

# A Primary Care System to Improve Health Care Efficiency: Lessons from Ecuador

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**Ecuador is a country with few resources to spend on health care. Historically, Ecuador has struggled to find a model for health care that is efficient, effective, and available to all people in the country, even those in underserved and rural communities. In 2000, the Ecuador Ministry of Public Health implemented a new system of health care that used primary care as its platform. Since then, Ecuador has been able to increase its health care efficiency, increasing its ranking from 111 of 211 countries worldwide in 2000, to 20 of 211 countries in 2014. This article briefly reviews the new components of the system implemented in Ecuador and examines the tools used to accomplish this. The discussion also compares and contrasts the Ecuador and US systems, and identifies concepts and policies from Ecuador that could improve the US system. (J Am Board Fam Med 2017;30:380–383.)**

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Although some controversy exists about the best way to define health care efficiency (HCE), the World Health Organization (WHO) provides the most widely accepted definition (Table 1). WHO defines HCE using a weighted average of 5 parameters—(1) population health, (2) health equality, (3) health system responsiveness, (4) distribution of responsiveness, and (5) fair financing—as well as overall health care expenditures.<sup>1</sup> Research has shown that increasing primary care in countries leads to an improvement in all the parameters used to measure HCE.<sup>2</sup> Ecuador is a country that has gone through recent health care reform and used primary care to significantly increase its HCE.<sup>3,4</sup>

Ecuador is a middle-income country in South America. Its population is nearly 16 million, and

>23% of the population lives in rural areas. Like in most low- and middle-income countries, socioeconomic status has a strong correlation with poor health. Historically, Ecuador has struggled to find a model for health care that is both efficient and effective.<sup>3</sup>

Ecuador's national health care system started in 1967, and the availability of care and outcomes were poor for many years. In 2000, WHO ranked HCE in Ecuador 111th of 221 countries worldwide. As of 2014, however, Ecuador was ranked 20th.<sup>3</sup> This leads one to ask, "What has changed?" How has Ecuador been able to increase its HCE so dramatically in such a short amount of time?

## Background

Before 2006, Ecuador's health care system was crumbling. In the 13 years preceding 2006, Ecuador saw 8 different government transitions, and corruption, administrative instability, and lack of public administration dominated the political system.<sup>5</sup> Simultaneously, health care funding was slashed, and the government's role in health care was decreased significantly<sup>4,5</sup> because of a lack of funding and new laws preventing the government from establishing an efficient health care system.<sup>6</sup> Instead, health care services were privatized, with the goal of allowing the "free market" to bring low-cost, efficient, and quality health care. At that

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**Table 1. Parameters Used by the World Health Organization to Define Health Care Efficiency**

Parameter	How Parameter Is Defined
Population health	Complex calculation that includes life expectancy, newborn and maternal mortality, health-related quality of life, and other determinants of health
Health inequalities	Differences in the health status or distribution of health determinants between population subgroups
System responsiveness	Timely care Safeguarding rights of patients Attracting the public to seek care
Distribution of system responsiveness	Differences in the measures of system responsiveness between population subgroups
Fair financing	Ensuring that poor households do not pay a higher share of their discretionary expenditures on health care than do richer households Protecting all households against catastrophic financial losses related to ill health

Information from Tandon et al.<sup>1</sup>

time, WHO ranked Ecuador as 111 of 221 countries, and the country achieved very poor outcomes on most health care metrics.<sup>3</sup>

In 2008 a new constitution was written, with a goal of creating a society in which all citizens would have *buen vivir* (“good living”) through the eradication of poverty, promotion of sustainable development, and fair distribution of resources and wealth. An aim of this goal included unimpeded access to high-quality health care services (with a strong focus on primary care) at no direct cost to individuals.<sup>4,5</sup> This, it was thought, would increase the responsiveness and fair financing of the country’s health care system.

### Barriers

In the past, many barriers to achieving this goal had to be overcome, the largest of which were the aforementioned laws and funding restrictions that prevented the government from establishing an efficient health care system. The new constitution of 2008, however, made health care a right, gave better control and oversight of health care to the government, increased the budget for health care, and allowed the government to reshape the system. The constitution now states “health is a right guaranteed by the State . . . the State shall guarantee this right through economic, social, cultural, and educational policies . . . without exclusion . . . by comprehensive health care access . . . .”<sup>6</sup>

### The New System

A Ministry of Health (MOH) was appointed, with the responsibility for developing and maintaining a universal public health care system. Three major (and

several minor) sectors of the new health care system now exist: (1) a public system, which is free to everyone and was the focus of the reform; (2) a social security system, which is available to all working-class individuals and their families through a tax that employers pay into the system; and (3) a private system, which is expensive and is used mostly by the upper- and middle-class population, representing about 3% of Ecuadorians.<sup>5</sup> The MOH is responsible for the management, control, regulation, and evaluation of health activities and services provided by both the public and private entities.<sup>3,5</sup>

The emphasis of the new system was to protect the most vulnerable among the population and to bring health care “to the people.” It focuses on prevention, including immunizations and family planning. Health education is also a priority, with intervention programs in high-risk, poverty-stricken areas that specifically address issues such as teen pregnancy and tobacco cessation. Public health initiatives address environmental factors that influence health, such as infrastructure improvements (eg, installing sewage systems across the country).<sup>4</sup> Sewage coverage increased from 44% to 49% in just the first year of implementation, and has continued to increase since then.<sup>5</sup>

The number of clinics and makeup/number of health care professionals in the new system is dependent on the density of the population in each geographic area. But regardless of the number of health professionals, each citizen of Ecuador is assigned a primary health clinic based on their place of residence. Patients are treated in these clinics at no cost and are seen without a need for appointments, with both open-access scheduling and “first

come, first serve” scheduling. Patients ideally should go to their assigned primary clinic for continuity and record keeping, but they can be treated at any public clinic or hospital.

Specialty clinics have been established, to which patients can be referred, as well as well-equipped general hospitals in all major cities, at which patients receive care at no cost. Both the specialty clinics and hospitals are geographically located based on population density in the area.<sup>4,8</sup> All medications, including contraception, are provided free at the public clinics and hospitals. Physicians and nurses under this new system have time during the work week dedicated to home visits and community outreach.<sup>3,4,7</sup>

### Changes

For the above-mentioned changes to be realized, health care funding in Ecuador was substantially increased, with an additional US\$1.6 billion put toward health care in 2011; health care funding now totals around US\$5 billion/year, most of which is put toward primary care devolvement and infrastructure improvements in the public health care sector. A fundamental shift has also occurred at a government level, addressing health care problems and acknowledging that social, economic, and political conditions influence health care. At a societal level, a “social medicine” model of health care had to be accepted.<sup>4</sup>

All these changes might seem like insurmountable hurdles given the state of economic hardship at the time of the reform, but the economic situation in the country actually helped facilitate the acceptance of a new model. During 2005–2006, 61.54% of the rural and 24.88% of the urban populations were living in poverty, and 14% of the population was living in extreme poverty. Citizens had little access to health care and saw the direct negative health consequences of the old system.<sup>5</sup> A new system was needed, and reforms to develop that system were widely accepted.

### Outcomes

The outcomes have been impressive. In 2006 there were 16 million visits for health care in Ecuador. This more than doubled to 38 million visits in 2012, and during the same period, health outcomes (including infant mortality, low birth weight among infants, and overall mortality)—all of which are important factors

in primary care models—improved substantially. Over the past decade, a sharp decrease has occurred in infant mortality, and childhood anemia rates have been reduced by 21%. No cases of measles (a stark contrast to the United States) or yellow fever have been reported since 2006, and no cases of diphtheria, rubella, congenital rubella, or *H. influenza* meningitis have occurred since 2008.<sup>4,7</sup>

### Challenges

Although much success has been achieved, Ecuador’s health care system still faces challenges, including achieving continued progress in controlling communicable diseases (Ecuador has the fourth highest number of cases of tuberculosis in the Americas) and tackling noncommunicable chronic diseases such as type 2 diabetes and hypertension. Further improvements are still needed in some rural communities, where clinics are still somewhat understaffed (especially ancillary staff), in poor condition, and lack all necessary equipment.<sup>4,7</sup>

Looking to the future, however, Ecuador is addressing these issues by working on a comprehensive and strategic approach to tackling the aforementioned chronic noncommunicable diseases and continuing to work on communicable diseases such as tuberculosis. This approach includes an action plan for obesity prevention in children and adolescents, the mandatory graphic labeling of processed foods, and a public health–focused educational effort about noncommunicable diseases.<sup>7</sup>

The MOH is also committed to improving care in rural areas through the creation of a community-based health promoter program. The health promoters will live in the community and understand its specific needs, collaborate with physicians to develop health-based needs assessments, and lead community projects.<sup>4,7</sup>

In 2013 Ecuador launched the Plan Nacional del Buen Vivir 2013–2017 (National Plan for Good Living). This plan outlines public spending for health care and further health care reforms.<sup>8</sup> The plan objectives go along with (and beyond) the United Nations sustainable development goals for 2015–2030. The plan states that “quality of life begins by guaranteeing water, food, health, education, and housing access as a prerequisite for individual and social development.”<sup>8</sup> These goals will take decades to implement fully, and initial outcomes still need to be evaluated, but if successful they could become a model for other nations to follow.

## Implications for the US Health Care System

Overall, Ecuador has been successful in increasing HCE with relatively little money and few resources, using a primary care model for their health care reform. For example, while Ecuador spends 7.3% of its gross domestic product (GDP) on health care and is ranked 20th of 221 countries on HCE, the United States spends 17.9% of its GDP on health care and is ranked 50th.<sup>3,8,9</sup> This is largely because the United States charges higher prices for medical services than other countries, has more private spending, uses technology inefficiently (eg, overuse of advanced imaging), and has a high rate of using expensive pharmaceuticals.<sup>10</sup> The United States also has a specialty-driven and fee-for-service-driven model of health care rather than a low-cost or no-cost primary care-driven model; the latter costs less and is more highly correlated with better health outcomes.<sup>2</sup>

Much can be learned from Ecuador's new system in the midst of health care reform in the United States. Ecuador emphasizes prevention, education, public health, and community outreach. It uses primary care as the platform for its new system and brings health care to the people. These things have been shown to decrease overall cost of health care while simultaneously decreasing overall mortality rates due to cancer, heart disease, and stroke; decreasing infant mortality and low birth weight; and increasing self-report of good health, even when controlling for socioeconomic and lifestyle factors.<sup>2</sup> Ecuador spends less money and is still able to provide patients with free health care, free medications, and health education. Although the United States has a slightly higher life expectancy (by 2 years) and slightly better overall health than Ecuador, the responsiveness and fair financing in the United States are significantly lower.<sup>3,9</sup> Nearly two thirds (62.1%) of bankruptcies in the United States have a medical cause, and the percentage of bankruptcies due to medical illness continues to increase.<sup>8</sup> Ecuadorian citizens do not have to worry about medical debt because there is no direct cost to them for their health care.

We need to make better use of primary care in the United States and put more emphasis on prevention and education. If the United States adopted some Ecuadorian principles, it would be able to decrease costs while increasing the health of the population.<sup>3,9</sup> We could accomplish this by increasing public primary health care centers (especially in rural and underserved areas), increasing government funding for

health care, decreasing direct costs to patients, and moving toward a primary care–driven system of medicine.<sup>2</sup> Doing these things could make health care more equitable, decrease the amount of catastrophic financial losses due to illness and medical bills, decrease the proportion of the GDP spent on health care, decrease mortality, and improve the overall health metrics of the population.<sup>2</sup>

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To see this article online, please go to: <http://jabfm.org/content/30/3/380.full>.

## References

1. Tandon A, Murray CJL, Lauer JA, Evans DB. Measuring overall health system performance for 191 countries. GPE discussion paper series: no. 30. Geneva: World Health Organization; 2000.
2. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q* 2005;83:457–502.
3. Most efficient health care 2014: countries. New York: Bloomberg; 2014. Available from <https://www.bloomberg.com/graphics/best-and-worst/#most-efficient-health-care-2014-countries>. Accessed March 17, 2017.
4. Rasch D, ByWater K. Health promotion in Ecuador: a solution for a failing system. *Health* 2014;6:916–25.
5. Health systems profile Ecuador: monitoring and analysis—health systems change/reform. 3rd ed, October 2008. Available from: [http://www1.paho.org/hq/dmdocuments/2010/Health\\_System\\_Profile-Ecuador\\_2008.pdf](http://www1.paho.org/hq/dmdocuments/2010/Health_System_Profile-Ecuador_2008.pdf). Accessed March 17, 2017.
6. National Center for Health Statistics. Health, United States, 2015: With special feature on racial and ethnic health disparities. Hyattsville, MD: National Center for Health Statistics. Available from: <https://www.cdc.gov/nchs/data/hsr/hsr15.pdf>. Accessed March 17, 2017.
7. WHO country cooperation strategy at a glance: Ecuador. CCS brief Ecuador. Geneva: World Health Organization; 2016. Available from: <http://apps.who.int/iris/handle/10665/137163>. Accessed March 17, 2017.
8. Republic of Ecuador National Planning Council. National development plan/National plan for good living, 2013–2017. Summarized version. Quito, Ecuador: National Secretariat of Planning and Development; 2013.
9. Lucio R, Villacres N, Henriquez R. The health system of Ecuador. *Public Health of Mexico*. 2011, 1–13.
10. Squires D, Anderson C. U.S. health care from a global perspective: spending, use of services, prices, and health in 13 countries. *Issue Brief (Commonw Fund)* 2015;15:1–15.