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FIFTH ANNUAL

GLOBAL HEALTH

SYMPOSIA • MARCH 6-9, 2017

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Office of Faculty Affairs

Office of Global Health

Office of Student Life and Engagement,
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FIFTH ANNUAL

GLOBAL HEALTH

SYMPOSIA • MARCH 6-9, 2017

EVENTS AT A GLANCE

Lunch will be provided.

MONDAY, MARCH 6
12-1 p.m., 540 AAC

Zika Virus: Global Burden, Implications and Containment
Gordon Trenholme, MD, *the James Lowenstine Professor of Internal Medicine, Rush Medical College*

Zika Virus: Global and Local Antepartum Implications and Management
Guillermo Font, MD, *Assistant Professor, Department of Obstetrics and Gynecology, Rush Medical College*

TUESDAY, MARCH 7
12-1 p.m., 540 AAC

Where There Are No Neurologists: Development of the Zambia Global Neurology Program
Igor Koralnik, MD, *the Jean Schweppe Armour Professor of Neurology, Chairperson of the Department of Neurological Sciences, Rush Medical College*

WEDNESDAY, MARCH 8
12-1 p.m., 540 AAC

Alone and Together: Ebola and Malaria
Gordon Trenholme, MD, *the James Lowenstine Professor of Internal Medicine, Rush Medical College*

THURSDAY, MARCH 9
12-1 p.m., 976 AAC

Horizontal Future for Vertical Global Health Programs: an Ethnographic Examination of Cultural Perceptions, Preventions and Treatments of Malaria in Rural Uganda Following International Eradication Intervention
***Carol Feng,** *M1 Student, Rush Medical College*

Implementation Model of a Portable, Open-Source Electronic Medical Record in a Rural Global Health Clinic
***Devin Mehta, MD**, *Cardiology Fellow, Division of Cardiovascular Medicine, Department of Internal Medicine, Medical College of Wisconsin*

Delivering Care During War Times: the Syrian Medical Crisis
Samer Al-Khundari, MD, *Assistant Professor, Director of Transoral Robotic Surgery, Department of Otorhinolaryngology, Rush Medical College*

THURSDAY, MARCH 9
3-5 p.m., 994 AAC

Poster Session and Award Reception

**The presenting member is listed here. For a complete listing of project members, please see poster abstract.*

FIFTH ANNUAL

GLOBAL HEALTH

SYMPOSIA • MARCH 6-9, 2017

Dear Students, Faculty and Staff,

I am thrilled to welcome you to the fifth annual Global Health Symposia. One of the goals of the Office of Global Health is to expose the Rush community to global experiences and facilitate scholarly work on initiatives that benefit international communities. Many of our students, residents, faculty and staff members devote their time and efforts to make an impact worldwide. This event provides a platform to share the results of their work.

I would like to take this opportunity to thank you for supporting the Office of Faculty Affairs, the Office of Global Health, and our co-sponsor, the Office of Student Life and Engagement in the Division of Student Affairs. We look forward to your continued involvement.

Sincerely,

Susan Chubinskaya, PhD
Associate Provost
Office of Faculty Affairs
Rush University

FIFTH ANNUAL

GLOBAL HEALTH

SYMPOSIA • MARCH 6-9, 2017

Dear Students, Faculty and Staff,

On behalf of the Office of Global Health at Rush, I would like to thank each of you for participating in the fifth annual Global Health Symposia. As our nation faces a crisis of identity, we are faced with individual choices regarding how we want to think, practice and represent ourselves and the Rush community. In preparing for this event, I had the opportunity to meet with many of you, read through your presentations, and learn about the work you do in many parts of the world to further health equity and empowerment. It was inspirational for me to see that the values of inclusivity, selflessness and partnerships are alive and well. We are delighted to be able to provide you a forum to share your ideas and inspire each other.

We look forward to another great year of service, learning and scholarship.

In solidarity,

Stephanie Crane, MD
Director
Office of Global Health
Rush University

MONDAY, MARCH 6, 2017

12-1 p.m. • 540 AAC



Zika Virus: Global Burden, Implications and Containment

Gordon Trenholme, MD

The James Lowenstine Professor of Internal Medicine, Rush Medical College

Dr. Trenholme is the James Lowenstine Professor of Internal Medicine and director of the Section of Infectious Diseases at Rush. He graduated from Marquette School of Medicine. He completed his internal medicine residency at the University of Chicago and his infectious diseases fellowship at Rush. His military service was at Walter Reed Army Institute of Research. He has published extensively on malaria and is an expert on clinical tropical medicine.

Zika Virus: Global and Local Antepartum Implications and Management

Guillermo Font, MD

Assistant Professor, Department of Obstetrics and Gynecology, Rush Medical College

Dr. Font is an obstetrician-gynecologist in Chicago with more than 20 years in practice. He is affiliated with multiple hospitals in the area, including Rush University Medical Center, St. James Hospital, St. Joseph Medical Center and MetroSouth Medical Center.

Dr. Font received his medical degree from Complutense University of Madrid. He completed his obstetrics and gynecology residency at the University of Illinois at Chicago and his family practice residency at St. Mary of Nazareth in Chicago. He also completed a maternal-fetal medicine fellowship at the University of Illinois at Chicago. Dr. Font has more than 10 publications, as well as numerous abstracts and presentations.

TUESDAY, MARCH 7, 2017

12-1 p.m. • 540 AAC



Where There Are No Neurologists: Development of the Zambia Global Neurology Program

Igor Koralnik, MD

The Jean Schweppe Armour Professor of Neurology, Chairperson of the Department of Neurological Sciences, Rush Medical College

An accomplished clinician and researcher, Dr. Koralnik has been named chairperson of the Department of Neurological Sciences at Rush. In his previous role, Dr. Koralnik was chief of the Division of Neuro-Immunology at Beth Israel Deaconess Medical Center in Boston and professor of neurology at Harvard Medical School. He also served as director of the HIV/Neurology Center, an outpatient clinic, at Beth Israel Deaconess Medical Center.

Dr. Koralnik has created a neuroinfectious disease section at Rush where he and his fellows see HIV-infected patients with neurologic problems, and patients with infectious or inflammatory disease of the nervous system in a weekly outpatient clinic.

Dr. Koralnik's laboratory focuses on the investigation of the polyomavirus JC (JCV), the etiologic agent of progressive multifocal leukoencephalopathy (PML). His laboratory has characterized the cellular immune response against JCV in patients with PML, and demonstrated that a strong immune response against this virus is associated with a favorable clinical outcome. He is now exploring novel immunotherapies for PML.

Dr. Koralnik and his colleagues have shown that JCV does not only infect glial cells in the brain but also neurons. They have identified three novel clinical entities distinct from PML, JCV-granule cell neuronopathy, JCV-encephalopathy, and JCV-meningitis caused by JCV deletion variants. The Koralnik laboratory also studies radiological correlates of inflammation and demyelination in the brains of patients with PML using MRI, MR spectroscopy and arterial spin labeling. They are also studying the mechanisms of epileptogenesis in PML.

The Koralnik laboratory is also investigating the determinants of latency and reactivation of JCV in patients with multiple sclerosis treated with natalizumab or dimethylfumarate. Finally, Dr. Koralnik has developed a global neurology research program in Lusaka, Zambia, a country severely affected by the AIDS epidemic.

Dr. Koralnik has published more than 160 peer-reviewed articles, reviews and book chapters on the topics of JCV pathogenesis and neurological complications of HIV. He is a member of numerous medical societies, including the American Society for Clinical Investigation, and he is the president of the International Society for NeuroVirology.

WEDNESDAY, MARCH 8, 2017

12-1 p.m. • 540 AAC



Alone and Together: Ebola and Malaria

Gordon Trenholme, MD

The James Lowenstine Professor of Internal Medicine, Rush Medical College

THURSDAY, MARCH 9, 2017

12-12:20 p.m. • 976 AAC



Horizontal Future for Vertical Global Health Programs: an Ethnographic Examination of Cultural Perceptions, Preventions and Treatments of Malaria in Rural Uganda Following International Eradication Intervention

Carol Feng[1], Marilyn Janisch[2], Victoria Zapater-Charrette, Neil Thivalapill[3], Noelle Sullivan, PhD[2]

[1]Rush Medical College, [2]Northwestern University, [3]Columbia University

Despite recent government distribution of insecticide-treated nets (ITNs), medical staff members at a non-governmental organization (NGO) in Namugoga, Uganda, noticed a significant number of malaria cases in 2014 and grew concerned for the health of their community. Our partners at the NGO asked our research team to investigate.

The objectives were to investigate cultural perceptions of malaria and to elucidate existing preventive measures and treatments used within and around Namugoga. This ethnographic study also serves as a method to evaluate the impact of recent malaria eradication initiatives. Additionally, our partner NGO intends on using the results to improve health services and address malaria incidence and mortality in rural Uganda.

In 2015, we conducted semi-structured interviews with 80 adult participants in the Wakiso district of Uganda. Participants were recruited via snowball sampling through our partner NGO and the government-employed Village Health Team members. We obtained verbal consent from all participants. Our project was approved by both the Northwestern University Institutional Review Board and the Uganda National Council for Science and Technology.

Preliminary data analysis revealed that nearly all participants correctly identified malarial symptoms and understood the cause of malaria. Notably, both owning and using ITNs was common in this area of Uganda. However, a large majority of participants still perceived the incidence of malaria as high, with most participants having experienced malaria within their families at least once in the past year. Affording and accessing reliable malaria treatment was difficult for nearly all participants.

While many malaria eradication programs favor ITNs as the primary method to control malaria, our research suggests that proper and widespread ITN usage alone is not sufficient to combat malaria effectively. When it comes to malaria, treatment is as crucial as prevention. Nearly all of our participants' experiences with malaria reveal that the persistent problems of high morbidity and mortality stem not from local behavior, knowledge or compliance, but rather unreliable and unaffordable access to care. By utilizing ethnography to understand the lived experiences of those we aim to serve, this study recommends that vertical global health initiatives, such as malaria eradication, should also consider strengthening health systems horizontally.

Funding: John & Martha Mabie Public Health Research Fellowship, Northwestern University International Program Development

GLOBAL HEALTH SYMPOSIA

THURSDAY, MARCH 9, 2017

12:20-12:40 p.m. • 976 AAC



Implementation Model of a Portable, Open-Source Electronic Medical Record in a Rural Global Health Clinic

Krzysztof Garbarz, DNP[1,2], Stephanie Crane, MD[1], Jennifer Towbin, MD[1], Babs Waldman, MD[1], Bobby Bacci[2,3], Selah Ben-Haim[2,3], Ryan Esslinger[2], Kevin Mehta[2], Michael Widlansky, MD[4], Devin Mehta, MD[2,4]

[1]Office of Global Health, Rush University, [2]Global Health Coalition, [3]Prominence Advisors, [4]Division of Cardiovascular Medicine, Department of Internal Medicine, Medical College of Wisconsin

An electronic medical record enables collection, communication and analysis of health data in various clinical settings, including hospitals and health clinics. Implementation of electronic medical records has traditionally been challenging in resource-limited environments due to variable access to electricity, lack of information technology infrastructure, the high cost of hardware and software, the need for trained implementers, and maintenance requirements such as software updating and troubleshooting.

The purpose was to implement a portable open-source electronic medical record in a Haitian clinic without access to internet and electricity.

A needs assessment of the health clinic in Haiti was performed and the results guided hardware and software selection for the electronic medical record implementation model. An open-source software application, Bahmni, was selected as the electronic medical record and Tableau, a business intelligence software platform, was utilized for health data analytics. Hardware used in the implementation model included a portable AC power supply, wireless network router, uninterrupted power supply, and laptop computers. Using a wireless network router, a local area network was created in the health clinic for communication between workstations.

A model of a portable, open-source electronic medical record was successfully deployed in a Haitian health clinic during a one-week period. All health data was entered in the electronic medical record, including the transition of previous paper records. Patient health information was extracted from the electronic medical record into Tableau, and a custom data analytics dashboard was created allowing clinicians to interact with the data collected.

Implementation of an electronic medical record is feasible in a health clinic with limited resources and information technology infrastructure. Various challenges observed in the field during implementation, such as barriers to data back-up and a software learning curve, provide valuable insights for an improved model for implementation of a portable, open-source electronic medical record in a global health clinic. Utilization of an electronic medical record in a global health clinic may improve accuracy of medical records, enable efficient health care delivery, and provide a platform for health data analytics and population health management.

Funding: Global Health Coalition, a 501(c)3 non-profit organization



Delivering Care During War Times: the Syrian Medical Crisis

Samer Al-Khundari, MD
Assistant Professor, Director of Transoral Robotic Surgery, Department of Otorhinolaryngology, Rush Medical College

The Syrian crisis is one of the largest humanitarian crises of modern times; since 2011, more than 1 million people have been severely injured. This presentation aims to describe the current status of providing medical care to more than 10 million displaced Syrians within Syria and in its surrounding countries. This will be a case-based discussion. Challenges of this landscape and strategies utilized to overcome them will also be presented.

This presentation will focus on Dr. Al-Khundari's experiences providing otolaryngology medical and surgical care to refugees near the Syrian border. He will present advanced facial reconstruction cases, including total nasal reconstruction and microvascular reconstructive surgery to the victims with severe and complex facial injuries secondary to blasts and chemical weapons. He will also describe challenges to delivering care for neoplastic lesions in this changing landscape.

Through cases, Dr. Al-Khundari will impart lessons learned from the planning process for this type of mission work in war regions, surgical challenges and success, and postoperative care and follow-up for patients living within the Syrian crisis.

Funding: none

POSTER SESSION AND AWARD RECEPTION



1. Vaccine Awareness in the Community of Canaan, Haiti

Yasmin N. Abedin[1], Veronica M. Esmero, DO[2], Joseph P. Musto, MD[2], Jennifer Towbin, MD[2]
[1]Rush Medical College, [2]Rush University Medical Center

During the earthquake that struck Haiti in January 2010, all health services were interrupted. Since then, various health organizations have been delivering health care to Haiti, including vaccinations.

Recently, Rush University Medical Center helped build the Jerusalem Clinic in Canaan, Haiti, with the hopes of delivering sustainable care. Although there is national data from the World Health Organization regarding vaccination practices in Haiti, there is limited information regarding Canaan. Therefore, a needs assessment was conducted at the Jerusalem Clinic in order to better understand Canaan's vaccine knowledge.

A thirteen-question survey was created and interpreted in French. The survey was delivered at the Jerusalem Clinic in Canaan from Aug. 1 through 5, 2016. Children and patients younger than 16 years were excluded from the survey. Data was entered into a Microsoft Excel spreadsheet for analysis and interpretation.

A total of 174 participant surveys were collected; 89.1% of the participants were female and 10.9% were male. The average age of participants was 39 years. Of note, the majority of participants (93.7%) had knowledge of the tetanus vaccine and only 33.9% had knowledge of the HPV vaccine. Regarding the appropriate time to receive a vaccine, 77.9% stated that their physician notified them and 27.0% stated that a community health worker notified them. The majority of participants (22.4%) attributed barriers to travel distance and 17.8% attributed barriers to cost. In the survey, 71.8% stated that their physician kept records of vaccines and 94.3% stated that records were on paper. Additionally, 92.0% of the participants received at least one vaccine and 97.7% had openness to receiving vaccines.

Based on this needs assessment, it was found that there was variable knowledge about vaccines with participants being most familiar with the tetanus vaccine and least familiar with the HPV vaccine. Physicians and community workers need to remind patients of vaccine schedules and must educate patients about vaccine importance. Further studies will investigate which vaccines patients received and costs pertaining to vaccines. Additionally, the Jerusalem Clinic awaits approval from the Haitian Ministry of Health to become a vaccination center and also adopt an electronic medical records system.

Funding: none



2. Understanding Barriers to Practicing Kangaroo Mother Care at Home After Hospital Discharge in Delhi, India

Rebecca Dawar, MPH[1], Sushma Nangia, MBBS, MD, DM[2], Anu Thukral, MBBS, MD, DM[2], Babu S. Madarkar, MBBS, MD[2], Rajesh Khanna, MBBS, MD[3]

[1]Preventive Medicine, Rush University Medical Center, Chicago, [2]Neonatology, Lady Hardinge Medical College and Kalawati Saran Children's Hospital, New Delhi, [3]Save the Children, Saving Newborn Lives Initiative India, New Delhi

India accounts for more than one quarter of the global burden of neonatal deaths and 40% of low birth weight babies. Kangaroo mother care (KMC) is a low-cost method of care for low birth weight (LBW) infants. It promotes skin-to-skin contact between mother and infant and exclusive breastfeeding. Evidence supports use of KMC in LBW infants as an alternative to conventional care in resource-limited settings.

The purpose of this study was to examine the feasibility and benefits of continuing KMC at home and to identify socioeconomic and cultural barriers to KMC practice at home.

Singleton stable infant-mother dyads were recruited from the KMC ward of a government operated tertiary care hospital serving vulnerable population in Delhi, India. Baseline, infant anthropometric measurements and qualitative data were collected at four different time points. Questionnaires assessed the mother's acceptability of KMC practice in hospital and home; barriers to practicing KMC at home; and reasons for discontinuation. Interviews were recorded, translated and transcribed into English.

Birthweight and gestation of 60 infants were 1,361±329 gms (mean+SD) and 31 (29–34) weeks (Median(IQR)) and weight at KMC initiation at 14+8 days was 1,404±233 gms. Mothers practiced KMC for 4.3+2.2 hrs in the hospital, and four weeks after discharge it was 3.3+2.7 hrs. The majority of mothers continued to practice for five days per week for variable duration. Although the duration of KMC decreased, weight gain at four weeks post discharge was 12.5 ± 5.2 gm/kg/day with a 71% exclusive breastfeeding rate. Major thematic barriers to practicing KMC at home included the following: signs of discomfort from baby, discomfort of mother, household chores, and lack of privacy and motivation. Facilitators included mother's motivation, strong familial support (living in joint family), and KMC practice by family members.

KMC may improve weight gain and exclusive breastfeeding rates in neonates less than 2,000 gms at eight weeks of life. Barriers and solutions identified in this study may be relevant for improving KMC programs in underserved and urban populations within India and other countries.

Funding: none

GLOBAL HEALTH SYMPOSIA
THURSDAY, MARCH 9, 2017
3-5 p.m. • 994 AAC
POSTER SESSION AND AWARD RECEPTION



3. Promoting Transfusion Safety Through an Online Specialist in Blood Banking Certificate Program

Laurie Gillard, MS, MT(ASCP)SBB

Department of Medical Laboratory Science, College of Health Sciences

The Rush University Specialist in Blood Bank (SBB) Certificate Program was developed to meet the needs of experienced medical laboratory scientists seeking advanced knowledge of immunohematology and its related disciplines. Initially it began as a program for laboratory professionals in the United States but has grown to also include students from Canada, Jamaica and Trinidad.

Transfusion safety is the heart of the program. The curriculum provides students with comprehensive instruction in blood group serology, molecular biology, antibody identification, blood procurement, blood manufacturing, transfusion medicine, and laboratory management. The SBB courses consist of both online lecture/discussion and clinical experience components. Clinical experiences are frequently located at blood centers and hospitals near the student's home.

There are a total of 11 accredited (by the Commission on Accreditation of Allied Health Education Programs) SBB programs in the United States, with a total of 99 student positions. Seventy-nine positions are offered through online programs. The Rush University SBB program can accept up to 25 students, making Rush University one of the largest, if not the largest, programs in the country. In promoting global donor and transfusion safety, international students have completed the program as well.

The Rush program began in 2007, and the Masters of Science in clinical laboratory management (MS in CLM) was added in 2010. Another feature making Rush University's program highly sought after is that Rush is one of three SBB programs that are offered as graduate level education, which can be applied to a Master in Science degree. Since the inception of the program, 112 SBB certificates have been awarded. Furthermore, Rush University is the only program of its kind in the United States to offer an MS in CLM. Currently there are 51 SBB students enrolled (part time and full time) in the MS in CLM program, and 34 students have graduated.

The success of the Rush University Specialist in Blood Bank (SBB) Certificate Program is built on the quality and accessibility of online education to reach students regardless of their geographic locations.

Funding: Rush University



4. Proprotein-Convertase Subtilisin-Kexin Type 9 (PCSK9) and Low Density Lipoprotein Receptor (LDLR) Genotype Distribution and Association with Statins in Filipino-American Women

Joanne Michelle D. Gomez, MD[1], Irma B. Ancheta, PhD[2], Annabelle S. Volgman, MD[1], Cynthia A. Battie, PhD[3], Rene Flores, PhD[4], Latha Palaniappan, MD, MS[5]
[1]Rush University Medical Center, [2]University of Florida, Jacksonville, [3]University of North Florida, [4]University of Texas Health Science Center at Houston, [5]Stanford University School of Medicine

Filipino-American women (FAW) have a high incidence of coronary heart disease (CHD) and high LDL cholesterol (LDL-C). The distribution of rs11206510 proprotein-convertase subtilisin-kexin type 9 (PCSK9) and rs1122608 low density lipoprotein receptor (LDLR) single nucleotide polymorphisms (SNPs), known for genetic influences on LDL-C, is unknown in this population.

The aim was to examine the genetic determinants of LDL-C, their association with LDL-C, and the effects of statins on LDL-C given the genetic determinants in this high-risk population.

Data were obtained from the FAW Cardiovascular Study (N=338) of women ages 40 to 65 years old from four major U.S. cities between the years 2011 to 2013. Allele frequency calculation, LDL-C determination, and lipid analysis were done using Roche modular methodology. Luminex-oligonucleotide ligation assay procedure was used to determine genotype.

The distribution of rs11206510 PCSK9 genotypes was 88% thymine-thymine (TT), 11% thymine-cytosine (TC) and 1% cytosine-cytosine (CC), and the rs1122608 LDLR genotype distribution was 83% guanine-guanine (GG), 17% guanine-thymine (GT) and 0% TT. These SNPs showed no effect on LDL-C. Mean LDL-C levels were significantly lower in participants on statins in the homogenous genotypes but not in heterogeneous genotypes. FAW on statin medications had lower LDL levels regardless of their PCSK9 or LDLR genotypes.

Most FAW had a gain of function allele of PCSK9 and LDLR, similar to previously studied ethnic populations. The predominance of gain of function alleles in the FAW cohort may account for the high percent of subjects with elevated LDL-C. In a population at high risk for hypercholesterolemia, optimal treatment with statins or PCSK9 inhibitors should be considered where appropriate.

Partial Funding: University of North Florida Dean Professorship Grant

GLOBAL HEALTH SYMPOSIA
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POSTER SESSION AND AWARD RECEPTION



5. Spreading Awareness: Characterization of Health Care in the U.S. Virgin Islands

Ryan Hagens
Rush Medical College

While the U.S. territories are home to more than 4.1 million people, they are frequently overlooked from a policy perspective, especially in regards to health care reform. Not only does the quality of health care in the U.S. Virgin Islands (USVI) fall below the radar, it is poorly characterized. Without accurate data describing the current status of health and health care in the USVI, it is difficult to compare the quality, access, and impact of reform between the states and the territories.

The aims of this study were to characterize the quality of health care in the USVI, identifying challenges and perceptions among their citizens, and to illustrate the high need for policy reform.

The investigator gained firsthand exposure to the health care system on St. Croix, USVI, to characterize the quality of health care, the barriers to access experienced by residents, and the challenges facing health care providers to deliver adequate care. Subsequently, the investigator applied those subjective experiences in the broader context of published literature to gain further understanding, appreciation and awareness of the health care challenges faced by Virgin Islanders.

Through working directly with the health care providers at Frederiksted Health Care, Inc. on St. Croix, the investigator learned about the challenges faced by both patients and providers in achieving quality health care. The most commonly reported challenges facing citizens included lack of affordable health insurance, cultural barriers, and concerns about privacy. Challenges facing providers included inadequate funding, public health education, and shortage of long-term providers.

With the firsthand knowledge of the challenges facing residents of the USVI, coupled with the stark health care disparities between the mainland states and the territories as characterized by recent literature, the investigator hopes to raise awareness for a population that has an often unnoticed voice in Washington. While the residents of U.S. territories do not share the benefits of statehood, the Federal government should ensure that the quality of health care is at the same level as that of the mainland states.

Funding: none



6. Bringing Respiratory Care Best Practices to China

Jie Li, RRT-ACCS, NPS[1], Constance Mussa, PhD, RRT-NPS[1], Zongan Liang, MD[2], Yajuan Zong, RN[3]
[1]Department of Cardiopulmonary Sciences, Division of Respiratory Care, Rush University Medical Center,
[2]Department of Pulmonary and Critical Care Medicine, West China University Medical Center,
[3]Intensive Care Unit, Second Yixing Hospital, Wuxi, China

Respiratory care as a profession has been established in the United States for more than 60 years. However, it is still in the embryonic stage of development in many other countries in Europe, the Middle East, Africa and East Asia. The collaboration of respiratory therapists in the United States with clinicians who provide respiratory care in other countries advances the mission of the International Council for Respiratory Care, namely, the practice of safe, effective and ethical respiratory care to facilitate high-quality respiratory care outcomes worldwide.

The study's aim was to share respiratory care best practices currently employed in the United States with clinicians in China.

A working group comprised of physicians, nurses and respiratory therapists from several health care organizations in China was convened to perform an educational needs assessment relevant to the care of patients with cardiopulmonary diseases. Discussions of the working group allowed participants to identify challenges encountered in caring for these patients, as well as opportunities to improve the care provided. The nominal group technique was used to help the working group set priorities regarding the educational needs of the respiratory care community, and to reach a consensus regarding continuing education programs.

As a result of the knowledge gaps and opportunities for improvement in the provision of safe, effective respiratory care identified by the working group, respiratory care professionals from the United States were invited to participate in continuing education initiatives in various formats and venues in China.

Medical professionals in China are increasingly recognizing the need to educate professionals to specifically focus on the respiratory care of patients with cardiopulmonary diseases. Moreover, they acknowledge the importance of collaborating with respiratory therapists from the United States to facilitate the provision of evidence-based respiratory care in China.

Funding: none

GLOBAL HEALTH SYMPOSIA
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POSTER SESSION AND AWARD RECEPTION



7. Development of a Cardiopulmonary Department in the Middle East Using Scrum Methodology

Constance Mussa, PhD
Department of Cardiopulmonary Sciences, College of Health Sciences, Rush University

The development of complex products and systems is a challenging endeavor that requires careful planning and selection of a methodology that is mature, well-defined and appropriate. Critical infrastructure projects, such as those related to aviation, health care and the military, are especially challenging as the consequences of project failure may be catastrophic. In the health care environment, for example, the implementation of new clinical services, remodeling of existing facilities, or construction of additional physical space, requires an approach that is compatible with the complexities inherent in providing safe, efficient and effective patient care.

The aim was to develop an infrastructure for the activation of a cardiopulmonary department in support of a new academic medical center — a Greenfield project in the Middle East.

Scrum methodology, borrowed from the software engineering discipline, was employed to develop the cardiopulmonary department's infrastructure as this methodology provides a framework for collaboration that was ideal for the cross-functional teamwork required. Specific deliverables (e.g., departmental staffing plans and job descriptions) were expected during time-boxed events called sprints. Weekly scrums, which are short meetings facilitated by the scrum master for the cardiopulmonary department (a senior level health care consultant), consisted of team members reporting what was accomplished since the last scrum meeting, what the team planned to accomplish for the next scrum meeting, and challenges the team might face before the next scrum meeting.

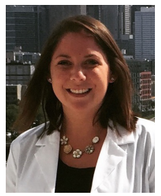
At the end of a 12-month period, managers of the various services within the cardiopulmonary department (respiratory care, invasive and noninvasive cardiac services, pulmonary function lab, neurodiagnostics, and sleep labs) had accomplished the following: created activation plans, staffing plans and job descriptions; recruited, interviewed and selected key personnel; developed policies and procedures; procured equipment; performed multiple benchmark room inspections of the medical center under construction; participated in the customization of a commercial electronic health record (EHR) to support patient care; and started data mapping to facilitate integration of various medical devices with the EHR.

Scrum methodology facilitates not only the development of complex software but also the development of complex health care systems.

Funding: none


E.A. Rotert


E.L. Dygas


S.A. Coon

8. Investing in Sustainable Shelter for Compounding Health — Paying it Forward

J.A. Chin, N.S. Coleman, S.A. Coon, E.L. Dygas, C.D. Flora, T.R. Friese, K. Janko, V.L. Nelson, J.A. O'Toole, M.I. Partain, H. Ravndal, E.A. Rotert, E.A. Torres, C. Villa
Rush University

The Rush University Belize Immersion Experience (RUBIE), an interdisciplinary, international service-learning experience, began as an initiative of the Student Nursing Association in 1991. In 2004, RUBIE partnered with Hand-in-Hand Ministries to coordinate an annual week-long service trip for Rush students to Belize.

The trip has the mission of improving global health by providing families with the basic need of shelter, sharing best practices and medical supplies, and exposing students to alternative lifestyles and medical practice through cultural immersion. The main focus of each trip centers around providing a home for a family, creating a foundation on which to build a better life.

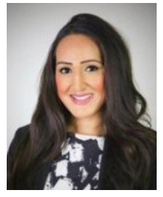
Ten students and four staff members are selected each fall from a pool of applicants. The selected team raises money for building and medical supplies and then spends a week building a home while immersing themselves in the culture of Belize. Construction of the home is guided and supervised by local Hand-in-Hand Ministries partners. Among the hand-in-hand partners are previous home recipients, who help teach requisite skills to complete a home. Before receiving a home, Hand-in-Hand Ministries requires recipients to participate in an educational life-skills workshop that supports family structure as well as assists on build sites before, during and after receiving their home, fostering community within the city.

RUBIE has provided homes for 13 families through Hand-in-Hand Ministries' Building for Change program, donating tens of thousands of dollars' worth of housing and medical supplies for their HIV/AIDS outreach program, and impacting hundreds of lives. As of the end of 2016, Hand-in-Hand Ministries has facilitated the provision of 310 homes. The successful partnership between Rush University and Hand-in-Hand Ministries (Belize) has directly contributed to the fulfillment of Maslow's hierarchy of needs for recipients by providing a sustainable living space.

The fulfillment of this basic need enables recipients to direct physical, mental and monetary resources previously drained by this need to be reallocated toward other needs, such as physical nourishment, gainful employment, and educational opportunities to further improve their lives.

Funding: All funding for this year's trip was provided by students and staff, private donations (each less than $250), and the Rush Office of Global Health. In past years, fundraising auctions were held for friends and family of the students and the office, with auction items donated by local businesses. There was no funding provided for the specific intent of the abstract or research publication.

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9. The Return on Investment of International Patients to American Hospitals

Tricia Johnson[1], Andrew Garman[1,2], Samuel Hohmann[3], Paola Cieslak[1], Ishani Patel[1], Jarrett Fowler[4], Shabnam Daneshgar[4]
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Medical travel has increased across the world in recent years, and there has been increased attention on international patients by U.S. hospitals. International patients are a small but important group of patients for some U.S. hospitals for several reasons. Certain hospitals may also have a niche or specialty that may attract additional international patients to that hospital. International patients are attracted to the medical care provided by U.S. hospitals due to their investment in health care infrastructure, focus on quality and patient safety, and clinical outcomes. A myriad of hospitals across the United States offer medical care to international patients, but the return on investment (ROI) of these patients to the hospitals and the United States health care system collectively is unknown.

Quantifying the economic benefit of international programs allows hospital leaders to understand the importance from a business perspective. By understanding the economic benefits, costs and ROI that international programs generate, large or established programs will be able to provide relevant information to newer and smaller programs to enhance their current structure or aid hospitals in developing a strong international program. International patients generally generate more revenue than domestic patients for similar treatments and travel, particularly for more complex and expensive procedures as collection rates tend to be higher. In addition, international patients are more likely to pay for their care in advance through self-pay, promising revenue for the hospital.

This cross-sectional, retrospective study will evaluate the association between hospital investment in international programs and their ROI and increased patient revenue. The study's hypothesis is that larger and established international programs yield higher patient revenues. International programs will also be analyzed by program size and by program maturity, which may contribute to increased gross international patient revenues. This study will examine the costs that hospitals incur to develop international programs and the resulting benefits. The association tests will be performed on a sample of 55 hospitals that were members of the US Cooperative for International Patient Programs (USCIPP) in a series of descriptive and bivariate statistical analyses with cost and benefit variables. This study will evaluate whether any economies of scale exist, understand the organizational trade-offs, and provide objective information for making the business case to hospital leadership.

Funding: Department of Health Systems Management, College of Health Sciences, Rush University



10. Interpreter Service Utilization — a Needs Assessment

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The Rush Global Health Program provides primary care to an urban community in Haiti and the Dominican Republic, and it relies heavily on interpreter services. Currently, no formal training is offered to interpreters or to clinical staff working with the program. In order to better understand the value of interpreter services and to improve overall quality of care, a questionnaire was created and administered to clinical and interpreter staff to identify areas of need for both the interpreters and the clinical staff.

This work had the following aims: to identify the benefits and challenges of the interpreter and clinician experience; to identify gaps in clinician competency in the use of interpreter services; and to identify gaps in interpreter competency in managing a clinical encounter.

A survey was developed to assess the experience of the clinical staff and interpreters. The survey was electronically administered to clinical staff that traveled to Haiti and the Dominican Republic from July to October 2016. The survey was translated into Creole and administered to all Haitian interpreter staff that had provided services on two or more primary care trips.

The survey response rate from clinical staff was 44% (11/25 surveys). Seven interpreters completed the survey. Although six of the 11 clinicians had not had any formal interpreter training, the same number expected interpreters to be professionally trained. The clinicians noted that interpreters were helpful in breaking cultural barriers and allowing for clinical encounters to occur. Challenges that arose with interpreters included the following: separate conversations, indirect translation, and poor eye contact. The interpreters identified professionalism, speaking in ways the interpreters could understand, and taking time in patient counseling as important for successful patient encounters. Both clinical staff and interpreters scored low in identifying core interpreter competencies.

This survey helped highlight that clinical and interpreter staff bring different qualities to a patient encounter, that both are highly valued, and that challenges exist. Since both groups demonstrated knowledge gaps in the clinical vignette, the next steps will be to assess how this translates to the patient experience and develop a formal training program to optimize interpreter services.

Funding: none

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11. Infection and Emergency: Four Weeks of Global Health at Cho Ray Hospital, Vietnam

Hieu Pham
Rush Medical College

Cho Ray Hospital is the largest referral hospital in Southern Vietnam, caring for 2,000 to 3,000 patients daily. It has one of the busiest emergency departments in the country, with daily admissions of approximately 300 to 400 patients. It is the referral center for many provinces in Vietnam, taking in the most critical cases. Cho Ray Hospital also boasts a dedicated Department of Infectious and Tropical Disease with more than an 80-bed capacity, including a 10-bed intensive care unit (ICU) and a 14-bed ICU step down. It serves as a site of training for many Vietnamese doctors, as well as medical students from other countries.

This presentation has the following aims: to learn about common infections and conditions that present to the emergency department and the infectious and tropical disease ward; and to understand medical student learning from the global health lens, and Vietnamese medical training and practice.

Information came from the following sources: clinical experience and observation, informal qualitative data via discussion with Vietnamese doctors, and literature review via the WHO Vietnam database and the Vietnamese health database.

Conditions seen in the Cho Ray emergency department included motor vehicle accidents, traumatic brain injury, electrical burns, internal brain hemorrhage, myocardial infections and stroke. Common infections seen in the infectious disease ward included CNS infections (2/2 TB, bacterial, cryptococcal, VZV and HSV), strongyloides, bacterial infections, dengue fever, malaria, melioidosis, snake bites, TEN/SJS, bacteremia (2/2 streptococcal suis) and organophosphate poisoning.

Vietnam is a country undergoing an epidemiological transition, experiencing both the burden of communicable and noncommunicable diseases. Many foreign students come to Cho Ray Hospital to learn about tropical diseases, as well as trauma. They may benefit from medical cross cultural exchange, including learning about different disease pathologies and resource allocation in a resource-limited country like Vietnam, appreciating the health care system in a developing country, and enhancing technical and procedural competency in a supervised environment.

Funding: Office of Global Health, Rush University



12. Pathways to Care for Women With Obstetric Fistula in Rural Uganda

Emma Richardson
Rush Medical College

Obstetric fistula is a maternal morbidity that predominantly arises from obstructed labor and affects 50,000 to 100,000 women annually. It is characterized by an abnormal connection between the vagina and bladder or rectum, leading to urinary incontinence, social stigmatization, and many other sequelae. Although it is preventable and curable, an estimated 80% of affected women never seek treatment.

This project aimed to identify factors that facilitated and delayed access to surgical care.

The Institutional Review Board at the University of Notre Dame approved this protocol, and research was conducted in partnership with a local non-governmental organization, Uganda Village Project (UVP). Twenty-three women participated in semi-structured interviews following obstetric fistula repair surgeries at Kamuli Mission Hospital (KMH) in Uganda. A translator obtained informed consent. Interviews were recorded, transcribed, and qualitatively analyzed using open coding methods.

Nineteen participants developed fistula following obstructed labor, with labor lasting 1.4 days on average, and associated with 84% perinatal infant mortality. On average, women accessed surgical care 5.75 years after fistula development. Women reported financial (n=13), social (n=11) and knowledge (n=10) barriers. Twelve women reported repeated denial of care, collectively reporting 17 unsuccessful attempts to access care. Access was facilitated by social support (n=16), radio announcements advertising UVP and KMH's services (n=9), word of mouth (n=7), and UVP staff outreach to locate affected women (n=5).

Although all participants developed obstetric fistula at health care institutions, only one received information regarding fistula at the time of care. UVP facilitates surgical care at no cost during fistula repair camps at KMH, but insufficient knowledge of these services delays care. UVP partnership with rural health centers could expedite care by providing information about UVP's services. Other established institutions could reduce knowledge-based barriers and social stigma through prenatal educational initiatives and community-level education.

Funding: Undergraduate Research Opportunity Program, Institute for Scholarship in the Liberal Arts, College of Arts and Letters; Center for Undergraduate Scholarly Engagement; College of Science, University of Notre Dame

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13. Awareness and Attitudes Towards Vasectomy in Rural Dominican Republic

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Tubal ligation is the most common form of permanent contraception worldwide. However, vasectomy is an office-based procedure associated with significantly fewer risks. The Rush Global Health Program has sent urology and gynecology focused missions to Peralta, Dominican Republic since 2005 to provide specialty care to the underserved. Over this period of time, there have been hundreds of requests for tubal ligations, but never a request for vasectomy.

The purpose of this study was to evaluate awareness and attitudes towards vasectomy in this population to better understand this discrepancy.

A 21-question survey, based on a previously validated questionnaire, was used to assess demographics, knowledge and opinions about vasectomy. This survey was offered to the 61 patients who presented to the preoperative clinic in April 2016. Twenty-nine patients (48% response rate) completed the survey. Eighteen (62%) surveys were completed by women, and 11 (38%) were completed by men. The majority (59%) of patients were 20 to 39 years old. Of those surveyed, 41% were Protestant and 38% were Catholic. Sixty nine percent of respondents had three or more children.

In the surveyed participants, 45% had never heard of vasectomy. Of those who identified knowledge of vasectomy, none believed that this procedure could be done in an office setting. Seventy seven percent of respondents were worried about possible complications, recovery time, and particularly absence from work. Sixty one percent of respondents were worried about impotence after vasectomy and believed that the procedure decreased masculinity. Forty six percent had religious objections to vasectomy. Unexpectedly, 74% of those surveyed would consider undergoing vasectomy. The most commonly cited reasons for refusing vasectomy were lack of knowledge about the procedure (50%) and potential complications (20%).

In conclusion, our results suggest that many patients lack knowledge of vasectomy as a method of permanent contraception, and many hold false beliefs about the procedure. Although cultural and religious factors clearly shape attitudes towards vasectomy, it appears that the under-utilization of this procedure is largely due to an education gap. As 74% of those surveyed would consider vasectomy, we suspect that improved knowledge will increase utilization. Future efforts should focus on educating this population on the risks and benefits of vasectomy.

Funding: Office of Global Health, Rush University

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14. A Report of Interprofessional Collaboration During a Global Health Immersion Experience in Belize

Elizabeth Rotert, Niwa Coleman
Rush University

In December of 2016, 10 Rush students, including students studying speech and language pathology (SLP) and nursing, and four staff members traveled to Belize as part of the Rush University Belize Immersion Experience.

The goals of the trip were to build a home for a family in need and to assist local professionals with health-related education. Based on an informal needs assessment and the limited availability of specialized providers in Belize, two Rush students (SLP and nursing) were recruited to provide clinical services and education for young students, teachers and parents at a local school for children with special needs.

This interprofessional cooperation enhanced the client-centered care provided at this school. By challenging traditional professional boundaries, each team member contributed to specialized, complimentary interventions to promote improved quality of life. To support the development of speech and language, the SLP student worked directly with several children and their families. Speaking to parents to find out their language concerns informed the completion of a dynamic communication assessment of each child. In parallel, the nursing student implemented strategies of psychiatric mental health nursing, establishing interpersonal relationships with the children and their families to assist in identifying and understanding emotional and sensory deficits. Using the nursing process, interventions for family-centered care were explored. During these sessions, two local special education officers observed and recorded best practices as explained and demonstrated by the Rush students. At the end of each session, the team (parents, Rush students, and special education officers) discussed recommendations and next steps for that individual child.

The SLP student also provided a training session for special education teachers, special education officers, and a physical therapist. The training included best practices for supporting language development in children with delayed receptive or expressive language, including the importance of utilizing a core word vocabulary.

The collaboration of the two students was well received and appreciated by the families and professionals in Belize.

This interprofessional effort strongly indicates that continued collaboration between Rush students and professionals and the Belize community is beneficial in supporting children with special needs.

Funding: Office of Global Health, Rush University; additional fundraising

OUR MISSION

To advance ongoing involvement and develop new programs with global health initiatives that could have a mutual benefit from the voluntary assistance of Rush students, residents, fellows, faculty and staff.



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