

The global health impact of a multidisciplinary medical service trip: lessons from Belize

Terese Geraghty¹, Kelly Nemeč², Paula Jo Belice¹, Tanya Friese¹,
Stelios Mantis¹

Background The Rush University Belize Immersion Experience (RUBIE) aims to engage healthcare professionals in a multidisciplinary team to build a home for a deserving Belizean family. A complimentary purpose of this program is for team members to achieve cultural immersion and a broader understanding of healthcare disparities in Belize.

Methods In December 2015, 10 students and 4 faculty members from Rush University Medical Center traveled to Belize City for six days. Through partnering with Hand in Hand Ministries (HHM) Building for Change program, participants were instructed by HHM staff on how to build the house daily until the sixteen square-foot home was completed. When team members were not working on the house, they volunteered in a local geriatric clinic, participated in discussions with healthcare and social service professionals, and interacted with local residents.

Results Building the house took approximately three days to complete. Participants gained collaborative and social skills from the teamwork and interaction with local residents while building the house. The entire experience provided students the opportunity to learn first-hand about the health issues impacting the citizens of Belize. The primary outcome produced a brand new house for a family living in extreme poverty, giving them a clean and safe shelter. The RUBIE program achieved the educational goal of immersing multidisciplinary health professionals on the challenges Belizean residents face everyday and the impact of public health issues.

Conclusions The RUBIE program immersed healthcare professionals in a new country and culture allowing them to work and learn together and accomplish the goal of providing clean shelter to a family in need. The impact of building one house in Belize may seem small, but this team contributed to the over 300 houses built by HHM's Building for Change program. The sum of clean shelter built over time will have long lasting effects on the Belizean health and economy. Overall, RUBIE team members took home knowledge and motivation to change the state of global health through their individual disciplines. Their collective experiences will continue to guide their efforts toward bringing quality, equitable healthcare to all the citizens of the world.

¹Rush University Medical Center, Chicago, Illinois, USA

²University of Chicago Medicine, Chicago, Illinois, USA

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CORRESPONDENCE TO:

Terese Geraghty | Department of Internal Medicine | Rush University Medical Center | 1735 W. Harrison St. Suite 736d | Chicago, IL 60612 | USA

Terese_Geraghty@rush.edu

Kelly Nemeč | Registered Dietician | University of Chicago Medicine | 5841 S. Maryland Ave Rm. CCD 10470, MC0988 | Chicago, IL 60612 | USA

Kelly.Nemec@uchospitals.edu

“For he who has health has hope; and he who has hope, has everything” (1). Equitable global health is a constant aspiration and remains an on-going challenge for healthcare professionals. Lack of access to affordable, quality healthcare persists worldwide, particularly in developing countries. Global health trips provide opportunities for healthcare professionals including students, faculty, and other community members to gain experience in their fields while exposing them to different cultures and related health care disparities. Universities, colleges, churches, community centers and other organizations have historically traversed the planet with the goal of positively impacting the health and wellness of their fellow global citizens. This article will focus on the Rush University Belize Immersion Experience (RUBIE) partnership with Hand in Hand Ministries Building for Change program. Hand in Hand Ministries (HHM) is a non-denominational faith-based organization that aims to build strong communities and transform lives through cultural immersion, education, housing and healthcare (2). Since 2004, Rush University has partnered with HHM to bring healthcare professionals of all disciplines and experience levels to Belize and provide health-related services, consultation, and education to the local community and its leaders. In addition, a goal of this experience is to help build a home for a family in need. To showcase the student, faculty, and staff efforts during the RUBIE trip and other global health trips and research conducted at the university, Rush hosts an annual Global Health Symposium with juried oral and poster presentations. We were given the opportunity to be a part of the 2015 RUBIE trip and through this article aim to share our experience in Belize.

WHAT IS RUBIE?

The Rush University Belize Immersion Experience is a seven-day interprofessional service experience. The purpose of the trip is to develop students as interdisciplinary team members and expand their understanding of global health issues, including the impact of poverty on health and wellness in daily life. An initiative of a student nursing group on campus, the first trip was organized in 1999 with the Sisters of Charity of Nazareth in Belize City, Belize. The following year, a second trip ensued. After a three-year hiatus, RUBIE found a new partner in HHM. Based in Louisville, Kentucky, HHM has satellite offices in Belize and Nicaragua. Rush University faculty, staff, and students team up with HHM and local healthcare and social service agencies to provide health-related services for residents of Belize City. These health-related services focus on some of the major public health issues facing the country including HIV/AIDs. Local volunteers also assist RUBIE and HHM members in building a house for a family in need. The 2015 RUBIE team consisted of nursing, profusion, nutrition, immunology, health systems management, and health science students at the undergraduate, master's, and doctoral level. The faculty included an occupational therapist, a patient care technician, a nurse practitioner, and a pediatric endocrinologist. All participants underwent a rigorous application and acceptance process through the Rush University Office of Global Health and Faculty Affairs. For about three months leading up to the departure date of December 14, 2015, students, staff, and faculty attended weekly meetings to plan and implement logistics, fundraising, educational programs, and procurement of materials and supplies.

HAND IN HAND MINISTRIES – BUILDING FOR CHANGE

The Hand in Hand Ministries Building for Change program started in 2002 and has provided homes for over 300 families. To qualify for a house, a family must provide proof of land ownership or a lease from the government. The materials for the house and labor are paid for by the trip volunteers who are also responsible for building the house under the watchful guidance of the experienced HHM staff in conjunction with local volunteers and members of the family who will receive the home. The wooden 16 feet by 16 feet structure typically takes 3-4 days to build. Family members receiving the home are required to attend empowerment lectures to learn the skills needed to break the cycle of poverty and achieve sustainability, as well as to assist future beneficiaries of the program in building a new house (2).

AIDS CRISIS IN BELIZE

The 2010 UNAIDS Report on the Global AIDS Epidemic reported Belize has the highest HIV prevalence in Central America and 3rd highest in the Caribbean with an estimated adult prevalence of 2.1% and more than 4,800 people living with HIV (3). Since 2010, there has been slow and steady progress in fighting the ongoing AIDS crisis in Belize. In 2015, there was a greater volume of HIV testing in individuals aged 15-39, but this was largely due to an increase in female tests (64% females and 36% males total tested) (4). The Annual Belize HIV Statistical Report attributes this success to the efforts in antenatal care and prevention of mother to child transmission (5). While the adult prevalence of HIV has decreased from 2.1% in 2010 to 1.5% in 2015, rates of newly diagnosed HIV infections per 10,000 people continue to increase, disproportionately affecting the male population (5). In the 2015 report, there was an increase in rate of newly diagnosed HIV cases in the 20+ years age groups in both sexes, with predominance in the male population after the age of 25. Additionally, the incidence of infection for infants under the age of 1 increased from 2014 to 2015 (5). While breastfeeding is discouraged in HIV-positive mothers, the strong stigma and discrimination associated with having HIV in Belize convinces these mothers to breastfeed so that others will not suspect they have HIV. With regard to treatment, the stigma still applies; HIV-positive Belize citizens will not seek out treatment for fear of being seen by others at the hospital. However, of the total number of individuals reported on antiretroviral agents, 74% (866) were on first line medications and 26% (310) were on second line medications (5). Most newly diagnosed HIV patients are in late-stage infection (indicated by low CD4+ T cell counts), further demonstrating the on-going discrimination experienced by HIV-infected individuals in Belize. The 2015 report showed that men were dying at twice the rate of women and the overall HIV-related death rate was 3.1/10,000 people (5). While much progress has been made in prevention and access to treatment, there is clearly much more work to do.

During the 2015 service trip, we were fortunate to spend time with nurses and outreach workers at an HIV clinic for pediatric clients in Belize City. This “Outreach Center” exclusively treats children infected with and affected by HIV. By not explicitly advertising that they treat patients with HIV, patients are more likely to access their safe, confidential services including testing, treatment, education, and emotional support. This necessity to hide the HIV clinic from the public underscores the severity of the stigma associated with HIV in Belize. The clinic staff works tirelessly to improve the quality and quantity of life for children of all ages affected by HIV. Day-to-day challenges include patient compliance, lack of government funding, and limited access to second and third line highly active anti-retroviral therapy. Of all the challenges, the nurses indicated patient compliance is the most difficult due to the stigma these children face (7). Increased efforts to break the stigma and implement tactical and informative sex education at a prepubescent age remain critical in reducing prevalence, morbidity, and mortality of HIV/AIDS in Belize.

OUR EXPERIENCE IN BELIZE

House building

We built a house for a man afflicted with HIV and his son. This was the 12th house RUBIE constructed in Belize. A home for this family will afford privacy and space, alleviating additional mental health hardships as well as providing running water, clean bathroom facilities, and space for cooking nutritious meals. The house was completed in three days under the expert eyes of HHM staff and local volunteers. As they patiently guided us through the house building steps, they taught us how to use tools and managed the construction site. Family members of the house recipient and residents of the immediate community also pitched in. Once the house was completed, HHM held an emotional house blessing for the family and the building crew. The receiving family, led by an HHM elder, walks through the new house together, blessing each area and giving thanks. It is tradition for the en-

tire group to close the ceremony with Bob Marley's, *Redemption Song*, followed by small housewarming gifts given to the family by the RUBIE group and hugs all around. On this trip, students also bestowed intangible gifts, lending beautiful voices to a round of *Amazing Grace* and thoughtfully orated blessings for the family and the building team's future. Following the ceremony, the receiving family shared hugs, cold sodas, and home cooked desserts with the team. Given the severe hardships they bear, our team was overwhelmed with this display of heartfelt gratitude that transcended our differences and connected us forever in the name of true humanity.

Geriatric clinic and home visits

The RUBIE team was given the opportunity to work in an outpatient clinic serving the geriatric population of Belize City. After orientation with the clinic director and several clients, students and faculty gained a general understanding of the clinic and the types of patients served and participated in several activities supporting the work of the clinic. Many of the patients in the clinic were diagnosed with type 2 diabetes and hypertension. As the clinic lacks a steady supply of insulin, the RUBIE public health nurse and physician conferred with the clinic director and several students to take a sustainable, public health approach for educational sessions. The nutrition student on the team conducted one-on-one nutrition counseling and group nutrition lessons with clinic patients. During one-on-one counseling, the students discovered that elderly individuals in Belize City with diabetes had very little knowledge of foods high in carbohydrates, such as rice and plantains, which are staples in their diet. The group nutrition lesson focused on easy-to-follow healthy eating with alternate foods that were available and relatively affordable. Given the poor water sanitation throughout Belize, citizens purchase juices and sodas instead of purified water. A diet high in carbohydrates and processed sugarcane contribute significantly to the development and progression of type 2 diabetes. Drinking purified water was discussed and options for obtaining affordable clean water were provided. The clinic did not have a registered dietitian on staff, but the patients were receptive to the nutrition lessons and handouts, asking several questions regarding the foods they consume on a daily basis and seeking ways to eat healthier. RUBIE faculty members were also able to take several students on home visits for pediatric clients and even facilitate referrals to specialty care for these young children.

Working in the geriatric clinic and participating in home visits provided students the opportunity to work with patients from a developing country and learn first-hand about healthcare in Belize. Students in healthcare professions can benefit greatly from medical service trips as they have the chance to gain a different and unique perspective when it comes to patient care.

Cultural immersion

Every morning we were greeted by caring Belizean people who were eager to share their culture with us and join us in building a new home for a family in need, while sharing a home-cooked communal meal of traditional breakfast foods. During "free time", we were immersed in the history and culture of Belize facilitated by our HHM partners. The evening after we completed building the house, we were greeted by Garifuna dancers after supper. These talented performers help preserve the traditions of Belizean dance, augmenting their performance with storytelling about Belizean colonization, slavery, language (Creole), and independence. Other local guides took us to breathtaking Mayan temples at Altun Ha where we continued our cultural immersion.

The cultural immersion experience was remarkable and allowed not only for RUBIE participants to learn about the important history and culture of Belize, but also to bond as an interprofessional team. Cultural immersion included in medical service trips gives aspiring as well as seasoned health care professionals a new perspective and appreciation for building lasting relationships despite challenges and differences that may arise.

CONCLUSIONS

In summary, this RUBIE service trip coalesced a team of current and aspiring healthcare professionals to serve public health needs in Belize while engaging them in the beauty of Belizean culture. Team members absorbed new cultural perspectives and participated in multinational teamwork. A suggestion for enhancing the experience for the students as well as providing additional public/community health benefits to the host community is to slate more time for activities like working in the HIV and geriatric clinics and home health visits.

Service trips are available in universities throughout the United States structured under a variety of curriculum. However, a large portion of programs are not multidisciplinary. Programs are often specific to certain disciplines, such as medical students or nursing students. Rush, for example, has other opportunities for students specific to medical and surgical teams to serve communities in Haiti and the Dominican Republic. What makes the RUBIE program unique is the ability to not only introduce a public health component, but to be a part of making a difference by building a house. Participants, through volunteering in clinics *and* building a house, make the social determinant connection to health care status. Because of these differences, the RUBIE program is more far-reaching in its impact for the people living in poverty in Belize.

While this article highlights the HIV/AIDS epidemic in Belize, there are other diseases, such as diabetes, that contribute to the overall public health burden in Belize (6). Additional support from future medical service trips and their local partnering agencies, such as HHM, will positively affect and augment current social and political change being steered by local and national leaders. This combined effort should focus on breaking the discrimination of Belizeans afflicted by HIV, address issues related to diabetes and associated metabolic syndrome, and prioritize nutritional and hygienic education to overcome these public health challenges.

Overall, health professions based service trips provide students, faculty, and staff the opportunity to work as members of an interprofessional team, allowing them to gain new and unique cultural proficiencies for use in their native country in professional practice. Belize has taught us how to work as a team, utilizing and learning from each RUBIE member's skills and perspective. This cultural immersion will continue to impact our lives and the lives of those we serve at home and abroad as we carry in our hearts and minds the unyielding power of hope and perseverance to bring quality, equitable healthcare to all the citizens of the world.

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