

A Comprehensive Analysis on the Healthcare Systems in Latin America

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A Comprehensive Analysis on the Healthcare Systems in Latin America:
Mexico Country Report

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Introduction

This paper will seek to examine the current state of the Mexican healthcare system. Through a combination of private and public healthcare, Mexico has stated they have been able to ensure more than 90% of its population is provided some form of basic medical care¹. However, there are still large disparities in quality and access of care. Because of the dynamic approach to healthcare, with federal and state run operations, and the lack of a comprehensive health data system, it can be difficult to assert the status of their system. Here we seek to provide a comprehensive overview of their healthcare system and infrastructure, and to examine issues in the population and healthcare industry that are specific to Mexico.

Country Overview

The United Mexican States is an expansive territory, covering 1,972,550 square kilometers². It comprised of 32 autonomous federal states, containing 2,456 municipalities³. It is the 10th most populous country in the world, and its economy ranks 11th largest economy in the world, with a GDP of \$2.4 trillion⁴. It has emerged as a regional power in North America. Gross national income per capita amounts to 16,840, with total unemployment rate is 3.5%⁵. Though unemployment remains low, underemployment remains high, and may be as high as 25%⁶. As of 2015, private health expenditure amounts to 2.8% of GDP, while public expenditure makes up 3.1% of GDP, leading to total health expenditure consisting of 5.9% of national GDP⁷. This is relatively low, as the U.S. spends 18% of

¹ Feldspar, Karen. "Mexico Achieves Universal Health Coverage, Enrolls 52.6 Million People in Less than a Decade." *News*, Harvard School of Public Health, 13 Mar. 2017,

² Pan American Health Organization. "Country Report: Mexico".

³ PAHO. "Country Report: Mexico".

⁴ PAHO. "Country Report: Mexico".

⁵ PAHO. "Country Report: Mexico".

⁶ CIA World Fact Book

⁷ Pan American Health Organization. "Country Report: Mexico".

GDP on healthcare expenditures. Mexico's neighboring countries also spend a larger percentage, with Uruguay and Brazil spending 8.9% of GDP on healthcare expenditures⁸.

Inequality is a major issue in Mexico. As of 2016, Mexico was scored a 48.3 on the GINI index, which measures income and wealth distribution in nations⁹. The World Bank group estimates about 41.9% of the Mexican population is living below national poverty lines¹⁰. In addition, 25.7% of the population is living on less than \$5.50 per day¹¹. Mexico is highly urbanized, one of these major urban centers is Mexico City. With a population of 21.672 million, it is the largest urban center in Mexico. Other notable urban centers include Guadalajara (pop. 5.101 million), Monterrey (pop. 4.793 million), Puebla (pop. 3.145 million), Toluca de Lerdo (pop. 2.411 million), and Tijuana (pop. 2.099 million)¹²

In Mexico, healthcare is a right mandated by Article 4 of its constitution. Great strides have been made in the past few decades to expand care, with increased insurance coverage of millions of Mexican citizens. The current administration, led by left-wing politician Andres Manuel Lopez Obrador, often referred to as AMLO, has continued to focus on improving access and quality of care in the health system¹³.

Population Demographics

Mexico has a diverse population. They do not keep a population census as they do in the U.S, however, according to the CIA World Factbook, the dominant ethnic group is mestizo (Amerindian-Spanish), which accounts for 62% of Mexico's population. The predominantly

⁸ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

⁹ The World Bank. GINI index (World Bank estimate) – Mexico

¹⁰ World Bank. Poverty headcount ratio at national poverty lines (% of population) - Mexico World Bank, Global Poverty Working Group.

¹¹ World Bank. Poverty headcount ratio at national poverty lines (% of population) - Mexico World Bank, Global Poverty Working Group.

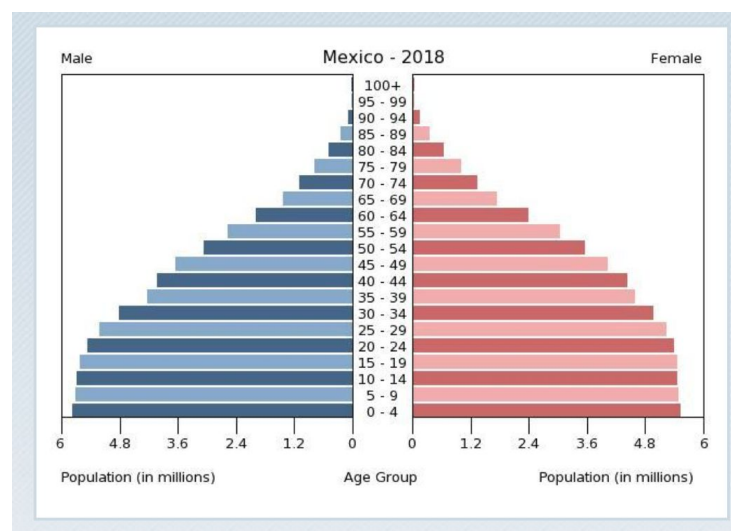
¹² CIA World Fact Book

¹³ "AMLO Announces New Health System; Seguro Popular to Be Replaced." *Mexico News Daily*, 15 Dec. 2018.

Amerindian population accounts for 21%, with Amerindian accounting for 7%, and 10% being defined as other, mostly of European descent¹⁴.

Healthcare Indicators

Major health indicators are collected concerning Mexico's population. According to the CIA World Factbook, life expectancy hovers near 79 for women and 75 for men, with a median age of 28.6 years¹⁵. Mexico's population structure and age distribution is shown below, divided between male and female.



The birthrate in Mexico is 18.1 births per 1000 population while the death rate is 5.4 deaths per 1000 population¹⁶. Maternal mortality is an important indicator of overall state of health, and Mexico's rate is 33 deaths per 100,000 live births, ranking 108th in the world¹⁷. Infant mortality was reported as 11.3 deaths per 1000 live births, ranking them 125th in the world¹⁸. The fertility rate is 2.2 children born/woman, placing them at 94th in the world¹⁹. The annual population growth is 1.2%²⁰.

¹⁴CIA World Fact Book.

¹⁵ CIA World Fact Book

¹⁶ CIA World Fact Book

¹⁷ CIA World Fact Book

¹⁸ CIA World Fact Book

¹⁹ CIA World Fact Book

²⁰ CIA World Fact Book

Healthcare Financing

The Mexican Institute of Social Security, IMSS, was launched in 1943²¹. Healthcare services were decentralized in 1983²², putting the onus of health coverage on individual states as opposed to solely through the federal government. Today, public options are funded through the federal and state governments. The mandate of healthcare as an inalienable right has led to a dynamic healthcare system that combines the public and private sector. Coverage operates mainly based on employment status. The system operates through three main channels: public, social security and private insurers. Today, the two main systems that provide public health coverage are IMSS and Seguro Popular. This range of public options has allowed Mexico to provide health insurance 24.5 million more people in a 4-year period ending in 2015²³. Universal healthcare is Mexico's final goal²⁴. Public programs have eliminated co-pays, allowing access to healthcare to low income individuals. Public and social security programs cover approximately 95% of Mexico's insured population, with the rest obtaining insurance through private companies²⁵.

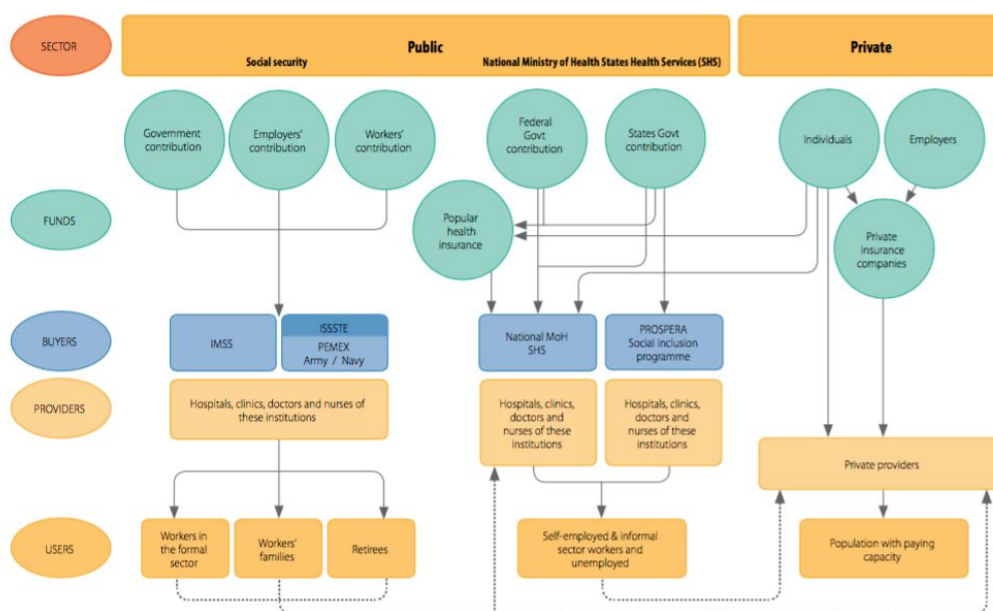
²¹ Antología de la Atención a la Salud en México, 1902-2002

²² Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

²³ Feldspar, Karen. "Mexico Achieves Universal Health Coverage, Enrolls 52.6 Million People in Less than a Decade." *News*, Harvard School of Public Health, 13 Mar. 2017,

²⁴ The World Bank. Seguro Popular: Health Coverage for All in Mexico. The World Banks; 2015.

²⁵ "Seguro Popular: Health Coverage For All in Mexico." *World Bank*, Feb. 2015.

Figure 1. Structure of the Mexican health system

Source: Updated from Gómez-Dantés et al. (5).

IMSS

The public options in Mexico are divided into those who have social security and those who do not. The social security option is The Instituto Mexicano del Seguro Social. This social security program was launched in 1943²⁶, with the goals of bringing healthcare to indigenous communities and facilitating development²⁷. Abbreviated as IMSS, it is the governmental agency that oversees the social security and individuals who are not covered under employer insurance. The Institute for Social Security and Services for State Workers (ISSSTE) operates similarly to IMSS, and provides coverage for navy, army and other governmental personnel. Social security is funded through government contributions, employers' contributions, and workers' contributions. Hospitals, clinics, doctors and nurses are funded and employed through this program.

²⁶ PAHO - Antología de la Atención a la Salud en México, 1902-2002

²⁷Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

Seguro Popular

Launched in 2003, *Seguro Popular de Salud* was the public option that emerged in order to offer coverage to the unemployed population and eliminate inequalities²⁸. This allowed people access to health services without co-pays and without employment status. Between 2009 and 2013, the number of those covered under Seguro Popular grew by 24.5 million²⁹. This allowed increased access to indigenous populations. This is financed through federal and state contributions. With these two public options, public spending on healthcare amounts to 5.78% of GDP, or \$124,410,000. The amount spent on public options amounts to 52.62% of the total amount, or \$64,465,000³⁰. The remaining 47.38% of expenditure is spent in the private sector, amounting to \$60,410,000 per year.

Despite a large percentage of the population being covered, out-of-pocket expenses still amounts to 40% of healthcare expenditure³¹. This signifies a large percentage of the population is going through private healthcare providers, despite the increased insurance coverage. Expenditure per capita/person is ~\$1000, far below international standards. This could be attributed to the percentage of the population living in poverty, and the unequal access to facilities. The healthcare system that Mexico has developed is still based on the ability to pay.

While these public sector insurance and healthcare provisions helped to eliminate disparities in access to care on paper, the reality was that there was still unequal use of these services and unequal distribution in facilities and personnel. The high fragmentation of the system and distribution of centers impedes ability to provide equitable care to citizens.

²⁸ Nigenda, Gustavo et al. "Understanding the dynamics of the Seguro Popular de Salud policy implementation in Mexico from a complex adaptive systems perspective." *Implementation science : IS* vol. 11 68. 13 May. 2016, doi:10.1186/s13012-016-0439-x

²⁹ "Seguro Popular: Health Coverage For All in Mexico." *World Bank*, Feb. 2015.

³⁰ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

³¹ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

Physical Distribution of Healthcare Centers

Despite increased insurance coverage, there are still extreme disparities in access to care. On average, the hospital beds ratio 1.5 per 1,000 people, though this varies based on region and urban accessibility. Miranda asserts, “Doctors agreed it was very different to receive medical care in Mexico City, where there are 2.4 beds per every 1,000 inhabitants, than in the state of Chipas, where there is only one bed per every 2,000 inhabitants”³².

Table 8. Health care services: infrastructure offered, by institution, Mexico 2015

| Type of service | Min. of Health | IMSS | IMSS Prospera | ISSSTE | Other ^a | Private | Total |
|---------------------------|----------------|--------|---------------|--------|--------------------|---------|---------|
| Primary health facilities | 14 387 | 1 143 | 4 198 | 1 063 | 654 | 627 | 22 072 |
| Hospitals | 741 | 265 | 80 | 111 | 189 | 3 070 | 4 456 |
| Medical offices | 39 639 | 18 121 | 5 058 | 6 619 | 5 546 | 13 407 | 88 390 |
| Operation rooms | 1 891 | 1 469 | 122 | 330 | 429 | 4 994 | 9 235 |
| Total beds | 62 270 | 47 463 | 3 931 | 10 749 | 10 185 | 44 514 | 184 112 |

a. Including PEMEX, Ministry of Defence, SEMAR.

Source: DGIS, 2015.

With their current infrastructure, there are 22,072 primary health facilities operating in Mexico. There are 4,456 hospitals open, with 3,070 of these operated privately. There are 88,390 medical offices open, and 9,235 operating rooms. There are only 184,112 total beds offered by the current healthcare infrastructure in Mexico³³.

There are large disparities in spatial distribution of healthcare centers, limiting access to care. Urbanization has posed a challenge to equitable access. Urbanization has increased at high rates, with large numbers of the population moving to urban centers. In 1950, nearly 43% of Mexico’s population lived in urban centers. Now, approximately 80% of the population lives in an urban area³⁴. Healthcare centers and personnel are often located in city centers. The rural and underfunded states have less

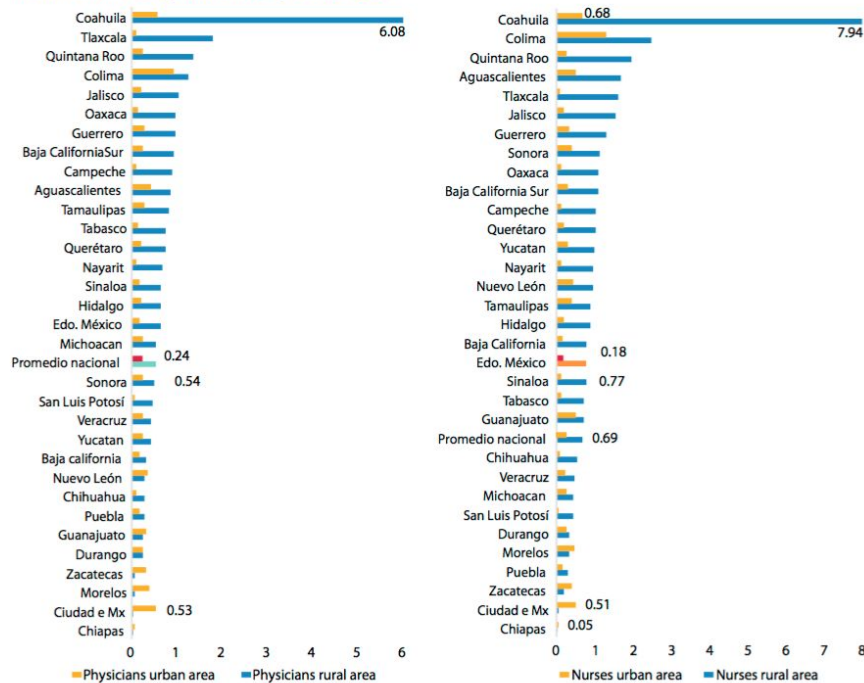
³² Miranda, Perla. “OECD: Mexican Healthcare System Is Lagging Behind.” *El Universal*, 29 Mar. 2019.

³³ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

³⁴ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

health personnel available to them, creating inequalities. In the graph below, it discrepancies in healthcare workers available between certain states are clear.

Figure 13. Rural/urban density of physician and nurses per 1000 inhabitants in primary health facilities, Ministry of Health, by state, 2015



Source: Adapted with data from INEGI, 2016.

Medical schools are to be accredited by the Mexican Council for Medical Education and the Mexican Council for the Accreditation and Certification of Nursing. With these regulatory institutions, there are only 44 accredited medical schools out of 80³⁵.

Despite obstacles, the number of healthcare workers has been growing. As of 2015, there were 895,000 health personnel³⁶. Of these, 32% were doctors, 31% nurses³⁷. According to PAHO, there

³⁵ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

³⁶ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

³⁷ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

personnel weren't nearly enough to cover the entire population. As of 2016, there were only 1 dentist per 10,000 people, 29 nurses per 10,000 people and 24 physicians for every 10,000 people³⁸. This leaves significant gaps in access and coverage, with 30 federal states that did not even have 1 doctor per 1,000 residents³⁹.

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

| Health personnel | 2013 n = 249 247 | | 2014 n = 269 057 | | 2015 n = 291 047 | |
|------------------------------|---------------------|----|---------------------|----|---------------------|----|
| | n | % | n | % | n | % |
| Physicians | 75 828 | 30 | 81 481 | 30 | 93 096 | 32 |
| Nursing personnel | 73 089 | 29 | 79 760 | 30 | 91 552 | 31 |
| Other professional personnel | 24 449 | 10 | 25 562 | 10 | 13 047 | 4 |
| Technical personnel | 22 110 | 9 | 23 994 | 9 | 31 251 | 12 |
| Other personnel | 53 771 | 22 | 58 260 | 21 | 62 101 | 21 |

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

| Institution | Physicians | | | | | | Nurses | | | | | |
|--------------------|------------|----|--------|----|--------|----|--------|----|--------|----|--------|----|
| | 2013 | | 2014 | | 2015 | | 2013 | | 2014 | | 2015 | |
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Ministry of Health | 36 803 | 49 | 40 806 | 50 | 41 893 | 45 | 37 893 | 52 | 37 893 | 51 | 37 893 | 46 |
| ISSSTE | 10 171 | 13 | 11 354 | 14 | 11 193 | 12 | 10 090 | 14 | 10 330 | 14 | 10 532 | 13 |
| IMSS | 28 854 | 38 | 29 321 | 36 | 40 010 | 43 | 25 106 | 34 | 25 366 | 34 | 34 514 | 42 |

Note: Does not include medical and nurse students in practice.
Source: Human resources information from DGIS, 2016.

Major Health Challenges

Non-communicable diseases and chronic illnesses have become a leading cause of death in developing countries, and Mexico is no exception. Diabetes, kidney disease and heart disease have all experienced increased prevalence in the last few decades⁴⁰. Mexico is leading the world in its rates of overweight and obesity⁴¹, and in 2017 the World Health Organization asserted that diabetes was the

³⁸ Primary health care systems (PRIMASYS): case study from Mexico. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

³⁹ Miranda, Perla. "OECD: Mexican Healthcare System Is Lagging Behind." *El Universal*, 29 Mar. 2019.

⁴⁰ Giménez, V., Keith, J.R. & Prior, D. "Do healthcare financing systems influence hospital efficiency? A metafrontier approach for the case of Mexico" *Health Care Manag Sci* (2019) 22: 549.

⁴¹ Beaubien, Jason. (05 April 2017). *NPR*.

number one leading causes of death in Mexico, with over 80,000 deaths per year⁴². Today, 28.9 % of adults in Mexico are considered obese. According to the OEOC, 70% of adults in Mexico were considered overweight⁴³. Approximately 14% of the population diagnosed with diabetes mellitus, creating resource strain on the healthcare system. The treatment of diabetes will incur significant costs in the coming years, as well as costs associated with complications from resulting health conditions. Mexico has taken initiative to curb this budding epidemic, changing food labels and attempting to increase national awareness. They also implemented a sugar-drink tax in January 2014 in order to curb the epidemic⁴⁴. However, lack of preventative care and popularity of sugary drinks will indeed continue to have harmful health effects.

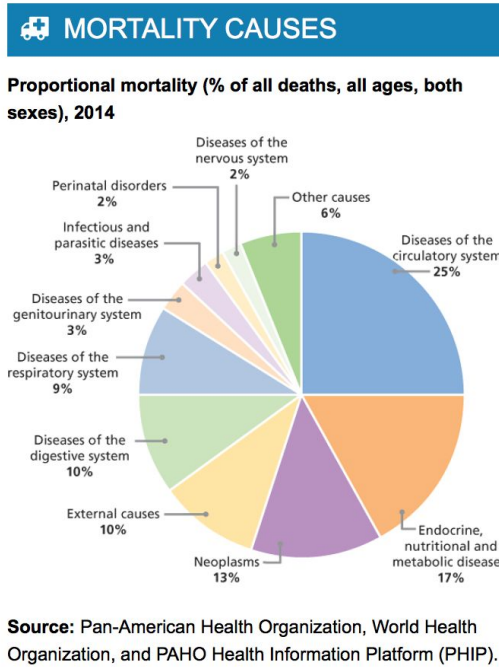
Causes of mortality vary, with the largest contributors being diseases of the circulatory system, followed by endocrine, nutritional and metabolic diseases⁴⁵.

⁴² Mexico News Daily. (02 April 2018). "Mexico Is a World Leader for Overweight and Obesity".<https://mexiconewsdaily.com/news/mx-is-world-leader-for-overweight-obesity/>.

⁴³ Beaubien, Jason. (05 April 2017). How Diabetes Got To be the No.1 Killer in Mexico. *NPR*.

⁴⁴ Beaubien, Jason. (05 April 2017). How Diabetes Got To be the No.1 Killer in Mexico. *NPR*.

⁴⁵ Pan American Health Organization. Country Report: Mexico



Maternal Mortality

Maternal mortality is an important indicator of health in a population, and was and continues to be a pressing issue in Mexico. Under Seguro Popular, women are eligible for free prenatal and delivery care⁴⁶ (World Bank). In 2015, there were 34.6 deaths per 100,000 live births⁴⁷ (PAHO). This rate increased in rural and marginalized states, with 55 deaths per 100,000 live births. Despite progress in expanding care to women, Mexico is still far above the UN Millennium Development Goal for maternal mortality of 22.2 per 100,000. Approximately 95.6% of births were attended to by a trained professional, with 46 out of 100 births being performed by cesarean section⁴⁸. Though, there are still large cost disparities for insured and uninsured women, with the uninsured cost being covered by family members⁴⁹. Infant mortality has dropped dramatically in recent years, from 37 per 1,000 births

⁴⁶ “Seguro Popular: Health Coverage For All in Mexico.” *World Bank*, Feb. 2015,

⁴⁷ Pan American Health Organization. “Country Report: Mexico”.

⁴⁸ Pan American Health Organization: Leading Health Challenges. Mexico

⁴⁹ José E Urquieta-Salomón, Héctor J Villarreal, Evolution of health coverage in Mexico: evidence of progress and challenges in the Mexican health system, *Health Policy and Planning*, Volume 31, Issue 1, February 2016, Pages 28–36.

in 1990 to 12.5 per 1,000 births by 2015⁵⁰. Half of these deaths were caused from perinatal disorders and a quarter from congenital malformations⁵¹. Influenza and pneumonia were the second leading causes of death in children under 5⁵².

Vaccines-Preventable Diseases

Vaccine preventable diseases pose health challenges to any large country. Yet Mexico has high rates of immunization and one of the best immunizations records in Latin America. The country has multi-year plans for immunizations, and mandatory immunizations are nationally available through the public and private healthcare options⁵³. Records are written on a national vaccination card, which is required prior to enrollment in public schools. Through immunizations, they have reduced the number of vaccine preventable diseases. Pertussis cases have declined in recent years, and in 2018 the number of cases reported was 783, down from 827 in 2017⁵⁴. Measles cases have declined from 68,782 reported cases in 1980 to 0 reported cases in 2017⁵⁵. However, in 2018, that number was up again with 5 reported cases. According to the PAHO, malaria is in pre-elimination phase in Mexico, though still present in states where there is a shortage of health workers⁵⁶. Overall, they have managed to provide comprehensive and widely available immunization access and reduced number of vaccine-preventable diseases considerably.

⁵⁰ CIA World Fact Book.

⁵¹ Pan American Health Organization: Leading Health Challenges. Mexico

⁵² Pan American Health Organization: Leading Health Challenges. Mexico

⁵³ Richardson, Vesta, et al. "Contribution of Mexico's Universal Immunization Program to the Fourth Millennium Development Goal/Contribucion Del Programa De Vacunacion Universal De Mexico Al Cuarto Objetivo De Desarrollo Del Milenio." *Revista Panamericana De Salud Publica*, vol. 35, no. 4, 2014, pp. 248.

⁵⁴ World Health Organization: Vaccine-Preventable Diseases: Monitoring System. 2019 global summary

⁵⁵ World Health Organization: Vaccine-Preventable Diseases: Monitoring System. 2019 global summary

⁵⁶ Pan American Health Organization: Leading Health Challenges. Mexico

A major health challenge comes in the structure of reporting health information. Without a unified healthcare system, it is difficult to consolidate information. Utilizing the three independent branches of private, public and social security creates barriers to information exchange and effective implementation of policies. This can also impair research due to lack of information. Electronic Health Records (EHR) play an important role in any health system, keeping records and patient information consolidated in a safe place. Though there have been efforts to increase the use of ERH, with different branches of industry, one single network to exchange information has not been established. The exchange of information from one branch of the healthcare sector is essential to patient health, and its lack of universal access in Mexico illustrates the disorganization that ensues between state and federal run programs.

Relevant Legislation

Through its social security and public programs, Mexico has been able to expand coverage to millions of more citizens. However, large disparities in quality and access of care remain, and legislation has been proposed to address these discrepancies. In December 2018, upon his election, President Lopez-Obrador announced a new federal system to replace the healthcare current structure⁵⁷. This new system is intended to replace the Seguro Popular and work in tangent with the IMSS, creating a fully federally operated public system. President Lopez-Obrador asserted the plan was to incorporate Mexico's federal states eight at a time, the first being Guerrero, Oaxaca, Chiapas, Veracruz, Tabasco, Yucatán, Quintana Roo and Campeche⁵⁸. President Lopez-Obrador asserted \$90 billion pesos (\$4.5 billion USD) will be allotted to creating this federal system⁵⁹.

⁵⁷ "AMLO Announces New Health System; Seguro Popular to Be Replaced." *Mexico News Daily*, 15 Dec. 2018.

⁵⁸ "AMLO Announces New Health System; Seguro Popular to Be Replaced." *Mexico News Daily*, 15 Dec. 2018.

⁵⁹ "AMLO Announces New Health System; Seguro Popular to Be Replaced." *Mexico News Daily*, 15 Dec. 2018.

In April 2019, the federal government in Mexico announced this new program would be called the National Institute of Health for Well-Being. President Lopez-Obrador stated his ambitions for this program were to fully eliminate Seguro Popular and provide medical service to over 60 million Mexicans without insurance⁶⁰. In July 2019, the President officially signed the memorandum, the first formal document to establish this new system. This will operate under the new Public Health system. Budget will come in the form of 80 billion pesos from the Catastrophic Expenses Protection Fund⁶¹

President Lopez-Obrador also seeks to eliminate the basic medicine chart, so Mexican citizens will have free access to all medications. To ensure this, he assures that federal government will create drug distributors to ensure equitable access to all regions. The new institution will absorb facilities funded by Seguro Popular, and seeks to establish healthcare even in the marginalized and underfunded states. It plans to regulate workers in the health sector with a census, in an effort to combat corruption. The Ministry of Finance will undertake the task of centralizing the payroll. However, besides the president's public announcements regarding this new system, it was difficult to gather information or concrete legislative outlines. Time will tell if President Lopez-Obrador's administration will be transparent and publish the details of this plan and current transition.

Conclusion:

Mexico has a dynamic healthcare system with multiple sectors, with a goal of offering universal healthcare coverage. However, the social security, public and private sectors lack communication and often are located in urban areas, leading to unequal and inequitable access to millions. Mexico's healthcare system creates institutional barriers to equality, and an overhaul will be needed in order to ensure equal care to all, regardless of socioeconomic status. It is important to keep in mind the

⁶⁰ "AMLO Announces New Health Care Program for Those Outside Existing Ones." *Mexico News Daily*, 10 Apr. 2019.

⁶¹ "AMLO Gets Rid of Seguro Popular and Introduces Health Institute for Wellbeing." *The Yucatan Times*, 17 July 2019.

discrepancies that exist when collecting information on a nation's healthcare system. Often times the figures given to the international community are inflated. The figures collected here have been taken from a variety of sources, and represent some consensus on the figure in question. The most prevalent theme observed is the inherent institutional inequality has become a central tenet of Mexico's healthcare system. With progressive plans on the horizon, time will tell whether this will change.

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A Comprehensive Analysis on the Healthcare Systems in Latin America:
The Northern Triangle Region Report

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IRG 378: Capstone

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Introduction

Before understanding the individual health care systems of the Northern Triangle, it is important to note their connection, communication, and cooperation as a region. Often grouped together because of similar histories, Guatemala, Honduras, and El Salvador connect in many circumstances. For instance, all three countries rank within the top ten countries dealing with violence, without being in active war.⁶² Historically, these countries share trends of political instability, state government repression, and sustained violence through their transition into democracy and after.⁶³ Prolonged conflicts such as a civil war in Guatemala from 1960-1996, a civil in El Salvador from 1979-1992, and military rule of Honduras until the early 1980s shape their lack of resources and structure, primarily impacting their health care systems.⁶⁴ However, their similar situations seem to not have much of an open dialogue concerning health. They have only recently cooperated with the Alliance for Prosperity Plan in the Northern Triangle, but Oscar Chacón, the Executive Director of Alianza Americas, notes that the plan does not address three key transformations including education, health, and tax laws.⁶⁵ With these linked qualities in mind, the following region report provides a comprehensive analysis of the health care systems in the Northern Triangle.

Basic Health Indicators

Guatemala's basic health indicator statistics provide insight to the progress of their health system, while also exposing some struggles with health and development. For instance, Guatemala presents itself as the most populous country in Latin America with the highest fertility rate at 2.87

⁶² De Jesus, M. and C. Hernandes. *Generalized Violence as a Threat to Health and Well-being: A Qualitative Study of Youth Living in Urban Settings in Central America's Northern Triangle*. (Washington D.C., USA: International Journal of Environmental Research and Public Health 16, no. 18, 2018)

⁶³ De Jesus, 1.

⁶⁴ De Jesus, 1.

⁶⁵ Garcia, Mercedes. *Alliance for Prosperity Plan in the Northern Triangle: Not Likely a Final Solution for the Central American Migration Crisis*. ((Washington D.C., USA: Council on Hemispheric Affairs, 2016)

children per woman and the highest population growth rate in Latin America at 1.72 %.⁶⁶ Due to its relatively young population, the population growth rate will most likely continue to accelerate in growth. Moreover, the birth rate is 24.6 per thousand, while their death rate is 5 per thousand.⁶⁷ However, the country struggles particularly with infant mortality at 23.3 per 1,000 live births and maternal mortality at 95 per 100,000 live births.⁶⁸ Beyond these statistics, Guatemala struggles with malnutrition in youth, literacy throughout the country, and contraceptive awareness and use.⁶⁹ Across these statistics, the indigenous populations are disproportionately affected and put at an unhealthy disadvantage.⁷⁰

Next, Honduras is mainly characterized as one of the poorest countries in Latin America because close to half the population lives below the poverty line and the per capita income is one of the lowest in the region.⁷¹ Within the country, poverty concentrates mainly in the south as well as the rural borders on the east and west.⁷² However, their population rate at 1.56% continues to increase due to high fertility rate at 2.61 children born per woman and a younger population in general. Also, the birth rate stands at 22 births per thousand, and the death rate falls at 5.3 per thousand.⁷³ Regardless, they face a high maternal mortality rates at 65 deaths per 100,000 and infant mortality rates at 16.7 per thousand.⁷⁴ Other than these statistics, excess mortality from AIDS largely affects the death estimates, which overall lowers life expectancy, generates higher infant mortality, and increases death rates.⁷⁵ Due

⁶⁶ Central Intelligence Agency (CIA). *The World Factbook: Guatemala*. (Washington D.C., USA: CIA, 2019)

⁶⁷ CIA, People and Society.

⁶⁸ CIA, People and Society.

⁶⁹ CIA, People and Society.

⁷⁰ CIA, People and Society.

⁷¹ Central Intelligence Agency (CIA). *The World Factbook: Honduras*. (Washington D.C., USA: CIA, 2019)

⁷² CIA, People and Society.

⁷³ CIA, People and Society.

⁷⁴ CIA, People and Society.

⁷⁵ CIA, People and Society.

to problems stemming from poverty and low resources, Honduras struggles with few screening programs, later stages of diagnosis, and greater symptom burden.⁷⁶

Subsequently, El Salvador might be one of the smallest countries in Central America, but it the most densely populated.⁷⁷ Given this demographic, the population seems to be aging with a declining number of youths, so the population growth rate has slowed to 0.57 % and fertility rate to 1.84 children born per woman.⁷⁸ This has been attributed to increased family planning through awareness and use of contraceptives with a prevalence rate at 72%.⁷⁹ Moreover, the birth rate is 16.1 per thousand, and the death rate is 5.8 per thousand.⁸⁰ Further, the maternal mortality rate stands at 46 deaths per 100,000 live births, and the infant mortality rate stands at 16.3 deaths per 1,000 live births.⁸¹ After reforms in 2010, the country shifted to focus on primary health care as the foundation for the Salvadoran healthcare system.⁸² This has made great achievements like the increase in coverage of hospital delivery from 43.9% in 2005 to 99.1% in 2016, and the significant reduction of chronic malnutrition in children under five from 29% in 1990 to 14% in 2014.⁸³ Further, its improved healthcare coverage through trusted community family health teams that reach 78% of the more rural and poorer municipalities, and by 2016, there was 536 community teams spread around the country, composed of a doctor, a nurse, nurse assistant, and three community health promoters.⁸⁴ However, the public seems to overall respond negatively to this reform due to poor service quality, patient abuse, and shortage of medicines and medical supplies.⁸⁵

⁷⁶ Kennedy Sheldon, Lisa; Constance Dahlin, Shail Maingi, and Jose Sanchez. *A Multiorganization Approach to Improving Palliative Care in Honduras*. (Pennsylvania, USA: Oncology Nursing Forum, 2017)

⁷⁷ Central Intelligence Agency (CIA). *The World Factbook: El Salvador*. (Washington D.C., USA: CIA, 2019)

⁷⁸ CIA, People and Society.

⁷⁹ CIA, People and Society.

⁸⁰ CIA, People and Society.

⁸¹ CIA, People and Society.

⁸² Hernández Reyes, A. *La atención primaria de salud como fundamento de la reforma de salud salvadoreña*. (El Salvador, PAHO: 2018)

⁸³ Hernández Reyes, I.

⁸⁴ Hernández Reyes, I.

⁸⁵ Hernández Reyes, I.

The healthcare systems of the Northern Triangle can be understood through four main avenues: health care financing systems, physical distribution of health care services and workforce, major health challenges, and legislation affecting healthcare.

Healthcare Financing Systems

The countries in the Northern Triangle generally have a similar institutional structure, but they allocate resources in slightly different ways. For instance, each country's public health care systems primarily have two institutions: a Ministry of Public Health and a Social Security System for the formal working population, and their private sectors are much smaller consisting of expensive urban institutions and non for profit organizations. The most recent health care expenditure data was collected in 2015 as 5.7% of Guatemala's GDP, 7.6% of Honduras GDP, and 7% of El Salvador's GDP.⁸⁶ With this basic health indicator in mind, the following sections discuss how each country's health care financing system reflects in their public sector, their private sector, and some common themes on how this affects their circumstances.

Before signing the 1996 Peace Accords, Guatemala's health care system functioned with little to no access for the rural majority.⁸⁷ In 1997, Guatemala established a Health Code that created their Ministry of Public Health and Social Assistance that recognized health as a human right, a public good, and a responsibility of the state. Just two years later, in 1999, they included the legal obligation of the state to provide a comprehensive healthcare service.⁸⁸ Inspiring a drastic renovation to the national health system, this initiative jumpstarted government focus on an expansion of primary care services and access for the impoverished rural majority population.⁸⁹ The public healthcare system quickly turned toward government stewardship to implement functions that strengthened and developed the

⁸⁶ Central Intelligence Agency (CIA). The World Factbook: Country Profiles. (Washington D.C., USA: CIA, 2019)

⁸⁷ Cross, Harry E., Marisela De La Cruz, and Juan Dent. *Government Stewardship and Primary Health Care in Guatemala since 1996*. (Palladium, Washington, D.C., USA and Guatemala City, Guatemala: John Wiley & Sons Ltd, 2018)

⁸⁸ Thomas Fagan. Fiscal Space for Health in Guatemala: Prospects for Increasing Public Resources for Health. (Washington, DC: Health Policy Plus, 2017)

⁸⁹ Cross, 1.

current state of the national healthcare system.⁹⁰ Of these functions, the most impactful include establishing policy instruments to provide for its structure and building and sustaining relationships, coalitions, and partnerships to influence participation across national, departmental, and municipal levels.⁹¹ Today, the government has two main public health care options: the Ministry of Public Health and Social Assistance (MSPAS) for the general public and Guatemalan Social Security Institute (IGSS) for the population with formal employment.⁹² As a public systems, MSPAS covers around 70% of the population, IGSS covers around 17.45% of the population, and Military Health covers 0.5% of the population.⁹³ For these, a third of the national budget is allocated for specific institutions and programs; however, less than a percent of these places itself in health related sectors. Due to this, public healthcare funding mainly relies on discretionary expenditure, and around 10% of the discretionary budget accounts for 92% MSPAS funding on average.⁹⁴ Despite these numbers, the MPSAS budget per beneficiary only accumulates to US\$60, while an IGSS beneficiary receives US\$225.⁹⁵ (Fagan 3) For 2017, MPSAS successfully acquired a significant increase in their institutional budget to 6,897 million quetzals approved by the Ministry of Finance. Additionally, the MPSAS multiannual plan argues to reach a 32% annual increase by 2022.⁹⁶ (Fagan 4) MPAS devised two strategic healthcare plans that outline comprehensive costing of the health sector and address underfunding with a 5 to 10 year budget plan to guide these policy changes.⁹⁷ Under these reports, the government's goal is to define a package of their health service to accurately assess the needed funding. Differently, IGSS is funded primarily through direct and indirect enrolment contributions. This system only relies on the government for a third of their budget accounting for employers and public sectors employee's indirect membership

⁹⁰ Cross, 2.

⁹¹ Cross, 20.

⁹² Pan American Health Organization (PAHO). Health in the Americas: Guatemala. (Washington, D.C.: PAHO, 2016)

⁹³ PAHO, 2.

⁹⁴ Fagan, v.

⁹⁵ Fagan, 3.

⁹⁶ Fagan, 4.

⁹⁷ PAHO, 2.

payments, but the government routinely denies them this income to place the money elsewhere in the public budget.⁹⁸

In comparison, Honduras' public health care system mimics this trend, but the demographics and structure change slightly to accommodate the country's unique circumstances. For instance, Honduras' most recent health care reforms were the National Model of Health approved in 2013 and the Social Protection Framework Law passed in 2015.⁹⁹ Under these, the state reorganized their two main public healthcare systems that the population uses regularly.¹⁰⁰ First, the Ministry of Health (SEASAL) that covers 60% of the population, and second, the Honduran Social Security Institute (IHSS) that provides for 40% of the actively employed population and their dependents, which accounts for 18% of total population.¹⁰¹ Similar to the IGSS, the IHSS is funded through contributions from the formal sector system of employers and employees, but it maintains a closed network budget for its recipients.¹⁰² However, Honduras lacks labor formalization policies which would generate more resources for IHSS and a stronger insurance coverage program, while simultaneously releasing some pressure off the SEASAL resources.¹⁰³ Faults in public healthcare financing seem to come from inefficiency in spending. The public sector should focus on these issues through improving medication, human resource management, and strengthening policy mechanism for accountability.¹⁰⁴ There tends to be consistent political support for improving spending efficiency and reprioritizing the health sector.¹⁰⁵

Comparable to the former countries, El Salvador's main public service provider is the Ministry of Health (MINSAL) for 72% of the population, but the country also provides Salvadoran Institute of Social Security (ISSS), a slightly smaller institution that covers the working population organizes into

⁹⁸ Fagan, v.

⁹⁹ Prieto Toledo, Lorena, Vilma Montañez Ginocchio and Vilma Montañez Ginocchio. *Espacio fiscal para salud en Honduras*. (Honduras, PAHO: 2017)

¹⁰⁰ Pan American Health Organization (PAHO). *Health in the Americas: Honduras*. (Washington, D.C.: PAHO, 2016)

¹⁰¹ PAHO, 1.

¹⁰² Prieto Toledo, 5.

¹⁰³ Prieto Toledo, 5.

¹⁰⁴ Prieto Toledo, 5.

¹⁰⁵ Prieto Toledo, 6.

four regions and covers 25.1% of the population.¹⁰⁶ Differently in El Salvador, The National Health System (SNS) further branches into the Salvadoran Institute for Invalid Rehabilitation (ISRI), Military Health, the Salvadoran Institute of Teacher Welfare (ISBM) and the Solidarity Fund for Health (FOSALUD), the Military Health Command (COSAM), and the National Drug Directorate.¹⁰⁷ Since 2013, there has been an increase in public health spending and a simultaneous decrease in private health spending, which has resulted in reductions in out of pocket spending that prove burdensome to the population.¹⁰⁸ These shifts are largely attributed to an increased public budget allocation to health and implementation of abolishing certain fees for health services.¹⁰⁹ The largest portion of the public health expenditure increase funded hospital services and eliminated the for-service fee which directly increased consultations at the primary care level, so relatively more people seek healthcare when they are sick. Despite these improvements, 40% of the population does not follow this trend.¹¹⁰ Regardless, this reflects about 50% of public health spending by the Ministry of Health, only to be closely trailed by the ISSS which accounted for 41%, and the smaller public health branches consolidated for last 9%.¹¹¹ A closer look into these numbers reflects the fragmentation in the health care expenditure. For instance, the per capita expenditure for the Ministry of Health is US\$137, while the ISSS is US\$236, and in considerably smaller sectors like Military Health Command gets US\$349 and Salvadoran Institute for Teacher Welfare gets US\$509.¹¹² Despite the Military Health Command affiliation with less than 1.5% of the population, their per capita spending outranks the ISSS which entails about a quarter of the population.¹¹³

¹⁰⁶ Pan American Health Organization (PAHO). *Health in the Americas: Honduras*. (Washington, D.C.: PAHO, 2016)

¹⁰⁷ PAHO, 1.

¹⁰⁸ The World Bank. *Central America Social Expenditures and Institutional Review: El Salvador*. (Washington, D.C.: The World Bank, 2015)

¹⁰⁹ The World Bank, 40.

¹¹⁰ The World Bank, 42.

¹¹¹ The World Bank, 40.

¹¹² PAHO, 1.

¹¹³ Pan American Health Organization. *El Salvador en el camino hacia la cobertura universal de salud: logros y desafíos*. (San Salvador: PAHO, 2014)

As for the private healthcare sector, each country has a variety of diverse options ranging from lucrative to non-for-profit organizations. Often the countries' social security systems (IGSS, IHSS and ISSS) partner with private sector health care institutions.

For Guatemala, private health care options include lucrative specialized health care institutions and non-for-profit institutions like NGOs, faith-based organizations and traditional and alternative forms of medicine.¹¹⁴ Non-governmental organizations offer healthcare packages to 18% of the populations, but private health insurance covers less than 8% of the population, which is realistically only accessible by the wealthy.¹¹⁵ Regardless, the Guatemalan populations instills more trust to private health care sector for specialized treatments like family planning and for the treatment of chronic conditions such as diabetes and hypertension.¹¹⁶ In an effort to expand health care to the more rural parts of the country, MSPAS had contracted programs that partners with NGOs through the Extension for Coverage Program, but they cancelled most of these contracts in late 2014 because the communities perceived the provided services as low quality.¹¹⁷

Likewise, only 10-15% of the Honduran population uses private healthcare, but high costs and lack of access make it unlikely.¹¹⁸ In Honduras, the population turns to the private sector for specialized practice including some primary care, pharmacy, diagnostic imaging and needs for high tech laboratory equipment.¹¹⁹ In these cases, the private for-profit health care funds itself through costly out-of-pocket payments and some insurance programs, while the nonprofit providers fund themselves through internal and external donations.¹²⁰

¹¹⁴ Carlos Avila, Rhea Bright, Jose Gutierrez, Kenneth Hoadley, Coite Manuel, Natalia Romero, and Michael P. Rodriguez. *Guatemala Health Assessment 2015*. (Bethesda, Maryland: USAID's Health Finance and Governance Project, 2015)

¹¹⁵ PAHO, 2.

¹¹⁶ Avila, 13.

¹¹⁷ Avila, 12.

¹¹⁸ PAHO, 1.

¹¹⁹ Bermudez-Madriz, JL, MD Saenz, J. Muiser, and M. Acosta. *The Health System of Honduras*. (Mexico: Salud Publica De Mexico, 2011)

¹²⁰ Bermudez-Madriz, S192.

Further, El Salvador's private healthcare sector mimics these trends. However, Salvador delegates The Higher Council for Public Health to oversee the private-sector and its development.¹²¹ The for-profit private sectors are focused in the main cities, and the non-profit organizations operate predominantly in the more rural areas. Only around 7% of the Salvadoran national healthcare expenditure comes from private insurance companies.¹²²

Throughout their health care financing systems, there seems to be a few running themes across the Northern Triangle. For instance, problems with pooling resources lead to high fragmentation with resource allocation. Improvements in healthcare legislation and code could better this to allow for better access to health as a public good and legitimize the healthcare systems. Also, all three countries struggle with high out-of-pocket payments because their population seems to turn away from public health care options and toward specialized private healthcare. In Guatemala, half of the current health spending is attributed to high out-of-pocket payment, and more than 75% of the national population does not economically have access to pre-paid health care services.¹²³ Similarly in Honduras, out-of-pocket spending represents 45.6% of total health spending in the country, and 17% of the population lives without any regular access to health services.¹²⁴

Distribution: Facilities and Workforce

The Northern Triangle countries share similar struggles pertaining to their distribution of healthcare facilities and their distribution of the healthcare workforce. Predominantly, the countries provide an unequal distribution of services that leave their more rural populations at a disadvantage. The following section discusses the distribution of faculties in each country and this distribution of health personnel in each country along with some factors that influence the disparities in these systems. Many problems stem from fragmentation and financing issues examined in the last section.

¹²¹ PAHO, 1.

¹²² PAHO, 1

¹²³ Fagan, 3.

¹²⁴ Prieto Toledo, 5.

The central Guatemalan government spending institutions are defined in ministries, including MSPAS, and further divided into local governments that include 22 departments and 388 municipalities. Together these institutions organize the funds for national health care.¹²⁵ Specifically, the MSPAS coordinates the budget of 29 health areas, 43 hospitals, and 13 administrative units.¹²⁶ Within the public sector service delivery network, MSPAS has facilities that categorized into primary, secondary and tertiary care levels. Although the 1302 health posts and the 2,220 convergence centers serves as the most accessible primary care facilities, they are often overlooked because people are more likely to seek care in hospitals.¹²⁷ Also, the 902 health centers and 397 mobile clinics that function as secondary facilities that face this same problem, but the 21 specialized health facilities are preferred in specialized cases, like chronic and noncommunicable disease.¹²⁸ Further, there are 51 MSPAS hospitals that reach the tertiary level of care with specialty and outpatient services.¹²⁹ However, they exist with great disparities in the more rural regions as mentioned above. As of 2014, there were only 0.6 hospital beds for 1,000 population.¹³⁰ To combat this issue, MSPAS created a community based primary healthcare strategy with features and care services familiar to the region from health projects like Inclusive Health Model and the NGO TulaSalud.¹³¹ This system would ensure that each health post covers no more than 5,000 inhabitants supported with two auxiliary nurses, six community facilitators, and 10 TBAs.¹³² Further, it suggests a turn toward heavy reliance on telemedicine through the Kwok information system to identify, track and refer patients.¹³³ As for private healthcare facilities, there are 1,103 health clinics, 2,927 specialized clinics, 1651 dental clinics and laboratories, 241 alternative medicine centers, 135 hospitals, 1688 laboratories, and 1808 other medical facilities in total.

¹²⁵ Avila, 42.

¹²⁶ Avila, 42.

¹²⁷ Avila, 58.

¹²⁸ Avila, 58.

¹²⁹ Avila, 58.

¹³⁰ CIA WFB

¹³¹ Avila, 61.

¹³² Avila, 61.

¹³³ Avila, 61.

¹³⁴ Although private insurance seems economically unattainable from the average Guatemalan income, many regularly prefer to use private healthcare facilities and pay out-of-pocket. For instance, data suggests that Guatemalans with chronic conditions prefer the private sector.¹³⁵

Honduras defines healthcare facilities in three categories: specialized health care centers, departmental and regional reference hospitals, and national hospitals. From these numbers, it is projected that only 82% of the Honduran population has geographic and economic access to health care services. SESAL contributes 60%, the IHSS contributes 12% and the remaining 10% comes from private sector services.¹³⁶ The rural and the more indigenous populated areas endure low access to care at concerning disadvantage. For instance, Guatemala's more rural departments in San Marcos, Huehuetenango, Quiché and Alta Verapaz have the most challenging geographical access, large dangerous populations, and highest poverty rates which only add to their lack or absence of healthcare services.¹³⁷ Other than this, the country has approximately 7588 hospital beds which equates to 0.97 beds per thousand inhabitants. They are unequally distributed not only between rural and urban communities, but also between the public and private sectors. For instance, there are 5202 in SESAL hospitals, 634 in the IHSS facilities, 1652 in the for-profit private sector, and the remaining 101 in NGOs service.¹³⁸ The specialized health centers include rural health centers (CESAR), health centers with doctors and dentists (CESAMO), maternal and child clinics (CMI), and peripheral emergency clinics (CLIPER).¹³⁹ The national public healthcare system (SESAL) holds the largest number of facilities with 1587 Health Establishments, 28 Hospitals, 68 CMI, 444 CESAMO, three CLIPER and 1044 CESAR.¹⁴⁰ Other than these, the IHSS consists of 2 hospitals and 18 outpatient care facilities, as

¹³⁴ Avila, 64.

¹³⁵ Avila, 64.

¹³⁶ Secretaría de Salud (HN). *Guía de Práctica Clínica para el Manejo Ambulatorio (Promoción, Prevención, Diagnóstico y Tratamiento) del Adulto con Diabetes Mellitus*. (Tegucigalpa: Secretaría de Salud (HN), 2015)

¹³⁷ Ministerio de Salud Pública y Asistencia Social. *Desigualdades en Salud en Guatemala*. (Guatemala: Organización Panamericana de la Salud/ Organización Mundial de la Salud en Guatemala, 2016)

¹³⁸ Secretaría de Salud (HN), 10.

¹³⁹ Secretaría de Salud (HN), 10.

¹⁴⁰ Secretaría de Salud (HN), 10.

separate units with three levels of care. Among the private subsector, NGOs and other institutions there are 108 hospitals and 820 outpatient facilities in the country.¹⁴¹ Commonly, these facilities are comprised of integrated health service delivery networks (IHDSN.)¹⁴² However, the most recent healthcare reform in 2013 sought to expand primary healthcare through an IDHSN system. A study into this system revealed the gaps between IHDSNs theoretical framework and their actual realized implementation. Results suggest that IHDNs' models of care, resource allocation and incentives work well, but they need improvement in aspects concerning governance strategy and organizational and management.¹⁴³ This gap implies a lack of government commitment to train human resources and allocation of material and financial resources.¹⁴⁴

As for El Salvador, there is proportionally less current information about the distribution of their healthcare facilities. Documents show the ratification of the United Nations' Road Map Toward Universal Access and Universal Health Coverage intends to incorporate 956 outpatient hospitals, 104 specialized outpatient, and 43 hospital facilities in the country.¹⁴⁵ After 2010, the reforms integrated some of these facilities within their community based primary health care focus. Of these, there were 30 national hospitals, 30 community health units, 481 Equipo Comunitario de Salud Familiar (ECOS), and 36 specialized ECOS.¹⁴⁶ Overall, they seem to have the most hospital beds per 1,000 populations at 1.3, but this could be influenced by their dense population in comparison to the other Northern triangle countries.¹⁴⁷ Notwithstanding the last statistic, the other numbers come from a 2014 report that uses

¹⁴¹ Secretaría de Salud (HN), 10.

¹⁴² Puertas EB, Martínez RA, Figueroa GS, Hidalgo FE. *Integración de redes de servicios de salud en Honduras: valoración comparativa del planteamiento teórico y de la aplicación práctica en cinco redes del país*. (Honduras, PAHO: 2018)

¹⁴³ Puertas, 3.

¹⁴⁴ Puertas, 6.

¹⁴⁵ PAHO, 2.

¹⁴⁶ Rodríguez, Maria Isabel, Margaret Chan, and Carissa Etienne. *El Salvador en el camino hacia la Cobertura Universal de Salud*. (San Salvador, El Salvador: PAHO/WHO, 2014)

¹⁴⁷ Central Intelligence Agency (CIA). *The World Factbook: Guatemala*. (Washington D.C., USA: CIA, 2019)

some sources from 2012, and this seems to encompass most current and most specific information available for the distribution of healthcare facilities in El Salvador.

The health care workforce distribution also develops differently in each country, but they all seem to face similar inequality issues.

As for Guatemala, in the department of Guatemala (province) there is one doctor for every 384 population, but in the department of Quiché only has a doctor for every 11,984 population. As much as 75% of the national health human resources including midwives are concentrated in the more urban departments of Guatemala, Quetzaltenango and Escuintla.¹⁴⁸ This also affects health spending, in more rural population the MPSAS health expenditure can reach as low as 140 quetzals, or US\$18 per capita and leaves the families to pay for considerably expensive services.¹⁴⁹ As of 2018, these numbers have averaged to an estimated 0.36 physicians per 1,000 population.¹⁵⁰ The 2016 estimates suggest that physician density was 8.1 per 10,000 population, consideration that numbers were in-between 1.5-1.6 per 10,000 population in more rural areas like Alta Verapaz and Huehuetenango.¹⁵¹ Further, the professional nurse density is much lower at only 6 per 100,000 population.

These numbers reflect the low medical training facilities and their high costs and commitment that turn people away from pursuing a career in the health field. In Honduras, there is only one public university and six private universities that offer physician faculties, but many medical students also attend Cuba's Latin American School of Medicine that provides them with accredited training.¹⁵² For specialized training and grad school, there are two gradual schools that focus in health administration

¹⁴⁸ Ministerio de Salud Pública y Asistencia Social (MSPAS). *Desigualdades en Salud en Guatemala*. (Guatemala: Organización Panamericana de la Salud/ Organización Mundial de la Salud en Guatemala, 2016)

¹⁴⁹ MSPAS, 40.

¹⁵⁰ CIA, People and Society.

¹⁵¹ PAHO, 2.

¹⁵² PAHO, 2.

and epidemiology.¹⁵³ Even with these credentials, there seems to be job security issues because MPSAS's limited financial structure restricts the hiring numbers.¹⁵⁴

In 2013, Honduras tried to alleviate this problem with the installation of The Directorate-General of Human Resources, a department that directly oversees the professional development of health workers in the country.¹⁵⁵ Since implementation, the 2017 estimates for physician density are still low at 0.31 per 1,000 population.¹⁵⁶ Further investigation suggests health personnel density approximately includes “a doctor, 0.34 professional nurses, 1.3 nursing assistants and 0.15 dentists per 1,000 population.”¹⁵⁷ These numbers drastically fell from 2013 records that suggested an average 10 physicians, 3.8 nurses and 0.3 dentists per 1,000 population.¹⁵⁸ The Pan American Health Organization suggests that these numbers drop due to an increasing number of health personnel that relocate to the United States and Spain for a safer and more lucrative circumstances.

In contrast, El Salvador has a noticeably higher physician density of 1.57 per 1,000 population.¹⁵⁹ As for health care workers, there are 19.5 per 10,000 population, including physicians, nurses, and maternal and child health graduates.¹⁶⁰ On average, 670 physicians, 722 nursing professionals, and 1276 nursing technicians graduate annually from one of the 11 higher education institutions that train professional health personnel in 13 disciplines.¹⁶¹ Comparing these numbers to other countries, El Salvador seems to excel in health care workforce retention. Nevertheless, the countries rural and urban population see these numbers in different capacities. Only 13.9% of total national medical personnel located in rural areas. For instance, San Salvador only has 1.9% while the Sonsonate, an urban center, has 47%. In 2015, “a 46,983 workers were distributed as follows: 17.7% general practitioners and

¹⁵³ PAHO, 2.

¹⁵⁴ PAHO, 2.

¹⁵⁵ PAHO, 2.

¹⁵⁶ Central Intelligence Agency (CIA). *The World Factbook: Honduras*. (Washington D.C., USA: CIA, 2019)

¹⁵⁷ Secretaría de Salud (HN), 10.

¹⁵⁸ PAHO, 2.

¹⁵⁹ CIA WFB

¹⁶⁰ PAHO, 2.

¹⁶¹ PAHO, 2.

specialists, 2.1% dentists, 10.5% graduate nurses, 13.1% nursing auxiliaries, 19.6% technical personnel, 8.1% community health workers, 27.8% administrative personnel, and 0.9% interns.”¹⁶²

From these statistics, 62.4% worked for the Ministry of Health.

Major Health Challenges

For Guatemala, some of the major health challenges revolve inequalities for women and indigenous populations overall affecting maternal health and child malnutrition. In accordance with this, rural indigenous Guatemalan women disproportionately struggle with maternal mortality at a rate two to three times more likely to die at childbirth because they often experience disrespectful care in hospitals.¹⁶³ This may be due to communication problems since most hospital staff do not speak their indigenous languages.¹⁶⁴ Recent reforms like the Ley Para la Maternidad Saludable demands for better respect for intercultural differences, like the allowance of Midwives during the labor and delivery process.¹⁶⁵

Other than this, Guatemala has one of the highest rates of child malnutrition in the region with almost one million children under the age of five affected.¹⁶⁶ This has a lasting effect on the population like 40% less structural brain development within the first two years of life, which leads to slow learning and greater risk of chronic illnesses later in life.¹⁶⁷ The main causes of child malnutrition are “dietary habits and inadequate access to health, water and sanitation services.”¹⁶⁸ To combat this, Guatemala implemented the Zero Hunger Plan and the National Strategy for the Prevention of Chronic Malnutrition 2016-2020 to target the in the poorest, less educated, and indigenous as the most

¹⁶² PAHO, 2.

¹⁶³ Juarez, M., K. Austad, and P. Rohloff. "Lay Midwives: On the Front Lines of the Fight Against Maternal Mortality in Rural Guatemala." (Arlington, VA: *American Journal of Tropical Medicine and Hygiene*, 2019)

¹⁶⁴ Juarez, 237.

¹⁶⁵ Juarez, 237.

¹⁶⁶ States News Service. *Guatemala Steps Up Fight Against Malnutrition*. (Washington DC: States News Service, 2019)

¹⁶⁷ States News Service, 1.

¹⁶⁸ States News Service, 1.

vulnerable populations.¹⁶⁹ Specifically in Guatemalan rural indigenous populations are at greater risk, due to poor diet diversity and expensive fortified foods.¹⁷⁰ Although not as severe, Honduras experiences a similar case of chronic child malnutrition, as 29% of children under five in the country, and 80% of poor and indigenous communities.¹⁷¹

Other than medical human resources, Honduras' major health challenges revolve around chronic noncommunicable diseases like diabetes and hypertension. Factors like “geographic location, household head gender, Spanish literacy, patient age, perceived health status, perceived quality of public sector care, household economic level, and having health insurance” all serve as barriers to access when seeking out care and medicine through the formal health system.¹⁷²

As for El Salvador, the leading health challenges include neglected infectious diseases related to poverty and HIV/AIDs epidemic. In response to this, the country received funding from the Global Fund to fight AIDS, Tuberculosis, and Malaria.¹⁷³ Additionally, these funds contributed to HIV prevention interventions, but this program and its resources only reached about half of its target population due to an unanticipated increase in violence preventing access.¹⁷⁴ All three countries face similar barriers to health care due to violence, insecurity and victimization.¹⁷⁵

Legislation affecting health care

After the 1996 Peace Accords, key legislation and policy regarding healthcare evolved directly from implementing government stewardship focusing on primary health care. Since the instilment of

¹⁶⁹ Mazariegos, Mónica, María F. Kroker-Lobos, and Manuel Ramírez-Zea. *Socio-Economic and Ethnic Disparities of Malnutrition in all its Forms in Guatemala*. (Public Health Nutrition, 2019)

¹⁷⁰ Mazariegos, 7.

¹⁷¹ Palacios, LF, EB Augustinus, CR Urquia, CF Saseta, and GR Berruezo. *Degree of Malnutrition and its Relationship with Major Structural and Eating Factors in Honduran Preschool Population. Prevalence of Breastfeeding*. (Panama, Guatemala, and Mexico: Nutricion Hospitalaria, 2017)

¹⁷² Emmerick, ICM, VL Luiza, LAB Camacho, C. Vialle-Valentin, and D. Ross-Degnan. *Barriers in Household Access to Medicines for Chronic Conditions in Three Latin American Countries*. (RJ, Brazil and Maryland, USA: International Journal for Equity in Health, 2015).

¹⁷³ Buck, Meredith, Julia Dickson-Gomez, and Gloria Bodnar. *Combination HIV Prevention Strategy Implementation in El Salvador: Perceived Barriers and Adaptations Reported by Outreach Peer Educators and Supervisors*. (Wisconsin and El Salvador: Global Qualitative Nursing Research, 2017)

¹⁷⁴ Buck, 8.

¹⁷⁵ De Jesus, 1.

the 1997 Health Code, MPSAS mandates responsibility for the national health sector and protects and encourages community participation in decision making for their constitutional right to health.¹⁷⁶ In 2001, the Social Development law further affirmed and identified vulnerable communities like indigenous, women and adolescents for a reproductive health program.¹⁷⁷ This program was later expanded through the Law of Universal and Equitable Access to Family Planning Services that created the National Commission for Contraceptive Security.¹⁷⁸ Still, consistently high maternal and neonatal mortality rates stimulated the 2010 Health Motherhood Law that made safe maternal health a priority through universal primary health services to women during and after pregnancies with a budget for maternal service and repercussions for noncompliance.¹⁷⁹ Especially in cases that involve vulnerable populations, MSPAS stresses the importance of their relationships with civil society organizations and non-governmental organizations for their advocacy for improved legislation that later develops into partnerships for programs, financing and monitoring.¹⁸⁰ For instance, government programs like Zero Hunger have been more effective when state actors collaborate with informal authorities and a network of traditional village leaders.¹⁸¹ In these cases, policy and legislation programs gain legitimacy due to trust within the community which increases participation.¹⁸²

Other than the formation of the national healthcare system, Honduras has little legislation that pertains to health. Other codified law, they have sections in government policies and plans that mention their intentions with the development of their healthcare system. For instance, the state's New Health Model outline tier plan to strengthen the Ministry of Health into organized functions for financing,

¹⁷⁶ Cross, 14.

¹⁷⁷ Cross, 14.

¹⁷⁸ Cross, 14.

¹⁷⁹ Cross, 14.

¹⁸⁰ Cross, 14.

¹⁸¹ Klick, M. T. *The Effect of State–Local complementarity and Local Governance on Development: A Comparative Analysis from Post-War Guatemala*. (:World Development, 2016)

¹⁸² Klick, 4.

securing, and provision of services.¹⁸³ Similar to Guatemala in some respects, this plan also includes emphasizing the local Integral Health care networks to have first- and second-degree level of service.¹⁸⁴ However, some stakeholders believe that this plan suggests a turn toward a privatized system of healthcare which would favor the right to health as a privilege rather than a right.¹⁸⁵

Moreover, El Salvador's most significant health reform commitment expresses its 2010 launch of The Declaration of Alma-Ata on primary health care focus.¹⁸⁶ This international commitment motivated actions to expand coverage, promote health, and organized levels of care.¹⁸⁷ Similar to more decentralized approaches of Guatemala and Honduras, El Salvador implements this reform in efforts to involve other social programs that collaborate on reducing poverty and inequality concerns affecting health.¹⁸⁸ The progress toward a better public and universal health system thrives with citizen involvement, especially in management positions.¹⁸⁹ Although employment of this plan has helped improve basic health indicator statistics, the general population criticizes some poor service quality from patient abuse to shortage of medicine and medical supplies in poorer areas where the plan had little diffusion.¹⁹⁰

Conclusion

Comprehensively, the Northern Triangle healthcare systems can be understood through their financing systems, distribution of health facilities and workforce, major health challenges, and healthcare legislation. That being said, there seems to be some gaps in research among data collection within the Northern Triangle. Particularly, there was little current information on El Salvador.

¹⁸³ Carmenate-Milián L, Herrera-Ramos A, Ramos-Cáceres D, Lagos- Ordoñez K, Lagos- Ordoñez T, et al. *Situation of the Health System in Honduras and the New Proposed Health Model*. (Honduras; Arch Med., 2017)

¹⁸⁴ Carmenate-Milián L, 4.

¹⁸⁵ Carmenate-Milián L, 4.

¹⁸⁶ Hernández Reyes, 1.

¹⁸⁷ Hernández Reyes, 1.

¹⁸⁸ Hernández Reyes, 1.

¹⁸⁹ Hernández Reyes, 1.

¹⁹⁰ Hernández Reyes, 1.

Regardless, some uniting themes include the healthcare inequality leaving women and indigenous populations more vulnerable, fragmentation and budgeting problems in the financing systems, and turning toward more community based programs to effectively implement healthcare.

A Comprehensive Analysis on the Healthcare Systems in Latin America:

Colombia Country Report

Sarah Haque

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Health Care Systems in Latin America: Colombia

Introduction

Healthcare is a fundamental human right. It allows people to seek quality treatment and assistance for any medical concerns that they have in order to prevent and mitigate diseases, disabilities, and even death. Establishing an effective healthcare system is a cornerstone to any well-functioning society because it enriches an individual's quality of well-being. The government has an obligation to ensure the safety and wellness of all of its citizens. Colombia is a middle-income country with a population size of approximately 43 million (Escobar 3). It is a democratic nation that endows its citizens with certain human rights that cannot be revoked by the state. However, prior to 1993 Colombia was breaching its social contract with its citizens by neglecting to fix a fragmented, inefficient, and unequal healthcare model. The majority of the population became vulnerable to infirmities and were unable to seek quality health assistance and claimed "economic barriers" were the main threshold preventing them from going to healthcare facilities (Escobar 1).

Colombia has learned from its past errors and has established one of the top ranked healthcare systems in the world. According to the World Health Organization, Colombia's system is ranked #22 out of 191 countries and is the top ranked health system in all of Latin America (International Living). 41% of the best hospitals in Latin American can be found in Colombia, carrying 24 of the top 58 clinics and hospitals (Jeff 2018). However, as mentioned earlier, its climb to the top did not come with ease. Healthcare coverage in the country prior to 1993 was infective in terms of both "equity and financing" with poor infrastructure not sufficient enough to provide basic care (Weiss 102). The healthcare reform was brought on by president Cesar Gaviria Trujillo, of the Colombian Liberal Party, who wanted to provide equal and efficient healthcare access to all Colombian Citizens; and it's

considered to be the largest social reform ever undertaken in Latin America (Weiss 102). The World Bank, accompanied by other international finance institutions played an essential role in overhauling the previous model (Lamprea 50). By 1993 the reform, also referred to as Law 100, transformed Colombia's fragmented, inefficient model into a well-developed universal healthcare system. In this paper I am going to examine the Colombian healthcare system, its accessibility to pharmaceuticals and health services, how we measure the quality of health and the number of health professionals within the country. In this paper we define accessibility as convenience to access healthcare facilities. Factors that help deem whether access is convenient include (but aren't limited to): distance to health facilities and time it takes to book appointments.

Healthcare Finance Systems

The 1993 reform aimed to abolish the disparaging inequality to health care that plagued the nation. The use of healthcare facilities was low due to reasons such as, costly out of pocket expenditures and low efficiency at health facilities, which "disproportionately affected the poor" (Escobar 3). Over half of the "bottom income quintile" could not obtain care due to costs and over a quarter of the population had no means to access "effective" health care because of lack of "health care infrastructure, human resources, medicine, and medical goods" (Escobar 3). Ever since the 1993 reform, Colombia has sought to reap the benefits of having universal health coverage. With, the General Health and Social Security System (SGSSS), citizens are entitled to receive care, despite their ability or inability to pay. It is funded through public taxes where an individual's income decides which regime they'll participate in: The Contributive Regime (CR) or the Subsidized Regime (SR), (Giedion). The CR system was created to cover formal sector workers and their families who earn above a certain monthly income of roughly \$170USD and is financed through a mandatory payroll tax of 11% (Giedion). The payment goes directly to insurance companies and allows CR holders access to all

levels of health coverage spanning from preventative care, health education, and even catastrophic care. Whereas the SR was created to cover those citizens who are uninsured and would be unable to pay for “health expenditures out of pocket” (Weiss 2013). If an individual identifies as being low-income, they can take a test to see if they would be eligible to qualify for the SR and then the state assumes costs for 30%-90% of medical expenses, based on an individual’s income (Webster 2012). However, health coverage in the SR plan is understandably more limited in contrast to the CR package. The benefits offered in the SR extended mainly to primary and catastrophic care, with very restrictive access to hospital care and maternity and sickness leaves, and no access to short-term disability (Weiss 2013). Dr. Alfredo Pinzon explains that “nobody gets turned away” but the issue lies in the quality of the healthcare (Webster 2012). It is simply not as good for the less affluent. The figures below illustrate health disparities between material health coverage in some of the most affluent Colombian regions contrasted with some of the poorest. There is unequal access to healthcare across regions.

Figure 1. Shows Pediatric ICU’s, chemotherapy chairs, and operating rooms (per 100,000 inhabitants)

(Lamprea 60)

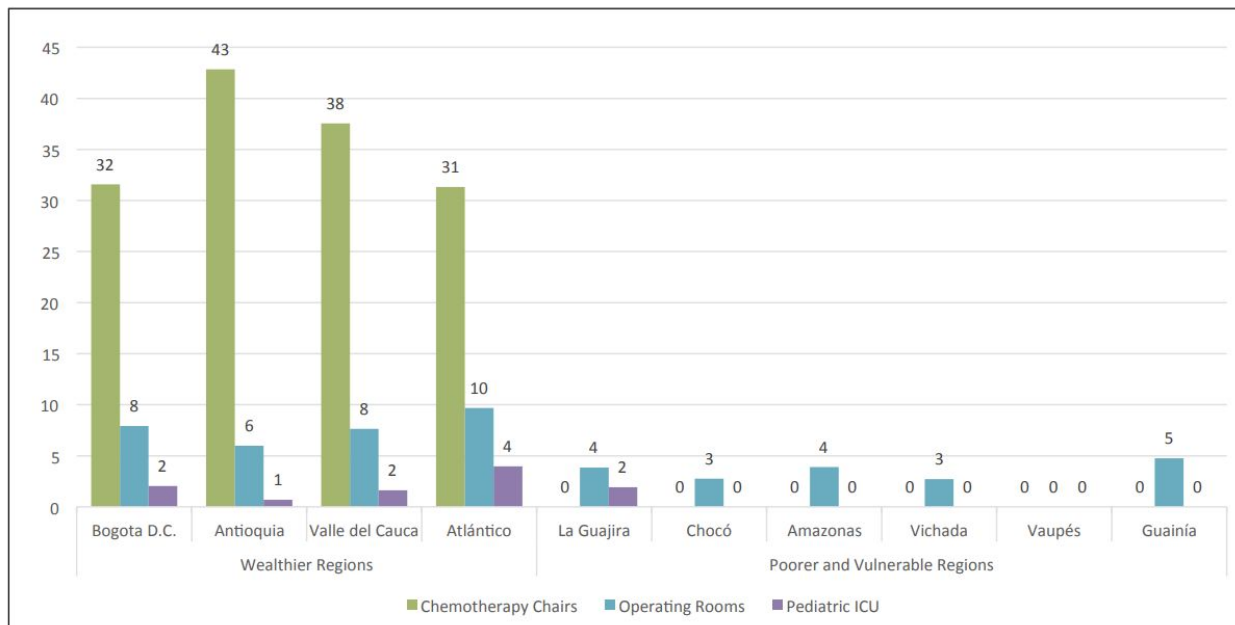
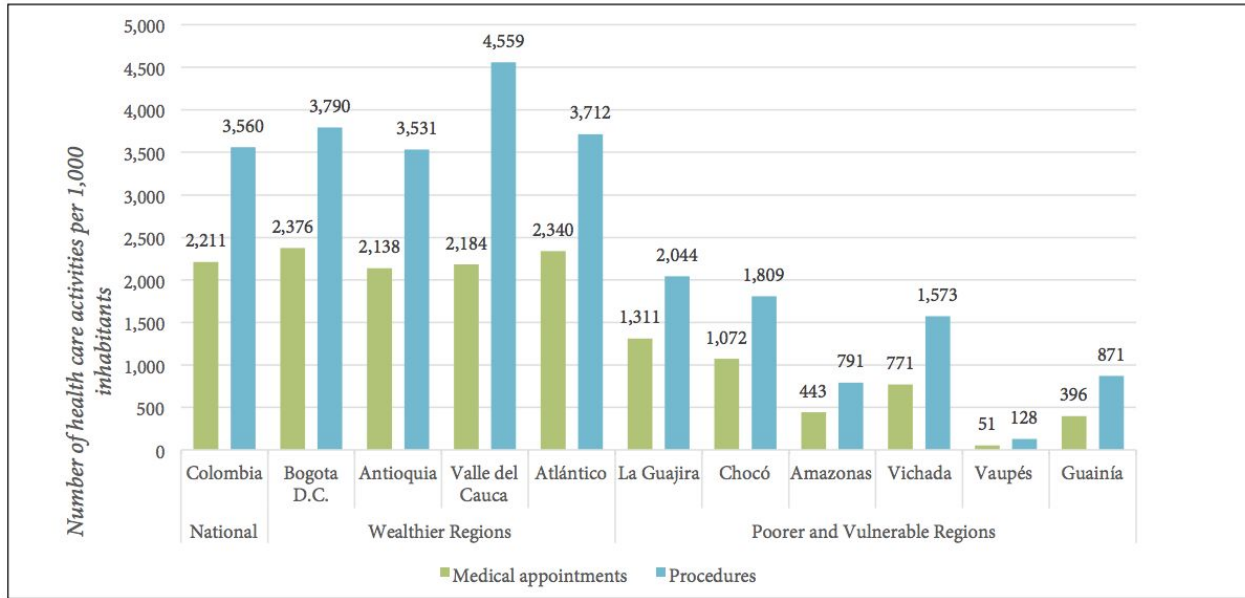


Figure 2. Medical appointments and procedure rates (per 1,000 inhabitants) (Lamprea 61)



Studies show, only 40% of Colombians have ‘formal’ jobs and pay for health coverage while 60% of the other half of the population relies on government-subsidized health care (Webster 2012). Informal workers, which constitute over half of the population are those working who earn a living through “self-employment,” and thus are not on a payroll and are not taxed. According to Colombia’s largest labor organization, the Confederation of Workers (CUT) “most people [in the formal sector] have unfair contracts,” and as a result has changed the landscape of their labor force (Jolly 2014). The Colombian labor market has often been characterized by “violent union organizing and other illegal practices” which companies undertake to cut costs (Jolly 2014). With \$319 a month, Colombia “has the fourth lowest legal minimum wage” paired with its high salary tax has coerced more and more citizens to prefer the informal labor market. Choosing to “make their own savings” and not pay taxes (Jolly 2014). This strategy may seem advantageous in the short term, however, can have costly consequences down the line. If an emergency were to arise, these workers would have to cover the full costs of medical insurance. Because they are unable to afford it, the government is burdened with the cost. Furthermore, government subsidized insurance does not extend to private hospitals. Colombians with

the SR plan wouldn't even think about going to a private hospital and if they did they would be told to go to a public facility instead where the wait would be longer and the care would not be as good. This is an indicator of the growing inequality in Colombia.

Though the country has been lauded for covering 97% of their population, they have recently faced criticism for providing “dramatically inferior coverage” to lower class citizens (Webster 2012). Corruption, mismanagement of funds, and institutional weaknesses seem to be more prevalent in poorer regions in contrast to affluent areas. Poor departments such as Amazonas, Guainía, and Vaupés received \$4 million dollars from the Colombian government in order to “improve their hospitals and health facilities,” however, none of those departments actually utilized the money. Due to institutional weakness and lack of accountability, the quality of healthcare facilities in poorer regions are suffering (Lamprea 62). The government has gone as far as to label it a “social emergency” and is beginning to mobilize in order to prep themselves to implement financial changes of public health services (Webster 2012). Many Colombian senators argue that the current healthcare model is at risk of financial collapse because of increasing pharmaceutical costs and insurance fraud. Current corruption threatens to undermine Colombia's goal of achieving a functioning Universal Healthcare system. Alongside insurance fraud, there has been “enormous abuses” within the pharmaceutical industry (Webster 2012).

The World Health Organization cites that Colombians pay one of the highest markups for medication, paying high costs for drugs, such as antibiotics (Webster 2012). This is due to the prolific use of high-priced proprietary drugs in lieu of generic products. Essentially insurance companies have a stake in the purchase of these proprietary medications and charge the public inflated prices up to 650%. Getting care at the hospital or the doctor's office is no longer the issue—being able to afford the right medication is. This spike in prices has caused a crisis within the well-to do system and is garnering the public to speak out against this injustice and demand for reform. Director of the pharmaceutical research center in Bogotá presses that in order to mitigate the high drug cost the Colombian

government must push for the use of generic products, adopt price control measures, and restrict influence on physicians to promote certain brands of medication over others (Webster 2012). The current system is becoming perverse and large institutions are finding ways to take advantage of the current health care finance system. Some politicians are arguing to do away with all private insurances and have a universal public insurance system, in order to prevent having a health system that is functioning for profit (Webster 2012). Before we can discuss reforming the system it is important to analyze the current systems in place. In Colombia, there are three primary health insurances that are available:

EPS (Entidades Promotoras de Salud): EPS is the public health insurance that is mandatory for all Colombian residents, it expands to dental care and requires that people pay 12.5% of their monthly gross income to be officially recognized as EPS carriers (Jeff 2018). If you hold a local Colombian ID then you are eligible to qualify. Foreigners with a legitimate visa and cedula can also be permitted to access EPS. Bear in mind that the EPS plan covers everyone, which translates to longer lines and greater time to book doctor appointments (Jeff 2018). It takes up to a few months to schedule an appointment where in contrast the Prepagada plan only takes a few days.

Prepagada: The private health insurance in Colombia has a monthly premium payment that varies based on age and the plan one chooses (Jeff 2018). In contrast to the EPS, Prepagada offers high quality medical care in a timely manner. Those insured by this private plan enjoy the convenience of shorter lines, access to the best doctors and health care facilities, with “preferential treatment” (Jeff 2018). There are less jumps and hurdles to access specialists and procedures because referrals are “not needed for diagnostic” patients can call to book appointments directly without consulting a general practitioner (Jeff 2018). In terms of payments post appointment, Prepada does not charge for deductibles—instead they charge small copayments.

SISBEN: System for Selecting Beneficiaries of Social Spending is the free government subsidized insurance system. SISBEN uses a “proxy means test” in order to classify Colombians into six distinct socioeconomic levels and only those who are in the lower two tier are able to participate in the SR plan (Weiss 2013). The lower tiers consist of those who are homeless or are living in impoverished conditions. The SISBEN index was created in order to equally and objectively determine needs within Colombian and measures poverty through “qualitative and quantitative variables” (Weiss 2013).

Regardless of insurance type, all Colombians are mandated to participate within the Obligatory Health Plan (POS) which is an umbrella underneath the General System of Social Security in Health (SGSSS). This plan was implemented due to the 1993 reform and is essentially a “package of health services” in areas of health recovery and disease prevention. Basically this plan was created in order to allow Colombians access to health benefits when they are not able to work due to extraneous circumstances such as: “illness, accidents, or maternity” (Minsalud). The POS works under both the CR and SR plan, however, the amount and quality of services that are accessed vary based on regime.

Additionally, despite the progress made in the past 25 years that aimed to cover all citizens, a handful of Colombian nationals remain uninsured and are classified as the “Uninsured Poor Population (UPP)” due to lack of awareness, interest and patience to wait for coverage approval (Xcenda). The government has “conceded” that part of their population still remains uninsured (Lamprea 59). According to recent studies conducted by the Ministry of Health, 46.4 million people are insured by either the CR or SR regimes, however, Colombia’s population lies at approximately 48.7 million (Lamprea 59). Thus, this finding shows that roughly 2.3 million people remain uninsured. People that fall under the UPP category are those in the process of applying for insurance, those who remain uninsured despite “being poor enough to qualify” for the SR plan, and “sandwiched” individuals. The

sandwiched individuals are viewed to be the most “worrying category” because they are those who frequently switch jobs or those who are “short-term contract workers” (Lamprea 59). It’s difficult because when they are formally employed, they are incorporated into the CR plan, however, when they are temporarily unemployed, “they abandon it” (Lamprea 59). These individuals are unable to take part in the SR plan because of their changing employment status makes it difficult to id them as being “permanently unemployed” (Lamprea 59).

Physical Distribution of Healthcare Facilities

As mentioned earlier, Colombia boasts the top ranked health system in all of Latin America. It has an expansive network of healthcare facilities that are located in all of its regions. It has built 899 public hospitals and medical centers, as well as over 4,400 health institutions (ABHI). Unfortunately, while conducting my research I could not find any scholarship that would discuss the actual distribution of these healthcare facilities in order to determine whether they are conglomerated in one area or distributed evenly across the nation.

Distribution of Healthcare Workforce

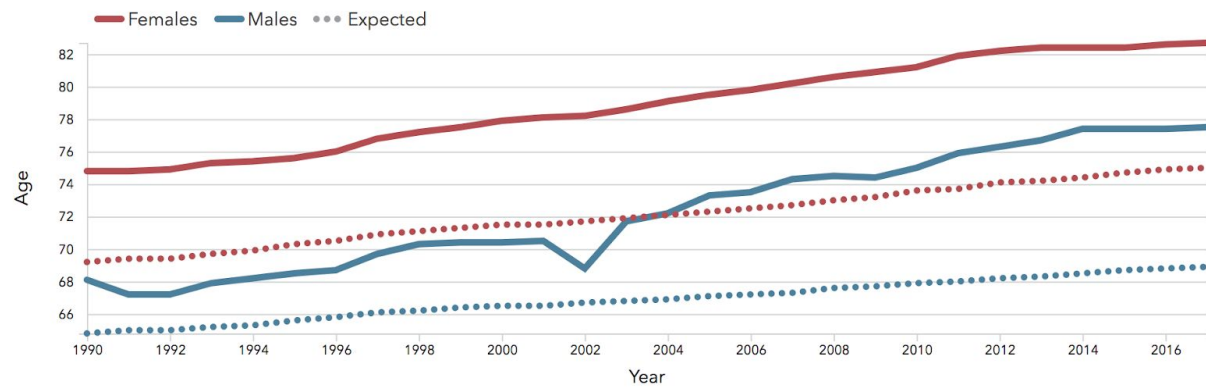
In this section I’m going to provide statistics in regard to the quantity of health care workers within Colombia. According to the United States Central Intelligence Agency, there were 1.35 physicians per 1000 population in Colombia in 2002 with a total of 63,000 certified physicians (Webster 2012). Of the total number of doctors, 43,000 are general physicals and 20,000 are trained specialists (ABHI). Doctors are trained in one of the 53 medical schools in the country, 38 of which are private and 15 are public (ABHI). 74% of students that have matriculated from medical school, attended private universities and 56% of all medical students from the country are in the wealthier regions of Bogotá, Barranquilla, and Medellín (Rojas 2018). There has been no literature to suggest

that medical students who graduate from these regions, chose to stay. However, wealthier regions are known to have a greater number of quality health professionals because the locals are able to pay for private insurances and majority of doctors are concentrated in urban areas and more affluent parts of the country (ABHI). Alongside doctors there are 23,950 nurses and 33,951 dentists, which translates to 0.55 nurses and 0.78 dentists per 1000 people (ABHI). Despite Colombia having a renowned health system, they have less physicians per a population of 1000 in contrast to the Latin American average of 1.5 per 1000 (ABHI). Many deem this issue to a “misallocation of funds” within the sector (ABHI). Though Colombia has less physicians per x number of population size, they face similar health-related challenges as the rest of their Latin American neighbors.

Major Health Challenges

The two leading causes of death in Colombia are due to non-communicable diseases and interpersonal violence. I'll start this section by discussing naturally occurring diseases and later pivoting to anthropogenic causes of death due to interpersonal violence. Main diseases that have plagued the country and have caused the highest number of deaths are: heart disease, stroke, Alzheimer's, and diabetes (IHME). Below are charts depicting life expectancy, infant mortality, and the major causes of death.

Life Expectancy (IHME):

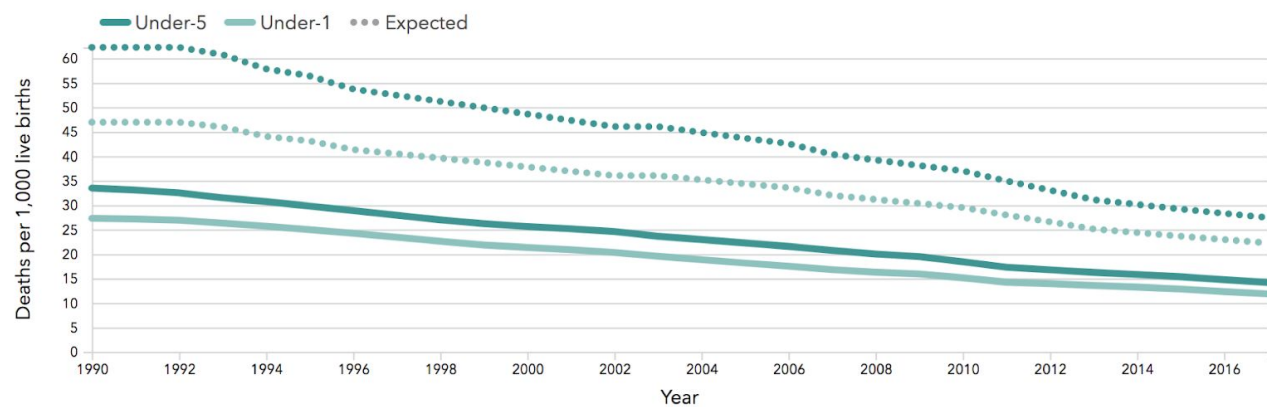


| | Expected | | Observed | |
|---------|----------|------|----------|------|
| | 1990 | 2017 | 1990 | 2017 |
| Females | 69.2 | 75.0 | 74.8 | 82.7 |
| Males | 64.8 | 68.9 | 68.1 | 77.5 |

Life expectancy, 1990-2017

Infant Mortality (IHME):

What is the mortality trend in the under-5 and under-1 age groups?

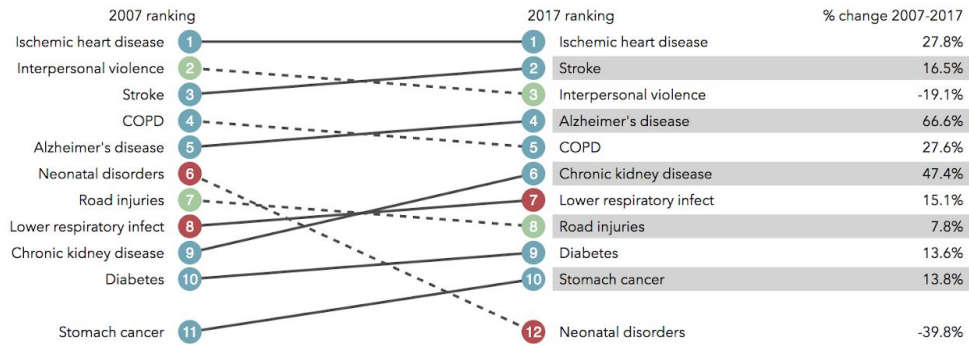


| | Expected | | Observed | |
|---------|----------|------|----------|------|
| | 1990 | 2017 | 1990 | 2017 |
| Under-5 | 62.3 | 27.5 | 33.5 | 14.2 |
| Under-1 | 47.0 | 22.3 | 27.3 | 11.9 |

Child mortality, 1990-2017

Causes of Death (IHME):

What causes the most deaths?



Top 10 causes of death in 2017 and percent change, 2007-2017, all ages, number

Non-communicable diseases and its effects

Non-communicable diseases are those that cannot be transferred through direct contact.

Obesity, Alzheimer's, heart disease, cancer, etc. are all examples of a non-communicable disease. It is important to note that conventional wisdom says that the inextricable link amongst these health issues and diet; many of the diseases are caused by poor diet and lack of physical activity. Aida Lebbos Saad, a pediatrician working in Bogotá has noticed a change in the children of wealthy families (Webster 2012). She noticed that they are becoming victims of “ballooning” a process in which children are becoming “heavier and unhealthier” and it is predominantly affecting those from affluent families (Webster 2012). Richer diets paired with an increasingly sedentary lifestyle and decreasing physical activity has resulted in greater health issues. Though the Colombian government covers a vast majority of its citizens, it is unnecessary to use taxpayer money to cover the bill of diseases that could be easily prevented by lifestyle changes. Ever since 2010, there has been a positive slope of recorded instances of obesity amongst Colombians to the point where childhood obesity rivals the United States at 31% (Webster 2012).

More recent studies indicate that non-communicable diseases are becoming an increasing issue amongst Colombians. It's taking the lives of so many people in developing countries, including

Colombia, that the United Nations has urged the World Health Organization (WHO) to start monitoring trends and finding ways to reduce the proliferation of these diseases (Webster 2012). Dr. Luis Fernando Gomez urges that it is a problem Colombia needs to “tackle immediately,” it used to be a problem “concentrated amongst the wealthy” but is trickling down and “affecting poorest” (Webster 2012). Other Doctors explain that reducing cholesterol, blood pressure, and obesity must be deemed a “priority” in order to control this “ongoing epidemic of cardiovascular diseases,” which alone accounts for 40% of deaths in Colombia (Webster 2012).

Interpersonal Violence

Another leading cause of death in Colombia is due to interpersonal violence, which is increasingly dominant in Latin America. According to the WHO, interpersonal violence includes “abuse against children, women or the elderly” as well as violence that occurs between strangers and acquaintances (Guerrero 2017). Colombia has been labeled a “violent country” relative to its Latin American counterparts (Guerrero 2017). Countries are deemed violent based on the homicide rate per 100,000 inhabitants, the WHO deems homicide an “endemic problem” if a country has 7 or more cases of homicide amongst 100,000 (Geurrero 2017). Colombia has 17 homicide cases per 100,000 inhabitants, which is 10 over the limit in which it is deemed to be endemic. Homicide is the leading cause of death for adults ranging from the ages of 16+ partly due to high crime rates (Humans Right Watch). Another growing concern is the consumption of alcohol has been attributed to increasing violent deaths in Colombia. Alcohol consumption has caused many “unintentional” injuries and deaths (Sanchez 2011). As a preventative measure, government officials have implemented policies to restrict the sale and consumption of alcohol in “public places after certain hours” to help mitigate the issue (Sanchez 2011)

Alongside homicide, there has been a “long history” of violence that has continued in the forms of child abuse, malnourishment, and gender-based violence against women (Guerrero 2017). Instances like acid-attacks on women occur about 100 times a year. Due to “lack of training” and lack of proper protocols to address these issues, access to medical services are impeded and creates another hurdle for women to seek care post-violent incident (Humans Rights Watch). In Colombia, perpetrators of gender-based crimes are hardly ever held accountable for their actions, causing it to be a rampant issue. Women and children alike have trouble seeking assistance in violent circumstances. Often times they fear to speak up and if they do, their accusations may be dismissed, resulting in deadly consequences. Children, especially are more vulnerable in these situations because violence early on in life, can have extremely damaging repercussions. One-third of Colombian parents who claimed that they “did not abuse their children,” believed that it was acceptable and even sometimes, necessary to hit their children with “hard objects that could hurt them” (Guerrero 2017). This form of physical punishment and emotional abuse runs rampant, yet “goes unnoticed” (Guerrero 2017). The early years of trauma these children face perpetuate a cycle of abuse that is passed on to others and could indirectly lead to future deaths.

Reproductive Rights

In 2006, the Colombian Constitutional Court ruled on the legalization of abortion and deemed it as a “constitutional right” for women, stating that they ought not to be “criminalized in cases of rape, incest, fatal fetal impairments, and health or life endangerment” (Press Releases 2016). Though abortion has been legalized and deemed a constitutional right there are still many hurdles women face in order to receive safe procedures, which can be attributed to the fact that local society leans more conservatively, despite the fact that the Colombian government has one of the most liberal reproductive rights in all of Latin America (Kraul 2010). The Colombian government recognizes that women have

the right to “make decisions regarding [their] reproductive life” (Press Releases 2016). Yet, despite there being a legal precedent set it is difficult to prove what cases qualify for legal abortion access, and doctors, medical institutions, and even judges can deny access to abortions based on personal beliefs and “moral objections” (Press Releases). For some women it may seem as if the law is only “legal on paper but in practice out of reach” since many are dissuaded due to “bureaucratic hurdles, dangerous delays, and stubborn attitudes” (Moloney 2016). Since 2006 health care providers have carried out approximately 50,000 legal abortions, however, roughly 400,000 women in Colombia “undergo illegal abortions each year” (Moloney 2016). This is due to a flawed system in place to carry out abortions. Women only need the permission of one doctor to access a legal abortion, but many doctors have found loopholes to prevent immediate care. Physicians will insist upon “convening a special medical committee” to decide whether an abortion can be granted—however, this step is completely unnecessary and forces delays until it’s too late (Moloney 2016). Colombia is a heavily Catholic country whose religious ideologies permeate into people’s belief system and influence societies view on concepts such as reproductive rights. Many physicians will prioritize their religious beliefs above their professional obligation.

As of 2010, Colombia’s Congress has ensured that all citizens will have access to free “contraceptive drugs and surgical procedures, including vasectomies and tubal ligation” (Kraul 2010). This could be a direct response to the fact that Colombia has one of the highest rates of “unintended pregnancy in the world” due to lack of contraceptives (DePineres 324). An aim for this new law is to have a sharp decline in birthrates in “shanty neighborhoods” who are amongst the nation’s highest in pregnancy, especially amongst teenage girls (Kraul 2010). Another benefit of this new law is that it takes away a financial burden from Colombia’s over-extended healthcare system. Due to the guarantee of universal care for all, government revenue “falls short” and maternity and neonatal care amongst

some of the “fastest-growing costs,” so providing free contraceptives could save money and alleviate a small financial strain from the government (Kraul 2010).

Labor Laws

When conducting my research there was little to no information regarding paternity leave. The literature regarding labor laws was almost exclusively written about maternity leave. I wanted to preface this section by explaining why the information will be predominantly focused on women and to make it clear that the male perspective was not intentionally disregarded.

Due to industrialization and social revolutions in the twentieth century there has been an increase of female participation in the labor market (Bustamante 2015). Urbanization, modernization, increased use of contraceptives and other factors have all contributed to women becoming more involved in the workforce. This transition prompted the Colombian government to want to “promote female employment” and offer incentivized maternity leave programs (Bustamante 2015). Since 2014, Colombia has passed legislation that fundamentally guarantees women who go on maternity leave: job security and a “nine-month gestation period” (Bustamante 2015). The government does not want to penalize the child or the mother and does not want a woman’s pregnancy to compromise her economic security. In Colombia women are allowed to take a minimum of 84 to 90 days of full paid maternity leave which can begin two weeks before the birth of the child. However, for fathers, paternity leave is much more restrictive. Fathers are eligible to take up to 8 paid days, only if they have “contributed more than 100 weeks” of payments to their social security system (Legal Team 2016). Women are given a substantial amount of time over Colombian men, though still are given relatively less time off compared to other countries that have universal health care. Canada, for instance, allows women to take anywhere between 119 days to a full year of maternity leave (Stewart 2009). Though, Canadian women are not paid their full salaries while on maternity leave.

However, coverage for maternity leave is still a problem for “vulnerable populations,” essentially poor residents in rural areas tend to be self-employed and are outside of the framework of formal jobs (Stewart 2009). Therefore, these women are not “affiliated” with social security health insurance and are unable to receive the benefits of maternity leave because of it (Stewart 2009). Women in these areas tend to be at a disadvantage when it comes to accessing the benefits of Colombia’s universal health model.

Legislation Affecting Healthcare Services

In February of 2015 Colombia passed the Ley Estatutaria de Salud (LES) which is a “statutory health law” that resulted in “unprecedented” change in the range of healthcare accessibility (Xcenda 2017). The details concerning the implementation of this change have yet to be fully determined. Before, services and products were “limited” to EPS members and citizens in the SR plan only received access to roughly 60% of the products and services listed (Xcenda 2017). However, since Colombia has deemed healthcare a fundamental right many citizens are starting to take legal actions against EPS when it denies access to “services, treatment, exams, or pharmaceuticals” (Xcenda 2017). Because it has been nationally recognized that citizens are entitled to receive these health related services. Though providing more utilities and greater access poses the dilemma as to how healthcare will be financed long term? The current model is not sustainable especially with an increasing population of lower-income citizens who rely on government subsidized coverage.

Conclusion

The rapid growth of health coverage in Colombia is undeniably “one of the greatest successes” to come out of the 1993 health reform with considerable improvements in health services (Lamprea 63). However, three decades later the road to universal health coverage has been paved with

unevenness and growing inequality. Some of the same issues that caused the overhaul of the previous health model and the implementation of Law 100, are resurfacing. The current model is proving to be financially unsustainable and overextended, and without reform, could collapse in the near future. The various regional disparities regarding quality of healthcare emphasize the divide between the rich and poor. Showcasing that socioeconomic status remains to be a determining factor in the quality and accessibility of healthcare facilities, despite the government's attempts to bridge these gaps. Even though an overwhelming majority of the population is insured, many lower class citizens have yet to experience any of the benefits of the 1993 reform and are still facing the same barriers to access. The Colombian government must work in tandem with Congress to "correct the institutional and regulatory dysfunctions" that have continued to plague the country (Lamprea 63).

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A Comprehensive Analysis on the Healthcare Systems in Latin America:
Brazil Country Report

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IRG 378: Capstone

Dr. Michael Mosser

8 December 2019

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I. Introduction

Latin America casts a wide net of healthcare distribution towards its citizens, but the absolute largest healthcare market in the region belongs to Brazil. Globally, Brazil has the titles of the fifth largest country in area and the sixth largest country in population, with about 8.51 million square kilometers and an estimated 211 million people.¹⁹¹ Geographically, Brazil is split into 5 regions of 26 states and 1 federal district (*Appendix I*) with significant cultural differences. As a whole, Brazil has recently seen a period of economic growth, especially within the last decade. The Brazilian government recorded a GDP of 1.869 trillion USD in 2018¹⁹² and is currently regarded as the ninth largest economy in the world. As of 2019, Brazil invests about 9.1% of its GDP into financing its healthcare system.¹⁹³ This growth is linked to advancements in income distribution and the breaking down of social inequalities and poverty barriers.

A. Health in Demographics

1. Population Demographics

Brazil hosts over 200 million people within its borders. The country ranks sixth in the world on population density, with a population density of about 24.66 people/square kilometer.¹⁹⁴ Brazilians are categorized by ethnicity and race through skin colour on the government's self-reported census. Its census indicates about 5 main ethnic groups: white, mulatto, black, Asian, and indigenous. Results reported about 48% of Brazilians are white (92 million), 44% are mixed race or mulatto (83 million), 7% are black (13 million), 0.50% are Asian (1.1 million), and 0.25% are indigenous (536,000).¹⁹⁵

The vast majority of people live by the Atlantic coast, on the east side of the country, with 86.8% of the total population living in urban areas.¹⁹⁶ The cities with the biggest population hubs are in

¹⁹¹ "Brazil Population 2019 (Demographics, Maps, Graphs)" 2019

¹⁹² "Brazil - Healthcare | Export.Gov."

¹⁹³ "Brazil - Healthcare | Export.Gov."

¹⁹⁴ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

¹⁹⁵ "Brazil Population 2019 (Demographics, Maps, Graphs)" 2019

¹⁹⁶ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

the southeast: São Paulo, Brasília, and Rio de Janeiro. The Central Intelligence Agency predicts the urbanization rate for 2015-2020 is 1.05% annual rate of change and its population rate is 0.71%.¹⁹⁷ Brazil's fertility rate has significantly decreased since the 1960s and is a major factor in its slowed population rate.

2. Demographics Indicator Rates

In 2018, the birth rate was 13.9 births/1,000 population, the death rate was 6.7 deaths/1,000 population, and the net migration rate was -.01 migrant(s)/1,000 population.¹⁹⁸ The CIA gathered life expectancy at birth to be 70.7 years for men and 78 years for women, with the present-day median average age of a Brazilian is about 32.4 years old.¹⁹⁹

Brazil's age structure contains the largest density at 43.86% between 25-54 years, followed by 21.89% between 0-14 years and 16.29% between 15-24 years. Its older populations are the smallest, with 9.35% between 55-64 years and only 8.61% at 65+ years. Its largest demographics are the youngest populations, with 0-24 years totalling about 38.18%²⁰⁰ and about 62% of Brazilians are 29 or younger.²⁰¹ By 2025, it is estimated that its current favourable age structure will begin to decrease and the geriatric population will increase,²⁰² and that by 2041, Brazilians will regularly live past 80 years.²⁰³

¹⁹⁷ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

¹⁹⁸ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

¹⁹⁹ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

²⁰⁰ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

²⁰¹ "Brazil Population 2019 (Demographics, Maps, Graphs)" 2019

²⁰² "South America :: Brazil — The World Factbook - Central Intelligence Agency."

²⁰³ "Brazil Population 2019 (Demographics, Maps, Graphs)" 2019

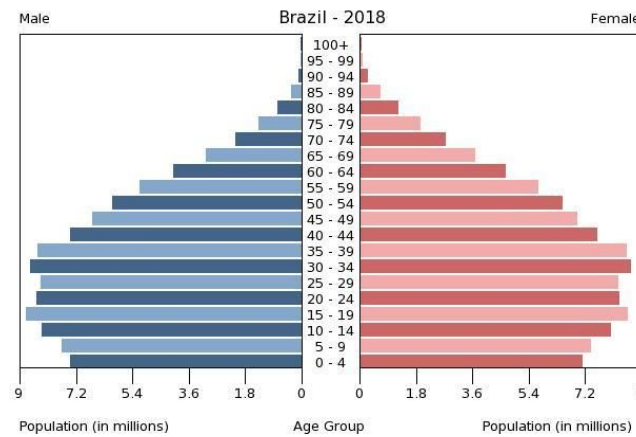


Figure 1: Age Structure, organized by age and sex, in 2018²⁰⁴

The combination of Brazil's substantial aging population, decreasing population growth rate, and future estimations of longer life expectancies lead to worries that the growth of the younger generations will heavily impact pensions, healthcare, and resources as they age into a large senior population. Overall, the continuation of the trend of the slowing growth rate is expected to result in a peak of 214 million inhabitants by 2020, and hit a plateau by 2050, in which it will then stagnate and begin decreasing.

II. Healthcare System & Finances

Brazil's unprecedented reduction of poverty and inequalities across its economy was a massive movement for improvements in healthcare. Major programs were rolled out, such as the universal healthcare system, income transfer programs that were geared towards families, and enhancements for the living conditions of Brazil's poorest people.

A. Universal Health System (*Sistema Único de Saúde, SUS*)

1. SUS History and Establishment

After Brazil's military dictatorship fell in 1985, more than half of Brazilians had no health coverage or access to health facilities. Healthcare was only available to those who participated and paid in social security programs, which was not widespread among the relatively poor population. In 1988,

²⁰⁴ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

the Brazilian Constitution outlined the rights and freedoms of healthcare for Brazilians and guaranteed the principles of equal access to health,²⁰⁵ and the *Sistema Único de Saúde* (SUS) was created. Known as Brazil's universal healthcare system, the SUS was established and has grown into an established public health system, drastically improving life for Brazilians, especially those in the poorest sector of the population. It operates as a regionalized and multi-level network, overseen in collaboration by the federal, state, and municipal governments.

2. SUS Decentralized Operations and Finances

The SUS aims for decentralized government management as an accountability measure, resulting in highly complex finances that flow from both higher government levels to the local levels. With decentralization, the federal government's contribution to SUS has declined since the 1980s but it is still the largest funder of the program, financing about 50% of the program.²⁰⁶ The federal government provides approximately 6.5% of its gross tax revenues through the Ministry of Health's budget of "Public Health Services and Actions." Through this budget, 67% finances the SUS's primary, secondary, and tertiary care actions; the remaining 33% cover the SUS assets, including the development of facilities, pharmaceutical transfers, medical equipment, HR capacity, etc. The state and municipal governments split the last 50% equally, each contributing about 25% of the SUS, and respectively providing about 12% and 15% of their gross tax revenues.²⁰⁷

The SUS also looks to provide avenues for community participation and integrated care. By itself, the SUS provides over 75% of Brazilians with health coverage and protections, encompassing coverage for prenatal care and vaccinations as almost universal.²⁰⁸ The SUS offers services without any user fees, copayments, or need to contribute financially to any program (other than the People's

²⁰⁵ "Presidência Da República" 1990

²⁰⁶ Rajkumar et al. 2014

²⁰⁷ Rajkumar et al. 2014

²⁰⁸ "Regional Core Health Data Initiative: Brazil." Pan American Health Organization, and World Health Organization. 2012

Pharmacy Program for copayments).²⁰⁹ The SUS covers services to those on private health plans as well.

3. SUS Primary Care-based Evolution & Strategies

Throughout the years, the SUS has evolved into branches and programs were rolled out as the government tried to pinpoint health deficiencies. In 1994, the Community Health Worker Program was introduced and marked the shift towards the Primary Care Strategy, which focuses on basic care and emphasizes care for the poor. After a few years, the Ministry of Health created the *Programa Saúde da Família* (PSF), or the Family Health Strategy, out of the Primary Care Strategy. This program encapsulated the need to integrate families as a single unit into the Brazilian healthcare and aimed to provide a more holistic care for entire families. As these developments of the SUS pushed for more primary care emphasis, the government enhanced its geographic coverage by establishing family health teams in 1994. These teams were made up of a doctor, a nurse, and a community health agent, and a team was assigned for every 800 to 1,000 registered family units.²¹⁰ Through this new outreach of the PSF, over 100 million Brazilians are covered today. The PCS and PSF allowed for Brazil to transition from a hospital-heavy system to preventive primary care, and shortly after their integration, the Results-Based Financing (RBF) system was adopted in 1996, in which management was transferred from the federal to municipal governments to improve geographically-defined care and decentralization sought to promote regional healthcare in efficiency and accountability.²¹¹

B. Public & Private Sector

Despite the SUS' far reach as the established universal healthcare, it does struggle by implementing higher quality services through sole government funding. Before the SUS, Brazilian healthcare was highly privatized and remains this way as the government still provides substantial

²⁰⁹ Rajkumar et al. 2014

²¹⁰ Cashin and Chi 2011

²¹¹ Rajkumar et al. 2014

funds for the private sector. The private health insurance sector is huge and expanding as over 1,500 private health insurance providers are part of the Supplementary Health System, with about 63% of contractors providing private health plans and Brazilian employees viewing these as important benefits in their job searches.²¹² The SHS directly covers almost 25% of the population through these corporate plans, many of which are based out of free public facilities but include tertiary benefits.²¹³

There are around 211,100,00 Brazilian companies registered in the health and social services sector in Brazil, which has been growing quickly since 2010 (135,850,000 companies registered).²¹⁴ A big portion of these companies are private hospital groups, which are limited regionally, and as such there is no national hospital group. However, private hospitals still largely dominate their geographic constraints. Out of around 6,161 hospitals in Brazil, about 70% of them are privately-owned.²¹⁵

III. Health System Distribution: Facilities & Workforce

A. Present State

Across Latin America, Brazil is the leader in healthcare infrastructure, numbering 6,400 hospitals (totalling 4905,000 beds) and 70,000 drug stores.²¹⁶ The average number of beds and operating rooms per hospital was relatively low: 24 and 2, respectively.²¹⁷ Outside of these main avenues, there are about 96,000 healthcare supplementary services.²¹⁸ From 1990 to 2009, primary care facilities have increased from 2.2 per 10,000 residents to 3.6 per 10,000. In the same 20 years, the number of primary care consultations per person has increased by 70%. In 2019, there are approximately 513,454 physicians in the country, out of which there about 212,390 are female practicing doctors.²¹⁹ This makes up about 2.18 medical doctors per 1,000 people. Other medical

²¹² Rajkumar et al. 2014

²¹³ Rajkumar et al. 2014

²¹⁴ Pasquali 2019

²¹⁵ "Brazil - Healthcare | Export.Gov."

²¹⁶ "Brazil - Healthcare | Export.Gov."

²¹⁷ Pasquali 2019

²¹⁸ "Brazil - Healthcare | Export.Gov."

²¹⁹ Pasquali 2019

providers include a total of 144,000 dentists, 5,500 plastic surgeons, and about 3.12 million health sector employees.²²⁰

B. Brazil's HR Development in the Healthcare Workforce

In recent decades Brazil has made efforts to expand its human resources capacity to meet the growing need of the SUS. Its challenges are the high turnover among health professionals, inadequate geographic distribution of providers and infrastructure, overspecialization and training, and resource management.²²¹ To front these obstacles, the government began offering a higher number of positions in training programs of medicine (37.5% increase), dentistry (33.5% increase), and nursing (37.5% increase). On top of this expansion, formal job positions increased 37.2% for nurses and 16.5% for nurses. Although inequalities of distribution among health professionals continue to persist, these developments have made progress towards geographic equity. From 2006 to 2009, 57.5% of physicians in the Southeast region and 3.9% of physicians in the North balanced out to 51.8% and 7.8% respectively. These efforts have not only been limited to physicians. Between 2006 and 2010, the Ministry of Health implemented several programs that embellished worker participation and security in the healthcare industry, drawing in more non-medical practicing workers to professionally manage health institutions.

IV. Environmental & Human Security in Health

A. Clean Water & Sewage Access

Through the Brazilian government's improvements in SUS and other federal initiatives, sanitation standards have significantly increased across the country. In 2008, all municipalities were connected to a water supply system and over 55% were now being serviced by a sewage system. This allowed for 92.8% of the urban population to access potable water, which promoted clean water and

²²⁰ Pasquali 2019

²²¹ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

decreased hygiene-related disease.²²² About 83% of the population is now using basic sanitation services, 1% is using limited sanitation services, 14% is using unimproved sanitation services, and 2% are still practising open defecation.²²³ However, rural areas are significantly still disadvantaged: only 24.2% had access to a sewage system and only 31.5% had adequate drinking water. Even then, 32% of the sewage undergoes no treatment before being released directly into freshwater sources.²²⁴ The continued malpractice of sanitation methods contributes to the existence of hygiene-related diseases such as dengue fever, diarrhea, zika, parasites, cholera, and leptospirosis. In 2018, nearly 35% of Brazilian cities were hit by a serious onset of these hygiene-related diseases,²²⁵ proving that the huge challenge of increasing sanitation standards is needed in order to offset these outbreaks. Brazil is currently planning to invest more federal and state resources in improving infrastructure related to sanitation and sewage in the efforts to reduce contamination and therefore decrease healthcare epidemics and related costs in the future.²²⁶

V. Health Challenges On Different Groups

A. Maternal & Pediatric

Maternal and pediatric care in Brazil has been a huge focus in the past three decades. Although progress remains difficult to measure due to time trends warped by recent improvements in vital statistics compared to prior models, evidence points to a remarkable decrease in maternal mortality ratios within the past 30 years.²²⁷ In the 1980s and 1990s, infant mortality rates have declined by 5.5% per year and from 2000 to present, they have declined by 4.4% per year. Between 1990 and 2007, the leading causes of maternal death were specifically targeted and reduced significantly, including

²²² "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²²³ "Brazil - Mortality Rates & Indicators," Child Mortality (United Nations Inter-agency Group for Child Mortality Estimation, 2019)

²²⁴ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²²⁵ Calabral, "Lack of Sewage and Sanitation Services Spread Disease in Brazil," CGTN America, October 10, 2018

²²⁶ Calabral, "Lack of Sewage and Sanitation Services Spread Disease in Brazil"

²²⁷ Victora et al. 2011

hypertension (62.8% reduction), abortion (79.5% reduction), hemorrhage (58.4% reduction), and circulatory diseases relating to pregnancy and childbirth (50.7% reduction).²²⁸

In 2018, the fertility rate was 1/75 children born/woman, the maternal mortality rate was 60 deaths/100,000 live births (2017) and a total mortality rate of 16.9 deaths/1,000 live births.²²⁹ These lowered rates are mainly due to huge federal pushes for socioeconomic and demographic progress, investing in women's education, the SUS and PSF, interventions outside the health sector (involving the water sanitation and sewage implementation), and educational programs aimed to improve child and family health.²³⁰ There are still many issues regarding maternal care involving overmedicalization at childbirth, illegal abortions, and a high rate of preterm deliveries. The high rate of cesarean delivery at 55%²³¹ is another concern, particularly in well-developed areas.²³²

B. Youth: Infants & Under-Five Children

In the past 30 years, there has been a drastic overhaul of healthcare and prevention tactics targeting the youth, especially among infants and younger children. From 1992 to 2007, specific causes addressed in the overhaul included perinatal issues (decreased by 47%), respiratory infections (decreased by 82%), and diarrhoea (decreased by 92%).²³³ This has led to a significant decrease in infant mortality (*Figure 2*).²³⁴ From the highest infant mortality rate of 146.06 deaths per 1000 live births, the rate has fallen over 50% to 52.54 deaths per 1000 births, and present estimates from 2019 indicate 12.82 deaths per 1000 births.²³⁵ Similarly, in 1990, the under-five mortality rate was 63.1 deaths per 1,000 live births, and in 2018, it declined to 14.8 deaths per 1,000 live births.²³⁶ As a result,

²²⁸ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²²⁹ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

²³⁰ Victora et al. 2011

²³¹ "Brazil - Mortality Rates & Indicators," UN IGME, 2019

²³² Victora et al. 2011

²³³ Victora et al. 2011

²³⁴ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²³⁵ "Brazil - Mortality Rates & Indicators," UN IGME, 2019

²³⁶ "Brazil - Mortality Rates & Indicators," UN IGME, 2019

Brazil actually met the United Nations' Millennium Development Goal 4 (Reduce Child Mortality - a two-thirds reduction in mortality rate of children younger than 5 years by 2015).²³⁷

Continued challenges exist among the ethnic and poverty disparities, in which there are higher mortality rates among children from Afro-Brazilian/indigenous descent, as well as the rate of death for children from poor families is double the death rate of children from richer families.²³⁸ Although it exists at a low rate, congenital malformations have also remained a steady problem since 1990, affecting about 4 deaths per 1000 births.²³⁹

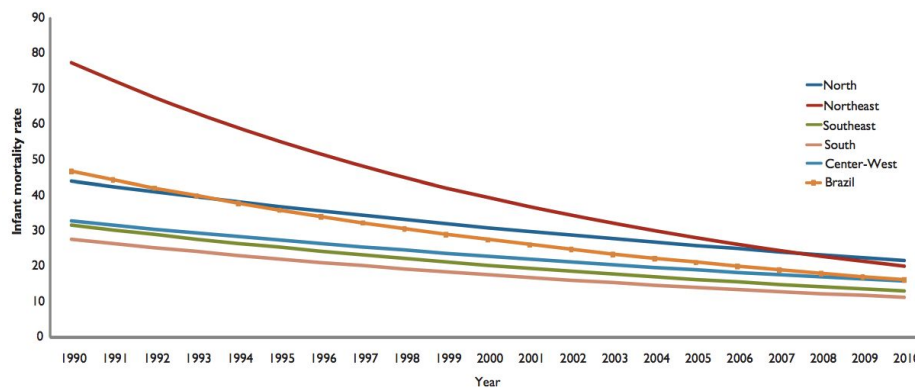


Figure 2: Evolution of the infant mortality rate (per 1,000 live births), nationwide and by region, Brazil, 1990–2010²⁴⁰

C. Racial and Ethnic Groups

Brazil hosts a large mixed population that faces disparities among health risks and access.²⁴¹ Examples include how indigenous populations notoriously face higher rates of mortality than the national average, particularly the doubled indigenous infant mortality rate of 17.1 deaths per 1,000 births. Efforts have been made to reduce this inequality, leading to a substantial decline of 43.8% from 74.6 deaths per 1,000 births in 2000 to 41.9 deaths per 1,000 births in 2009.²⁴² Healthcare access

²³⁷ "Fact Sheet: The MDGs in Brazil," Konrad Adenauer Stiftung (MDG Country Progress, n.d.)

²³⁸ "Fact Sheet: The MDGs in Brazil," Konrad Adenauer Stiftung

²³⁹ Victora et al. 2011

²⁴⁰ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁴¹ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁴² "Regional Core Health Data Initiative: Brazil." PAHO, 2012

among pregnant women also differs: in 2010, 75.2% of white women had more than six prenatal visits compared to 53.8% of black women, 48.3% of brown women, and 18.9% of indigenous women.²⁴³

VI. Morbidity

A. Communicable Diseases

1. Vector-borne Diseases

Malaria

Malaria is an ongoing problem in Brazil. The average number of cases between 2000-2012 was 530,000 cases across nine states, predominantly caused by the *Plasmodium vivax* agent (accounting for 80% of all cases).²⁴⁴ Malaria is highly connected with the increasing internal migrations and short-term rural settlements across Brazil, especially in the Amazon region, which is home to about 99% of all recorded cases.²⁴⁵ Although the disease has been significantly reduced in recent years, there have been serious fluctuations throughout the 2000s (*Appendix 2*), causing a push of renewed efforts for control that led to a decrease from 600,000 cases in 2005 to less than 143,000 cases in 2014.²⁴⁶ In 2014-2016, malaria cases remained relatively steady but a spike in 2017 at 194,000 cases spotlights the weaknesses of the long-term effectiveness of the control program.²⁴⁷

Dengue

Reintroduced to Brazil in the early 1980s, the first Dengue mosquito virus epidemic broke in 2002 with 794,219 cases²⁴⁸ and 57 deaths reported due to the DEN-3 strain, and Rio de Janeiro was the most affected state hit by the epidemic.²⁴⁹ The DEN-3 strain became the predominant circulating

²⁴³ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁴⁴ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁴⁵ Carlos et al, (2019) A comprehensive analysis of malaria transmission in Brazil, *Pathogens and Global Health*, 113:1, 1-13.

²⁴⁶ Carlos et al, (2019) A comprehensive analysis of malaria transmission in Brazil, *Pathogens and Global Health*, 113:1, 1-13.

²⁴⁷ Carlos et al, (2019) A comprehensive analysis of malaria transmission in Brazil, *Pathogens and Global Health*, 113:1, 1-13.

²⁴⁸ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁴⁹ "2008 - Dengue/dengue haemorrhagic fever in Brazil," World Health Organization (WHO - Disease Outbreak News, April 10, 2008)

serotype throughout the 2000s, and in 2008, a second epidemic broke out with 806,036²⁵⁰ cases of dengue and 48 deaths reported, and Rio de Janeiro was at the center of it once again.²⁵¹ This time, the DEN-2 strain also contributed to the epidemic and led to a rise in serious dengue fever cases spreading among children, resulting in 50% of the total deaths to be of children 13 years old and younger.²⁵² In 2010, there were 1,029,136 cases and 656 deaths, making it the worst year of dengue transmission.²⁵³

Dengue mosquito virus now spreads across all Brazil with all serotypes in present circulation.²⁵⁴ Of the 14 million dengue cases reported in South America, Brazil accounts for 55% of those.²⁵⁵ Dengue remains to be a fluctuating epidemic across Brazil, with reported cases and fatalities oscillating between both seasons and years (*Appendix 3*). Causes are narrowed down to most likely be affected by the rapidly changing climate and interchanging strains of focus.

2. Sexually-Transmitted Infections: HIV/AIDs

Brazil reported the first cases of AIDS in the 1980s and is still existing today. Currently, about 900,000 people are living with HIV in Brazil and the HIV epidemic is presently classified as stable on the national level with a population-wide prevalence rate of infection at about 0.5% since 2004 for people aged 15-49²⁵⁶ (0.8% among men and 0.4% among women).²⁵⁷ Prevalence of HIV varies across different regions as higher presences are found in the south and southeastern states, and also concentrates among men (especially men sexually involved with other men, at 33,000 newly infected mrn versus 15,000 women newly infected).²⁵⁸ The number of AIDS-concerned deaths has been steady since 2010, at about 15,000 deaths, but there has been a recent increase of new HIV infections, from

²⁵⁰ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁵¹ "2002 - Dengue/Dengue Haemorrhagic Fever in Brazil," World Health Organization (WHO - Disease Outbreak News, May 8, 2002)

²⁵² "2002 - Dengue/Dengue Haemorrhagic Fever in Brazil," World Health Organization (WHO - Disease Outbreak News, May 8, 2002)

²⁵³ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁵⁴ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁵⁵ Nunes, et al. "30 years of fatal dengue cases in Brazil: a review." BMC Public Health 19, 329 (2019)

²⁵⁶ "HIV and AIDS in Brazil," Avert, October 1, 2019

²⁵⁷ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁵⁸ "HIV and AIDS in Brazil," Avert

44,000 to 53,000 infections since 2010.²⁵⁹ In 2018, the HIV incidence of new HIV infections among the whole population was 0.26 per 1000 uninfected.²⁶⁰ Highest rates of infections exist among people aged 30-49, and within the last 10 years, new infections have tripled for those aged 15-19 and doubled for those aged 20-24.²⁶¹ This is largely due to the increasing national and international migration between rural and urban settings, as well as social boom surrounding sex between men in more active approaches,²⁶² and Brazil has been working hard to address these increases.

Since the 1980s, Brazil has been a leader in responding to the HIV crisis. In the beginning of the epidemic, Brazil fought pharmaceutical companies by producing its own generic versions of otherwise high-priced drugs, leading to antiretroviral drug prices lowering worldwide.²⁶³ Since then, SUS is known to buy and distribute more condoms than any other national healthcare system, and Brazil was the first country to provide free self-testing and treatment kits to all people, regardless of the stage of their HIV infection.²⁶⁴ As a result, Brazil has experienced increases of 85% diagnosis of all Brazilians carrying HIV, of which 66% are on HIV treatment, and 62% of whom are virally suppressed.²⁶⁵ Brazil aims to hit 90% on all three aforementioned indicators (awareness, on treatment, and viral suppression) and is close to achieving the 90-90-90 targets for all ages (*Appendix 4*).²⁶⁶

3. Tuberculosis

Brazil is listed within the top 30 high TB-burden and TB/HIV burden countries list by the World Health Organization in 2019.²⁶⁷ In 2018, the total TB incidences was 95,000 people, at an incidence rate of 45 cases per 100,000 population (about 30% lower than its rate in 1990²⁶⁸) and 5.2

²⁵⁹ "Brazil," UNAIDS, October 30, 2019

²⁶⁰ "Brazil," UNAIDS, October 30, 2019

²⁶¹ "Brazil," UNAIDS, October 30, 2019

²⁶² "Brazil," UNAIDS, October 30, 2019

²⁶³ "HIV and AIDS in Brazil," Avert

²⁶⁴ "HIV and AIDS in Brazil," Avert

²⁶⁵ "HIV and AIDS in Brazil," Avert

²⁶⁶ "HIV and AIDS in Brazil," Avert

²⁶⁷ "Global Tuberculosis Report: 2019," Global Tuberculosis Report: 2019 (France: World Health Organization, 2019)

²⁶⁸ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

HIV-positive TB incidence cases per 100,000 population (*Appendix 5*).²⁶⁹ Though the national rate is considered low overall, the rates per state differ greatly as Rio de Janeiro has about 69.7 cases per 100,000 population and Amazonas has about 65.7 cases per 100,000 population.²⁷⁰ The total new and relapse case notifications for TB was 82,409 cases out of 90,527 total cases notified, and the largest groups affected were the ones with known HIV status (79%) and men (68%).²⁷¹ In the early 2010s, tuberculosis was the third leading cause of death among infectious diseases and the leading cause of death among people with AIDS.²⁷²

B. Noncommunicable Diseases

1. Chronic Diseases

Since Brazil began SUS over 30 years ago, its rate of deaths regarding acute diseases has significantly decreased, but its chronic, noncommunicable diseases has become a major health problem for poor and other vulnerable groups. Urban growth as well as demographic and nutritional transitions within the past three decades have played a role in the health scene.²⁷³ In 1996, noncommunicable deaths made up 511,380 deaths out of 896,777 deaths.²⁷⁴ In 2015, noncommunicable diseases made up 871,347 out of 1,260,524 total deaths; it was by far the biggest category of fatal diseases at 69%²⁷⁵ and after correcting for the government's mismanaged underreporting, the percentage rises even higher to 72.4%.²⁷⁶ The second biggest was communicable, maternal, perinatal, and nutritional conditions at 167,600 deaths. The biggest killer of noncommunicable diseases were the diseases of the circulatory

²⁶⁹ "TB Burden Estimates and Country-Reported TB Data: Brazil," World Health Organization (World Health Organization)

²⁷⁰ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁷¹ "TB Burden Estimates and Country-Reported TB Data: Brazil," World Health Organization

²⁷² "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁷³ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁷⁴ "PAHO Mortality - Indicators by Country and Region - Leading Causes of Death," PLISA Health Information Platform for the Americas (PAHO | WHO, February 20, 2018)

²⁷⁵ "PAHO Mortality - Indicators by Country and Region - Leading Causes of Death," PLISA Health Information Platform for the Americas, 2018

²⁷⁶ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

system, reaching 349,230 deaths in 2015,²⁷⁷ but its rate of impact has gone down in the past 30 years in both men and women alike across Brazil, while other diseases have become more widespread, including diabetes and cancer fatalities.²⁷⁸

2. Nutritional Diseases

Brazil has a long history of malnutrition among its population, especially the youth, but after decades-long hard work by the government and SUS-implemented initiatives to remedy this, malnutrition officially dropped from the top ten risk factors that drive the most death and disability in the period from 2007-2017, decreasing by about 36.9% change in its prevalence ranking across all ages.²⁷⁹ Among child malnutrition, there has been a reduction from 13% in 1996 to 7% in 2006.²⁸⁰ However, there has been a surge of obesity among Brazilians, as the growth between 1975 and 2009 went from 2.8% to 12.5% in men and 7.8% to 16.9% in women.²⁸¹ As of 2018, 18.7% of men and 20.7% of women were considered obese, as well as 19.8% of the total Brazilian population aged 18 years and older.²⁸² There is a higher presence of obesity among the uneducated populations²⁸³ and the higher-income strata of the population, separately measured, although the gap between the poor and the rich has shrunk in the obesity divide.²⁸⁴

VII. Mortality

In 2018, Brazil had a crude death rate of 6.7 deaths per 1,000 people, ranking 135th in comparison to the world.²⁸⁵ This is a stark difference to its crude death rate from 1960, in which it was 13.35 deaths per 1,000 people.²⁸⁶ Brazil reached its lowest crude death rate in 2007, at 6.016 deaths per

²⁷⁷ "PAHO Mortality - Indicators by Country and Region - Leading Causes of Death," PLISA Health Information Platform for the Americas, 2018

²⁷⁸ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁷⁹ "Brazil," Institute for Health Metrics and Evaluation, September 16

²⁸⁰ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁸¹ "VIGITEL BRASIL 2018," VIGITEL BRASIL 2018 § (2019), pp45

²⁸² "VIGITEL BRASIL 2018," pp45

²⁸³ "VIGITEL BRASIL 2018," pp45

²⁸⁴ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁸⁵ "South America :: Brazil — The World Factbook - Central Intelligence Agency."

²⁸⁶ "Death Rate, Crude (per 1,000 People) - Brazil," The World Bank - Data (UNPD, 2017)

1,000 people, before a slight incline up to present day.²⁸⁷ As of 2017 (compared to 2007), the leading five causes of deaths were ischemic heart disease (22.3% growth from 2007), stroke (17.5% growth), lower respiratory infections (44.2%), Alzheimer's disease (55.5%), and chronic obstructive pulmonary diseases (23.8% growth).²⁸⁸

Throughout the last decade (since 2007), there have been major changes in mortality patterns (*Appendix 6*). The top three causes remained the same (as well as COPD), but Alzheimer's disease grew 55.5% and into the top five ranking.²⁸⁹ Interpersonal violence dropped 10.8%,²⁹⁰ likely due to educative and protective measures taken by SUS and NGOs to raise awareness and recognition of IPV, especially among domestic partners. Diabetes has risen 37.8% as well as chronic kidney disease (44.1%) and cirrhosis (24.6%),²⁹¹ all likely in connection with the rise in obesity levels among the population.

From 1996 to 2010, the overall proportion of deaths due to infectious diseases has declined from 5.8% to 4.3% and there was another significant decrease from 15.1% to 7.9% in the proportion of ill-defined causes.²⁹² These reductions reflect the improvement in Brazil's initiatives towards communicable diseases and mortality information records.²⁹³

VIII. Legislation

A. Accountability and Community Participation

As a response to social and healthcare challenges across different groups and entities within Brazil, the SUS' legal framework necessitates multiplex management systems. It was created to be managed through several levels of government (federal, 27 states, and 5,560 municipal).²⁹⁴ The system

²⁸⁷ "Death Rate, Crude (per 1,000 People) - Brazil," The World Bank - Data (UNPD, 2017)

²⁸⁸ "Brazil," Institute for Health Metrics and Evaluation, September 16

²⁸⁹ "Brazil," Institute for Health Metrics and Evaluation, September 16

²⁹⁰ "Brazil," Institute for Health Metrics and Evaluation, September 16

²⁹¹ "Brazil," Institute for Health Metrics and Evaluation, September 16

²⁹² "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁹³ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

²⁹⁴ "Regional Core Health Data Initiative: Brazil." PAHO, 2012

is meant to be shared in responsibilities among the three levels for decentralization and accountability, and part of that responsibility is meant to invoke community participation. The Organic Health Act (Law 8,142 of 1990) proposes health councils and health conferences as a means of social inclusion of Brazilians in their government. These councils are present in almost every municipality and their conferences occur every four years, tasked into defining healthcare initiatives and monitoring their progress.²⁹⁵

B. Support Towards Indigenous Peoples

As a public health system, SUS is meant for all Brazilians of all races. However, due to long-inherited and standing systemic inequalities, indigenous are often neglected at higher rates than lighter-skinned counterparts and experience greater health challenges.²⁹⁶

Stemming from the Organic Health Act, Brazil established the *Política Nacional de Atenção à Saúde das Populações Indígenas (PNASPI)*, otherwise known as the National Policy for the Care of Indigenous Peoples, in 1999 as a strategy to guarantee access to healthcare for the indigenous population.²⁹⁷ PNASPI has several directives, almost all of them based on inclusion through better organization, preparation, education, communication, and control through social and cultural awareness of the indigenous populations.²⁹⁸ The implementation of PNASPI and growing financial funds sought to bridge the lack of healthcare impacting indigenous groups.²⁹⁹

Although there has been some progress in that present day healthcare is more accessible than previous decades, true long-term development has had little impact on health indicators due to the intrinsic historical inequalities faced by indigeneous populations.³⁰⁰ There have been persistent

²⁹⁵ “Regional Core Health Data Initiative: Brazil.” PAHO, 2012

²⁹⁶ Anapaula Martins Mendes et al., “O Desafio Da Atenção Primária Na Saúde Indígena No Brasil,” *Rev Panam Salud Publica*;42, oct. 2018 (Pan American Journal of Public Health, October 1, 2018)

²⁹⁷ Mendes et al., “O Desafio Da Atenção Primária Na Saúde Indígena No Brasil,” 2018

²⁹⁸ “POLÍTICA NACIONAL DE ATENÇÃO À SAÚDE DOS POVOS INDÍGENAS,” *POLÍTICA NACIONAL DE ATENÇÃO À SAÚDE DOS POVOS INDÍGENAS* (Fundação Nacional de Saúde | Ministério da Saúde, 2002),

²⁹⁹ Mendes et al., “O Desafio Da Atenção Primária Na Saúde Indígena No Brasil,” 2018

³⁰⁰ Mendes et al., “O Desafio Da Atenção Primária Na Saúde Indígena No Brasil,” 2018

discontinuities, shortages and rapid turnovers of healthcare workers in rural and indigenous areas, as well as linguistic and cultural blocks that mischaracterize diagnoses or prevent intercultural dialogues from occurring effectively in indigenous home regions.³⁰¹ As such, care for indigenous people is prioritized as relocation methods for patients to travel away for treatment, often resulting in high costs and patient resistance to seeking help.³⁰²

IX. Conclusion: Synthesis and Prospects

Since its freedom from the long-kept dictatorship, Brazil has made substantial improvements to its healthcare systems and addressing its inequalities. Brazil's progress is largely due to political, economic, and social changes that have significantly contributed to creating an inclusive state for all Brazilians. Since its establishment as free healthcare for its citizens, SUS has laid the foundations for a health system that covers virtually all Brazilians and seeks to improve the quality of life of its people, comprising of methods of gradually-increasing public spending on health and allocation of federal and state resources for its poorest and most rural segments.

The past three decades have been a mix of challenges and renewed solutions. Obstacles endure in the need to address neglected diseases and demographic groups across the country, particularly the marked disparities between the white and black and indigenous populations, urban and rural areas, and women and men. The positive impacts of SUS and its related groups and policies (particularly PSF and PNASPI), as well as improved environmental and culturally-diverse standards, are unrivaled as Brazil has become a leader in many areas, including infrastructure and epidemic responsiveness. Brazil is continuously paving the road for better living conditions and reducing social inequality as the country engages in embracing care for all Brazilians.

³⁰¹ "POLÍTICA NACIONAL DE ATENÇÃO À SAÚDE DOS POVOS INDÍGENAS," POLÍTICA NACIONAL DE ATENÇÃO À SAÚDE DOS POVOS INDÍGENAS (Fundação Nacional de Saúde | Ministério da Saúde, 2002),

³⁰² Mendes et al., "O Desafio Da Atenção Primária Na Saúde Indígena No Brasil," 2018

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<https://portal.arquivos2.saude.gov.br/images/pdf/2019/julho/25/vigitel-brasil-2018.pdf>.

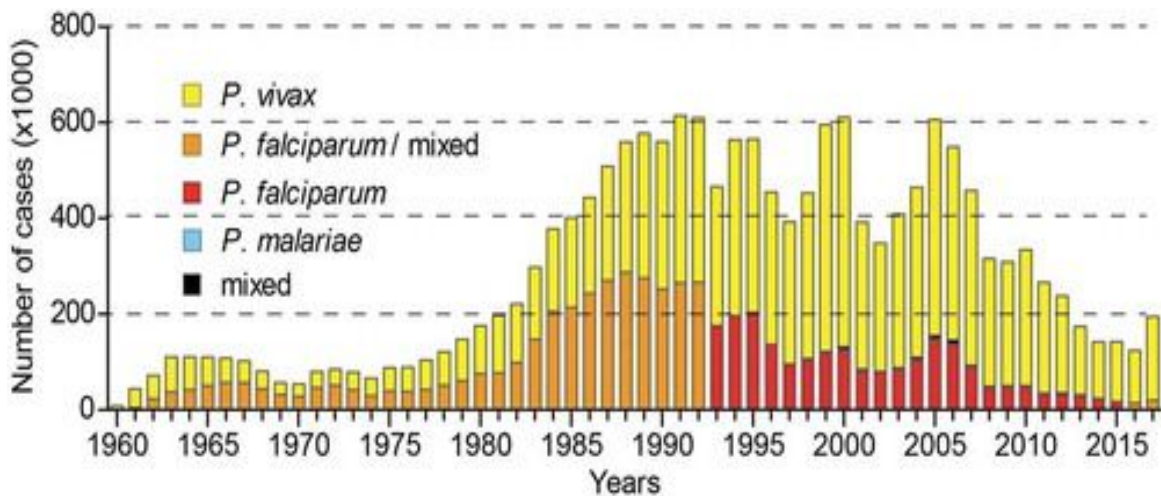
“2002 - Dengue/Dengue Haemorrhagic Fever in Brazil.” World Health Organization. WHO - Disease Outbreak News, May 8, 2002. https://www.who.int/csr/don/2002_05_08/en/.

Appendices

Appendix 1: Map of Brazil's Regions and States³⁰³



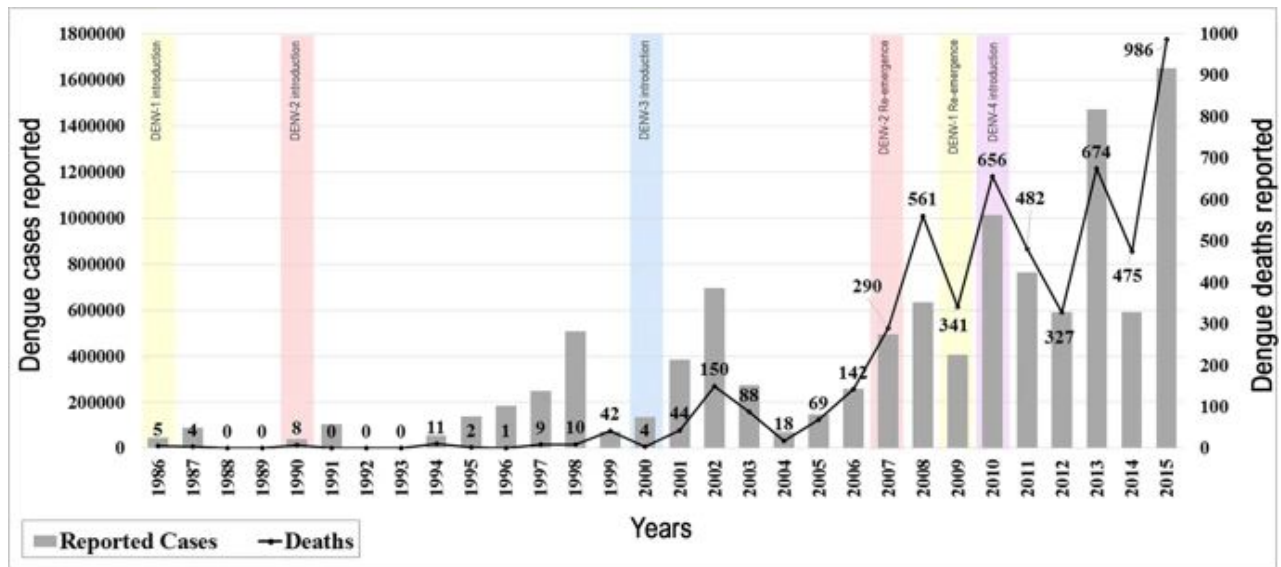
Appendix 2: Number of malaria cases in Brazil in almost 60 years (1960 and 2017)³⁰⁴



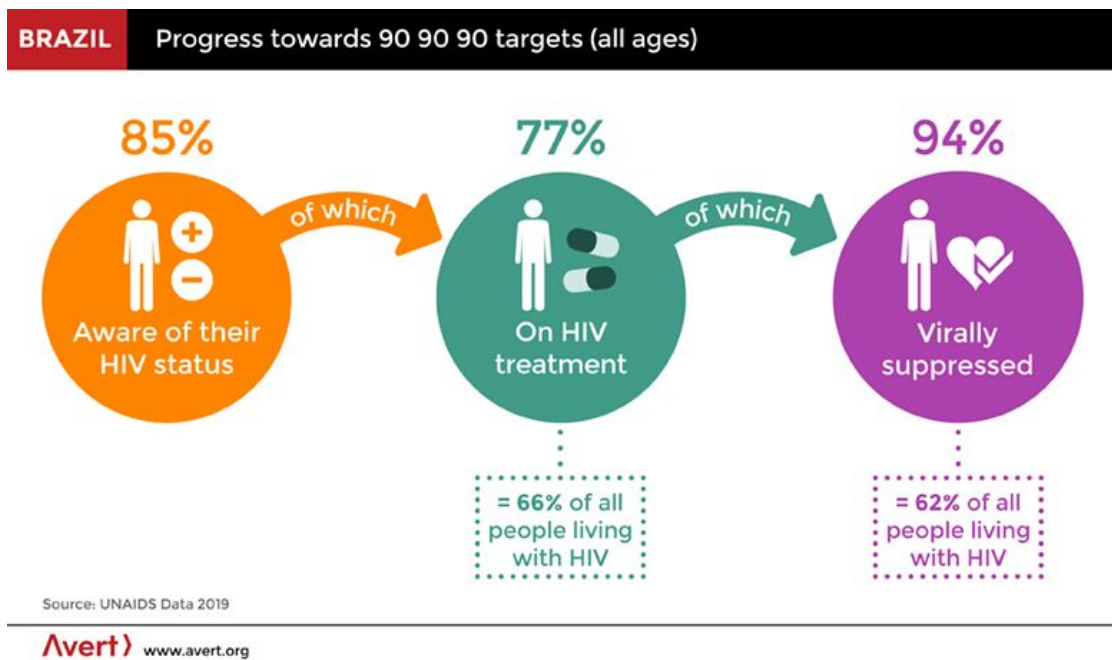
³⁰³ "Maps Of Brazil," Brazil Travel Northeast (SBI, n.d.)

³⁰⁴ Carlos et al, (2019) A comprehensive analysis of malaria transmission in Brazil, Pathogens and Global Health, 113:1, 1-13.

Appendix 3: Dengue cases and dengue fatal cases reported in Brazil in 30 years (1986 to 2015)³⁰⁵



Appendix 4: Progress towards 90-90-90 Targets (All Ages)³⁰⁶



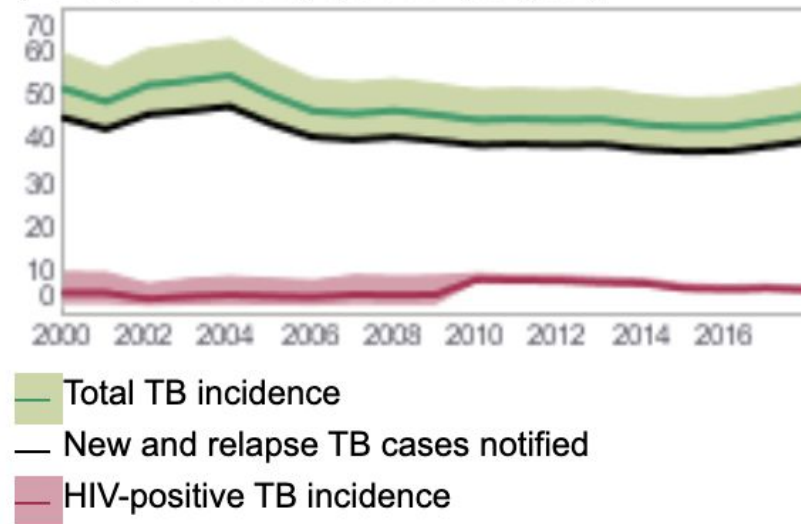
Appendix 5: TB Profile of Rates per 100,000 population per year³⁰⁷

³⁰⁵ "2008 - Dengue/dengue haemorrhagic fever in Brazil," World Health Organization (WHO - Disease Outbreak News, April 10, 2008)

³⁰⁶ "HIV and AIDS in Brazil," Avert

³⁰⁷ "TB Burden Estimates and Country-Reported TB Data: Brazil," World Health Organization

(Rate per 100 000 population per year)



Appendix 6: Top 10 causes of death in 2017 and percent change, 2007-2017, all ages, number³⁰⁸

| 2007 ranking | 2017 ranking | | % change 2007-2017 |
|----------------------------|--------------|--------------------------|--------------------|
| Ischemic heart disease 1 | 1 | Ischemic heart disease | 22.3% |
| Stroke 2 | 2 | Stroke | 17.5% |
| Lower respiratory infect 3 | 3 | Lower respiratory infect | 44.2% |
| Interpersonal violence 4 | 4 | Alzheimer's disease | 55.5% |
| COPD 5 | 5 | COPD | 23.8% |
| Alzheimer's disease 6 | 6 | Interpersonal violence | 10.8% |
| Road injuries 7 | 7 | Diabetes | 37.8% |
| Diabetes 8 | 8 | Road injuries | 2.5% |
| Neonatal disorders 9 | 9 | Cirrhosis | 24.6% |
| Cirrhosis 10 | 10 | Chronic kidney disease | 44.1% |
| Chronic kidney disease 12 | 14 | Neonatal disorders | -43.4% |

³⁰⁸ "Brazil," Institute for Health Metrics and Evaluation, September 16

A Comprehensive Analysis on the Healthcare Systems in Latin America:
The Andes Region Report

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IRG 378

Michael Mosser

8 December 2019

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Intro:

The countries of Peru, Ecuador, and Bolivia have undergone transformational political, economic, and health systems throughout their respective history. For Peru, its past military governments were ineffective in dealing with the social inequalities that were consuming the nation, along with an increasing terrorist movement. As a result, Peru returned to democracy in 1980 through the presidency of Alberto Fujimori. He helped overcome the terrorist presence and allow for economic progress to take place in the country. However, Fujimori's authoritarian practices forced him out of power. Since then, Peru has seen a return to democracy.

For Bolivia, it faced periodic military governance, hyperinflation, and a reliance on illicit drugs and narcotics to help boost the economy. Then, in 1985, "an elected civilian government introduced stern economic retrenchment, which led to political stability, economic recovery and success against the drugs trade."³⁰⁹

For Ecuador, the 1950's and 1960's were plagued with economic instability and an increase in terrorist movements. Then, in 1984, Ecuador went back to democracy. From 1984 to present-day 2019, Ecuador has been governed democratically.

Commonalities

Throughout the research conducted over the health systems of Peru, Ecuador, and Bolivia, some commonalities were revealed. For example, common themes between Peru, Ecuador, and Bolivia included but were not limited to the need to implement stronger policies and financing in the following areas of focus: education, income inequality, gender inclusion, accessibility, and health services. In Peru, the nation has gone through transformative economic activities. They have been able to drop their poverty rate substantially during the past decades but it is still high at about 30% with rural areas being

³⁰⁹ "History of Peru, Ecuador and Bolivia, 2005 CE." TimeMaps. Accessed November 4, 2019. <https://www.timemaps.com/history/peru-2005ad/>.

disproportionately more affected with their poverty rate at about 55%.³¹⁰ In addition, school enrollment for lower socioeconomic children is poor because of familial factors that force the children to temporarily stop their studies or drop out in order to work and support their families. This reflects the ongoing problems with education in Peru. This is a similar phenomenon occurring in Bolivia. For example, the quality of public education is considered poor in Bolivia. Also, access to education is unevenly available throughout the country and considered one of the most “unevenly distributed in Latin America, with girls and indigenous and rural children less likely to be literate or to complete primary school.” (Idib)² Similarly, Ecuador faces inequality issues that also impact the rural populations and indigenous communities the most. The government has increased its public spending to help combat issues of high poverty and income inequality affecting indigenous communities and the rural population. However, the efficiency and the implementation of the State’s plan has been questioned by critics because of factors such as a 25% rate of population living below poverty, 2016 recession, and lack of foreign investment.³¹¹

PERU

Summary:

The country of Peru has a healthcare system that is decentralized and is administered by five entities. These entities consist of “the Ministry of Health (MINSA), which provides health services for 60% of

³¹⁰ “Peru vs. Bolivia.” Peru vs. Bolivia - Country Comparison. Accessed December 7, 2019. <https://www.indexmundi.com/factbook/compare/peru.bolivia>.

³¹¹ “Peru vs. Ecuador.” Peru vs. Ecuador - Country Comparison. Accessed December 7, 2019. <https://www.indexmundi.com/factbook/compare/peru.ecuador>.

the population; *EsSalud*, which provides for 30% of the population; and the Armed Forces (FFAA), National Police (PNP), and the private sector together provide services to the remaining 10% (*Recursos humanos en salud al 2011*).”³¹²

The first major type of insurance is called Seguro Integral de Salud (SIS), it is mandated by the Peruvian Ministry of Health (Ministerio de Salud, or MINSA). While the second type of national insurance is called EsSalud, and is coverage given through employment for working families and individuals. The system in Peru consists of state and private providers of insurance and services that overlap in performance but also have little coordination. As a result, health workers are often seen working multiple jobs in various sectors. One may assume that the number of health workers should be decreasing, however, the overall count for health workers has been increasing on trend. There is “no significant difference in HRH densities with the exception of nursing, which has increased (9.7/10,000; *Recursos humanos en salud al 2011*).” (Ibid)² The “current national HRH density is 17.8/10,000 population.” (Ibid)⁴

The Peruvian government adopted the “Act No. 29,344 (Framework for Universal Health Insurance) in 2009 and the issuance of 23 legislative decrees in 2013, whose objectives include expanding insurance coverage for vulnerable populations; reducing fragmentation and segmentation of the health system; expanding investment, especially in infrastructure, with new financing mechanisms through public–private partnerships; formulating a new remuneration policy, with incentives based on geographic location and performance, among other criteria; and functionally reorganizing the Ministry of Health.”³¹³ This Act sought to fulfill the Peruvian government’s goal of providing universal healthcare for its population. As hopeful as this goal was, complete coverage of the Peruvian

³¹² “Peru.” World Health Organization. World Health Organization, March 27, 2012. <https://www.who.int/workforcealliance/countries/per/en/>.

³¹³ “Peru.” Health in the Americas 2017. Accessed December 5, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3232>.

population has not been attained. From inequitable distribution of facilities and doctors to poor healthcare services, universal coverage has not been reached.

The geographic distribution of health workers is, generally, inequitable. This is because Lima and coastal areas having the highest densities of health workers while other areas, such as “Piura (9.6), Lambayeque (10.7) and Loreto (10.8) having the lowest (*Recursos humanos en salud al 2011*).”³¹⁴

Overall, the SERUMS plan, aimed at redistributing health workers to remote areas, has been able to help mitigate some of the differences of densities that occurs in urban and rural areas. “The plan was developed with an accompanying technical guide containing a baseline, and review of good practices and procedures to implement a long-term retention policy based on intersectoral agreements. Other achievements include development of a national HRH observatory, and development and implementation of a national HRH strategic plan that is fully costed and integrated with a broader health plan.” (Ibid)⁶ The table below shows the slow progress of insurance coverage taking place in Peru during the eight-year time period between 2000-2008. The significance of this chart is that it set the foundation for the existing system that seeks to have universal health coverage for all of the Peruvian citizens.

³¹⁴ “Peru.” World Health Organization. World Health Organization, March 27, 2012. <https://www.who.int/workforcealliance/countries/per/en/>.

| | 2000 % | 2008 % |
|--|-----------|-----------|
| Población con protección social en salud | 32.33 | 42.0 |
| Población con EsSALUD | 19.7 | 20.0 |
| Población con SIS * | - | 18.0 |
| Población con otro tipo de seguro [‡] | 12.6 | 4.0 |
| Población sin protección social en salud | 67.7 | 58.0 |
| Población total | 100 | 100 |

“Table showing the percentage of the population that has insurance coverage. Basically, in 2008 48% of the population has some kind of social health coverage, compared with 32% in 2000. In 2008 20% and 18% of the population had either EsSalud or SIS insurance coverage, respectively. In 2008, 4% of the population had some other type of insurance and 58% of the population was not covered by any type of social insurance” (Peruvian Health System).³¹⁵

ECUADOR

Summary:

The country of Ecuador relies on ‘Ministerio de Salud Publica del Ecuador’ for the regulation and creation of public health policies and healthcare plans. This Ministry of Public Health was established in 2008 when a new constitution was written, its goal was to create 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.”³¹⁶ The Ministry of Health’s mission is to

³¹⁵ “Peruvian Health System.” Peruzo. Accessed November 2, 2019.
<http://www.peru-zo.com/2011/11/16/peruvian-health-system/>.

³¹⁶ Aldulaimi, Sommer, and Francisco E. Mora. “A Primary Care System to Improve Health Care Efficiency: Lessons from Ecuador.” *The Journal of the American Board of Family*

create and maintain public health system. It consists of three major sectors “first, a public system, then, 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, finally, a private system, which is expensive and is used mostly by the upper and middle-class population, representing about 3% of Ecuadorians.” (Ibid)⁸

However, with this new plan, the number of clinics and health professionals is heavily dependent on the density or number of people in the area. In addition, Indigenous families in Ecuador are more likely to grow up in poverty. This causes the families and children to have medical problems. Similarly, rates of chronic malnutrition are worse for indigenous children.³¹⁷ Another issue faced in this new system is IESS increasing the creation of private hospitals and clinics. As a result, the parts of the population are marginalized and do not have adequate access to healthcare services. Continuing, the effectiveness of private insurance is much greater than the national or public insurance. However, again, part of the population is marginalized because only the wealthy and elite can afford to obtain private insurance. The goal of the Ministry of Public Health is to provide medical services to its most vulnerable population, while they have fallen short on some aspects, the overall health system of Ecuador has improved since the new constitution was written in 2008.

BOLIVIA

Summary:

The healthcare system has heavily relied on funding by international organizations, such as the World Bank. However, in 2019, Bolivia launched a free Unified Health System (SUS in Spanish) to provide health coverage to previously uninsured Bolivians. Unified Health System or SUS had been a long proposition of President Evo Morales since his 2014 presidential campaign. Since the system is very

Medicine 30, no. 3 (2017): 380–83. <https://doi.org/10.3122/jabfm.2017.03.160304>.

³¹⁷ “Ecuador.” UNICEF, August 9, 2016. <https://www.unicef.org/infobycountry/ecuador.html>.

new, most of the healthcare distribution is still reliant on NGOs, as it has been for years. Health in Bolivia ranks very low among global key indicators. Therefore, “Bolivia attracts one of the highest volumes of aid per capita in South and Central America. A large proportion of official development assistance is administered to and through NGOs that are working towards improving health, supporting development, and reducing poverty within the nation. The majority of NGOs working in Bolivia receive international funding; few NGOs operate with domestic support. The greatest proportion of NGO projects were classified in the health and agriculture sectors; each comprising twenty-four per cent of the total NGO projects and together accounting for nearly half of all NGO projects.”³¹⁸

Therefore, much of healthcare services in Bolivia is dependent on aid and NGOs. The exact percentage of healthcare services carried out by the Bolivian government was hard to determine because lack of transparency or statistics by the Bolivian government. The data on the Bolivian government’s role in healthcare expenditures was not only limited but very outdated.

physical distribution of healthcare facilities throughout the country

In Peru, the Ministry of Health or MINSA has implanted mandates since 2015 the requires certain public hospitals, such as Hospital Regional and Hospital Antonio Lorena, which both are in Cuzco, to offer healthcare services regardless of insurance provider or coverage. This is an important factory and policy by the Ministry of Health. It is moving beyond the past health coverages in order to include and cover all of the Peruvian citizens. These public hospitals allow the government to provide medical procedures on the uninsured citizens of Peru. However, it is done “in exchange for a fee of variable amounts under the discretion of the individual hospitals/organizations or through the Seguro Integral de

³¹⁸ Galway, Lindsay P, Kitty K Corbett, and Leilei Zeng. “Where Are the NGOs and Why? The Distribution of Health and Development NGOs in Bolivia.” *Globalization and Health* 8, no. 1 (2012): 38. <https://doi.org/10.1186/1744-8603-8-38>.

Salud (SIS).”³¹⁹ But the resulting system does little to actually perform effectively. Rather, it consists of several providers of insurance and services perform overlapping functions and do not coordinate properly.

In Ecuador, the Municipal Health Directorate (Directorio Municipal de Salud—DIMUSA) was created to be in charge of the local management of health services. The creation of the national-level Family, Community and Intercultural Health Strategy (Salud Familiar Comunitaria Intercultural—SAFCI), sought to expand the coverage of health insurance beyond the maternal and child population and promote a comprehensive PHC approach with a focus on multiculturality.³²⁰ “Improved availability of services in the public health services network (851 new units between 2010 and 2016) and greater availability of health professionals have led to increased access to health services. In 2014, health services at the various care levels accounted for a total of 39,208,319 instances of medical care, an increase of 10.6% over 2011. Some 74.6% of these consultations were at the primary care level. Categorized by type of care, 14.6% were emergency consultations, 45.8% were for illness, 16.5% for dental care, and 22.9% for preventive care.”³²¹

In Bolivia, the State has “deployed 2,710 primary care clinics throughout the country, providing access to primary care to 25% of the most vulnerable population. The focus is on prevention, early diagnosis, and the social determinants of health, and includes the direct participation of grassroots organizations. In addition, the government has created a Zero Malnutrition Multisectoral Program that uses an intersectoral partnership with the ministries of social services and the economy to operate in the

³¹⁹ “Peruvian Health System.” Peruzo. Accessed November 2, 2019.
<http://www.peru-zo.com/2011/11/16/peruvian-health-system/>.

³²⁰ Pablo, Ernesto, et al. “Analysis of the Enablers of Capacities to Produce Primary Health Care-Based Reforms in Latin America: A Multiple Case Study.” *OUP Academic*, Oxford University Press, 21 May 2016, <https://doi.org/10.1093/fampra/cmw038>.

³²¹ “Ecuador.” Health in the Americas 2017. Accessed December 7, 2019.
<https://www.paho.org/salud-en-las-americas-2017/?p=4272>.

municipalities most vulnerable to food insecurity and risk of malnutrition among children under 5 (especially those under 2 years of age).”³²²

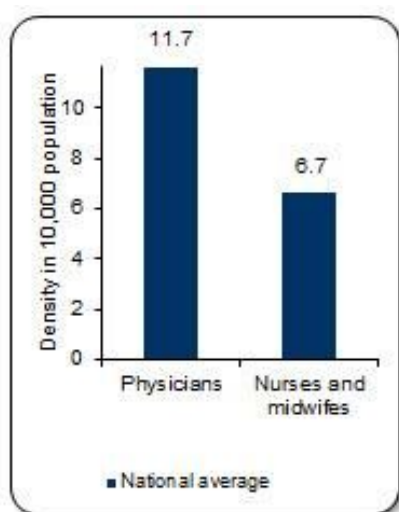
COMPARISON

The governments of Peru, Ecuador, and Bolivia all seem to strive to distribute healthcare facilities equitably in each respective nation. However, the actual creation and implementation of public hospitals in all regions in order to cover all citizens is non-existing. This seems to be because, in Peru, the government is creating public hospitals but still is adding a small fee. The fee is limiting the poorer population in Peru to have access and actually use the supposed public health services the government has created. In addition, these public hospitals are concentrated in the dense, populous areas of Peru, overlooking or ignoring rural populations that also need public hospitals in order to have access to health services. In Ecuador, primary care services are fundamental in providing health treatment to the population, but their shortcomings must be fixed in order to operate more efficiently. The different levels of management by the Municipal Health Directorate show its inefficiency because of the lack of coordination between the different managerial levels. There is a need for Ecuador to implement an integrated network of healthcare services that strives to ensure continuity of care, instead of referring patients to other types of hospitals or consultations. In Bolivia, the State has made great progress in helping subside inequalities amongst the population. However, the disparities between the rural and urban populations are still very apparent. Specifically, the inequitable access to healthcare services for rural areas, varying regions in the nation, different gender, and the indigenous communities. In Peru, Ecuador, and Bolivia the nations have made some progress in addressing social issues. However, there is still inequities in access to health services and the quality of the health services for reasons such as gender problems, rural to urban distribution, and marginalization of indigenous communities.

³²² “Bolivia.” Health in the Americas 2017. Accessed December 7, 2019.
<https://www.paho.org/salud-en-las-americas-2017/?p=3974>.

distribution of healthcare workforce

As the population in Peru has grown and life expectancy has increased to 75.1 years, a 5.1 increase from 2000³²³, there also has been an increased demand for providers, especially medical specialists, over the past decade due to the implementation of universal health insurance and associated policies³²⁴. As a result, the demographic differences in densities as well as urban/rural differences have begun to disappear due to implementation of the SERUMS plan, a decentralized HRH retention plan to distribute and retain health workers in remote areas. (Ibid)¹⁶



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“In 2015, the ratio of human resources for health (physicians, nurses, and obstetricians) to population was 29.6 professionals per 10,000 population, with the number ranging from 16.9 in Loreto to 46.5 in Callao. In urban areas, the ratio was 33.1 professionals per 10,000 population, compared to 17.6 in rural areas. At the national level, the availability of health professionals was 12.2 physicians, 12.8

³²³ “OECD Reviews of Health Systems: Peru 2017: READ Online.” OECD iLibrary. Accessed November 2, 2019. https://read.oecd-ilibrary.org/social-issues-migration-health/oecd-reviews-of-health-systems-peru-2017_9789264282735-en#page5.

³²⁴ “Peru.” World Health Organization. World Health Organization, March 27, 2012. <https://www.who.int/workforcealliance/countries/per/en/>.

³²⁵ “Peru.” World Health Organization. World Health Organization, March 27, 2012. <https://www.who.int/workforcealliance/countries/per/en/>.

nurses, and 4.6 obstetricians per 10,000 population. There were 18,567 specialized physicians, distributed mainly between the Ministry of Health (45%) and EsSalud (33%). The Rural and Urban Fringe Service provides coverage in poor and underserved areas. In 2015, a total of 7,811 new professionals joined the health workforce, of whom 30% were physicians, 30% nurses, 25% obstetricians, and 15% professionals with other specialties. Act No. 30,453 (National Medical Residency System), promulgated in June 2016, is intended to increase the number of specialists. In 2011, the shortage of medical specialists in the country was estimated at 11,73.”³²⁶

Ecuador-There are 2.05 physicians/1,000 population.³²⁷ “The large budget allocated to health between 2008 until 2015, and the program to encourage the return of professionals living abroad (1,948 returned in 2014), contributed to a greater availability of health professionals. In 2014, available physicians numbered 20.35 per 10,000 population, and nursing personnel 10.14 per 10,000. The sum of the two groups exceeded the regional goal for total density of human resources in health for 2007-2015 (25 per 10,000 population). Nevertheless, the availability of specialist physicians and dentists is low, and the allocation of resources remains inequitable in different parts of the country: in urban areas there were 29.01 physicians per 100,000 inhabitants, while the rural rate was 5.42 per 100,000, with uneven distribution between provinces (e.g. 13.04 in Esmeraldas and 26.03 in Pichincha). In 2014, the majority of health professionals (71.5%) worked in the public sector; 60.7% of them for the MoH”³²⁸

Bolivia- “The number of physicians practicing in Bolivia has doubled in recent years, to about 130 per 100,000 citizens, a comparable ratio for the region.”³²⁹ “Official counts of human resources for health

³²⁶ “Peru.” Health in the Americas 2017. Accessed December 5, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3232>.

³²⁷ “The World Factbook: Ecuador.” Central Intelligence Agency. Central Intelligence Agency, February 1, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/ec.html>.

³²⁸ “Ecuador.” Health in the Americas 2017. Accessed December 7, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=4272>.

³²⁹ Galway, Lindsay P, Kitty K Corbett, and Leilei Zeng. “Where Are the NGOs and Why? The Distribution of Health and Development NGOs in Bolivia.” *Globalization and Health* 8, no. 1 (2012): 38. <https://doi.org/10.1186/1744-8603-8-38>.

include only personnel in the public subsector. The national supply of physicians is estimated at 8 per 10,000 population. In 2015, this sub sector had 8,676 physicians (including specialists and generalists) and 4,254 nurses (4 nurses per 10,000 population). The total supply of physicians and nurses was 14.1 professionals per 10,000 population, ranging from 25 professionals per 10,000 population in Chuquisaca to only 12 professionals per 10,000 population in Santa Cruz. At the national level, there were 12 professionals per 10,000 population, split evenly between urban and rural areas. Of these, 8% were specialized physicians, 16% general practitioners, 4% registered nurses, 8% other health professionals, 24% nursing assistants, 13% service personnel, 10% administrative personnel, and 17% other personnel. Overall, 56% of physicians worked in primary care. As of 2012, 4,456 traditional practitioners had been registered, of whom 1,433 were regarded as traditional naturopaths, 490 as midwives, and 2,535 as traditional doctors. Prior to 2014, 77% of physicians in the public sector were in urban areas and 23% were in rural areas. Currently, thanks to the *Mi Salud*, *Bono Juana Azurduy*, and ASSO medical residency programs, 65% of physicians are now in urban areas and 35% are in rural areas.”³³⁰

COMPARISON

A major issue faced by all three nations in regard to healthcare workforce distribution is an outwards emigration of the healthcare workforce. In order to combat this issue, Peru has implemented the SERMUS plan in order to help retain and redistribute healthcare workers into remote areas. There are still disparities between urban and rural healthcare worker rates in Peru, however, the government acknowledges the problem and is actively combatting it. Similarly, the Peruvian government has implemented services and programs that specifically aim to serve rural populations because of the uneven distribution of healthcare workers throughout the nation. In Ecuador, there was a great exodus

³³⁰ “Bolivia.” Health in the Americas 2017. Accessed December 7, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3974>.

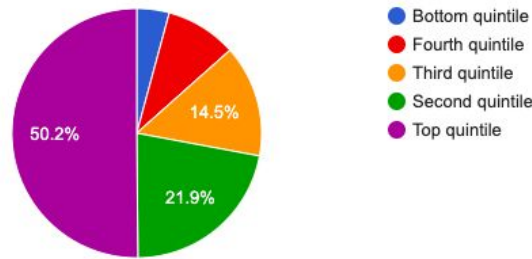
of healthcare workers. As a result, the Ecuadorian government allocated a large portion of its health budget to bring them back and rectify the issue. The Ministry of Health was successful in helping to bring back health professionals. The program ended in 2015 but was successful in bringing back almost 2000 health professionals. However, the number of returned health professionals is still not enough to help fulfill the uneven urban to rural health professional's distribution. There still a disparity between the two and an overall lack and insufficient number of healthcare workers in Ecuador. In Bolivia, the number of healthcare workers is also very low and insufficient. The statistics for healthcare worker exist only for health professionals in the public subsector. Therefore, health professional accounts are not completely accurate and are lacking data from the private sector. As with Peru and Ecuador, Bolivia also faces discrepancies between urban and rural healthcare workforce distribution. The Bolivian government has implemented programs to address and resolve this discrepancy, but it still exists. Peru, Ecuador, and Bolivia face a lack of presence of healthcare professionals in each nation's rural areas and also for each nation as a whole.

major health challenges

Peru- The country of Peru has had unequal economic prosperity and growth. For example, much of the communities that are urban or on the coast have benefited more than rural and indigenous communities in Peru. Peru has large economic inequalities, “with the top 20% of Peru’s population enjoys over half of the nation’s wealth, while the bottom 60% controls just over a quarter. In 2015, 17.7% of the population continued to lack health insurance, and those covered by the SIS, those with limited economic resources, and other population groups living in conditions of vulnerability, only had access to the services provided under the Essential Health Insurance Plan, except for some complementary benefits, such as treatment for cancer.”³³¹ As shown in the chart below.

³³¹ “Peru.” Health in the Americas 2017. Accessed December 5, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3232>.

Wealth Distribution



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Throughout the past decade, the poverty rate has dropped significantly in Peru. However, the poverty rate remains more than 55% in rural areas. Peru has shown improvements in school enrollment, but achievement scores reveal Peru's continuing struggles with reaching equitable education. For example, numerous rural and underprivileged children are forced to drop out of school to support their families. "About a quarter to a third of Peruvian children aged 6 to 14 work, often putting in long hours at hazardous mining or construction sites."³³³

During the past years, Peru's government has launched initiatives to help reform the health sector. These changes are focused on a multitude of factors from health insurance to inefficiency. The main problems in the system include insufficient health insurance since some of the population does not have access to health services because of economic strain or struggles. Similarly, the decentralization of Peru's healthcare system has shown that at some levels of functions, regional and local, there is a lack of competence and capacity deficiencies when transferring functions to these lower levels. The quality

³³² "Poverty and Inequality." Perú Reports. Accessed December 6, 2019. <https://perureports.com/poverty-inequality/>

³³³ "The World Factbook: Peru." Central Intelligence Agency. Central Intelligence Agency, February 1, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/pe.html>.

of service is insufficient. For example, there is a weak guarantee of patient quality and safety, lack of accreditation of services, lack of quality audit and lack of standardized management in the system. In addition, there exists insufficient infrastructure and equipment to support the population, fragmented services, and poor network organization. As a result, the distribution to the whole population is fragmented. Meaning rural communities and indigenous populations are excluded. This is because there is unequal location of qualified human resources in health, lack of training regulation professional, lack of reconciliation between needs and demands. Similarly, there is a lack in the availability of medicine in the poorest sectors, poor quality of medicines and high out-of-pocket expenses. This exists in addition to the inequitable distribution of financing and inefficient health spending.³³⁴ There is a great need to reduce the gap between the health status of the poor and non-poor. For example, the infant mortality rates are high in relation to Peru's poorer population. In addition, Peru's poorest citizens are subject to harmful environmental settings, have inadequate and unequal access to healthcare services, and have lesser or lower levels of education. This results from the poor environmental standards they live in from sanitation issues to infestation to high rates of transfer of diseases.

However, there are ways the Peruvian government plans to combat these challenges. Some strategies include:

1. Incorporate into the national health information system, the data and processes necessary to the monitoring of the performance of the indicators of compliance with the objectives and goals selected in the plan, available to all the actors involved. (Ibid)²⁶
2. The Ministry of Health, in coordination with regional and local governments, will annually evaluate and will inform the community of the progress in the implementation of the PNCS and will analyze the new agreements and steps to be implemented. (Ibid)²⁶

³³⁴ "Inicio." Biblioteca Virtual en Salud. Accessed November 3, 2019. <http://bvs.minsa.gob.pe/>.

3. The Minister of Health shall report the progress of the plan in the annual report to the President of the Republic and to the National Congress. (Ibid)²⁶

Ecuador- The country of Ecuador struggles with high levels of poverty and income inequality. These two factors impact rural populations and indigenous communities the most. As a result, the government of Ecuador has increased social spending to help alleviate these problems and strive for a more equitable distribution. However, there are many critiques on the effectiveness and the execution of the government's development plan. "Nevertheless, the conditional cash transfer program, which requires participants' children to attend school and have medical check-ups, has helped improve educational attainment and healthcare among poor children. Ecuador is stalled at above replacement level fertility and the population most likely will keep growing rather than stabilize."³³⁵

Bolivia- The nation of Bolivia ranks very low and almost at the bottom amongst nations in its region in areas such as "health and development, including poverty, education, fertility, malnutrition, mortality, and life expectancy."³³⁶ The income inequality that persists in Bolivia is not only the highest in Latin America but it is amongst the highest rates in the world. The quality of public education is very poor in Bolivia. In addition, opportunities to pursue education are not equally distributed in the country and are among one of the most unequal distribution of educational opportunities in Latin America. Indigenous communities, rural populations, and girls are the ones most affected and most likely to be illiterate and not complete primary school. Also, the lack of access to "clean water and basic sanitation, especially in rural areas, contributes to health problems." (Ibid)²⁸ Furthermore, Bolivia has the worst child mortality rate in South America, 69 per 1,000 live births. The need for improving basic healthcare to children and females, increasing immunization throughout the country evenly, confronting sanitation and

³³⁵ "The World Factbook: Ecuador." Central Intelligence Agency. Central Intelligence Agency, February 1, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/ec.html>.

³³⁶ "The World Factbook: Bolivia." Central Intelligence Agency. Central Intelligence Agency, February 1, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/bl.html>.

education problems that contribute to deaths among children are all current priorities of the country.

“The most socially vulnerable groups (especially those living in extreme poverty, indigenous people, and rural populations), continue to experience the most avoidable health problems, such as chronic malnutrition, maternal and child mortality, communicable diseases related to various environmental problems, and noncommunicable chronic diseases. There are also various the physical and mental effects of different types of violence (domestic, sexual, etc.), including gang- and drug-related violence, especially in certain urban areas.”³³⁷

COMPARISON

In Peru, Ecuador, and Bolivia, the three nations face health challenges that impact the poorer populations, rural populations, and indigenous communities more significantly than other populations. For example, “in 2014, after a hiatus of 20 years, canine rabies reappeared in Arequipa, jeopardizing the process of elimination of dog-transmitted human rabies.”³³⁸ In Peru’s Amazon jungle region, there has been an increase in reported outbreaks of human rabies transmitted by vampire bats. There has been a total of 60 cases were reported between 2011 and the first half of 2016, most among children under 15 belonging to indigenous communities. (Ibid)³⁰ This shows the continuous and disproportionate health challenges faced by indigenous communities. Similarly, Ecuador faces challenges in helping support and alleviate health challenges to its indigenous and rural communities. For example, in “2014, deaths from tuberculosis (TB) were 2.79 per 100,000 population, with 5,157 new cases detected.”³³⁹ Factors thought to be the reason for the increase in TB cases is the difficulty the country is having in controlling the disease, insufficient healthcare access, and inadequate analysis of sick patients by

³³⁷ “Bolivia.” Health in the Americas 2017. Accessed December 7, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3974>.

³³⁸ “Peru.” Health in the Americas 2017. Accessed December 5, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3232>.

³³⁹ “Ecuador.” Health in the Americas 2017. Accessed December 7, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=4272>.

hospitals. Not only are some large and coastal cities account for TB cases, but there are vulnerable peri-urban populations with insufficient access to health services who are also contributing to TB cases. Bolivia ranks “at or near the bottom among Latin American countries in several areas of health and development, including poverty, education, fertility, malnutrition, mortality, and life expectancy.”³⁴⁰ It is considered to be the place with one of the highest income inequalities in the world. As a result, there is a lack of access to family planning services and education to its citizens. For example, Bolivia has a high fertility rate with “approximately three children per woman.” (Ibid)³² Also, basic social services are inequitably distributed throughout the nation resulting in lack of clean water and sanitation in Bolivia’s rural population, which then add to the health problems faced by the rural population. The three nations face income inequality problems that then spills over and contributes to rural and indigenous populations ongoing inequitable health challenges.

legislation affecting healthcare services

Peru- The nation of Peru has large economic inequalities, with 20 percent of the population controlling over 54 percent of the country’s income. Around 50 percent of the population lives in poverty, with 20 percent living well below the poverty line. As a result, access to adequate healthcare is inequitable throughout the country.³⁴¹

Ecuador- The Ministry of Health is creating private healthcare related contracts with IESS. This leads to inequitable access to healthcare services because of privatization.³⁴²

³⁴⁰ “Peru vs. Bolivia.” Peru vs. Bolivia - Country Comparison. Accessed December 7, 2019. <https://www.indexmundi.com/factbook/compare/peru.bolivia>.

³⁴¹ “Peru.” Health in the Americas 2017. Accessed December 5, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=3232>.

³⁴² “Ecuador.” Health in the Americas 2017. Accessed December 7, 2019. <https://www.paho.org/salud-en-las-americas-2017/?p=4272>.

Bolivia- Bolivia's healthcare expenditures are 6.4% of their GDP as of 2015, which is slightly lower than some of the neighboring countries.³⁴³ However, they, too, have flaws in their health systems and do not invest or spend a great deal of their GDP in health services, compared to other countries globally.

COMPARISON

The most apparent cause affecting healthcare services is economic inequalities that result in the wealthy controlling the nation, privatization of healthcare services, and insufficient healthcare expenditures. In Peru, the large income disparities show what group of the country controls it. Meaning, the wealthy control the majority of the country's income leading them to have the most economic and political factor. In addition, the majority of healthcare legislation and facilities is determined by those in power, the wealthy. As a result, there is inadequate access to healthcare services throughout the country because of income inequalities. In Ecuador, the government is creating private relationships or partnerships in order to reduce their responsibility of providing healthcare services. This form of neoliberalizing the healthcare system results in health services being used for profit. In Bolivia, the health expenditures increased to 6.9% in 2016 from 6.4% in 2015, however, this is still insufficient in providing access to healthcare to all of its citizens.³⁴⁴ The inequalities in healthcare access that exist in Bolivia are apparent in the populations living in poverty, rural communities, and the indigenous populations who experience health effects that are avoidable if there was more investment and access. All three nations experience different health accessibility issues that disproportionately affect certain groups more than others. As a result, there is a need for each government to step in to

³⁴³ "The World Factbook: Bolivia." Central Intelligence Agency. Central Intelligence Agency, February 1, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/bl.html>.

³⁴⁴ "The World Factbook: Bolivia." Central Intelligence Agency. Central Intelligence Agency, February 1, 2018. <https://www.cia.gov/library/publications/the-world-factbook/geos/bl.html>.

help achieve equitable income, be more responsible in distributing healthcare services, and invest in health expenditures.

Conclusion:

From the analysis and comparison of Peru, Ecuador, and Bolivia, there were some underlying themes amongst the three nations. The three nations face inadequate access to healthcare services for their citizens because of structural and institutional problems. These problems encompass economic factors such as funding and health investment or expenditures that leave parts of the population without access. Specifically, it is the indigenous communities, rural populations, and poorer communities that are marginalized and not able to access healthcare services. Each respective government acknowledges and recognizes this fundamental problem in the system and tries to implement programs and public hospitals to rectify this problem. However, they are unsuccessful still. The lack of coordination between different managerial levels, inefficient implementation of the programs, and not enough government spending on health services all contribute to the ongoing problems of inequitable access to healthcare. While Peru, Ecuador, and Bolivia has public and private components to their healthcare services and insurances, the data on the public sector is more apparent in revealing each respective government's shortcomings.

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A Comprehensive Analysis on the Healthcare Systems of Latin America

Río de la Plata Report

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IRG 378

Dr. Mosser

December 8, 2019

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Introduction

The Rioplatense region or Southern Cone encompasses Chile, Argentina and Uruguay, which share somewhat comparable recent trajectories in terms of healthcare policy and reform. The Southern Cone in general is investing more into healthcare in recent years than other comparable sub-regions of South America, and has been enjoying a steady increase in life expectancy³⁴⁵. All three countries, to slightly varying extents, are towards the end of their respective epidemiological transitions, and as such are dealing more with cancer and obesity related non-communicable diseases than poverty-related illness. Despite some similarities in the progress of these three nation's development, their respective governments and health systems are structured quite differently and each countries' greatest healthcare concerns and achievements are attributable to national policies and priorities. There hasn't been a lot of significant long-term intergovernmental cooperation relating to healthcare between these three countries, with the notable exception of the Southern Cone Initiative against Chagas disease which has achieved "remarkable success" in elimination of the main vector³⁴⁶. All three Southern Cone countries have experienced military dictatorship in recent decades and saw a return to civilian governance accompanied by subsequent comprehensive governmental and healthcare reforms in the 1980s - early 2000s³⁴⁷.

Basic Health Indicators

Basic statistical indicators are an effective way to not only gain insights on each country individually, but also to straightforwardly compare and contrast all three countries intra-regionally. To give a general overview of the region, all three countries are listed by the UN Development Program as

³⁴⁵ NuestraSalud. "*Southern Cone*". NuestraSalud, 2019, <https://nuestrasaludlatam.org/en/regions/southern-cone/>. Accessed 23 Nov 2019.

³⁴⁶ Schofield, Christopher J. "*The Southern Cone Initiative Against Chagas Disease*". National Center for Biotechnology Information, 1999.

³⁴⁷ Olea, Victor Flores. "*Operación Cóndor*" (in Spanish). El Universal (Mexico), 2007. Archived from the original on 2007-06-28

having “Very High Human Development,” with Chile ranked highest at 0.843 (44th), Argentina at 0.825 (47th) and Uruguay at 0.804 (55th)³⁴⁸. To put that into perspective, all of the other Latin American countries discussed in this report rank as “High Development” or “Medium Development”³⁴⁹.

Argentina is classified as an upper-middle-income country and has a population of around forty-four million people, the majority of whom (91%) live in large cities, and a third of whom live in Buenos Aires. Only 2.4% of the country is indigenous, with the rest being primarily of European ancestry³⁵⁰. The country spends about 8% of its GDP on healthcare³⁵¹. It is ranked 121st in population growth at 0.89% annually, with a birth rate of 16.5 births per 1000 people and a death rate of 7.5 deaths per 1000 people. A 2018 estimate placed the fertility rate at 2.25 children born per woman. The contraceptive prevalence rate was 81.3% as of 2013³⁵². 100% of rural and 99% of urban Argentinians enjoy improved drinking water sources, 98.3% of rural and 96% of urban Argentinians have access to improved sanitation systems; and the life expectancy is 77.5 years³⁵³. Argentina scores a 93.61 for basic medical care on the Social Progress Index and a 95.21 for water and sanitation. The maternal mortality rate is 37.3 per 100,000 live births, the infant mortality rate is 10.6 deaths per 1000 births³⁵⁴. While these metrics don’t place Argentina in the same category as Western Europe or Canada, they indicate a shift in health priorities towards those of western economies.

³⁴⁸ United Nations. “*Human Development Indices and Indicators - 2018 Statistical Update*”. United Nations Development Program, 2018.

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³⁵⁰ Pan-American Health Organization (PAHO). *Health in the Americas: Argentina*. PAHO, Washington DC, 2017.

³⁵¹ Central Intelligence Agency (CIA). *World Factbook: Argentina - People and Society*. Washington DC, 2019.

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³⁵⁴ PAHO, Argentina.

Chile is a high-income country³⁵⁵ with a population of nearly eighteen million people as of 2018³⁵⁶. 87.1% of the population lives in urban areas, with 40% concentrated solely in the Santiago Metropolitan region³⁵⁷. Their health expenditure as of 2015 is 8.1% of GDP³⁵⁸. Not unlike Argentina, it has fairly low population growth rate at 0.75% and a birth rate of 13.4 births per 1000 people. The death rate is 6.3 deaths per 1000 people³⁵⁹. Chile has almost completed its epidemiological transition, more so than Argentina, and as a result experiences fairly low and stable population growth, and a low rate of extreme poverty (3.5%)³⁶⁰. 99.9% of Chileans have access to clean drinking water, 96.7% have access to sanitation services, and there is 99.9% coverage of wastewater treatment in urban areas³⁶¹. The Gini coefficient has stayed around 50.5 in recent years, indicating a significant level of inequality³⁶². In terms of maternal mortality, there are 13 deaths per 100,000 live births (2018) and the infant mortality rate is 6.4 deaths per 1000 live births³⁶³. Chile has only 1.1 physicians per 1000 people, making it the 148th in the world in that indicator³⁶⁴. However, they score 96.67 for basic medical care on the Social Progress Index and 99.84 for water and sanitation³⁶⁵. While Chile is a relatively wealthy country, sometimes referred to as the “Latin American Miracle,” most of their biggest problems, in healthcare and in other realms, stem from systemic inequalities, particularly for indigenous populations³⁶⁶.

Finally, Uruguay is a small, high-income country of about 3.5 million people, with the majority of the population (95.3%) concentrated in urban areas³⁶⁷. They spend the highest proportion of GDP on

³⁵⁵ United Nations Development Programme; Government of Chile. *Los Objetivos de Desarrollo del Milenio: cuarto informe del Gobierno de Chile*. Santiago: UNDP/GOC; 2014.

³⁵⁶ Central Intelligence Agency (CIA). *World Factbook: Chile - People and Society*. Washington DC, 2019.

³⁵⁷ Pan-American Health Organization (PAHO). *Health in the Americas: Chile*. PAHO, Washington DC, 2017.

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³⁶¹ A

³⁶² CIA, Chile - People and Society, 2019.

³⁶³ CIA, Chile - People and Society, 2019.

³⁶⁴ CIA, Chile - People and Society, 2019.

³⁶⁵ The Social Progress Imperative. “2019 Social Progress Index - Chile”. Social Progress Imperative, 2019.

³⁶⁶ PAHO, Chile.

³⁶⁷ Pan-American Health Organization (PAHO). *Health in the Americas: Uruguay*. PAHO, Washington DC, 2017.

healthcare in the Southern Cone at 9.2%³⁶⁸. The contraceptive prevalence rate is 79.6% as of 2014 for women between the ages of 15 and 44³⁶⁹. As a result of a low birth rate (13.5 births per 1000 population) and increased life expectancy at birth, the over-65 population has been steadily growing (7.6% of the population in 1963, and 14.1% in 2011)³⁷⁰. The maternal mortality rate is 17 deaths per 100,000 live births and the infant mortality rate is 8.1 deaths per 1000 live births³⁷¹. Uruguay is one of the few countries in Latin America with 100% access to clean water, and 96.4% of the population has access to improved sanitation facilities³⁷². According to PAHO, In 2005-2015, “the population’s quality of life improved steadily, as reflected in indicators of access to goods and social services, distribution of wealth, employment, infant mortality, and poverty, among other factors”³⁷³. Uruguay is regarded as one of the most socially advanced countries in the Western Hemisphere, and scores in the high 90’s on the 2019 Social Progress Index for markers such as nutrition and basic healthcare, water and sanitation, and personal rights³⁷⁴.

Health Finance Systems

The structures of the healthcare systems in these three Southern Cone nations are comparable in some ways. They all maintain some level of private care supplemented by a tax-payer funded healthcare option for those unable to pay in. However, the resource allocation strategies and the inclusivity of the public sectors differ significantly.

In terms of financing, Argentina’s health system is composed of a private system, a “universal” government-funded system, and social insurance programs run by labor unions known as Obras

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³⁶⁹ Central Intelligence Agency (CIA). *World Factbook: Uruguay - People and Society*. Washington DC, 2019.

³⁷⁰ PAHO, Uruguay, 2017.

³⁷¹ CIA, Uruguay - People and Society, 2019.

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³⁷³ PAHO, Uruguay, 2017.

³⁷⁴ The Social Progress Imperative. “2019 Social Progress Index - Uruguay”. Social Progress Imperative, 2019.

Sociales. The private sector serves holders of private insurance and some beneficiaries of the Obras Sociales. Only about 5% of the population has out-of pocket and monthly premium private coverage, and about 11% have access to private coverage through their national union program. Because of the overlap between private and national union healthcare provision, it is sometimes difficult to measure their impacts independently. According to a report by the International Development Research Center, foreign corporations are increasingly entering the private market from Switzerland, the United States, and other Latin American countries³⁷⁵.

The public sector, or tax-funded government sector, was decentralized as a result of the reforms in the 1990's, meaning that the federal government provides very little funding and input into provincial operations. Therefore, autonomous provincial health ministries are largely in charge of basic health services. Part of the reform allowed public hospitals to adopt a 'self-managed status,' which introduced out-of-pocket payment for services at public hospitals, in addition to covering uninsured groups. The increase in the number of privately insured procedures at public hospitals has, in some cases, prevented the uninsured (about 36% of the population)³⁷⁶ from accessing the resources they are supposedly constitutionally entitled to. The public sector is also generally used for more complex and expensive procedures³⁷⁷.

Finally, the social health insurance program consists of more than 300 trade-union administered funds known as Obras Sociales. These programs are funded by compulsory payroll contributions, 3% from employees and 6% from employers³⁷⁸. There are 24 regional Obras Sociales Provinciales which cover about 5 million public sector employees³⁷⁹. Although the Obras Sociales are able to effectively

³⁷⁵ Cavagnero, Eleonora and Carrin, Guy and Xu, Ke and Aguilar-Rivera, Ana Mylena. *Health Financing in Argentina: An Empirical Study of Healthcare Expenditure and Utilization*. World Health Organization, 2006.

³⁷⁶ Novick, Gabriel E. *Health Care Organization and Delivery in Argentina: A Case of Fragmentation, Inefficiency and Inequality*. Wiley Online Library, 12 April 2017

³⁷⁷ Cavagnero 2006.

³⁷⁸ Cavagnero 2006

³⁷⁹ Novick, Gabriel E. *Health Care Organization and Delivery in Argentina*, 2017.

pool risk, different funds correspond to different sectors, leading to inequalities between funds for higher-paying union jobs and those for lower-paying union jobs. There was an attempt at a redistribution fund, but it largely failed to accommodate the smaller, poorer social funds. This lack of resources ultimately led some funds to subcontract with the private sector, however this plan has been accused of creating a “purchaser-provider split [that] generated a complex contracting and subcontracting system”³⁸⁰.

Subsequently, Chile has a mixed system which includes the Fondo Nacional de Salud (FONASA), a private insurance system via Instituciones de Salud Provisionales (ISAPRE) and specified insurance schemes for distinctive groups like those in the armed forces³⁸¹. Chilean workers and pensioners are mandated to pay 7% of their paycheck towards health insurance, either towards ISAPREs or the FONASA. Workers have the option to pay more towards ISAPREs and receive higher quality care and be less restricted by caveats and pre-existing conditions³⁸². The FONASA exists as an alternative to the ISAPREs but also supports those on unemployment benefits, dependents of insured workers, and those with disabilities³⁸³. In order to do so, FONASA also receives tax-based funding in addition to the income from paychecks of those who pay in. The health care system is fragmented in terms of both the delivery of services and financing. People living in different sectors among the population experience unequal availability of resources³⁸⁴. Out-of-pocket health spending makes up for 38% of all health expenditure. 76.3% of Chileans belonged to FONASA in 2013 whereas only 8.3% paid into an ISAPRE³⁸⁵. An estimated 5% of family income is devoted to health expenditures on average, and an estimated 4% of families are facing expenditure that puts them at risk of poverty³⁸⁶.

³⁸⁰ Cavagnero 2006.

³⁸¹ PAHO, Chile, 2017.

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³⁸⁵ PAHO, Chile, 2017.

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Finally, Uruguay has a traditional private insurance system as well as an integrated system that attempts to combine all types of non-private healthcare, including tax-funded. All employed Uruguayans are entitled to private healthcare through FONASA, which they all pay into based on the amount of dependents they have and their salary³⁸⁷. Since major reforms in 2005, there has been strong indication that Uruguay is on a very positive trajectory in terms of affordability and coverage³⁸⁸. According to the WHO, Uruguay is “committed to achieving universal health coverage for its entire population³⁸⁹. The 2005 reforms prioritized “equity, financial protection and change in the healthcare model”, as well as meeting the goal of universality by recognizing people’s right to health protection³⁹⁰. The Sistema Nacional Integrada de Salud (SNIS) was created by bill 18.211, which sought to unify and integrate fragmented systems within the country as well as extending comprehensive care to all residents and guarantee universal coverage by more integrated coordination between the private and public sectors^{391,392}.

The National Health Fund (FONASA) is central to health funding in Uruguay. The fund is nationally pooled and mandatory, and consists of three sources: insured employees as a proportion of income, employers’ contributions as a proportion of wages paid, and the state’s general fund³⁹³. It aims to provide all working Uruguayan residents with affordable, high quality healthcare. It is also in charge of collecting, managing and allocating all state health funding in Uruguay as a result of the reform. In 2017, FONASA had 2.5 million people in its register and also paid the caps to 43 public and private

³⁸⁷ Cruces, Guillermo. *“Labor informality and the incentive effects of social security: Evidence from a healthcare reform in Uruguay”*. Universidad Nacional de la Plata, 2011.

³⁸⁸ PAHO, Uruguay 2017.

³⁸⁹ The World Health Organization. *“Improving Health System Efficiency - Uruguay: Building up the national integrated health system”*. WHO, 2015.

³⁹⁰ WHO, Improving Efficiency - Uruguay, 2015.

³⁹¹ Cruces, Guillermo. *Labor informality and the incentive effects of social security*, 2011

³⁹² El Senado de la República Oriental del Uruguay. “Ley N° 18.21: Sistema Integral Nacional de Salud”. Montevideo, 2007.

³⁹³ PAHO, Uruguay, 2017.

health institutions³⁹⁴, which represents the vast majority of the country. All workers, pensioners and dependents under 18 are covered by FONASA, meaning that they are all entitled to healthcare outside of the state system. The aim of this is to take the burden off the state system so that it can provide for low-income and disabled residents, but all working Uruguayan residents will still have access to high-quality healthcare³⁹⁵. Uruguay's public system is administered by the Administración de los Servicios de Salud del Estado (ASSE). Service standards at ASSE hospitals are generally lower than private hospitals³⁹⁶.

There are multiple types of private care in Uruguay. Standard private insurance is offered by companies like BlueCross and BlueShield Uruguay³⁹⁷. However, private hospitals also cut out the middle-man by offering what are called “mutualistas”. These are essentially membership plans associated with individual private hospitals, where you pay monthly membership fees and small premiums each visit. These hospitals are allowed to determine their own age restrictions and pre-existing conditions for the unemployed, but the healthcare plans they offer are often preferable to traditional private insurance as they forego lifetime caps and large deductible payments³⁹⁸.

Distribution: Facilities and Workforce

In terms of healthcare distribution, the three countries differ in their abilities to provide effective care across urban and rural regions. All of them to some degree, however, follow the common Latin American trend of neglecting indigenous and rural populations in the distribution of health resources, providing those areas with an insufficient and unequal amount of resources. Given that all three countries are shown to have the majority of their population living in cities, in these cases usually

³⁹⁴ El Observador. “*Estafa al Fonasa: la Justicia incautó material en el BPS y seguirá con interrogatorios*”. El Observador, 6 March 2017.

³⁹⁵ El Senado de la República Oriental del Uruguay, Ley N° 18.21, 2007

³⁹⁶ Hammond, David. “*Healthcare and Healthcare Systems in Uruguay*”. International Living, 2019.

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in just one capital city, it is logical that the majority of health resources would reside with the majority of the population. That being said, there are often serious systemic inequalities for rural citizens in terms of accessing care, with the notable exception of Uruguay in large part.

According to the Argentinian government website SISA (Sistema Integrado de Información Sanitaria Argentina), there are 5,363 hospitals in Argentina. 3803 are private (70.9%), and 1560 (29.1%) are public. The chart below shows a breakdown by region and funding source. As is expected, wealthier and heavier populated regions such as Buenos Aires have more private hospitals and more hospitals overall³⁹⁹. As mentioned earlier, the decentralized nature of the Argentinian healthcare system and provincial control of health leads to significant regional disparities, especially in poorer provinces⁴⁰⁰. The national health authority is also quite limited in its ability to force provincial governments to adhere to national legislation, especially when it involves significant structural changes⁴⁰¹. 47.4% of the indigenous population has no access to health insurance⁴⁰². The activist group Cultural Survival described the issue in a report to the UN Human Rights Council as a combination of “long delays in providing services, unwanted referrals to wrong clinics, financial barriers, and in some cases outright denial of care and lack of access to information”⁴⁰³. There have also been reports of ambulances and private service providers refusing to operate in certain communities⁴⁰⁴.

| Origen del financiamiento | CABA | BUE | CAT | CHA | CHU | CBA | CTE | ERI | FOR | JUY | LPA | LRJ | MZA | MIS | NQN | RNG | SAL | SJU | SLU | SCR | SFE | SGO | TDF | TUC | % | Total |
|---------------------------|------------|-------------|-----------|------------|-----------|------------|-----------|------------|-----------|-----------|-----------|-----------|------------|------------|------------|-----------|-----------|------------|-----------|-----------|------------|-----------|-----------|------------|---------------|-------------|
| Privado | 132 | 1754 | 31 | 57 | 36 | 467 | 43 | 96 | 36 | 28 | 20 | 21 | 196 | 81 | 73 | 48 | 38 | 84 | 18 | 4 | 429 | 32 | 5 | 74 | 70.9% | 3803 |
| Público | 42 | 443 | 39 | 55 | 34 | 178 | 53 | 69 | 41 | 22 | 36 | 35 | 27 | 60 | 30 | 36 | 61 | 18 | 25 | 23 | 135 | 55 | 5 | 38 | 29.1% | 1560 |
| TOTAL | 174 | 2197 | 70 | 112 | 70 | 645 | 96 | 165 | 77 | 50 | 56 | 56 | 223 | 141 | 103 | 84 | 99 | 102 | 43 | 27 | 564 | 87 | 10 | 112 | 100.0% | 5363 |

Data Retrieved From SISA Central de Reportes⁴⁰⁵

As for healthcare workforce, Argentina has on average 3.96 physicians per 1000 people, and 5 hospital beds per 1000 people⁴⁰⁶. These numbers are exceptionally high for the region, and are actually

³⁹⁹ Sistema Integrado de Información Sanitaria Argentina (SISA). *Central de Reportes*. Buenos Aires, 2019.

⁴⁰⁰ Cavagnero 2006.

⁴⁰¹ PAHO, Argentina, 2017.

⁴⁰² Cultural Survival. “*Observations on the State of Indigenous Human Rights in Argentina*.” Prepared for United Nations Human Rights Council, March 2017.

⁴⁰³ Cultural Survival - Indigenous Rights in Argentina, 2017.

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⁴⁰⁶ CIA, Argentina - People and Society, 2019.

higher than those of the United States⁴⁰⁷. However, these metrics can be misleading, as the per capita average does not factor in or show regional disparities.

Chile has only 425 hospitals throughout the country, 54% of which are private and 46% are public⁴⁰⁸. The vast majority of these hospitals are located in the Santiago metropolitan region. Like Argentina, urban regions have a higher proportion of private hospitals and more hospitals overall⁴⁰⁹. A study from 2017 found that Chileans in urban areas were significantly more likely to enjoy access to healthcare, and generally have better quality healthcare available to them⁴¹⁰. Chile has only 1.08 physicians per 1000 people and 2.2 beds per 1000 population, lower than many other Latin American countries⁴¹¹. When considering that these are national averages and that Santiago has the majority of hospitals in the country, it implies a lack of access to care in rural areas.

Finally, Uruguay has 107 hospitals as of 2017⁴¹². Most of these are concentrated in Montevideo, where the vast majority of Uruguayans live. According to the Pan-American Health Organization, significant inequalities do exist geographically in Uruguay⁴¹³. However, the inequality is actually the opposite of that in other Latin American countries in that urban citizens have higher rates of poverty than rural ones, especially in Montevideo, which has nearly double the poverty rate of the remainder of the country (13.4% vs 7.3%)⁴¹⁴. Uruguay's relatively small and concentrated population makes it easier to avoid rural inequalities in terms of access to healthcare facilities. Unlike Argentina, Uruguay is considered much more successful at achieving effective universal health care as there are few, if any, recent instances of communities being unable to access medical treatment. That being said,

⁴⁰⁷ Central Intelligence Agency (CIA). *World Factbook: United States of America*. Washington DC, 2019.

⁴⁰⁸ Departamento de Estadísticas e Información de Salud. *Recursos para Salud*. Santiago, 2019.

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⁴¹⁰ Gallardo, Kevin et al. *"Inequality of opportunity in health: evidence from Chile"*. The US National Library of Medicine, 2017.

⁴¹¹ CIA, Chile - People and Society, 2019.

⁴¹² Export.gov. *Healthcare Resource Guide: Uruguay*. US Department of Commerce, 2019.

⁴¹³ PAHO, Uruguay, 2017.

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unemployed citizens, which often includes Afro-Uruguayans and indigenous Uruguayans⁴¹⁵, may be forced to rely on the public system which has been shown to have a lower standard of care. In terms of workforce, Uruguay has 5.05 physicians per 1000 population and 2.8 beds per 1000 population⁴¹⁶. These are strong numbers indicative of sufficient healthcare professional presence in the country.

Major Health Challenges

The Rioplatense countries face comparable challenges currently and in the foreseeable future, with some key distinctions. As discussed earlier, all three are towards the end of their epidemiological transitions, and none of them are dealing with rampant poverty or governmental failure to provide care. The health challenges of these countries are mainly non-communicable diseases, mental health problems, and nutrition-related conditions.

Argentina is transitioning into a more ‘western’ medical focus, in the sense that vector borne and poverty-related diseases are becoming less of a contributor to mortality. That being said, that transition is incomplete and there are still some issues relating to pre-epidemiological transition dynamics. Argentina is currently fighting dengue fever, chikungunya, and the Zika virus, which generally occur in sporadic outbreaks. Since a large proportion of the population has no natural immunity to these arboviruses spread by the *Aedes* mosquito, these have proven difficult to counter particularly in northern tropical regions⁴¹⁷. Malaria has been largely interrupted, and possibly eliminated, although post-elimination surveillance is said to be lacking. Another high priority for Argentinian health services is Chagas disease, which is spread through the protist known as *Trypanosoma cruzi* that lives in the feces of tropical triatomine insects. While vector based

⁴¹⁵ Minority Rights. “*Afro-Uruguayans*”. Minority Rights Group, London, 2019.

⁴¹⁶ CIA, Uruguay - People and Society, 2019.

⁴¹⁷ PAHO, Argentina, 2017.

containment has had some success with interruption, the disease also spreads congenitally, affecting 0.21 children per every 100 live-birth⁴¹⁸.

Extreme regional inequality is also highlighted as a major challenge by metrics such as maternal mortality, which ranges from 8.1 per 10,000 in the province of Salta to 1.9 in CABA, Santa Fe, and La Pampa⁴¹⁹. Even though the cause of death remains the same, regions with fewer provincial resources and weakly funded Obras Sociales programs simply can not afford to uphold the same standard as those of wealthier regions. The Pan-American Health Organization has observed that the regions with the highest maternal mortality rates (Formosa, Chaco, Misiones, San Juan, and Salta) also have distinctively low levels of education, access to basic information, and difficulties in receiving quality health services⁴²⁰. Obesity and diabetes are also becoming increasingly prevalent in the country. The percentage of overweight people among the population increased from 35.4% in 2009 to 37.1% in 2013, and obesity rose 18% to 20.8% in the same 4 year period⁴²¹.

Economic turmoil is also attributable to healthcare shortcomings in Argentina⁴²². The system is often unable to fulfill legislative promises due to financial concerns⁴²³. Since 2018, the inflation rate has stayed around 30%, the country's external debt has increased by 60%, and the economy has contracted by 4%⁴²⁴. The past few years of economic decline have mitigated the average citizen's potential to access high quality care as well as the provincial governments' ability to move towards funding effective care at the universal level.

As discussed, Chile's economic development has allowed it to significantly reduce problems related to communicable, poverty-related, maternal and childhood diseases⁴²⁵. Therefore, similarly to

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⁴¹⁹ PAHO, Argentina, 2017.

⁴²⁰ PAHO, Argentina, 2017.

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⁴²² Novick, Gabriel E. 2017

⁴²³ Cavagnero, Eleanora and Torres, Rubén. *A National Social Health Insurance Plan for Argentina: Simulating its financial feasibility*. World Health Organization, 2010.

⁴²⁴ Nelson, Rebecca M. *Argentina's Economic Crisis*. Congressional Research Service, Washington DC, 2019.

⁴²⁵ PAHO, Chile, 2017.

Argentina, the main problems Chile faces are related to mental health and non-communicable diseases. Diabetes and obesity are also significant concerns. The biggest concern for Chile, however, is likely the persistent and rising inequality the country has endured in the wake of Pinochet's dictatorship, which ended in 1989.

The non-communicable diseases that took up the greatest share of the disease burden in Chile in 2013 were malignant neoplasms (13.8%), mental disorders and substance abuse (12.2%), and cardiovascular disease (12.3%)⁴²⁶. Type 2 diabetes is also prevalent in Chile, with 19.8 in 100,000 dying because of it in 2011. Older men are the most at risk group for diabetes in Chile⁴²⁷. However, the leading cause of death in Chile is cardiovascular disease, with 149 deaths per 100,000 population in 2011. 75% of the deaths related to cardiovascular disease were also attributed to cerebrovascular disease (34%), ischemic heart disease (28%) and hypertensive disease (13%)⁴²⁸. Cardiovascular health became part of Chile's primary care program in 2002⁴²⁹. Depression and anxiety made up the bulk of mental health disorders, and are more common among women than men; however, the next most common is substance abuse, which is more common among men⁴³⁰.

Air pollution is also a significant problem in Chile, particularly in Santiago, which is largely enclosed by mountains. A 2014 study by the National Air Quality Information System found that 10 million Chileans (more than half) live in areas deemed "saturated"⁴³¹. This is an extremely significant health concern, as the pollutants in the Chilean air have been linked to venous thrombosis and

⁴²⁶ PAHO, Chile, 2017.

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⁴²⁸ PAHO, Chile, 2017.

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⁴³¹ Ministerio del Medio Ambiente (Chile). Planes de Descontaminación Atmosférica: Estrategia 2014–2018. Santiago, 2014.

pulmonary embolism⁴³². This is being dealt with by the Chilean Ministry of the Environment, which has a short and long term plan for decontaminating the air quality⁴³³.

Finally, systemic inequality has significantly reduced Chile's ability to provide healthcare for all of its citizens, and has also led to social turmoil in recent months⁴³⁴ which is bound to have healthcare implications in the future. Chile was a "laboratory" for neoliberal economics under Pinochet, initiating the current era of laissez-faire domestic economic policies which have allowed Chile's economy to grow rapidly but has exacerbated the divisions between rich and poor⁴³⁵. Starting in the 1990's, newly democratic Chile was faced with failing infrastructure and a poorly run health system, which hit rural areas and poor urban districts the hardest⁴³⁶, which, in a money-based neoliberal health system, created an auto-catalytic cycle that persists at least in part to this day and maintains regional inequality. There is also a large discrepancy in quality of care based on inequality among those who have access to it. Only 2.9% of the poorest quintile are members of ISAPREs (which are generally more expensive and higher quality) whereas 38.2% of the wealthiest quintile have access to them. In the current system, adult women can also be required to pay up to 4 times as much as a man the same age⁴³⁷. Although Chile has made some attempts at addressing this inequality, particularly under Ricardo Lagos in the early 2000s, there is certainly more intervention necessary to extend access across Chilean citizens.

Finally, Uruguay is more similar to Argentina in terms of the problems the government deems pressing. Not having huge systemic issues with inequality or access to services⁴³⁸, and being on the latter end of the epidemiological transition, they are mainly focused on noncommunicable disease,

⁴³² DALES, R.E., CAKMAK, S. and VIDAL, C.B. (2010), Air pollution and hospitalization for venous thromboembolic disease in Chile. *Journal of Thrombosis and Haemostasis*, 2010.

⁴³³ Ministerio del Medio Ambiente (Chile) 2014.

⁴³⁴ AlJazeera. *Chile Protests: Calls to draft new constitution*. November, 2019.

⁴³⁵ Rotaru, Elena S, and Sakellariou, Dikaio. "Neoliberal reforms in health systems and the construction of long-lasting inequalities in healthcare: A case study for Chile". *El Sevier, Sciencedirect*, 2017.

⁴³⁶ Rotaru and Sakellariou, Case study for Chile, 2017.

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⁴³⁸ PAHO, Uruguay, 2017.

sexually transmitted disease, unwanted pregnancy, and nutritional issues. The Uruguayan government also has a series of health priorities necessary for expanding their already successful system.

The Ministry of Public Health in Uruguay has established a series of objectives for 2020 and beyond. One of its more systemic goals in recent years has been to increase human resource availability in order to improve the training system and cultivation of health workers. They created a human resources division in 2010 with the intention of developing the nursing field (as they were under-represented) and establishing a human resources information system country-wide⁴³⁹. The Ministry has also made it a priority to improve health education and technology. This includes both keeping the public informed, training professionals to use the latest technology, and updating their infrastructure to keep up with the digital age. Birth and death certificates are electronic, and the website Timbó provides free nationwide access to Uruguayan and international scientific medical publications⁴⁴⁰, indicating a good deal of success on this front.

Aside from aims at improvement, Uruguay has issues with nutrition throughout the country, problems pertaining to unprotected sexual contact in the younger population, and many of the non-communicable diseases that developed countries often deal with. The food intake in Uruguay has exceptionally high levels of salt, saturated fats, refined sugars and limited fiber⁴⁴¹. Various ministries in Uruguay have established an education campaign targeting younger citizens to combat this problem, but it has largely persisted⁴⁴². Also on the Ministry's list of critical health problems are HIV, unwanted adolescent pregnancy and early childhood developmental impairments⁴⁴³. The adult prevalence rate for HIV in Uruguay is 0.6%⁴⁴⁴, which is slightly higher than regional neighbours but not anywhere close to the epidemics that other nations face.

⁴³⁹ PAHO, Uruguay, 2017.

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⁴⁴¹ PAHO, Uruguay, 2019.

⁴⁴² PAHO, Uruguay, 2017.

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⁴⁴⁴ CIA, Uruguay - People and Society, 2019 .

Relative Legislation

Argentina, Chile and Uruguay have all undergone significant healthcare reforms in recent decades, all to varying degrees of success. In their respective reforms, one of the main aims was to increase the inclusivity and the accessibility of their systems, again to varying degrees of success.

Argentina underwent significant healthcare reform starting in the 1990s, prioritizing decentralization and self-managed status of the public sector and a revamp of the entire social health system⁴⁴⁵. One major aspect of the reform was the idea of “self-managed status,” where public hospitals could recover costs from private and social insurers, or those that paid upfront⁴⁴⁶. They allowed for more choice between Obras Sociales in an effort to incentivize competition between them. Argentina also modified the Solidarity Redistribution Fund (FSR), which collects a proportion of all Obras Sociales contributions and redistributes them to Obras Sociales that did not meet contribution quotas⁴⁴⁷.

Eleonora Cavagnero of the World Bank notes a central problem of the reform was that it did not feature a “comprehensive plan to reform and unify the sector”⁴⁴⁸. Other aspects of the reform were also largely unsuccessful. While the reforming government believed that introducing cost recovery for self managed hospitals would increase their budgets significantly, and that fostering competition between Obras Sociales by allowing workers to choose between them would decrease fragmentation, neither of

⁴⁴⁵ Cavagnero, Eleonora. *“Health sector reforms in Argentina and the performance of the health financing system”*. Elsevier, Sciencedirect, 2008.

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⁴⁴⁷ Cavagnero, Eleonora. *Health Sector Reforms*, 2008.

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those results occurred⁴⁴⁹. Some steps such as the FSR reform were steps in the right direction, but the overall plan of the reform largely did not come to fruition⁴⁵⁰.

Chile underwent major reform under President Ricardo Lagos in 2004 in an effort to reduce the country's severe problems with inequality. The reform became known as the AUGE. The new laws mandated coverage by either an ISAPRE or the FONASA if the patient can't afford an ISAPRE for selected medical interventions related to 56 prioritized conditions⁴⁵¹. The AUGE law also made four guarantees: insurers would be required to guarantee coverage for an explicit list of 56 conditions, the interventions would be delivered by registered and certified professionals in accordance with clinical regulations, waiting times would have to remain under a certain threshold, and insurers would guarantee reimbursement for the intervention to the extent that the beneficiary did not exceed the pre-defined share of household income⁴⁵².

These reforms have largely been regarded as successful, but also as not having the necessary teeth to address the level of inequality Chile was, and is, dealing with. Ricardo Bitrán of Health Affairs argues that the reform “brought about a considerable increase in access to health services for its fifty-six priority health problems” in both the ISAPRE and FONASA systems⁴⁵³. He also argues that there has been “sizable improvements in the treatment of chronic conditions among the beneficiaries of these two insurers”⁴⁵⁴. However, other scholars have indicated that the reforms are simply not sufficient to address all of the problems Chile is facing, particularly those related to inequality⁴⁵⁵. The reform was certainly a step in the right direction, but as left-leaning politicians have been increasingly pushed out

⁴⁴⁹ Cavagnero, Eleonora. Health Sector Reforms, 2008.

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⁴⁵¹ Bitrán Ricardo et al. “*After Chile’s Health Reform: Increase in Coverage And Access, Decline in Hospitalization And Death Rates*”. Health Affairs, Vol. 29, 2010.

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⁴⁵³ Bitrán, Ricardo. Chile Health Reform, 2010

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⁴⁵⁵ Rotaru and Sakellariou, Case study for Chile, 2017.

of the Chilean political arena in recent years, another Lagos-esque reform is probably not on the horizon.

Uruguay too, underwent extensive reform around the same time as Chile, in 2005. The Frente Amplio government, prioritizing accessibility, made the main goal of the reform to promote universality and accessibility in healthcare⁴⁵⁶. The reform created the SNIS system and entitled all working Uruguayans to private healthcare based on contributions from employee and employer salaries as well as state subsidization⁴⁵⁷. This then allowed for the public system to only focus on low-income and unemployed citizens. This reform has been widely regarded as successful⁴⁵⁸. Uruguay is exceptionally close to effective universal healthcare coverage. As the reform was recent and is in some ways still ongoing⁴⁵⁹, there is still time to see if Uruguay's situation continues improving.

Conclusion

The Southern Cone is in many ways an exceptional region within the greater context of Latin America. Despite Argentina, Chile and Uruguay all coming out of military dictatorships characterized by dark periods of repression and violence in the not so distant past, their civilian governments have been successful at setting up functional healthcare systems that maintain fairly stable and positive health indicators. They, to a much greater extent than the United States, have managed to include huge proportions of their populations into their health schemes and to some extent have all cemented healthcare as a human right. Uruguay in particular could one day potentially serve as a model for other small Latin American nations to follow.

⁴⁵⁶ The World Health Organization. Uruguay - Improving Health System Efficiency, 2015.

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Conclusion

Each country has a unique approach to their healthcare system. One thing that all of these countries have in common is institutional inequality. Whether this be through ability to pay, or by physical distribution of healthcare facilities in a country, it affects the quality of care in each nation. Hopefully through this analysis, we have shed some light on the obstacles these healthcare systems face, and the path forward to more inclusive and efficient policies.