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*Analysis of Health Care Systems of the  
First and Third World*

## **Introduction**

The subversive nature of health economics continues to complicate health policy. Ken Arrow, one of the fathers of health economics, described health markets as different due to their uncertainty, asymmetric information, and contagion & altruistic externalities (1963). Traditional models and frameworks that usually predict market behavior falter in health economic markets. The health sector itself can pose as a conundrum since people's health behavior has proven to be irrational and political systems fail to optimize these markets. Thus, health economics provides a necessary, coherent framework using economic systems to analyze the multiple objectives of health policy.

A health system is any economic system that is concerned with human health. Economic systems are comprised of economic units, agents, and institutions that act coherently, adapting and adjusting to the social and physical environments (Grossman 1972). Common examples of health systems include households, quality assurance programs, innovation systems, and drug and supplies distribution systems. A fundamental question in health economics is "What human decisions and actions can be taken that will save the most lives of the most disadvantaged?" The most disadvantaged and sick people inhabit the third world. However, from an economic standpoint, these countries have health problems that are the cheapest to cure. Thus, it makes the most sense to implement health economic policy to help these third world countries that already have low institutional capacity, spend the least, and have the least financial protection for their citizens. Addressing and resolving these issues will help diminish the monumental disparity in global health.

There is a need to reprioritize global health. The ability of sound health

care systems propelling countries to higher GDP/capita growth is significant. Therefore, solutions for these health system pathologies are imperative. Also, as history has shown, medical breakthroughs are not the only means to improve health care. Public health measures such as sanitation, housing, and nutrition, are critical to prevent infection diseases that run rampant in low-income countries.

Unfortunately there does not exist any all-encompassing theory that will resolve the health disparity that exists around the world. However, in examining and contrasting health care systems around the world, it is painfully clear that there is a need for rational economic policy. This work uses empirical evidence, theory, and interviews to analyze three major aspects of health care systems: (1) financing health care, (2) consumer incentives in terms of moral hazard and adverse selection, and (3) producer compensation. By setting parameters on the effectiveness of these systems, conclusions and trends can be drawn that will help guide future health policy in a positive direction. These deductions will be accentuated by specific case study work on the health care systems of France and South Africa. Finally, conclusions will be drawn about the nature of health systems in general and future global health policy.

## **Background**

### *(1) Financing*

The manner in which countries finance health care plays a critical role in the amount and quality of care citizen's receive and remains a primary issue for health policy around the world. Despite the complexity of individual health care systems, they can be categorized into three basic types. Type I health care systems finance and deliver health care privately, such as the core U.S.

system. Type II health care systems have public financing of the health sector and substantial private delivery; Japan, Germany, Canada, and France have health systems that fall into this category. Lastly, Type III health care systems have both public financing and mainly public delivery, like the United Kingdom (Besley and Gouveia 1994). Health care systems have adopted basic means to finance health care: general taxation, social insurance, private insurance premiums, and out of pocket payments (Wagstaff et. al, 1999).

### *Equity in Health Care*

The conversation of how to finance health care costs would be incomplete if the issues of equity and need were not considered.

Equity determines how health care is distributed and aims to answer the question of whether or not people are getting the health care they need. There are many theories on distributive justice, including Utilitarianism, Rawlsian, and classical liberalism.

Utilitarianism argues for the greatest utility for the greatest numbers, even at the expense of a minority. It has been criticized for having an unclear domain, upholding a notion of having a constant measurable level of happiness, and the issue of maximizing the utility of the malevolent.

Next, John Rawls issued the concept of social distributive justice from the standpoint of neutrality. In Rawls' mind, people who already had political or economic power should not determine social justice decisions. Instead, he posed the idea of a 'veil of ignorance' behind which decisions of social equality would be made. Rawls argued that under these conditions, society would chose to obey the maximin principle, maximizing the utility of the worst off. Critics of this theory argued that Rawls assumed incorrectly that every human being

behind the 'veil of ignorance' is extremely risk adverse.

Finally, the classical liberalism theory of distributive justice states that a human being has the rights to his property and himself. It has been critiqued on the grounds of the libertarian constraint in itself (Folland, Goodman, and Stano, 401-404).

Despite the numerous theories on distributive justice and equity, most nations have converged on a common notion when judging fairness in health care - health care payments should be linked to the ability of a consumer to pay, not on the consumer's use of medical facilities. This notion is rational since consumers will always remain uncertain when they will require health care at a specific time. The second common notion for health equity is universal access to health care. While there is debate upon whether there needs to be a ceiling for quality of care, there is a strong consensus that every human being is entitled to a fundamental level of health care (Wagstaff et. al, 1999). These global notions on health can be used as a benchmark for evaluating the extent to which health care systems of countries achieve health equity. In addition to financing and health equity, consumer and provider based incentives in health care systems also play a major role in terms of how health resources and services are allocated.

### *(2) Consumer Incentives*

#### *(a) Moral Hazard*

Moral hazard is defined as the reduced incentive to mitigate risk because of insurance (Kling 2005). When a consumer buys health insurance, the price per unit of service is lowered at the point of service; therefore, people purchase more service when they are insured. In the case for health care, moral hazard causes people with health insurance to purchase more health care than the system deems necessary due to the

decreased marginal cost for health services (Folland, Goodman, and Stano, 166). It is important to note that moral hazard does not insinuate moral perfidy; instead, the consumer reaction to moral hazard is a fully rational, incentivized occurrence (Rice and Unruh, 83).

### *(b) Adverse Selection*

Adverse selection - when insurance companies accept patients who use services at a higher than average rate of consumption- also distort consumer incentives. This occurrence is the direct consequence of asymmetric information; in health care markets, the potentially insureds have more knowledge concerning their expected future health expenditures than the insurance company. An important distinction to make is that incomplete information is not synonymous with asymmetric information. In fact, if patients are no better at predicting their intended level of health care services than their insurers, adverse selection will not occur (Folland, Goodman, and Stano, 201-206).

### *(3) Physician Incentives*

On the supply side of health care, the manner in which physicians are paid has a dramatic impact on the effectiveness of a health care system. The three basic ways to pay physicians are fee-for-service (FFS), capitation, and salary; health care systems utilize different combinations or variations of these methods. Through the 1980s, FFS remained the dominant method to pay physicians (with the NHS being the major exception); however, there has been a shift in recent years towards incentive-based payment systems throughout the world (Rice and Unruh, 328). The variability of physician payment systems seen between *and* within countries can be attributed to two causes. First, the different goals and structures of various health care systems

between countries may call for different methods of compensation. Second, the lack of consensus as to what method of physician payment results in the best outcomes can lead to variations in payment schemes within countries as well (Gosden et al. 2000). Thus, a universal method of physician compensation may not exist.

### *(a) Fee-for-service (FFS)*

The theoretical advantages and disadvantages of the three major forms of physician payment methods should be assessed. In fee-for-service, payment is given for each patient encounter or each item of service and the transaction occurs after care has been provided. It is a familiar payment method that patients and physicians are accustomed to and has served numerous medical specialties.

A crucial gain of FFS is that it incentivizes performance and theoretically rewards physicians who work hard, raising quality. However, FFS does not favor primary care functions, especially comprehensive care of patients with various chronic conditions. Administrative costs are also higher in FFS because claims must be made for every service prescribed. Finally, there is no place in FFS for rewarding enhanced access to physicians such as after hours, telephone calls, or email correspondence (Berenson and Rich 2010).

However, physicians who are paid through FFS have the incentive to over provide care to inflate income, decreasing the effective allocation of health resources. This phenomenon, called supplier induced demand (SID) can be explained by examining a doctor's utility function

$$U = U(\pi, L, I) \quad (i)$$

where  $\pi$  is net income from the practice,  $L$  is a doctor's leisure time, and  $I$  is the degree of inducement. Inducement results when physicians place their own effort to persuade patients to purchase more health service than

necessary, leading to SID. The inherent roots of SID come from the information gap between patients and their physicians. Once patients become ill, they hire physicians to act as their agents. The issue however is that the agent in this case is the provider and seller of health care, leading to a principal-agent problem. The supplier can use this information advantage to encourage the patient to demand a greater quantity of health goods and services than the Pareto efficient level, resulting in welfare loss. Evidence of SID can be measured by changes in consumer demand caused by a decrease in a physician's profit rate; this reduction is due to increased competition, leading to physicians raising their inducement  $I$  to pull profits back to their original levels (Folland, Goodman, and Stano, 314-321).

#### *(b) Capitation*

The second major form of paying physicians is capitation, where physicians are paid per registered patient. Unlike FFS, the capitated physician knows the monetary amount they will receive before any care is provided (a prospective payment).

A major advantage to this method is accountability between the patient and provider. Also, the capitated physician has more flexibility to invest in new personnel and technology, enhancing access, coordinated care, and thus, quality. Because capitated physicians are not paid per service, they have more incentive to contain costs and not authorize superfluous procedures. Instead, doctors in this system are more inclined to prescribe preventative care to reduce future costs since they are paid on keeping patients from becoming ill, not for treatment once they already are ill. However, it is often difficult to set capitation rates and as a result, doctors are at times incentivized to withhold services (Berenson and Rich 2010). Also, physicians may

attempt to hold larger patient lists in order to increase income, resulting in higher workloads and shorter consultations, reducing quality of care. Capitated physicians also draw in patients by creating reputations of high quality and easy access to health care in their practices (Gosden et al. 2000). However, capitation can cause the under provision of health care (decreasing efficient allocation) unless there is some factor adjusting capitated physician incentives; common examples of adjusting incentive factors are quality scores, satisfaction scores, and coupling capitation with FFS for health services that benefit society such as preventative care and immunizations (Rice and Unruh, 329).

#### *(c) Salary*

The third common physician payment system is salary, where doctors get paid a fixed amount to work a set number of hours per week, per year. Like capitation, this payment method is also prospective, and due to the simplicity of claims, has the lowest administrative costs.

A key benefit in salary-based physician compensation is that the physician can freely act to accommodate the patient's best interests without any concern for financial advancement, increasing the quality of care administered. Since salary payment neither incentivizes over providing care (as with FFS) or withholding care (as with capitation), the method of payment is incentive neutral (Berenson and Rich 2010). Also, within a practice, hospital, or group, paying doctors on a salary opens opportunities for additional performance incentives with minimal complications. However, salaried physicians that devote more time and effort to a particular patient with complex problems will either have to increase total hours worked and/or reduce time available to serve other patients, creating a misallocation of health resources.

Another disadvantage of the salary payment is that because the method is incentive neutral, it reduces accountability and eliminates the social contract between the patient and physician. In theory, this view is explained by arguing that salaried physicians consider the organization, and not themselves, responsible for patient satisfaction; thus, salaried doctors are more willing to leave a problem for someone else within the organization, compromising quality. Lastly, diligence in salary-based payment is not rewarded as highly as in other payment options; thus, the physicians who go above and beyond to care for their patients and obtain positive outcomes might not be justly compensated for their efforts in a salary-based payment scheme (Berenson and Rich 2010).

## **Results**

Now that a background on financing health care (with respect to type I, II, and III health care systems), consumer incentive implications of moral hazard and adverse selection, and the forms of physician compensation has been established, these concepts should be analyzed within specific health care systems.

### *(1) Financing Health Care*

#### *(a) United Kingdom*

Analyzing the financing patterns of health systems in different countries can elucidate what are effective and ineffective ways to pay for health care. Great Britain's National Health Service (NHS) was established in 1946 and provides health care to all British residents. The system is financed largely through revenues and pays general doctors on a capitation basis. The majority of hospital physicians are paid on a salaried basis. Due to opting out pressures, 10% of the population uses private health insurance. There are several key advantages to the financing method in the United Kingdom.

The NHS keeps costs low by rationing waiting lists and the use of new technologies. Also, because the system pre-determines the demand for health care of each citizen, consumer uncertainty plays a smaller role. This can be viewed as advantageous because it prevents the consumer from over consuming health care due to a lack of medical information. Another advantage of the NHS is universal access. However, upper class patients still spend more on care for a given illness than lower-class patients, highlighting that health services are not entirely free (Maynard 1990).

Providing universal access to the entire population also has its disadvantages. In efforts to keep costs low, the NHS has experienced excessive waiting lists and limits of availability with new technologies. This phenomenon has even deterred citizens for purchasing some forms of health care. There also have been shortages of doctors, nurses, and hospital beds within the NHS system in recent years. Lastly, because of the finance structure of the NHS, incentive problems have arisen. The longest waiting lists for NHS services have arisen in specialties where doctors in those areas have the highest earnings. This fact is telling because in the NHS, doctors are paid salaries to practice 11 sessions per week. In the private sector, doctors are allowed to work as many hours as they chose on a fee-for-service schedule. Thus, the lack of NHS specialists in high earning areas means that there was a migration from NHS to private practice in Great Britain.

However, the NHS does well in terms of achieving health equity. Since the system's introduction, the NHS has been very popular because of universal access and relatively low costs. The ability to pay has been addressed in the NHS, with people who have money and value health more opting out and the rest of the population feeding into the

universal NHS system. Second, because everyone under the NHS has access to a fundamental level of health care, the NHS meets the second standard for health equity as well. There also has been a quasi-market effort with the NHS called the purchaser-provider split. Under this initiative, the centralized NHS bureaucracy was supplanted with a quasi-market mechanism under which purchasers of health care (regional health authorities and fund holders) distributed budgets to acquire services for the respective populations. The purchasers remained distinct from the hospital (the providers), creating the quasi-market setting. This change reduced waiting times and waiting lists for people in the NHS system, creating further equity between private health care and the NHS system (Folland, Goodman, and Stano, 492-498).

*(b) Canada*

Like the NHS, one of the most admired health care financial infrastructures is the Canadian health care finance system, called Medicare. Canadians enjoy national health insurance that is supported by grants from the federal government. The coverage administered by the 10 provinces and 3 territories of Canada must be universal and portable (individuals can transfer coverage between provinces within Canada). Citizens enjoy several advantages under Medicare such as zero barriers to access and the freedom of choice in choosing physicians. Unlike under the NHS, most Canadian physicians work in private practice and have the power to admit people to hospitals. They are paid by their respective provinces on a fee-for-service basis under negotiated fee schedules. Hospitals are also private, despite the fact that their budgets are approved and mostly funded by the provinces. Costs and hospital fees are kept relatively low in Canada due to

a number of factors. Under Medicare, doctors charge fees that result from a negotiation between physician organizations and the provincial governments, thus eliminating the ability of physicians to price discriminate. In a similar manner, the provinces also regulate hospital costs and the centralized mechanism allocates health resources to the hospital sector. Medicare in Canada reveals many advantages of National Health Insurance (NHI). First, it creates a safety net for all residents, regardless of background, employment, or age. It also gives patients a choice in choosing a provider for health care. Lastly, NHI incentivizes markets to control costs and makes health care easier to administer with a single-payer system.

However, Canada's health care system does have complications. Many Canadian's are losing confidence that the provinces will be able to fund the current NHI system. The federal government will either have to find new revenue, increase taxes, increase health care delivery efficiency, or scale back benefits to deal with the increased financial burden. Other critics of the Canadian health system state that the care is allocated in a manner that it cannot be supplied on an appropriate time frame. There is no opting out option in the Canadian health care system that is readily available, although some Canadians use the United States to fill this role. Lastly, the waiting lines that exist in the NHS also appear in the Canadian health system; such problems are less frequent in market-based health systems such as the United States.

Nevertheless, Canadian Medicare, like the NHS, does reach a high level of health equity. Universal access is present, and because of a lack of private health care, there is less inequality between the quality of care the rich and the poor can obtain. Since the wealthy cannot simply opt out of the national health system as they in the

NHS, a greater sense of equity is reached with Canadian National Health Insurance. Under a fully comprehensive NHI plan, a complete lower bound for health care is present that entitles all citizens to a basic level of health care – a notion that most countries recognize as a standard for complete health equity (Folland, Goodman, and Stano, 502-516).

*(c) United States*

A discussion of the U.S health care system will provide a rare example of a health system driven primarily by market forces but contains two social insurance programs, Medicare and Medicaid. The effects on the U.S. health system after the introduction of Medicare and Medicaid in 1965 have been significant, leading to an increase in health care costs and inflation. The United States remains one of the few OCED countries to use markets as the dominant allocation method.

The advantages to using a market system for finance and delivery of health services include increased efficiency of delivery with less waiting lines and increased choices for consumers. Also, the public provision of health care tends to cost more than private services (Mueller 1989). Lastly, it is worth drawing the distinction that efficiency is not the sole driver of privatization; easing government burdens and efforts to redistribute costs can also serve as enforcing agents and positive effects of market provision.

However, there are several disadvantages of relying on markets to provide and finance health care. In reality, markets are not perfect and tend to have several market failures leading to inefficiency. In health care, insurance markets are directly linked to financing health care because people prefer to make steady, incremental payments when in good health rather than large, potentially crippling payments when their health fails.

The two main problems in health insurance markets financing health care are cost control and universal access. Patients rarely face the actual market price for a given health care provision due to insurance which essentially subsidizes the health care purchases at the margin. Similarly, new technologies cannot be implemented efficiently because the market price of those services cannot be accessed either. Another issue with cost control escalation is the physician-patient agency problem. Because there is asymmetric information between the two agents, consumers tend to over-consume health care. Market-dominated financing of health care also causes problems in universal accessibility of health care because of adverse selection or if the heterogeneity of health status is observable. Insurance companies cannot witness the underlying health of their consumers, leading to high inefficiency. When these companies can observe the health status of their consumers, outcomes do not necessarily improve. Often times, people with long-term conditions end up losing effective health insurance (Besley and Gouveia, 1994).

*(2) Consumer Incentives*

*(a) Moral Hazard in the United States*

The United States is a prime example of the role moral hazard plays in a largely private health system. In 2004, health savings accounts (HSA) were introduced under President Bush. HSAs aimed to minimize moral hazard and upheld the stance that Americans were over insured and over consumed health services. Under the HSA system, consumers pay for routine healthcare with their own money that can be saved in a tax-free account. For catastrophic payments, U.S. citizens can buy basic health insurance packages with specific annual deductibles. This system was viewed as the final step towards actuarial health insurance, minimizing moral hazard. However, health



savings accounts became the antithesis of universal healthcare; insurance was no longer seen as a solution but rather the problem, leaving forty-five million U.S. citizens uninsured (Gladwell 2005). This statistic indicates the extent moral hazard plagues the U.S. health system. Copayments, where the insured pays out of pocket some fraction of the service charge, are used to reduce moral hazard in the United States. They take on four basic forms: a flat rate charge per service, coinsurance, deductibles, or a combination of the latter two. The RAND Health Insurance Experiment (HIE) provides empirical evidence for the effect of copayments on the demand for medical care. Families were randomly allocated to one of fourteen different fee-for-service (FFS) plans or to a prepaid group practice. The FFS plans had varied levels of cost-sharing: (1) coinsurance rates were 0, 25, 50, or 95 percent and (2) each plan had a maximum dollar expenditure limit of 5, 10, or 15 percent of the entire family income up to maximum of \$1000. The results showed that the utilization of health services was responsive to the amount paid out-of-pocket, meeting the effectiveness criterion for general consumer utilization. Per capita expenses in total on the free plan were 45% higher than those on the 95% coinsurance plan. Also, outpatient expenses in the free plan were 67% higher than those on the 95% coinsurance plan. (Manning et al. 1987). Another effectiveness criterion for methods to minimize moral hazard is utilization of services by various groups. In comparing families on cost-sharing plans with families on free plans on occurrence of specific diseases, HIE found that the effect of cost-sharing was larger for low-income families (below \$20,200 per annum) than high-income families. For example, the probability that a poor adult would seek treatment for acute pharyngitis if on a cost-

sharing plan was 54% of the probability a poor adult having free care would obtain treatment. These probabilities for low-income children were even higher; however, there was little difference in probabilities between high-income families (Lohr et al. 1986). Lastly, there were negligible effects of cost-sharing on general measures of health in the HIE experiment; possible explanations are that the measures of health were too limited, the experimental sample was too small, and the time frame of the HIE was too narrow (Donaldson and Gerard 1989). The second manner in which the U.S. health system combats moral hazard is fixed periodic per capita pre-payments that are paid directly to a provider of comprehensive healthcare. The RAND HIE randomly assigned 1673 people to either one HMO or a FFS plan in which care was free at the point of delivery (Ware et al. 1986). Results showed that in terms of patient utilization, general expenditures per person in the HMO group were 72% of those on free FFS, indicating a significant less hospital-intensive care in HMO plans (Manning et al. 1987). Next, people in good health that were assigned to the HMO did not suffer; however, there were differences between low and high-income groups that began the experiment with health problems. The HMO performed well in improving general health ratings and cholesterol levels compared to the free FFS plan, but for the unhealthy, low-income group, HMO care resulted in more sick days and severe symptoms compared with free FFS (Donaldson and Gerard 1989). Thus, the health status for the low-income sick group was lower in the HMO.

*(b) Moral Hazard in the United Kingdom*

Because the NHS offers universal health insurance, the manner in which moral

hazard affects the UK health system differs from the U.S. system. Healthcare providers in the NHS system do not incur the full opportunity cost for many types of care (eg. diagnostic tests). Therefore, these physicians are subject to *provider* moral hazard.

Because the British taxpayer is the funder for healthcare, moral hazard's effect on costs are partially masked to consumers. To combat provider moral hazard, the NHS uses a non-price rationing method utilized by physicians that forces them to make judgments that affect patient waiting times for elective treatments. A 10% increase in waiting time is estimated to lead to a 6% decrease in demand for inpatient care (Lindsay and Feigenbaum 1984). Other figures reveal that 25% of patients in England who are on a waiting list wait 96 days (for non-emergency care leading to hospitalization). Of the remaining 75%, half are admitted on scene and the other quarter are booked or transferred from other hospitals. These statistics refute the notion of long waiting times in the NHS, and the option of primary ambulatory care signifies that few have to wait for general care (Bloom and Fendrick 1987). Also, most waiting times are for elective treatments that have little clinical relevance.

In evaluating the effectiveness of physician time rationing, it should be noted that the relationship between price and waiting time is not exact. Unless patients die while waiting, wait time has no deterrent effect on the demand for care and thus, on patient and group utilization of healthcare. Finally, assuming that the patients who die in waiting rooms under the NHS is negligible, the rationing of waiting times by physicians does not play a large role in health status (Donaldson and Gerard 1989).

*(c) Adverse Selection in the United States*  
Adverse selection, another deleterious force in health insurance markets, has had a

crippling effect on the U.S. healthcare system. The insurance contract itself is enough to lead to an experience rating in the United States; high coverage and high premiums will attract the sick while low coverage and low premiums will attract the healthy. However, if one health plan is the recipient of sicker enrollment, raising the next cycles costs and premiums, only the sickest consumers will continue to sign up. Costs will rise until no one can afford coverage, leading to the firm going bankrupt. This dramatic consequence of adverse selection, called the death spiral, has occurred in the United States.

For example, the University of California adopted a fixed contribution policy in 1994. This new policy saved the university money as plans now had incentive to compete with one another regarding premiums and employees could switch to cheaper plans. However, the spillover effect caused the only FFS plan, Prudential High Opinion, to go into a premium death spiral. In 1993, 10% of employees were enrolled in Prudential High Opinion and paid \$750 for annual coverage. By 1996, premiums had quadrupled to \$3,300 and enrollment was at 1%. The death spiral continued until in 2001; the premium was \$17,000 for single coverage and a staggering \$40,000 for family coverage (University of California 2001).

Combatting adverse selection in the United States healthcare system rests upon the principle of group insurance. Most employees and their families in the U.S. are insured through their employer instead of individual plans. Group plans allow insurers to implement precise experience ratings, where premiums are based on the history of the group. Also, since employees have limited choices, they cannot fully capitalize on their asymmetric information advantage (Folland, Goodman, and Stano, 206). In accessing the effectiveness of these policies

in controlling adverse selection, emphasis in the US lies with employer-based group utilization, creating automatic risk pools that minimize adverse selection.

*(d) Adverse Selection in the United Kingdom*

Adverse selection plays a smaller role in public healthcare systems like the NHS because single-payer insurance serves as an automatic pooling equilibrium. However, adverse selection is present regarding the selection of patients by private providers. This situation is analogous to HMO's picking consumers in the United States. For example, Kaiser Permanente (a U.S. based HMO) acts similarly to general practitioners in the UK- both have salaried physicians and no financial barrier at the point of use. Over 25% of the Kaiser members have 0 visits and only 7.5% have more than 10. Also, 1.9% of the elderly account for 31.3% of expenditures (Scheffler 1989). This distribution of expenditure makes the point that in Kaiser Permanente, a few people use the majority of services. General practitioners (GPs) in the UK face a similar distribution and must not admit too many high-usage patients. If adverse selection forces take over, a GP's practice can get derailed similar to insurance companies in a death spiral.

To prevent this occurrence, capitation payments are adjusted for factors that cause high health expenditure (age and health status). Also, adverse selection is less significant in large consumer groups; if GPs can acquire numerous patients, the forces of adverse selection can be absorbed. Lastly, controlling patient choice with lock in periods can force high-risk patients to move less often, easing the determination of the capitation rate paid (Scheffler 1989). Effectiveness of these measures lies in their ability to affect individual patient utilization and form large group utilization pools to minimize risk.

*(3) Provider Incentives*

Shifting gears to the supply side of health care, it quickly becomes clear that theoretical rationale is not enough to determine which payment systems are more effective in terms of quality of care and efficient allocation of resources in specific health care systems. To test whether the theory behind various payment options holds true, empirical evidence needs to be accessed.

In the U.S., what is immediately striking when analyzing data is the large variation in physician payment options. Under Medicare, 77% of enrollees are in the traditional FFS, leaving only 23% in Medicare HMOs and other plans (KFF 2008a). On the other hand, among the working class citizens that have health insurance, 20% are in Health Maintenance Organizations (HMOs), 58% in Preferential Provider Organizations (PPOs), and 12% in point-of-service (POS) plans. Only 2% of this group are in FFS and 8% in high deductible plans (Claxton et al. 2008). PPOs in the U.S. mostly pay physicians on a FFS basis while there is greater variation among HMO and POS plans. Regarding primary care, managed care plans utilize FFS (25%), capitation (61%), and salary (14%). Specialists however are largely paid through FFS (75%), with capitation (13%) and salary (11%) utilized less frequently (MedPac 2000). As theory would suggest, such large variation in physician payment methods *within* a health care system indicates that there is no clear consensus on the most effective methods to pay doctors; furthermore, different aspects of a given health care system (eg. Medicare, managed care, primary care, and specialists) may respond better to certain forms of payment over another. Due to the complexities of modern health care systems, physician payment options cannot be generalized to

one health care system; to increase quality and efficiency of health care, each payment option must be applied for a *specific* sector of a given health care infrastructure.

The lack of agreement in paying physicians has led to empirical work directly comparing different types of payment options within one health care system. Studies have shown in relation to capitation, FFS results in more primary care visits, specialist visits, higher continuity of care, higher compliance with a given number of visits, and more frequent use of diagnostic and curative services.

However, FFS has also led to fewer hospital referrals, a lower satisfaction score, and less access to their physicians in relation to capitation (Gosden et al. 2000). Theory accounts for these findings as FFS is predicted to lead to a higher provision of care and visits compared with capitation; at the same time, FFS also stimulates SID which explains the higher utilization of diagnostic and curative services in relation to capitation and salary-based payment options. Physicians also are more accountable for their patients under capitation versus FFS, justifying the lower satisfaction scores and less physician access when doctors are paid per service.

While FFS remained the predominant method to reimburse physicians up until the 1980s, there has been a gradual trend in developed countries *away* from FFS and towards more prospective payment options such as capitation and salary (Rice and Unruh, 364 -365). For example, Canada (a country known for its complete reliance on FFS) is following this gradual trend. In 2000, Allan Rock, the Canadian minister of health, asserted that for Canada to remain a public health care system, primary health care reform away from FFS as the standard form of remuneration had to occur (Iglehart 2000). Canada is not alone in this progression; in fact, the country is part of a larger, global movement to implement

regional, prospective budgets for health resources based on capitation payments. There is strong agreement that regardless of the infrastructure of a health care system, provider cost containment and accountability are contingent upon capitation (Rice and Smith 2001).

## **Discussion**

### *(1) Financing*

Significant conclusions can be drawn by comparing the advantages and disadvantages of private and public provision and financing of health care in various countries with regards to type I, type II, and type III health systems.

Type I health systems like the United States fall lowest on the health equity scale in terms of fulfilling the notion that health care delivery should be based on need (Wagstaff and Doorslaer 1992). Equity is the seminal advantage of public financing because as noted previously, market failures create uneven distributions of health care that leave the poor and uninsured worse off. The hallmark of public healthcare is relatively uniformity. Evidence shows that there has been a convergence for countries towards type II health systems (public financing with mostly private delivery). This movement has positive implications for both the case for health equity and efficiency. The problems of market failures that result in an uninsured population are eliminated and due to public financing, a basic level of health care is assured. Also, in type II health systems, governments have more control over the aims of health care contingent on the social norms of the country.

The main advantage of type II health care systems over type III is competition, which dramatically increases efficiency while still maintaining a basic level of health equity (Besley and Gouveia 1994). Although further research needs to be conducted to

validate the superior health equity and efficiency of type II systems over type I and III, the advantages and disadvantages of health systems examined in this study indicate that this convergence is a positive step in improving health financing around the world.

### *(2) Consumer Incentives*

Moral hazard and adverse selection play significant roles in all health systems, even in those of highly industrialized countries such as the U.S. and the UK. Various methods to combat these forces have been analyzed on the criteria of patient utilization, various group utilization, and health status. Coinsurance reduces patient utilization, mainly in low-income groups. HMO's also have positive effects in controlling moral hazard and lower costs but reduce health outcomes for low-income families. Pooling risk by employer-based insurance is an effective method to control asymmetric information advantages and manage adverse selection in the U.S. Lastly, monitoring capitation payments, locking in patients, and enlarging patient pools have been effective patient utilization methods to control provider-based adverse selection in the UK. Empirical evidence by large studies such as the Rand HIE support these findings and validate combative methods. In the U.S. combative strategies against moral hazard and adverse selection negatively affect low-income families the most. In the NHS, moral hazard and adverse selection distort incentives for providers, requiring supply-side combative policies. Thus, by keeping adverse selection and moral hazard on the forefront of health policy decisions, these detrimental forces can be handled effectively in the years to come.

### *(3) Provider Incentives*

The three basic ways to pay physicians (FFS, capitation, and salary) have been

analyzed based on the combination of theory and empirical evidence, and effectiveness of these payment plans has been discussed on the grounds of quality and efficient allocation. Many implications from theory have shown to hold true in light of recent empirical evidence; however, due to the complexities of today's health care systems, one physician payment system cannot meet our effectiveness criteria when applied to an entire health care sector.

Instead, by analyzing individual parts of a sector, directly comparing various physician payment options, and calculating the percentages of various forms of payment within a health care system, trends can be drawn. The major global progression in recent years based on empirical evidence has been away from FFS and towards capitation. This trend has been centered on the increased importance to control costs and heighten physician accountability, two major advantages of capitation.

However, an important factor to consider is that the implementation of new policy regarding physician incentives can be incredibly difficult to track due to the lengthy pipeline to train physicians. Thus, there can be a lag between the introduction of provider-based policy and its effects. For these reasons, there is still limited data on the influence of payment systems on physician behavior; however, recent evidence and theory together have shown that payment incentives do seem to affect behavior in predictable directions (Goodson et al. 2001). These findings are encouraging as novel payment systems that combine the favorable elements of FFS, capitation, and salary are currently being proposed that rely on a sound understanding of provider incentives.

### ***Case Study: A closer look at opposite ends of the health care spectrum***

A major reason for comparing different health care systems around the world is to incorporate elements of successful health care programs into weaker systems; the health care systems of France and South Africa for example are on opposite ends of the spectrum for quality health care provision. The World Health Organization (WHO) ranked France's health care system as the best in the world; South Africa on the other hand landed 175 on this list (World Health Report 2000). Much of the economic theory of health care systems discussed in this study is highlighted by the juxtaposition of the French and South African health care systems, revealing useful concepts and important observations along the way.

### *The French Health Care System*

The French health care system has numerous components that developing countries can attempt to emulate. The majority of the population is covered by health insurance funds that are organized on the basis of sectors of the labor market. In 2000, the Couverture Maladie Universelle (CMU) was created to offer a second comprehensive universal coverage to the poor, unemployed, and legal migrants without coverage (Imai et al. 2000). The French health care system, often described as a compromise between Britain's NHS and the U.S. health care system, is grounded on three tenets: free provider choice, no limit to services reimbursed, and the only limits on prescribing care are general rules doctors must follow (Sandier et al. 2004). Health insurance is funded from payroll taxes by employers and a social contribution levy by individuals. The national government also serves major functions in French health care; it regulates expenditures and distribution of hospital resources, controls the prices of pharmaceutical and medical fees, and decides the level of financing for public hospitals. Because the government is the

body of a nation that possesses morality, giving government influence on health care has proven beneficial in France. Next, the National Health Insurance Agency for Salaried Workers, the main national health insurance fund, provides coverage for 80% of the population and is governed by employer representatives and employees. Levels of insurance coverage do vary in France, with the type of service influencing the extent of coverage offered. French citizens also purchase supplementary insurance to cover compulsory copayments.

In terms of physician compensation, two-thirds of doctors in the ambulatory care sector in France work in private practice (and are paid on a fee schedule) while public hospital physicians are salaried. Another key asset to the French health care system is that patients can visit specialists without referrals, creating mobility within health care. However, in 2004, direct access to specialists became modified so that patients paid more if they accessed a specialist without obtaining a referral. In private practice, the fee schedule is negotiated between representatives of the public sickness funds and physician unions. The minister of health finalizes this negotiation. Next, French hospitals are managed by the public sector (45%), the private sector (35%) and nonprofit organizations (15%). These hospitals are given global budgets and local managers in conjunction with governing boards handle the management and staffing decisions of the hospital. The Carete Sanitaire, a map used to measure and plan the allocation of hospital services, governs the regional planning of health resources (Rice and Unruh, 380-383). Karl Dunz, an economist at the American University of Paris, states that the French health care system has several strong facets but is not flawless (2011). While France spends much less on health care than other developed countries, doctors are paid much

less. Dunz argues that modern health policy will rarely be pareto optimal (benefiting people without making anyone worse off) and winners and loses will always result. However, one of the reasons the French system has had so much success is that because it is centralized, the government can distribute preventative tests that catch potentially expensive diseases to treat. For example, every year, stool sample tests are given out in France to check for the presence of colon cancer; a generic test like this could not be administered in a market-based health care system such as the United States. Finally, Dunz states that a part of the reason why coverage is so universal and people end up seeking less health care in France is due to genetics and the fact that the French are very risk adverse. A multitude of these peripheral factors ease the burden on the health care system in France (2011).

#### *The South African Health Care System*

On the other hand, the South African health care system faces a multitude of social and economic challenges that undermine health care quality, access, and administration. Dr. Flavia Senkubuge, a professor and doctor at the University of Pretoria School of Public Health, discusses the *nature* of the South African health care system, uncovering several nuances that empirical literature might overlook. To begin, South Africa has a three-tiered health care system; the national system creates health policy, the provincial system is in charge of the secondary hospitals and the implementation of health policy, and the district system focuses on primary care. There has been a revitalization of the district health care system of South Africa in an effort to equip South African hospitals with the resources to make them “first world” health care centers. However, after apartheid ended in South Africa, the social integration that was expected never fully materialized. As a result, there are still

communities that are not getting access to basic, primary health care (Senkubuge 2011).

Methods are at work to amend these problems. Dr. Senkubuge defines an effective health care system as one that “meets the need of the people and produces one thing, health” and argues that strides have been taken to meet this goal (2011). However, the central issue in South Africa regarding health is that the country faces a *quadruple burden of disease*: (1) disease of poverty, (2) violence and injury, (3) maternal and child, and (4) communicable and noncommunicable diseases. Thus, a major drawback for health policy is that it cannot ignore any of the four burdens of disease, severely straining the health care system. However, public health specialists argue that the issue is not about policy but instead an issue with implementation. There is a shortage of human resources due to South Africa’s brain drain and the duration of time it takes to produce doctors further exacerbates the problem. A possible solution to help with the implementation of health policy is the creation of the midlevel worker that will serve as a bridge between the patient and the doctor and have the training to administer basic health care. Apart from implementation issues, violence in the form of homicide, intended car accidents, and hate crimes (issues that are less apparent in highly developed countries) are incredibly prominent in South Africa and further stretch the capacity of hospitals and primary care facilities. Dr. Senkubuge states that the violence in South Africa is *distinctive*- there is an observable anger and brutality to the crime in South Africa that many ER doctors state is disturbingly unique to the region. The types of crimes include child on child rape, gang murder of infants, and morbid stabbings and beatings. In addition to the brutality of crime in South Africa, some of it is incredibly precise. After

the end of apartheid in 1994, there was a huge inheritance of old soldiers and many of them were not fully absorbed into the police structure. South Africans speculate that these same individuals are behind many of the largest, most precise crime in the region. Because the incidence of crime and violence is so high in South Africa, educated, capable families (especially those with young children) are inclined to leave the country, worsening the brain drain problem of the country (2011).

The issue of crime and violence in most instances is out of the scope of health care systems. However, South Africa serves as an incredibly important exception. After apartheid ended in 1994, many poor South African citizens believed that natural reconciliation would result. Blacks were expected to move out of townships and the whites in the suburbs were expected to embrace them, creating what many locals called *the rainbow nation*. However, reconciliation was not immediate. A black elite emerged, the white elite remained, and the income disparity gap widened, all while the overwhelming majority of the population remained poor. This series of events resulted in resentment that *transcended* color. These issues tie back into the health care system of South Africa because the burden of violence and crime plays such a large role in terms of hospitalizations and capacity issues.

However, Dr. Senkubuge does see hope for South Africa's future concerning social resentment. The *20-20 children*, those born in the years following 1994, don't see color and wealth as disruptive forces and have a limited understanding of the horrors of apartheid. Many teachers at the University of Pretoria state that the upcoming generation of students is more competitive and driven to invoke change. It is now up to this generation to begin to mitigate the racial *and* economic tension in South Africa, hopefully reducing violence and crime as a

major burden of disease in the process (2011).

The large economic disparity in South Africa addressed earlier also poses an interesting question for health policy. Parts of South Africa are incredibly developed (such as Sandton and Cape Town) and resemble first world cities while others (Pretoria and downtown Johannesburg) remain incredibly third world. Also, there is a small minority in South Africa, mostly white, that still controls the overwhelming majority of the income and power in the country. As a result of this large gap in social status, there is a large variation in primary care services demanded depending on *where* in South Africa a clinic is located. As a result, the concept of a *basket of services* (a list of services offered at every primary care clinic) had to be removed because it was economically inefficient and did not address the needs of the community. Replacing the basket of needs came regional diagnoses that were incorporated into primary care facilities, greatly increasing efficiency in terms of the allocation of health resources.

All these issues amount to the major health care concern issue of South Africa—how to address the quadruple burden of disease. There is a strong consensus that because of the large economic disparity and inequality in South Africa, implementation of policy needs to be done at the microeconomic level. Past policy has taught South Africans that singling out one disease at a time is not the solution. Instead, Dr. Senkubuge and most public health specialists argue that for South Africa, aid, money, and sound policy is substantial enough to begin making a difference. The key in terms of health policy rests on the decision of *where* to spend the money. Instead of picking specific diseases to target, a good place for policy to begin is with the various diseases that are affecting and



killing the most citizens on a *community* level scale. This method takes into account the economic disparity and social tension variations that drive violence and crime, allowing resources to be allocated in a much more efficient manner (Senkubuge 2011).

## **Conclusion**

To sum, the goal of this study was to piece apart the fundamental aspects of different health systems around to world in both the first and third world to disentangle the incredibly complex issue of health care and find implications for future policy. We found that with regards to health financing, type II health systems (public financing with mostly private delivery) have several advantages in terms of equity, efficiency, and competition. Next, we observed how moral hazard and adverse selection inhibit the effectiveness of insurance markets. Several methods of combating these forces were discussed. The different methods to pay physicians were then analyzed. Finally, it was found that there is a major global progression in recent years away from FFS and towards capitation with the goal of controlling costs and heightening physician accountability. These concepts laid the groundwork to discuss two health care systems that lay on opposite ends of effectiveness - the systems of South Africa and France. Explanations were postulated to elucidate why the French health care system has had such success were given. In contrast, accounts were also posed to detail why South Africa's health policy concerns are unique and daunting.

This study reveals numerous facets about health care systems that have strong implications on health policy in general. First, because health is so complex, economic tools often lead to predictions that are different from observations. This does not indicate that the theory is wrong or impractical. Instead, the sole implication

that results when theory does not match empirical observation is that some of the underlying assumptions were violated (Feldstein 1988). In health care systems, there is a plethora of indicators that emphasize that there is *no* reason to believe that the competitive marketplace will lead to the best outcomes. Thus, a better approach to solving health issues is on a more microeconomic level. Alternative policies for a given issue should be implemented and empirical evidence gathered on a community level. From this point, a true judgment of whether policy improves *health* (in terms of mortality, life expectancy, quality adjusted life years, ect.) can be made.

Furthermore, in recent years, global health policy has rested on supply side tools such as capitation, diagnosis-related groups, physician practice guidelines, technology controls, and utilization reviews (Rice and Unruh 2009). None of these policy tools are contingent upon working in a competitive market, and research indicates they have resulted in positive outcomes for health care systems. While the challenges to improving global health care seem daunting, it is important to remember that proposed solutions need not, and perhaps can never be, optimal. Health care systems do not fully internalize and absorb all sound policy decisions or the effects of various interactions within them (Ray 1998). As a result, the role of global health policy in today's world of exceptionally intricate health care systems should be to generate conditions upon which the internalization of positive benefits can be heightened. This point is possibly the central message of the entire study.

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