PRIMARY HEALTH CARE SYSTEMS (PRIMASYS)

Case study from Mexico
Overview of primary health care system

According to a 2015 survey (between two censuses), the estimated population of Mexico was 119.5 million people in that year, with a projected 137 million by 2030. In 2015, the population aged under 15 years represented 27% of the total population, people aged between 15 and 64 represented 65% and those above 65 were 7.2%. Mexico has undergone an increasing urbanization process. In 1950 around 43% of the population lived in urban areas; by 1990 this population represented 71%, attaining 79% in 2015. According to the National Council for the Evaluation of Social Development Policy (CONEVAL, for its Spanish initials), in 2014, 46% of the population lived in poverty, of which 36.6% lived in moderate poverty and 9.6% in extreme poverty.

As the 10th Revision of the International Classification of Diseases and Related Health Problems (ICD10) states, the main mortality causes were diabetes mellitus, ischaemic heart diseases, cerebrovascular disease, cirrhosis and other chronic liver diseases, and chronic obstructive pulmonary disease. At the same time, there has been a significant increase in risk factors, such as obesity and overweight, physical inactivity, consumption of high caloric content food, as well as use of tobacco, alcohol and illicit drugs.

The Mexican economy has experienced a long-term decrease of its growth rate during the last three decades. In 2015, Mexico’s gross domestic product (GDP) was US$ 1143.79 billion, while the GDP value of Mexico represented 1.84% of the world economy. According to per capita GDP, Mexico is ranked 76th among 196 countries. The Gini coefficient, measuring inequality of income, was 0.503, placing Mexico as a country with a significant income inequality. Total health expenditure as a proportion of GDP is 5.78%, below the percentage of other Latin American countries such as Uruguay and Brazil (both 8.9%). Public health expenditure is 53% of total health expenditure, while out-of-pocket expenditure accounts for 41%.

In 2015, the number of first-level health care units reached 28,366 – 98% in the public sector and only 2% (627) in the private sector. In the same year 4456 hospitals were counted, of which 69% (3070) were in the private sector. The availability of human resources for health is 2.47 physicians (OECD 3.27) and 2.77 nurses (OECD 9.09) per 1000 inhabitants.

Table 1 summarizes demographic and health indicators for Mexico, while Figure 1 provides a timeline of key developments in the Mexican health system.

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3 To facilitate identification, all initials of Mexican institutions are provided as they are originally written in Spanish.
Table 1. Mexico: demographic and health indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Year</th>
<th>Results</th>
<th>Source of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population of country</td>
<td>2015</td>
<td>119,938,473</td>
<td>National Statistics and Geography Institute (INEGI)</td>
</tr>
<tr>
<td>Distribution of population (rural/urban)</td>
<td>2015</td>
<td>21%</td>
<td>World Bank&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Life expectancy at birth</td>
<td>2015</td>
<td>74.9 years</td>
<td>General Directorate for Health Information (DGIS)</td>
</tr>
<tr>
<td>Infant mortality rate</td>
<td>2015</td>
<td>12.51/1000 live births</td>
<td>Millennium Development Goals Information System (SIODM)&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Under-5 mortality rate</td>
<td>2015</td>
<td>15.06/1000 live births</td>
<td>SIODM</td>
</tr>
<tr>
<td>Maternal mortality rate</td>
<td>2015</td>
<td>34.59/100,000 live births</td>
<td>SIODM</td>
</tr>
<tr>
<td>Immunization coverage under 1 year (including pneumococcal and rotavirus)</td>
<td>2013</td>
<td>BCG</td>
<td>INEGI</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>HB</td>
<td>94.9%</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>Pentavalent</td>
<td>84.7%</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>Pneumococcal</td>
<td>69.4%</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>Rotavirus</td>
<td>80.8%</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>Basic scheme</td>
<td>63.5%</td>
</tr>
<tr>
<td>Income or wealth inequality (Gini coefficient)</td>
<td>2014</td>
<td>0.503</td>
<td>CONEVAL</td>
</tr>
<tr>
<td>Total health expenditure as proportion of GDP</td>
<td>2014</td>
<td>5.78%</td>
<td>Ministry of Health, Statistical information bulletin&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Public expenditure as proportion of total expenditure on health</td>
<td>2014</td>
<td>52.62%</td>
<td>Ministry of Health, Statistical information bulletin</td>
</tr>
<tr>
<td>Private expenditure as proportion of total expenditure on health</td>
<td>2014</td>
<td>48.38%</td>
<td>Ministry of Health, Statistical information bulletin</td>
</tr>
<tr>
<td>Primary health care (PHC) expenditure as % of total health expenditure</td>
<td>2014</td>
<td>24.90%</td>
<td>Estimation from Mexico Health Accounts database</td>
</tr>
<tr>
<td>% total public sector expenditure on PHC</td>
<td>2014</td>
<td>55.00%</td>
<td>Estimation from Mexico Health Accounts database</td>
</tr>
<tr>
<td>Per capita public sector expenditure on PHC</td>
<td>2014</td>
<td>US$ 306</td>
<td>Estimation from Mexico Health Accounts database</td>
</tr>
<tr>
<td>Out-of-pocket payment as proportion of total expenditure on health</td>
<td>2013</td>
<td>40.80%</td>
<td>Ministry of Health, Statistical information bulletin</td>
</tr>
<tr>
<td>Proportion of households experiencing catastrophic health expenditures</td>
<td>2012</td>
<td>2.08%</td>
<td>Ministry of Health, Statistical information bulletin</td>
</tr>
</tbody>
</table>

Figure 1. Timeline of key developments in the Mexican health system

1979
IMSS-COPLAMAR
This programme emphasized preventive health activities based on community work to promote development

1985
Constitutional Reform
Recognition of citizens’ right to receive health protection and replacement of the old Sanitary Code by the General Health Law

1996
Decentralization and separation of functions
1. Decentralization of health services for uninsured population
2. Creation of the States Health Services
3. Extension of coverage
4. Improvement of efficiency and quality through sector coordination

1997
PROGRESA Coverage Extension Program
Cash transfer programme conditioned to schooling of children and attendance at periodic health care visits

2003
System for Social Protection in Health
1. Financial protection offering voluntary public health insurance to the population without social security
2. Health provision for health prevention and promotion

2006
Health Promotion Operative Model
This model defines the basis for health promotion

2012
PHC Services Observatory
The model placed PHC as the most important strategy for health care in Mexico

2015
Integral Health Model
The model placed PHC as the most important strategy for health care in Mexico
Governance

The Mexican health system (Figure 2) is a segmented and fragmented system with both public and private sector participation. The public sector is responsible for the health care of both the beneficiaries of the social security institutions and the population without social security, which is covered by the System of Social Protection in Health.\(^6\) Health care in the latter case is the responsibility of its executive arm, Popular Health Insurance, which is provided by the Ministry of Health, the State Health Services (SESA) and the Prospera Social Inclusion Programme. Besides health care, the social security institutions also offer other social advantages, such as retirement insurance. These institutions cover the formal private sector employees and their families, under the Mexican Social Security Institute (IMSS); the employees of the federal and state governments and their families, under the Institute for Social Security and Services for State Workers (ISSSTE); as well as the employees of the national oil company (PEMEX), of the Ministry of Defence, through the Social Security Institute for the Mexican Armed Forces (ISSFAM), and of the Marine Secretariat (SEMAR), including their families. On the other hand, the private sector offers health care to very diverse populations – from people lacking employment in the formal sector of the economy to the wealthiest populations. All of them buy a range of health care services of varying cost and quality from private medical offices, clinics, hospitals and insurance companies.\(^7\,8\)

In terms of organizational structure, the Ministry of Health does not include any high-level office or department specifically responsible for primary health care (PHC).

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Nevertheless, two general directorates (third hierarchical level) are in charge of the organization of relevant aspects of PHC and, most importantly, the implementation of the Comprehensive Health Care Model (MAI). First, the General Directorate for Health Promotion, under the Undersecretary for Integration and Development of the Health Sector, is responsible for a series of specific action programmes directly linked with PHC, namely health promotion, social determinants of health, healthy communities and environments, food and physical activity. Likewise, the General Directorate for Health Planning and Development includes structures that are responsible for outpatient health care, extending coverage, planning health services networks, planning services exchange and even traditional medicine. In 2012 the Primary Health Care Services Observatory reported on the overall conditions of PHC units, identifying opportunities and strategies to improve the quality of PHC.

As an expression of the federal character of the country, the autonomy of each SESA creates a wide range of modalities for PHC provision adapted to each state. As in the Federal Ministry of Health, each SESA includes several entities with PHC responsibilities. However, except in the SESA in the states of Puebla and Michoacán, they seldom include offices with explicit links to PHC. A search for similar departments in the rest of the country only identifies subdirectorates for health promotion and disease prevention in Quintana Roo, prevention and promotion departments in Hidalgo, and first-level services and health promotion regulation departments in Morelos.

Concerning IMSS – the provider of health care for the formal private sector workers and their families – the Directorate for Health Care Services Provision includes a Primary Health Care Unit. This directorate is divided into three coordination offices: one responsible for comprehensive health care at the primary care level; one responsible for occupational health, which is focused on employment; and one responsible for epidemiological surveillance, linked to the diagnosis of public health from which the portfolio of services is elaborated. ISSSTE also lacks an explicit PHC-linked office. Nevertheless, the Subdirectorate for Health Promotion and Disease Prevention, which is part of the Medical Directorate, does have an Office of Family Medical Care Services. This office is responsible for the first-level services network, and well as for family medical care services. In addition, another office is responsible for the prevention of chronic degenerative diseases, and another department is in charge of the regional and local health systems. The organizational structure of PEMEX includes the Administration for Preventive Medicine, in which are located the Prevention Unit and the Subadministration for Preventive Medicine. Within the latter, the Department for Primary Prevention and Community Action and the Department for Secondary Prevention and Assistance are mandated to perform PHC-linked activities. In relation to the public sector, consideration must also be given to health services for the members of the armed forces and marine services and their families. Even though each one of these institutions includes particular organizations and systems related to health care in general, the available information regarding their organizational structure is not sufficiently clear to distinguish any entities specifically responsible for PHC.

Finally, while there is no structured policy or complete information on the role of the private sector in relation to PHC, this sector certainly plays a relevant role in offering first-contact health care to the population, even to those who benefit from other forms of health coverage. As an example, using outpatient care as a proxy for PHC, the present study found that, in a context in which around 40% of the out-of-pocket spending of families is used to pay for private medical consultations, between 2000 and 2012, the proportion of all kinds of health-related out-of-pocket spending increased from 31% to 38.9%.

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Financing

In 2014, the total health expenditure in Mexico was US$ 124 410 million (purchasing power parity = 8.002), equivalent to 5.78% of its GDP, while public spending represented 52.62% of this amount (US$ 65 467 million). As stated, funding for this expenditure comes from both the public and private sectors. In this analysis we will only consider the public expenditure on PHC.

Public financing of health care has two components: financing for the population with social security, and financing for the population without social security (Figure 3). The first component, mainly in the cases of IMSS, ISSSTE and PEMEX, is characterized by the inclusion of mandatory contributions from workers and their employers. On the other hand, the expenditure for the population with no social security is dedicated to financing government plans and programmes to improve access to health care for the self-employed, unemployed and informal workers. This expenditure includes the Ministry of Health (in which the System of Social Protection in Health must be mentioned), the Health Care Services Contributions Fund (FASSA), Prospera and expenditure by states.

This analysis uses the Classification of Health Care Functions developed by the Organisation for Economic Co-operation and Development (OECD), which is the basis for the expenditure accounts of Mexico through the Federal and State Health Accounts Subsystem (SICUENTAS). According to the OECD definition of primary health care, this analysis only considers outpatient curative care and preventive health services as indicators of PHC expenditure, all of which are included in functions HC.1, “curative care”; and HC.6, “preventive care”. Only “outpatient curative care” (HC.1.3) was used as an indicator of PHC expenditure (Figure 3). So PHC expenditure as a percentage of total health expenditure (PHCE%) is determined by the following formula:

\[
\text{PHCE\%} = \left( \frac{\text{outpatient curative care expenditure (HC.1.3)} + \text{preventive care expenditure (HC.6)}}{\text{total health expenditure (H)}} \right) \times 100
\]

The public health expenditure allocated to PHC in Mexico is US$ 36 465 million, or 29.4% of total health expenditure and 55% of public health expenditure. Figure 3 shows that 5.7% of public health expenditure goes to preventive care, while 49.3% goes to outpatient curative care. However, those percentages vary by financial source: IMSS allocated 73.8% of its total health expenditure to PHC (70.1% to outpatient care and 3.7% to preventive care), while the Ministry of Health allocated 57.8% (50.7% to outpatient care and 7.1% to preventive care).

Human resources

In 2015 there was a total of 745 040 health workers in Mexico (including medical and nurse students in practice). Of those, 57% were working in hospitals, 40% in primary health facilities and 2% in other health facilities. Physicians and nursing personnel represented the majority of human resources working in primary health facilities, with little change in the trend between 2013 and 2015 (Table 2). The distribution of physicians and nursing personnel in primary health facilities follows the same trend. The Ministry of Health has the highest proportion of medical and nursing staff, followed by IMSS and ISSSTE (Table 3).
Figure 3. Percentage of public expenditure destined to primary health care, by source of financing, Mexico, 2014

Table 2. Human resources in primary health facilities in Mexico, by category

<table>
<thead>
<tr>
<th>Health personnel</th>
<th>2013 n = 249 247</th>
<th>2014 n = 269 057</th>
<th>2015 n = 291 047</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Physicians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physicians</td>
<td>75 828</td>
<td>30</td>
<td>81 481</td>
</tr>
<tr>
<td>Nursing personnel</td>
<td>73 089</td>
<td>29</td>
<td>79 760</td>
</tr>
<tr>
<td>Other professional personnel</td>
<td>24 449</td>
<td>10</td>
<td>25 562</td>
</tr>
<tr>
<td>Technical personnel</td>
<td>22 110</td>
<td>9</td>
<td>23 994</td>
</tr>
<tr>
<td>Other personnel</td>
<td>53 771</td>
<td>22</td>
<td>58 260</td>
</tr>
</tbody>
</table>

Note: Does not include medical and nurse students in practice; includes personnel from IMSS, ISSSTE and Ministry of Health.
Source: Human resources information from DGIS, 2016.

Table 3. Distribution of physicians and nursing personnel in Mexico, by institution

<table>
<thead>
<tr>
<th>Institution</th>
<th>Physicians</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013 n</td>
<td>%</td>
<td>2014 n</td>
<td>%</td>
<td>2015 n</td>
<td>%</td>
</tr>
<tr>
<td>Ministry of Health</td>
<td>36 803</td>
<td>49</td>
<td>40 806</td>
<td>50</td>
<td>41 893</td>
<td>45</td>
</tr>
<tr>
<td>ISSSTE</td>
<td>10 171</td>
<td>13</td>
<td>11 354</td>
<td>14</td>
<td>11 193</td>
<td>12</td>
</tr>
<tr>
<td>IMSS</td>
<td>28 854</td>
<td>38</td>
<td>29 321</td>
<td>36</td>
<td>40 010</td>
<td>43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institution</th>
<th>Nurses</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013 n</td>
<td>%</td>
<td>2014 n</td>
<td>%</td>
<td>2015 n</td>
<td>%</td>
</tr>
<tr>
<td>Ministry of Health</td>
<td>37 893</td>
<td>52</td>
<td>37 893</td>
<td>51</td>
<td>37 893</td>
<td>46</td>
</tr>
<tr>
<td>ISSSTE</td>
<td>10 090</td>
<td>14</td>
<td>10 330</td>
<td>14</td>
<td>10 532</td>
<td>13</td>
</tr>
<tr>
<td>IMSS</td>
<td>25 106</td>
<td>34</td>
<td>25 366</td>
<td>34</td>
<td>34 514</td>
<td>42</td>
</tr>
</tbody>
</table>

Note: Does not include medical and nurse students in practice.
Source: Human resources information from DGIS, 2016.
Accreditation of nursing and medical schools is guided by the Mexican Council for Medical Education and the Mexican Council for the Accreditation and Certification of Nursing, which are both recognized by the Council for the Accreditation of Higher Education. Despite the existence of these organizations, full accreditation of all the programmes in the country has not been achieved. In fact, only 44 of 80 medical schools and only a few of the 600 nursing training programmes have been accredited. Awarding degrees and certification is the responsibility of universities and other higher education institutions, together with the Ministry of Education’s General Directorate for Professions, which is in charge of awarding physicians’ licences.

Concerning PHC education, Mexico has an academic structure for postgraduate studies. In 1994 the Mexican College of Family Medicine was founded, gathering around 36 state-level primary care associations and medical colleges. Some universities have family medicine departments, and the Mexican Council for the Certification of Family Medicine can certify specialists in family medicine.18 Regarding undergraduate education in medicine, there is no information on the inclusion of PHC in the curricula of any of the universities. Similarly, there is a great variety of schools training nurses at technical and Bachelor of Arts level, but there is no information on the curricula for PHC nurses. Unfortunately nurses are still being trained only to become the aids of physicians, while their potential for strengthening PHC is neglected.19

Planning and implementation

Every five years, each health institution elaborates its own programmes following the health sector’s goals and including different strategies and activities related to PHC units. All of these programmes are explicitly devoted to prevention, health promotion and health recovery. The Ministry of Health counts 18 such programmes, while IMSS also encompasses 18 different programmes in its large initiative called PREVENIMSS. Similarly, the Preventive Medicine area of ISSSTE includes 15 programmes. In all cases, programmes simultaneously target the individual, families and communities. And even though each institution is responsible for the implementation of its own programmes, the Ministry of Health does play a certain coordination role. At the same time, every institution carries out performance evaluations of the health units in which PHC is provided using a set of indicators that have been called “walking towards excellence”.20 Besides, the National Council for Evaluation of Development Policy is in charge of monitoring and evaluating all programmes of this kind and observes several efficiency indicators.21

As a steering entity, in 2015 the Ministry of Health launched the MAI in order to standardize health care services, optimize health resources and infrastructure, and promote citizens’ participation. As one of the four strategies of MAI was the renewal of PHC, the implementation of MAI followed a series of guidelines:

- focus on the person, the family and the community, considering the needs of the first two and the health risks of the latter;
- prioritize health promotion and disease prevention according to the epidemiological, demographic, social and economic conditions of each region through promoting capacity-building, intersectoral participation and inclusion of different stakeholders, while seeking to influence the social determinants of health;

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• strengthen the sanitary jurisdictions as technical and management units for the coordination of the territorial systems in order to survey the quality of PHC and thus guarantee access to health benefits;
• strengthen networks of facilities to ensure the provision of standardized services for health promotion, disease prevention, health care, disease management, rehabilitation and palliative care, taking into account cultural and social dimensions and emphasizing outpatient care, with particular emphasis on PHC;
• develop the competences and capacities of human resources and ensure their even distribution throughout the country while adjusting them to local community and geographical circumstances, with special attention to the professionalization of multidisciplinary groups in charge of outpatient care;
• define the population and geographical realms of responsibility in such a way that each person or family will be assigned to a services network cognizant of and able to cater for their health needs.

Regulatory process

Health system stewardship depends on the federal government through the Ministry of Health, which is the main organization responsible for strategic planning, intersectoral coordination, sanitary regulation and evaluation of institutions, programmes, policies and services in the health sector. Regulation of provision is simultaneously a responsibility of the federal government and of each state’s ministry of health. Civil society organizations and professionals collaboratively conduct regulation of health care.\textsuperscript{22,23} At the state level, sanitary jurisdictions are the technical and management units responsible for the coordination of territorial systems based on PHC. Their objective is to guarantee quality of care and access to health services, to manage intersectoral participation in order to address social determinants of health in each region, and to articulate outpatient medical care.\textsuperscript{24}

The General Health Council is a collegiate organization with sanitary authority responsibilities. Several articles of the Mexican Constitution and the General Health Law support the council as the main coordination and regulation entity of the National Health System. It is integrated with the Secretary of Health; the directors of the National System for the Integral Development of Families and of the National Science and Technology Council; the medical directors of IMSS and ISSSTE; and representatives from the academic institutions related to the health sector.\textsuperscript{25} The functions of the council in the domain of PHC include (a) elaboration, dissemination and update of the basic catalogue of inputs for the primary health facilities, in coordination with the Ministry of Health and the other public institutions; (b) elaboration, publication and update of the generic drugs catalogue; and (c) establishing actions for quality assessment and certification of medical care facilities by defining standards for the PHC certification of clinics.\textsuperscript{26,27}

The National Health Council, which includes the directors of all the SESAs, was created in 1986 to coordinate programming, budgeting and evaluation of public health. Following its reorganization in January 1995, the National Health Council became the permanent coordination mechanism between the federal and state governments to support the health services decentralization process. Among its main functions are the establishment of recommendations to unify criteria to attain the goals of public health programmes; the promotion of priority health programmes in the states; and proposing complementary financing strategies for public health.\textsuperscript{28,29,30,31}

31 Acuerdo por el que se establece la integración y objetivos del Consejo Nacional de Salud. DOF 27/01/2009. México; 2009.
According to the Strategic Project for Sanitary Jurisdictions, 1989, the sanitary jurisdictions are responsible for the coordination of the local health systems at the state level. This project’s main objectives were (a) to promote expansion of health services coverage, with emphasis on PHC; (b) to contribute to the quality and productivity of health services; and (c) to promote the decentralization of resources and decision-making at the local level.\footnote{Fortalecimiento de los sistemas locales de salud. Proyecto de Desarrollo de Jurisdicciones Sanitarias. Dirección de Desarrollo de Sistemas Locales de Salud. Salud Pública de México. 1994;36(6):673–93.}

The sanitary jurisdictions are responsible for planning and assessing health services based on uniform, systematic operations in order to guarantee quality of care in the first-level units, according to the guidelines of national and state health programmes.\footnote{Manual de funcionamiento de las jurisdicciones sanitarias del ISEM. Gobierno del Estado de México, Secretaría de Salud; 2015.)} Their functions are (a) to organize the medical care and public health actions according to the norms (Law on Social Protection in Health, last reform, 2011, provision of health care services, last reform, 2016, and other guidelines and norms issued by the Ministry of Health); (b) to review quality standards in the primary health facilities; (c) to support the elaboration of the health situation analysis and programmes; (d) to coordinate social participation in the local health system; and (e) to support surveillance of the sanitary operation and functioning of health care facilities.\footnote{Manual de indicadores de servicios de salud. Secretaría de Salud (http://www.dged.salud.gob.mx/contenidos/dess/descargas/ind_hosp/Manual-ih.pdf, accessed 25 May 2017} Nevertheless, sanitary jurisdictions only encompass health services provided by the Ministry of Health and SESA, while health care provision at IMSS, ISSSTE and the other public institutions responds to the criteria and guidelines put in place by other organizations.

**Monitoring and information system**

The National System of Health Information (SINAIS) makes available data from different units for provision of health care services, including outpatient services. Databases include information on health care coverage, infrastructure, human and financial resources, services utilization and performance indicators. However, SINAIS does not integrate information from all health providers. Despite some progress, most of the data come from the Ministry of Health. There is as yet no free access to information for other health institutions in the public sector for consultation and analysis. Concerning information on quality of care, even if the states collect information on productivity indicators in hospitals and satisfaction surveys among patients of public facilities, there is no autonomous agency capable of collating state-level data. To estimate several indicators of outpatient care in Mexico it is necessary to gather data from different sources, including:

- demographic events registration
- population and housing census
- ordinary registries of health services
- epidemiological surveillance data
- sample-based surveys (population surveys)
- disease registration
- other data sources from different sectors (economic, political, social welfare).

Since 2000, Mexico has developed initiatives to assess health system performance, with the help of the World Health Organization. Multiple indicators have been used to assess the performance of health systems. In this process, Mexico has developed a monitoring system for external consultation units and outpatient services using a number of indicators, including:\footnote{Manual de indicadores de servicios de salud. Secretaría de Salud (http://www.dged.salud.gob.mx/contenidos/dess/descargas/ind_hosp/Manual-ih.pdf, accessed 25 May 2017}

- average consultation per medical office
- percentage of pregnant women enrolled in the first trimester
- average of prenatal consultations
- percentage of consultations for acute respiratory infection
- percentage of controlled hypertensive patients.

**Ways forward and policy considerations**

According to the National Health Plan 2013–2018, the basis of MAI is the regeneration and strengthening of PHC. It is therefore first necessary to review the ensemble of health services to assess how they can coherently respond to the health needs of the population. In that regard, priority should be given to the implementation, monitoring and evaluation of actions that support health promotion and disease prevention, without disregarding actions that support healing and rehabilitation.

The implementation of a PHC-oriented health care model entails strengthening the training of human resources for...
health so that they acquire the necessary competences to assure delivery of quality health care. It is also important to bring up to date the skills profiles of health professionals, including professional midwives, health promoters and physical trainers, so that they can respond to the health needs of the population.

The implementation of a health care model based on PHC is essential to strengthen the primary care units. This entails training professionals on management capacities related to the provision of quality care. At the same time, the capacity of health units must be improved so that they can provide greater quality and quantity of human resources, teams, drugs, appropriate technology and other inputs.

At the community level, it is vital to engage citizens in formulation of the diverse interventions related to their health demands through the participation of diverse stakeholders and actors from civil society. Disease prevention and health promotion strategies need increased financing, given their potential to influence lifestyles and combat the risk factors behind the increasing prevalence of chronic degenerative diseases in Mexico. Finally, it is necessary to review how PHC is being financed: What are the resource allocation mechanisms? How are resources distributed among prevention, promotion, healing and rehabilitation actions? and, What budget mechanisms are in place?
Case study from Mexico

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This case study was developed by the Alliance for Health Policy and Systems Research, an international partnership hosted by the World Health Organization, as part of the Primary Health Care Systems (PRIMASYS) initiative. PRIMASYS is funded by the Bill & Melinda Gates Foundation, and aims to advance the science of primary health care in low- and middle-income countries in order to support efforts to strengthen primary health care systems and improve the implementation, effectiveness and efficiency of primary health care interventions worldwide. The PRIMASYS case studies cover key aspects of primary health care systems, including policy development and implementation, financing, integration of primary health care into comprehensive health systems, scope, quality and coverage of care, governance and organization, and monitoring and evaluation of system performance. The Alliance has developed full and abridged versions of the 20 PRIMASYS case studies. The abridged version provides an overview of the primary health care system, tailored to a primary audience of policy-makers and global health stakeholders interested in understanding the key entry points to strengthen primary health care systems. The comprehensive case study provides an in-depth assessment of the system for an audience of researchers and stakeholders who wish to gain deeper insight into the determinants and performance of primary health care systems in selected low- and middle-income countries.