

**Background:** More than 1 billion people worldwide suffer from “neglected diseases” — illnesses that receive little to no R&D investments because those affected are too poor to provide a market for new medicines. Furthermore, 10 million people die each year simply because they don’t have access to lifesaving medicines that already exist — often because those treatments are far too expensive. Universities can use their unique positions as public-interest, largely publicly-funded research institutions to address these challenges.

**Methods:** Few have tried to systematically measure universities’ contributions in this vital area. The Universities Allied for Essential Medicines (UAEM) Global Equity and Biomedical Research Report Card aims to fill this gap by evaluating academic institutions on three key questions: Are universities investing in innovative medical research that addresses the neglected health needs of low-income communities worldwide? When universities license their medical technology for commercial development, are they doing so in a manner that ensures those treatments reach patients in LMICs at affordable prices? And, are universities educating the next generation of global health leaders about the impact academic institutions can have on global health through research and licensing activities?

**Findings:** Using both publicly-available and self-reported information, UAEM evaluated and ranked 59 American universities that received the highest total grant funding dollar amount from the National Institutes of Health (NIH) and the National Science Foundation (NSF) in 2014. Evaluation metrics that minimized variation based on levels of research, student body size, and public vs. private institutions were primarily selected to develop weighted scores for each of the three sections: Access, Innovation, and Empowerment. Only one school was awarded an “A”, whereas 47 schools received a grade of C+ or less.

**Interpretation:** Based on these results, it is evident that universities need to realize their potential to leverage their investment in biomedical research to advance global health equity. By prioritizing research on diseases neglected by for-profit R&D, they can pioneer new treatments that will benefit millions in low and middle-income countries (LMICs). By sharing their medical breakthroughs under non-exclusive licenses or licenses that promote lower prices in developing countries, universities can help poor patients worldwide access life-saving treatments and diagnostics.

**Funding:** Funding for the project was provided by the Doris Duke Charitable Foundation, the Open Societies Foundation, the Perls Foundation and the Moriah Fund.

**Abstract #:** 2.022\_NEP

### Assessing youth-friendly sexual and reproductive health services for adolescents: A systematic review

*A. Mazur, M.J. Decker, C.D. Brindis, Philip R. Lee Institute for Health Policy Studies and Bixby Center for Global Reproductive Health, University of California, San Francisco, San Francisco, CA, USA*

**Background:** Over the last quarter century, there has been an emergence of evidence-based research directed toward the development, implementation and assessment of the impact of youth-friendly health services (YFHS) to improve the delivery of sexual and reproductive health services for adolescents. Despite these research efforts,

evidence supporting the effectiveness of YFHS is limited, which may be attributed to a lack of consensus on how to measure youth-friendliness to track progress and evaluate outcomes. The purpose of this systematic literature review is to assess how youth-friendly sexual and reproductive health services are measured worldwide.

**Methods:** We conducted a systematic review of studies measuring youth-friendly sexual and reproductive health services at health facilities published between January 2000 and June 2015 using Pubmed, Web of Science and POPLINE databases. Additional studies were identified by reviewing references of identified sources. Studies were screened to identify measurements and indicators that have been used to measure youth-friendly sexual and reproductive health services.

**Findings:** Our review identified 20 studies from an initial search of more than 12,000 records, including six from high-income countries and 14 from low-and-middle-income countries. The review identified 119 indicators used for measuring youth-friendly sexual and reproductive health services. The three most frequently assessed domains were accessibility, staff characteristics and competency, and confidentiality and privacy. The majority of the indicators were not specific to youth needs and often reflected basic standards of care. Our review showed no consistency in the tools or indicators used to measure youth-friendliness.

**Interpretation:** This review shows the need for standardization and prioritization of indicators for the evaluation of YFHS. The results can be used to identify a core set of indicators that can be incorporated into a framework for assessing youth-friendly sexual and reproductive health services. There is a need to further distinguish between those variables that may have greatest impact on the use of services by adolescents, such as respect and privacy, those that impact the quality of services offered, and those that have limited relevance. More rigorous studies using a standardized and prioritized set of indicators is critical to measure the impact and effectiveness of YFHS efforts.

**Funding:** The World Bank Group.

**Abstract #:** 2.023\_NEP

### Health care access during the Ebola epidemic in Liberia

*P. McQuilkin<sup>1</sup>, K. Udbayashankar<sup>2</sup>, M. Niescierenko<sup>3</sup>; <sup>1</sup>University of Massachusetts Medical School, Worcester, MA, USA, <sup>2</sup>JFK Medical Center, Monrovia, Liberia, <sup>3</sup>Boston Children’s Hospital, Boston, MA, USA*

**Background:** The Ebola epidemic in West Africa claimed over 4,800 lives in Liberia. The outbreak paralyzed the healthcare system with all government hospitals closed or operating at limited capacity at the height of the epidemic. Little is known about where patients were seeking care when healthcare facilities were closed and what impact this had on health.

**Objective:** To determine the impact the Ebola outbreak had on access to basic health care in Liberia.

**Methods:** Healthcare access and Ebola knowledge surveys were administered in interview format to a cluster randomized sample within 1 hours drive in the catchment area around Liberia’s 21 government hospitals. Data was managed in a mobile data application on smart phones and analyzed using SPSS.

**Results:** A total of 543 heads of household were interviewed. The average age of respondents was 42 years with equal male to female and rural to urban ratios. An average of 48% of respondents reported on a graduated scale that it was “very difficult” to obtain basic healthcare, and that it was more difficult in rural areas (55%). Reasons for not accessing healthcare included fear of exposure to Ebola in hospitals (33%), closure of hospitals (22%), and healthcare workers refusal to see patients presenting for care (20%). There was an overall decline in facility use by 30% with obstetric care, prenatal care and pediatric care down by 45%, 40% and 30% respectively. There was a slight increase in healthcare seeking at pharmacies for pediatric care and in use of traditional birth attendants and midwives for obstetric care.

**Interpretation:** Access to basic healthcare was severely affected during the Ebola outbreak in Liberia. Although hospital closures/limited functioning were a large factor in inability to provide care, other factors such as fear of exposure to Ebola within healthcare facilities played a role in reduced access. Obstetric, prenatal and pediatric care were especially difficult to access during this time. Strategies to preserve healthcare system function and public impression of these facilities will be critical, should future outbreaks occur.

**Funding:** This work was supported by the Paul G. Allen Tackle Ebola campaign.

**Abstract #:** 2.024\_NEP

### Prevalence and correlates of depression in a high emigration town in Oaxaca, Mexico: Findings from a binational student research training program

M.C. Meacham<sup>1,2</sup>, D.A. Hughes<sup>1</sup>, M. Gell-Redman<sup>1,3</sup>, M.L. Zúñiga<sup>1,2</sup>; <sup>1</sup>University of California San Diego, La Jolla, CA, USA, <sup>2</sup>San Diego State University, San Diego, CA, USA, <sup>3</sup>University of Georgia, Athens, GA, USA

**Background:** Depression is the most common mental health disorder and a leading cause of disability worldwide. Residents of high emigration towns in Mexico often live with prolonged separation from family members; limited economic opportunities; and, for returned migrants from the United States, histories of stress, fear, discrimination, and guilt that may place them at increased risk for depression.

**Methods:** Our binational research team of Latino/a, Mexican, and American students conducted a household-based health and migration survey in a high emigration town in rural Oaxaca, Mexico, in January 2014. All residents aged 15–65 were eligible for the survey; participants provided verbal consent. Participants were screened for depression (CES-D short form) and substance use (WHO ASSIST), and reported their migration history and chronic health conditions. Logistic regression was used to determine correlates of screening positive for depression.

**Findings:** Of the 463 residents who completed our survey, a majority (61.9%) were female and the average age was 38.5 (SD: 14.9). Over half the participants (60.0%) reported some history of migration: 54.5% had internal migration experience and 28.5% were returned migrants from the United States. Two thirds (67.0%) reported talking regularly with family in the United States. A third (36.1%) met the CES-D screening criteria for depression.

In bivariate analyses, history of internal migration was associated with a positive depression screening ( $p=.019$ ), but history of U.S. migration was not. In multivariate logistic regression analyses, female gender (AOR: 3.44, 95% CI: 2.08–5.67), talking with family in the United States (AOR: 1.85, 95% CI: 1.17–2.93), lifetime alcohol use (AOR: 2.80, 95% CI: 1.74–4.50), and having another chronic health condition (AOR: 2.45, 95% CI: 1.55–3.88) were independently associated with screening positive for depression.

**Interpretation:** Although we were limited by the lack of validated depression scale for this population, survey findings showed a very high prevalence of depression. These findings indicate a need for culturally appropriate mental health services, especially for women, that can be integrated with health services for other chronic conditions and alcohol abuse prevention. U.S. and Mexican migration policies that facilitate family reunification might also mitigate psychological distress experienced by members of high emigration communities.

**Funding:** UCSD Center for Comparative Immigration Studies.

**Abstract #:** 2.025\_NEP

### Sustainable university-based water quality program in the developing world

S.H. Byer, G.D. Michels; Creighton University, Omaha, NE, USA

**Background:** Point-of-Use (POU) ceramic filter systems have been shown to be reliable sources of safe drinking water. However, the long-term effectiveness of these systems has been questioned because of a lack of sustainability due user loss, filtration integrity, cost, replacement part accessibility, and use and cleaning complexity. Using data collected from work of the Institute for Latin American Concern - Water Quality (ILAC-WQ) Program, which provides (POU) Ceramic Candle water filtration systems to households in rural, developing communities throughout the Dominican Republic, this study presents quantitative longitudinal data supporting the efficacy of our program model for sustaining a POU filter program.

**Methods:** A University-Based Service-Learning Program has been developed which provides long-term sustainable access to clean drinking water for Dominican families. Student participants from Creighton University work with ILAC, an organization that has a 40 year history of providing healthcare to rural Dominican communities. Student participants annually visit households in 25–30 communities, sampling filtered water to later test for microbiological purity, interviewing users for maintenance knowledge, and conducting physical examination of filter condition. Participants educate the household on proper usage and provide necessary repairs and replacement parts. Under the infrastructure of ILAC-WQ, households can notify community staff of breakages and need for more filters and an incoming team will be notified.

**Findings:** Data collected from the 17 communities, each visited at least 5 times from 2009 to 2015, shows no decline in filter usage. There is a statistically significant increase in filter users when comparing means of the first 3 years to that of the last 4 over all communities. Data show an increase in average filter functionality from 74.7% to 93.6%, and in average filter potability from 84.5% to 97.8% over this 7 year time period.