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Cover Page Footnote

I wish to thank professor and PA-C, Leocadia Conlon, for her helpful guidance and encouragement during this process, and also for her exceptional leadership of the women's health team.

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A PA Student's Perspective

Introduction & Past Perspectives

Prior to starting Shenandoah University's Physician Assistant Master's program, I had numerous experiences with healthcare. One of which was a medical mission trip to Panama that took place during my senior year undergraduate. This experience stands out to me, but not for good reason. The trip was eight days long and when we arrived it was evident that there was no real plan of action. We were just students who were part of a global organization that sends missions to various regions within countries that have medical need. We had raised enough money to take the necessary medications and supplies requested on the formulary, but had only one sponsoring doctor who was relatively unfamiliar with the region. While my interactions with the people were rewarding, I was not prepared for the feelings I would encounter when we left. Our short medical mission trip left little opportunity for continuity of care. We had no answers for people when they asked when we would be back or when the next team would come through. Within a week of returning home, I knew the end result of our trip was not what we had intended. We left the community with the supplies left from the week, but with no sustainable follow-up care.

A year and a half ago, I started what would easily be one of the most difficult but rewarding journeys of my life. As a new student in Shenandoah's physician assistant program, I learned about their annual missions to Nicaragua. Shenandoah's missions visit the same clinic each year and include teams from their various health profession programs including physician assistant, physical therapy, occupational therapy, and pharmacy. They pride themselves on a sustainable relationship with the El Ayudante clinic and the surrounding communities. Although

impressed by the interdisciplinary nature of their medical mission team and the inclusion of women's health via a smaller team of physician assistant students and faculty, I was still skeptical about the true impact of short-term medical missions. Thus, I decided to do my own research on sustainable medical mission practices and found that Shenandoah's method aligned well with what professionals agree is the ideal model.

Short-Term Medical Mission Trip Considerations

Margaret Mead, an American cultural anthropologist, once said, "Never doubt that a small group of thoughtful committed citizens can change the world. Indeed; it's the only thing that ever has" (Golub, 2011, p. 261). Statements like these have inspired students and medical professionals across the nation to participate in medical missions, as awareness of international health disparities increases. However, before attempting to address global health needs and embarking on mission trips, health professionals and students alike should determine what it means to be truly committed to sustainable mission practices. Teams should have a comprehensive understanding of all of the possible outcomes associated with service learning opportunities such as this. An article written by John W. Eby discusses factors that make service-learning opportunities such as medical missions "bad". One factor in particular that is extremely relevant to medical mission trips is the idea that service-learning creates a false understanding of need (Eby, 1998, pg. 3). Many teams planning medical missions focus so much on deficiencies that they ignore strengths and resources that are already established within the community they are preparing to serve. Eby (1998) uses a student led tutoring program that was initiated in an underserved community as an example (pg. 3). Although the program was rewarding for the students teaching members of the community, Eby explains that programs such as this with little understanding of actual needs ignores structural components and causes. This perpetuates a

disproportionate focus on the volunteer's own benefit and growth that can negatively impact service-learning opportunities including medical missions (Eby, 1998, pg. 4). Addressing the true needs of the community in an effort to create a comprehensive and sustainable mission model should be a focus in planning for all medical teams.

Langowski, an Assistant Department Chair for Health Care Ethics at St. Louis University with her J.D. and certification in health law, explains the ways in which medical missions may differ. These trips vary in scope, goal, professional expertise, and duration. Some are planned rapidly in response to crises, others may be organized to a particular location based on need, and some may be arranged to visit the same area on a routine basis (Langowski et. al., 2011, pg. 71). A volunteer's scope of practice or engagement varies amongst individual trips. Ideally, recipient communities should be consulted and involved in the needs assessment, the planning of medical mission trips, and the interventions provided by volunteers and medical personnel. However, this does not always happen. With that said, concerns have been raised regarding the delivery of healthcare in poor underserved settings. Langowski (2011) divides issues relevant to short-term medical mission trips into two categories: (1) concerns that emerge regarding the encounters with patients and families and (2) concerns that emerge regarding the ways in which short-term volunteer work can affect host communities (pg.73). Under the first category falls language and cultural barriers, as well as the possibility that health care professionals may be practicing in ways that they normally would not in their home countries. Both of these issues pose concerns for patient safety. This creates the risk of leaving a patient injured and worse off as a result of medical treatment. Under the second category falls the concern that the government will decrease efforts to provide more regular care to these patients since they are aware that medical mission teams visit areas of need. Another concern that is important to consider is that these missions

may not actually address the community's most pressing needs (Langowski et. al., 2011, pg. 74). Like Langowski, the authors of *Perceptions of short-term medical volunteer work: a qualitative study in Guatemala*, describe short-term medical mission trips that do not consult the community as a form of temporary aid that is not sustainable (Green et al, 2009, pg. 2). The authors suggest that medical volunteers should structure their trips in ways that minimize the concerns noted above to reduce the potential harmful effects on the host community (Green et al, 2009, pg. 2).

Another source emphasizing the need for ethical guidance provides suggestions for addressing concerns regarding short-term medical missions. Although ethical review of short-term medical mission trips is in its relative infancy, the source states that an ethical review is the greatest safeguard for the creation of beneficial and sustainable medical missions thus suggesting that significant collaboration with the host community should take place in order to solidify expectations and overall continuity. A formalized ethical review process would address the concerns noted above prior to the start of the trip, aligning with the first source's goal to eliminate those potential harmful effects (DeCamp, 2011, pg. 92). This review process may include a university's review board or may be in the form of a checklist that is designed by individual medical mission teams or organizations.

Although short-term medical mission participants are familiar with many of the above concerns, teams are still reluctant to form sustainable mission trip models. As one can imagine, this takes much thought, effort, and planning. An article titled *A Model for Sustainable Short-term International Medical Trips* shares experiences regarding the development of the Children's Health International Project of Seattle at the University of Washington. Before delving into what the authors believe to be an appropriate medical mission model, they address the ethical challenges of international medical care. In part echoing the concerns of Eby and Langowski,

they proceed to explain that these trips can be viewed as: self-serving, raising unmet expectations, generally ineffective due to their temporary nature, imposing burdens on local health facilities, and inappropriate due to failure to follow current standards of health care (Suchdev et al., 2007, pg. 317). However, very much like the Shenandoah health professions, the authors believe that with adequate preparation and collaboration trips such as these can be incredibly beneficial. Motivated by the lack of guiding principles for medical missions and international trips, the team discusses their model as an example for future sustainable missions.

Children's Health International Medical Project of Seattle (CHIMPS) organizes 1-week outreach trips to Los Abelines, a community in rural El Salvador. The team collaborates with a local nongovernmental organization (NGO) to organize these trips throughout the year. The NGO, named ENLACE, has developed a local health committee that provides simple health services and employs a local physician who visits the Los Abelines community often in the teams absence. The CHIMPS team is a diverse group of healthcare professionals including physicians, nurses, physical therapists, and health educators. Prior to each visit the team determines the needs of the population via communication with the NGO and local physician. The team also gathers supplies and medications, and sets pre-determined goals that meet the needs of the Los Abelines community. For example, approximately 30% of the Los Abelines community has shown evidence of iron deficiency. Thus, the team prepared nutritional education pieces and system for identifying those at risk (Suchdev et al., 2007, pg. 318).

When the teams arrive to the community, they are familiarized with common health conditions and the beliefs of the population they are serving. In order to keep the model sustainable, the team has worked to maintain an ongoing relationship with the NGO and the community. They obtain regular feedback from their NGO, ENLACE, as well as local

physicians, which they incorporate as suggestions for future visits (Suchdev et al., 2007, pg. 318).

Shenandoah's medical mission trips to Nicaragua boast a similar model to that of CHIMPS, which aims to maintain a continuous relationship with the Los Abelines community. Shenandoah's medical mission program was formed in sustainable collaboration with El Ayudante, a local organization that, in partnership with the Ministry of Health, serves the people of Leon, Nicaragua.

A Sustainable Model

In 2008, Shenandoah University's medical team collaborated with the El Ayudante staff to be a part of the opening of El Ayudante's medical clinic that May (El Ayudante, 2008). Even prior to this, in 2004 Shenandoah University began a working relationship with El Ayudante and the local Ministry of Health to serve the surrounding rural communities. Shenandoah's School of Health professions sends a team each year to provide routine and acute medical care to this rural underserved population. The trips last about eight days and include roughly 50 team members. The teams are interdisciplinary and are comprised of physician assistant, pharmacy, physical therapy, and occupational therapy faculty and students. Each team is prepared to provide general medical care in addition to women's health and gynecologic services. This honors the original purposes of a clinic supported by El Ayudante, which was for women's health care (El Ayudante, 2008). Each year, the team sees approximately 1,200 to 1,500 patients for general medical concerns and disease state follow-up. Although Shenandoah's presence in-country is short-term, the health professions team communicates and collaborates with El Ayudante throughout the year as to prepare adequately for each and every mission.

Like CHIMPS, faculty leaders from the team communicate with the staff at El Ayudante to generate a list of supplies and formulary of medications that address the community's current health care needs. Teams are briefed on issues that Nicaraguans are currently facing as well as any new illnesses or conditions that have impacted local communities. Faculty and students fundraise individually to contribute to the cost of the medical supplies and medications. All funds raised are allocated to purchasing items that the clinic and community need. Among these supplies are fluoride varnishes and toothbrushes, which correlate with the team's goal of bringing more awareness to dental health in the community of Leon. Shenandoah's team has placed increased importance on dental health due to the high incidence of caries and tooth decay within the community. In addition to dental hygiene, the team has also placed emphasis on the importance of women's health, which has made a heartfelt impact on the community of Leon. Although improvements have been made to Nicaragua's health care system, there are still numerous concerns surrounding women's health services. Organizers of Shenandoah's health professions medical mission trip were compelled to include a separate women's health team and incorporate the team as part of the model after comprehensive research in this area.

Women's Health & Cervical Cancer in Nicaragua

Nicaragua's statistics provide profound justification as to why women's health was added to Shenandoah's medical mission model. Statistics taken from the Central Intelligence Agency's World Factbook demonstrate Nicaragua's need for women's health and provide a snapshot of the type of country that truly needs these services. Similar statistics should be considered by teams seeking to include women's health as a part of their own medical mission model.

To begin, health expenditures in Nicaragua total only 8.4% of the country's GDP. There is only one physician per 1,000 citizens in Nicaragua and one hospital bed per 1,000 citizens.

The median age of females in Nicaragua is 25.1 years old and the birth rate is 18.41 births per 1,000 people. The mother's mean age at first birth is 19.7 years old and there are more than 100 maternal deaths per 100,000 live births. This statistic puts Nicaragua at the 76th ranking for greatest number of maternal deaths per live births out of 184 countries with reported data. More than 70% of these maternal deaths occur in rural areas such as the community of Leon served by El Ayudante. Approximately 80.4% of women in Nicaragua use some type of contraceptive, including condoms and the Depo Provera injection. Oral contraceptives accounted for about 13.5% of this total. However, since more than 50% of the Nicaraguan population is Roman Catholic, many women we cared for did not use any type of contraceptive as it was against their religious beliefs (CIA, 2014).

Nicaragua's epidemiological profile is worrisome. Currently the country has high rates for infectious diseases as well as maternal and child morbidity and mortality as mentioned above (CIA, 2014). According to an article titled *The Nicaraguan Health System: An overview of critical challenges and opportunities* by authors from the Program for Appropriate Technology in Health (PATH) Association, these rates correspond to the chronic diseases, accidents, and violence that plague the country. The same article states that vaccine-preventable diseases are under control. However, this does not account for HPV and cervical cancer, which remain a serious concern for the women of Nicaragua (Sequeira et al., 2011, pg. 10).

According to the ICO Information Centre on HPV and Cancer, a total of 2.10 million women ages 15 years and older are at risk for developing cervical cancer. Annually, 934 women are diagnosed with cervical cancer and 424 of these women die from the disease. This statistic may seem somewhat low, however this is because many women do not receive adequate screening and are never diagnosed. Cervical cancer currently ranks as the first most frequent

cancer among women in Nicaragua. However, no data is currently available on the HPV burden for Nicaragua's general population. There is also no current HPV vaccine program in Nicaragua. This means that millions of women are exposed to this disease every year and due to lack of resources for a robust screening program for cervical cancer, the prevalence of cervical cancer within the country continues to increase (ICO, 2014).

The HPV vaccine protects against strains six, eleven, sixteen and eighteen, which are spread through sexual intercourse. Cervical cancer is most commonly caused by HPV strains 16 and 18. The HPV vaccine is expected to prevent up to 70% of cervical cancers because they are caused by the HPV strains that the vaccine directly protects against (Centers for Disease Control & Prevention, 2014). According to the CDC, after the introduction of the HPV vaccine in the U.S in 2006 HPV prevalence among female teenagers aged 14-19 decreased by 56% (Centers for Disease Control & Prevention, 2013). If initiated in Nicaragua, the HPV vaccine could have a tremendous impact.

According to the ICO's fact sheet on HPV and cervical cancer, of all women aged 15-65 in Nicaragua, only 31.5% of Nicaraguan women are screened annually via Pap smears (ICO, 2014). At the present time, Nicaragua has the highest rate of cervical cancer in Latin America and the 12th-to-15th highest rate in the world. The country's cervical cancer mortality rate for women over 30 is 27th globally, according to a 2008 study of 184 countries conducted by WHO's International Agency for Cancer Research (Fara Foundation, 2012). There are many factors that contribute to this problem, including: lack of resources and healthcare facilities, lack of qualified healthcare professionals, inadequate patient education, and limited access to existing facilities especially for women living in rural areas (Soneji et al., 2013, pg. 175).

While in Nicaragua, I researched the issue more in order to brainstorm possible solutions to this problem. An article titled *Socioeconomic Determinants of Cervical Cancer Screening in Latin America* made publicly available by the NIH states that women who reported a recent doctor's visit, including rural residents, experienced consistently higher probabilities of having a recent Pap smear screening. The same article also mentioned that the knowledge of Pap smears and the purpose they serve derives from educational attainment, whether from academic sources or directly from a healthcare professional in the form of patient education. Women who have a better understanding of medical practice or higher education level are known to benefit more from preventive health measures such as Pap smears. Overall, these women exercise greater autonomy and usually face lower cultural barriers to screening (Soneji et al., 2013, pg. 175).

It was with this information that I began to think about our team's impact. I realized Shenandoah's inclusion of a women's health team wasn't just for the sake of providing physical care; it was for the sake of the Nicaraguan women themselves and providing them with the information they need to live a healthy life with the resources they have.

The Role of the Women's Health Team

The women's health team consists of one female PA faculty member and six female PA students. At times, an OB/GYN has also accompanied the women's health team. This past spring, women's health clinics were set up in various rural locations around Leon, Nicaragua over a span of four days, including: Santa Ana, Centro de Salud Quezalgualque in La Estacion, Clinica El Ayudante, and Walter Ferreti in Perla Norori. Each day a new community of women were cared for. Before exams, a student completed a patient intake form with the help of a translator to ask the patient a variety of history questions regarding previous medical visits, pregnancies, births as well as complications, number of children, number of sexual partners, etc.

This gave the team time to understand the individual circumstances of the patient and tailor care to their specific needs.

During the interviews some commonalities among patients became apparent. When patients were asked if they were monogamous with their partners, many of them said yes but that they were not sure if their partner was also monogamous. Some women knew that their partners were not monogamous. Based on interactions throughout the trip, some women seemed to understand the consequences of having multiple partners and understood the relationship between this and the risk for sexually transmitted disease; others did not, particularly the youngest patients. Once members of the women's health team conducted a thorough patient history with the assistance of a translator, the appropriate exam was performed. The women's health team was equipped and trained to perform breast exams, abdominal exams, pelvic exams and Pap smears. The team was also able to provide urine dipsticks if the patient had symptoms of a urine infection, and/or urine pregnancy tests if pregnancy was suspected.

Annually, the women's health team completes approximately 50-100 Pap smears. This year our team completed about 70 Pap smears. However, the number of Pap smears completed is disproportionate to the number of patients that the women's health team sees, which is much larger. The reason for this is that a Pap smear is not indicated for each patient seen in the women's health clinic as patients are seen for many other women's health issues. It was clear that the women in the communities we served were concerned about their risk of developing cervical cancer. It was truly incredible to see the number of women who knew their family history of cervical cancer and were interested in receiving the appropriate testing.

Many of the Nicaraguan women had Pap smears that were completed previously but had not received their results. This was because many of the patients lived in rural areas of Nicaragua

where there is no standardized way to ensure that patients received the results of their Pap smears. After discussions with faculty and others in the El Ayudante community, I found that patients usually only received their results if they were delivered to a local shop or a family friend. It was with much dismay that I discovered that this was merely a “pass along” system for important and potentially life-altering information. In Nicaragua, Pap smear results usually take about three months. In addition, Nicaragua does not have up to date Pap smear technology. Thus, many of the women brought Pap smear results to the women’s health team that read “inconclusive”. Many reported that they were told to take “the pill” and have their Pap smear repeated. Our women’s health team was not sure what type of pill the women were referring to, whether an oral contraceptive, anti-fungal, antibiotic, or another type of medication. The Shenandoah team provided compensation for Pap smears to be processed with expedited results, which enabled patients to receive their results within 30 days. Shenandoah’s relationship with Nicaragua’s Ministry of Health has been built so that any abnormal Pap smear results are guaranteed to have follow-up at the nearest hospital. Although means of transportation is not provided, the women will receive the follow up at no cost.

If indicated, patients were also provided with educational pieces regarding their conditions including cervical cancer, as many of the Nicaraguan women were unaware of early detection methods and the comprehensive risks of the disease (Centers for Disease Control and Prevention, 2013). The importance of general wellness and doctor’s visits when finances allowed was emphasized, and patients were seen by occupational therapy students and faculty who provided patient education on women’s health hygiene. Each patient was assessed on an individual basis and team members took into account their personal needs, desires and their

environmental setting in order to make an appropriate and sustainable care plan that could be utilized even after the departure of the medical team.

Discussion & Reflection

Before embarking on this trip I appreciated Shenandoah's inclusion of a women's health team; I returned with overwhelming respect and gratitude. Foremost, I was impressed at the team's ability to recognize this problem, understand the statistics, and provide a solution. Although adding a women's health team to a traditional medical mission model requires more logistical and financial planning, Shenandoah's team made this a reality. I was humbled by my experiences with the women of the communities we served and looked forward to learning from them as the trip progressed. Each woman was thankful and attentive to team members including myself, making the impact of our women's health team very real on a personal level.

As I prepared myself to return home, I was frightened by the statistics regarding cervical cancer. In this moment, I realized the purpose and value of our women's health team. Since Nicaragua does have an HPV vaccine, which has proven efficacy in protecting against strains that cause cervical cancer, cervical cancer prevention and screening in Nicaragua revolves around Pap smear technology. It was evident that the women were concerned about their individual risk and were still interested in having a Pap smear completed even though their ability to seek treatment may be difficult. I imagine this is because Nicaraguan women value family life and serve as the true caregivers for their families. Although our team cannot provide the HPV vaccine or physically deliver Pap smear results, we were able to provide fundamental women's health services that the women may not have had access to otherwise. We provided them with the peace of mind of having a Pap smear completed so that they may receive an adequate result. The solution to the women's health problems in Nicaragua is not an easy one

considering the logistical and financial challenges that Nicaragua faces as a country. Our women's health team does not aim to be the solution, but rather a resource for women who wish to seek women's health services within the communities we visit. This is our contribution.

As a PA student on the women's health team I became increasingly aware of the medical inadequacies that women in these communities faced and how these inadequacies impacted their care. My experiences caring for these patients are ones that I will take with me into practice. In the U.S., not every female patient I see will have the financial means or resources to seek the treatment or services that I recommend. Additionally, I may encounter patients who disagree with my recommendations and seek alternative treatments or services that better align with their culture, beliefs, or personal values. In Nicaragua, I became frustrated at times by the true lack of resources for these women which thus impacted their compliance with the medical plans or treatment; by the end of the trip I was just thankful to have served these women in the greatest capacity that I could. As a future provider, I know that I will encounter similar times of frustration in practice. However, I believe that my experiences in Nicaragua will remind me that as a provider I am not here to dictate to patients what medical care or services they should or should not seek. I want to be a resource for my patients, as to give them professional advice but ultimately respect their wishes.

While maintaining my role as PA student, I also reflected on my experiences from the perspective of a woman. I frequently put myself in the position of the women we cared for. Familiar with many of the aspects of women's health care that the country was lacking, I had difficulty imagining experiencing those deficits on a personal level. What I came to realize is that although there is much room for improvement, the women did not focus on what was lacking. They made the most of the resources and services that were available to them. I felt the lack of

resources much more than they did because I am accustomed to having them. Had I always experienced the level of care that is available to the Nicaraguan women, I would not have been so devastated but rather grateful for team efforts like Shenandoah's.

Conclusion

International medical mission trips require an immense amount of planning and insight from the host community. However, teams should not be discouraged by the intensive nature of medical mission planning but rather led by the idea that they have the ability to create something truly sustainable for communities with medical need. If created with a sustainable vision, short-term mission trips can be effective in providing means for the improvement of global health. Furthermore, medical teams should consider the inclusion of women's health services as part of their model. Nicaragua's statistical profile allows it to serve as an excellent example of a country that would benefit from the addition of a women's health team. It is impractical to believe that all patients will be given the level of care that they need with the resources made available by teams. However, thoughtful interventions that incorporate the host community in the planning process can benefit underserved populations similar to the communities mentioned above. The planning of more sustainable medical missions will reinforce the idea that health in communities around the world is in fact a global responsibility rather than an individual interest.

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