

best-practices, and educational pedagogies. Global Service-Learning has been suggested as one of the most effective ways to facilitate the development of intercultural competence (Deardorff 2011; Kuh 2008; Merrill et al. 2012), and “global citizenship” (Abdi and Shultz 2008; Battistoni et al. 2009; Braskamp 2011; Institute of International Education 2014). Intercultural Competence is defined as the ability to communicate effectively and appropriately with people of other cultures (Messner). Global Citizenship is a concept common to service-learning circles, as well as in recent inter-professional global health competencies (Appiah, 2006, Falk 2000, Nussbaum 1997, Joegst 2015). Based in evidence-based and expert consensus, the tools and resources that stem from international education will be presented.

**Outcome & Evaluation:** The outcomes of global health education adopting best practices and engagement with international education colleagues include improved collaboration, increased safety and rigor of global health experiential learning, and improved evaluation of student impacts. Assessment tools including the Intercultural Development Inventory, Global Engagement Survey, and Global Perspectives Survey will be detailed.

**Going Forward:** Going forward, increased synergy between international education and global health education at both a campus and national/international level, will benefit both schools of thought and communities of practice. This session creates an underpinning for CUGH and its members to interface with international education.

**Source of Funding:** none.

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### **Economic Spillovers from Public Medical Countermeasure Investments: A Case Study of NexoBrid®**

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**Background:** The US Department of Health and Human Services’ Biomedical Advanced Research and Development Authority (BARDA) awarded a \$24 million contract to MediWound Ltd. for the development of NexoBrid® to enhance US preparedness for an improvised nuclear device incident. NexoBrid® is a burn debridement product reducing the need for surgical excision of dead tissue.

**Methods:** We develop a standard diffusion model to project the potential economic spillover effects of a burn debridement product by examining four primary components: 1) market size, 2) effectiveness (debridement and grafting), 3) cost, and 4) market adoption. We use data from two primary sources to project potential spillover benefits based on our model: 1) the American Burn Association’s 2015 National Burn Repository Annual Report of Data, and published clinical outcomes that have been used to gain European approval for the burn treatment.

**Findings:** Peer-reviewed clinical results suggest that the approval of NexoBrid® for burn debridement in the United States would improve burn patient outcomes and reduce hospital length of stay

(LOS) and grafting in the day-to-day health care system. If approved in the US, the burn debridement product would be available for use in routine burn care beyond its primary mission. BARDA’s investment has potential economic spillover benefits that exceed BARDA’s initial investment of \$24 million a few years after its entrance into the US market.

**Interpretation:** Because multi-functionality of a medical countermeasure is a key consideration of the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) when making resource decisions, the results of this analysis can help to inform prioritization of scarce resources for development by the PHEMCE. Future Federal investment decisions could incorporate consideration of potential economic spillover benefits when a product could be used routinely in the commercial market.

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### **Arsenic in Drinking Water: Policy Implications in Mexico**

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**Program/Project Purpose:** Global concern around arsenic in drinking water and its linkage to disease make translation of evidence-based research into national policy a priority. The Mexican standard for arsenic concentration in drinking water is 25 µg/L, which remains “two-and-a-half” times higher than that of the World Health Organization (WHO) recommendation. Arsenic is a naturally occurring element widely distributed in the earth’s crust that contaminates drinking water. Arsenic in drinking water has come to be synonymous as carcinogenic to humans and a risk factor for other chronic and acute illness. The purpose of this research is to raise awareness to the implications that arsenic contamination in drinking water has on Mexico and to suggest action steps for environmental policy reform.

**Structure/Method/Design:** Arsenic concentrations in ground-water have been documented since the 1950’s in Mexico. Yet, it wasn’t until 1994 that Mexico’s first standard was formed. The research will summarize Mexico’s national policy history regarding arsenic in drinking water while qualitatively analyzing how scientific research and international guidelines have influenced the policy. The goal is to provide a position on arsenic policy in Mexico.

**Outcome & Evaluation:** The research considers four factors that play major roles for environmental policy change in Mexico: scientific evidence, political agenda, economical situation, and resource capacity. Each component is explored to determine its significance for policy advancement and to provide a current position in Mexico.

**Going Forward:** Mexico has had a history of fragmented and overlapping domestic institutions that have yielded ineffective and inadequate environmental policy. The delay to lower the current standard has undoubtedly led to the loss of countless lives and burden of disease. The guideline value of 10 µg/L set by the WHO might incur practical difficulties and deciding on a new

standard for arsenic in drinking water is no simple task. Though, it is critical to bring to discussion strategies to advance policy. Mexico must consider their political agenda, weigh scientific evidence, be economically able, and have the resource capacity to monitor and enforce such a new standard.

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### Understanding the Experiences of Street Working Children in Karachi Using Photovoice

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**Program/Project Purpose:** Pakistan's population of street children is estimated to be around 70,000, and 12,000 of these work on the streets of Karachi. Working as beggars, window cleaners, mechanics or trash pickers, these children are treated as adults by society, with little regard for their age. We are using Photovoice to document and understand the experiences of street children, in order to advocate for a supportive environment for them.

**Structure/Method/Design:** Photovoice is a participatory action research (PAR) methodology that enables participants to record and reflect on their lives in order to promote a critical dialogue about the issues they face. We are giving street working children cameras and are asking them to take photographs to represent their daily experiences, the challenges that they face, their joys and supports, and their hopes and dreams. The photographs are then discussed in focus group discussions in order to allow the participants to develop a narrative to contextualize each photograph.

**Outcome & Evaluation:** Between October 2012 and May 2013, we enrolled 21 street working children, aged 8–15, from three sites around Karachi (NIPA Chowrangi, near Bait-ul-Mukarram masjid in Gulshan-e-Iqbal, and Shireen Jinnah Colony). The children are engaged in a range of occupations including washing cars, selling tissue packets during traffic, begging, picking trash, and cleaning homes. Their photographs and stories cover a number of themes such as professional respect and pride, career aspirations, occupational hazards, and security. At the same time, their photographs also share play and rest as essential components of their lives. Finally, the photographs share the children's aspirations including education, more stable income, and professional dignity.

**Going Forward:** The findings of this study share important insights into the experiences and hazards faced by street working children. While they remain children, they lack the protective cushions of childhood, in the forms of school, security, and mental, emotional sheltering. The adult burdens of bread-winning force them to grow up fast amidst the inherent vulnerability of childhood. However, the photographs also reveal the universality of childhood through their joys and aspirations. The pictures and their narratives

serve as an unyielding reminder, that despite all odds, these children make the most out of very little.

**Source of Funding:** Interactive Research and Development.

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### Barriers to Care and Support for Persons with Physical Disabilities in Moshi Rural and Moshi Urban, Tanzania

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**Background:** Physical disability is a global health problem. Across the world, about 15% of people are currently living with disability, and the prevalence is on the rise due to ageing population and higher incidence of chronic disease and the majority of these individuals with disability reside in low-income countries, where access to proper infrastructure and quality services can be difficult. This study explore the policy issues concerning barriers to care and support for persons with physical disabilities in Moshi rural and Moshi municipal, Tanzania.

**Methods:** A cross-sectional descriptive study was conducted in June 2016 involving all stakeholders having an address of Moshi district, mainly being Tanzanian government ministries including the Ministry of Health, Community Development, Gender, Elderly, and Children (MoHCDEGEC), the Ministry of Education, Science, Technology and Vocational Training, and the Ministry of Works, Transport and Communication. Others include international organizations such as the World Health Organization (WHO), District and Municipal Social Welfare Officers, social support providers (such as schools, community-based rehabilitation centers, and non-governmental organizations), health care providers, families, and persons with physical disability themselves. All eligible stakeholders were obtained and invited to participate, and they were interviewed regarding their interests, influences and importance on the matter.

**Findings:** A number of factors were found to hinder efforts to curb this rising problem: Inaccessibility of buildings and facilities, transport and road safety issues, limited access to quality health care and rehabilitation services and high cost of health care. The situation is worsened by social stigmatization, and often communities lack the general knowledge and awareness regarding the needs of physically disabled individuals as well as limited education and vocational trainings.

**Interpretation:** Barriers to care and support for persons with physical disabilities can be reduced if there will be accessible public transportation to all areas; increased community awareness through education campaign; availability of social support and rehabilitation services; improved accessibility to buildings, social amenities and facilities; Training of rehabilitation health workers; and peer support and skills training.

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