The NEW ENGLAND JOURNAL of MEDICINE

Perspective

JANUARY 7, 2016

INTERNATIONAL HEALTH CARE SYSTEMS

Innovation and Change in the Chilean Health System

Thomas J. Bossert, Ph.D., and Thomas Leisewitz, M.D., M.P.H.

Chile has often been a regional health system innovator. One of the first Latin American countries to adopt a Bismarckian social security system that provides white-collar workers with health insurance

An interactive graphic is available at NEJM.org

funded by a salary tax, Chile also created a state-run National Health System (NHS) in the 1950s, based on the British National Health Service model and funded by general tax revenue. Although the social security system provided insurance to salaried employees who contributed a portion of their salaries, Chile did not set up a separate social security delivery system, instead funding public services and later providing access to private clinics.[1]

Until the 1980s, Chile's health system was predominantly publicly funded, and health care publicly delivered, though eventually higher-income public-system patients could use vouchers to cover some costs of private care. The system was highly effective by Latin American standards; it significantly improved communicable disease rates, nutrition, and maternal and child health, and Chile's health status was among the best in the region. The infant mortality rate, which had been 136 per 1000 live births in 1950, dropped to 33 per 1000 live births by 1980, and the prevalence of malnutrition among children under 6 years of age declined from 37% to 11.5%.[2]

In the 1980s, as part of its market-oriented policies, the military government of Augusto Pinochet began allowing salaried workers to opt out of the social security system and use the legally mandated 7% of wages to purchase private health insurance, creating a two-tiered system in which private insurance, at its peak, covered 26% of the population. Private insurance companies contracted with private providers, driving rapid growth in private clinics and hospitals. The public health system was funded through a public agency, Fondo Nacional de Salud (FONASA). The privately insured population spent up to twice as much on health services as the FONASA population, though the difference shrank substantially over time.

The military government also decentralized primary care clinics, shifting them to municipal control gradually throughout the 1980s. Though the system still depends heavily on central government financing, decentraliza-

tion improved the equity of allocation among rich and poor municipalities, in terms of both transfers from central-government budgets and local taxes allotted to primary care facilities.[3]

With the return to democracy in 1989, the new government formed by a coalition of center-left parties did not initially attempt to reform the Pinochet system but substantially increased public funding, especially for hospitals. Democracy also brought growing pressure to improve the public system's responsiveness and implement major reform. Underinvestment and poor management in public services resulted in deteriorating quality of care and increasing waiting times for many services. Meanwhile, private health care was growing and attracting more providers to full-time positions in more-expensive private clinics and hospitals. But because health care costs increased more rapidly than salaries, the middle class had more difficulty obtaining private insurance with their 7% mandated contribution alone, and they either paid an additional fee (now contributing an average of 10%) or returned to the public system. Over time, fewer households could afford private insurance, which now covers only 19% of the population.

Chile continued to show improvements in communicable diseases and mortality, but in 2003, a national health survey revealed that rates of chronic conditions such as obesity, diabetes, cancer, and heart disease resembled those in higher-income countries: 61% of the population was overweight or obese, 33.7% had hypertension, 6.3% had diabetes, and 17.5% had had depressive symptoms during the previous year. The negative health effects of Chile's improved economic situation, the aging of its population, and the lack of attention to prevention of noncommunicable diseases were taking their toll.

In addition to facing common epidemiologic changes, Chile is contending with substantial inequality between high-income participants in the private system and the large majority covered by social insurance and tax-funded public health services.

In the early 2000s, President Ricardo Lagos promoted a reform that would strengthen public-sector service provision without abandoning the private health system. The Congress passed the reform after a major political struggle. Called the Explicit Guarantee System (Acceso Universal con Garantías Explícitas, or AUGE), the plan aimed to improve public-service quality by selecting 56 health problems for which several guarantees would be made to insured patients — primarily that they would receive care in accordance with clinical guidelines and wait no longer than preset periods for diagnosis, treatment, or follow-up. In addition, out-of-pocket expenditures for these services were capped. If the insurer could not provide services within the designated waiting times, it would have to pay alternative (usually private) providers for the services. The reform had early successes in improving the quality of some services and reducing mortality rates, especially among patients with myocardial infarction,[4] and some studies suggest that AUGE has improved access and health status, especially among lower-income Chileans.[5]

Implementation, however, was inconsistent, and waiting times grew significantly, especially for services not covered by the program. In addition, since the process for selecting the (now 80) health problems and updating their definitions and guidelines is inadequately regulated, it is subject to public pressure and has been used for political gain.

In 2010, the Constitutional Court struck down a core element of the private insurance system, disallowing its mechanism for risk-adjusting premiums by age and sex as discriminatory, but not providing any alternative mechanism. The resulting regulatory uncertainty has challenged the viability of the two-tiered system, which depended in part on risk adjustment. In addition, increasing numbers of enrollees of private insurance companies (Instituciones de Salud Previsional, or ISAPREs) are going to court to contest premium increases. The court system generally grants these petitions, threatening the ISAPREs' financial viability.

Having recently joined the Organization for Economic Cooperation and Development (OECD), Chile has begun comparing its health status with those in high-income countries and has enhanced initiatives for prevention, promotion, and treatment of non-

Selected Characteristics of the Health Care System and Health Outcomes in Chile.*	
Variable	**Value**
Health expenditures	
Per capita (U.S. $)	1,623
Percentage of GDP	7.4
Out-of-pocket (% of private health expenditures)	33.0
Public sources (% of total)	46.2
Health insurance	
Percentage of population covered in 2014	19% private; 76% public
Source of funding	Private: 7% of wages + voluntary contribution (average, 3%) Public: 7% of wages (34% of total) + state subsidy (66% of total)
Average physician income in 2014 (U.S $ [multiple of average Chilean wage])	
Salaried general practitioner	46,000 (4.6)
Salaried specialist	61,100 (6.1)
Generalist–specialist balance in 2014 (%)	
Generalists	47.8
Specialists	52.2
Access	
No. of hospital beds per 10,000 population in 2014	21.7
No. of physicians per 1000 population in 2014	2.0
Total government health expenditures spent on mental health care in 2011 (%)	2.8
Life and death	
Life expectancy at birth (yr)	78.8
Additional life expectancy at 60 yr (yr)	24.2
No. of deaths per 1000 population in 2012	5.7
Annual no. of infant deaths per 1000 live births	7.0
Annual no. of deaths of children <5 yr of age per 1000 live births	8.2
Annual no. of maternal deaths per 100,000 live births	22
Fertility and childbirth	
Average no. of births per woman	1.8
Births attended by skilled health personnel in 2010 (%)	99.7
Preventive care	
General availability of colorectal-cancer screening at primary care level in 2010	No
Children 12–23 mo of age receiving measles immunization (%)	90
Prevalence of chronic diseases (%)	
Diabetes in persons 20–79 yr of age	9.5
HIV infection in 2012	0.2
Prevalence of risk factors (%)	
Obesity in adults ≥18 yr of age in 2014	27.8
Overweight in children <5 yr of age in 2008	9.5
Underweight in children <5 yr of age in 2008	0.5
Smoking in 2011	41

* Data are from the Organization for Economic Cooperation and Development; Chile's Superintendencia de Salud, Fondo Nacional de Salud, Instituto Nacional de Estadísticas, and Ministerio de Salud; the World Bank; and the World Health Organization and are for 2013, except as noted. No data are available for physicians in the private system. GDP denotes gross domestic product, and HIV human immunodeficiency virus.

MYOCARDIAL INFARCTION

A 55-year-old man with no other serious health conditions has a moderately severe myocardial infarction.

Mr. Lopez wakes up feeling tired and weak, having difficulty breathing. His wife takes him to the closest primary care center in San Fabián de Alico, a small rural town, 20 minutes away by horse, where they are greeted by an Ecuadorian physician they have seen several times before. The doctor orders an ECG, which is analyzed by a cardiologist located 400 km away in Santiago, who diagnoses a myocardial infarction. Oxygen, aspirin, and clopidogrel are administered immediately, and Mr. Lopez is transferred by ambulance to Las Higueras Hospital in Talcahuano, 2 hours away, for advanced care.

Las Higueras Hospital has been designated as the cardiovascular reference center for Mr. Lopez's region. He is promptly admitted to its coronary care unit and directed to the catheterization laboratory, where he receives two stents after an angiogram shows critically diminished flow in two coronary arteries (19 public hospitals in Chile can perform primary angioplasty, for a population of 14 million FONASA [public-system] patients). Three days later, Mr. Lopez is sent home with some medications, entirely covered by his public health insurance.

Two days after discharge, he is seen by a cardiovascular nurse at San Carlos Hospital, a community hospital not far from the primary care clinic. The nurse performs a heart ultrasound and sends the images to the Picture Archiving and Communication System. Finding a moderate pericardial effusion, she reaches out to the cardiologist on call at Las Higueras Hospital, who immediately reviews the images and rules out cardiac tamponade. He decides to interview the patient, using a high-definition video connection, which allows him to adjust Mr. Lopez's medications and agree on a cardiac rehabilitation plan, following the national clinical guidelines.

Two months later, Mr. Lopez tells a public health survey interviewer that he was very satisfied with the services he received, noting that although his primary care center is 15 years old and in need of renovations, the physician made a proper diagnosis and referred him immediately to a cardiologist. "They saved my life," he says.

communicable diseases. For example, it has implemented new laws restricting tobacco advertising and smoking and programs designed to reduce obesity rates.

Although Chile is now an upper-middle-income country, with a per capita gross domestic product (GDP) of $21,030 (U.S. $) in 2014, it has a high level of income inequality: according to the World Bank, the average income of Chile's richest quintile is 17.5 times that of its poorest quintile, and the richest 20% of Chileans earn 58% of the GDP. Chile has a mortality rate among children under 5 years of age of 8 per 1000 live births and a maternal mortality rate of 22 per 100,000 live births (2013; see table) — better than the average among upper-middle-income Latin American countries, according to the World Health Organization, although still higher than the OECD average. The total national health expenditure was in line with those of other high-income countries, at 7.4% of the GDP, in 2013, and has grown rapidly, with 5.9% annual increases since 2005. However, 54% comes from private sources, and out-of-pocket payments account for 33% of expenditures.

According to a survey from the Centro de Estudios Públicos, 44% of Chileans consider health care one of the top three priorities for the government. Satisfaction with the health system has been decreasing and in 2014 reached its lowest point since 2007; only one of four Chileans reported being satisfied with it (though satisfaction was higher among ISAPRE patients), and 44% said they were not satisfied, according to the Superintendencia de Salud. Satisfaction with both health insurance and health care providers was also higher among ISAPRE patients (44% and 49%, respectively) than FONASA patients (26% and 23%, respectively).

Although Chile produces a sufficient number of doctors to cover its population, Chilean physicians, like those elsewhere, tend to prefer to work in urban areas and, despite innovative family medicine programs in several prestigious medical schools, often seek higher-paid specialties. Moreover, the private sector's higher salaries and better working conditions have lured physicians away from public services, causing a shortage of general practitioners and family physicians in public clinics. Many municipalities therefore hire doctors from other countries, such as Ecuador, Bolivia, and Cuba, who will accept lower pay and less advantageous working conditions.

Like other middle- and high-income countries, Chile faces growing prevalence of chronic diseases in an aging population, increasing costs, and insufficient prevention and health-promotion activities. These epidemiologic changes have increased demand

PREGNANCY AND CHILDBIRTH

A healthy 23-year-old woman is pregnant for the first time.

Ms. Perez receives her antenatal care at a public primary care center. As a publicly insured patient, she does not pay for her antenatal care, which includes laboratory tests and two ultrasounds. Clinical protocols indicate which vitamin supplements a pregnant woman should receive and some educational activities she and her partner may attend. Antenatal care is delivered by midwives, though high-risk patients are referred to an obstetrician at a specialized clinic.

Almost all deliveries in Chile are assisted by health care professionals, and clinical outcomes of obstetrical care are similar in the public and private systems. The odds are about 50–50 that Ms. Perez will be assisted by a midwife. An obstetrician would be called for a high-risk pregnancy or complicated delivery or if a cesarean section is required, but Ms. Perez is less likely to have a cesarean delivery in the public system (40% of deliveries) than she would be in a private hospital (70%), where all deliveries involve an obstetrician.

Ms. Perez chose to use the FONASA vouchers program and go to a private hospital, where deliveries are clinically better supported, with ready access to specialists who might be needed. At the private hospital, she was able to rest for 2 days in a private room.

When the baby was 10 days old, Ms. Perez attended her first well-child visit with a nurse at the primary care center and scheduled an appointment with a doctor for the 1-month visit. Well-child visits, educational activities, immunizations, supplements, and even powdered milk for older children are provided free at public primary care centers. However, many children are taken to private clinical centers for care by a physician instead of a nurse, and some families can afford to pay for additional vaccines, including rotavirus, hepatitis A, and varicella zoster.

for care, which in turn has affected the quality of care and timely access to services, at least in the large public services. Chile is also contending with substantial inequality between high-income participants in the private system and the large majority covered by social insurance and tax-funded public health services.

With the courts and both public and private sectors acknowledging the need for reform, presidential advisory commissions have been convened to develop a consensus plan. The most recent commission recommended returning to a single-payer public insurance system somewhat similar to the Canadian system (and the recently abandoned Vermont plan). A minority report, however, proposed introducing a broader minimum health plan, at a single price, into the private system, with a compensation fund for reducing risk-selection behavior (which could also eventually be open to FONASA). The debate is ongoing.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

From the Harvard T.H Chan School of Public Health, Boston (T.J.B.); and Pontificia Universidad Católica de Chile, Santiago (T.L.).

1. Jimenez de la Jara J, Bossert TJ. Chile's health sector reform: lessons from four reform periods. In: Berman P, ed. Health sector reform in developing countries: making health development sustainable. Cambridge, MA: Harvard University Press, 1995:199-214.
2. Jiménez J, Romero MI. Reducing infant mortality in Chile: success in two phases. Health Aff (Millwood) 2007;26:458-65.
3. Bossert TJ, Larrañaga O, Giedion U, Arbelaez JJ, Bowser DM. Decentralization and equity of resource allocation: evidence from Colombia and Chile. Bull World Health Organ 2003;81:95-100.
4. Nazzal NC, Campos TP, Corbalán HR, et al. The impact of Chilean health reform in the management and mortality of ST elevation myocardial infarction (STEMI) in Chilean hospitals. Rev Med Chil 2008;136:1231-9. (In Spanish.)
5. Frenz P, Delgado I, Kaufman JS, Harper S. Achieving effective universal health coverage with equity: evidence from Chile. Health Policy Plan 2014;29:717-31.

DOI: 10.1056/NEJMp1514202

The House and the ACA — A Lawsuit over Cost-Sharing Reductions

Timothy Stoltzfus Jost, J.D.

The Affordable Care Act (ACA) has twice survived a near-death experience at the hands of the judiciary. In 2012, the Supreme Court in *National Federation of Independent Business v. Sebelius* narrowly upheld the ACA's individual mandate as a valid exercise of Congress's taxing power. But it also held that Congress could not compel the states to expand Medicaid to cover working-age