

University, Bethesda, MD, USA, ²Johns Hopkins University School of Medicine, Baltimore, MD, USA; Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Program/Project Purpose: The Republic of Senegal Disaster Preparedness and Response Exercise was held from 2–6 June 2014 in Dakar, Senegal as a part of the US Africa Command Disaster Preparedness Program (DPP). The goal of the exercise was to assist the Republic of Senegal to familiarize and validate roles and responsibilities in the existing National Pandemic Influenza Preparedness and Response Plan, Armed Forces of Senegal Pandemic Contingency Plan and Military Assistance to Civil Authorities (MACA) Contingency Disaster Plan, as well as revise and update the recently developed Disaster Management Strategic Work Plan for building future disaster response capacity.

Structure/Method/Design: There were 60 participants in the exercise. The Tabletop Exercise was designed to assist participants in identifying shortfalls and gaps in existing disaster preparedness and response plans, and to provide recommendations for enhancing national and regional disaster management capacity. During the Disaster Management Strategic Work Plan portion, participants refined a list of projects, including specific tasks and sub-tasks that provide a “roadmap” for completing each project by listing timelines for each project, as well as an estimate of budgetary and other resource requirements. All 60 participants received a copy of the survey questionnaire.

Outcome and Evaluation: 86 percent of respondents agreed or strongly agreed they had a better knowledge of the Senegal pandemic and disaster contingency plans. 89% of respondents agreed or strongly agreed they had a better understanding of their ministry’s or agency’s role in disaster response. 84% of respondents agreed or strongly agreed that they had a better understanding of the roles and resources of other Senegal government ministries or agencies during a disaster response. 92% of respondents had a better understanding of the potential role of the military during a pandemic.

Going Forward: Participants were in strong agreement that the exercise helped them to better understand the contents of their disaster response plans, build relationships across ministerial lines and use their new found skills on a day-to-day basis in their current positions. Participants felt that follow up training and exercises would be essential to solidify concepts from this exercise.

Abstract #: 1.056_NEP

Global surgical electives in residency: the impact on training and future practice at Temple University Hospital

M. Harfouche, Z. Maher, L. Krowsoski, A. Goldberg; Temple University Hospital, Philadelphia, PA, USA

Background: Global surgical electives are becoming a mainstay of general surgery residency programs. We evaluated perceptions regarding the value of global surgical electives and pursuing a career in global surgery amongst Temple surgery residents that had varying access to global surgical elective opportunities.

Methods: We sent an anonymous, web-based questionnaire to all past and present Temple General Surgery residents. Questions were

focused on experience practicing surgery in low or middle income countries (LMIC), perception of the value of global surgical elective to residency education and the extent to which global surgery is integrated in respondent surgical careers. Those with global surgical exposure were asked to rate their experience in terms of the seven ACGME competencies.

Findings: Twenty-three graduates (G) of the surgical residency program and 36 current surgical residents (R) completed the survey. Of the respondents, 10 residents (28%) and 12 (52%) graduates had spent time providing surgical care in a LMIC. Respondents in both groups stated that their experience “very much” or “extremely” impacted patient care (G= 80% vs. R=75%), medical knowledge (G=60% vs R=75%) and practice based learning (G=75% vs R=90%). Four of the 12 graduates spent greater than 8 weeks practicing in a LMIC, and only two are currently working in a LMIC. Eight graduates (50%) stated lack of time as a reason for not pursuing work in a LMIC.

Interpretation: There is strong agreement amongst current surgical residents and graduates of surgical residency of the value of global surgical electives in improving surgical training. Few graduates are able to incorporate global surgery into their practice mostly due to time constraints. In cases where they do practice global surgery, this is usually on a short-term basis. Future efforts should focus on bridging the growth of global surgical electives with opportunities for long-term, sustainable careers in global surgery.

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Caring for adolescents: A qualitative evaluation among healthcare providers in Guatemala

J.C. Maza¹, H. Teich², E. Calgua¹, A. Hassan²; ¹Pediatrics, Universidad de San Carlos de Guatemala, Guatemala City, Guatemala, ²Department of Medicine, Boston Children’s Hospital, Boston, MA, United States

Background: Today’s generation of adolescents is the largest in history, creating a major challenge for low and middle-income countries faced with the necessity of addressing their healthcare needs. Our objective was to assess the extent to which health care providers in Guatemala are trained, knowledgeable and feel comfortable with providing services to adolescents.

Methods: A sample of 20 medical providers were recruited from the School of Medicine at San Carlos University and its affiliated hospitals. Thirty to forty minute face-to-face interviews were conducted using a semi-structured guide exploring providers’ training, knowledge, skills and experience towards adolescent health care. Recruitment continued until thematic saturation was reached. Interviews were recorded and transcribed verbatim, and then analyzed for emergent themes using principles of framework analysis.

Findings: Provider’s mean age was 33.7 years (SD=10.2). Most were female (65%) and practiced medicine in a metropolitan location. Five major themes emerged from the data: (1) perceptions of current adolescent health care needs, (2) barriers to providing care for adolescents, (3) comfort level in communicating with adolescents, (4) knowledge and availability of services and programs geared

towards adolescents and (5) perceived gaps in adolescent medicine training. Most providers felt that adolescents have different health care needs than children and adults and would benefit from dedicated health care services. There were concerns that not having a dedicated site or group of providers, as well as a pediatric cut-off age of 12 years pose significant barriers for adolescents seeking services. Providers admitted to not always feeling comfortable in discussing confidential topics such as substance use and although many discussed contraceptive options, they felt that gynecologists should prescribe. Most struggle with locating additional services especially related to unmet mental health needs. Finally, few providers felt that they had received adequate training in adolescent health during medical school and residency.

Interpretation: Providers recognize the need for increased and dedicated adolescent health care services. There is strong support for the creation of a credentialed national adolescent health training program.

Funding: None.

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The nutritional paradox of indigenous communities of Ecuador: engaging communities to affect change

X.J. He¹, J. Morales², M. Conejo², A. Doucet³; ¹Faculty of Medicine, ²Department of Family Medicine, McGill University

Background: Many indigenous people around the world struggle with food security, causing them to have a lower level of health and nutrition. Similarly, studies done by previous research students in the indigenous communities in North Andean Ecuador showed that only 7% of households was food secure. This statistic was accompanied by the finding that approximately 49% of indigenous children were stunted, and 48% of them qualified as overweight. This highlights the nutritional paradox that exists within the communities, where two forms of malnutrition, namely stunting and obesity, are concurrently present. Participatory research in these circumstances is an appropriate way to engage the communities in recognizing the issues at hand and becoming the factors of change that they need. The research student disseminated the results from previous years' studies to leaders in the communities and aimed to educate the communities and stimulate engagement through the development of a play on the topic of nutrition.

Methods: Development and writing of the play was done conjunctly with community health workers, community leaders and children participating in the play. The play has been left with community health workers, who can use the play as a tool to talk about nutrition with their peers and as a way to guide future program initiatives in the community.

Findings: The play on nutrition was performed by 10 children in the community center of Chilcapamba to over 30 spectators. Drawings of plates of balanced meals were collected from children to show their learnings, and the concepts of proportions and variety can be found in all of the drawings.

Interpretation: Despite its challenges, the student successfully developed an educative play with the support of the community members. This has taught the student to actively engage

a community in a project, and at the same time, has empowered the community health workers to reach out to other community members by taking a leadership role.

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Characterization of immune factors of chronic Chikungunya disease in Grenada, West Indies

C.J. Heath¹, T.P. Noël², R. Waechte², J. Lowther², C.N. Macpherson², A.D. LaBeaud¹; ¹Department of Pediatric Infectious Diseases, Stanford University, California, USA, ²WINDREF, St. George's University, Grenada, West Indies

Background: Arthropod (mosquito) -borne viruses (arboviruses) are among the most important 'emerging' pathogens due to their continually increasing geographic expansion and public health impact. Chikungunya virus (CHIKV) is a rapidly re-emerging arbovirus which causes both acute and chronic illness. Initial fevers are often followed by severe skeletal and joint pain, arthritis and, more rarely, eye inflammation, vision loss, neuritis, paralysis, vasculitis, hepatitis and heart disease. In 50% of those affected, disabling arthritis and vasculitis can persist for years, yet our understanding of the risk factors and mechanisms underlying chronic disease are limited and there are currently no approved CHIKV therapeutics or vaccines. The virus now affects over 75 countries in Africa, Asia, Europe and, most recently, the Americas, where it now causes autochthonous outbreaks of disease. There have been > 590,000 confirmed and suspected cases across the Caribbean, Central and South America, and the southern USA. In our study site, Grenada, thousands of CHIKV cases have occurred since July 2014, with a wide spectrum of disease being reported. It is estimated that since that time, 90% of the Grenadian population has been infected with CHIKV and tens of thousands continue to suffer joint complaints.

Methods: During the CHIKV-disease outbreak of July–December 2014, serum samples were collected from ~ 500 acutely CHIKV-infected individuals. Currently, we are re-enrolling these individuals for long-term follow-up, using validated quality of life, risk exposure, past medical history and arthritis-score assessments to study demographic and exposure factors associated with chronic disease. In addition, participants have physical examinations and blood drawn for analysis using a Luminex multiplex cytokine quantification platform.

Findings: Immunological, demographic and human behavior data will be correlated with clinical and symptomology data from chronic vs. recovered subjects. Luminex will yield comprehensive immune response data and will identify key immune signatures important in protection from or promotion of chronic disease.

Interpretation: The data generated by this study addresses a fundamental knowledge gap about host factors that contribute to severe and chronic disease sequelae, allowing the optimization of risk control and therapeutics, and ultimately informing vaccine development.

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