

alkalinity, total hardness and chlorine. Water quality was compared between samples from Alto Trujillo, and urban Trujillo proper. Data was entered and analyzed using Research Electronic Data Capture (REDCap).

Findings: A total of 50 water samples were obtained and analyzed. 25 samples came from homes in urban Trujillo. 25 samples came from periurban Alto Trujillo, 8 from distribution tanks and 17 from individual homes. Homes in Trujillo proper were 32% positive for total coliforms and 4% positive for *E. coli*. In comparison, the distribution tanks in Alto Trujillo were 50% positive for total coliforms and 12.5% positive for *E. coli*. Homes in Alto Trujillo were 70% positive for total coliforms and 58.8% positive for *E. coli*.

Interpretation: A noticeable decrease in water quality was observed between the homes in Alto Trujillo, which utilize a nontraditional water distribution system, when compared to homes in Trujillo proper.

Discussion: Below ground water systems should be designed and operated to supply water of sufficient quantity and quality to the community. Intermittent systems, whether by tank or by pipe struggle to meet population demands and frequently compromise water quality and overall population health.

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Assessment of knowledge of neglected tropical diseases among future public health professionals

A. Hardee², L. Crossman², M. Ramudif¹, M. Kincaid², B. Brohier¹; ¹The University of Cincinnati, ²Washington University in St. Louis

Project Purpose: The World Health Organization characterizes neglected tropical diseases (NTDs) as the most common diseases amongst the world's poor. These communicable diseases are contracted via vectors or consumption of contaminated food and water. NTDs disable, debilitate and kill one in six people worldwide. Treating NTDs can aid nutrition, improve health education, and economic productivity in vulnerable populations. The primary purpose of this project is to investigate knowledge of neglected tropical diseases among future public health professionals.

Project Design: The Global Network for Neglected Tropical Diseases, an initiative of the Sabin Vaccine Institute, is dedicated to raising the awareness of NTDs. The END7 campaign advocates and educates the public about NTDs to facilitate the delivery of medication that treats seven of the most common NTDs. Participants involved in the study will be enrolled in core level courses at the University of Cincinnati in the College of Medicine's Master of Public Health program. The project will determine the prior knowledge of NTDs among public health professionals. Examine the participant's knowledge based on sex, age, nationality, concentration of study, and assess knowledge of NTDs following a 10-week educational seminar.

Outcome & Evaluation: Statistical analyses will be used to categorize important variables and test for significance. Awareness of NTDs among future public health professionals is critical in shaping the necessary policies toward the control of such diseases and addressing the global health disparity.

Going Forward: Next steps include enhancement of education among future public health professionals about NTDs. In addition, specific NTD education to both undergraduate and graduate students with futures in public health.

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A One Health approach to interdict environmental health threats in Suriname

M.Y. Lichtveld¹, W.B. Hawkins¹, P.E. Ouboter², J.K. Wickliffe¹, M.J. Wilson¹, F. Abdoel Wahid¹, A. van Sauers³, R. Ramjatan⁴, T. Graafsma⁵, D.R.A. Mans⁶; ¹Tulane University, School of Public Health and Tropical Medicine, Department of Global Environmental Health Sciences, New Orleans, LA, USA, ²National Zoological Collection/Environmental Research Center, Anton de Kom University of Suriname, Paramaribo, Suriname, ³Ministry of Agriculture, Livestock, and Fisheries, Paramaribo, Suriname, ⁴Regional Health Services (RGD), Nickerie, Suriname, ⁵Institute for Graduate Studies and Research, Anton de Kom University of Suriname, Paramaribo, Suriname, ⁶Anton de Kom University of Suriname, Faculty of Medical Sciences, Paramaribo, Suriname

Background: A One Health approach was used to analyze environmental and occupational health threats (EOH) in Suriname and those common to the increasingly vulnerable Caribbean region while preserving the unique assets, health and cultural traditions of indigenous- and other health disparate populations.

Methods: EOH assessments targeting goldmining practices included mercury (Hg) analyses in sediment, water, fish, and women/children. Pesticide use in agriculture was examined through pesticide residue analyses of frequently consumed produce. The community-academic partnership facilitated training of mobile-health technology-enabled Community Health Workers (CHWs) to promote safe pesticide use.

Findings: Hg contamination: sediments (0.14–0.35 ug Hg/g); frequently consumed fish (0.17 to 1.64 ug Hg/g), with 75% of fish at levels above WHO's safe consumption level (0.5 ug Hg/g). Depth-wise sediment cores showed decreasing Hg concentrations indicating higher Hg levels were associated with more recent goldmining-related deposition; mean hair Hg 4.6 ug/g (range 1.1–9.1 ug/g) and 5.3 ug/g (range 1.0–14.1 ug/g) in women and children, respectively. All levels were at or above EPA's reference dose (1.0 ug/g). Produce pesticide residues exceeded Maximum Residual Levels (MRLs). Endosulfan, a banned pesticide, was detected in 1 of 8 samples in Tannia (mean 0.07 ppm, EU MRL 0.05 ppm). Organochlorines and pyrethroids were detected in 35% of samples. Pesticide residues in all contaminated produce exceeded 1 or more MRLs. The 25 CHWs successfully developed and validated safe pesticide use health education messages.

Interpretations: Hg contamination in Suriname's greenstone belt has been confirmed in frequently consumed fish, sediment, and communities near gold-mining areas but there are also indications that climate change may have influenced Hg deposition and bioavailability in non-gold mining areas. Dietary exposure to pesticides represents a priority EOH concern especially in pregnant

women. CHWs can serve as effective pesticide interventionists. Since both Hg and selected pesticides are neurotoxicants, these findings served as the foundation for a recently awarded GEOHealth research and research training grant to ascertain adverse neurodevelopmental effects in 1000 mother/child dyads. The results from this research will inform a gap- and opportunities assessment of relevant environmental policies in Suriname.

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Managing diabetes and co-morbid mental health problems in low and middle income countries: A scoping literature review

H. Mirzoshoev, S. Weine; The University of Illinois at Chicago, IL, USA

Purpose: The aim of this study was to inform best practice strategies for managing diabetes and co-morbid mental health problems in LMICs based upon a scoping literature review.

Method: A scoping literature review was conducting with the keywords “diabetes”, “depression”, “LMICs”, “mental health”, “treatment”, and “management”. International databases including PubMed and Google scholar were consulted, as well as the websites of the World Health Organization and International Diabetes Federation. 25 publications were selected with relevance to the topics including those on diabetes and depression in LMICs (n = 9), diabetes and other mental disorders in LMICs (n = 10) and diabetes and mental health treatment not in LMICs (n = 6). These publications included original research (n = 10), literature reviews (n = 8), conceptual papers (n = 4) and reports (n = 3).

Results/Findings: 80% of persons with type 2 diabetes reside in LMICs and 1/3 are depressed. Depression is more common in women and associated with older age, being overweight, poor glycaemic control, and pernicious habits. Anxiety and stress are also common among diabetics, and associated with unemployment and lack of physical activity. Among those with depression, and other mental disorders, two-thirds are not recognized. The most widely reported interventions for diabetes and depression in LMICs are antidepressants, psychotherapy, or a combination of both. Task sharing approaches which have been used in LMICs to train nurses or lay health care workers to assist patients with taking medications and exercising, have potential for delivery of mental health services to diabetics.

Conclusion: Diabetes and co-morbid depression or other mental health problems, is a major public health problem in LMICs that needs to be better addressed. Best practice strategies should adopt a task sharing approach with nurses, lay health workers, and peers to assist in mental health prevention, screening, and care for diabetics. To inform this approach, further research is needed that characterizes the mental health needs, supports and resources, and barriers to care of diabetics with depression and other mental health disorders.

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Tuberculosis epidemiology and novel transmission routes in rural Tanzania

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