Public health

Evidence-based health policy: three generations of reform in Mexico

Julio Frenk, Jaime Sepúlveda, Octavio Gómez-Dantés, Felicia Knaul

The Mexican health system has evolved through three generations of reform. The creation of the Ministry of Health and the main social security agency in 1943 marked the first generation of health reforms. In the late 1970s, a second generation of reforms was launched around the primary health-care model. Third-generation reforms favour systemic changes to reorganise the system through the horizontal integration of basic functions—stewardship, financing, and provision. The stability of leadership in the health sector is emphasised as a key element that allowed for reform during the past 60 years. Furthermore, there has been a transition in the second generation of reforms to a model that is increasingly based on evidence; this has been intensified and extended in the third generation of reforms. We also examine policy developments that will provide social protection in health for all. These developments could be of interest for countries seeking to provide their citizens with universal access to health care that incorporates equity, quality, and financial protection.

We provide an overview of the evolution of the modern Mexican health-care system. Our main focus is on Mexican health policies that have addressed health challenges in the second half of the 20th century and which have shaped three overlapping but distinct generations of reform.

The first generation involved the foundation of a national health system through the establishment of a Ministry of Health and a social security agency. Distinctive features of the second generation of reforms were the explicit adoption of the primary health-care paradigm and several efforts to extend health coverage by strengthening the public supply of health services and through decentralisation of facilities. Finally, third-generation reforms favour structural changes that seek to reorganise the system through horizontal integration of its basic functions—ie, stewardship, financing, and provision. We also describe the legislative reform of 2003 and other recent policy developments that aim to provide social protection in health to the 50 million uninsured Mexicans through the creation of a popular health insurance programme.

Stability of leadership in the health sector has been a key element, unique to Mexico, which has allowed for reform in the past 60 years. Since the 1940s, the turnover of Ministers of Health in all of the 6-year terms of government has been especially low, and most ministers have served an entire term of office. Furthermore, the second generation model was shaped by evidence with a heavy reliance on large-scale health surveys. This was an initiative of leaders in the health sector who, for the first time, were elected for their technical expertise rather than their political affiliation. Third-generation reforms have also been increasingly characterised by evidence-based decision making, including the use of substantial economic analysis to guide financial reform and the incorporation of formal assessment processes to the design of new programmes.

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Instituto Nacional de Salud Publica, Colonia Santa Maria Ahuacatitian 62508 Cuernavaca, Morelos, Mexico (J Sepúlveda DrSc)**; Mexican Ministry of Health** (J Frenk MD, O Gómez-Dantés MD)**; and Ministry of Public Education of Mexico** (F Knaul PhD)

Correspondence to: Dr Jaime Sepúlveda (e-mail: jsepulveda@insp.mx)

Three generations of reform

Mexico is an upper middle-income country with a gross domestic product (GDP) per head of US$6215 in 2002. With about 100 million inhabitants, it is the third largest country in the Western hemisphere. Although about three quarters of its inhabitants live in urban areas, about 11% dwell in 180 000 scattered small rural communities (1–499 inhabitants) according to data from the 2000 census.

Although most Mexicans have access to basic health-care services through public institutions, the range and quality of available interventions vary greatly, to the point that many Mexicans, both poor and wealthy, choose to pay private providers for care because of poor access to, and quality of, public health-care facilities.

First-generation reforms

The Mexican health system dates back to 1943, when three important institutions were created: the Ministry of Health, the Mexican Institute for Social Security (IMSS), and the Children's Hospital (the first of the now ten National Institutes of Health, charged with complex tertiary care, training of specialists, and scientific research). The introduction of these institutions marked the appearance of the first generation of health reforms, which aimed to address the demands of industrialisation and take advantage of the opportunities of technological progress and economic development. Since its inception, the Mexican health system was marked by the schism between the insured in the formal sector of the economy and the uninsured poor (figure 1).

In the late 1960s, this hospital and speciality-oriented model began to reach its capacity to meet the health needs of the population. The cost of care rose strikingly as a result of increased demand and technological complexity. Furthermore, the system was not reaching many poor people in rural areas and many households had to use their own resources in a private market that frequently offered poor-quality, unregulated services.

Between 1940 and 1970, Mexico went through radical changes in its epidemiological profile. This transition has

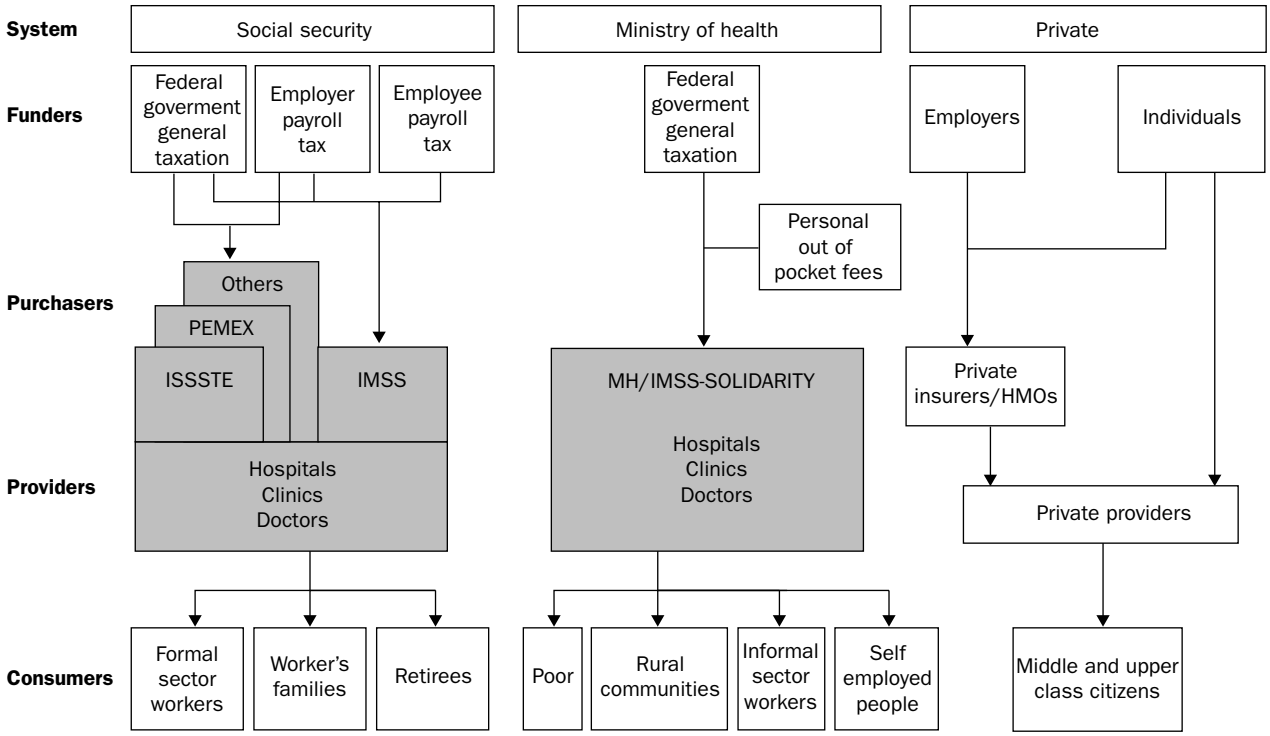

Figure 1: **An overview of the Mexican health system**
ISSSTE=Federal Civil Servants and the armed forces. PEMEX=employees of the national oil company. MH/IMSS-SOLIDARITY=special branch of the Ministry Health managed through the exsisting social security system. HMO=Health Maintenance Organisation.

been polarised and protracted because of the overlap of a health backlog and a pattern of emerging diseases.[1] A change was needed in the way the health system was organised.[2,3]

Second-generation reform

The late 1970s mark the beginning of a second generation of reforms with efforts to extend basic health care to poorly served rural and urban-poor populations. A key input to this process was the design of policies and programmes based on evidence and evaluation. To improve the evidence-base for decision making, several measures to support health research were implemented. In 1987, the National Public Health Institute was created to enhance the work begun in 1922 when Mexico broke new international ground and established its own School of Public Health. With the National Institute came the implementation of regular surveys to track progress in health and health care, specific research programmes as inputs in developing public health programmes, and teaching programmes integrated with the policy-making process.

At the same time, and in response to the severe debt crisis of 1982, the federal administration implemented austerity measures that included reductions in health spending in an already underfunded health system.

These restrictions resulted in a deterioration of the health network in an overly centralised, inefficient system that concentrated most of its resources on costly curative interventions.[4] Mexico is still only spending 5·7% of its GDP on health; around 2·7% is from public funds and 3% is private expenditure. In Latin America, the average expenditure in health as a proportion of GDP is 6·1%.

In search of new approaches to extend access and improve the efficiency and quality of care, a major health-care reform was launched in 1983.[5] A constitutional amendment was introduced, establishing the right of every person to the protection of their health. A progressive Health Law replaced an old-fashioned sanitary code. Health services for the uninsured population began to be decentralised to state governments. Finally, the difficulty of limited coverage of health services, which at that time affected about 14 million Mexicans, was addressed through a programme based on the primary health-care model. Public health interventions formed an integral part of this reform and included oral rehydration, the Universal

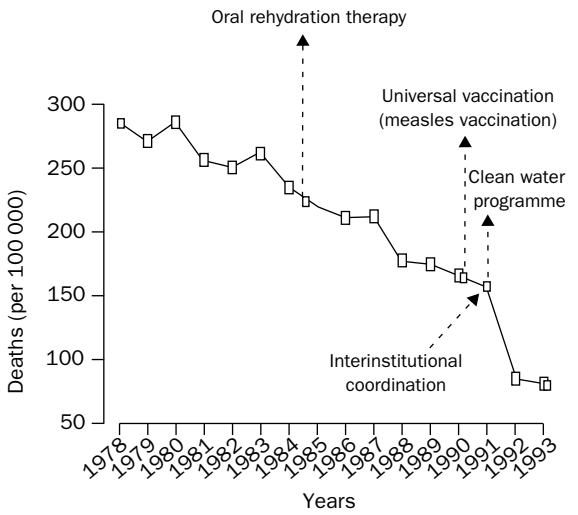

Figure 2: **Mortality from diarrhoeal diseases in children younger than 5 years, 1978–93**
Correlation between trends in deaths attributable to diarrhoeal diseases and public health measures is shown.

Immunization Programme, an increase in the quality and availability of water, and improved access for women to education as a vehicle to improving reproductive and family health. Mortality decreased strikingly during these years, at an average of 6·4% per year between 1984 and 1989, and 17·8% between 1990 and 1993 (figure 2).[6]

An evidence-based approach was used to confront the emerging AIDS epidemic. For example, measures to prevent transmission of the disease through blood were implemented as a result of studies that showed this form of transmission to be common in Mexico. A National AIDS Prevention Committee and a national network of HIV detection laboratories were also created.[7] In 1995, workers at the National Institute of Public Health estimated that by the year 2000 almost 10 000 AIDS cases would be prevented.[8] Indeed by 2000, 57% of sexually active youth were using condoms—an increase from 33% in 1994. Frequency of HIV infection in female sex workers had remained low (0·3% in 1997), and by 2002 no new cases of HIV transmission from contaminated blood supplies had been reported for more than 4 years. Although cases are almost certainly under-reported, Mexico has one of the lowest HIV/AIDS infection rates in all of the Americas.[9]

The immunisation programme was also strengthened and evolved from single vaccination days, to vaccination weeks, and finally to the introduction of vaccines as part of a package of health services that included supraphysiological doses of oral vitamin A, anthelmintic treatments (albendazol), and oral rehydration salts. As a result of this programme, the last recorded case of poliomyelitis in Mexico was in 1991, and since 1997 no cases of non-imported measles have been reported.

Substantial reductions in death rates from diarrhoeal disease indicate the effect of a combination of these interventions, since mortality reduction was most highly correlated with environmental improvements, household sanitation, and measles immunisation. Indeed, the nutritional status of children in Mexico greatly improved during the 1990s: the prevalence of underweight children younger than 5 years decreased by almost half between 1988 and 1999, while the prevalence of diarrhoea decreased by more than 30%.[10,11]

Perhaps the clearest example of the effect of Mexico's public-health policies is the decreasing gap in health inequalities, despite the increasing gap in income distribution. During the 1980s, the richest 10% of the population held 33% of gross national product and at the end of the 1990s, this proportion had risen to 42%. At the same time, and despite this increased concentration of wealth, differences in life expectancy across Mexican states (figure 3), by sex, and by cause of death have slowly but steadily decreased. Moreover, the greatest gains in life expectancy over the past two decades have been achieved in women in the poorest states of the country.[12]

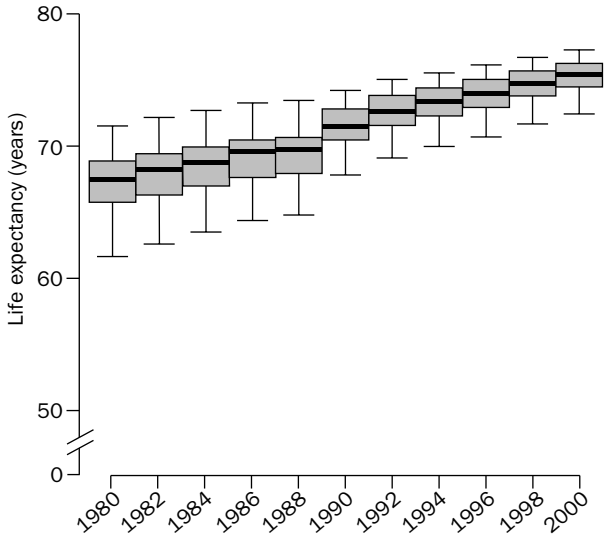

Figure 3: **Life expectancy at birth in Mexico (1980–2000)**
This box-plot shows the decreasing variance in life expectancy between the richest and poorest states in Mexico. Vertical bars show 95% CI and bold horizontal line shows mean.

The last example of the second-generation approach to health care was a programme cofinanced with federal resources and a loan from the World Bank, implemented in the early 1990s. The objectives of this programme were to improve and extend the health service infrastructure of the uninsured population of the poorest states (Chiapas, Guerrero, Hidalgo, and Oaxaca) and areas of Mexico City, and to improve the managerial infrastructure and abilities of state and federal health offices.[13]

Despite some progress, rates of use of the newly built health units were quite low, in part because of the lack of essential drugs and the existence of organisational and cultural barriers.[14] The primary health-care approach can be criticised for giving little attention to people's demand for care, which is greatly affected by perceived quality and responsiveness of the health system, and instead concentrates on their professionally identified needs and the supply of resources to meet them.[15] This criticism is especially valid in indigenous communities who might have their own set of beliefs and traditions related to health that are rarely considered during policy making.

Some of these second-generation reforms faced resistance from interest groups—most notably social security unions, who had benefited from the previous segregation. One of the most important negative effects of such opposition was the interruption of the decentralisation process, which meant that health services were decentralised in only 14 of 32 Mexican states. The process was not completed until the late 1990s.

Third-generation reforms

A worldwide movement for health reform in the early 1990s marked the beginning of a third generation of health reforms. The prescribed solutions included: separation of financing from the provision of services to stimulate competition and accountability; evaluation of health interventions with the goal of designing cost-effective benefit packages; programmes for the continuous improvement of quality of care; and increased participation of citizens in their care.

In Mexico, decentralisation of health services for the uninsured was completed, allowing the Ministry of Health to concentrate on its stewardship role; the financial basis of IMSS was strengthened while quality of care was improved; and a package of essential health-care interventions was extended to target groups of poor people in rural areas.[16,17] The Programme for Extension of Coverage provided 12 basic interventions that included: basic household sanitary measures; family planning; prenatal, perinatal, and postnatal care; nutrition and growth surveillance; immunisation; treatment of diarrhoea at the household level; treatment of common parasitic diseases; treatment of acute respiratory infections; prevention and treatment of tuberculosis; prevention and control of hypertension and diabetes; prevention of accidents and initial treatment of injuries; and community training for health promotion.

An incentive-based welfare programme (PROGRESA, Program for Education, Health and Nutrition) was also introduced. It offers cash subsidies to poor people in

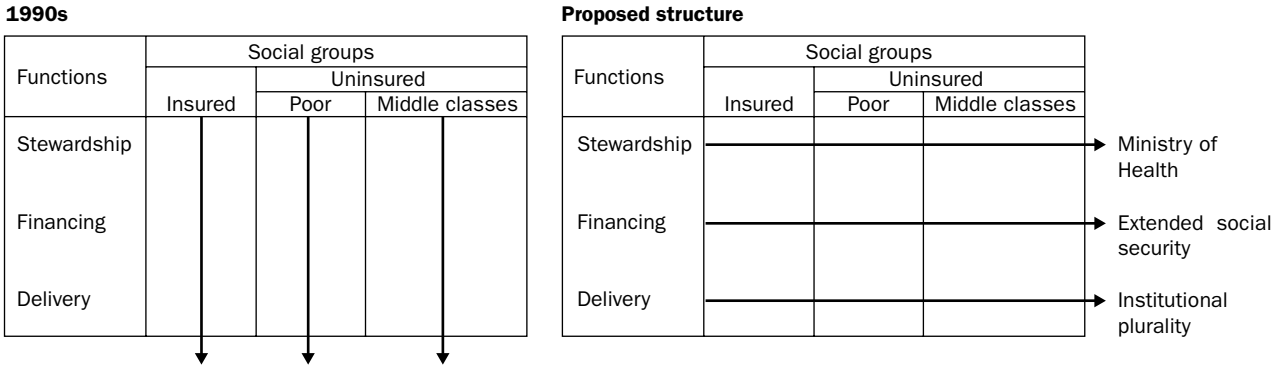

Figure 4: **Reorganisation of the Mexican health system**

exchange for adherence to several education, health, and nutritional interventions.

The third generation of reform is based on the reorganisation of the system by functions (provision, financing, and stewardship) (figure 4).[18–20] In this new scenario, the Ministry of Health would be responsible for coordinating, monitoring, and regulating the system (including the social security agencies and the private sector) and for providing non-personal health services. Financing would come mostly by extension of social insurance to all, and public and private providers would satisfy the need for personal health services.

Policies for the new century

The present administration has developed the evidence-based approach to health care. The *National Health Program 2001–2006* (*NHP 2001–2006*), in line with the WHO framework on health system performance, identifies equity, quality, and financial protection as the major challenges facing the Mexican health system and has designed specific policies to address them. These policies are consistent with the idea of reorganisation of the system by function.

Equity is an especially important goal. According to Karl,[21] democracies that develop in a context of great inequity are unstable. To address the health backlog is not only a moral imperative but also a democratic concern. National health surveys and several research projects have consistently shown the great diversity of health needs between states and between social classes.[22,23]

Quality represents another challenge. Public sector health agencies mainly operate as monopolies; hence, there is little consumer choice, few incentives for responsiveness to consumer needs, and little concern for quality of care. Until recently, neither public nor private facilities were subject to regular processes of accreditation to verify their capacity to provide an acceptable standard of care. Consequently, the quality of hospital services varies widely. Issues of quality are also common in the private sector, which includes many small units that are often badly equipped, undersupplied, and uncertified.

Financial protection is another challenge faced by the health system. Although Mexico ranked about 60 out of 191 countries in overall health system performance as measured by WHO in 2000, in terms of financial protection the country is much more poorly placed at 141. Although this ranking system remains controversial, it is a strong indicator of health-system-financing inefficiency in Mexico.[24] The National Health Accounts developed by the Mexican Health Foundation in the 1990s showed that private expenditure represents more than half of all health expenditure.[25] The large amount of out-of-pocket spending and the poor performance of Mexico on fairness of finance is a direct result of the fact that about half the population do not have health insurance. The National Household Income and Expenditure Survey of 2000 shows impoverishing health expenditures to be especially common in poor households without medical insurance. Specifically, 85% of families that spend more than 30% of their disposable income (defined as total spending minus spending on food) on health are uninsured and more than half are in bottom quintiles of the income distribution.

To meet these challenges, the *NHP 2001–2006* established five main goals: (1) to improve the health conditions of Mexicans; (2) to address health inequalities; (3) to improve the responsiveness of public and private services; (4) to ensure fair financing for health; and (5) to strengthen the health system, especially public institutions.

To reduce the health backlog and address the issue of health equity in Mexico, effective access to basic health services for the population living in poverty, in both rural and urban areas, is being extended. Special emphasis is being placed on the supply of maternal and child health-care services through a programme called Fair Start in Life. Additionally, nutritional supplements are being offered to all pregnant women and children aged younger than 2 years who live in indigenous communities.

To address emerging problems that will affect the entire population as the epidemiological transition progresses requires a clear definition of priorities for improving health conditions based on evidence. The new administration is promoting a culture of detection and prevention: more effective, early detection of obesity, diabetes, and hypertension; adoption of measures to discourage use of alcohol, tobacco, and other addictive substances; programmes to prevent, and care for people with, mental health difficulties; and enhancement of programmes for the comprehensive care of disabilities.

The National Crusade for the Quality of Health Services was launched in January, 2001, throughout Mexico to increase the effectiveness and responsiveness of health services. With a focus on the priority technical and interpersonal aspects of care and with greater weight given to primary and secondary care settings, this programme should result in improvements in the supply of drugs; promotion of the certification of health professionals and medical units, promotion of the use of clinical guidelines and enhancement of access to evidence-based resources for informed decision making, creation of a bill of rights for users of health services, provision of complete information and timely care, and establishment of a follow-up and response system for complaints and suggestions.

To protect families from the financial consequences of caring for health, a major legislative reform was approved in April 2003, by the Mexican Congress. This reform aims to provide universal health insurance through the establishment of a system of Social Protection in Health (SPH), which will cover those people, most of them poor, who have hitherto been excluded from the formal social security system because they are self-employed, unemployed, work in the informal sector of the economy, or are out of the work force.

A major innovation of the SPH system is that it explicitly separates financing for personal and non-personal health services. By creating a separate fund for non-personal services, the reform will ensure adequate financing for health-related public goods (including environmental services, epidemiological surveillance, information, research and stewardship functions) and for community-based campaigns to promote preventive health actions.

With respect to financing access to personal health services, the operational arm of the SPH system is a programme called Popular Health Insurance. This insurance scheme is funded through a tripartite formula with tax-based contributions from the federal and state governments subsidising family contributions in accordance with ability to pay, such that the poorest families would receive benefits that are up to 99% subsidised.

The pilot stage of Popular Health Insurance has been quite successful, with more than 500 000 families enrolled. In the next 7 years the coverage scheme will aim to enrol 11 million families (about 45 million people) and reach the entire population that is currently uninsured.

The project also includes a series of supply-side interventions to guarantee more, and higher, quality public services and encourage users to adopt the popular insurance plan. The vision for this reform is to convert insurance into a tool not only for financial protection but also for a realignment of incentives that will stimulate greater efficiency, technical quality, and responsiveness to users.

Conclusions

Modern health systems aim to guarantee universal access to services that respond to the needs and expectations of citizens based on the goals of equity, quality, and financial protection. The reform of health systems has been a continuing process of change to approach these goals in the face of health transitions, technological innovation, and political and economic development at the national and international levels. The Mexican health reform process has increasingly been based on evidence to guide decision making and policy formulation, the application of advances in knowledge at the international level in the national context, innovations in finance as well as service provision and stewardship, and an evolving response to the health needs associated with the epidemiological transition.

While each health reform experience is unique to each time period and country, the description of the process and its results is a public good relevant to the global learning experience and of use to individual countries. This description of three generations of health reforms in Mexico is of particular importance to other developing countries seeking guidance through both success stories and the obstacles encountered along the path to reform. Indeed, Mexico is one of a select group of developing countries that can document continuous progress in the evolution of its health system.

Conflict of interest statement

Several of the authors work directly or indirectly with the Ministry of Health.

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