

2017 Global Health Symposium



Center for Global Health
WHO Collaborating Center
Colorado School of Public Health
<http://globalhealth.ucdenver.edu>



Schedule

8:10 am – Welcome

Pediatric Global Health

8:15 am – “*Psycho-Social Rehab with Syrian Refugee Children in Lebanon*”

Howard Dotson, NOCO (Northern Colorado) Interfaith

8:30 am – “*Assessment of Pediatric Malnutrition and Household Food Insecurity in Kisii and Nyamira, Kenya: A Cross-Sectional Study*”

Kevin Forey, MD-MBA Student, School of Medicine and Business School University of Colorado Anschutz Medical and Denver Campuses

8:45 am – “*Babies, Cows, and Health: Unpasteurized Milk Consumption and Hygiene in The Gambia*”

Jennifer Washabaugh, MA, Department of Biological Anthropology, University of Colorado Boulder Campus

9:00 am – “*Spatio-Temporal Modelling of Weekly Malaria Incidence in Children Under 5 for Early Epidemic Detection in Mozambique*”

Katie Colborn, PhD, Assistant Professor of Biostatistics and Informatics, Colorado School of Public Health, University of Colorado Anschutz Medical Campus

Women and Adult Global Health

9:15 am – “*Transmission of Group B Streptococcus in Malawi: A Prospective Cohort Study*”

Yo Nishihara, MBBS, MRCPCH, UK Paediatrician, Malawi-Liverpool -Wellcome Trust Clinical Research Programme

October 20, 2017

8:10 am - 12:30 pm

University of Colorado
Anschutz Medical Campus

Fulginiti Pavilion for Bioethics &
Humanities Building
Gossard Auditorium

13080 East 19th Avenue
Aurora, CO 80045

9:30 am – “A Prospective, Population-Based Study of Rates of Operative Vaginal Delivery as Compared to Cesarean Section Rates in Seven Low- and Middle-Income Countries 2010-2016”

Margo Harrison, MD, MPH, FACOG, Women's Reproductive Health Research Fellow, University of Colorado Anschutz Medical Campus

9:45 am – “Understanding Schistosoma Japonicum Population Structure and Relatedness Using Reduced-Representation Genome Sequencing”

Jonathan Shortt, PhD Student, Pollock Laboratory, Department of Biochemistry and Molecular Genetics, School of Medicine, University of Colorado Anschutz Medical Campus

Training and Education

10:00 am - “Improving Anatomic Pathology in Sub-Saharan Africa to Support Cancer Care”

Stephanie Ayers, MA, Project Coordinator, African Strategies for Advancing Pathology

10:15 am – “Asthma – COPD Educational Outreach to GPs in Bangladesh”

PK Vedanthan, MD, Global Chest Initiative, Clinical Professor, Internal Medicine, School of Medicine, University of Colorado Anschutz Medical Campus

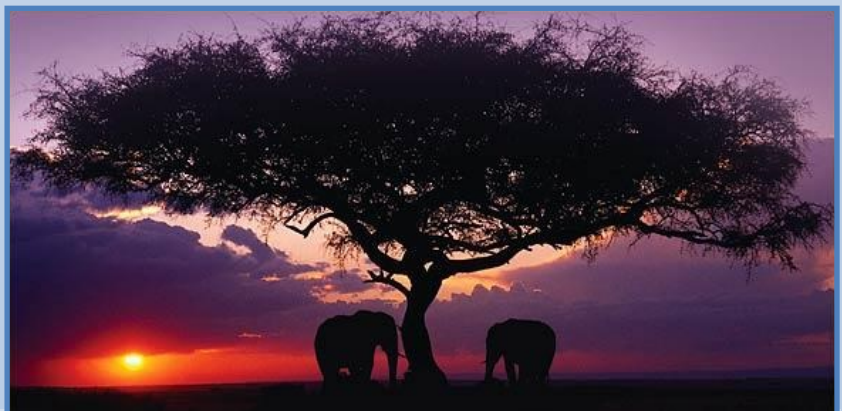
Phuong Dinh, MBA Health Administration, Administrative Fellow, Kaiser Permanente

10:30 am – Break

Health Capacity and Implementation

10:45 am - “AIDS-Free Community Campaigns and Toolbox”

Louise Singleton, MSPH, Director, Africa HIV/AIDS Initiative, Institute of Cultural Affairs USA



11:00 am – “A Survey of Emergency Department Capacity and Practice in the World’s Most Violent Country”

Nicholas Fling, Student, School of Medicine, University of Colorado Anschutz Medical Campus

11:15 am – “Primary Healthcare Delivery Amid Chronic Armed Conflict: Lessons from Rio de Janeiro”

Andrew Flynn, Student, School of Medicine, University of Colorado Anschutz Medical Campus

11:30 am – “Globalization of Health Services: U.S. Health Services in China”

Blair Gifford, PhD, MS, Professor, International Health Management, Business School, University of Colorado Denver Campus

11:45 am – “Music Festivals Can Catalyze the Provision of Effective Sexual Health Services”

Will Tesconi, Director of Academic Partnerships, Global Livingston Institute

12:00 pm - Presentation of the 2017 Excellence in Global Health Awards

12:30 pm – Conclusion



Abstracts

Psycho-Social Rehab with Syrian Refugee Children in Lebanon

Howard Dotson, NOCO Interfaith, 348 N Jefferson Ave, Loveland CO 80537

Background: NOCO (Northern Colorado) Interfaith volunteers work with several UN affiliated NGOs in Beirut and Saida Lebanon to provide psych-social rehab activities for Syrian refugee children residing in the UNICEF affiliated sheltered communities. Lebanon has over 1.5 million Syrian refugees. Many of these young families are suffering from PTS and complicated grief. The art therapy, play therapy and music therapy are therapeutic modalities that facilitated psych social rehab.

Objective: To augment and enhance the psychotherapeutic milieu of Syrian refugee children residing in UN affiliated sheltered communities in Beirut and Saida, Lebanon. To provide public mental health education and initial referrals for mental health providers in Beirut and Saida.

Method/Design: Using the best practices of trauma informed care and art therapy, play therapy and music therapy holistic disciplines, American volunteers are trained and supervised in 2 week and 4 week rotations.

Results: In qualitative data collected from the Syrian parents and the nonprofit staff working with these Syrian families they have reported. We are able to make assessments of PTS symptoms through the art work and therapeutic milieu interactions. We consult with the parents and NGO staff to identify the children who need follow up evaluations and therapy referrals.

Conclusions: NOCO interfaith is recruiting more volunteers and interpreting these psych social rehab needs of Syrian children with several Congressional committees, at the UN and with our NGO partners active in the humanitarian effort in Lebanon, Turkey and Jordan.

Assessment of Pediatric Malnutrition and Household Food Insecurity in Kisii and Nyamira, Kenya: a Cross-Sectional Study.

Kevin Forey, MD-MBA Health Administration Class of 2018

Objectives: To determine the prevalence of acute malnutrition in the pediatric population of Kisii and Nyamira, Kenya, and to characterize food insecurity and dietary diversity among households with school-aged children.

Methods: Using height-for-weight measurements, 879 children were screened at eight different schools. A Household Dietary Diversity and Food Insecurity Survey were completed by 104 parents at the time of screening. Separately, 43 schools were surveyed about the availability of feeding programs and school kitchens.

Results: Combined rates of moderate acute malnutrition (MAM) and severe acute malnutrition (SAM) were 15.1% (133/879). Children screened at the one school that provided students with lunch had the lowest rate of MAM, 1.2% (1/85), and no cases of SAM. Among households surveyed, 7.3% (7/96) were *Food Secure*, while 92.7% were *Food Insecure*, including 49.0% that were *Severely Food Insecure*. In the past month, 91.7% of caregivers expressed concern that they did not have enough food for their household, 40.6% reported having no food to eat of any kind at their home on at least one occasion, and 45.3% reported going at least one whole day without eating any food. Among schools surveyed, 28% (12/43) provided students with school lunch, while 91% reported having access to a kitchen.

Conclusions: Combined rates of malnutrition consistently exceeded the WHO's Crisis Classification threshold for *Serious* (>10%) and *Critical* (>15%) concern, suggesting that immediate intervention is warranted. While only 28% of schools surveyed have a feeding program, implementing similar programs at other schools may be a practical long-term solution.



Abstracts continued

Babies, Cows, and Health: Unpasteurized Milk Consumption and Hygiene in The Gambia

Jennifer Washabaugh, MA, Robin Bernstein, PhD, Arss Secka, PhD, Momodou Jeng, MS, Olawale Olaniyan, PhD



Background: In Gambia, unpasteurized cow's milk (UCM) is frequently consumed, but its hygiene is largely unregulated. Gambian infants are commonly fed UCM before 12 months of age. Bacteria in UCM can cause serious foodborne illness, which can significantly impact infant morbidity and mortality. UCM consumption practices and UCM hygiene were last examined in Gambia in 1992 and 2004 respectively.

Objective: Typify maternal and infant milk consumption in rural Gambia, and document bacterial contamination of UCM in urban areas of The Gambia.

Methods/Design: Questionnaires were administered in 2015 to mothers (n=194) in the rural West Kiang District to determine maternal and infant milk consumption patterns. *Enterobacteriaceae* was measured in fresh (n=24), powdered (n=10), and sour (n=19) milk samples from the greater Banjul urban area using the Hygiene EnSURE luminometer. EnSURE uses light detection to derive equivalent Colony Forming Units (CFUs) from Relative Light Units (RLUs), providing a proxy for bacterial abundance.

Results: Since 1992, overall infant milk consumption frequency has declined, but consumption of sour milk has increased nearly 10-fold. Over 28% of children and 32% of mothers consume cow's milk 2-4 times per week, which is most commonly purchased from herdsmen. Based on RLUs, over 90% of samples exceeded UK Standards for maximum *Enterobacteriaceae* levels in UCM (RLU: CFU equivalent = 2.0×10^5 - 1.0×10^7 CFU/mL), and *Escherichia coli* was present in 52.8% of samples.

Conclusions: Maternal and infant milk consumption patterns in rural Gambia have shifted in the last 25 years. Bacterial contamination of UCM available for sale in urban Gambian markets may pose a threat to consumer health. Food safety of milk, especially as a weaning food, requires greater attention.

Spatio-temporal modelling of weekly malaria incidence in children under 5 for early epidemic detection in Mozambique

Kathryn L Colborn¹, Emanuele Giorgi², Andrew J Monaghan³, Eduardo Samo Gudo⁴, Baltazar Candrihno⁵, James M Colborn⁶

¹Department of Biostatistics and Informatics, University of Colorado, Colorado School of Public Health, Aurora, CO, USA, ²Lancaster University, Lancaster, UK, ³National Center for Atmospheric Research, Boulder, CO, USA, ⁴Instituto Nacional de Saude, Maputo, Mozambique, ⁵National Malaria Control Program, Maputo, Mozambique, ⁶Clinton Health Access Initiative, Boston, MA

Background: We present a malaria early warning system (MEWS) for Mozambique.

Objective: To develop a MEWS that is easy to use and freely available to the National Malaria Control Program.

Methods: Our outcome of interest was weekly case reports of children under 5 years of age from 141 districts over seven years. We developed a spatio-temporal Poisson mixed model based on explanatory weather variables in order to map exceedance probabilities (EPs), defined as the predictive probability that the relative risk exceeds a predefined threshold. In order to detect outbreaks 8 and 26 weeks ahead, we used three different approaches to map EPs: (M1) use of weather variables while ignoring any source of residual extra-Poisson variation; (M2) use of spatio-temporal random effects but no weather variables; (M3) a spatio-temporal model which combines both weather variables and residual extra-Poisson variation. We then compared these using mean square-errors (MSEs) and 95% coverage probabilities (CPs), defined as the proportion of observed malaria cases from the holdout data-set that fell within the 95% prediction intervals.

Results: In the first three weeks, M2 had the lowest RMSE, whilst from the fourth week onwards the best performing model in terms of RMSE was M3. M1 was not reliable in quantifying the uncertainty, as CPs were close to 1%, compared with close to 95% for M2 and M3 for every week.

Conclusions: Unmeasured risk factors for malaria need to be taken into account in order to develop a reliable MEWS that can be used to map the likely occurrence of outbreaks.

Yo Nishihara, MBBS, MRCPCH, Ethwako Mlia, MBBS, Queen Dube, MBBS, PhD, Neil French, MB, ChB, FRCP, PhD, Robert Heyderman, MBBS, FRCP, PhD

Background: *Group B Streptococcus* (GBS) is a leading cause of neonatal morbidity and mortality worldwide. Yet the maternal carriage of maternal GBS in pregnancy, and the relationship with neonatal invasive disease remains poorly understood in resource poor settings. Effective interventions are critical in reducing the disease burden in these countries such as Malawi.

Objective: To describe the GBS carriage rates among pregnant women, and chronicle the pregnancy/early life outcomes of these women and babies. Also, to assess colonisation of well babies with GBS in the first month of life.

Methods/Design: This was a prospective cohort study recruiting pregnant women in the third trimester of pregnancy between 2014-2016. GBS carriage state was assessed, and their infants followed up to 6 weeks of age. Clinically unwell babies would be investigated and treated, with blood and CSF cultures assessed for invasive GBS. Sub-cohort of mother and well-baby dyads followed weekly to assess neonatal colonisation with GBS.

Results (interim): Of the 1712 eligible women screened, 713 enrolled, resulting in 508 livebirths, and 1 stillbirth. Maternal GBS colonisation rate was 19%, with serotype III most prevalent (47%). 27 neonates screened and treated for neonatal sepsis, with no isolated GBS cases so far. Evidence of direct mother to neonatal surface colonisation of GBS in 6 of the 14 GBS positive mothers recruited into sub study, whilst also 9 babies born to GBS negative mothers showing acquisition of GBS.

Conclusions: The study is important as it is one of the only studies in Malawi to investigate the true carriage rates of GBS and follow the pregnancy and neonatal outcomes. Neonatal sepsis events were less common than expected, suggesting a relatively healthy cohort had participated. There is evidence of mother to neonate direct colonisation of GBS, but also babies who developed GBS colonisation born to non-colonised mothers, suggesting alternative sources for early life acquisition. We anticipate that the results of ongoing genome sequencing will enhance our understanding of early and late GBS neonatal sepsis/meningitis and inform the design of existing and novel interventions, including GBS vaccines.

Understanding *Schistosoma japonicum* population structure and relatedness using reduced-representation genome sequencing

Jonathan A. Shortt¹, Elizabeth J. Carlton², Will Eaton², Liu Yang³, Zhong Bo³, Todd A. Castoe⁴, David D. Pollock¹

¹Department of Biochemistry & Molecular Genetics, University of Colorado School of Medicine, Aurora, CO, USA, ²Department of Environmental and Occupational Health, Colorado School of Public Health, University of Colorado, Anschutz, Aurora, 80045, USA,

³Institute of Parasitic Disease, Sichuan Center for Disease Control and Prevention, Chengdu, The People's Republic of China,

⁴Department of Biology, University of Texas Arlington, Arlington, TX, USA

Background: With over 200 million infections worldwide, schistosomiasis is an important global health concern. Although efforts to control schistosomiasis in China have led to substantial reductions in prevalence, pockets of persistent transmission remain.

Objective: To identify factors that contribute to persistent and emerging schistosome infections in Sichuan, China by analyzing fine-scale population structure.

Methods/Design: We collected miracidia, the offspring of schistosome worms, from twenty human hosts in ten different villages in Sichuan, China, across multiple years. Miracidia genomes were amplified and a reduced-representation sequencing method, double digest restriction site-associated DNA sequencing, was used to obtain genetic variation at thousands of loci. We used this variation to evaluate miracidia relatedness within and between villages and hosts.

Results: To date, high-quality sequences have been obtained for about 100 miracidia. Miracidia collected from single hosts are often highly related, frequently at sibling or cousin level. Miracidia from the same village are often more related to each other than to miracidia from other villages, suggesting limited infection sources. Lower relatedness between villages indicates that cross-village transmission is rare, but we found evidence that such events may occur. In addition, sibling-level relatedness between miracidia collected from a single host across multiple years indicates treatment failure.

Conclusions: Our data offers an unprecedented view of the population structure of schistosomes which can be used to trace transmission of infections across space and time. These results shed light on how schistosomiasis persists despite aggressive local control programs and may inform future global schistosomiasis elimination efforts.

Abstracts continued

Improving Anatomic Pathology in Sub-Saharan Africa to Support Cancer Care

Michael Wilson, MD, FCAP, FASCP, Alexia Eslan, MBAH, Stephanie Ayers, MA

Background: In Africa, varying standards of training and scarcity of a skilled workforce for pathology services have resulted in ineffective treatment due to delayed or inaccurate diagnoses. This leads to erroneous estimates of disease rates, resulting in a diminished ability to plan resource allocation and poorer clinical outcomes.

Objective: Determine the best training approach to improve the ability of anatomic pathologists in East, Central, and Southern Africa (ECSA) to perform staging of four common cancers.

Methods / Design: This project involved three 2.5-day workshops that included 52 pathologists from sixteen institutions across ECSA. Three different approaches to training were compared; traditional lectures, case-based training (CBT), and a blended approach. Educational assessments were developed to measure knowledge gained through each approach. Pre- and post- training results of an online survey tool were compared, followed by site visits to validate responses.

Results: Results of assessments were analyzed to determine which teaching approach is most effective in this context. Both CBT and blended approaches resulted in a 19% increase in average scores from pre- to post-course assessments. Qualitative surveys among faculty indicated that the blended approach resulted in the highest level of engagement among participants. Institutions that participated in the blended workshop also had increased reports of changes in practice patterns, indicated by the institutional survey.

Conclusions: The blended approach was most effective at improving learning in this context. The training conducted at the workshops has contributed to a higher performing pathology workforce who will be able to assess and train other anatomical pathology practitioners within the region.



Asthma-COPD Educational Outreach to GPs in Bangladesh

P Vedanthan MD #, MHabib MD*, A UddinMD ^P Dinh #

#University of Colorado, Anchulstz campus, Aurora, Colorado USA, *[International Primary Care Respiratory Group – Bangladesh \[IPCRG-BD\]](#), ^ICDDR International Centre for Diarrheal Disease Research, Bangladesh

Background: Asthma and COPD are two common long-standing respiratory conditions in Bangladesh. Both of the diseases are well treatable and manageable. Burden of asthma and COPD was measured in Bangladesh in 1999, 2006 and 2009 (Asthma by NAPS 1999 & 2009 and COPD BOLD-BD 2006). Prevalence of Asthma is around 6.7 and COPD Prevalence in >40 years population was 21.24% (95% CI 20.77 - 21.78).

Objective: 1. To study the techniques used by professional societies, non governmental agencies to improve the awareness and knowledge base among the General practitioners and its impact 2. improving the care of the COPD-Asthma patients in a 'Resource poor' country.

Methodology: Considering the above burden and Government's preoccupation with Pulmonary Tuberculosis and other infectious disease as well as the low priority of asthma and COPD, Bangladesh Primary Care Respiratory Society (BPCRS) developed a program known as "**Better Breathing Bangladesh (BBB)**" along with International Primary Care Respiratory Group-Bangladesh (IPCRG-BD) and Bangladesh Lung Foundation and Education for Health UK. The project was recognized by WHO Global Alliance against Chronic Respiratory Diseases (WHO-GARD) as a demonstration project in 2009. The **E learning course on Asthma and COPD** is done through International Centre for Diarrheal Disease Research, Bangladesh (ICDDR). Through this course the GPs are taught online, outreach camps, clinical rotations, personal contact sessions, as well as providing evidence based care administered at all levels.

Results: The above measures have significantly increased the awareness as well as the level of care, including pulmonary rehabilitation at rural and urban levels of the population in Bangladesh. Actual impact studies have not been performed yet.

Conclusions: Health professionals working in the community level should be empowered to provide evidence based care for Asthma and COPD. Improving health literacy is one most important element of the program. Resource building in the most efficient manner is being done at the GP level to combat COPD and Asthma in Bangladesh.

Abstracts continued

AIDS-Free Community Campaigns and Toolbox

Louise R. Singleton MSPH, Director, Africa HIV/AIDS Initiative, Institute of Cultural Affairs USA

Background: African participants at the 2000 International Conference of the Institute of Cultural Affairs (ICA) demanded that development work address HIV/AIDS. A program to train peer educators to provide HIV/AIDS Education, Prevention and Management (HIV/AIDS EPM) was implemented in 11 African countries over a decade. Experience made evident the need for a replicable one-year campaign.

Objectives: Design one-year HIV/AIDS Community Campaign that provides structure and enables participants to set priorities, plan actions, name indicators of success, and work together for HIV/AIDS EPM. Test and revise this model on the ground in Africa.

Methods and Design: The campaign includes 4 phases:

- Planning and Preparation – Leadership planning and community-wide launch(1 month)
- Prevention Education – Peer educator training, prevention education, community mobilization (3 months)
- HIV/AIDS Management Implementation – Testing campaigns, Living Well Groups, home care, Self Help Groups (SHGs) (8 months)
- Evaluation, planning for continuation, celebration.

The model was tested in 26 communities averaging 5,000 residents in peri-urban Harare, Zimbabwe from 2013 – 2016. Materials were revised, edited, and published.

Results: The chart summarizes results documented by peer-educators and leaders. The *Toolbox*, which includes seven guides for program consults and support groups for use by leaders and participants, was published in March, 2017. ICA Staff are meeting with potential partners in four African countries to implement the campaign.

Conclusion: This community campaign demonstrates that local citizens can battle a major community problem when provided with training, planning methods, and minimal outside resources, (\$6000/community.)

Survey of Emergency Department Capacity and Practice in the World's Most Violent Country

Nicholas Fling, MD Candidate – University of Colorado School of Medicine, Julio Hernandez MD, Eric Cioe-Peña MD, MPH, FAAEM

Background: El Salvador suffers a striking burden of trauma with the world's highest homicide rate and rates of motor vehicle accident deaths 2.5 times greater than those of the developed world. Despite this, dedicated emergency care training and standardizations-of-care and equipment in public hospitals remains scarce.

Objective: Establish a baseline measure of current capacities and practices in public San Salvador emergency departments.

Methods/Design: A team of two interviewers conducted in-person interviews of nine key emergency department operations personnel at each of the eight public emergency departments in the metropolitan San Salvador area using the *sidHARTE needs-assessment tool*.

Results: 70/72 individuals sought participated. 100% of hospitals report consistent electricity. 37.5% report inconsistent access to running water. 100% report 24-hour access to all vital laboratory studies as well as reliable access to supplies of blood. 50% of EDs surveyed report access to an ultrasound machine and 37.5% report the ability to perform emergency sonography after-hours. EDs had, on-average, 60% (31.9/53) of "Essential Emergency Medicines," 81% (52/64) of "Essential Emergency Supplies," and 90% of "Essential Emergency Equipment" (5.4/6). 0/6 hospitals (2 non-responders) had held mass-casualty incident training in the last year.

Conclusions: This study characterized the resources and emergency care capacity of San Salvador's public emergency departments. Emergency imaging and trauma-care training are areas of high need. A high degree of variability was observed among emergency department resources and additional efforts should be made to characterize the populations utilizing each emergency department in order to assure the resources identified in this study are best matched to areas of greatest need.

Abstracts continued

Primary healthcare delivery amid chronic armed conflict: lessons from Rio de Janeiro

Andrew Gumpper Flynn¹, Césio Sotero dos Santos², Claudia Meneses da Silva³, Mariana Soares Puppim³, Denise Alves Silva³, Patricia Durovni³

¹ University of Colorado School of Medicine, Aurora, USA, ² Homeless Healthcare Services, Jacarezinho Family Clinic, Rio de Janeiro, Brasil, ³ Department of Prevention, Primary Care and Surveillance, Rio de Janeiro Municipal Health Secretariat, Brasil



Background: More than two million Rio de Janeiro residents live in *favelas*, neighborhoods with a history of economic marginalization and state-sponsored repression that are among the world's most violent places. Rio's health department expanded primary healthcare from 2008-2016 and saw public primary care utilization jump from 3% to more than 60%. The initiative targeted favelas, where life expectancy is up to 15 years lower than wealthy neighborhoods. We aimed to identify strategies integral to successful primary care expansion in favelas.

Methods: From 9/2016 to 2/2017 we conducted 32 structured and semi-structured interviews and used participant observation of healthcare provision and promotion activities in 12 favela family clinics to understand strategies behind successful service expansion.

Results: Health policy planning included favela residents and local providers who favored responsive and practical policies. Health services were separated from police/military activities, leading to perceived neutrality of health workers and clinics functioning as safe spaces. Small healthcare teams cared for specific neighborhood areas, fostering a sense of responsibility to meet coverage targets. Community health workers hired from a team's area formed the backbone of the team, integrating local knowledge and situational awareness into medical practice and leading to clinic-led public health initiatives. Regular home visits by community health workers and providers to areas controlled by armed militias, and initiatives such as homeless outreach services, built respect for health workers and led to increased service availability and utilization.

Conclusions: Themes of community engagement, mutual respect and neutrality were central to successful service expansion in Rio's favelas.

Globalization of Health Services: U.S. Health Services in China

Blair Gifford, PhD

Background: In recent years, the Chinese government has begun to invest heavily into health services development. However, this investment has not been enough to stem the tide of a growing cancer epidemic. As a result, the government has further opened the door and invited western U.S. oncology institutions in to help out. In particular, the government has initiated policies to increase the number of private health facilities and to allow physicians to practice at multiple locations, including private facilities. In response, many U.S. health institutions have entered China in the last few years. This situation indicates that health systems have added a global orientation to regional and national orientations in recent years.

Objective: To better understand why many U.S. health systems are starting to globalize.

Methods/Design: This is a case study analysis of U.S. Health institutions entry into the Chinese oncology market. Cases are explored to determine business models which seem more likely to be successful in international markets and to understand the vision of U.S. health systems toward globalization.

Results: The most important finding is that the development of standalone international (western) hospitals in China has not worked. Instead, putting a private facility with in an existing public hospital seems to work well (public-private partnerships). A second finding is that we do not know much about profitability of these arrangements. A third finding is that given limited profit potential there must be other motivations driving U.S. health systems to globalize.

Conclusion: Health services historically have been local in orientation and focused on physician/patients relations. However, the business of health care has amended this formula. Today, health systems are changing the setting of competition from local to regional by adding in national and now global competition. In response, many of the top health systems in the U.S. feel compelled to compete globally as well as locally. A consequence of this evolving situation is that U.S. based health services are becoming increasingly available throughout the world.

Abstracts continued

Music Festivals Can Catalyze the Provision of Effective Sexual Health Services

Ward A, Rothfuss C, Nabimanya H, Adams J, Ntawiha H, Atunairwe N, Anguyo G, McLean S, Tesconi W, Grundy R, Namuddu M, Matovu T, Mugabe B, Thrun M, Van Leeuwen J.

Background: Recent policy changes in Uganda – such as the 2014 anti-homosexuality law, and the 2016 prohibition of sexual health education to youth – have hindered efforts to provide sexual health services including prevention education, HIV screening, and reproductive health services. We hypothesized that a music festival would draw rural Ugandans to a central location where sexual health services could be conveniently offered.

Methods: In 2014 and 2015, two NGOs partnered to produce a music festival in Kabale, Uganda, expanding to include Lira, Uganda in 2016. HIV testing and reproductive health services were offered by several local NGOs specializing in HIV and sexual health. Prevention education was delivered directly by NGO staff, print and radio marketing, and from the stage during the festival. Clinical service data was compiled and analyzed.

Results: Between 2014 and 2016, over 38,000 persons attended the festivals and were exposed to HIV prevention messaging and 7,000 persons were tested for HIV. In 2016, 4,588 HIV tests were performed; 68% male and 56% under the age of 25. 1.6% tested positive and all were offered linkage to care services. 193 circumcision referrals, 31 IUD placements, 33 cervical cancer screenings, and 2 tubal ligations were also performed.

Conclusion: The music festivals served as a meaningful catalyst to bring sexual health services, such as prevention education, reproductive healthcare, and HIV testing to rural Ugandans, while facilitating collaborative efforts among many NGOs working on sexual health to provide opportunities to broadly educate about sexual health.

Excellence in Global Health Award - 2017 Recipients

Sarah Mulligan, Sister of Charity of Cincinnati Shortly after graduation from Fenwick High School, Middletown, Ohio, in 1956, I entered the Congregation of the Sisters of Charity, Cincinnati, Ohio. Fortunately, they asked me to study nursing, and thus began my opportunity to serve in many ways. Finishing my degree with a BSN from Mt. St. Joseph College (now University), I ministered as a staff nurse, head nurse and supervisor for several years in Ohio and Michigan. One good experience was the opportunity to help initiate the first coronary care unit in Good Samaritan Hospital, Dayton, Ohio.

The next phase of my career brought me to the University of Indiana to receive a master's degree in Nursing Administration. Following three years as Director of Nursing at St Mary Corwin Hospital, Pueblo, Colorado, I began more direct community service. Collaborating with community members, we initiated a soup kitchen to serve a hot meal daily, and this service continues today.

While working as a nurse with Migrant Health and Pueblo Community Health Services, I earned a Certificate as an Adult Nurse Practitioner from the University of Colorado. The next seven years found me in the Valley Wide Health Services in Alamosa, Colorado, once again with many migrants and families from Central America. These wonderful experiences finally brought me in 1994 to Guatemala to serve in Mixco, a poor area outside of Guatemala City, heavily populated with many factories and small businesses. Often multiple families live in one home without water, and the people have lacked the opportunity for health care and education.

(continued on next page)



Excellence in Global Health Award - 2017 Recipients continued

Earlier the people of the community requested health service and were loaned property for a number of years. In 1992 in collaboration with the Catholic Church, they initiated the construction of the clinic, which opened in 1995. For me it was an opportunity to help the people realize their dream; however, the needs were much greater than anticipated. We continue today with the ever-increasing health and education programs. We successfully formed a non-profit organization, AMICASI (Missionary Association of Charity for Whole Health), and thus the community itself is the owner of the entire operation. Presently, we have a staff of 25 persons, all Guatemalans, who receive a just wage and benefits. A young woman I am training from the community will soon assume the role as Director.



The Guatemalans have participated one hundred percent and this award honors them as well as me. God has blessed us in many ways, especially with faithful supporters. Thank you for honoring me with this prestigious award.



Joshua Solomon, MD, FCCP, Associate Professor of Medicine, Autoimmune Lung Center & Interstitial Lung Disease Program, Associate Division Chief, Division of Critical Care Medicine at National Jewish Health

Dr. Solomon studied biochemistry and music at Bucknell University. After graduation, he moved to Atlanta, Georgia to attend medical school at Emory University. Upon completion of medical school he was accepted into the internal medicine residency class at the University of Texas Southwestern in Dallas, Texas.

After residency but before starting a fellowship in Pulmonary and Critical Care at the University of Colorado, he spent a year abroad. His goal was to travel Southeast Asia but ended up working the entire year in an orphanage in central Viet Nam that had just opened their doors to the public. Over the course of that year and subsequent yearly trips during fellowship, he worked with others to improve the quality of life for the disabled children through improvements in health and hygiene, instituting a physical therapy program and developing an education curriculum. After fellowship in 2006, Dr. Solomon moved back to central Viet Nam to work full time.

Shortly after returning to Viet Nam, he quickly learned the downsides to working in a government sponsored orphanage with the widespread corruption and misappropriation of funds and resources. Dr. Solomon worked with his local staff to identify health priorities in the neighboring poor commune. Over the next few years, as he developed projects in pediatric HIV and congenital/acquired heart defects, he noticed a significantly high percentage of non-communicable diseases (NCD) such as diabetes and hypertension amongst the poor in rural areas of central Viet Nam.

Working with commune health centers and local government, he visited the rural clinics in the area. Working side-by-side with health center staff, he saw over 3,000 patients and worked to identify the barriers to care delivery. Partnering with the World Health Organization (WHO) and the Ministry of Health, he developed a training package and treatment protocol where it was piloted in Phu Tho, Northern Viet Nam. He moved back to the United States in 2009 but continues to develop the programs on the ground in Viet Nam and travels there yearly.

Currently, his non-profit (the Vietnam Health Improvement Project - VNHIP) continues its work with the WHO to refine the NCD treatment protocol and implement it countrywide. His organization has expanded its work with children living with HIV to include not only access to life-prolonging medications but also sustainable economic development and life-skills teaching. While working with NCD management in the ethnic minority tribes, VNHIP noted a need for clean water and hygiene education and has worked to provide this for over 3,000 students in primary school. VNHIP has provided over 150 corrective surgeries for congenital/acquired heart defects and works with disabled sheltered adults to improve their health and quality of life. As their work continues, Josh continues staff development with the eventual goal of having the organization completely managed and run by the Vietnamese.

The purpose of the Excellence in Global Health Award is to recognize and publicly honor those individuals, institutions or organizations based in the state of Colorado that have made a significant and exemplary contribution to the sustained improvement of the health of multiple populations over an extended period of time in a global health setting.

Peter Durst, the creator of the *Excellence in Global Health Award* is a longtime Colorado ceramist and sculptor. His work has been exhibited nationally for the past 35 years in galleries, art centers, museums, private collections, and public spaces. He received a BA from Allegheny College and a JD from NYU School of Law, as well as ceramic training at Anderson Ranch Arts Center in Snowmass, Colorado. He was instrumental in establishing the Ceramics Program at the Art Students League-Denver, and serves on the faculty there.



Peter Durst is also one of the contributors to the endowed student scholarship, the Robinson Durst International Student Scholarship (the other contributor is William Robinson, MD). This Scholarship is given to students on an annual basis to help support their travel for work in underserved areas of the world.

PETER DURST STUDIO GALLERY and SCULPTURE GARDEN

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<http://peterdurstart.com/index.html>

"Sometimes it falls upon a generation to be great. You can be that great generation."

~Nelson Mandela

The health of people and communities around the world will require strong partnerships and dedication to improving health equity and access to care. Consider supporting this noble cause through the Center for Global Health.

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Want to learn more? Contact Megan Cooke at the CU Foundation: megan.cooke@ucdenver.edu



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