Liam Liden

Professors Hinsa and Ferguson
GLP: Research Paper
April 26, 2018

Health Funding and Finance: How Health Payments Influence Outcomes

Healthcare systems in the United States, Cuba, and Costa Rica differ greatly in both financing and organization. Political organization and policy implementation often influence healthcare structures. For example, the socialist government of Cuba directly relates to the use of a publicly funded insurance system. Another example is the lack of a formal declaration of a right to healthcare in the United States, which has established a focus on market policy and privatization. While the actual financing a country spends on healthcare is influenced by a variety of factors, this paper will focus on how these financing schemes have led to vastly different health outcomes in Cuba, Costa Rica, and the United States. Evaluation of health economics is critical in an age of globalization. As demand for healthcare and expenses continue to grow—caused by the increasing share of populations requiring care—wealth becomes a greater influence on the patient's ability to get treatment. In societies lacking formal rights to health, care has grown to be vastly inequitable in both coverage and quality depending on a patient's financial background, race, gender, and other identifiers. Critical examination of how countries can avoid this equity gap and reduce treatment costs will be needed to build sustainable healthcare systems.

A significant misconception in health systems stems from the idea that more spending equates to better care. Expenditure, while often assumed to have a direct correlation to improvement in life expectancy, shows very little effect. Both Cuba and Costa Rica maintain life expectancies of 79.5 and 79.6 years old respectively. By contrast, the United States' life expectancy is 78.7 years old while spending 7% more of their respective GDP on health (World

Bank 2018). Comparing the larger GDP of the U.S. with Costa Rica and Cuba's GDP leads to an even vaster gap in total healthcare expenditure between the countries (World Bank 2018). This leads to a question: if GDP and spending do not lead to better health outcomes, how can financing and health economics be used to create healthcare outcomes that emphasize equity and quality? The answer lies in the integration of spending and system policy. The use of a publicly or privately funded insurance system and the form that financing takes—whether through taxes, out-of-pocket payments, or a mixture of both—achieve greater health benefits and play a larger role in determining outcomes than does spending.

The remaining portion of this paper is contained within three sections. A brief literature review regarding historical background of the compared countries and current health economics follows this introduction. After the literature review, findings on the effect out-of-pocket payments have on both influencing patient behavior and financing a healthcare system will be explained. Other findings include how public and private insurance programs influence the ability of a healthcare system to successfully and equitably treat illness. Following the findings section is the conclusion, which will summarize the overall paper and explain some benefits regarding insurance programs not mentioned earlier.

LITERATURE REVIEW

Most findings are formed through use of data and statistics from organizations such as the World Bank and World Health Organization in conjunction with field observations from the travel portion of the research. Current research on the overall effect of health expenditure has provided an abundance of data and research, though the answers to overcoming excessive health

spending and the deficiencies it brings are varied. This paper hopes to combine historical background from sources such as the book *Privatization in Costa Rica*, several journal articles, and reports done by organizations to form an alternative to ineffective mass health spending as exhibited in the U.S. healthcare system. The paper will contribute to the wide range of health economics literature and will play a role in providing possible answers to the problem of healthcare costs through insurance program and finance evaluation.

The historical context, particularly from the Costa Rican side of the analysis, is drawn from Anthony B. Chamberlain's *Privatization in Costa Rica*. The CCSS and INS play pivotal roles in explaining effects of global privatization in the book. The history discussed by Chamberlain directly applies to the topic of insurance programs within Costa Rica. Chamberlain agrees to several arguments against social insurance programs that will be discussed later while also examining weaknesses of the private sector, such as the growing inequities based on patient wealth (Chamberlain 2007:17). The mission of the Costa Rican insurance, according to Chamberlain, "… was never intended to generate income surplus. Rather, from the outset it was understood as a social service founded on the 'solidarity model'" (2007:103). This is important context for the policies that the Caja—the system of policies that make up the universal public healthcare system in Costa Rica—exist under. Healthcare for all was the primary concern during its founding, and as such the government was prepared to subsidize healthcare needs to achieve this goal. Privatization, especially of insurance, is a pushback to this initial mission, potentially threatening the existence of a solidarity system.

While Chamberlain provides an effective backdrop of information, the book's examples are somewhat dated coming from 2007. CAFTA, the Central American Free Trade Agreement, has changed several aspects of Costa Rican insurance policy since then. Part of this change comes from The Insurance Law No. 8653. The law was put into place on August 7, 2008 and allowed the private insurance industry access into what was once considered an INS monopoly (Thorburn 2018:44). Establishment of an organization to oversee the newly opened insurance market followed with the opening of SUGESE. They set forth regulations for new firms entering Costa Rican insurance and gave a few recessions to the INS, such as exclusive rights to the automobile, occupational, and a few other insurance branches (Thorburn 2018:45). In all, CAFTA has changed the course of Costa Rica's health system, not only through opening trade between Central American countries, but also through the massive change in available insurance programs.

FINDINGS

Out-of-Pocket Payments

Out-of-pocket payments (OPPs) are used differently depending upon the healthcare system you are analyzing, and this variation has huge control over who gets treatment and what quality the treatment will be. OPPs play different roles within Costa Rica, Cuba, and the U.S., and often relate to the governmental style of the country. In the U.S., OPPs occur on a consistent basis for the 8.8% of the population that are uninsured (Barnett and Berchick 2017). Many households with coverage must also pay out-of-pocket for deductible or co-pay policies. In Costa

Rica, OPPs only occur outside of the Caja public social insurance program. They fulfill a role in speeding up acquisition of care, whether that be through access to closer pharmaceuticals offered by the private sector, quicker access to diagnostics and scanning in private hospitals, or even just access to care faster through private hospitals. For example, Matambú, a rural community in Costa Rica visited during the research for this paper, residents often found themselves resorting to private pharmaceutical stores for their medicinal needs as the regional hospital was distant and transport was scarce (Mora et al. 2018). OPPs in Cuba are only used during payment for pharmaceuticals. Overall, OPPs have varying uses in healthcare systems, a fundamental aspect of payment for almost all care in the U.S., a way to spend extra in order to achieve faster care in Costa Rica, and for purchase of medical goods in Cuba.

By analyzing the effects of the different roles that OPPs play in a healthcare system, conclusions are drawn related to equity, quality, and quantity of care. OPPs produce inherent inequities in healthcare systems through altering incentives related to preventative care. Rezayatmand, a Department of Health Services researcher, found: “When patients are required to pay for counselling, the referral level declines by 97%” (2012:75). When payments above $5 co-pays are introduced as a barrier to preventative care, the use of such care is disincentivized heavily. Not only does the cost raise inequity gaps by preventing treatment to those who cannot afford the new increased prices, those who can afford the treatment suffer by raising prices in medical care, costing more money from families when it could be better spent elsewhere. Rezayatmand also found that the assumed effect of OPPs on moral hazard—a phenomenon stating that the higher insurance coverage one has the less healthy one will act—correlating

OPPs to reducing the incentive to act unhealthy is incorrect and contradictory. In reality, those purchasing more expensive insurance plans showed more priority in keeping themselves healthy. While some scenarios found that private plans with high OPPs caused more patients to stop unhealthy behavior like smoking, the presence of deductibles, copays, and other OPPs have caused reductions in medication adherence. In the case of some medicines such as cardiac medications necessary for life and exhibit inelastic supply curves, the implementation of a 25% co-insurance has no effect on the quantity demanded of the drug (Rezayatmand et al. 2012:77). Not only do OPPs prevent medical care from being utilized, often to the detriment of the patients who are supposedly living "healthier" lifestyles, they create equity gaps and price increases for essential medications.

Costa Rica's healthcare system has continued to privatize since the 2000s with reforms and the introduction of CAFTA, causing rises in OPPs nationwide. OPPs have continued to increase in Costa Rica, lowering public health expenditures from 77% of the total expenditure to 71% between 1991 and 2001 (Unger et al. 2011). This has risen to the point in which OPPs are a proportionately larger percentage of the total expenditure on health in Costa Rica than the U.S. (see Figure 2). This would indicate that Costa Rica is more effected by all of the adverse incentives introduced by OPPs mentioned earlier. While having higher OPPs does cause decreases in patient use of preventative services as mentioned by Rezayatmand, one must examine the whole picture of Costa Rican healthcare policy to understand how the system can mitigate such results. Costa Rica's implementation of community-based healthcare services as part of their universal insurance program has led to widespread engagement with preventative

care. Patients interact often with their doctors, and ATAP personnel make home visits to collect information and encourage community care daily. Almost all communities, with the exception of some rural towns and villages left out of the system (Mora et al. 2018), are closely knit with local care facilities and a doctor, nurse, statistician, and pharmacologist team (Odio 2018). The use of the CCSS in providing every Costa Rican citizen with free preventative care acts as a counteragent to reductions in equity and preventative care use associated with OPPs.

Cuba has similar policy implementations to counteract OPPs. Unlike Costa Rica, Cuba is not suffering nearly as much from the global capitalist introduction of free markets and privatization—most likely influenced by the ongoing embargo by the U.S. As such, OPPs play an even smaller role in the Cuban medical care system and influence it even less. Due to the lack of a private sector and use of OPPs only for purchase of drugs, OPPs contribute 100% of private expenditure in Cuba (see Figure 1). The minimal influence OPPs and privatization in general have on Cuba can be seen in their incredibly low share of health expenditure, with private payments and OPPs accounting for 4.4% of total health expenditure (see Figures 2 & 3). Since no OPPs are introduced regarding actual medical treatment—and the ones that are used for medications are incredibly low due to subsidization by the government—no adverse incentives or moral hazards are created within the healthcare system (Sanchez and Vazquez 2018). Overall, both Cuba and Costa Rica have implemented social insurance programs focusing on primary care and prevention at a community level that have caused a reduction in the negative impacts associated with OPPs.

These solutions to OPPs do contain weaknesses and may not work in all countries. Cuban healthcare relies upon a governmental style that may not be applicable in many countries. Financing effects related to a socialist government will be discussed in the next section, but without a financial source such as the government or heavy private investment, OPPs may be necessary for a healthcare system to function. Costa Rica has also shown that growing OPPs have effects on exclusion of certain populations from treatment. Matambú, being a rural community made up of an indigenous population, lacks the same advantages that large urban centers have healthcare wise. Transportation to the nearest regional hospital can be difficult to arrange, and OPPs can occur if households require medication and the easiest option is a private pharmacologist rather than a Caja-supported one (Mora et al. 2018). While they may still be able to afford private medications, the OPPs have an influence on financial aspects of these families. With wealth being a major determinant of health, OPPs may not totally exclude these populations from treatment, but they do influence them negatively. The growing use of OPPs in Costa Rica can be a blessing for the overloaded CCSS system, but any limitation of money means that certain populations and people will have larger benefits than others. The Costa Rican system does its best to assure care to the population regardless of social identities with a universal system, but privatization poses a threat to the values of the CCSS mission.

Overall, OPPs are important in when examining healthcare systems and can explain trends in consumer actions. They provide incentive to take different actions and influence behaviors of patients in ways that effect accessibility of treatment. In market-driven systems such as the U.S. OPPs, thought to reduce risk of moral hazard, produce barriers to treatment. Costa

Rica and Cuba lessen these impacts through community driven health policy and a focus on primary care. Not only does this achieve harmony with the OPPs that are established in their systems by providing free preventative care, but also produces less cost overall as preventative care has been found to be less expensive than hospital treatments (Villalobos 2018). OPPs are an influential piece of the bigger picture of healthcare finance.

Financing a Healthcare System: Analysis of the Public and Private Influence

Costa Rica, Cuba, and the U.S. use different balances of financial schemes to fund their healthcare systems. Cuba primarily uses citizen and corporate tax in conjunction with government financing and maintains low private expenditures. The U.S. is categorized at the other end of the spectrum. Private expenditure is half of all finance. Costa Rica provides a mix of the two, with around a quarter of funding coming from the private sector—most of which being OPPs. More differences appear upon examination of where insurance funding is coming from, namely social, compulsory, or voluntary. Social insurance—which is almost always compulsory—is split differently in the U.S. and Costa Rica. The Caja, which covers all citizens of Costa Rica, finances around 65% of the healthcare system (see Figure 4). Compulsory insurance in turn finances 66% in Costa Rica, 65% of which is Caja or social insurance funding and 1% of which can be accounted for by the INS through auto and occupational insurance programs. The U.S. lacks such programs, leading to a largely private market exhibited by the 35% voluntary insurance share of expenditure (see Figure 4). Multiple takeaways can be

gathered from the data. First, the single pool insurance system of Costa Rica, which includes universal coverage, can pay for around two thirds of the healthcare costs. This implies that of the 76% government expenditure, 10% is coming from foreign loan and domestic budget. Of the 50% government expenditure of the U.S., only half of it is being financed from compulsory or social insurance. Whereas the Costa Rican government is providing for around 13% of its own expenditure, the U.S. must pay for 50%. The two countries achieving near-equal rates in life expectancy, infant and maternal mortality, and other indicators, but the U.S. is suffering from a severe overuse of capital.

A study undergone in India regarding the private and public provision of vaccination treatments describes some effects that over-privatization can have. The data, collected from 1986 to 2012, used an economic measurement of income inequality known as the Gini coefficient—a calculation using calculus and graphical measurements indicating a percentage of the population and what percentage of the total wealth that population holds—to measure how private versus public delivery of vaccines had affected incomes of Indian households. The study found that when the private share of provision was increased by a single standard deviation, the Gini coefficient also rose anywhere from 1.5% to 2.2% depending on the vaccine and period (Bhattacharjee et al. 2017:175). Bhattacharjee also stated that, “Although we focus on vaccines, we observe that the effects are also robust to the inclusion of the private share in non-vaccine health care investments” (175). Income inequality, related through social determinants of health, has implications for health inequality as well. As the private share of healthcare markets continues to increase, treatment becomes harder to acquire for some populations.

Costa Rica is affected by the influence of private expenditure as well. The introduction of CAFTA and subsequent freeing of the insurance market has led to intense product differentiation and competition as more insurance companies enter the market (Thorburn 2018). CAFTA has also lead to a greater demand for services like x-rays provided by private doctors, in turn causing larger shares of private expenditure and increased healthcare expenditure totals (Unger et al. 2011). Unger argues that pre-CAFTA expenditures—dominated by the public sector—resulted in greater equity and outcome:

> Whereas the average percentage of private health expenditures at the end of the 20th century was 58% among Latin American countries as a whole, it was only 25% in Costa Rica, and only 0.12% of Costa Rican households had suffered a catastrophic health expenditure (in sharp contrast with Colombia, for instance, where 6.26% of households incurred such an expenditure). In addition, Costa Rican public health expenditures have focused on equity, with 29% targeting the poorest income quintile and 11% targeting the richest, in 2000 (Unger et al. 2011).

Private expenditure increases diminish all the mentioned benefits associated with public expenditure. For now, Costa Rica's public and private systems are working in harmony, but the detrimental effects of an expanding private sector threaten the mission of the Caja. Private expenditure places the power of deciding who should get care within the hands of a free market system, one in which all value is placed upon the acquisition of capital and therefore denies care to those who cannot afford pay, a huge detour from Costa Rica's right to health.

CONCLUSION

While most of this discussion has focused on differences in private and public insurance financing and the role of OPPs in finance, it is also important to recognize the general benefits of a system offering universal coverage. In addition to preventing health risks, insurance coverage

has been correlated with continuation of vaccines in children under 18 and an increase in one's perception of their own health (Escobar et al. 2010:101). Health insurance in Costa Rica and Cuba is strictly universal, providing strong incentives to utilize care which in turn creates healthier populations. Concerns exist within all healthcare systems, however, one concern in Costa Rica is the trend of immigrants suffering from exclusion from Caja services. As Escobar mentions, "… in significant ways the uninsured are disadvantaged from a health standpoint. They use medical care resources more haphazardly than the insured. We hypothesize that this happens principally because the insured enter the pyramidal Caja system at the bottom while the uninsured tend to enter closer to the top" (2010:103). These concerns provide insight into how U.S. citizens may act within the structure of their healthcare system. Because preventative care is less common, they find themselves often entering E.R. and urgent care units rather than taking steps to prevent illness. They haphazardly utilize medical services when illness arrives rather than preparing for it. This system not only costs more but is strictly unhealthier (Villalobos 2018).

Overall, both OPPs and financing schemes of insurance programs play pivotal roles on influencing patient behaviors and health outcomes of populations. While the U.S. system, "… may have the financial resources to delay payment now, the country will be forced to confront the unsustainable nature of its medical expenditures in the future" (Rudasill 2015:3). The U.S. should learn from the power of a universal insurance program, such as those in Costa Rica and Cuba, to influence patients to utilize services more often, and therefore finance the system through supplementary OPPs and single pool systems. Full-scale reformation may not be entirely

viable under the U.S.'s current sociopolitical situation, but small changes, such as the community care of the EBAIS in Costa Rica and nurse-doctor pairs of Cuba, could be implemented in the U.S., potentially in a universal and socially funded manner separate from normal care. Without adjustment towards equitable and preventative care, the U.S. will continue with increasing health expenditures and detrimental incentives within their system. A U.S. style healthcare system, one solely focused on aggregate medical expenditure and private insurance markets, has been found unsuitable and unsustainable in granting equitable and quality care to its population.

ACKNOWLEDGEMENTS

Thank you to both Ally Rogers, a fellow classmate, and Taylor Price, a writing lab mentor, for editing and reviewing this paper. They both contributed incredible insight. Also, thanks to all of the professors, guides, and officials that taught and guided us through both this course and the research trip. I’ve never learned so much in two weeks, and I will never forget the privilege of being able travel with this amazing group of people.

REFERENCES

Barnett, Jessica C. and Berchick, Edward R. September 12, 2017. "Health Insurance Coverage in the United States: 2016." URL: https://www.census.gov/library/publications/2017/demo/p60-260.html

Bhattacharjee, Ayona et al. 2017. "Healthcare Investment and Income Inequality." *Journal of Health Economics.* 56:163-177.

Chamberlain, Anthony B. 2007. *Privatization in Costa Rica*. Maryland: University Press of America.

Escobar, Maria-Luisa et al. 2010. *The Impact of Health Insurance in Low and Middle-Income Countries.* Washington D.C.: Brookings Institution Press.

Mora et al. 3/18/18. "Discussion about Health Challenges in Poor Rural Communities." Public Health in Costa Rica. ACM. Matambú, Costa Rica.

Odio, Daniel. 3/19/18. "San Ramón EBAIS Tour." Public Health in Costa Rica. ACM. San Ramón, Costa Rica.

Rezayatmand, Reza et al. 2012. "The Impact of Out-of-Pocket Payments on Prevention and Health-Related Lifestyle." *European Journal of Public Health*. 23:74-79.

Rudasill, Sarah E. 2015. "Comparing Health Systems and Challenges in Costa Rica and the United States." *Inquiries*. 7:1-3.

Thorburn, Craig W. March 9, 2018. "Costa Rica Five Years after CAFTA-DR Chapter 3: Insurance: The End of a Monopoly, and a New Beginning for a Market." URL: https://openknowledge.worldbank.org/bitstream/handle/10986/22013/9781464805684.pdf?sequence=1&isAllowed=y

Sanchez, Jose and Vazquez, Jose. 3/24/18. "Overview of Cuban Healthcare." Global Health Cuba. IFSA Butler. La Picadora, Cuba.

Unger, Jean-Pierre et al. 2011. "Costa Rica: Achievements of a Heterodox Health Policy." URL: https://ajph.aphapublications.org/doi/10.2105/AJPH.2006.099598#_i7

Villalobos, Luis. 3/20/18. Personal interview with Dr. Luis Villalobos about healthcare costs, preventative care, and Costa Rican insurance. San José, Costa Rica.

World Bank. March 5, 2018. "Health, Nutrition, and Population Statistics." URL: http://databank.worldbank.org/data/reports.aspx?Id=b8301aa1&Report_Name=DataSci

World Bank. March 5, 2018. "World Development Indicators." URL: http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators

World Health Organization. March 7, 2018. “Global Health Expenditure Database.” URL: http://apps.who.int/nha/database/Select/Indicators/en

APPENDIX

Figure 1: Out-of-Pocket Health Expenditure (percentage of private expenditure on health) (World Bank 2018)

	2010	2011	2012	2013	2014
United States	22.4%	22.2%	22.0%	21.9%	21.4%
Costa Rica	90.5%	91.0%	91.0%	91.0%	91.0%
Cuba	100%	100%	100%	100%	100%

Figure 2: Out-of-Pocket Health Expenditure (percentage of total expenditure on health) (World Bank 2018)

	2010	2011	2012	2013	2014
United States	11.8%	11.7%	11.6%	11.5%	11.0%
Costa Rica	24.0%	24.1%	24.4%	24.5%	24.9%
Cuba	4.8%	5.0%	5.8%	5.5%	4.4%

Figure 3: Health Expenditure, Private (percentage of total health expenditure) (World Bank 2018)

	2010	2011	2012	2013	2014
United States	52.5%	52.7%	52.6%	52.4%	51.7%
Costa Rica	26.6%	26.5%	26.8%	27.0%	27.3%
Cuba	4.8%s	5.0%	5.8%	5.5%	4.4%

Figure 4: Percentage of Health Expenditure by Financial Scheme (2015) (World Health Organization 2018)

	Private Expenditure	Social Insurance	Compulsory Insurance	Voluntary Insurance
United States	50%	23%	23%	35%
Costa Rica	24%	65%	66%	2%