

**Of Maximizing the Efficacy of Resources to Fulfill the Duties of the Universal Right
to Health Care Demands**

Submitted by
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Abstract:

Health care reform and what a government ought to be responsible has, more recently, been at the forefront of a nation's political agenda of social reform. Rationing of medical care, whether all individuals are entitled to health care, and what health care services should be available for all people are questions that have been at the core of this debate. In this thesis, we will argue that basic health care is a fundamental human right; a great disparity in access to basic health care among the world's poor is immoral and unjust. Additionally, this thesis will explore the data collected on a community in Nicaragua and a community in the United States to argue that equitable health care is ineffective at mitigating the health care injustice. Although we recognize there are practical constraints in closing the gap, this analysis will provide suggestions on how to minimize the unjust inequality of care provided to disenfranchised populations.

Project Distribution

The following study was conducted by a team of two investigators, Nahrain Putris and Morgan Farrah, under the guidance of Dr. Elysa White, Professor of Philosophy, and Dr. Maria Paino, Assistant Professor of Sociology. The majority of the research conducted involved surveying patients at the Gary Burnstein Clinic in Pontiac, Michigan and Global Brigades in Salales, Nicaragua. Initially, Nahrain was responsible for conducting surveys at the Gary Burnstein Clinic and Morgan responsible for Nicaragua surveys. However, with the plethora of patients at the Nicaragua clinic it was only feasible to divide the work between us. Nevertheless, Morgan completed most of the work in Nicaragua and Nahrain completed the work in the Gary Burnstein clinic. We both participated in IRB approval. Morgan was responsible for data analysis of Nicaragua patients and Nahrain for Burstein patients. In terms of paper collaboration, Nahrain made the initial philosophical argument and provided information on the Gary Burnstein Clinic. Morgan provided information on Global Brigades and the study methods of the project. We both collaborated on the final discussion after analyzing the results together in order to synthesize our final argument.

Introduction

Human rights are moral claims that are rooted in basic human interests. The claim that health care is a right and is universal is rooted in the idea that all persons have rudimentary interests that are universally shared and which establish duties that the society is obligated to protect and enable. Some interests are so important for all human beings that they give rise to positive duties to help see that they are satisfied (e.g. adequate food, shelter, or access to immunizations) (Hessler, 2002). These basic interests are not only important for individuals to live, their fulfillment enables people to live a *good* life by enabling them to express autonomy. That is, their fulfillment is central to enabling people to express their humanity by allowing them to focus on larger and greater goals.

All people have a basic interest in health care¹ because health is embedded in everyday life. Medical ailments undermine a person's autonomy which includes the ability to work and their overall wellbeing. This in turn can affect a family as well. For example, children of a sick father or mother who is the sole breadwinner will also suffer as no source of income is being generated. In turn, a parent's sickness disables a family from focusing on what is truly important to them. Therefore, it should be the duty of the government to protect and promote health care as they do with life, liberty, and security.

Specifying the content of duties with respect to the right to health care that ought to be enforced, however, is not as simple as justifying why health care should be considered a human right. We need to define the right in order to know the standard we

¹ We should similarly clarify that “a *right to health care* implies, on its face, a right to certain services; by contrast, a *right to health* seems a right to be healthy, which is an impossible standard” (Hessler, 2002).

must live up to. The *right to health* set forth in the WHO Constitution and in several international human rights treaties is the right to “the highest attainable standard of health” (WHO, 1946). Criticized for being ambiguous, two trends have predominately characterized the literature associated with understanding the human right to health care. Some human rights scholars and healthcare professionals emphasize that the scope of health care is limited if it solely classifies health care by the services medical professionals provide (Hessler, 2002). Should we define the right to health care so narrowly? Chapman argues, “there are areas of the world in which the most valuable steps toward improvement of care are not medical services but public health protection. Poor countries with limited resources would better improve health standards by investing scarce resources in clean water and environmental clean-up rather than by offering curative health care to a small fraction of the population” (Chapman, 1994). We agree with this wider view that the human right to health care is not exclusive to medical care.

In addition, some scholars claim that we need a universal definition of health care in order to determine the content of our duties that the right to health care gives rise to (Toebe, 1999). But we think this approach is wrong headed. Hessler and Buchanan have argued that attempting to establish an international law that mandates egalitarian services for all people fails to address cultural differences or that most nations can only ensure a limited array of services (Hessler, 2002).

Hessler and Buchanan have determined that it is pointless to hold all nations to the same standard of health care they should provide for its people; however, they do claim that the extreme inequality of “the international distribution of resources is seriously unjust” (2002). Countries are not living up to the fulfillment of that right.

Specifically in the United States, even with the establishment of the Affordable Care Act, 28.5 million people in 2015 remained without coverage. Moreover, people of color were at higher risk of being uninsured than non-Hispanic Whites (Key Facts about the Uninsured Population, 2016). Studies repeatedly, in turn, have demonstrated that the uninsured are less likely than those with insurance to receive preventive care and services for major health conditions and chronic diseases (Hadley, 2007). Internationally speaking in under developed countries, there are larger “in country differences in terms of the coverage gap between the poorest and wealthiest.” In India and the Philippines, for example, the wealthiest groups are three times more likely to receive health care than the poor (WHO, 2008). Nevertheless, international communities should be responsible for motivating poorer nations and supplying all people with adequate health care to improve their overall wellbeing (Hessler, 2002).

Therefore, the idea of the right to health care as one of equality actually undermines the goal of health care in the first place. Providing equal money does not fulfill this right nor does implementing a universal and rigid system of how all forms of international health should proceed to care for patients fulfill this right. Instead, specific resources and services that aim to mitigate a particular community’s health care or public health deficiencies ought to determine what is needed to fulfill the universal right to health care. We were interested in investigating the ways patients perceive quality of care at two community clinics that appeal to poor people in relative areas. Specifically, we collected data on a community clinic in Nicaragua and a community clinic in the United States. Although both free health organizations serve disenfranchised populations, we hypothesize that the care patients receive in the United States would be far more just than

the care patients in Nicaragua would receive. The following data presented will also be used to argue that while free clinics are a step in the right direction, they employ the exact definition of the right to health care that we reject.

Background

Context: Nicaragua – Community of La Salales – Global Brigades

Nicaragua is the second poorest country in Latin America. Most recent measures indicate that 29.6% of the Nicaraguan population is living below the poverty threshold (CIA, 2015). Moreover, poverty is largely a rural issue though pockets of poverty in urban areas such as the capital, Managua, are present. The most vulnerable populations are the self-employed small-scale farmers and their families. Many live on less than \$1.25 USD a day (WFP Nicaragua Country Brief, 2016). While Nicaragua has seen an increase in government expenditures on health care, 9% of the country's GDP in 2014, its health care system still requires improvement. It is principally true that under the Sandinista party Nicaraguans have the right to free health care in which hospital and public clinic fees have been eliminated. In reality, however, the access to health care for the majority of Nicaraguans remains challenging. In 2009, 92.6% of health expenditures were in reality paid by Nicaraguans.

Typically, primary care clinics in rural areas may be out of reach for many members of a community, out of necessary chronic medications, short of staff, or limited in time and diagnostic equipment. Nicaraguan physicians are also some of the lowest paid physicians and thus must allocate time to working both public and private health care spheres (Chan, 2015). The physician density for their population of approximately 6 million is 1 physician per 1,000 people (CIA, 2015). This is the context within which

several western medical missions travel annually to support the rural Nicaraguans who desperately seek medical attention (Chan, 2015).

In this study, we focused on the responses of both men and women over the age of 18 in the community of Salales. The following community information assessing Salales' current health and economic status was provided by the Global Brigades Monitoring and Evaluation team. Salales, located in the department of Leon, has a population of 870. The community has a multi-grade primary and secondary school that serves over 100 students with 8 teachers and 9 classrooms. In regards to health, the community has access to one health center; however, their pharmacy is not stocked completely as funds for resources are solely dependent on the availability of government funding. Additionally, Salales has previously partnered with the International Rotary Club to construct a water system that is currently being monitored by a committee of five.

Our surveys were conducted alongside Oakland University's Global Medical Brigades. Global Brigades Inc., established in 2007, is the largest student-lead nonprofit sustainable organization. The clinic's mission aims to empower volunteers to facilitate medical care, increase prevention through education, and provide resources for patient follow up in order to provide sustainable health solutions. The following information was kindly provided and supplemented by onsite staff during our December Brigade (G. Mercene and B. He, personal communication, Dec 2016).

Mobile medical clinics and preventative health workshops are implemented within partner communities through the utilization of student and health professional volunteers participating in 7-10 day programs called "Medical Brigades". Medical Brigades are typically made up of about 30 university student volunteers and a mix of

local and international doctors, accompanied by translators, local pharmacists and other members of the Global Brigades team. Typically, the volunteer to staff ratio is about 3:1. Before each brigade, a local Medical team associated with Global Brigades conducts at least one community visit to meet with community-based leaders to prepare them for their role in the upcoming brigade. During these visits, community volunteers are also trained to prepare patient consultation spaces, assist with patient intake, direct patient traffic, and provide health education workshops during the brigade. These trainings build leadership capacities within the community as well as improve knowledge sharing around important public health education between brigades. Depending on the number of volunteer groups and weather limitations, two-four day long mobile clinics are implemented in each partner community at least twice a year. Clinics are advertised via word of mouth. When a community allows Global Brigades to host a mobile clinic, the community organizes a committee to help (1) relay information on when and where clinic days will be scheduled and (2) volunteer in organizing community members to help facilitate clinic stations. Communities are typically chosen based on its centrality and proximity to other surrounding communities that would maximize patient turnout. Global Brigades' in country, local staff also assists with information relay to the surrounding communities. It is a collaborative effort in order to inform the host and surrounding communities. Advertising for clinic begins 30-60 days before arrival of volunteers. While it has been noted that advertising can be improved upon, the following factors have been observed to have a significant effect on patient turnout. Geographical distance between communities, holidays and day of week (e.g. Church services on Sunday), and

work (e.g. low patient turnout during harvest season as most families harvest crops for income) can be attributed to low patient turnout.

The physical site of the Medical Brigade and details of setup vary depending upon the community and availability of resources. During the site visits, the Global Brigades team works with the community leaders to identify the space, most often a school, to utilize the versatility of neighboring rooms to operate the clinic. Different rooms are designated for distinct functions (e.g. intake, triage, consultation, etc.), similar to a traditional hospital, with patients transitioning through the different stations. After each brigade, each patient at the end of a brigade will have left with a complete consultation from a physician, oral treatment from a dentist, preventative education, and appropriate medicine for symptoms presented during consultation and additional medicines for common medical ailments that may arise before the next brigade in that community.

In patient clinic, both public health initiatives and patient education are integrated in the services Medical and Dental Brigades provide. All patients visit *charla*, educational workshops, before they receive their medications. Community leaders or community health workers facilitate adult charlas in which discussion and conversation on various health topics ranging from sexual health to personal hygiene is encouraged. Children attend children charla in which volunteers engage in a variety of activities to promote dental hygiene.

The clinic receives private donations in order to sustain itself and is incredibly stable. Global Brigades offers glucometers to its patients. Nevertheless, local licensed physicians that are hired for the Medical Brigade utilize their expertise and all body senses to diagnose a patient without the need for the equipment. Additionally, they focus

on listening to patients, asking various questions as to understand what they feel, where they feel the pain/symptoms, and what they do that could have caused their reported symptoms.

The Medical Brigades follow the Nicaragua Ministry of Health's (MINSa) guidelines and regulations. It can affect the quality of care, as MINSa may not allow particular equipment or donated medications and supplies with timely submission of necessary paperwork. Nevertheless, Global Brigades has established close relationships with the Ministry of Health and the Ministry of Education. These formal relationships have allowed Global Brigades to synchronize their medication list with that being used in the community health centers. Additionally, primary or secondary schools have been used as sites for mobile clinics and to solicit the assistance of local health professionals to provide routine vaccination or consultations with specialists in the region to complement the basal level of what is accomplished during a Medical or Dental Brigade.

Global Brigades ensures continuity of care through the following programs: Monitoring and Evaluation, Community Health Workers, and Patient Referral. Monitoring and Evaluation makes use of the data collect in Data Informatics, essentially an online medical records system. Paper copies of the intake forms are stored for up to a year while electronic versions are compiled and analyzed by the Medical staff's Data Informatics Lead. The compiled data is used to show trends in a specific community over time and the impact that the Medical Brigades, among other programs, has on a community. Community health workers (CHWs) help complement mobile clinics. The program trains and empowers community-elected volunteers to be first-responders, health educators, and health promoters. The CHWs aim to provide basic medical care, monitor

chronic conditions, and serve as point persons for health care issues from within their homes year-round. CHWs receive approximately six months of training, a comprehensive guidebook, and telephone numbers of full-time licensed doctors to ensure patients receive adequate follow-up between Medical Brigades. Furthermore, the CHWs help to prevent potential health complications in their communities through emergency treatment and health care education. They are trained in first aid and wound care, treatment of tropical diseases, STD transmission and prevention, family planning, nutrition, hygiene, and other topics depending on the need of the region. CHWs also learn how to monitor the health status of community members about preventative health measures.

Lastly, patient referral supports the sustainability of the Medical program by ensuring that patients receive necessary care even if that care extends beyond the means of a typical brigade or scope of the CHWs program. During a Medical Brigade, Global Brigades physicians identify patients who cannot be fully treated during the brigade. For an emergency case, a staff member will take the patient to the nearest health clinic or hospital to receive care that cannot be administered on the brigade site. For cases that require follow-up within a few weeks, the Global Brigades physician will give the patient a referral form, which guarantees the patient an appointment at the nearest health clinic or hospital. Additionally, the program follows up with patients after a brigade season to assess the status of the consultations and determine if further follow up is required as well as discuss the logistics of the consultation. If logistics (i.e. duration of care, cost of care, type of condition) seems to be unmanageable by Global Brigades, volunteer groups may sponsor the case. Again, the program is dependent on the extra support from the

volunteers. Overall, Global Brigades acts as the liaison for these groups once they return home to maintain communication with the group through their fundraising efforts.

Context: Michigan, United States – Community of Pontiac – Gary Burnstein Clinic

Pontiac is a city in the United States residing in Michigan located in the Metro Detroit Area. According to the U.S. Census Bureau, 35.7% of the population lives below the poverty line. This is higher than the national average of 14.7%. Moreover, the most common race or ethnicity living below the poverty threshold in Pontiac is African American followed by White and Hispanic or Latino. Additionally, the median yearly income of Pontiac in 2015 was \$28,505 (Michigan - \$49, 576; United States - \$53,889) (U.S. Census Bureau, 2015).

According to Galen who has documented the impact of poverty health of Detroit, communities find many difficulties in staying healthy. “State governments have reduced investment in public health by nearly \$392 million, and federal funding (excluding emergency and stimulus funds) has gone down in recent years (when adjusted for inflation). In 2009, Michigan ranked 45th in how many dollars per capita the federal Centers for Disease Control spent (Galen, 2010). For example, diet has become more of a significant risk for chronic diseases as the number of supermarkets within neighborhoods to buy healthy food has become increasingly obsolete.

Medicaid for the poor is the main U.S. program for health care. In 1996, Medicaid insured one million Michigan residents. In 2010, 1.8 million were covered. 1.2 million were uninsured. Galen noted that in 2010 30% of Michigan’s population was either on Medicaid or uninsured. Nevertheless, 80% of uninsured families have at least one family member working full or part time. Medicaid eligibility is limited to exclusive groups of

people (i.e. low income, disabled, elderly, and children). More recently, state legislature has eliminated coverage towards special services such as hearing aids, podiatry, optometry, and adult dental care. With Medicaid's low reimbursement, many doctors also refuse to accept Medicaid. This limits access of doctors. Few private practices are available for those with Medicaid and those that are available are not within distance and require waiting for long periods of time (Galens, 2010). According to the U.S. Census Bureau, the clinician to patient ratio in Pontiac is 1:151 (2015). In turn, the lack of primary care physicians has placed an emphasis on patients seeking care for chronic conditions at local hospital emergency departments without proper follow up care (Galens, 2010).

The Gary Burnstein Community Health Clinic (GBCHC) located in Pontiac, Michigan was established in commemoration of Dr. Gary Burnstein, a cardiologist who provided care for patients in homeless shelters in Pontiac. GBCHC's mission statement is as follows: "to provide free primary medical care, women's health care, and dental services to low income, uninsured and underinsured individuals of our neighborhood community in a caring, compassionate atmosphere". Eligible patients are 18-65 years old, uninsured or homeless with an income at or below 250% of the Federal Poverty Level (approximately \$30, 000 for 1 person). Dr. Burnstein's dream of providing free medical care for the underserved has been recently expanded to a new 7,000 square foot facility. According to staff and volunteers, the larger facility has allowed the clinic to expand its role in the community, treat more patients from a wider geographic area, and offer preventative care. In 2015, the clinic provided over 3,000 office visits, and more than 1 million dollars in prescriptions to over 2,000 patients. Moreover, public health initiatives

and patient education services is integrated into the goals of clinic in order to better treat chronic conditions and offer preventative care.

The following information was kindly provided by the Executive Director during our visits at the GBCHC (J. Brox, personal communication, Jan 2017). The clinic is privately funded and it has been commented that funds are somewhat stable. GBCHC provides access to medical and dental professionals, medications, blood work, and an opportunity to for patients to regain their health again. In order to fulfill these services, the clinic has an array of diagnostic equipment: ultrasounds, EKGs, EMGs, colonoscopies, vitals (i.e. blood pressure, temperature, pulse oximetry, weight), urine tests, blood tests, and a defibrillator is onsite. A friend of a volunteer or staff member at some private practice supplements other necessary equipment that a patient may require. Additionally, staff will send out grants to acquire needed equipment.

The clinic has a board of directors headed by a president responsible for ensuring that the executive director carries out his or her role. The executive director is then responsible for ensuring that the front office manager, dental manager, community outreach coordinator, and finances/back office manager carries out their roles as well. Moreover, the executive director ensures that the pharmacy director, medical director, and volunteers also follow through their required roles. Medical students, licensed physicians (that complete a certain number of hours of continuing medication education requirements), physician assistants, and nurse practitioners are among the caregivers at GBCHC. A variety of specialists other than general medicine (e.g. dermatology, ENT, pulmonology, podiatry, gynecology, cardiology, ophthalmology, chiropractic, physical therapy, neurology) are also offered to patients.

Most of what happens in clinic or rather the execution of clinic actually happens before clinic starts. The executive director ensures that there are sufficient volunteers and the appropriate kinds of volunteers. For example, without a written official contract between a nurse practitioner (NP) or physician assistant (PA) and a licensed physician, patients cannot be consulted unsupervised. Therefore, with an online scheduler, the appropriate kind and number of health care professionals volunteer. Moreover, lab resources and medication availability is confirmed. The office manager also will contact patients to remind them of their appointment (typically one day in advance) and any necessary documentation required for the visit. After clinic, staff ensures that the patients receive the appropriate medications and those who apply for the patient assistance program (PAP) to receive more expensive, free medication have filed the appropriate paperwork correctly. On average 12 patients are seen per clinic day. Patient visits mimic those of a private practice in which patients check in and have their vitals taken before consultation with the physician. After consultation, patients wait for their medications and consultation with the pharmacy volunteer if they require medications. Follow up appointments are also made before the patient leaves.

State and federal regulations or rather best practices are followed in order to mimic private practices. Some federal regulation is disregarded since funding is entirely private and thus not mandated to fulfill. It has been noted that although some federal mandates are indeed beneficial, many are insensible and place a burden on staff with no extra benefit to the patient or caregiver. This has been noted to be beneficial as physicians and medical staff can focus exclusively at meeting the needs of the patients.

Contrasting to a private clinic, all extra specialties are offered at this one facility. Because volunteers are not compensated and thus medical professionals are not paid by the hour or visit, physicians are free to take as much time with minimal constraints. Staff and volunteers have the opportunity to essentially freely dictate what they would like to do and how they would like to proceed to best take care of patients that arrive to the clinic.

Although continuity of care is not something GBCHC strives for, accommodations are made for patients that request to be scheduled with a certain physician. It was also noted that GBCHC hardly advertised their clinic and its associated services. It was remarked that there was a lot of room for improvement. The surrounding community is largely unaware of the clinic; however, the new community outreach and development directors are attempting to make improvements and progress advertising.

Study Methods

Data for this study were collected from two different medical clinics. Data was collected from a Global Medical Brigade in Salales, which is in the department of Leon, in Nicaragua, and from the Gary Burnstein Clinic, in Pontiac, Michigan, USA. Data was collected from Global Brigades in December 2016 and from the Burnstein Clinic in January of 2017. Surveys were conducted from Global Medical Brigades for a duration of three days, while they were conducted at the Burnstein Clinic over a one month period. The numbers of patients seen between the two clinics in a day are drastically different. The Global Medical Brigades clinic sees over 150 patients on average per day, where the Burnstein Clinic sees around 10 patients per day. The clinics were selected by the primary investigators, choosing clinics that provide free health care to underserved

populations, in countries at different levels of development. Data was collected through surveys conducted before and after the patient saw the medical professional.

IRB approval was obtained. Surveys were conducted at the Global Medical Brigade first. Advertisement for the study was placed at the intake station, where the patients initially signed-in to be seen at the clinic. If patients decided to participate in the study they had the opportunity to line up in a separate line for triage. This was an incentive as this line was usually shorter than the other lines. Patients were taken to a private room where the consent process was followed and the pre-exam survey data was collected. Data was collected solely through surveys. Patients in Nicaragua primarily spoke Spanish, so consents and surveys were verbalized to participants by a trained translator. After the patient saw the medical professional they were directed to a private room to complete the post-exam survey, again, with a translator.

Surveys were conducted in a similar manner at the Gary Burnstein Clinic. The opportunity to participate in the study was advertised and interested patients filled out the pre-exam survey before they saw the medical professional, and then the post-exam survey after.

Surveys were given to each medical professional providing care to patients at both clinics. A survey was provided to those who run the clinics in order to obtain logistical information on the clinic itself.

Data was entered into Microsoft Excel, then transferred into STATA 14 for analysis. After excluding cases that had missing data on any independent or dependent variables of interest, we were left with 177 patients for our analyses and results are presented using odds ratios.

Dependent Variables

Just as we cannot identify the specific duties we have with respect to the right to health care without defining that right, we cannot assess if we are living up to that standard without a definition of quality and efficiency of medical care. Quality of medical care is defined in “Measuring the Quality of Medical Care” as “the effect of care on the health of the individual and of the population” (Rustein et al., 2009). Efficiency is often brought into the model when determining the quality of medical care considering that more of an emphasis has been placed on healthcare rationing; however, effective medical care does not necessarily mean for the betterment of the patient. Quality must be confirmed by direct results of improved health in individuals and the community served (Rustein et al., 2009).

Since efficiency does not guarantee quality health care, it was not applied to our statistical model. We were not interested in the “money saved” or which program utilized the least number of resources while caring for the patients but rather we were interested in the outcomes of the care provided to the patients.

The American Medical Association states that high-quality medical care consistently contributes to improving the quality and duration of life of a person (Blumenthal, 1996). Both definitions were used when determining how to operationalize quality care. In this study, we define quality health care as care that not only benefits a person’s immediate state of health but also attempts to tackle the root cause of a patient’s struggles; it brings a person’s daily context-where one lives, grows, and works to the forefront in order to improve the person’s overall quality of life. It tackles, that is, the idea of autonomy that’s central to the argument that people have a right to health care.

Therefore, the patient characteristics selected as independent variables were used to measure enhancement of patient autonomy in these following three dependent variables: the level of relationship between physician and patient, patient satisfaction, and patient's understanding of diagnosis.

Each dependent variable comes from separate questions on the post-exam survey. The level of relationship between patient and physician was asked in the following manner: "Rate the level of relationship you developed with your physician (0-no relationship, 2- somewhat trusted/respected not entirely comfortable, 3- indifferent, 4- trust/respected and comfortable, 5- completely trusted/respected & comfortable)". Because responses were overwhelmingly one sided, responses were coded using "1" for "completely trusted/respected and comfortable" and "0" for reporting anything less. Patient satisfaction was asked to participants in the following manner: "Were you satisfied with today's visit?" (1 – not satisfied, 2 – slightly satisfied, 3 – indifferent, 4 – satisfied, 5 – overly satisfied). Responses were coded using "1" for "overly satisfied" and "0" for anything below overly satisfied because responses again were overwhelmingly one sided. Patient understanding of diagnosis was a created variable. On the post-exam survey patients were asked the following question, "Did the physician help you understand your medical situation?" (yes or no). The associated follow up question was as follows, "If yes, please put in your own words. If no, what do you wish would have been explained better?" Written responses were then analyzed to confirm whether patients that selected "yes" in part one of the question truly understood their diagnosis. Responses that were rejected explained how the medication was taken or at least directions provided by the physician, left blank, or simply reiterated the diagnosis without

any further explanation as to what the conditions truly entailed. Thus, this variable was coded using “1” for “yes, diagnosis was fully understood” if patients that selected “yes” in part one of the question provided a logical explanation as to what they were diagnosed with. Otherwise, any mismatch was coded using “0” for “no, diagnosis was not fully understood”.

Independent Variables

The independent variables used in the analysis included the sex of the patient (males are coded as 1), the work status of the patient (homemakers are compared to all other statuses, including full-time workers, part-time workers, self-employed, and unemployed/looking for work), the educational attainment of the patient (people with and without formal education), and the patient’s age (in years).

We also include independent variables that capture medical professional characteristics. We include the medical professional’s sex (female is coded as 1), how rushed the medical professional felt during the consultation with the patient (very rushed compared to anything other than very rushed) and the number of years of experience the medical professional had. Finally, we account for the location of the clinic, and include a variable that indicates whether or not the clinic was located in Nicaragua or the USA. Our models do not include other factors that may play an important role in predicting our dependent variables, such as income, because these were often very highly correlated with other variables in the model (e.g., the location of the clinic or the educational attainment of the patient).

Results

Table 1: Descriptive Statistics				
Variable	Description	Mean (SD) or % (n)	Min	Max
<u>Dependent Variables</u>				
Level of Relationship	Patient completely trusted/respected and comfortable with physician. (Reference = any reporting of less than completely trusting/ respecting and feeling comfortable.)	42.94% (76)	0	1
Satisfaction	Patient overly satisfied with visit at clinic. (Reference - Any satisfaction level less than overly satisfied.)	60.45% (107)	0	1
Understanding of Diagnosis	Patient understands the diagnosis (Reference = Does not know or does not have a clear understanding of diagnosis, based on his/her explanation of the diagnosis)	18.08% (32)	0	1
<u>Independent Variables</u>				
<u>Patient Characteristics</u>				
Male	Patient is male.	34.46% (61)	0	1
Age	The age of the patient, in years.	45.06 (15.13)	18	82
Homemaker	The patient is a homemaker (Reference = all other employment statuses, which can include students, full time employed, self-employed, etc.)	51.98% (92)	0	1
No Formal Schooling	The patient has no formal schooling (Reference = any formal schooling)	31.64% (56)	0	1
<u>Physician Characteristics</u>				
Female	Physician is female	24.29% (43)	0	1
Years of Experience	The number of years the physician has been practicing medicine	13.47 (9.04)	1	41
Rushed Office Visits	The extent to which office visits are rushed	62.71% (111)	0	1
<u>Country of Origin</u>				
Nicaragua	The patient experienced medical care in Nicaragua (Reference = United States)	83.05% (147)	0	1
<i>N=177</i>				

Descriptive statistics are shown in Table 1. Forty three percent of patients felt that they completely trusted/respected and felt comfortable with their physician, saying that they felt that they had formed a relationship with the physician. Sixty percent of patients were overly satisfied with their visit to the clinic that they were cared for at. Patients were asked to explain their diagnosis and after analyzation, it was determined that only 18% of patients truly understood their diagnosis, though many of them initially claimed to understand it. Male patients comprise 34% of the sample. The mean age of patients was 45 years old. Employment status showed that 52% of patients were homemakers. Every other employment status, including students, full time employed, self-employed, etc. were not considered homemakers. Thirty-two percent of patients had no formal schooling. Twenty-four percent saw a physician that was female. The mean number of years of experience the physicians had was 13 years, ranging from 1 to 41 years. Sixty-three percent of physicians did not feel rushed during office visits with patients. Eighty-three percent of patients seen, were seen in Nicaragua.

Table 2 shows the result of the multivariate logistic regression, analyzing the quality of patient care on patient characteristics, and the results are presented using odds ratios. Odds ratios are interpreted differently from coefficients. An odds ratio is a relative measure of effect; odds ratios allow us to compare independent and dependent variables. Therefore, an odds ratio of one is interpreted as no difference between these variables. Moreover, an odds ratio that is between zero and one exhibits a negative relationship between the independent variable and dependent variable (i.e. as the independent variable increases/or exists, the dependent variable will decrease/or not

exist). An odds ratio that is greater than one shows a positive association between the independent and dependent variable.

We present three models in Table 2, and each model uses a different dependent variable: (1) level of relationship, (2) satisfaction, and (3) understanding of diagnosis. Patients that saw female physicians were significantly more likely to feel that they developed a strong relationship with their physician, stating that they completely trusted, respected, and felt comfortable with their physician (OR=2.750). The number of years of experience a physician had was positively associated with the patient/physician relationship formed. Each additional year of experience a physician had resulted in a 6% increase in the likelihood that the patient reported a strong relationship with the physician (OR=1.058).

Table 2: Logistic Regressions of Quality of Patient Care on Patient Characteristics (Odds Ratios)

	Model 1	Model 2	Model 3
Variables	Level of Relationship	Satisfaction	Understanding of Diagnosis
<u>Patient Characteristics</u>			
Male (Reference = Female)	0.902	0.842	0.241 *
Age	1.013	1.027 *	1.007
Homemaker (Reference = All Other Employment Statuses)	0.905	1.182	0.206 *
No Formal Schooling (Reference = Any Formal Schooling)	0.643	0.827	0.882
<u>Physician Characteristics</u>			
Female (Reference = Male)	2.750 *	1.848	2.748
Years of Experience	1.058 †	1.072 *	1.104 *
Rushed Office Visits (Reference = Not Rushed or Moderately Rushed)	0.792	1.001	0.828
<u>Country of Respondent</u>			
Nicaragua (Reference = United States)	1.058	2.144	7.347 †
Constant	0.214	0.088 *	0.024 *

N=177

† *p*<0.10 * *p*<0.05 ** *p*<0.01 *** *p*<0.001

In Model 2 of Table 2 we analyze the relationship between patient characteristics, physician characteristics and the level of satisfaction patients had during their office visits. The age of the patient was significantly and positively related to patient reporting satisfaction of their visit at the clinic. Every additional year of a patient’s age resulted in a 3% likelihood that they reported satisfaction of their visit (OR=1.027). The physician’s

years of experience were also significantly related to whether or not patients reported satisfaction. Patients were 7% more likely to report satisfaction of their visit for every additional year of experience their physician had (OR=1.072).

In Model 3 of Table 2, we assess the factors associated with patient's understanding of their medical diagnosis. In Model 3, we find two patient characteristics were significantly and negatively related to patient understanding of their diagnosis. Male patients were 76% less likely to report understanding of their diagnosis, while homemakers were 79% less likely to report understanding of their diagnosis. But, we do find a positive association between physician's experience and the patients understanding of their diagnosis. Patients were significantly more likely to understand their diagnosis with every additional year of experience a physician had (OR=1.104). Finally, the data showed that patients receiving care in Nicaragua were also more likely to understand their diagnosis (OR=7.347); however, this finding was surprising considering that the majority of Nicaraguan patients had little to no formal education.

Discussion

Our model included the level of physician/patient relationship, patient satisfaction, and patient's understanding of their diagnosis to analyze if the care provided by the clinic was of high quality. If a patient felt that they had a strong relationship with the physician they saw, were satisfied with their visit, and understood their diagnosis, they were considered to have received quality care during their visit. The structure of each clinic was considered when determining if the care continued to improve a patient's quality of life in the long run.

Most patients from both the Global Brigades Medical clinic and GBCHC were greatly satisfied with their visits. There was a positive relationship between patient age and level of satisfaction. The average age of patients seen was 45 years old. Since this is a relatively high number, this could have reflected in the extremely high satisfaction rates that patients recorded, considering the positive association between patient age and level of satisfaction. Female physicians seemed to create stronger relationships with their patients compared to their male counterparts. We speculate that this could be because of patients' expectations of females to be more empathetic, nurturing, and responsive (Bertakis, 2003). Physicians with more experience also seemed to create patient/physician relationships at a higher level than those physicians with fewer years of experience. When physicians had more experience, patients reported higher levels of satisfaction and higher rates of understanding of their diagnoses. With the high level of satisfaction from the patients, we determined that a proper level of quality care was provided by each clinic in this study at the initial visit, but there were still areas that were determined to be unjust between the care provided when comparing the structures of the two organizations as a whole.

In Nicaragua, at the Global Brigade clinic, the patient visit times were extremely short based on our observations compared to those at the GBCHC, yet, patients from both clinics reported that they felt they had adequate time with the physician. Although the consultation time was incredibly brief in Nicaragua, patients were better at articulating their diagnosis than patients surveyed at GBCHC. This surprising finding may be a result that the Nicaraguan patients were diagnosed with simpler medical ailments. Nicaraguan patients were primarily diagnosed with cough, flu, parasites, and gastritis. These

conditions could be easily connected to daily activities, allowing a patient to communicate a diagnosis more readily and effectively. Therefore, it would be wrong to correlate that a shorter consultation time, which seemed to have resulted in better patient understanding from our data, would be more effective at enhancing a patient's autonomy than a longer consultation time with a medical professional.

Moreover, the high levels of satisfaction in both clinics may be relative to the embedded resources available in each community. It is possible that in Nicaragua the patients were grateful for any care that was provided to them. Even a short consult that lasts approximately five minutes was very satisfying because perhaps they may be unaware of anything superior. Additionally, their expectations did not seem as high as those set in America. Many patients that attended the Global Brigade clinic have no other source of receiving medications, which was a common theme when analyzing reason of attendance to the mobile clinic. It could be that minimal or no resources are available to them regularly; therefore, high rates of satisfaction may have arisen simply from the fact that they were receiving free medications they would not otherwise have access to.

Nevertheless, GBCHC patient satisfaction was also extremely high. Though there are other clinics that these patients could take advantage of, the condition of the clinic itself and the volunteers at the clinic seemed to play a large role in the patients' satisfaction. Unlike the patients seen in Nicaragua, many of the patients at the GBCHC do have a basis to make comparisons with, to judge their satisfaction of the visit and still they were very happy with the clinic.

Though patients were satisfied with their visit, at both clinics, patients left unable to articulate their diagnosis and thus with an incomplete idea of what their medical

condition truly entailed. A very low percentage of patients left the clinics fully understanding their diagnosis. Many patients in Nicaragua had completed less than primary school. With this lack of education, physicians may have struggled communicating in laymen's terms to the patient, as they commented that education was a large disparity in the background between the physician and the patient. The physician in this case may not have made an extenuating effort to communicate clearly with the patient.

With that being said, both clinics have room for improvement despite the fact that we have determined they are providing quality care regarding a patient's immediate health situation. These improvements would only make the quality of care provided by the clinics at an even higher caliber. As many patients stated higher satisfaction ratings, stronger patient/physician relationships, and higher understanding of their diagnosis with physicians that have more years of experience, the clinics could aim to use physicians with a minimum year number of experience. This may not be realistic, but if possible, it could improve the quality of care provided to patients. The more experience a physician had, the higher quality of care a patient seemed to report.

Making sure patients understand their diagnosis should be put as a priority for both clinics, as only 18% of all patients appeared to understand their diagnosis. If patients do not fully understand their medical situation it will be hard for them to be truly autonomous beings of their health. Increasing patient medical competence will allow patients to have a more influential role in improving their health and overall quality of life if they realize that many of their medical ailments are associated with their daily activities.

Physicians in these clinics should make sure to take the extra time to explain a patient's diagnosis to them to solve this issue. They can also explain it in terms that make sense to a person who has no medical background knowledge. Although it seems intuitive that a more developed patient/physician relationship would result in a patient better understanding their diagnosis (e.g. patients who feel more comfortable with their physician are more apt to ask them questions), our data showed that there was no correlation between the variables. From our experience, the patient/physician relationship was not valued in Nicaragua nearly as much as it is in America. Many of the Nicaraguans misinterpreted our question on "patient/physician relationship" as having an exclusive, personal connection with the physician rather than a professional one. This relationship was not strongly valued in Nicaragua in the Global Brigades clinic, but it was determined that it did not need to be. Nevertheless, it is a common consensus in the medical community that the relationship a patient develops with their health care professional on the basis of trust and understanding enhances a patient's autonomy (Quill, 1996). Therefore, the idea of the patient/physician relationship should not be undermined.

Health care should be just on a level based on the needs of the community. In Nicaragua, the needs of the community we entered were providing patients with basic health care while tackling the roots of common health issues, such as persistent coughs and parasites. Patient/physician relationships were not yet needed to provide the care necessary to this community. The unjust disparity was surprisingly found in the United States. As stated before, quality health care is care that improves the quality of one's life overall, it does not just stop at the initial physical "health" part of it. This suggests that there should be a commitment by relief organizations to continue improving patients'

health after receiving their initial health care by the clinic. Global Brigades did a better job than the Gary Burnstein Clinic with this aspect of quality care.

Global Brigades functions under a holistic model, that aims to make a community sustainable. This approach to health results in achieving a higher standard of autonomy. Things like good water and dental care can contribute to or even be a central cause of illness and disability. After choosing a community that has the strongest need for their help, Global Brigades begins to implement programs that allow a community to become sustainable. Rustein et. al states, “If there is clear-cut documented evidence that identifiable social, environmental, “life-style”, economic, or genetic factors are responsible for special varieties of unnecessary disease, disability, or untimely death, these factors should be identified and eliminated whenever possible,” (2009). Global Brigades aims to do just that, identify and eliminate such issues. Global Brigades begins with a Medical/Dental clinic which provides the community with necessary basic health care. Global Brigades provides few specialist doctors, but this aspect of the program is growing (they have recently added optometry to the program as they have seen that eyesight problems are a major issue in the communities and they occasionally provide gynecologists). If a referral is needed to the hospital, Global Brigades will provide this for the patient. Community Health Workers (CHWs) are also trained to continue basic medical care for the community. After the Medical Clinic, they will implement a Public Health Brigade. This is where Global Brigades is more just in providing quality care to their patients, attempting to eliminate the root of the problems they see in the clinics. During a Public Health Brigade, volunteers build families latrines, put cement floors in community members’ homes, and replace wood-burning stoves. Families are provided

with clean water for cooking and a clean and safe place to bathe and use the restroom with the building of the latrine. The cement floors prevent people from contracting parasitic diseases. Replacing the wood-burning stoves eliminates smoke from overwhelming the homes, aiming to prevent chronic coughs and respiratory problems in the communities. After the Public Health Brigade comes a Water Brigade, providing clean running water to communities. They continue to sustain the community with brigades based in business, engineering, the environment, and human rights. Global Brigades works with communities to empower them to run independently. Global Brigades teaches community leaders to run projects and have community members assist in a small percentage of funding for these projects to ensure the continuity of them after they leave the community. By following the holistic model, Global Brigades is not a relief organization that goes into a community and simply leaves after a week, essentially leaving no benefit to the community.

We suggest that all medical relief organizations should follow a model similar to Global Brigades, providing preventative and stable care to the community served. Global Brigades continually improves the quality and duration of a person's life as well as effectively cares for the health of the community complying with both the definitions of quality of health care provided in "Measuring the Quality of Medical Care" and provided by the American Medical Association. We can conclude that the care provided by Global Brigades to the communities they serve is just.

The Gary Burnstein Clinic does not follow a holistic model in their structure. Therefore, the preventative medicine aspect of improving patients' lives is not met to the same extent that it is with the Global Brigades holistic model. The Gary Burnstein Clinic

does provide many more services for patients, in a sense of specialists for the patients to see to improve their immediate state of physical and mental health. Many patients have return visits to see specialist doctors, which is free of cost. These specialists range from gynecologists to podiatrists to neurologists. Patients also have a higher chance of creating a patient/physician relationship at GBCHC because patients are scheduled for follow-up visits after initial appointments. Though, having the same physician for the second visit is not guaranteed as physicians are solely volunteers and come at their own availability. The appointment times the patients have with the physicians in this clinic are much longer than at the Global Brigades clinic. The initial health care appointment at the Gary Burnstein Clinic is seen to be at a higher caliber than the initial appointment a patient has with Global Brigades. Though, after the medical care is provided at GBCHC, besides follow-up appointments, there are very few resources to improve the quality of life of patients outside of the clinic. Immediate health care needs are met with this clinic, but they fall short on the side of continuation and preventative care that continually improve patients' quality of life.

Health care provided to underserved populations in America (using the Gary Burnstein Clinic as reference) is unjust compared to that provided in Nicaragua (using Global Brigades as reference). In the United States, there is a need for more preventative medical practices to be put into place. It seems that in the United States, there are programs for such help, but not on a continuum. Every program is separate, not allowing for fluidity or easily accessible care to the patients in need. By solely giving the patient health advice at the Gary Burnstein Clinic it causes the patient to have to fend for themselves in all other aspects of life; some of which are contributors or causes of illness

and disease. This can leave the patient in a vicious cycle, that does not allow them to improve their overall quality of life.

Global Brigades holistic model is one that the Gary Burnstein Clinic should aim to emulate, as well as any other medical relief organizations serving underprivileged communities. Aiming to diminish the root of health problems as well as empowering people to improve their quality of life is the most just way of providing health care. If an organization is only providing medical care we ask, “What is the point?”. This allows for no continuity of care and the prevalent community issues just remain. Consider an analogy to throwing babies in a river. If someone is putting babies in a river at the beginning of the river, and someone else is trying to get the babies out the river, at a location farther down the river they are not very successful. They can continue to try to pull babies from the river, but the problem is never solved, as babies continually float down the river and some will not be saved. If instead they aimed to go to the beginning of the river and stop the person from initially putting babies in the river, the root of the problem would be solved and no more babies would be helplessly floating down the river. At this point in time, the Gary Burnstein Clinic acts as the person taking babies out of the end of the river, while Global Brigades is stopping the person from putting babies in the river in the first place.

Overall, the right to healthcare around the world does not have to be provided “equally” to be just. It must be provided equitably. The care provided by the two clinics studied are not necessarily equal, but they show equity to the community that they are serving. They provide proper and necessary care to the specific needs of these communities. We determined the healthcare provided by Global Brigades to be more just

based on the program's holistic model. This justice does not necessarily mean "equality". In reality, these patients are standing outside in the hot sun for hours with pigs and dogs walking around them while in line and sometimes even in the consultation area. The patients at the Gary Burnstein clinic were waiting in a new, up-to-date waiting room with television and heat. By no means are these two situations equal, but they are equitable to the community being served. Justice in health care needs to be looked at through "equity" rather than "equality". The equitable care provided by relief programs should aim to improve the lives of people and their community, by providing continuation of care and preventative medicine measures as does Global Brigades through its holistic model. All medical relief organizations should strive to emulate this model, to ensure quality care is being provided to all, as health care is a universal right.

Improvements/ Issues

Throughout this process, we came across multiple issues that could be improved in any furthering of this study. Obtaining IRB approval was initially an issue because of time constraints with leaving the country. IRB approval was not obtained until the day before we left for Nicaragua. This put us at a disadvantage for time after returning from the trip. Since approval was not obtained until right before we left for Nicaragua, this did not allow us to start collecting data from the Gary Burnstein Clinic until after we returned from Nicaragua. In the future, it would be beneficial to obtain more data from both sites, creating an even larger data pool.

While conducting surveys, there was an issue with getting patients to complete a post-survey. This was more of a problem with the Global Medical Brigade than it was with the Gary Burnstein Clinic, though, there were still a few instances here. At the Global Brigades clinic, it was expected that this may be a problem. Patients have a tendency to want to leave immediately after receiving their medications. Patients usually have to stand for long amounts of time in the hot sun and do not have interest in sticking around longer than they have to, especially when the goal of many is to receive medications. After the patient received their medication, it was likely that they would leave before completing a post-exam survey of the clinic. After the first day, we only had 17 people complete the post-exam survey and over double that who had completed pre-exam surveys. The next day we encouraged patients to complete a post-exam survey by moving the location that they were conducting these and by having a community member ask them if they were interested in completing their post-exam survey after seeing the physician. This greatly improved our numbers of post-exam surveys completed. In the

future, it would be beneficial to create an incentive for completing a post-exam survey for the study.

Having a larger data pool from the Gary Burnstein Clinic would also be a huge improvement study. Time constraints did not allow us to obtain as much data from this clinic as initially intended.

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