defining “Public Health”

EPIDEMIC PROPORTIONS
THE JOHNS HOPKINS UNDERGRADUATE PUBLIC HEALTH RESEARCH JOURNAL, VOLUME 13, SPRING 2016
About

(n.) Johns Hopkins University’s premier undergraduate public health research journal. Designed to highlight students’ research and fieldwork in the realm of public health; combines research and scholarship; seeks to capture the breadth and depth of the undergraduate public health experience.
## Contents

(n. pl.) A list of titles of the parts of a book or document, organized in the order in which the parts appear.

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Letters

(n. pl.) a written, typed, or printed communication, especially one sent in an envelope by mail or messenger.
From the Editors

Welcome to Epidemic Proportions!

The Epidemic Proportions Undergraduate Public Health Journal is designed to highlight student research, fieldwork, and interest in public health through a selection of diverse articles. Each article emphasizes a unique perspective or experience. This year we publish the 13th volume of our journal, an effort made possible by the contributions of our talented and passionate team of staff and authors.

With the constant evolution of public health, we chose this year’s theme, Defining Public Health, to stress the many distinct attributes that form this extensive field. Through this focus we hope to shed light on the complexities of public health as well as to call attention to the wide scope of this discipline.

Public health is a field teeming with compassionate and dedicated people interested in helping more than just the individual, but rather entire populations. Because of this service, the public health community has been able to accomplish many amazing achievements such as eradicating smallpox, improving maternal and infant health, and establishing regulations for worker safety. While there is still much work to be done, public health is a budding field that is rapidly expanding. Each day new problems are uncovered and each day new teams confront these challenges. Being a part of this field is truly like being a part of a community where everyone has the same goal in mind: to help populations improve their health and wellbeing.

The diversity of this field will be evident in our selection of articles. The range of topics include: opinion pieces on smoking and gun violence, research on blood safety and migrant workers, policy discussions regarding health promotion, and depictions of unique student experiences. These serve to highlight our theme, Defining Public Health, by showing the many facets of the field. To give us some perspective we turn to Johns Hopkins University Professor and Director of Social and Behavioral Interventions Program, Dr. Peter Winch. Dr. Winch has been involved in public health for over 30 years and provides valuable insight on the nature of this field.

With this we invite you to enjoy the many thought provoking articles in this year’s journal, Epidemic Proportions: Defining Public Health, and encourage you to contribute your own perspective to this diverse field.

Sincerely,

Maisa Nimer ’16
Public Health Studies
Molecular & Cellular Biology

Lawrence Lin ’18
Chemistry

From Dr. Peter Winch

What is Public Health?

I am often asked this question by students, as they ponder whether it is something they should take an interest in or even consider as a career. There is no simple answer. Notions of public health in the late nineteenth and early twentieth century had a laser-like focus on viruses, bacteria and parasites. Over recent decades, the scope of public health has expanded to include non-communicable diseases, mental health, injuries and violence, as well as a range of social and economic factors that affect health: poverty and marginalization, stigma and discrimination, conflict and forced displacement, torture and imprisonment.

To counter this broader range of threats, public health has developed a dazzling array of research methods and intervention modalities. The latter include tools to formulate and influence policy, drugs and vaccines, interventions to promote behaviors such as hand-washing with soap and smoking cessation, approaches to strengthen health systems and ensure an adequate health workforce, alternatives for health care financing, monitoring and surveillance systems, and ways to engage with and work in partnership with marginalized and powerless communities to address complex and their multi-faceted needs.

On one hand, public health is incredibly broad. On the other hand, some question whether it is far too narrow. Public health typically limits itself to the health of the world’s human population, but leaves out the health of the biosphere, and the non-human species with whom we share the planet. The numbers support this line of questioning. We are witnessing steady decreases in global deaths due to diseases such as HIV/AIDS and malaria. At the same time, we are witnessing increasing numbers species going extinct and degradation in ecosystems, along with the services these ecosystems provide to us as a species.

The Lancet-Rockefeller Commission on planetary health1 is one of several groups warning that we need to take preservation of the biosphere and ecosystems seriously, if we want to have a future as a species. What does this mean for public health at JHU? Among other things, it means breaking down walls between departments and academic programs dealing with ecosystems and environmental sustainability, and those seeking to improve public health. It also means that each member of the Hopkins community needs to take steps to reduce her or his impact on the biosphere, most notably by consuming less. Environmental sustainability is an enormous challenge. But we need to fold it into all aspects of public health, if we want to extend the progress we have made in recent years.

Sincerely,

Peter Winch
Director, Social and Behavioral Interventions Program

Research

(n.) the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.
St. Joseph’s Block Therapy Treatment Evaluation

GAURI BHATNAGAR ’17
PUBLIC HEALTH STUDIES

Gauri spent two months in South Africa working at a children’s home and hospital, analyzing how various external determinants affect the health and well-being of underserved populations.

Description
St. Joseph’s home is a secondary and tertiary pediatric rehabilitation center located in the suburb, Montana, off the N2 in Cape Town, South Africa. It is the only rehabilitation and therapy focused pediatric institution in Sub-Saharan Africa. St. Joseph’s mission is to provide holistic healthcare to children from disadvantaged backgrounds whose families are unable to give them the care they need. At the home, they teach the caregivers how to better care for their sick child to prevent further readmission. They offer a variety of services to those who need it such as: post acute care, restorative and rehabilitative care, palliative care, nursing training, special needs education, pastoral care, and training placements for medical, nursing, physical, occupational and speech therapists. The facilities offer housing for parents and caregivers of children who are receiving intensive therapy. Following the holistic model of health they are striving for, St. Joseph’s emphasizes good nutrition and healthy eating, spiritual and emotional support through grief counselors and therapists, and access to education. The majority of these children are from very disadvantaged backgrounds and have been diagnosed with life threatening illnesses such as HIV/AIDS, cancer, arthritis, heart-lung-kidney failure, neurological impairments, and brain damage/trauma. Thirty-one percent of the children are HIV+, 19 percent suffer from cancer, and 14 percent have diabetes.

Background
The purpose of this synthesizing assignment is to a) demonstrate the key public health concepts I have learned while working in South Africa and b) discuss and analyze a program specific to my worksite, St. Joseph’s. We critically analyzed their “Block Therapy” program in the search for loopholes, unstable aspects, and, most importantly, ways to increase the effectiveness of the rehabilitation. Program evaluation is an important aspect to any program to ensure the continued efficiency, effectiveness, and fluidity of organization, financial aspects and structure. Here we will examine the various factors from institutional structure, outside health and social disparities that contribute to and affect the Block Therapy Program.

Introduction
The Block Therapy program at St. Joseph’s is particularly structured. Its intention is to provide an intensive two-week rehabilitation program for children who require postoperative rehab, suffer from cerebral palsy, traumatic head injury, or global developmental issues. The most common diagnosis at the facility is some form of Cerebral Palsy, traumatic brain injury, hemiplegia, and TB/Meningitis. Because the Block Therapy program is such a short intensive program, their goal is not only to rehabilitate the child but also to educate the primary caregivers. The therapists want to show the caregivers how proper therapy is to be given so that the caregivers can treat the child appropriately at home. Many of the patients at St. Joseph’s have returned after being discharged due to lack of good treatment at home. In the interest of patient confidentiality, I will provide a general example of what I witnessed at the home. The children would come in for their three to six month general therapy rehabilitation (separate from Block Therapy). Afterwards, they would be discharged and go back home. At home, although the parents would keep up with the appropriate therapies and medications for a small time being, after a while some parents and caregivers would default (neglect giving medication) and the child would suffer from a secondary infection or, in some cases, stroke. Brain damages caused by these incidents could cause stunted growth, global developmental delays, lack of mobility, etc. Due to this, the children generally are returned back to St. Joseph’s for their treatment. One of the major things I learned was although the parents did default, the blame can’t be pinpointed on neglect or lack of love. Sometimes, they are single working parents with other children to take care of. Having a sick child is a huge responsibility and they have to tend to other responsibilities for the safety and health of their other children, the household, work and additional familial and societal duties.

Research Methods
In order to collect all of our data and come up with solutions for their difficulties in organization and management, we performed literature reviews of the materials given to us at the worksite, conducted interviews with the Occupational Therapists, Physical Therapists, Speech Therapists, Rehab Care Workers, the Director of the Home, the Director of the Rehabilitation program, and noted observations that we witnessed from working and volunteering in the wards with the Sisters (Nuns) and the range of full time nurses to volunteer nurses.

During the Block Therapy program, the child is seen every day by all three therapists: the occupational therapists, physical therapists, speech therapists, rehab care workers, and the volunteer nurses.

Among the Mountains
Table Mountain and Devil’s Peak loom above the University of Cape Town in South Africa. Photo by Gauri Bhatnagar.
and in effect, continue the therapy that was started. In order to implement the practices at home, the caretaker must be engaged in educating the child. St. Joseph’s does not only want to watch the progress of the activities that the therapists do, they must show comprehension of the activities. The parents and caretakers are required to show up at least to two of the therapy sessions per week. There are always going to be issues with language and communication in such programs since these communication and organizations disconnects. From the parents and caretakers side, sometimes they do not have the time to be at St. Joseph’s for as long as needed because they must go to work or stay at home and take care of the other children. To combat this, the therapists create what they call “take home” packets that have pictures of the activities along with the explanations of what is required. However, sometimes the parents are illiterate and can only comprehend the pictures as they can not read the explanations. Additionally, there are three main languages in South Africa: Xhosa, Afrikaans, and English. Many times, translators are needed to communicate efficiently between the caregivers and the therapists. The “take home” packets are generally written in English with some exceptions in Afrikaans. However, the majority of the families that come to the Home are Xhosa speaking families.

Reasons for referral to the Block Therapy Program.

Source: Director’s Review.

Since it’s hard to read and understand the packets, over time, they slowly forget the small nuances of the activities. Therefore, they are not able to practice the skills. The children are not getting the best treatment possible. In this case, the child might degrade in what they were capable of doing before rendering the services of St. Joseph’s unnecessary. Additionally, during the therapy programs themselves, the children get tired. Seeing three therapists for at least an hour each day is not only time consuming but exhausting. If the child is very young or has many skills to develop, the caregivers do not fully understand the severity of their child’s disability. Whereas the caregiver might want their child to have better physical skills, the therapist might want to focus more on the motor skills because they know long term, developing physical skills will be more important than developing physical skills like walking (especially if the child is so disabled that walking may never be a possibility for them at all).

Suggestions and Solutions

The Home should ensure that the therapists and caregivers have the same goals and make the home therapy more mother-friendly by providing lots of pictures and care. While they are back to the home, they could check up by the therapists. The RCW is to monitor the patients in their home environment and then report back if they find that the child has regressed in any way. While this is helpful in some cases, it would also be valuable to have reports on the progress that the child has made. For the child in hope, who has a gap of time in which the child requires more stimulation such as speech and physical therapy but are not receiving it. The child could have mastered the original motorization, reading and identification actions before the re-evaluation, and since the therapists only see the child every three months, there is a time in which the child’s progress is stagnate. The therapists only go to the child’s home when a need or problem arises. Having the therapists accompany the RCW’s more often could potentially reduce the chance that the child is left unchallenged for gaps of time. However since this may not be feasible, the RCW’s should more comprehensively report on the progress of the children’s mobility, and learning skills. Since the therapists are the ones who assign new activities, the parents should be kept aware of any progress that the child makes in between re-evaluations, that can be done through the RCW’s reports.

And finally, St. Joseph’s should provide a support group for the parents whose children have similar disabilities. It could help them better understand their situation, and help relieve unreasonable emotional guilt. Through interviews with the caretakers and parents of the patients, it was revealed that they feel a sense of disappointment and sadness if they are unable to fully take care of their children. They can relate to the same struggles or any situation. Sometimes they are unaware of the proper regime and other times, they are unable to fully perform them. They can tell the caregivers as much as they want, but they won’t hear it unless they want to. If the caregivers find others that they can relate to, then they would be more inclined to. This is why a support group would be so beneficial. Members can give others suggestions and advice on coming up with solutions or making suggestions. Everything is very sensitive and we must always try our best to re- main neutral when giving our opinion. The socio-economic and racial factors change how health care is provided to people in differing communities. This is one of the largest public health issues in South Africa. In order to solve and better the situation concerning health disparities, work must start from the ground up, working with people who need the most help and figuring out what works best in different communities. After implementation of the solutions can be more widespread. Tackling health care, especially in second and third world countries will always carry a heavy burden. However, steps can be taken to alleviate the situation. One of the most detrimental things that one day, medical default, the spread of preventable infectious diseases and access to care can be achievable.

References

A Shift in Student Activism: Navigating Divestment through Hopkins’ Backdoors

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Tasked with archival research, this team of five students explored student activism at Johns Hopkins during the 1980s.

The 1980s student movement for Johns Hopkins University to divest from companies involved in South Africa focused their efforts on working through the channels of university administration. This issue marks a transition in student activism on campus. Student protests in the late 1960s and early 1970s were generally broadly based confrontational movements directed at the U.S. government to protest the Vietnam War. In contrast, when working towards divestiture, students had to learn not only about foreign policy, but also about their own university’s structure in order to effectively work through the administration and Board of Trustees. Our team studied this event through an analysis of documents written between 1985 and 1987 by a student group named the Coalition for a Free South Africa, the University Administration, and members of the Board of Trustees. Each of these documents draws out the complexities of carrying out student activism with the goal of influencing the University’s involvement in foreign policy, which further reflects a changing relationship between the students and administration.

Although universities have long been the student divestment movement, the exposition of student activism in the sixties signified a break from the more docile nature of the university campuses of the forties and fifties. By the mid-1960s, with the rapidly growing civil rights movement, emergence of the new feminist movement and the beginnings of the anti-Vietnam War movement, the mid-1960s universities had transformed into active—and at times violent—sites of protest. The historian Michael Wall has written extensively about the antiracist and student political activism, and he has explained the movement from “protest to resistance” as one fueled in part by the fear felt by those who tried to change US policy through legal protest against the draft. There was a growing sense that a stronger resistance was necessary in order to influence US policy. The 1970 US invasion of Cambodia was met with vigorous opposition, particularly on college campuses. In the days following Nixon’s decision over five hundred college campuses were closed, and violence erupted at Kent State University and Jackson State University when several protesters were killed by National Guardsmen and Mississippi police, respectively.1

It is significant that the anti-war protests of the late sixties were directed at US foreign policy; students were challenging the military’s involvement in another country and were directing their anger and frustration towards the government. This stands in contrast to the student divestment movement of the 1980s, which aimed to pressure the University administration to reconsider its investment portfolio. In the documents we analyzed, we noticed that the approach taken by the students of the Hopkins Coalition for a free South Africa was one that necessitated knowledge of the University’s administrative structure. The students needed to understand how the financial decisions of the university were made, and by whom, in order to affect change. Furthermore, the Coalition was not targeting U.S. foreign policy by directly protesting the U.S. government. Instead, they tried to affect change in South Africa by leveraging the University. The University’s Board of Trustees serves as the guiding hand of daily operations and initiatives. This is certainly true for Hopkins, where the Board of Trustees is the oldest part of the University. Throughout its history, the Board of Trustees has mostly served outside of the purview of the student body. However, the Hopkins Board of Trustees was given unprecedented attentiveness during its involvement with the divestment crisis. Students heavily petitioned the Board of Trustees specifically the Board’s Investment Committee to divest from South Africa, as that seemed to be the most direct recourse to remedying the situation at hand.

On September 10th, 1985 memo-randum to the Board of Trustees from the University President and Trustee Steven Muller sheds light on the protocol for making decisions regarding University investments.2 Muller entrusted the Public Interest Investment Advisory Committee (PIAAC), comprised of students, professors, and Trustees, with carefully considering social issues and making recommendations to the President and the PIAC Subcommittee of the Board of Trustees Investment Committee. In the same memo, Muller states that “businesses in South Africa already are embarking upon a variety of courses that permit them to continue to trade in South Africa by leveraging the University.”3

Although the student demonstrations of the late sixties were direct confrontations with the administration and Board of Trustees, the 1980s student movement was generally broadly based confrontational movements focused on the divestiture of the University from companies in South Africa. The Coalition for a Free South Africa, a student group focused on the divestiture of the University from companies in South Africa, formally introduces themselves to President Muller in a letter dated January 28th, 1986, which followed a January fifth meeting with the President. The letter, authored by Paul Genest of the Coalition and Darel Cook of the Black Student Union, begins by emphasizing the university’s moral obligations through the example of the groups’ recent demonstration at a Martin Luther King Jr. Day address by Bishop Tutu and President Muller. The students reference Muller’s statement that “the spirit of Dr. King is with us,” which they contrast with Dr. King’s call for “the economic isolation of South Africa in 1965.”4 While the President spoke in honor of Dr. King, the students believe that investments in South Africa are keeping the University from upholding Dr. King’s values. They explain that they intended to honor Martin Luther King and Bishop Tutu through their demonstration, an event that brought
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This loose organization led to facilitation of their full grasp of the fact that the Investment Committee alone. Accordingly, we intend to direct an educational effort towards all of the Trustees in non-South African Principle-signatories without consulting the rest of the Trustees or discussing it with PIIAC. This contrasts the importance that President Muller attributed to the PIIAC's recommendations in his September 10th letter to the Trustees. By requesting that all Trustees discuss this issue in a general meeting, the Coalition in effect asks for diffusion of power within the Board. This statement summarizes the efforts of the Coalition. Although they continue to demonstrate on and off campus to spread awareness, they focus on working with the administration in order to bring about divestment from companies involved in South Africa.

While acknowledging that the President and Trustees do not advocate for apartheid, the Coalition closes their letter with yet another plea for the administration to consider the moral implications of the school's investments. The conclusion is utterly inescapable that foreign corporations are major contributors to the perpetuation of apartheid, that the black community wants them out, and that we, by our investments, are helping keep these companies there, supporting the institutionalism of racism.2 This opinion provides a stark contrast to President Muller's belief that the university should avoid involvement in social issues. While the President recommended that the university avoid further involvement and partisanship, the Coalition takes a strong stance on the university and presents divestment as a moral obligation of the school. In the final paragraph, the Coalition emphasized that they do not advocate JHU to stop taking corporate donations from companies working in South Africa, since the relationship between divestment and future donations has not been fully explored. At this point in time, the group remained focused on investigating and educating on the issue, in hopes of eventual school divestment.

A year later, the relationship between the Coalition and administrators had developed greatly. A memorandum written for administrators describing the January 8, 1987 meeting between the Coalition and Administration depicted this relationship, in which both groups appear to be making efforts to communicate and collaborate. However, the relationship is strained. Both groups express frustration about the lack of communication between the students and administrators and the necessity for each group to understand the organization of the other. This is followed by a description of the Coalition's organization for administration reference: they are a loosely organized group with fluid membership. There was a steering committee with six to eight "faithful members," but there was no designated leader, and decisions were communicated through a phone tree.2 This loose organization led to confusion amongst administrators, who received varying information requests from different members asking for different information. In response to this problem, the Coalition agreed to have one representative request all administration information and to put these requests in writing.

The Coalition also expressed confusion about the organization of the school's administration and asked for a university organizational chart in order to better direct their requests and letters. They were told that key Coalition members should get to know specific administration officers and are not guaranteed an organizational chart. The students also requested a progress from the Board of Trustees Investment Committee and are to request that at the most recent Committee meeting no divestment notes were taken. Furthermore, the Committee still planned to study investments before taking action.3 This answer mirrors that which was proposed to the Trustees by Steven Muller in his September 1985 memorandum, possibly reflecting the lack of progress since that time. The Coalition made further requests for the date of the next Investment Committee meeting, the full list of investments before taking action. Since that time.

A year later, the relationship between the Coalition and the administration when they had achieved some information requested, they had not taken action through the Investment Committee. Although they provided the organizational chart in order to increase transparency, they did not take any tangible action in regards to their investments. However, more progress was apparent in a Feb. 8, 1987 letter to President Joseph J. Hall from Paul Genest, the Coalition member who co-wrote the introductory letter to President Muller on January 28th, 1986. Hall provided the Coalition with an organizational chart, and most of their requests for action and information from the school were received but never fully addressed until this point.

In a Feb. 8, 1987 follow up letter about this same meeting, Vice President Darren Wilson in his September 1985 memorandum, possibly reflecting the lack of progress since that time. The Coalition and Administration made further requests for the date of the next Investment Committee meeting, the full list of South Africa-related investments held by the school, and a written progress report from the Investment Committee. None of this information was guaranteed by the administration. The Coalition also proposed a scholarship program in a Feb. 20, 1987 letter to Joseph J. Hall from Paul Genest. This document reflects a stage in the relationship between the Coalition and the administration when they had achieved some transparency of the Board of Trustees. The administration finally complied with the request for a complete list of the University's investments in companies involved in South Africa, and the Coalition moved forward to negotiate...
demands. First, they aimed to educate the administration on a “new definition of apartheid,” meant to counter a “sham divestment” measure taken by certain companies, including IBM.

This contrasted with President Muller’s original belief that companies are already engaging on a voluntary basis. The Coalition believed that while it may appear that companies have left South Africa, it is just the beginning. In order to facilitate communication, the Coalition provided a list of contacts for the university but did not release a full list of membership “pending the resolution of matters of contempt charges against four coalition members, the injunction against shanties and the ban on unauthorized structures at JHU.” Although they had moved forward in working with school officials, the students continued to protest and were unwilling to cease these demonstrations. Their main form of public protest had been through the construction and occupation of different parts of campus, built to emulate the conditions of living for black South Africans. The Coalition continued open communication by telling Hall they intended to build another structure on Feb. 22. “This would be built as an “East Baltimore residence” in direct defiance of the Board of Trustee’s August 1986 edict banning the construction of “unauthorized structures” on campus.”

This structure, “the Baltimore rowhouse,” was built to protest gentrification and displacement of East Baltimore residents. Like their original introduction letter to the President in 1986, the Coalition again showed their concern with the University’s morality—not just in South Africa, but also their role within Baltimore. Just as they quoted President Muller’s to explain their reasoning, they also revealed differing agendas between the students and administration.

The groups collaborated, but only to a certain point. While the administration could share their stances amongst each other, as evidenced by President Muller’s 1985 Memorandum to the Board of Trustees, they could not be rendered as public opinions. Furthermore, it was not until 1987 that it was discerned the Coalition obtained a university organizational chart and February 1987 that they obtained a list of the school’s investments within South Africa. Beyond discerning the exact viewpoints of key administration members, the Coalition struggled to obtain information about whom to address their concerns, and about the University’s actual holdings. At the same time, they continued to protest through the construction of shanties on campus, which the Board of Trustees had explicitly banned.

While both groups made an effort to communicate and work with one another, they also held themselves to the rights to certain actions or pieces of information. Reflecting the original statement Muller suggested in his 1985 memorandum to the Board of Trustees, the Administration continued saying they were continuing to research their investments related to South Africa. Despite the University’s clear disapproval, the Coalition continued to construct shanties and held protests. The University administration was never fully transparent with the Coalition, and the Coalition never let go of their more rebellious forms of protest. However, the effort to work together still reflects a shift in student protests. The Coalition’s communication with the administration demonstrates their growing interest in creating and maintaining a working relationship, as they seem to recognize the importance of that. At first, the administration complained of the differing requests from many members of the Coalition. As meetings between administration and representatives of the group happen more frequently, these angry demands were replaced less frequently, and they started to politely request documents, reflecting a growing understanding of the procedures used within the university.

The American Association of Blood Banks (AABB) is a non-profit organization based outside of Washington, D.C. that deals with blood safety. It covers diverse aspects of public health such as biostatistics, community health, public policy, and occupational safety and health. AABB deals with blood-related products, donors, recipients, technicians, institutions, and facilities. It is an international organization that creates standards for safety, efficiency, and treatment in the blood industry and is widely accepted as the most reliable and trustworthy accrediting body in the United States. Furthermore, the AABB keeps a constant watch on new bills and acts in the legislative side of the US, as well as research and technology developing around the world. By continuously creating alliances and attending conferences, it is a constantly evolving organization. It is also willing to expand to low and medium income countries. The AABB is a small organization that has a wide reach, mostly because of its dedication to the mission of health and the passion of its workers.

One of the major accomplishments of the AABB is that it kick-started the process of facility blood accreditation. As a public health association, AABB keeps a constant eye on the legislative arena. As an intern, I checked on various websites to look for updates on bills and in committees, whether or not they were directly related to blood. I wrote several executive briefings on bills introduced, bills that were passed through committees, or proposals that were coming on. The bill that stood out most to me was the 21st Century Cures Act.

The 21st Century Cures Act would create a huge difference in healthcare if passed. Examples of its drastic effects would include: additional billions to NIH funding, surrogate checkpoints for drugs, and repurposing of drugs. Surrogate checkpoints are data points that are not directly related to disease. For example, a drug might lower cholesterol levels, which is related indirectly to heart disease but might not actually improve conditions. Such drugs will be passed if this act were to pass and will affect the blood industry. I did extensive research and realized that all policies can hold importance in healthcare. Between the mid-eighteenth and mid-nineteenth centuries, as well as in the first half of the twentieth century, human life expectancy increased rapidly at an unprecedented rate. The
RESEARCH

study proved that non-health policies can have formidable consequences on the public’s health and on institutions throughout the U.S. It further suggest- ed that more studies should be executed to policies that are non-health related. The AABB accredits nearly all hospitals and blood clinics in the U.S. The full process takes about six to nine months, but I was able to shadow some of the major steps and decision-making processes in accreditation. The set of standards created by the AABB has made blood transfusion much safer for the donor, technician, and the recipi- ent. The AABB has several differing ac- creditation programs for facilities that include, but are not limited to: transfu- sion services, blood banks, cellular therapy services, immunohematology reference laboratories, and relationship testing (dealing with customer service, sample collection, testing, and report- ing). Each accreditation process and assessment is tailored to the specific type of laboratory and service. I specifi- cally shadowed an accreditation expert to a facility for somatic cell services. These types of facilities deal with qualifying do- nors, collection, processing, storage, and distribution of somatic cell products. The standards are not extremely harsh, nor are they unrealistic. Their main focus, as well as those of the institutions, is patient safety. AABB updates the standards to mirror new technologies, methods, and research in order to create safe environ- ments. Institutions adhere strictly to the standards that are created and conduct their own internal checks to maintain se- cure environments and methods.

Aside from the U.S., many other countries have used AABB standards. During my internship at the AABB, I worked with doctors abroad who spear- headed the standard practices for their home countries. For example, I had a conference-call with doctors in South Asia who were involved with the Asian Association of Transfusion Medicine (AAATM), also called the South Asian Association of Transfusion Medicine (SAATM). The doctors were mostly from Pakistan, Nepal, and Bangladesh. I com- pleted many different reports for them, in- cluding the common safety standards in other countries and different adaptations of the AABB standards. I analyzed Bhutan’s recent AABB-based standards, Indi- an national standards, and World Health Organization (WHO) recommenda- tions. Some of the suggestions included screening 100 percent of blood products and making sure that 75 percent of red blood cell products meet certain require- ments.1 I also helped them go over work- shops that were done by the AABB to promote blood safety practices and create more workshops of their own. I made re- ports and calls to estimate the efficiency of the workshops, as well as to examine any possible improvements. It was a long- term project that required intense coor- dination between various workers at the AABB and referencing old texts and previ- ous attempts. Of the 108 million blood units worldwide, only half are done in medium- and low-income countries. Of the medium- and low-income countries that actually practice blood transfusions, only 60 percent of medium-income countries have legislation and standards for blood donation, while only 44 per- cent have standards in low-income coun- tries.2 Even after having their standards, only 33 percent of medium-income countries have an external assessment for their facilities, and this percentage is as low as 16 in low-income countries. In comparison, 97 percent of high-income countries have facilities monitored by ex- ternal assessment schemes. Therefore, it is important to have organizations from how many people attended an event, how long they were there for, and how long people visited the AABB website. The purpose of sitting through numerous pages of data and numbers was to see if the AABB’s information was transmitted successfully. AABB continuously revises its standards based upon developments in research, so it is crucial that blood safety workers are constantly updated. With the advanced communication technologies and social networks, it is easier than ever to relay such information in a quick and effi- cient manner.3 Understanding the implica- tions of innovations and how the public as a whole adopts them is im- portant for every field but especially in the health field. The AABB is really fo- cused on how it can spread safe and ef- ficient practices quickly and effectively. Finally, I researched various prac- tices regarding blood products and cel- lular therapies in the United States and abroad. The head of the cellular ther- apy departmen was interested in an in-depth evaluation of many types of treatment, varying from those that are practiced in the United States without FDA approval to practices done in Eu- rope that have been approved by their own agencies to practices done in Eu- rope that have been partially adopted into the United States. Specifically, I looked into platelet-rich plasma injec- tions. I evaluated research articles and such information to see whether or not these injections were a viable op- tion for treatments and whether he and other institutions should accredit the treatment and suggest its approval to the FDA. Another similar project was on buffy coat platelets. It is a practice done in Europe that extracts blood and platelets, followed by combining donor platelets and storing them in a different way than how it is done in the United States. It is widely accepted through- out Europe and other non-American high-income countries. Data showed that it provided a better, safer, and less wasteful option of donating and receiv- ing platelets than the current American system.

My time at the American Associ- ation of Blood Banks taught me many things that I find invaluable. I found out how to work efficiently and collaboratively with others to reach a common goal. I also saw firsthand how the administra- tion of organizations works, as well as how these organizations are affected by larger policies. I consistently witnessed how everyone in the workplace was aware of and dedicated to their mission: patient and donor safety. Everyone who worked there felt passionate about their jobs, devoting a substantial amount of time and effort to make sure that the safest and most effective ways to use blood are being practiced and helping to extend that practice to those who cannot do it themselves. Their passion has stuck with me most, as well as their mission as public health professionals to serve and advance public health locally and ad- nationally. References


RESEARCH

GIVING LIFE

Approximately 60 percent of the U.S. population is eligible to give blood. Only 5 percent of the U.S. population actually gives blood in a given year. Source: American Red Cross.

U.S. Population Eligible to Give Blood

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U.S. Population Actually Giving Blood

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References

Features

(n.) a special or important article or program, esp. one that gives details about something that is not part of the main news.

UGANDA Photo by Grace Kwak ’18.
Namaste from Nepal

IVORY LOH ’18
PUBLIC HEALTH STUDIES

Ivy visited Nepal over intersession and shadowed at the largest governmental children's hospital. There, she experienced its health care and public health system firsthand.

This winter break, I signed up for a medical volunteer trip with a non-governmental, non-profit organization called VCD Nepal and had the amazing opportunity to visit Kathmandu, the capital city of Nepal! During my stay, I shadowed at the largest governmental children’s hospital in Nepal, Kanti Children’s Hospital (K.C.H.), and stayed with a local host family. Living with a host family allowed me to better experience the realities of living in Nepal. According to Nepal Electricity Authority (NEA), there will now be power outages for 80 hours per week, a substantial increase from the previous 65 hours per week. I can personally attest to this, as we experienced power outages for up to 11 hours every day. The power typically came back on around 10-11pm, and the living room—dimly lit with the single solar-powered light at the back of the room—would suddenly brighten up. Rashna, one of our hosts, would then immediately get up from her couch to turn on the TV. There was also no heating system or hot water due to the fuel embargo by India. I often saw long lines of people, taxis, and microbuses queuing at empty petrol stations while I was walking home from the hospital and exploring the city. Our main host guide, Brakash, told us that he was trying to buy fuel from the black market so that we could finally light with the single solar-powered light at the back of the room.

The critical fuel shortage that hit Nepal early August has been causing more problems with the declining temperature. I slept under five thick blankets every night and wore at least three layers of clothes whenever I headed out in the evening. After the sunset, the temperature would fall drastically. I often saw groups of people on the streets, huddled around a fire fueled by firewood and small pieces of trash, including plastic, which emits highly unbearable fumes. I also frequently observed small restaurants and street vendors cooking with firewood, as cooking gas had become very scarce and expensive.1

Wood smoke not only contains carbon monoxide and sulfur dioxide that enter straight into our respiratory system but also various irritant gases and carcinogenic chemicals.2 This is extremely deleterious to infants and children that still have developing lungs and can increase their risk of lower respiratory infections, including bronchitis and pneumonia.3 According to the Environmental Protection Agency (EPA), wood smoke can cause “coughs, headaches, eye and throat irritations in healthy people,” as well as exacerbate the risk of chronic respiratory and cardiovascular diseases in vulnerable populations.4 Most of the time, I saw people cooking with firewood in a small, enclosed “kitchen,” which considerably increased their exposure to these toxic particles. The smog on the streets during the daytime, notably rush hours, is also one of the worst I have ever experienced, which is rather telling given that I have lived in both Beijing and Shanghai. In Yale’s 2014 Environmental Performance Index, Nepal was ranked 177th out of 178 countries for air quality.5

Walking to and from the hospital, there were many times that I had to hold my breath to prevent breathing in a large wave of smog blown into my face. I often wondered how the people of Nepal could live like this everyday, even with the facemasks many of the residents wear. I can only imagine that many of the patients at the hospital must be the victims of the heavy pollution and lack of proper hygiene and sanitation.

Every morning, my two friends and I took a microbus congested with people who were both cramped on seats and half-standing to K.C.H. With a medical team consisting of local senior doctors and medical residents, we would complete rounds at the medical wards. I would listen in on the presentation of each patient’s case, symptoms, possible diagnoses, results of any medical tests and scans, and the recommended treatment procedure. On other days, I would shadow a general pediatrics, Dr. Ram, at the Outpatient Department (OPD), as she evaluated patients that came flooding in one after another for consultations.

The two most common diseases among inpatients at Kanti are pneumonia and acute gastroenteritis.6 One of the patients that I saw during OPD presented with fever for two days, cough for 14 days and facial puffiness. Dr. Ram stressed that just because his cough was clear did not necessarily mean that he didn’t have pneumonia. An alternate diagnosis could be tuberculosis. According to Dr. Ram, “When a patient presents with prolonged cough, the doctors here must first do tests to rule out tuberculosis, as tuberculosis is very common in Nepal.”

Vaccines and bacteria are the most common causes of pneumonia, with the most common causative bacteria being Streptococcus pneumoniae, Staphylococcus aureus, Escherichia coli, and Haemophilus influenzae. Dr. Ram taught me that different bacterial pneumonia requires different treatment courses. One of our patients who we visited during rounds was diagnosed with salmonella pneumonia. Dr. Ram explained that the patient likely ingested unclean foods with fecal contamination of salmonella, which happens very commonly in dairy foods due to unhygienic food handling and processing. However, the diagnosis of salmonella as the causative bacteria was purely from clinical investigation and the high incidence of salmonella pneumonia. In Nepal, specific testing, such as a blood culture test, for the accurate detection of the causative bacteria is seldom done due to cost considerations and limited resources.

The doctors must make their best judgment with regard to antibiotics based on the patients’ symptoms and other clinical markers. If the antibiotics against salmonella prove to be futile, the doctors will then switch to a different antibiotic for a broader bacterial group. According to Dr. Ram, the doctors’ educated guesses are typically correct, and patients are effectively treated. From shadowing in OPD and the medical wards, I learned that the inpatients in wards have regular follow-ups, as the residents do daily rounds at least twice a day. However, the patient consultations at OPD last for roughly five minutes. The short consultations are the result of a high patient-to-doctor ratio, which results in a dramatic decrease in the overall quality of care relative to the United States (U.S.) or other industrialized nations. However, due to the lack of human infrastructure and economic resources, I believe that Nepal focuses on improving public health and prioritizes it over individual health needs.

According to the doctors at Kanti and my personal observations of frequent antibiotic prescriptions to patients in OPD, antibiotic resistance is a serious issue in Nepal. Lacking adequate medical knowledge, patients often ask doctors to prescribe antibiotics to them. Many patients would also buy antibiotics from outside pharmacies and medicine vendors. According to Dr. Ram, “prescription-only” antibiotics...
The final regretting the doctors at Kanti, I was surprised
Healthcare workers, doctors, and nurses
reduce self-treatment with antibiotics.
the problem of antibiotic resistance to
diseases such as pneumonia and diar
vide more vaccines to prevent bacterial
and public sanitation standards, pro
with regard to the sale of antibiotics
tibiotics for those bacteria.”

Another striking finding was the lack of transplant surgeries in Nepal. One of our patients in the medical wards had bronchiectasis, which is a condition usually caused by an infection that damages the lungs’ airways and impedes their ability to clear out the dust, bacteria, and other particles trapped in the mucus. The final recommendation from the senior doctor of our medical team was for the patient to do a lobectomy or surgical removal for his infected bottom left lobe. She explained to me that ideally the patient should get a lung transplant, but this is not feasible in Nepal. There is not even a pediatric cardiologist in K.C.H. All cardiac surgical cases are sent to the nearby Teaching Hospital, where there is a general cardiac surgeon. However, this is much more expensive than Kant-
i. The doctor explained that the patient would likely have to travel to India or elsewhere for the lobectomy, which would be extremely costly for his family. I later inquired about the lack of transplant services with more doctors, and they informed me that organ transplants are virtually nonexistent in Nepal, due to the lack of an organ donation system. Furthermore, there are neither the fa-
cilities to properly preserve the organ and facilitate the procedure nor doctors who can perform the transplant. There are also extremely limited post-opera-
tive care and long-term follow-up care for donors, which significantly increase their risk of infections and other com-
plications in the recovery process. In Nepal, organ donation is largely limited to the eyes and kidneys, although bone marrow transplantation is a burgeoning

that none of them washed their hands between patients. The doctors I shadowed in Singapore and the U.S. always stressed that it is standard practice to wash their hands for at least 30 seconds after each patient visit. In the rush of the OPD, I could see how the doctors would neglect washing their hands between each patient; yet, hand washing is a cheap and simple intervention that could prove to be the most effective strategy in preventing hospital-acquired infections.

Another striking finding was the lack of transplant surgeries in Nepal. One of our patients in the medical wards had bronchiectasis, which is a condition usually caused by an infection that damages the lungs’ airways and impedes their ability to clear out the dust, bacteria, and other particles trapped in the mucus. The final recommendation from the senior doctor of our medical team was for the patient to do a lobectomy or surgical removal for his infected bottom left lobe. She explained to me that ideally the patient should get a lung transplant, but this is not feasible in Nepal. There is not even a pediatric cardiologist in K.C.H. All cardiac surgical cases are sent to the nearby Teaching Hospital, where there is a general cardiac surgeon. However, this is much more expensive than Kang-
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field. The Human Body Organ Trans-
lantation (Regulation and Prohibition) Act of 1998 and the Kidney Transplanta-
tion (Regulation and Prohibition) Act of 2002 govern organ transplantation in Nepal. By the 1998 Act, kidney donors must share a legal relationship with the recipient and relationships that fit the criteria among other documents must be submitted before the trans-
plant. However, kidney trafficking still remains an issue in Nepal, posing various post-donation health issues on the patients, including fatigue and weakness (77.8%), loss of stamina for work and walking (75%), headache and cold symptoms (59.6%), vomiting (33.3%) among others.

When my friends and I visited the Dashurainath Temple, one of the most sacred Hindu temples of Nepal, we watched two cremations take place. Our tour guide noted that the deceased are always cremated, though they can choose to donate their eyes at a center near the cremation site of the temple. Before the center was instituted, cor-
neas were excised in the open before the cremation took place. Hinduism and Buddhism are the two main reli-
gions in Nepal. As part of the Hindu tradition, “the dead should be cremated on the banks of the holy Bagmati Riv-
er.”

Speechless, I watched as a group of people carried a dead body across the bridge and dipped it into the riv-
er. I later saw a man drying his hands after rinsing himself in the river. Our tour guide explained that the man is likely the first son of the deceased. As the chief mourner, he must take a bath in the holy river water after the crema-
tion takes place. The tour guide then showed us where the cremations took place, and I saw men gathering wood in preparation for another cremation, which takes place after the body is dipped in the holy river water three times. After the cremation, the ashes are then collected in an urn, as most Hindu families choose to dispose of them in the cremations of ancestors. In Nepal, organ donation is largely limited to the eyes and kidneys, although bone marrow transplantation is a burgeoning

about the level of pollution in the riv-
er and in ramifications on the aquatic 
ecosystem and the health of the popula-
tion the river supports. The influence of cultural practices on the environment and public health is a whole other issue on its own.

After our daily morning rounds, my friends and I would end up in the out-
door “Doctor’s Lounge” with our team of doctors. As we sat around and drank the standard Nepalese drink of choice, sweetened milk tea, I started inquiring about the doctors’ daily schedules and the national healthcare system in Ne-
pal. To my surprise, many of the doc-
tors ended their work at Kanti Chil-
dren’s Hospital around noon unless they were assigned to be on a 24-hour shift in the Emergency Department.

On most days, the doctors I shadowed left the hospital after lunch to work at another private hospital or run their own private clinic elsewhere. They ex-

plained to me that private clinics only provide outpatient services. They purely offer consultations but at a much higher cost to those who can afford it. The benefits afforded by a private clin-
ic are the minimal waiting time and a lengthier consultation with the doctor’s choice. Private clinic consulta-
tions last for approximately thirty min-
utes, a large contrast to the brief three to five minutes at the OPD department at Kanti and other hospitals. The doc-
tors told me they operated on their own with no oversight from bosses or any restrictions from any other author-

FEATURES

BLOOD TEST (Top) A doctor, wearing no gloves, draws blood from a baby girl for investigation.
KEEPING WARM (Right) A baby in the emergency department is kept warm by a lamp. The equipment surrounding his head delivers oxygen. Photos by Ivory Loh.
FEED THE BIRDS

Women sit in Durbar Square in Kathmandu, Nepal. Photo by Ivory Loh.

launch a social health security scheme (SHS), which is in effect social health insurance, in order to provide universal health coverage.1,2" The details of the SHS design and the regulations for implementation are yet to be made public.3" From my discussions with the doctors, I have come to gather that the government provides healthcare at different levels throughout Nepal. The lowest level is primary health care centers, which are staffed with health assistants that have undergone training for two years. They take the place of certified doctors and have very limited supplies of medication, treatment, and diagnostic equipment. The government sets up these health centers in every Nepalese village. The grade above primary health care centers is district hospitals, which have general doctors but lack specialized departments and treatments. Beyond district hospitals are zonal hospitals, which have doctors and specializations, but often lack many facilities and equipment. There are also areas in which district and zonal hospitals overlap, reducing the doctor-to-patient ratio and resources available to the patients in those communities. The highest grade of hospital is tertiary hospitals, such as Kanti, which have specialized departments, intensive care units (ICU), and extensive equipment and medicine, etc. There are only tertiary government hospitals in Kathmandu. This presents a sizeable issue for the distribution of health care amenities, as the communities in rural areas only have access to lower grade health care, such as primary health centers, unless they are able to travel to Kathmandu or pay the high fees of private hospitals. Apart from this, other challenges that the health system in Nepal faces include "poor infrastructures, inadequate supplies of medication, treatment, and poor retention of human resources in rural areas." The Nepalese doctor and nurses per 1000 population ratio (0.67) is significantly lower than the World Health Organization’s recommended 2.3 ratio.4" With the recent earthquake disaster and current political turmoil that has led to the Indian fuel embargo, the health care needs of the Nepalese people are only becoming more demanding. In short, there are certainly many challenges that Nepal faces politically, economically, and socially. In closing, I would like to assert that my time in Nepal was definitely worthwhile and insightful. Having grown up in a very comfortable home in the bustling and developed city of Shanghai, I was undeniably unaccustomed to the harsh Nepalese lifestyle. Nonetheless, despite experiencing the difficult realities of living in Nepal, I also came to appreciate many of the amazing features it has to offer. I was welcomed with open arms into a very hospitable host family, who cooked me breakfast and dinner every day. They always generously offered to make me hot milk tea, which made the cold nights substantially more bearable. Likewise, the doctors and medical team at Kanti were incredibly friendly. I owe much of my learning and shadowing experience to Dr. Ram, who took the time to patiently translate and explain all the cases to me from Nepalese to English. Nepal is certainly a remarkable country rich in both cultural and natural beauty. I only hope that with international aid, NGOs, and other additional support, this nation can further develop and thrive in the near future.

References
Reducing Stigma in Botswana: The Role of NGO’s

BENITA PURSCH ’16
PUBLIC HEALTH STUDIES

Botswana has become a democratic success story in the last 50 years and has since been viewed as a paragon for other developing nations. Despite 70 percent of the country being covered by the Kalahari Desert, Botswana has succeeded in moving from abject poverty to upper middle income status since its bloodless rise to independence in 1966. Since then, the country has solidified its place as one of the most stable countries in Africa, making it a shining beacon of hope for an often struggling continent. While the world’s richest diamond mines and a growing tourism industry, Botswana appears to have all the required resources to continue its success. Despite its wealth and peaceful history, Botswana still deals with significant challenges. As of 2014, it had the 2nd highest HIV/AIDS prevalence in the world, second only to Swaziland, with 18 percent of the population living in poverty and 17.8 percent in unemployment. These challenges are endemic in many countries, particularly those that are still developing, but their existence in a country with resources and a relatively high GDP is unique. Because of this, nongovernmental organizations have had to restructure their approach to providing aid and development in order to adapt to the needs at hand. Botswana currently has a high functioning nationalized healthcare system, where all services are provided either for free or for a nominal fee of 50 cents, so the instillation of basic health services is no longer an issue. While any health system can always use more health professionals (Botswana’s first medical school class only graduated in 2014) and more funding, international and national aid organizations have a different role to play. Specifically, they are refocusing their efforts towards non-structural challenges of increasing healthcare access and awareness—challenges that the government has neither the time nor the resources for. Stigma, education, and youth outreach are all aspects of the health system that often fall by the wayside as governmental healthcare, and it is up to NGOs to fill in that gap.

In 2013, I experienced these challenges firsthand, as I studied and worked in Botswana for five months. It was far from a typical study abroad experience. Instead of spending my time in the classroom, I mostly volunteered at local government clinics and visited other government-run facilities, such as the national microbiology lab and the abattoir. While these field trips and short term volunteering experiences gave me a diverse view of the governmental side of the health care system, I desired to increase my exposure to the other side. I started working for Project Concern International (PCI), the Botswana branch of an international NGO based in Gaborone. PCI initiates provisions of health and development aid to developing countries in the areas that need it most. Like many organizations throughout Sub-Saharan Africa, PCI focuses many of its initiatives on education, and youth outreach are all aspects of the health system that often fall by the wayside as governmental healthcare, and it is up to NGOs to fill in that gap.

In 2015, I experienced these challenges firsthand, as I studied and worked in Botswana for five months. It was far from a typical study abroad experience. Instead of spending my time in the classroom, I mostly volunteered at local government clinics and visited other government-run facilities, such as the national microbiology lab and the abattoir. While these field trips and short term volunteering experiences gave me a diverse view of the governmental side of the health care system, I desired to increase my exposure to the other side. I started working for Project Concern International (PCI), the Botswana branch of an international NGO based in Gaborone. PCI initiates provisions of health and development aid to developing countries in the areas that need it most. Like many organizations throughout Sub-Saharan Africa, PCI focuses many of its initiatives on the prevention and control of HIV/AIDS. Over the last few years, one of its main projects has focused upon reducing the stigma that accompanies reproductive health amongst youth. It is hard to balance between reducing the stigma of HIV transmission with having an open precautionary conversation. We want to encourage people to speak up and also maintain safe sex habits, condom use, and STD testing. PCI has chosen to combat the issue of HIV/AIDS stigma and awareness through an initiative that foremost addresses not reproductive health but financial literacy. Through this project, we hoped to prove to youth in rural Botswana that their HIV status was not the defining factor of their lives but just a circumstance that they could learn to live with. By not having HIV status as the primary importance, we hoped to reinforce that their lives were defined instead by their knowledge and drive in fields that they are passionate about. The Twende Project provided youth in northern Botswana with an extensive course of financial literacy, covering everything from opening a bank account to creating a business plan and applying for grants through PCI and the Barclays Bank. Although sexual health awareness and HIV/AIDS knowledge did not fall seamlessly into this curriculum, by working to incorporate it into every module, PCI hoped to make sexual health education the norm. By expanding sexual and reproductive health education to all programs participants, STDs, and HIV/AIDS in particular, was presented as a common problem that anyone may encounter, reducing stigma overall.

Expanding sexual and reproductive health education into other interventions is by no means the best or only method of reducing stigma of HIV/AIDS. However, what it does do is make the knowledge of infectious diseases, such as HIV, more widespread. Because stigma and ignorance breeds intolerance, making HIV/AIDS more “mainstream” serves to encourage target populations that a positive HIV outcome is no longer a death sentence. Because stigma and ignorance breeds intolerance, making HIV/AIDS more “mainstream” serves to encourage target populations that a positive HIV outcome is no longer a death sentence. Because stigma and ignorance breeds intolerance, making HIV/AIDS more “mainstream” serves to encourage target populations that a positive HIV outcome is no longer a death sentence. Because stigma and ignorance breeds intolerance, making HIV/AIDS more “mainstream” serves to encourage target populations that a positive HIV outcome is no longer a death sentence.

References
How Global Brigades Changed My View of Healthcare

EMILY RENCSOK ’16
BIOMEDICAL ENGINEERING

Emily is the president of the Global Medical and Dental Brigades chapter of Global Brigades at Johns Hopkins. She has been on four medical, dental, and public health brigades.

According to the World Health Organization, over 400 million people (around six percent of the world’s population) lack access to one or more basic forms of healthcare. This fraction is higher in developing countries where there are fewer doctors and hospitals. Hospitals in developing countries are often ten hours away from families in rural areas, and the costs of healthcare are insurmountable when the families only make a couple dollars per day. In rural Honduras, for example, one out of seven people do not have access to any basic form of healthcare. For every 10,000 people in Honduras, there are generally only four doctors, two dentists, and 11 nurses. The hospitals are too far away and the medicines are too expensive, so the families generally go without necessary treatments. Living conditions are poor, leading to many health problems, especially respiratory problems, that could have been avoided with proper flooring and basic sanitation practices. There is a wide array of health issues that can be both prevented and treated, but they are not due to the lack of access to resources and the high cost of prescriptions. Throughout my time at Hopkins, I’ve had the incredible opportunity to both see these health issues firsthand and work on a comprehensive solution for them.

During my freshman year at Hopkins, I was introduced to an incredible organization called Global Brigades (GB). GB is an international organization that provides resources and support to developing communities in Honduras, Panama, Nicaragua, and Ghana in a variety of ways. GB prides itself on its holistic model of development, aiming to support both individual families and communities as a whole, from providing healthcare to teaching the communities about loans and helping to establish community banks. Largely student-run, GB annually sends more volunteers into the field than the Peace Corps, and students from universities all over the world travel to these countries year-round to participate in any of the nine brigades supported by GB. The idea behind GB makes a lot of sense. First, send in a medical and dental brigade to a community to assess the needs of the community members. If a community is deemed to have health problems that can widely be relieved by other types of brigades, water and engineering brigades will come and help get the families in the community easier access to clean water. A public health brigade will come next to build things like showers and an eco-friendly stove for the families. Once the basic healthcare needs of the families are met, the final four brigades enter the community. An environmental brigade comes and helps implement sustainable agriculture projects. A microfinance brigade enters the community to provide financial literacy to the families and develop a community bank. A business brigade empowers small businesses within the community to become more economically stable. Finally, a human rights brigade supports the community with pro-bono legal consulting to resolve family law cases. Once a community has seen all of the brigades, the community is sustainably exited, and brigades no longer travel to that community. By this point, the health of the families in the community is better, and the families know how to run businesses and deal with finances. The community is self-sustaining which allows it to support other local families as well. The community is also able to function as a cohesive and productive unit.

During internession of my freshman year, I was presented with the opportunity to travel to Honduras for a week with a dental brigade. Through my time in Honduras, I became enamored with both the country itself and all of the people that I met throughout my stay there. Needless to say, my first brigade was life-changing, and since then, I’ve returned on both medical and public health brigades. All of these brigades have given me much greater insight into the health problems that families in rural areas of Honduras face, and I’ve learned more shadowing doctors in Honduras than I could ever learn from doctors in the U.S.

On the dental brigade, I worked alongside other brigaders from Hopkins and UC Berkeley to set up a medical clinic in a community called Jalaca. We set up in a small school building that had four rooms: one for vitals and symptoms, another for consultation with the doctors, a dental clinic room, and a last room for a pharmacy where all of the medicines were packed and given to the patients. Because I was a dental volunteer, I spent a lot of time administering fluoride treatments to little kids and shadowing dentists performing fillings and extractions. I feel like everyone that I know in the U.S. takes going to the dentist for granted. We get twice a year covered by our insurance, and we spend that hour awkwardly answering questions that the dentist asks us while trying to scrape plaque off our teeth. Most of us see dental visits as an inconvenience and generally do not give it a second thought. Working in the dental clinic in Honduras changed my perspective after seeing the dental issues that the patients faced.

I saw an eight-year-old boy whose adult teeth weren’t growing in properly since he wasn’t taking care of them. There was a 40-year-old woman whose teeth were rotting away so badly that only the roots of her teeth remained. She was physically unable to fall out of her mouth. There was a 30-year-old woman who had a tooth growing in the middle of the roof of her mouth, and there wasn’t anything she could do about it. The most impactful experience of that dental brigade, though, was when we saw a 20-year-old patient who only had two teeth. The rest of the man’s teeth had fallen out because he wasn’t able to take care of them. The two teeth he had left were both in pretty bad shape, so the dentist said that they had to be extracted. Realizing that this twenty-year-old man would soon be completely toothless forever was something that was hard for me to grasp. I was 19 at the time, and envisioning myself having no teeth at such a young age was hard to do.

On my medical brigade last May, I shadowed in the dental station again, and we saw similar problems. The moment that was most salient to me was when we saw a five-year-old boy. He still had his baby teeth, but some of his teeth were rotting so badly that serious health problems could have arisen had we left the teeth in. The boy was very visibly shaken by the whole experience. He opened his mouth, and the dentist determined that we would have to extract five of his teeth. Extracting five teeth from such a small boy seemed excessive, but the bacteria on his rotting teeth could infect his bloodstream and cause major health problems. The boy became even more nervous when he heard this, and he started to silently cry. My job immediately switched from assisting the dentist to being the hand-holder for the event. The next fifteen minutes were spent holding the boy’s hand and trying to reassure him in very mediocre Spanish.

These experiences showed me that many people around the world have absolutely no access to dental care.
Why did we rarely do fillings and almost exclusively pull anywhere from three to six teeth from each patient? Toothbrushes are not prevalent in rural Honduras, and alternatives to using a toothbrush aren't known. How can the issue of proper teeth cleaning be addressed across such large populations? GB believes that the best way is to target education to the kids. Along with giving out toothbrushes and toothpaste, we teach the kids how to brush their teeth and administer the fluoride treatments, taking care of their dental hygiene practices. While administering the fluoride treatments, we teach the kids how to brush their teeth. We tell them that if they lose their toothbrush and can't get another one, gurgling salt water is a good substitute. The kids (and adults) leave with the knowledge of how to take better care of their teeth, and this knowledge can be passed along to other members of the community. This obviously isn't the perfect solution to getting everyone access to toothbrushes and toothpaste, but information about how to take care of your teeth with a toothbrush is a step in the right direction to better dental practices and hopefully fewer extractions in the future.

During internship of my sophomore year, I decided to try out the public health brigade offered by Hopkins and GB since I had already seen the dental side of things. On this brigade, I worked closely with one family for the week (as opposed to seeing 500 patients over the three clinic days in the dental brigade). I worked alongside other Hopkins, Boston, Kentuckky, and Berkeley volunteers to construct a clean water basin, cement floors, an eco-stove, a shower, and a toilet for five families in a community called Palo Verde. Seeing how these families live was a different experience from seeing hundreds of patients in a school building on the dental brigade. Again, seeing the living conditions of these families changed my perspective about the way that we live in the U.S.

The family with which I worked lived in a house with three rooms. Living in this house was the mother, father, grandmother, three teenage daughters, one eight-year-old son, and a three-year-old son who had epilepsy. One of the rooms in the house was the kitchen, and the remaining two rooms housed eight people. My room at school is the size of their two rooms combined. The house had dirt floors, and their beds consisted of blankets layered on the floor. Their stove in the kitchen was basically just an open fire on which they cooked. The family had a hole in the ground behind their house that they used for their toilet. Their shower was the most heartbreaking. In a corner of their yard, there were four wooden poles forming four corners of a rectangle. There was a bright blue tarp wrapped around three of the sides with the open side facing the house. At first, I didn't even realize that the family was using it as a shower. To take a shower, the person would stand inside the rectangle and dump buckets of water over their head since they didn't have running wa-

DOLL-LIKE
Two girls swaddle a small doll like a baby in Honduras. Photo by John Jiao.

ter. I felt disgustingly privileged. These living conditions would cause health problems for anyone. Constantly laying on dirt floors brought the family into close contact with bacteria and parasites. Regularly breathing in dirt from the floors caused respiratory problems for the family, especially for the kids. The stove in the kitchen generated a lot of smoke that remained in the room since it didn't have any way to be ventilated. The mother and older daughters who mostly cooked had severe respiratory issues from inhaling all of the smoke. The family didn't have anywhere to store the water that they brought to their house from miles away, so the water was kept in dirty buckets leading to more parasite infections. The family was not living in a healthy environment, and the symptoms that they presented were evidence of that.

Over the week-long public health brigade, the other volunteers and I worked alongside the families as well as with Honduran masons to pour cement floors and build a sanitation station as well as an eco-stove for the families. I spent most of the week sifting sand and mixing cement. I learned the proper way to lay bricks and level a cement floor. I saw all of the plumbing involved in installing a toilet. I practiced my mediocre Spanish and handed the masons hammers, shovels, and cement before correctly handing them the tool for which they had asked. It was a hard week of physical labor, but so worth it in the end. On the last construction day, I was sitting all day with a couple other volunteers, and I looked up at one point to see the father walking out of the house. I watched him as he walked over to the blue tarp, untied the rope holding the tarp to the wooden poles, and pulled the tarp down. I watched all of the wooden poles out of the ground and brought them back into the house. Where the family's old shower once stood, there was nothing. I looked over to the right, only 15 feet away, to see a shower that wasn't there when we started that week. There were cement walls and a metal door. There was plumbing to allow the water to flow. Seeing the father pull down the blue tarp and wooden poles, it finally hit home that this family was going to be much healthier. I distinctly remember stopping sand sifting to wipe the tears from my eyes knowing that we were about to do so much for this family. I felt that basic health needs are met, and the importance of public health in ensuring that basic health needs are met, and I hope to get more involved in public health classes and other opportunities in the future to learn more about how problems like this can be solved.

This past May, I traveled back to Honduras to help the public health brigade to Las Animas. Having seen the public health side of things and why many families present respiratory problems and parasites, I was interested to see how these symptoms and diseases could be relieved with medicines. On this brigade, I helped build the four stations of the medical brigade: triage (where vital signs are assessed, consultation (where the patients talk to the physician), gynecology (where pap smears were done), and pharmacy (where medicines were sorted and packaged for the patients). Over the three clinic days, we saw over a thousand patients for a variety of conditions, many of which could have been avoided if the families had the proper public health infrastructure.

For every patient that came through the clinic, we prescribed anti-parasite medication. The water that the families drink is so unclean that nearly the entire rural population of Honduras has some sort of parasite, so the medication was blanket-prescribed. Above all, the most significant thing that I learned from this trip was the importance of a basic public health infrastructure to promote good health. The families with which we worked didn't have the resources to create cement floors or a shower for themselves. Because of this, they settled for breathing in dirt and smoke daily and drinking dirty water. Just by bringing cement and some bricks to these families with volunteers who were excited to do some construction for the week, the basic health level of these families exponentially increased. Knowing that the families are better off because I helped means everything. Public health brigades run year-round to help provide these resources for families throughout Honduras, Nicaragua, Panama, and Ghana, and every family that is given cement floors and an eco-stove is a family that will have a better baseline of health. This brigade taught me the importance of public health in ensuring that basic health needs are met, and I hope to get more involved in public health classes and other opportunities in the future to learn more about how problems like this can be solved.
When they have to take the whole day off to obtain the insulin in the first place. There wasn’t much that we could do for this patient and her family. We took down their address so that they could be followed and helped in any way possible. If a brigade ever goes back near their community, GB will try to bring a supply of insulin for the girl. Unfortunately, this is not a sustainable way to treat her, and many others in rural parts of the world face the same types of health problems with no feasible solution.

Seeing all of these health problems on my medical brigade showed me that a more sustainable mode of health for these families in rural Honduras is necessary. At most, we could prescribe three months of medications to the families—a very temporary solution. Medical brigades generally try to return to the communities every six months to monitor health changes and prescribe necessary medications, but this is just a band-aid for the underlying problems of poor health at home and almost no access to higher care for more severe problems. Many of the problems that we saw in the clinic could have been fitted from a public health brigade returning to their homes. The respiratory problems, stuffy noses, and parasites all could have been avoided had the families had clean water and a stove that vented out of the house. The access to an area that is a larger issue that GB needs to do much to solve. We can give referrals to patients so that they know they’ll be seen if they travel the 10 hours to the

that have been reused multiple times. Without the proper wipes and ability to clean the babies, diaper rash becomes a prevalent problem.

In addition to these common problems, there were some conditions that would be hard to relieve even with public health measures. One woman had a brain tumor but had no way to get it removed. She came to the clinic in hopes of having a surgery performed, but we didn’t have that capability. We could have referred her to a hospital for a brain surgery that would cost around $1,000. This price seems extremely cheap compared to surgeries in the U.S., where surgeries routinely cost hundreds of thousands of dollars. However, in rural Honduras, there is little access to these surgeries despite the relatively low cost. To the patients seen on the medical brigades, $1,000 seems almost insurmountable when the families make less than a dollar a day. Though we couldn’t help in the clinic itself, we were able to fundraise the thousand dollars to cover the cost of the woman’s brain surgery, which was performed.

The most interesting case that I saw on my medical brigade was that of a 14-year-old girl with Type I diabetes. It was already known that she had diabetes, but she and her family had an extremely difficult time obtaining the necessary insulin injections to keep her healthy and alive. The family was only able to obtain a week’s worth of insulin at a time, and they had to travel all the way into Tegucigalpa to get it. Tegucigalpa is about three hours away by car from where the family lives. They didn’t have a car though, so they had to either walk, take a bus, which made getting the insulin a day-long event. When they arrived at the hospital in Tegucigalpa, they had to pay $15 for every week’s supply of insulin. This is an absurdly high price when the family only makes one dollar a day, and it is even worse when they have to take the whole day off to obtain the insulin in the first place. There wasn’t much that we could do for this patient and her family. We took down their address so that they could be followed and helped in any way possible. If a brigade ever goes back near their community, GB will try to bring a supply of insulin for the girl. Unfortunately, this is not a sustainable way to treat her, and many others in rural parts of the world face the same types of health problems with no feasible solution.

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Providing the resources to meet the basic health needs of families that don’t have access to healthcare can largely allow the families to avoid having to go to the hospital in the first place. Ensuring that everyone has access to clean water is an easy way to avoid many parasites and diseases caused by unclean drinking water. This is a problem that has been easily solved in the States, but has yet to be solved in rural parts of countries like Honduras. Having living environments with paved floors and stoves that vented out of the house is another way to avoid certain parasites, infections, and respiratory problems. Again, this is a larger issue in developing countries than it is in the States, but one that needs to be addressed everywhere. Lack of education regarding proper sanitation and hygiene also needs to be addressed to explain alternatives to those that don’t have access to a standard level of healthcare.

Basic public health projects like the ones on my public health brigade could ease potentially even solve most of the problems that I saw on the medical and dental brigades. While these projects need to be directed mostly towards developing countries, some projects are also needed here at home. Low-income working families are often uninterested because the cost of healthcare is too expensive. These families can’t afford to go to the hospital and get medications, and they also have trouble affording a clean living environment and healthy food to eat. Different public health projects put in place by both the government and private organizations aim to ease these problems, but the problems are still there. While politicians debate over the best way to provide healthcare, another solution needs to be put in place. Public health projects around the world could raise the baseline health level of those without access to healthcare and reduce the need of many families to go to the doctor. Some day in the future, healthcare might be less expensive and more accessible to those with low incomes or those who live far away from hospitals. With everything that I’ve seen on my medical, dental, and public health brigades, it’s tempting to believe that that sustainable method is the expansion and creation of more widespread public health projects in both the U.S. and also in developing countries around the world.

References
In Focus

(n.) the state or quality of having or producing clear visual definition.

UGANDA Photo by Grace Kwak ’18
How Do You Define Public Health?

PUBLIC HEALTH IS AN ECLECTIC FIELD THAT MEANS SOMETHING DIFFERENT TO EVERYONE.

Josh DiGiacomo

Bimolecular Engineering
CREATING SAFER, AND CLEANER, AND POLICIES CAN REDUCE COMMUNITIES OR COMBAT AND, IN TURN, TAKE A MORE BROAD-PICTURE VIEW THAN THE CURRENT AND FUTURE GENERATIONS FROM PREVENTABLE SICKNESS AND DISEASE. J

John McLaughlin '18

Chemical and Biomolecular Engineering
A WAY TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

Antonio Malacad

Chemical and Biomolecular Engineering
AN OPPORTUNITY FOR PEOPLE TO SEE THE REAL HEALTH ON A BIG-PICTURE LEVEL IN WHICH, THROUGH A CAREFULLY PLANNED AND MANAGED APPROACH TO HEALTHCARE, WE CAN SAVE THE HIGHEST BENEFITS BY INTERVENING ON THE NUMBER OF PEOPLE WHO ARE MEDICALLY TREATED.

Abby Biesman '18

International Studies
A FIELD THAT AIMS TO IMPROVE THE GENERAL HEALTH AND LIFESTYLE OF SOCIETY TO PROTECT THE WELL-BEING OF SOCIETY AS A WHOLE THROUGH INTERDISCIPLINARY MEASURES TO MAXIMIZE THE HIGHEST BENEFITS BY INTERVENING ON THE NUMBER OF PEOPLE WHO ARE MEDICALLY TREATED.

Mira Sohby '18

Earth and Planetary Sciences
THE STATE HAS BEEN ABLE TO INTERVENTE BETWEEN EXPERTS AND RESPONSIVE TO NEW AND OLD EPIDEMICS, PUBLIC HEALTH IS A BROAD FIELD WHERE YOU FIND A COOL COMBINATION OF PREVENTIVE MEASURES WHICH AIMS TO MAXIMIZE THE HIGHEST BENEFITS BY INTERVENING ON THE NUMBER OF PEOPLE WHO ARE MEDICALLY TREATED.

Tam Thanitcul '19

Biomedical Engineering
A REASON NOT TO BE PHYSICIANS FOR HUMANITY WITHOUT AN 1-ON-1 INTERACTION; IT'S A WAY TO APPLY YOUR OWN TALENTS AND INTERESTS TO PROTECT THE WELL-BEING OF SOCIETY AS A WHOLE THROUGH INTERDISCIPLINARY MEASURES TO MAXIMIZE THE HIGHEST BENEFITS BY INTERVENING ON THE NUMBER OF PEOPLE WHO ARE MEDICALLY TREATED.

Rahul Reddy '19

Biology
A FIELD THAT AIMS TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

Rahul Kenny Ling

Evon Morgan '16, Biology
A WAY TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

Marysol Encarnacion '16

Computer Science
A FIELD THAT AIMS TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

Ahluwalia Ajani '18

Economics
A FIELD THAT AIMS TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

Taylor Barber-Gumbs '19

Director, Public Health Studies
A FIELD THAT AIMS TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

Tai Barber-Gumbs '19

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A FIELD THAT AIMS TO IMPROVE THE LIFESTYLES OF PEOPLE'S WAY OF LIVING.

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International Studies
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Policies

(n. pl.) a course or principle of action adopted or proposed by a government, party, business, or individual.
Ethiopia has long been a country suffering from sporadic famine, high rates of urbanization, and alarming poverty rates. To help alleviate these problems, a local Ethiopian non-profit is using a new and integrated approach that is rapidly on the rise in public health and could solve decades-old problems.

Sexual and Reproductive Health Intervention in Rural Ethiopia

Although many improvements have been made, factors such as poverty, environmental derogation, and sporadic famines are still widely experienced. Many have theorized why insufficient progress has been made; corruption, political unrest, and lack of focus on sustainable development have been argued as causes. Another explanation may be the lack of focus on an approach that mirrors the world. If people take a step back they will realize that the world is extremely interconnected. Similar to a natural food web, our world is dependent on many factors and interactions. Despite this, our manmade institutions are extremely sectionalized. For example, non-profits tend to section their activities found in multiple sectors and combining them into one integrated project. The activities complement each other in order to maximize the effects of individual activities.

The developing world has been a major focus of public health projects. In recent decades, a new approach has emerged in Public Health practice—attempting to integrate approaches previously found in separate sectors. The Population, Health and Environment (PHE) approach is a multi-sectoral approach that addresses the social, economic, and environmental issues in the world. A typical PHE project understands the links between an environment and its effects on the human population’s health and livelihoods. For example, the relationship between high population growth and deteriorating living conditions is one acknowledged link. PHE projects are designed to address several problems by modifying activities found in multiple sectors and combining them into one integrated project. The activities complement each other in order to maximize the effects of individual activities.

Engender Health centers its efforts on family planning and reproductive health. Although both are just causes, the single-factor approaches do not mirror the interconnectedness of the world that the organizations are working in. If several factors are involved in creating a problem, various approaches should be used to “tag-team” a solution. This, essentially, is the PHE approach.

I worked at PHE Ethiopia Comorium (PHEEC), a non-profit organization based in Addis Ababa, Ethiopia focused on solving pressing public health issues using the PHE approach. PHEEC operates in various areas in Ethiopia. A favorite of the non-profit is biodiverse ecoregions of the country. The project I focused on was the Support for Horn of Africa Resilience (SHARE) project under the action name “Conservation of Biodiversity and Ecosystem Functions and Improved Well-being of Highland and Lowland Communities Within Bale Ecoregion.” The project received a €5.5 million grant from the European Union with the following expected results: expanded understanding of sustainable eco-region management, enhanced livelihoods and health of the local communities, a constructed institutional capacity for natural resource conservation.

The overall objectives were set in order to improve drought resilience, food, and nutrition security of vulnerable populations while conserving ecosystem function and services in the Bale Ecoregion (BER). The BER is one of the 34 world biodiversity hotspots, a unique and significant ecosystem spanning 22,000 km². The eco region hosts 26 percent of Ethiopia’s endemic species including several rare amphibian species. The BER is also a crucial water drainage system to East Africa and its oceanic coasts. This region has a human population of about 3.3 million. The BER has an average household size of eight, which is greater than the national average of 5.4. Such high population growth is forcing the expansion of farmland and increasing the rate of resource and environmental derogation. The upper catchments of the BER are under strong anthropogenic pressure resulting in a deforestation rate of up to 6.7 percent per annum. Unregulated use of grassland and forest resources have resulted in soil erosion, flooding, as well as a negative impact on other ecosystem services, most notably biodiversity and carbon storage. For instance, between 2000 and 2009 alone, the BER lost 263,000 square hectares of high forest resulting in a release of 118 metric tons of carbon dioxide and greenhouse gases. Consequently, the lowland communities of the BER experience high drought vulnerability and food insecurity, forcing them to depend on emergency food aid.

Due to these realities, the BER is an essential area to conserve. The living conditions of the people in the region are also threatened by the high population. This rising trend demands attention in order to ensure better quality of life. The SHARE project is a vast project attempting to decrease the high population pressure on the environment in the Bale Ecoregion as well as on the livelihood and health of the human population. The project is utilizing an integrated multi-sectoral approach which understands the links between social, economic, and environmental issues in this region and attempts to address each sector’s problems. The project is operated by five members of PHEEC, including PHEEC itself. Each member brings its expertise to the table. The expertise of the partners are farming, water management, environmental conservation, and health. Some aims of the project
In August, we traveled to the Bale Mountain National Park. At the beginning of our trip we were based in Goba and Robe, small towns in the Bale Mountains considered to be the region’s hubs. We decided to first conduct informal formative research in order to “identify social, economic, and political factors blocking or facilitating desired behavior changes.” In our case, we focused on the use of contraception in the BER. To begin our qualitative research, we met with several non-profit health coordinators, and even locals that the SHARE Project recognizes that creating lasting change requires sustained effort and describes the multistep process with the stages of continuum. Source: Measure Evaluation.

References


POLICIES
The Health and Social Issues within Nyarugusu Refugee Camp and Surrounding Areas

Michele Kihara ’17
PUBLIC HEALTH STUDIES

A native Swahili speaker, Michelle was first drawn to working on this project because of its proximity to her home in Kenya.

Throughout the 20th century, Tanzania became a temporary home for refugees who fled from war and other threats in their native countries of Rwanda, Burundi and Congo. Created in 1996 by the Tanzanian government and the United Nations High Commissioner for Refugees, the camp is now mostly inhabited by Congolese refugees who fled from civil war. An immense amount of data has been collected and translated from Kiswahili broadcasts on various health topics on Radio Kwizera, a popular regional radio station. The radio programs are uses of mass media to disseminate important information to a large audience. The data ranges from first-hand patient accounts in the clinical setting to interviews with distinguished individuals involved in academia and even politics. The interviews discuss health issues like HIV/AIDS, the recent Ebola epidemic, Malaria, and teen pregnancy. The audio has been transcribed to a script through a qualitative data analysis program known as Nvivo. Utilization of health-care resources in Kigoma has been largely influenced by the social stigma behind seeking care for various diseases and a strong belief in traditional healers. Education through mass media has allowed many in the area, including the refugees, to learn how and where to seek care as well as about the social or political issues that impact their daily lives. These findings will be applied to a larger project with an aim to push international non-profits like the UN to increase access to basic health-care resources. It is a major public health issue where the health disparity leads to poor health outcomes that are totally preventable through education, policy changes, and advocacy. The same applies to other groups who are suffering from a lack of resources and proper care in other parts of the world. Perhaps one of the more marginalized groups are refugees who have fled their home country due to war and other threats. These refugees are subjected to their host country’s rules and regulations and they do not possess the same access to resources that natives of the country do. This includes stringent limitations on where and when they can access health-care and other basic needs. The findings from this project will highlight the primary needs of the Nyarugusu inhabitants. The ultimate goal is to spark a series of improvements that will increase access to basic resources as well as better the conditions of the camp.

As a native of Kenya, I witnessed many of the healthcare injustices experienced by marginalized populations, which often include refugees from other countries seeking better living conditions. All the data (transcriptions) are in Kiswahili, and I was able to translate into English with ease. Through Nvivo, I will have been able to gain some skills in data analysis. The first-hand accounts from mothers caring for their children who are afflicted by malaria simply because of a lack of mosquito nets provide a vivid depiction of the deep need for an intervention. These findings may eventually lead to a new approach to healthcare in the camp and surrounding areas: healthcare could become more about preventing illness than treating it, which in the long run will have better outcomes and save many lives.

I will first discuss the use of mass media in creating changes in behavior. I will then introduce the major themes discussed in the radio broadcasts, which include direct approaches to tackling healthcare issues. These themes include the following: the policies behind access to care, HIV/AIDS treatment, access to anti-malarial drugs and nets, complications during pregnancy, and increased rates of abortions in young mothers. Many African countries who were previously very receptive to refugees fleeing from human rights abuse in their home countries have become less open to granting asylum. With the recent Ebola pandemic, health departments in countries with high refugee populations have put regulations in place to insure that no infected persons are allowed into the camps. At the time, Ebola had already spread to the Democratic Republic of Congo, which is where most of the Nyarugusu originated. To deal with this, the health officials and the Tanzanian government turn to the radio waves to try and educate as many individuals as possible on disease transmission and treatment.

Mass media campaigns have been used in the past to disseminate important messages to a generally passive audience. The campaigns have been successful because these media sources are easy to access and have the ability to reach a wide range of individuals, all while remaining low in cost. It is also important to take into consideration the demographics of the audience. The message must be age-appropriate and engaging enough to keep the audience’s attention. According to Mass Media Campaigns, homogeneous messages may not be persuasive to heterogeneous audiences; and campaigns might address behaviors that audiences lack the resources to change. The message has to remain general enough so it can be applied to large masses; there is a need to know the amount of resources within the population if the message promotes any type of behavior change. The programs directed toward the camp’s inhabitants, seek to inform on various health issues and give advice on how to care for the ill, promote healthy habits and prevent sickness. When the Ebola pandemic struck, government officials tightened up border security and relied heavily on education to try and alleviate some of the panic that was caused. During a special segment on Ebola, public health specialist Dr. Joshua Monge explained that the disease must be treated with urgency because ‘Ebola cases are lethal.’ He also explained exactly how the disease is transmitted from person to person, through body fluids. Many of the fears from the target audience were addressed during the broadcast, and Dr. Monge gave simple yet effective instructions on preventing infection. The result was that many of the camp’s inhabitants became well versed in seeking immediate care and for those who may be infected. This ended up alleviating much of the anxiety surrounding the lack of knowledge on the illness.

The radio campaign is an indirect approach to behavior change because it seeks to increase discussion on the various issues within Nyarugusu and surrounding areas. An indirect campaign is defined as one where the main goals are to “increase the frequency, depth, or both, of interpersonal discussion about a particular health issue within an individual’s social network, which might reinforce (or undermine) specific—

IN ADVANCE


<table>
<thead>
<tr>
<th>Type of population</th>
<th>Origin</th>
<th>January 2015</th>
<th>December 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total in country</td>
<td>Of whom assistd by UNHCR</td>
<td>Total in country</td>
</tr>
<tr>
<td>Refugees</td>
<td>Burundi</td>
<td>97,790</td>
<td>12,790</td>
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<tr>
<td></td>
<td>Democratic Republic of Congo</td>
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<tr>
<td></td>
<td>Various</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>Asylum seekers</td>
<td>Democratic Republic of Congo</td>
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<tr>
<td></td>
<td>Burundi</td>
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</tr>
<tr>
<td>Others of concern</td>
<td>Total</td>
<td>289,300</td>
<td>264,290</td>
</tr>
</tbody>
</table>
The radio campaign is an indirect approach to behavior change because it seeks to increase discussion on the various issues within Nyarugusu and surrounding areas.

wealthier countries where research capacity is substantial. An analysis in the future will determine how effective Radio Kivuza programming is in inciting change on a policy level and within the camp.

Fajarà ka wagonya, which translates to “Comfort for the Patients,” is one of the programs that involves a direct interaction with patients in the clinical setting. A radio presenter usually travels to a clinic in Kigoma and has a one on one interview with a patient about the quality of care that he/she receives. Overall, the patients are usually satisfied with the care that they receive, although the clinics have low funding. Once in a while, a patient would complain about the inadequate amount of beds or waiting time but otherwise be satisfied with the services provided. The patients travel from towns near and far for healthcare services for a wide array of maladies. A majority of the women in the clinics bring in their young children who suffer from malaria, which is very common in the region. Their visits involve a one to two night stay before symptoms improve, and they are discharged. Many of the mothers also mentioned that they gave birth to their children at the clinic and would always come back for treatment when needed. This continued relationship with patients is perhaps one of the reasons why so many are satisfied with the services regardless of funding.

Religious beliefs are known to generally have a positive effect on health. Many of the patients who were interviewed gave high regard to their god. The Muslims in this particular region in Africa are Christianity and Islam, and the patients would give thanks to Allah or Christ for their well-being. In fact, many of those who were bed-ridden with severe injuries and other ailments remained positive and thanked God that their situations were not any worse. During the community of because of myths on the spread of the virus. Those who do know that they are infected choose to keep their status a secret to avoid stigmatization. The government has created many centers where individuals can be tested and find out their status soon after. There has also been an initiative to educate the community, especially the youth on how the virus spreads from person to person. In fact, many of the radio advertisements involve short skits where characters that are HIV+ talk about treatment options and living normal lives. In one interview, a refugee from Nyarugusu mentioned that some people believe that if the butcher is infected, then the meat that he/she sells is also infected. Breaking down these myths through educational segments on Radio Kivuza has somewhat succeeded in creating a positive change in the community. Increasing conversation about the topic has led to people being comfortable enough to discuss the virus. As far as treatment, the U.N. and foreign governments have provided funding for antivirals that are given to those who are infected.

Teen pregnancies are also on the rise in the region, and many of the girls come from families that cannot afford to support the newborn child. Traditionally, teen girls get married to men twice or thrice their ages. With time, the youth have been more educated than in previous years and have deviated from the tradition of getting married at a young age. More of them have the opportunity to complete secondary school and in the process end up engaging in sexual activities within their social circles. This has led to an increase in the number of abortions. Several segments of Utupaji wa Watoto or Abortions, where school aged girls were asked why there has been such an increase in the rates of abortions in the region. One of them talked about social economic status, where those who come from poor families prefer to abort because their families cannot afford to support additional members. If the girl no longer has to take care of her child, she can get a job and work to help support her family. Another reason that arose is the girl’s upbringing. If the girl in question was never taught to abstain or practice safe sex, then she simply does not know any better and ends up having to abort. On the other hand, there are some who choose to engage in sexual activities in an act of rebellion against their parent’s teachings.

Although it was less discussed, an interviewee attributed the rise in abortions to orphaned teens that are forced to take care of their younger siblings. The older siblings find other ways to make a living, and some may join the sex industry and get pregnant in the process. Other reasons include students in higher education who believe that pregnancy may serve as a hindrance to achieving their goals. The students who were interviewed suggested an increase in education and mentorship for the youth, to try and decrease the abortion rates. A few of them even suggested that teens should be instructed to concentrate on their studies rather than dating to find a mate. Some of the students believed that if teens focus on graduating and starting a career before pursuing relationships, then they would better their livelihoods. This sense of responsibility will encourage financial stability and independence, as well as decrease teen pregnancies.

Whenever a large organization like the U.N. seeks to improve the healthcare outcomes in a region such as Kigoma, it is important for the organization to draw from the community’s culture and beliefs. Keeping this perspective will allow those volunteering foreign aid to better understand the climate in the target population and how to approach various issues. Instead of dealing with political leaders who may otherwise have selfish motives, nonprofits should pay closer attention to the needs of the population at large. Radio Kivuza provides an accurate glimpse into the health issues that plague Nyarugusu and the surrounding regions. Local authorities have found some success in using mass media as a means to educate the community on improving health care with limited resources. Instead of heavily funding policies that generalize and fail to take into account traditional ideals and culture, large nonprofits should focus on gaining knowledge on what the population at hand actually needs. This strategic planning is the only hope that exists as far as improving healthcare outcomes.

Radio Kivuza will continue to be a major source to help understand the healthcare topics in Nyarugusu and other regions around. As mentioned before, the goal is to raise awareness on how to approach healthcare within a refugee community. HIV remains a controversial topic that deserves more attention than it already has in order to decrease its rates to similar levels in as the rest of the globe. The goal of the project is to eventually raise questions and help propagate change in healthcare for refugees and other marginalized groups in Eastern Africa.

References


BY THE SEA

A group of children bathes and plays in the shadow of a dhow, a traditional Arab sailing vessel, off the coast of Tanzania. Photo by Alex Wald.
Insourcing of Utilization Management Review

ZAEEM LONE ’18
PUBLIC HEALTH STUDIES

Zaeem spent the summer working for Evergreen Health Cooperative, Maryland’s not-for-profit insurance company created directly out of a provision from the Affordable Care Act.

In a fee-for-service environment, doctors aim to maximize profit by subjecting patients to a host of tests. Utilization management is a tool that combats the overuse of health procedures. It is used by payers, insurance companies, as a cost containment tool.1 Proper utilization of a utilization management review represents an attempt to satisfy the triple aims of health care. By properly utilizing this service, a payer can determine whether or not patients truly require the service. It aims to counteract waste in the healthcare environment. At an organization like Evergreen, where the goal is to provide affordable and improved care to the patient, proper usage of utilization management represents a method to better manage patient health.

Traditionally, these functions are outsourced to a third party. The third party organization determines whether or not services are necessary. However, in an effort to achieve its goal of better care coordination, Evergreen decided to insource the process of utilization management with a Go Live date of 11/1. Having control over the utilization process will allow Evergreen to potentially better manage all of its members. There are a few aims of this report. First, to outline the process to insure utilization management. Second, to show the benefit of insourcing this process as it relates to population management. Finally, engaging in a more in-depth discussion on the benefits of utilization management.

Methods
Insourcing of this function eschews traditional laboratory science methodology. However, it provided insight into the business operations of a public health entity like a health insurance company. To insure utilization management a software platform must be generated to carry out these functions. Therefore, a Request for Proposal (RFP) was sent to out to a few companies that had the capability to design the platform for utilization management review. The RFP was sent out to four companies, Altruista Health, Valence Health, Essette Home, and CaseNet technologies. Each of these companies provided responses to the questions contained in the RFP and then were evaluated based on their response. A scoring matrix was devised to rate the responses. These companies were rated on their pricing offer, ability to integrate and adapt, timeliness of the implementation process, technical infrastructure, and knowledge of the Affordable Care Act and Maryland Insurance Articles. At the end of this evaluation period, Altruista Health was awarded the right to build the platform.

Traditionally, engaging in a more in-depth discussion on the benefits of utilization management review. The process by which Evergreen Health Cooperative makes a determination on whether or not they will authorize a medical service. Source: Zaeem Lone.
Committee for Quality Assurance, the Maryland Insurance Agency, a regulatory body, and the evidence based criteria used to make the medical necessity determination. Along with other EHC staff, I designed these blue prints. There are four types of services: a utilization management staff can make determinations on: pre-service authorization, emergent and/or urgent, concurrent review inpatient, and concurrent review outpatient. Pre-service authorization refers to services that require pre-certification or approval. An emergent or urgent service would refer to emergency department visits. Concurrent reviews of inpatient service determine whether or not a patient’s inpatient stay should be extended. Concurrent outpatient review is utilized for services like physical therapy. After this initial review, patients have the opportunity to appeal the decision. Therefore, a design for the appeals process needed to be generated. Along with these blue prints, business rules that articulate the flow charts needed to be created. These blueprints and business rules compose the backbone of how the system functions. With all of these items completed and approved, these plans are turned over to Atrius Health for designing the platform.

The goal is to have the utilization management operational at Evergreen on November 1, 2015 which corresponds with the open enrollment period for all new insurance members. Therefore, the platform will be completely developed and ready for testing the month before the open enrollment period.

Sample Business Rules
Pre-Service Authorization
1. Request comes into Evergreen via phone, fax or email (ePA)
2. If the request does NOT meet medical necessity, the nurse will draft a denial letter and send to the Medical Director for review and approval. See process immediately below for drafting and issuing adverse determination letter.
3. If the request does not meet medical necessity, the nurse will issue an adverse determination letter.
4. If it is determined that criteria is met for medical necessity the nurse will issue an approval letter.
5. If the initial request has all the necessary information (e.g., additional information request was not needed), the nurse will follow the process outlined below for preparing and issuing the adverse determination letter.
6. If additional information is received by day 35, the IC will send a reminder to the provider requesting the additional information.
7. If no additional information is received within 45 days, the nurse will conduct a case review with whatever records were submitted for this case and issue an adverse determination.
8. If the requested additional information is received, the records must be reviewed within 2 business days of receipt. If criteria is not met for medical necessity (even with reviewing additional records), the nurse will follow the process outlined below for preparing and issuing the adverse determination letter.
9. If it is determined that criteria is met for medical necessity the nurse will issue an approval letter.
10. If the initial request has all the necessary information (e.g., additional information request was not needed), the nurse reviews the request to determine if it meets criteria for medical necessity.
11. If the request does meet medical necessity the nurse will issue an authorisation letter.
12. If the request does NOT meet medical necessity, the nurse will draft a denial letter and send to the Medical Director for review and approval. See process immediately below for drafting and issuing adverse determination letter.
13. ADVERSE DETERMINATION LETTER. Nurse will draft response. This includes inserting free text language, including: a) list of all documents reviewed, b) cite to relevant benefit plan language, and c) cite relevant criteria.
14. Nurse places draft letter in Medical Director queue. Medical Director will review and edit before returning to nurse.
15. Upon receipt of the letter from the Medical Director, nurse provides oral notification to the provider which is documented in the member’s file.
16. Adverse determination letter is sent to provider, copy sent to member, within five (5) days of oral notification.

Results
The data below shows a comparison of utilization management data for the past year compared to Milliman.

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**CONCURRENT REVIEW OUTPATIENT**

How the health insurance company makes the determination on whether or not they will authorize and pay for your stay and visit at a clinic instead of a hospital. Source: Zaeem Lone.

1. Request is triaged by Intake Coordinator (IC).
   a. IC completes the shell
   b. IC determines if the request is emergent. If so the case is forwarded to a nurse or placed into the queue (see rules for emergent/urgent request).
   c. IC will determine if case is clinical/non clinical and place into appropriate queue.
2. If the request is clinical, it will be placed into the standard processes queue to be picked up by a nurse reviewer.
3. Nurse will determine if sufficient records were sent with the request.
4. If additional information is needed to conduct the clinical review, the nurse will send the “additional information request” letter to the provider. The provider has 45 days to submit the additional information.
5. If no additional information is received by day 35, the IC will send a reminder to the provider requesting the additional information.
6. If no additional information is submitted within 45 days, the nurse will conduct a case review with whatever records were submitted for this case and issue an adverse determination.
   a. The nurse will follow the process outlined below for preparing and issuing the adverse determination letter.
   b. IC determines if the request is emergent and/or urgent.
   c. IC completes the shell.
   d. IC requests additional information.
   e. IC sends the “additional information request” letter to the provider. The provider has 45 days to submit additional information.
   f. If no additional information is submitted within 45 days, the nurse will conduct a case review with whatever records were submitted for this case and issue an adverse determination.
   g. If it is determined that criteria is met for medical necessity the nurse will issue an approval letter.
   h. If the initial request has all the necessary information (e.g., additional information request was not needed), the nurse will follow the process outlined below for preparing and issuing the adverse determination letter.
   i. If the request does meet medical necessity the nurse will issue an authorisation letter.

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**POLICIES**

- Authorized days issued
- Potential denial P2P
- Letter issued
- Nurse review and letter drafting
- Medical director review & signs letter justification
- Yes
- Notify hospital with request
- Respond within 24 hours regardless
- No
- Additional information needed
- Meets criteria
- Concurrent review within 24 hours (inpatient)
- Concurrent review 24 hours (outpatient)
- Yes
- No
- Additional information needed
- Meets criteria
- Authorized days issued
- Potential denial P2P
- Letter issued
- Nurse review and letter drafting
- Medical director review & signs letter justification
- Yes
- Notify hospital with request
- Respond within 24 hours regardless
- No
- Additional information needed
- Meets criteria
- Authorized days issued
- Potential denial P2P
- Letter issued
- Nurse review and letter drafting
- Medical director review & signs letter justification
- Yes
- Notify hospital with request
- Respond within 24 hours regardless
- No
- Additional information needed
- Meets criteria
- Authorized days issued
- Potential denial P2P
- Letter issued
- Nurse review and letter drafting
- Medical director review & signs letter justification
Epidemic Proportions

188 - 33.64 - 179

Epidemicproportions.jhu.edu

No

11

3.48

4.3

36x760

Policies

POLICIES

Alos/1000

Evergreen. Source: Zaeem Lone.

Members have the opportunity to appeal denial of services by Evergreen. Source: Zaeem Lone.

Discussion

The results from this project indicate that insourcing the utilization management function decrease these particular metrics all across the board. To begin with, Evergreen outperformed the benchmarks for admissions and average length of stay. However, there are a list of reasons why Evergreen outperformed these metrics. Evergreen could have denied the inpatient service for most of its population. Another potential reason is that individuals that used Evergreen as a carrier did not get admitted to the hospital as much. The most probable reason is that Evergreen has a low population load compared to other carriers in the Maryland marketplace. Therefore, admissions rates were lower than the Milliman benchmark. Nevertheless, moving forward, as Evergreen insources this function and membership continues to grow with the coming open enrollment period, the projected number of admissions continues to drop. This continued drop suggests that Evergreen will be able to better manage admissions and inpatient care for its members. Looking at average length of stay (ALOS), Evergreen outperforms the Milliman benchmark. The reasons for this are quite similar to the admissions statistic—mainly smaller membership compared to other carriers in the marketplace. Nevertheless, insourcing this function continues to decrease the number of average days spent in a hospital. The only statistic where Evergreen lags is emergency department (ED) visits. Currently, EHC has many more visits to the emergency room than the Milliman benchmark. This is a problem for members as ED visits are quite expensive. A report from the NIH reveals that on each ED visit a patient spends $2,000.50 That amount is 46 percent more than what people spend on their home rents. Therefore, when individuals possess health insurance, they should avoid emergency department visits. Insourcing this function represents a decrease in ED visits as there will be better care coordination in terms of providers being aware that patients healthcare benefits and Evergreen managing all member’s medical management. Although still higher than the annual benchmark, a decrease in ED visits represents progress. The use of utilization management review has become ubiquitous in the healthcare industry. It is generally seen by many as a cost-containment strategy. Therefore, it engenders great debate as providers sometimes tend to view it as limiting.11 Utilization management is a far more valuable tool than just a cost containment mechanism. It is the primary tool that ensures if patients are receiving the appropriate level of care and if that care is providing quality and value. By insourcing this process, Evergreen is better situated to make smart decisions related to its health plans that maximize value for its members. Furthermore, utilization management is a necessary tool when it comes to accountability. It presents a method that accurately articulates the cost for its members and the actual benefits that health care outcomes.

Moving forward, once Evergreen has completed the insourcing process it will allow the company to use this feature in many ways. Evergreen will be able to comprehensively look at all the denials and approvals of services and corresponding appeals to deem whether there is proper usage of services. Furthermore, by insourcing this function, there can be better communication between Evergreen’s insurance component and its patient centers. This could also facilitate communication between providers and payers and better assuage provider concerns that utilization management restricts doctors. Nevertheless, proper usage of utilization management represents a method that not only saves cost but also improves quality. This tool, if properly used, represents a small piece in the puzzle to satisfy the Triple Aim’s of healthcare.

References

Editorials

(n. pl.) a newspaper article written by or on behalf of an editor that gives an opinion on a topical issue.
A Rotting Inside, A Pretty Outside

STEPHANIE NG ’15

CHEMISTRY

Stephanie is a research assistant at the Institute of Global Tobacco Control at Johns Hopkins Bloomberg School of Public Health. She is part of the TPackSS team.

It’s hard to fight off an addiction like smoking. Over time, it becomes a bad habit that people can’t quite shake. Even after they manage to stop, the shadow of their actions still follow them. Yet before an addiction can develop, there must be a starting point. Unfortunately, preventing the onset of smoking can be very difficult. Each year, tobacco use kills more than 5 million people, yet it is estimated that thousands of young adults will begin smoking cigarettes every day.8 Though it is obvious that smoking is detrimental to people’s health, many still choose to smoke cigarettes or other tobacco products regardless of the increased risk for cancer, heart disease, and stroke amongst other illnesses.9 In addition to peer pressure and other cultural conditions that contribute to the problem, imagining the long term effects of smoking once presented with the problem, imagining the long term effects of smoking once presented with the question, and being reminded of the health issues first and foremost.

However, this progress hasn’t happened without push-back. It wasn’t until December 2015 that Australia won its legal battle against Philip Morris over the use of plain packaging.10 Philip Morris filed a claim to challenge the plain packaging law due to its strong stake in the tobacco industry (think Marlboro). The courts have dismissed the case, declining jurisdiction to hear the company’s claim.11 By upholding the policy, Australia has potentially paved the way for other countries to follow suit and lobby for plain packaging as well. In addition, Australia has now become a country of interest to study the effect of implementing plain packaging on tobacco use, and many studies are beginning to take place.

While making headway is difficult due to both objections from big corporations and the slaggishness of policy-making, it is important that the battle against tobacco use continue. After all, many lives could be saved if the outside of the package reflected the ugly consequences of the inside.

References

PRETTY PACKAGING

2. Diao Yu Tai cigarettes from China.

A Pretty Outside

A Rotting Inside, A Pretty Outside

Editors' Note

2. Diao Yu Tai cigarettes from China.


Gun Violence Needs to be Treated as a Public Health Issue

ROBERT BESCH ’17
PUBLIC HEALTH STUDIES

Robert is head volunteer of the pediatric emergency department at Johns Hopkins Medical Institutions and is a public health studies student interested in epidemiology.

Volunteer at a Level 1 Trauma Center and you will see many victims of gun violence. Rotate through Maryland’s quintessential center for penetrating trauma and you’re going to see more victims. Coming from a military family living in the pro-gun sportsman’s culture of rural Alaska, I learned how to shoot growing up. The arguments surrounding gun violence are important to me not only because it’s been part of my life, but also because I’ve personally been touched by it: some are lucky and are discharged only with permanent scars. Others are adrift with the possibility of a firearm no longer survive. Mass shootings have also become an unfortunate recurrence in the U.S. The calling of these widespread tragedies as “outbreaks” of violence and denoting the overall phenomenon as “epidemic” attempts to view this issue through a public health lens. In the larger gun violence issue, many people are questioning if this huge problem should be treated as a public health one. In 2015 there were more than 340 gun-related homicides in Baltimore.1 Nationally we experienced almost as many incidents of mass shooting as days (350 events versus 365 days).2 This statistic refers not to deaths from mass shootings, but mass shooting events (a mass shooting is classified as “an incident in which four or more people are killed or injured by gunfire”).3 One aspect that must be understood is that gun violence is a much larger issue than just mass shootings. While these are intertwined topics, they are not the same thing. Public health practice seeks to maximize the number of lives saved by collecting data, establishing theories, conducting research, and then informing key decision-makers. This utilitarian approach involves allocating the most resources to the greatest cohort suffering from a specific health threat. Yet this process has not been applied in the case of gun violence. In fact, less than 0.5 percent of the more than 33,000 deaths from firearms in 2015 occurred during a mass shooting, despite mass-disproportionate airspace coverage of these events.4 Furthermore, Congress passed a rider, the Dicky amendment, which prevents federal funding from supporting gun control policy and effectively places a ban on the National Institutes of Health (NIH) and Centers for Disease Control and Prevention (CDC) conducting research on gun violence.5 Without research we cannot progress. Imagine attempting to tackle molecular deaths without awareness of the statistics of the details surrounding car accidents. The number of gun deaths whether accidental, suicidal, or homicidal in nature is far too high, and re-moving that gap order is certainly one of the first steps that should be taken to address this issue. The annual rate of firearm-related deaths in the U.S. has been estimated at nearly 20 times the rate of other high-income countries.6 Even the rate of unintentional firearm deaths in the U.S. is double that of peer countries. Unless one argues that Americans are just more careless (or violent) than citizens of other countries, the statistics are persuasive. The U.S. is heavily saturated with firearms, more than any other country on earth, and rates of death are much higher than other developed countries.7 In a quote from the Johns Hopkins Center for Gun Policy and Research “The higher prevalence of gun ownership and much less restrictive gun laws are important reasons why violent crime in the U.S. is so much more lethal than in countries of similar income levels.”

Gun violence is, and should be treated as, a public health issue. In comparing gun violence to another public health concern, for example cardiac arrests, we would analyze the scope of the problem, identify risk factors for mortality, establish direct and indirect causal factors, implement and evaluate effective interventions to mitigate those factors, and then work to implement effective interventions and routinely assess them for improvement.8 For cardiac arrests, this could include preventative measures such as promoting weight loss programs to combat obesity and raising awareness of cholesterol. The same approach is applicable to gun violence. We can collect details of gun violence from emergency departments and medical examiners, and identify risk factors for gun violence, such as geographical location since there is evidence of increased incidence in urban and poor areas.9 We can conduct research by means such as cohort studies with at-risk individuals, and with the results we can construct effective policy and prevention programs such as aggression management classes through public schools, law enforcement outreach through community liaison, and public awareness programs on the increased risks of having guns in the home. In this way, local leaders can mitigate direct and indirect aspects which lead to violence through non-discriminatory, blanket programs built on already-existing community partnerships. At the state level, an association was found from a study published in the American Journal of Public Health between laws regulating handgun ownership and statewide suicide rates.10 Almost two-thirds of these deaths from gunshot were suicides—an overwhelming majority. Using data and objective, peer-reviewed studies such as this one, more effective gun violence reduction policies at the state level can be created. But it is critical that key stakeholders, mainly those involved in enacting new laws, be convinced of this approach to solving the problem. The Baltimore law enforcement, I learned that the enforcement of gun laws, especially those carried by police, legally or illegally, was often perceived weakly due to poor gun control policy support. This resulted in many criminals back on the street within a short time—still armed. This very dangerous behavior completely bypasses a vetting process involving background checks and registration, assault weapons, and high-capacity magazines.11

Despite these suggestions from an array of respected evidence-based centers there is strong opposition against recognizing gun violence as a public health issue. There is a widespread argument that America’s gun culture is one that celebrates guns and that the solution to gun violence is more guns. To counter, the U.S. has on average more than one gun for every American citizen, and undisputedly has more per capita ownership than any other country.12,13 Furthermore, the NRA claims that firearms are used for self-defense—one of the consequences of having guns. But gun violence, such as geographical location and cause, could be reduced by the following: 

1. Assault weapons and high-capacity magazines should be banned. 
2. Background checks should be required to purchase guns. 
3. If policymakers do not want to support the 2nd Amendment, they should pass a rider on legislation to block the implementation of gun control laws. 
4. They could work closely with state and local officials to ensure enforcement of new gun laws. 
5. They could also work closely with state and local officials to ensure enforcement of new gun laws. 

PUBLIC HEAL TH STUDIES

United Nations Annual Firearms Deaths

UNINTENTIONAL FIREARMS DEATHS: Deaths rates comparing U.S. and peer countries in 2013 among both sexes and all ages. Source: Global Burden of Disease Study.

Guns were suicides—an overwhelming majority. Using data and objective, peer-reviewed studies such as this one, more effective gun violence reduction policies at the state level can be created. But it is critical that key stakeholders, mainly those involved in enacting new laws, be convinced of this approach to solving the problem. The Baltimore law enforcement, I learned that the enforcement of gun laws, especially those carried by police, legally or illegally, was often perceived weakly due to poor gun control policy support. This resulted in many criminals back on the street within a short time—still armed. This very dangerous behavior completely bypasses a vetting process involving background checks and registration, assault weapons, and high-capacity magazines.

Despite these suggestions from an array of respected evidence-based centers there is strong opposition against recognizing gun violence as a public health issue. There is a widespread argument that America’s gun culture is one that celebrates guns and that the solution to gun violence is more guns. To counter, the U.S. has on average more than one gun for every American citizen, and undisputedly has more per capita ownership than any other country. Furthermore, the NRA claims that firearms are used for self-defense—one of the consequences of having guns. But gun violence, such as geographical location and cause, could be reduced by the following:

1. Assault weapons and high-capacity magazines should be banned.
2. Background checks should be required to purchase guns.
3. If policymakers do not want to support the 2nd Amendment, they should pass a rider on legislation to block the implementation of gun control laws.
4. They could work closely with state and local officials to ensure enforcement of new gun laws.
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The call for increasing mandatory minimum sentences to ‘make criminals think twice before breaking the law’ is rebutted by the finding that they are to be ineffective in affecting criminal behavior.14

In a quote from the Gun Policy Summit held at Johns Hopkins last year, a released evidenced-based report recommended "establishing universal background checks, effectively treating high risk individuals from purchasing guns," establishing policy which evaluated and appropriately restricted access to guns for persons with serious mental illness, and establishing legislation and executive actions concerning trafficking, dealer licensing, personalized weapons, and high-capacity magazines.15

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OFF-TARGET

The recent attention groups such as Doctor’s For America to overturn the ban on federal funding for research on gun violence, as well as the voiced regret from the senator who proposed the legislation, is a step in the right direction.10,11 The public health approach supports the propositions from the American College of Physicians encouraging doctors to counsel patients of the risks of guns in the home, the support of universal background check legislation, and laws banning sale of guns to high-risk individuals would greatly decrease the more than 33,000 deaths, 80,000 hospitalizations, uncounted suffering, and hundreds of billions of dollars in direct and indirect costs, from gun violence.12

References

**SATHVIK NAMBURAR ’18**

**PUBLIC HEALTH STUDIES**

It is Past Time to Make Homewood Campus Smoke-Free

Sathvik is a sophomore class senator for the Johns Hopkins Student Government Association. He serves on its Health and Safety Committee.

According to the No-Smoke Campaign by the organization Americans for Non-smokers’ Rights, more than 1,600 college campuses nationwide are now smoke-free, but Johns Hopkins—with its number-one ranked Bloomberg School of Public Health—is not among them. In fact, 50 years after the landmark U.S. Surgeon General’s report on the dangers of smoking, smoking on Homewood campus remains ubiquitous. Anyone who walked through a cloud of smoke to enter MS&E Library or Brady Learning Commons—locations where many smokers congregate—can attest to this fact.

I serve on the Student Government Association’s (SGA) Health and Safety Committee, and this year, we received significant correspondence from students who desire to make Homewood campus smoke-free. Two years ago, in a campus-wide referendum, Johns Hopkins undergraduates supported a potential smoking ban on Homewood campus by a 60-40 margin. The SGA, as the representative of the undergraduate student population, commenced efforts to prompt the administration to institute a smoking ban on the Homewood campus, and the administration formed a task force to study this possibility. This task force consisted of university leaders representing a variety of disciplines and viewpoints from the Homewood and Peabody campuses. I have spoken to members of the task force, and their proposal regarding this issue will be put forth in spring 2016 to the upper administration.

As the task force prepares to release its findings, I have heard from some students who are opposed to a potential smoking ban. Despite this opposition, I believe that there are many reasons why Homewood campus should institute a smoking ban, the least of which is the improved image that we would project to prospective students, their parents, and other visitors. However, opponents of a smoking ban believe they have a right to smoke, just as they have a right to drink alcohol and partake in other behaviors. Such an argument is flawed because smoking is unique in that it harms the health of both smokers and bystanders. Secondhand smoke is a known carcinogen, and students walking to class and the library on Homewood campus are currently exposed to secondhand smoke many times throughout the day. It should not be acceptable for the personal rights of a small minority (only about 15 percent of collage students smoke, according to studies) to supersede the health of the vast majority.

Furthermore, news articles from some of the 1,600 college campuses that have already banned smoking, such as George Washington University and Towson University, have reported that bans on smoking on college campuses demonstrably reduce student smoking on campus, despite minimal enforcement. Additionally, these news articles reported that following the implementation of smoking bans, non-smokers were more likely to admonish people smoking on campus, prompting many smokers to move off-campus. Those who oppose a smoking ban on Homewood campus assert that campus police officers are already overworked and that requiring them to enforce a smoking ban would divert them from providing essential services. However, based on reports from other colleges, even a largely symbolic ban on the Homewood campus would probably be effective, since it would continue to raise awareness of the public health dangers that smoking poses to all.

Regardless of enforcement, however, the university should definitely dedicate resources to smoking cessation programs to help those who want to quit smoking. After all, the objective of a smoking ban should not be to merely vilify smoking; we must also help people break their habit. Opponents of a smoking ban on Homewood campus rightfully point out that any such policy would not solely affect the student body but would also affect faculty, staff, and visitors. Yet despite this argument, numerous uni-
We encourage students to share with us their experiences in local communities and abroad. Research, features, policies, and editorials contribute to the much-needed conversation on public health.
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Staff
(n.) a group of persons, as employees, charged with carrying out the work of an establishment or executing some undertaking.