SSGH
Stanford Service in Global Health

Tobacco &
INDIGENOUS
AUSTRALIANS

PPD in
Berkeley

Working with
the physician to
the Dalai Lama

MIGRANTS
IN URBAN CHINA

VOL. 3, NO. 1 SPRING 2011
LETTER FROM THE EDITORS

The two of us are honored to bring you Stanford Service in Global Health’s first ever double-issue in this, our third year of publication. With this issue, we hope you are reminded that global health concerns are still very much present today, and their solutions can be correspondingly contemporary. You will notice quite a few layout changes in this issue which reflect this modern perspective, from our bright, fresh coverage to our crisp, clean articles. We hope that our new layout is not only pleasing to the eye, but that it also drives home this new approach to envisioning global health today.

In this issue, many of our writers discuss cutting-edge, innovative methods to make an impact abroad: Dennis Chan shows us that text messaging can be appropriated by doctors in order to administer preventative healthcare to patients in India (and hopefully further abroad); Megan Winkelman conveys the potential for online educational modules, particularly hers on postpartum depression, to extend beyond their current usage in the profit-based health sector toward a public and free clinic setting; Lauren Platt highlights the power of TV commercials and other forms of popular media to be harnessed in order to make a strong influence in the fight against tobacco usage in Indigenous Australians.

But even with the abundance of technological advancements flowing into global health initiatives, all of our writers still take time to remind us that the central aspect of successful interventions has remained constant: the members of the impacted community must be behind the intervention and must be willing to carry it home. Our writers worked hard to ensure that their impact was sustainable, and their articles reflect that.

We are delighted to continue our mission of sharing true stories of health volunteer experience from Stanford students abroad and at home. We hope they inspire you.

Samantha Lasarow
Class of ’11

Catherine Le
Class of ’11

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Samantha Lasarow
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From Shrooms to Penicillin
The Evolution of the Mexican Healthcare System

BY KELLY STAVES

“Ahas probado los hongos?” Have you tried the shrooms?” It was a favorite question among my older patients.

“No, soy una gringa,” I would reply grinning, “Nadie quiere venderme hongos.” No, I’m a gringo, no one wants to sell me shrooms. And with that they would launch into explanations of what I was missing, of calm unity of body and soul, of the power of the associated ceremonies.

I was always impressed, on those occasions, by the contrast between the stories these patients brought me and the surround in which they were told. Centro de Salud de San Antonio was not a place of calm. It was filled to the brim with assorted strangers, all waiting with infinite patience to receive a prescription that had been unceremoniously dictated by the doctor; and scribbled by my gringo hand.

Two decades ago, traditional medicine was mainstream in many of the pueblos I visited. The older generations recall a time when they had no access to Western clinics.

“We’d carry our children miles to see the medicine woman,” one patient informed me, “We never expected them to survive.”

Today, Western medicine has supplanted traditional medicine as the principal healthcare system in the pueblos surrounding Oaxaca City. Even in el Mercado de Abastos, the largest market in the state, one has to hunt to find traditional treatments of any variety.

“The way people understand the body has changed,” one doctor informed me, “I rarely worry that my patients harbor doubts about Western medicine.” Now, with the national healthcare system in place, over half the population has access to free medical care and many more have access to some form of relatively inexpensive modern medicine.

“Everyone wants antibiotic shots now,” the doctor told me, “They believe they will work.”

My mother, ever the doctor, sent me off to Oaxaca armed with bottles of Cipro and enough Pepto-Bismol to fill a bathtub. I laughed at her as I lugged my overstuffed suitcase to the airport, but, as usual, she turned out to be right.

A few weeks into my trip, my propensity to try unusual-looking, mystery foods finally caught up with me, and I was left with one of the worst bouts of food poisoning I can remember. Modern medicine, fortunately, is a really wonderful thing.

Thirty-six hours and many packets of oral rehydration salts later, I was back buying snacks of pan dulce and laughing with friends about my new-found revulsion for mystery foods finally caught up to be right.

The disease burden in Oaxaca looks very different today than it did in the 1970s. Now, a typical day at a health center in Oaxaca brings roughly an even mix of patients with communicable diseases and those with chronic diseases. The combination of increased life expectancy (fueled in large part by the rise in antibiotic treatments) and the overwhelming success of the national family planning initiatives has transformed the population pyramid of Mexico from a sharply triangular pattern to a more rectangular shape. This means that the healthcare system, already cash-strapped ten years ago when chronic disease rates were low, now faces increasing demands to fund treatment of chronic diseases, which are three-to-five times more expensive than to treat anything resembling octopus.

“One of the more disturbing cases I saw while in Oaxaca was that of an older woman with liver cirrhosis. Though she had finally gotten sober after years of alcoholism, the woman’s liver was worsening. At that point significantly anemic, the woman had begun eating dirt. Her daughter, unaware that this was a side effect of iron deficiency and convinced that this was a sign of renewed alcoholism, had brought her cabinet of meager supplements, she extracted a bottle of calcium.

“Chew on these,” she told the old woman, “they taste like dirt.”

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“Chew on these,” she told the old woman, “they taste like dirt.” In the US we order blood work. We prescribe supplements and treatments and, for lucky patients, we talk of transplants. In Oaxaca, this woman didn’t even receive an explanation, much less a treatment.

“We’d carry our children miles to see the medicine woman. We never expected them to survive.”
With regards to economics, rationing of medical care is perhaps more prevalent than ever.

This year, a quarter-million-dollar autologous stem cell transplant will save my father’s life. In preparation for the treatment, the doctors measure and monitor every health indicator imaginable. Each morning, page-long lab reports inform us of his exact levels of calcium and potassium and a dozen other markers. Such lab reports are then translated into meticulous treatments, with supplemental potassium drips and increased fluids and further tests.

For my father, the same iron deficiencies that left the Oaxacan woman berated by her daughter for sneaking bites of dirt into her diet are corrected with a twist of a knob on an IV drip.

It should be this simple. Medical science has provided us with the knowledge base necessary to enact treatments for non-communicable disease that offer results just as impressive as antibiotic shots for bacterial pneumonia. But things, of course, are more complicated.

A rising tide lifts all boats. By most standards, the progress made by the Mexican healthcare system over the past decades is remarkable. Infant mortality rates have dropped to under a third of their 1940 levels and infectious, parasitic, and respiratory illnesses now account for only 20 percent of mortality as compared to 70 percent in 1940.1 With regards to geography, access to medical care has improved dramatically over the past several decades, and more people have access to quality care than ever before. Yet, with regards to economics, rationing of medical care is perhaps more prevalent than ever.

Jose Luis, a father to an eight-year-old girl with cerebral palsy, explained to me that he could afford to travel to the city for his daughter’s treatment only four times per year. A hongos farmer from a remote mountain village, Jose Luis has faith in modern medicine. Still, he likes to remind me that the culture of the hongos is not gone yet.

“Es otra opción,” Jose Luis tells me with a wink. Another option. Modern medicine has done great things for the daughter of Jose Luis, but with four short visits a year, it isn’t enough. It is worth pausing to consider what individuals will do when faced with an inability to afford treatment of chronic diseases. Where can people turn when modern medicine offers no solutions? Might the hongos stage a comeback?

Works Cited


Kelly Staves is a senior International Relations major. She loves travel, weird foods and scalpels. After graduation, she hopes to work on global health research for a few years before giving her life over to medical school.

Child Family Health International

Eight-week program that involved rotations through a wide range of different hospitals and clinics, and shadowing doctors both in the main hospital in the city as well as in smaller clinics outside the city. The program also included daily Spanish language instruction and weekly lectures on the Mexican health care system.

Contact info: www.cfhi.org

Access to Postpartum Depression Resources in Underserved Communities

BY MEGAN WINKELMAN

For the past two years, I have volunteered part-time at the Bridge Peer Counseling Center, a 24/7 Stanford counseling resource which accepts calls and walk-ins from both within and outside of the Stanford community. After almost two years of counseling, I am still astounded by the current of mental health issues and anxieties that persistently afflict students who outwardly project ease and satisfaction. After further reflection, a fundamental question arose: If these promising students (with full-coverage healthcare and access to Stanford’s resources) struggle so desperately with depression, anxiety and the management of their daily lives, how do men and women without such privileges cope?

From this seed of curiosity, I designed a research project to answer a descriptive question: How do recently pregnant woman without childbirth-related mood disorders and mental health resources? My initial motivation to expand general public health and epidemiological knowledge ultimately led me to my current attempts to translate my experimental results into actionable policy changes.

I began to take particular interest in the resources available to women with postpartum depression (PPD) after a haunting counsel with a teenage single mother in which she recounted her struggle with abuse, motherhood and periods of depression. This woman’s courage and honesty inspired me to investigate postpartum depression. I was intrigued to discover that the children of PPD mothers are more likely to have behavioral and developmental problems, which are arguably the primary reasons low-income students are placed into lower performing tracks from an early age.1 Perinatal mood disorders have far-reaching effects on health and equity in this country.2 With this impetus and understanding, I collaborated with the Berkeley Public Health Department to study the health programs I had observed supporting my own classmates at Berkeley High School when they became pregnant as teenagers.

Perinatal mood disorders present a key intersection of modern health care and cultural competency challenges. I was inspired to investigate the prevalence and impact of postpartum depression and felt challenged to create a

A view of UC-Berkeley’s Campanile. Berkeley is renowned for its progressive politics, but the city also struggles with providing quality healthcare to low-income families.

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more equitable society for affected mothers and their children. I had to know: What mental health resources are available for pregnant women in the Bay Area? What prevents women from seeking treatment? Do affected populations believe pregnancy can contribute to psychiatric illness?

The literature review I conducted extensively documents the prevalence of postpartum depression in low-income women and the deleterious effects on their children, as well as the host of cultural and political barriers to providing care. However, this research offered little insight into exactly which barriers are most problematic from the perspective of the affected women. I unearthed surprisingly few researchers who experimented with trial programs designed to overcome (not merely documenting) these barriers, and concluded that this deficit had to be filled. I decided I would spend the summer after my freshman year conducting a study under a community-based participatory research model, with the funding and guidance of the Center for Comparative Studies in Race & Ethnicity (CCSRE) and my mentors Dr. Tania Mitchell, Dr. Audrey Shafer and Professor Tanya Luhrmann.

Berkeley is a complex, fascinating, diverse, historical, revolutionary city, as well as my beloved hometown. I saw our community, notoriously committed to equal opportunity and progress in human and civil rights, as the perfect environment to explore mental health stigmatization and to experiment with public health solutions. For one, the cultural and economic diversity qualifies the city for a study investigating a range of cultural and socio-economic perspectives. According to the 2008 US Census, 10 percent of residents are African-American, 18 percent are Asian, and 10 percent are Latino. Twenty percent of residents live below the poverty line. This population allows investigation into multiple cultures within a single city sample. Additionally, through the City of Berkeley’s 2007 Health Status Report, the city explicitly named finding a way to screen and treat all women for postpartum depression as one of its primary health goals. One of the crucial tenets of Community-Based Participatory Research requires the research question to be of vital interest to the community itself, not just the researcher. This health report confirmed Berkeley’s commitment to combating PPD.

While many studies establish the prevalence of postpartum depression in low-income women, few have attempted to understand what barriers exist within a given community, how these barriers differ among diverse populations of women, and then investigate how to improve these circumstances. The survey questions I developed with the Berkeley Department of Public Health were designed to provide the department with information about what kind of education or health campaigns would be most effective in achieving universal screening and treatment for postpartum women in the city of Berkeley.

I wanted to understand what the path of an under-insured or low-income woman with postpartum depression seeking help could look like, in order to design effective strategies to improve the ease and efficacy of such a journey. Examples of these questions include: “Do you believe women can get depressed or have other mood disorders after pregnancy?” and, “If one of your loved ones experienced unusual behavior or moods after pregnancy would you know where to go to get help?” as well as, “Did you receive any education about post-partum depression? If so, from whom?” These questions provide essential insight into the reasons women do or do not seek help for mental illness, and will inform the next steps of the city’s departments. Public health nurses and community health workers from the Berkeley Public Health Department are now administering the survey and consent forms to the women they serve as part of their routine visits.

With this respect to this study, my next steps included completing the surveying, analyzing the collected surveys, identifying important cultural attitudes towards mental illness, and determining some barriers women have predominately encountered when seeking help. Preliminary results indicate that while women believe that mood changes during and after pregnancy constitute legitimate health concerns, they do not know exactly what resources they would utilize if they or someone they know were affected. From this information, I intend to work with the Berkeley Public Health Department to create educational materials targeted to address Berkeley’s specific misconceptions and barriers.

I am particularly excited about my current efforts as Mental Health Director for the Standard-based non-profit Anjna.org, where I am collaborating with fellow students to design an interactive online educational module that teaches viewers about postpartum depression in a culturally appropriate, accessible and interactive way. I believe these kinds of interactive educational materials, cutting edge in the profit-based health sector, are even more valuable and essential in public and free clinic settings, where they have yet to be introduced. Interestingly, recent studies demonstrate that online health educational modules are especially effective in older, less-computer literate populations; this cohort reports learning the most from the modules.

I am currently working with Anjna.org on applying for grants to test the efficacy of these modules in clinics.

One woman was offended to see the word “undererved” at the top of the survey as she was being interviewed. After realizing Berkeley Public Health worked with many native Spanish speakers, I had to file again with the IRB committee to have my Spanish translation approved which delayed surveying. The last page of the consent forms got cut off in the printing process (that kind-of important part that says “sign here if you give your consent”), and so those initial interviews had to be discarded and the surveys reprinted. I attended the Contra Costa County Health Services Women, Infants and Children, and Early Childhood-sponsored symposium, “Postpartum Depression: Screening, Prevention, and Treatment,” a wonderful gathering of health workers committed to serving PPD women, but had to muster the courage to speak to a room of people who were all older and infinitely more experienced. Just knowing those with those resources for serving low-income women was immensely difficult, but ultimately an important part of the research process; in many ways, it paralleled the journey of a Berkeley woman attempting to find help for herself.

These challenges forced me to constantly reevaluate my research goals and discover how to work within rather than against existing institutional structures.

My expedition into independent research has been one of my most valuable experiences at Stanford. I received immense support from my mentors, Tania Mitchell, Audrey Shafer, and Tanya Luhrmann, as well as from the Berkeley Department of Public Health and my peers at Anjna.org. I’ve realized that this kind of research is never fully complete, but I feel I’ve also found that my place in public health must involve service-learning and thoughtful intervention—I am not content to document and analyze inequity without action.

**Works Cited**


Megan Winkelman is a sopho- more majoring in Human Biology with a concentration in Neurobiol- ogy. She is fascinated by the role of mental illness in public policy, narrat- ives, medicine, bioethics and campus life. Her positions as a peer counselor at the Bridge Peer Counseling Center and the Direc- tor of Mental Health for Anjna.org have helped her in building a culture of awareness.
Welcome to Hospital Roatan

The public hospital in Roatan, Honduras, sits on the corner of a side street, looking like a dirty, neglected school building. I volunteered here for six weeks at the outpatient pediatric ward. My role was to triage patients, translate when necessary, assist the doctor in recording data, and clean the office at the end of the day.

Hospital Roatan is the only hospital on the island and serves about 70,000 inhabitants. Inside the building it is hot and humid, and it smells of the hundreds of bodies packed into hallways, waiting to be seen by healthcare providers.

Aside from navigating through the throngs of waiting patients and families, we found that walking through the hospital’s hallways requires paying close attention to the ground, as dirty needles and excrement often litter the floors; the needles are the product of busy or neglectful nurses, and the excrement, the product of patients waiting for an average of four hours to be seen with no restroom available to them.

The hospital’s lack of resources was a dire constraint to healthcare provision, as evidenced by the hospital’s poor upkeep. However, the result was far more serious: years and years of unsuccessfully trying to make a difference left the doctors and hospital staff having either lost hope or succumbed to idleness.

A powerful example is the day that Honduras played Spain in the World Cup. Several weeks earlier, when it was announced that Honduras had advanced to the World Cup, the Honduran government proclaimed a national holiday in celebration. The day that Honduras played Spain, however, had not been proclaimed a national holiday. On this day, sick patients lined up in the hospital, waiting to be seen, but the doctors had not even arrived yet. Outside the pediatric ward, mothers sitting with their sick children began to get frustrated. They had been waiting for hours in the 95-degree heat, suffering from the humidity and the smells of the hospital hallway. Eventually, the mothers made their way back home with their children to try again tomorrow, because the doctors never came that day.

Introduction to the Clinic

Clínica Esperanza is a non-profit clinic that never refuses patients who cannot afford the $2.50 fee. Here, we worked in triage and pharmacy, and we translated for American doctors.

While helping to translate advice from the doctors, we found ourselves commanding patients in the negative: don’t drink dirty water, avoid contact with your sick siblings, don’t play on the dirty ground, cover yourself from the harrowing mosquitoes, avoid showing bare skin to intense sunlight.

In La Colonia, the poorest village in Roatan, we saw the architecture of feeble houses crumbling with the persistent tropical storms, and the humidity serving as a petri dish for bacteria, fungi and mold. Our community lived in an environment full of dangers, with restraint as the constant atmosphere.

For the first two weeks in Honduras, we talked to volunteer coordinators, doctors at the clinic, and Masters of Public Health students, asking them how we could help. Although the problems were everywhere, we still felt powerless in what we could do. Most people presented me with abstract ideas or said, “Let’s talk next week.”

Our greatest help did finally come to us, but not in the manner we had anticipated. The clinic’s nurse, Karla, although not in a position of great power, had been with the clinic since its opening twelve years ago.

Karla listened attentively to us and answered our main question: “Solo queremos ayudar. ¿Cómo podemos?” [We just want to help. How can we?]. She referred us to another woman without a title or designated power, but who, more importantly, had respect in the community: our housekeeper, Irma.

As soon as we asked Irma for ways we could help, Irma arranged a meeting for us to speak with the President of La Colonia, the neighboring community.

Galvanized to help, we hiked up the steep hill of La Colonia to meet with the President of the community. With the president’s help, alongside the help of respected women in the community, we tried to develop a way we could help, but no tangible ideas were emerging.

Finally, a shy woman piped up, eyes wide, and said with self-assurance, “No quiero temer. Quiero el poder para ayudar a mi comunidad y vivir sin miedo.” [I want the power to help my community and live without fear.] She explained how helpless she felt when she was unable to help a child who would fall outside her hut—she possessed no education, no supplies, no sense of power to do anything for her neighbors.

Many community members had the potential and capacity to help—all they needed was the proper training and direction.

Community Health Workers Program

At the meeting, we brainstormed different ways to address the issue and decided that we would develop a weekly general health class for mothers, which we would call “¡Salud!”

One of the issues that ¡Salud! approached was education. At the clinic, knowledge of the notion of “contagiousness” seemed a privilege limited to a select few. Mothers brought in pairs of infants covered in impetigo and suffering from many other transmittable illnesses, confused at their bad luck: Why did...
one child’s suffering always bring the same illness to the other?

Each week, 20 to 30 women came to Salud, learning and asking questions about when a child must be taken to the hospital immediately, how to prevent STDs, the difference between malaria and dengue, and so forth. While this felt like a huge accomplishment, it only addressed one of the two major problems barring the impoverished locals from accessing care — lack of education.

This was not enough. There was still a financial barrier which needed to be addressed. We again met with the clinic manager and community leaders to discuss how we could remove the financial barrier for those who simply could not afford the $2.50 clinic fee.

The clinic manager said that she does not charge people who cannot pay, but the community leaders responded that many patients are too embarrassed to publically declare their poverty.

We suggested a program where the two pre-existing community leaders function as community health workers. The people in the settlement trust these community leaders and will go to them privately. Then, these community health workers will communicate to the clinic that an individual cannot afford the fee. Community members are too embarrassed to publically declare their poverty.

De Nuestros Corazones a los Suyos - Staff Appreciation Day

Spirited by the eagerness of the community members to help La Colonia, we realized that there was little outward gratitude paid to these admirable people. Many of these community members who worked behind the scenes made some of the most crucial contributions toward helping the community, yet they seemed to remain unrecognized and taken for granted.

To thank them, the two of us organized a staff appreciation day meant to appreciate the community health workers; the clinic’s nurse, Karla; our housekeeper, Irmá; the clinic’s security guard; and the doctors. Each of the American volunteers contributed $10, and we had a local chef create delicious food for our celebration.

As all of the people who had served the community gathered in one room, each staff member came up to accept his or her thank-you card and deliver a speech. Most moving to us was Irmá’s speech; our housekeeper spoke with phenomenal poise and beauty, although she had never received more than a third-grade education.

Conclusion

An important aspect of this process for us was recognizing that we were outsiders. The women working with us were the experts to whom we deferred, because they knew their community better than we ever could. Being able to communicate with one another and with community members and to pool our diverse skill sets together was indispensable to the success of this project. For instance, a few weeks after starting the two programs, we met with the community health workers after another Salud general health class. The women seemed happy with how things were going, but after some probing questions about what we could do to make the programs even better, the women said that they needed someone in the settlement to have a first-aid kit.

As things were, when community members got cuts or received injuries, they had to hike over a mile down the mountain to get to the clinic. The hike itself usually resulted in an infection before the clinic nurses could clean the wound.

After the women relayed this to us, we spoke with the clinic manager who was more than happy to supply each of the women with a first-aid kit. These first-aid kits allowed the women to clean, disinfect, and cover wounds on site so that patients journeying down the mountain to the clinic would not expose their cuts to further infection.

Working with Irma and Karla to develop these programs showed us that no matter how well intentioned, one cannot impose a project upon a community; Instead, one must work from within the community to understand the problem and how to address it in a culturally appropriate way. A new program can only be sustainable if it is set up with the wishes of the community members in mind.

We saw ourselves as catalysts for change, because the problems, the solutions, and the people necessary to carry out those solutions were already in place. What we did was help begin the journey to change, a journey which will continue long after we have left Roatan, because it is a change that stems from, and is being carried out by, community members.

Natalia Birgisson has triple citizenship, speaks five languages, and has called 14 different houses “home.” Where she comes from depends on who you ask. When she was little and people asked what she wanted to do when she grew up, the answer was easy: help people. Now her answer is more specific: she wants to be a surgeon and travel to developing countries to train the next generation of local doctors. In the meantime, she is majoring in biology and loves getting to know the priceless people she meets at Stanford.

Tiffany Kung is the daughter of two Taiwanese immigrants and is a Sophomore studying Human Biology at Stanford with a concentration in Neurological Issues in International Health. As the 75th generation of Confucius’ lineage, her passions, too, lie in helping the world embrace happiness and well-being. Tiffany’s aspirations are to become a doctor with a focus in global health. To achieve health on a global scale, she sees the fusion between sustainable entrepreneurship, education and medicine as the greatest power.

Karla, though not in a position of great power, listened attentively to us and answered our main question: “Solo queremos ayudar.” ¿Cómo podemos? [We just want to help, how can we?]

Tiffany and Natalia with three of the most admirable women in Roatan: Irma and the two Community Health Workers.
Global Health Begins in the Community

A Facilitative Approach to Community Health Initiatives in Nicaragua and a New Outlook on Service-Learning

BY LOVELEE BROWN and ZACK WETTSTEIN

The aerial descent into Managua, Nicaragua, the land of lakes and volcanoes, is simply beautiful. Verdant foliage trapesies unrestricted across the city, collecting most densely around the country’s many bodies of water.

However, driving through Managua it is impossible to deny the pervasive poverty that is often coupled with urban life. Even so, the seemingly oppositional juxtaposition of lush, exotic, Latin American greenery and the muted lifestyle of Nicaragua’s impoverished majority speaks to the struggle for development in the country. The landscape of fruit stands and cardboard homes skirting around a non-existent center is not an example of haphazard urban planning but rather a history and reality of tumultuous sociopolitical landscape.

For over thirty years the people of Nicaragua have heard promises in various social systems, in political history to develop a more sustainable model of aid work. This past summer, we joined a group of Stanford students to work with one of these NGOs through the Haas Center’s Impact Abroad program.

Background and History of Health Care in Nicaragua

The Nicaraguan many Westerners conjure up in their minds evoke thoughts of revolution, socialism, violence, and poverty. However, the positive changes that led to one of the highest literacy rates in Latin America and near eradication of many childhood illnesses, and exceptional health care delivery are often forgotten or dismissed.

Bringing in radical change after the Somoza regime with the 1979 Revolution, the Sandinistas overhauled the national health care system, instituting a national health system that would be free to all, following the belief that health care is a basic right of citizens. The new system created 200 rural health posts resulting directly in lowering infant mortality, increasing life expectancy, bettering access to health care, and significantly reducing the number of medical visits each year.

The Sandinista health care revolution not only aimed to increase health care access but also reformed the system from within by revising the system of healthcare education for professionals and laymen. In order to ensure rural areas with professional doctors were required to serve a mandatory two years of social service and were aided by foreign health workers and local health activists.

The campaign for health became such a national priority that in the first four years of the Sandinista administration, it was estimated that at least 10 percent of the entire population served as health activists, informing their neighbors about pertinent health issues, organizing preventative measures. These aggressive changes to the nation’s health care system launched Nicaragua as a leader in Latin American health care.

However, before the rapidly improving health care system in Nicaragua could garner further accolades, progress was stunted by the 1979 Sandinista movement. The dissolution of these health care advancements were met with rises in morbidity and poverty rates, and ironically an outpouring of foreign aid.

Nonetheless, the increase in material goods could not outweigh the value of investing in human resources. After the Contra Revolution, an unhealthy relationship of foreign aid dependence, which relied on transient support and resources, severely wounded the Nicaraguan health care system. The thousands of health care advocates and numerous national campaigns were no longer viewed as valuable in light of foreign assistance and intervention. Consequently, the self-sustaining health care system that produced a sustainable stream of health care providers dissolved and yielded to a series of foreign quick-fixes and a state of prolonged impoverishment.

In recent years, the nature of foreign aid in Nicaragua has appropriated a different approach that speaks back to an investment in human resources. In particular, San Francisco-based Foundation for Sustainable Development (FSD) has worked with numerous in-country organizations in Nicaragua for the past 15 years.

FSD operates on models of asset-based community development, taking advantage of the material and human resources of communities, as well as capacity-building by helping interested community members develop marketable and productive skill sets through training programs. For the past three years, Stanford students have partnered with FSD in Nicaragua to learn about these sustainable development models and to help jumpstart community projects related to health care.

Our In-Country Experience

During a four-week project in Nicaragua this past summer, we joined a group of fourteen Stanford undergraduates who worked with the Mujeres Ambientalistas, a local environmental-advocacy non-profit started by four Nicaraguan women in the community of Boris Vega, located in the northern city of Estelí. Our goal was to establish a natural medicine garden that would generate income for the women and function as a means to improve community health and wellness.

The members of the Boris Vega community frequently use natural medicines in the treatment and prevention of disease, as well as in the maintenance of good health. Additionally, the prohibitive costs of and limited access to medical clinics have made natural medicinal products use an even more popular practice.

The need for affordable medicinal products in Boris Vega was identified by the Mujeres Ambientalistas who developed the medicinal garden project with the in-country FSD team. The project was developed according to the asset-based community development model employed by FSD. While community need was taken into account, the most important factors leading to the development of the project were the resources available in the community and the desires of the community members.

Initially, we, along with the Mujeres Ambientalistas, studied under the tutelage of professionals at ISNAYA laboratories in Esteli.

Over the course of four weeks, the Impact Abroad team helped the Mujeres Ambientalistas turn a barren plot of land into a fertile natural medicine garden.
The ISNAYA laboratories are one of the most established producers of natural medicine products in Nicaragua. Over the course of our one-week internship with ISNAYA alongside the Mujeres, we studied the entire process of creating natural medicine products, from preparing the soil before planting the seeds to packaging the final medicinal product. After learning the process, we worked with the Mujeres Ambientalistas to turn their plot of land, once a garbage dump granted to the women for educational and environmental advocacy purposes, into a fertile natural medicine garden.

Over the course of three weeks, we tilled the soil, distributed hundreds of pounds of abono (fertilizer), and transplanted nearly 50 different species of medicinal plants with the Mujeres. Additionally, we helped them to establish their own laboratory in which they helped them to establish their species of medicinal plants with which they could produce the final medicinal products from their garden.

Our project followed FSD’s model of capacity building and asset-based community development. Instead of blindly giving resources or inserting ourselves to complete a project of our own design, we developed the project with the Mujeres Ambientalistas based on their interests and their resources available. We facilitated the interaction and subsequent knowledge transfer between the professionals at ISNAYA laboratories and their neighbors, the Mujeres Ambientalistas. Unlike traditional investments in material resources, which can lead to unsustainable systems of dependence, we invested in human resources through capacity building. As a result, instead of the project ending when we left Nicaragua, the project continued building momentum. More than six months later, the Mujeres Ambientalistas are successfully producing not only medicinal products but also abono of their own, despite numerous setbacks during the difficult tropical winter season.

The Service-Learning Experience

Having had the opportunity to both participate in and lead service-learning projects in Nicaragua, we have come to a number of realizations and conclusions regarding the service-learning model. In working in developing communities, we experienced numerous setbacks, most of which resulted from disconnects and miscommunication of expectations both among members of our team and among members of the community. We experienced the struggles of serving in the international context and in the health delivery setting, which had invaluable experiences that have shaped our future plans and goals. But we still reflect upon our experience and the service process continually, asking ourselves the question: What is the true value of service-learning experiences?

Instead of entering a community and blindly acting based on outside assessment of need, the service-learning model provides the opportunity for reflection and critical assessment throughout the course of project implementation. Inherent is the assumption that the participants are all students, learning from the community and the experience. It’s a humbling perspective, and requires constant reflection on the project through a critical lens.

Through this process we’ve asked ourselves and fellow participants a number of questions: Whose needs are we really serving? What are the consequences of our actions? How can we serve most ethically and effectively? These are the questions we asked ourselves each day before, during, and after the project. It is in these questions that we have the capacity to learn the most from the service-learning environment, making this model such an efficacious and didactic experience.

The questions surrounding the impact of our foreign aid footprint have continued to linger in our minds long after the project’s conclusion. Ultimately, we wondered whether the work we had done only added to the constantly expanding collection of ephemeral foreign health initiatives, if we were more invasive and taxing on our local community than helpful, if the harsh Nicaraguan rainstorms subdued the Mujeres’ budding garden and motivation, and if the four tenacious women were able to maintain their natural medicine products. However, after several months our anxieties were quelled with news from the site program coordinator that our footprints laid a foundation on top of which the Mujeres Ambientalistas built a physical pathway that welcomed community members of Boris Vega into the garden. The dense foliage that once separated the developing community from the natural medicine garden was now neatly groomed and maintained, bridging the gap between Nicaragua’s natural beauty and its people. The pathway built by the Mujeres Ambientalistas was much more than an aesthetic addition, it was a symbol of what happens when communities invest in themselves and develop accordingly.

Impact Abroad Service-Learning Program

Impact Abroad was a service-learning program offered through the Haas sponsored Impact Abroad program, serving first as a participant and again as a student-leader. Following her participation in the Impact Abroad program in the summer of 2010, she extended her stay in Nicaragua to initiate anthropological fieldwork on the medicalization of domestic violence against Afro-descendant Creole women. Lovelee is excited to pursue a career in medicine and explore the ways in which anthropological theory provides an insightful lens through which to view medicine and health care.

Zack Wettstein is a senior majoring in Human Biology with a concentration in infectious diseases and global health. He spent two summers abroad in Nicaragua through the Impact Abroad program, first as a participant, and again as a student-leader. He plans to pursue a career in medicine and, after graduating, will be returning to Nicaragua to conduct research on Dengue Fever with the Dengue Relief Foundation.

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Lovelee Brown is a senior majoring in Anthropology with a concentration in Medical Anthropology and a minor in Modern Languages. She spent two summers abroad in Nicaragua through the Haas sponsored Impact Abroad program and was involved in her community in Nicaragua.

Zack Wettstein is a senior majoring in Human Biology with a concentration in infectious diseases and global health. He spent two summers abroad in Nicaragua through the Impact Abroad program, first as a participant, and again as a student-leader. He plans to pursue a career in medicine and, after graduating, will be returning to Nicaragua to conduct research on Dengue Fever with the Dengue Relief Foundation.
Day 1: Early Morning

After nearly rolling off the hotel bed for the umpteenth time, I finally roused myself from my jet-lagged stupor and checked my cell phone. 5:30 in the morning. Cursing the cruel indifference of my body’s circadian rhythm, I decided to step out of my room’s adjoining balcony for some fresh air. As soon as I slid onto my room’s adjoining balcony, I was hit by a moist wave of warmth that made my grey air, I reminded myself why I was still in Beijing.

Taking a deep breath of the thick, grey air, I reminded myself why I was here in the dog days of August in the first place. I was going to be working the cities of Beijing and later Hangzhou for two weeks on a Freeman Spogli Institute (FSI) Research Abroad Internship, a new program established to help undergraduates pursue fieldwork opportunities in other countries. For my internship, I would be working with a team of two other undergraduates for the Rural Education Action Project (REAP), a nonprofit aiming to improve educational outcomes among China’s youth through policy-oriented and experiment-based research. Although REAP’s mission is primarily focused on education, several of its active projects are seeking to conduct research on the relationship among health, nutrition and educational performance in rural China.

Access to adequate nutrition, especially those micronutrients essential to adolescent development, is a huge challenge facing rural children in China. Studies conducted in 2008 and 2009 found that between 39 to 60 percent of school-aged children in three provinces in China had iron-deficiency anemia, a condition that affects the body’s ability to deliver oxygen to its organs and tissues, including the brain. Anemia has been correlated with a variety of negative education outcomes, including poor grades, diminished attention span and reduced attendance. Because of the high prevalence of this debilitating condition among rural children, REAP is studying what interventions can most effectively and efficiently improve educational performance among China’s rural poor.

To help REAP’s mission, we were tasked with developing an anemia knowledge survey to assess parental knowledge concerning anemia. We would be field-testing the survey in rural-to-urban migrant neighborhoods of Beijing and Hangzhou, the logic being that the overwhelming majority of these inhabitants would be from rural areas. That was the plan anyway. Staring out into the morning haze, that goal seemed as far away as the high-rise building block away.

As I worked my way through this unfamiliar sensory environment, I thought about what I had learned about rural-to-urban migrants prior to coming to Beijing. In the past 25 years, China has experienced an unprecedented wave of internal migration. There are currently an estimated 114 million rural-to-urban migrants in China with 10 million new people entering the cities every year. However, none of this—the statistics that I had studied, the articles that I had read or even the pictures that I had seen—none of this had prepared me for the visceral experience of walking through this migrant neighborhood.

Day 3: Late morning

Surveys in hand, it took all my effort to keep one eye on our 10-year-old guide as we walked through the streets and alleys of a migrant neighborhood on the outskirts of Beijing. Although this community was only a 40-minute taxi ride from our hotel, I had to frequently remind myself that this was still considered part of the capital city. On the taxi ride there, while savoring the perpetual flow of cold, dry air, I couldn’t help but notice the frequent flashes of home that dotted the freeway: the Crowne Plaza hotel, a billboard for Nokia smart phones, a royal blue IKEA store. But as soon as we got off the freeway and into the migrant neighborhood, it was clear that we were somewhere far from home. Imposing skyscrapers gave way to dilapidated warehouses. Smooth asphalt transitioned into uneven dirt. Stout Audis were replaced with rusty bicycles. By the time we drove through the gate of the local community, we had long left behind the Beijing of Olympic stadiums and exorbitantly priced coffee.

In this Beijing, we passed drab storefronts selling beans popsicles in fading freezer carts, enterprising street vendors hawking buns from enormous metal steamers, and laborers laying the bricks for half-completed buildings. If the sights were not enough to convince me that I was in another world, the assaults on my nose was assuaged by sputtering motorbikes.

As I sat cross-legged on the hard hotel bed, I checked the survey’s formatting again. Excel had been giving me problems all day, and I wanted to make sure that the survey’s format would be preserved when it was finally printed out. Although the final survey did not take up more than a page back and front, its brevity belies the numerous hours of discussion, many miles of cab rides and countless bottles of milk tea that went into its making.

Prior to my arrival in Beijing, the thought of developing a survey sounded like easy work to me. But when I got to the field, I quickly realized that this initial impression was laughably incorrect. Before we even began writing the survey, we had to pore over old questionnaires from REAP to develop ideas concerning what types of inquiries we should be making. We then debated the merits of individual questions and discussed how we could adapt them for our specific purposes: Is this question about non-heme iron too difficult to understand? (No.) Should we include more controls in our food knowledge matrix? (Yes.) After considering these questions of content, we still had to grapple with the way we wanted to present our survey: Should we ask for the education level of the respondents? (Yes.) How many multiple choice options should we list for each question? (Four.) Even after addressing these different issues, we needed to pretest our survey in different migrant neighborhoods. During our initial forays into the field, we tried several strategies to improve our survey design, from trying out multiple iterations of the same question in order to determine which version was best understood, to observing participant focus in order to get a sense of an appropriate survey length. Following each trip to

The Intersections of Nutrition, Health and Education in Urban China

BY YI LU
Rural Education Action Project (REAP)

The FSI Research Abroad Internship matches undergraduates with organizations working on chronic global underdevelopment. Interns work on multidisciplinary teams to develop and carry out field research projects with the guidance and support of one or more Stanford principal investigators. The program spans two weeks on location and four to six weeks planning and completing the projects in the US.

Contact info: www.reap.stanford.edu
www.fsi.stanford.edu/field_research

Day 14: Night

It was not until the cabin lights were dimmed and the in-flight movie began that I had the opportunity to reflect on my two weeks in China. According to the CIA World Factbook, there are over 1.3 billion people living in China. Even after squeezing into overcrowded buses, packing into standing-room only subways and jostling middle-aged women to keep my place in the check-in line, this number is impossible for me to even imagine.

Instead, I thought back to the individuals that I had met in the past nine days. There was the slender girl in the pink and white dress, leading us through the winding dirt streets and alleys on the way to her parents' residence. Was she anemic, suffering from a silent disorder that stunted her physical and academic growth? There was the mother of a young girl who received a REAP scholarship, repeatedly offering us fruit and apologizing for the size of her cramped Single Room Occupancy. Could she afford the foods that her daughter needs to be healthy? There was the cook flipping steamed bread at Dandelion Middle School, one of the best migrant schools in all of Beijing. Did she know that starch-heavy diets cannot supply the dietary iron that children need to stave off anemia?

Although the anemia knowledge survey that I helped develop represented only a small part of REAP’s expansive efforts in China, the process of developing the survey has made a large impact on the way that I think about health and education. In the time I spent in Beijing and Hangzhou, I had a chance to marvel at the booming business and China’s economic growth, but I also caught a glimpse of the people who were being left behind. Reliable statistics about the educational outcomes of the rural poor, let alone rural-to-urban migrants, are hard to come by. However, a REAP survey in Shaanxi Province found that as few as 1.3 percent of poor rural children attend college, an astonishingly low percentage when compared to the 47 percent of children from Beijing and Shanghai who move on to a tertiary education. However, these dismal education statistics do not tell the whole story. Although REAP’s research projects are primarily focused on improving educational opportunities for rural children, its work acknowledges that education is impacted by a confluence of other vital factors, including poverty, nutrition, and health.

REAP is not a service organization per se—it does not provide scholarships, give out multivitamins or develop anemia education campaigns just for the sake of doing good in the world. Rather, these good deeds are seen as means to achieving REAP’s goal of conducting ethical, experiment-based research in order to convince Chinese policy makers of the nutrition and education of all its children, whether they live in opulent, high-rises in Hong Kong or dingy, single-room occupancies in Beijing. This objective was brought home to me when I was helping to interview a sixth-grade girl from a migrant neighborhood in Beijing. At one point in the interview, we asked what we thought to be a routine question: “Who prepared your meals?” I was surprised to learn that she was eating most of her meals in communal kitchens, rather than at home. Upon further questioning, we learned that she and her sister were raised by their grandmother; her father was working outside of Beijing and her mother was frequently away at her job in the city. Although she told me her neighbors looked after her, I was amazed that this little girl, who could not have been older than 12, was essentially making it on her own. Through the efforts of organizations such as REAP, hopefully there will come a day when she won’t have to.

Yi Lu is a senior pursuing a B.A. in Anthropology and a minor in Modern Languages. Interested in education and health, Yi found the FSI/REAP program to be the perfect way for him to apply his skills in a focused field project. He is currently pursuing an Honors project in Anthropology on the uncertainty of living with Huntington’s disease.

Yi Lu

BY HARJUS BIRK

It has become widely accepted that there are many healthcare discrepancies existing on a global scale which ultimately prevent patients from receiving life-saving assistance. Many patients are distraught because they cannot be seen by physicians due to obstacles such as the inability to pay or the fact that they live in a country different from their birthplace. This is exacerbated by difficult language barriers between the physician and the patient.

These barriers must be tackled one step at a time in order to ensure that poverty and cross-cultural healthcare barriers can be overcome so as to provide medical and thorough care to those who require aid. The BeAGoodDoctor Program, founded at Stanford University in 2002 by Dr. Michael McCullough and Jennifer Miller, helps tear down these barriers. The program was founded in the hopes of creating an organization which would serve as an incubator for creative internships relating to medicine.

During the summer of 2010, I supported the BeAGoodDoctor Program and traveled to the Tibetan Delek Hospital in Dharamsala, India, in order to establish a clinical internship in which Stanford undergraduates as well as medical students are given the opportunity to experience global health care in a country with inadequate resources.

Ever since my childhood, I have yearned to travel back to India in order to positively contribute towards reviving the healthcare system. As a Sikh from India, I have been witness firsthand the inadequate health care that third-world countries face, and I have seen patients who are not treated because of an inability to finance medical operations. The opportunity to volunteer in an Indian hospital with limited resources and funding presented the perfect opportunity for me to restructure the medical industry in India.

After being exiled from China in the 1950s, the Tibetans found asylum in Dharamsala, India after following their spiritual and political leader, the Dalai Lama. To this day, Dharamsala is occupied largely by Tibetan refugees who require life-saving medical assistance in order to overcome injuries that were obtained during their escape from China and their subsequent journey to India.

Dharamsala is located in Northern India and is highly visited by tourists throughout the entire year. Furthermore, a variety of people travel to Dharamsala year-round to see the Dalai Lama. The Dalai Lama is the patron of the Tibetan Delek Hospital and contributes to the sustainability of the healthcare in the clinic.

The Tibetan Delek Hospital is the only clinic in Dharamsala, and it caters towards the medical needs of the Tibetan people. This hospital thus serves as an ideal platform for researching cross-cultural healthcare discrepancies such as the inability to effectively communicate
I shadowed Dr. Tsetan Dorji Sadutsang, the Chief Medical Officer and physician for His Holiness the Dalai Lama.

In the evenings after the hospital shifts were completed, Dr. Tsetan discussed the importance of compassion in providing effective medical care to humanity. He based the lectures on the writings of the Dalai Lama, and I felt honored knowing that I was being taught what the Dalai Lama preaches to millions of people around the world.

After having interacted with me for about four weeks and having seen my passion for global health, Dr. Tsetan discussed with me the need to restructure the Ambulance Corps system in India. At my time of arrival, only one ambulance existed in Dharamsala, which served as a huge barrier to patients achieving successful healthcare, as there are over 100 emergency calls every day. Immediately, I told Dr. Tsetan that this would be my project in addition to shadowing him, and my mission was to raise money that could be used to purchase a new ambulance for the clinic in a timely manner and ensure that no emergency calls would be missed due to lack of transportation and ambulatory care.

At first, the executive summary for this momentous project seemed extremely challenging to achieve because an ambulance costs 700,000 rupees ($17,000) to purchase. Although this seemed a daunting task, I knew it was essential to accomplish and would be a remarkable way to increase healthcare efficiency for the Tibetan refugees. Via motortrain, I was able to travel to Chandigarh, Punjab, Jalandhar and Ludhiana to present my mission to various businesses and corporations.

To Dr. Tsetan’s own surprise, at the end of the summer the amount raised was nearly $17,000. This amount of money was more than enough for the hospital to purchase another ambulance and increase the power of the Ambulance Corps system in India. Embarking on this journey to India helped spark my passion for global public health and led me to collaborate with the Dalai Lama and his hospital staff to create a clinical internship for Stanford University students. Internship positions are now available year-round for students interested in global health to travel to the Tibetan Delek Hospital and shadow Dr. Tsetan, translate for the Tibetan refugees, and work on other pressing projects.

Currently the tuberculosis program is in need of major restructuring in order to increase cost efficiency. Approximately 10,000 Tibetans in Dharamsala have tuberculosis, and all come to the Tibetan Delek Hospital throughout the year for treatment.

Future interns will have the chance to remodel the current tuberculosis program in India and work with the Dalai Lama and his physician to create a new program that will target maximum treatment for the patients at minimum cost for both the hospital and the patients. In addition to shadowing Dr. Tsetan and working with hospital staff to arrive at diagnoses for in-patients, student interns have the unique opportunity to work on a project that interests them personally. This allows for a two-sided clinical internship experience, in which students can both make a difference inside as well as outside the hospital.

Through my summer experience, I gained a stronger appreciation of the Tibetan culture while providing healthcare to others, enhancing my ability to connect with patients on a personal level.

I believe that the general populace is the key to cracking the barriers and adversities faced by the global healthcare system, one step at a time. With the benevolent voluntary efforts of those interested in global health, the future of humanitarianism appears very promising.

Harjus Birk is a junior at Stanford University, majoring in Neurobiology. Harjus was born in Southall, United Kingdom, and enjoys traveling to foreign countries in order to personally examine their different healthcare infrastructures. An avid researcher in the field of stem cell therapy for cerebrovascular accidents, Harjus has been involved in research at Stanford Medical School since his freshman year of college, and has co-authored three medical papers. In the future, Harjus plans on attending medical school and eventually working for Doctors Without Borders.
Preventing Health Problems One SMS at a Time

BY DENNIS CHAN

Team Mobilizing Health’s ultimate goal is to ensure the health of the community. We feel that by procuring good health, the residents of the village will be able to worry less about paying for the airplane tickets to the city to see doctors, medicine, and as a result, will have access to affordable healthcare. Many doctors who have a lot of experience and education in the field of medicine are located in the city, and are not willing to work in remote areas. For this reason, many residents have to travel to the city to see doctors, which is costly and time-consuming.

Google “NGOs in Udaipur” and after doing some research, you’ll find nearly one thousand NGOs, both international and local. All of them are working to improve the lives of over half a million people located in the villages around the city of Udaipur in Northwest India. Of course, many of the mission statements of these NGOs define and put into action ways to provide solutions to bring about social, economic and even political transformations locally. Nevertheless, three of my teammates and I strongly believed that it was well worth the thousands of dollars for the airplane tickets to implement the beta program for Mobilizing Health (MH). The program would not replace but rather complement the many social programs that already exist in India.

Team Mobilizing Health

The project works. Many doctors were interested in working with us. We were very few doctors who are genuinely passionate in making a difference. It is still the most difficult, but we managed to recruit both private and public sector doctors to work for MH as possible, with the help of many students who continue to shape our organization.

Mobilizing Health

Mobilizing Health is a global health and technology organization that aims to connect underserved communities to healthcare providers via SMS text messaging.

Contact info: mobilizinghealth.org

To them every aspect of how our project works. Many doctors were afraid of being petrified by the fact that they would not be earning any money. We could not pay the doctors because it would make the program unsustainable. At the moment, there are still no concrete incentives for the doctors other than certificates and small awards, so the doctors who were able to recruit were very committed to our cause.

The villagers were not easy to convince, either. They did not immediately trust that the technology would be effective and useful. Establishing the trust of villagers was especially difficult because of various social and cultural differences. So we introduced the Village Health Director (VHD) position. The VHD acts as the mediator between villagers and doctors. Most villagers in rural India have mobile phones, but at the same time, most are not literate, thus can’t read text messages. With the help of a member of Narayan Sewa Sangathan Trust, we were able to select the VHDs, who were both literate and well-versed in their villages. These VHDs serve as liaisons to their home communities and connect patients to immediate medical advice around the clock. When villagers are sick or injured, they can simply contact our VHDs, who send an SMS to a server that is relayed to an available physician. The physician then replies, advising first aid and any immediate action that needs to take place.

As a team, we made great strides. A project idea was turned into a working organization. Under two project managers, strong women of Udaipur City that have had over 10 years of experience in the field, we managed to keep our service running even after the team left the city. Fifteen doctors throughout the city agreed to be part of Mobilizing Health, and we trained 40 Village Health Directors. Furthermore, the two project managers held more training sessions every month for both VHDs and doctors.

Personally, I learned from both doctors and local residents that the villagers can effectively use the service MH provides. Many asserted that even established networks of hospitals in India lack a clear approach to deliver health care to those in rural communities. While there is no one source that is responsible for inadequate access to healthcare in rural areas, many factors can be attributed to this problem. One such factor is the ubiquity of corruption at every stage of the social ladder. This leads to flawed implementation of policies and programs and extreme differences of beliefs and customs in isolated villages. For instance, one VHD from a village that is very far from the city informed us that when people get sick, their only option is to go to the temple and pray to get better. This may be an extreme example but one solution would be for MH to partner with a local nonprofit which has doctors make rounds to villages monthly.

Today, MH is a team consisting of passionate Stanford and Berkeley students who continue to shape our program as we implement our SMS software and look for both local and international partners. Overall, MH’s integration of information technology into the framework of hospitals creates sustainable preventative healthcare. By focusing on preventative healthcare, we are able to promote the importance of the passion for academic knowledge, justice and professionalism as we advocate on behalf of underserved communities around the world.

Dennis Chan is currently a senior at Stanford, majoring in psychology. He was born in Myanmar and moved to Los Angeles about 10 years ago. He aspires to pursue medicine in the future and has a great interest in neuroscience.
The Promotion of Aboriginal Health and Culture Through Ethnopharmacology

BY ELYSE GALLES

Despite the critical need for antibiotics to combat rapidly developing, drug-resistant strains and the necessity of cures for AIDS, malaria, cancer and other currently incurable diseases, the synthesis of new drugs has been declining in the last decade. The pharmaceutical industry was once focused on investigating chemical plant compounds, but the hope of synthetic drug development as a quick solution to the tedious research and development process put plant-based research on hold. The new technology of molecular synthesis fostered the assumption that plant compounds were inessential.

Now, limited success in synthetic processing has returned the industry to an investigation of natural compounds and reignited an appreciation of bio-conservation in the pharmaceutical industry. Much of the world’s biodiversity has been lost in the interim of the synthetic-focus of drug development, making it of global interest to ensure that no further bio-resources are lost. Pharmaceutical companies, therefore, must be held to a standard of efficiency and sustainability in their processes for investigating plant biodiversity for new drugs.

The world’s genetic resources have historically been exploited freely across boundaries, but the decline of tropical rainforests and the resurgence of interest in medicinal plant compounds has led to nations tightening their hold on these valuable bio-assets. Approximately 7,000 natural compounds are used in modern pharmaceuticals, with 25 percent of US prescription drugs containing one or more plant-derived active ingredients. There are an estimated 400,000 global plant species, and only about 10 percent have been characterized chemically. The potential for drug discovery from plants is therefore enormous.

Australia has been suggested as “the best placed of the developed nations to bring together the interests of other megabiodiverse countries of the world,” as it possesses nearly 10 percent of the world’s biodiversity. Its biodiversity has been largely untapped for chemical activity, making it a prime market for drug developers. There are several species in Australia that are potential “blockbuster drugs” which could provide cures for cancer, HIV or other presently incurable diseases like malaria or the common cold.

The current list of important plants includes the black bean plant, Castanospermum Australe. Known as Baway by the Kuku-Yalanji people, this black bean plant is a possible cure for cancer of the bowels, but without proper processing it is very poisonous. Euphorbia hirta is another plant with potential anti-cancer activity used by Aboriginals; Ochnaella elliptica and Bracea javonica are prospective cures for malaria. Most notably, compounds from the Moreton Bay chestnut, Planchonia careya, are used in traditional Aboriginal medicine, and Planchonia careya’s antibiotic activity, the discovery of the Moreton Bay chestnut’s promising medicinal properties for the treatment of AIDS was also achieved through consultation of Aboriginal medicinal practices.

As a developed country with a significant percentage of the world’s biodiversity, Australia has monetary and biological resources to be one of the foremost drug development centers in the world. And since Fabricant and Farnsworth report that 80 percent of plant-derived drugs were developed through an ethnopharmacological approach, ignoring Aboriginal intellectual property for the pursuance of rapid screening or another non-ethnopharmacological approach would deter Australia’s progress in drug development.

At a national level, Australia has attempted to invoke Indigenous consultation in the decision-making process surrounding the pharmaceutical industry and its extraction methods through the establishment of a “Biological Diversity Advisory Committee with Indigenous representatives and an Indigenous Expert Committee to advise the Minister on its implementation,” however, the Aboriginal voices for the voices have often fallen on deaf ears. While Australia is one of few nations to incorporate Indigenous communities into national decision making on biodiversity protection, “imposition on people of institutional arrangements that are out of step with their traditions, their aspirations, and their capacities can disable rather than enable participation.”

In Australia, the Indigenous Advisory Committee is to advise the Minister on its establishment of a “Biological Diversity Advisory Committee with Indigenous representative and an Indigenous Expert Committee to advise the Minister on its implementation.” There has been a historic tendency for Western society to exploit natural resources. This is a Western attitude that is hard to escape, however, and only now are societies beginning to conceptualize the value of conservation. Indigenous culture, too, must be seen as a resource to be preserved. The United Nations, the World Health Organization and the Australian government have recognized the fact that a majority of plant-based medicines have arisen from Indigenous knowledge systems. In particular, the UN Convention on Biological Diversity recognizes the importance of Indigenous rights and ensures that the results of research and development and the subsequent benefits are shared in an equitable way. These are important steps in recognizing that industries cannot treat the world’s Indigenous people as a resource to be exploited. Research into the potential social impacts of ethnopharmacology has revealed its potential to positively affect bio-conservation and Aboriginal wellbeing. Consering Australia’s great asset of biodiversity is as important as utilizing it.

Aboriginal culture is deeply linked to the Australian landscape, and Aboriginals are stewards of Australia’s conservation. Each Aboriginal community has a totem (or aspect of the environment) that it is dedicated to protecting, and the health of this totem affects the community’s spiritual and psychological wellbeing. This is a source of identity and pride. Collaboration with Aboriginals through ethnopharmacology, therefore, has the potential to foster the spirit of conservation, while simultaneously improving the spiritual and psychological health of the Aboriginal community.

Ethnopharmacology also directly

**Part of the Australia BOSP group in the Australian outback.**
potential to not only produce novel medicinal drugs, but health is distance to use foreign (Western) industry attempts to address health of Australia’s valuable biodiversity and directors of extraction of its resources for pharmaceutical development is a way of re-instanting the Aboriginal view of a mutually beneficial relationship between humans and the environment and ensuring that this sustained biodiversity is available for pharmaceutical research for generations to come. Ethnopharmacology begins with a break from the Western attitude of exploitation to an attitude of conservation of natural resources and Aboriginal medicinal knowledge, and it has the potential to end with the sustainable production of new drugs and the improvement of the health and well-being of the Aboriginal community.

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Exploring the Disparity in Tobacco Use Between Indigenous and Non-Indigenous Australians

BY LAUREN PLATT

Introduction: Tobacco in Australia

Over the last 40 years, smoking in Western society has gone from being a symbol of status and a marker of high culture to being stigmatized as unhealthy and irresponsible. Because of what is thought to be one of the most successful public health campaigns to date from some of the most aggressive and intensive efforts from the fields of medicine, public health, public policy and the media, smoking prevalence has decreased drastically in many developed countries. However, what few people realize is that even with all the recent advancement, tobacco is still the single greatest cause of preventable death worldwide. This indicates that even with recent accomplishments, efforts against tobacco use are as pressing as ever.

This past quarter, I had the opportunity to study abroad in Australia, a country renowned for its advanced efforts against tobacco. As a leader in tobacco control, there remains a large disparity in tobacco use between Indigenous and non-Indigenous Australians. Indigenous individuals are almost three times more likely to smoke than other Australians. From 2004 to 2005, 50 percent of the adult Indigenous population self-identified as current daily smokers, whereas this statistic is only 16.6 percent for the general Australian public. Furthermore, the average life expectancy of an Indigenous individual is 17 years younger than the general Australian public, and smoking-related illness is responsible for 20 percent of all Indigenous adult deaths. These striking statistics caused me to rethink the issue of tobacco control.

For my targeted research project, I decided to start an in-depth exploration of the disparity between Indigenous and non-Indigenous Australians in an attempt to understand and identify factors that contribute to the ongoing disparity in tobacco use among communities.

First, I looked at the role tobacco has played throughout the history of Australia before and after colonization. I also considered the cultural and social reasons that might contribute to different smoking behaviors. After a review of the historical, and cultural factors of tobacco use in Indigenous individuals, I decided to focus on the role of social media in the fight against tobacco.

Smoking is a complex behavior rooted in cultural and social meanings that reach far beyond physiology and a nicotine buzz.

When looking at health behaviors such as smoking, it is important to think about the influence of beliefs on a person’s health behaviors. Different cultures and worldviews often have different outlooks regarding health. For example, Indigenous communities have a holistic view of health; they often believe health is influenced by physical, social, environmental and spiritual forces. These beliefs differ drastically from many western medical beliefs, which focus on the individual and the genetic factors as the key determinants of health.
When approaching the topic of tobacco, it is vital to realize that smoking is a complex behavior rooted in cultural and social meanings that reach far beyond physiology and a nicotine buzz. Smoking is also about acceptance, identity, and gaining access to social groups. In Indigenous communities, community beliefs and perspectives about smoking play an active role in the way tobacco is used in the community. Sharing is a critical component of Australian Indigenous society and has historical roots in the kinship system. In a kinship system, sharing is obligatory, and, if viewed from this perspective, the sharing of cigarettes can be understood as a way of forming social bonds between members of the community and reinforcing kinship relationships. Even today, tobacco is commonly used as a gift and it is exchanged in Indigenous communities for other goods and services.

Smoking tobacco is also a communal and collective activity used in ceremonies, cultural events, and social gatherings. It is a source of reciprocal social exchange. Tobacco provides a setting for the exchange of narratives and sharing of social experiences; a non-smoker would therefore be excluded from this social setting. In this way, tobacco plays a strong role in social cohesion and creates a sense of togetherness and belonging that is vital to individual and community well-being. Thus deciding not to participate in the act of smoking can result in feelings of alienation and isolation from the community.

The high prevalence of smoking in most Indigenous communities (up to 83 percent in some remote communities) contributes to the overall normalization of smoking practices. Smoking normalization makes it difficult for non-smokers (and smokers trying to stop) to succeed, because it is difficult for them to physically remove themselves from smoking situations.

**Smoking initiation in Indigenous communities is strongly related to family smoking practices.** In comparison to other Australians, Indigenous smokers begin smoking earlier, and 68 percent of smokers start before age 18.

The noticeably earlier age of smoking initiation is related to the social pressure to smoke created by normalization. This pressure is reflected in the finding that a greater number of Indigenous students indicated they smoke because most of their friends smoke, most of their family smokes, and they feel it makes them more popular amongst their peers.

**The Fight Against Tobacco: Anti-Smoking TV Campaigns**

Since Australia is known for its “aggressive” anti-smoking campaigns, which have been replicated and used in many other countries worldwide, I wanted to do a content analysis of these campaigns. Anti-tobacco TV campaigns are television advertisements that try to convince the audience not to smoke and are considered an integral component of effective anti-tobacco strategy. Anti-smoking campaigns address the social component of smoking and work to actively change the attitudes and social norms associated with smoking.

When constructing campaigns, people must think critically about whom they are targeting and how they want to present their message in order to motivate behavioral change. When Australia created their famous National Tobacco Campaign, huge amounts of money, research and resources were invested in strategically constructing campaigns that would change the general attitudes of Australians regarding the behavior of smoking. Australian campaigns are famous for their shocking and grotesque imagery. For example, one commercial begins with a doctor preparing to perform an amputation for their shocking and grotesque imagery. For example, one commercial begins with a doctor preparing to perform an amputation of a smoker’s leg. The viewer then clenches as the pulls out a surgical knife and the camera zooms in on the revolting image of the diseased foot, implying amputation.

Another famous television commercial, “Artery,” starts out with eerie background music coupled with an ominous heartbeat, while surgically gloved hands squeeze a pulsing and plaque out of an aorta, and a deep-authoritative voice explains, “Smoking makes arteries sticky and collects dangerous fatty deposits.”

As mentioned before, these commercials are believed to have been crucial to the reduction in smoking that Australia has seen over the last 40 years. Many people who watch these commercials have a visceral reaction to the disgusting images. However, despite the success of these commercials in the general public, few people have considered exactly whom these commercials are reaching, and, more importantly, whom they might not be reaching.

In order to obtain an in-depth understanding of all of the mass media commercials that have been produced since the 1970s, I searched an online database for all of the anti-smoking advertisements in Australia. I retrieved 38 commercials and watched all of them, noting the types of campaigns and watched all of them, noting the different attributes of each: the setting, the background noise, the rhetoric, the imagery and the actors. What I discovered profoundly changed the way that I envision the field of global health, particularly the role of individuals constructing public health campaigns.

In all 38 commercials, I noted the race, gender and relative age of the actors being shown. This included the profile of the smoker as well as any other people pictured, such as doctors and family members. I found that every single mainstream campaign that was mass-produced in Australia featured only white people. This finding is more profound and powerful than it might seem. To really understand how the racial and cultural profile of the main character is of importance, one has to consider how, in normal situations, campaigns are effective.

Studies have shown that mass media campaigns are effective when the viewer can identify with the main character. In order for a viewer to identify with the individual pictured, the viewer must usually share a culture, a background and a similar social experience with the actor. Commercials displaying only white actors may therefore be ineffective among Indigenous people. The commercials are culturally and socially irrelevant to Indigenous communities and are not able to work against the normalization that is currently maintaining and encouraging smoking in these communities.

A second domiant theme of the commercials is an emphasis on and idolization of Western medicine. Doctors are glorified and always hold a role of authority and power. They are the experts who deliver the facts about the detriments of smoking. Additionally, many commercials are set in state-of-the-art hospitals and laboratories, panning from laboratory benches to X-ray machines. The effect of this idolization of Western medicine is to “medicalize” smoking. But making a health behavior solely about science and biology ignores the social determinants of smoking. Instead of thinking about and addressing the original motivations behind smoking, many Indigenous people do not subscribe to Western beliefs about

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Lauren Platt and two Indigenous women of the Kukuyalani tribe in North Eastern Australia.
health. Instead, the health of a community is dependent on an integration of physical, social and spiritual factors. “Bad” health is therefore not always attributable to a specific medical causation, but rather includes other factors such as spiritual dysfunction.

Moving Forward: The Future of Tobacco in Australia

In my search on the Web for smoking campaigns in Australia, I came across a set of five inspiring videos produced last year in a collaborative effort between an Indigenous music producer, Skinnyfish, and the local governance. The videos were not national, mass media campaigns like the previous ones mentioned, however, I found that unlike the other commercials, these found a way to use Indigenous art and culture to produce culturally relevant and compelling content. These are videos that were recently produced and aired at an Indigenous festival and represent a successful way to construct an anti-smoking campaign that contains all the necessary components for creating an effective campaign. None of these videos were set in a high-tech hospital, but rather they were set in the environment – on the beach or in the neighborhoods and streets of the communities. Some of the videos also incorporated Indigenous dance with coughing and other creative dramatizations of disease. They also acknowledge social factors of smoking by bringing the action back to the home and looking at the familial influence on smoking.

Because of the obvious barriers, trying to address the tobacco disparity in Indigenous communities might seem daunting. But despite the hardships, I believe that this issue presents encouraging opportunity. Not only could mass media campaigns help, but also targeted Indigenous communities should be included and target Indigenous population actually help to decrease the prevalence in smoking, but a movement to eliminate the tobacco disparity in this method also has the potential to be used as a platform for promoting Indigenous culture in general; the media has a long history of excluding Indigenous actors, singers and other popular icons, but if Indigenous individuals and themes were integrated into anti-smoking campaigns and aired on mass media, this could help discourage general discrimination in the media.

In these efforts, the key is to work in collaboration with other Indigenous groups and organizations. In addition to including more Indigenous individuals, mass media campaigns should actively demonstrate a more multi-cultural representation of Australia by including people of varying races. Campaigns that address the root causes of smoking, such as family environment, should also be included. Smoking needs to be removed from a purely Western medical context and should instead be recognized by individuals as a community problem that causes premature pain and suffering for Indigenous people.

In this way, anti-tobacco endeavors can be an opportunity for empowerment and a chance to strive for equality. By pursuing policies which will decrease tobacco disparities, hopefully Australia will soon be able to live up to its name as a global tobacco leader while also spearheading the fight to end disparities in Indigenous health.

Works Cited


Lauren Platt: Even though she is a junior majoring in Human Biology with a focus in Global Health and Infectious Disease, Lauren has a secret fascination and passion for tobacco policy. She enjoys traveling the world, collecting souvenir cigarette packages.

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