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decade, primarily among rice farming communities. The national healthcare system is struggling to address the medical needs of the growing number of affected individuals who need to be treated with dialysis and renal transplants.

Hypothesis: Occupational pesticide use and alcohol consumption are risk factors associated with CKDu in farming communities in Sri Lanka.

Aims: 1) To conduct a case control study investigating risk factors for CKDu using a One Health community survey approach in affected rice farming communities of Sri Lanka; 2) To use results generated from this study to assist CKDu researchers in exploration of multidisciplinary intervention strategies and in generating data-driven policy changes to reduce CKDu incidence.

Methods: The case-control study focused on human populations living in the CKDu prevalent North Central region (NCR) of Sri Lanka. A sample population of 110 individuals (55 cases and 55 controls) was selected based on CKDu health screening records from affected communities. Cases were individuals who tested positive for albuminuria and had renal changes consistent with CKD without the presence of diabetes or hypertension. Controls were patients with similar exposures, but negative for albuminuria and CKD. The oral survey tool was translated from English to Sinhalese and administered by Sri Lankan research staff. Multivariable logistic regression was performed to model risk factors associated with CKDu diagnosis.

Findings: Community surveys from the 55 CKDu cases and 55 control individuals were analyzed based on exposure factors related to human, animal, and environmental components: 1) cultural practices, 2) family history, 3) animal health, 4) occupational pesticide use, and 5) utilized water sources. Preliminary analysis shows that the CKDu epidemic is most likely multifactorial and involves both cultural and occupational exposures more common in cases than controls.

Interpretation: Occupational and cultural risk factors are both important considerations that could be targeted in community interventions to reduce CKDu incidence in Sri Lanka and other affected agricultural communities.

Funding: University of California Global Health Institute and UC Davis Blum Center for Developing Economies.
Abstract #: *2.003_PLA*

Impact of an improved biomass stove on birth outcomes in rural Nepal: A cluster-randomized, step-wedge trial

J. Katz[1], J.M. Tielsch[2], S.K. Khatry[3], L. Shrestha[4], P. Breysse[1], S. Zeger[1], W. Checkley[5], L.C. Mullany[1], N. Kozuki[1], S.C. LeClerq[1], R. Adhikari[6]; [1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA, [2]George Washington University Milken Institute School of Public Health, Washington, DC, USA, [3]Nepal Nutrition Intervention Project – Sarlahi, Kathmandu, Nepal, [4]Institute of Medicine, Tribhuvan University, Kathmandu, Nepal, [5]Johns Hopkins School of Medicine, Baltimore, MD, USA, [6]Kathmandu Medical College, Kathmandu, Nepal

Background: Low birthweight (LBW), preterm birth, and small-for-gestational-age (SGA) are strongly associated with morbidity and mortality in low-resource settings. Data on the impact of reducing particulate indoor air pollution from biomass stoves on adverse birth outcomes is lacking.

Methods: A cluster-randomized, step-wedge, community-based cookstove replacement trial was conducted in rural southern Nepal to estimate the impact on birth outcomes. Eligible households had at least one child < 36 months of age or a married woman 15-30 years of age. Prevalent pregnancies were enrolled at baseline and incident pregnancies were identified by visiting households every five weeks. Gestational age was based on date of last menstrual period ascertained during these visits. Households were surveilled for six months prior to a 12-month stepped-wedge introduction of an improved biomass stove with chimney (Envirofit Corp.), followed by an additional six months of surveillance. 2553 pregnancies were enrolled within 3376 households. As soon after delivery as possible, study workers visited the household to interview the woman and take infant anthropometric measurements. Outcomes were compared across different amounts of time a pregnant woman lived in a household with an improved cookstove. Household $PM_{2.5}$ was collected before and after stove installation.

Findings: Mean 20-hour $PM_{2.5}$ level was reduced from 1386 $\mu g/m^3$ to 930 $\mu g/m^3$. Mean birth weight and gestational age was 2627g (SD = 443) and 38.8 weeks (SD = 3.1), respectively, among those delivering prior to improved stove installation. 39% were LBW, 22% preterm, and 55% SGA among pregnancies with no exposure to improved stoves. There was no statistically significant difference or trends in adverse birth outcomes by increasing exposure to improved stoves during pregnancy.

Interpretation: $PM_{2.5}$ concentrations following installation of the improved stoves were still well above the WHO indoor air standard of 25 $\mu g/m^3$. There was no evidence that installation of improved biomass stoves reduced adverse birth outcomes. This could be due to an inadequate improved stove design, stove stacking, or other sources of indoor air pollution. Trials to examine birth outcomes with better biomass stove designs or clean fuel are needed to establish whether further lowering of indoor air pollution improves birth outcomes.

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Abstract #: *2.004_PLA*

Zoonotic enteric pathogens in Kisumu Kenya, a comparison of farmed and Lake Victoria Tilapia: A collaborative interprofessional One Health project

B. Keith[1], K. Bagamian[1], J. Bouland[1], M. Charles[1], S. Cheruiyot[2], L. Lukorito[2], M. Oyango[2], R. Rheigans[1]; [1]University of Florida (UF), College of Public Health, Department of Environmental and Global Health, Gainesville, FL, [2]Great Lakes University of Kisumu (GLUK), Tropical Institute of Community Health and Development in Africa, Kisumu, Kenya

Background: Tilapia are among the main protein source around Lake Victoria, including Kisumu Kenya. Environmental pollutants of Lake Victoria include municipal untreated sewage, runoff, storm-water, and animal waste. We hypothesized that tilapia were contaminated with enteric zoonotic pathogens and we compared lake fish to locally farmed fish. We further wanted to see if certain parts of the fish were more likely to be contaminated.

Methods: We collected fish directly from the source by random selection. Lake Victoria tilapia were procured from fishing boats as they came to shore in Dunga. Farmed tilapia from Nyahera were procured soon after being fished out by farmers. Standard ethical practice was followed in the procurement of deceased fish meant for consumption. Fish were transported to the lab at GLUK. We sampled the skin, gills, and the inner tissue. We then extracted DNA and ran multiplex PCR assays testing for zoonotic enteric pathogens. DNA was then transferred to filter paper and brought to UF for ongoing specific identification testing. GLUK and UF faculty and students from various professions worked side by side on this collaborative project.

Results: Analysis of all 94 samples showed 18% were positive for at least one enteric pathogen. There were 12 samples positive for suspected Yersinia Enterocolitica or Cholera, all of these all were from the Nyahera fish farm. There were 5 samples which are likely Salmonella or Shigella, all of which were from Lake Victoria at Dunga. Furthermore, 94% of positive samples were either from skin or gill and only one tissue sample was positive.

Interpretation: The identification of zoonotic enteric pathogens in Tilapia has far-reaching implications. We show that currently farmed fish in the region have another set of pathogens. Additionally, we show that the skin and gills are the more likely sources of contamination. These comparisons provides hints about the origin of specific enteric outbreaks and will be helpful in mitigation efforts. Additionally, this highlights the need for public health education on this source of pathogenesis. Further larger scale studies and public health interventions are needed in order to prevent outbreaks of enteric pathogens.

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Abstract #: *2.005_PLA*

Identifying perceptions of chronic kidney disease in a hemodialysis population in Guatemala

P. Koolwal[1], L. Madrigal[2], M. Rothstein[3], J. Barnoya[2,4]; [1]Washington University/Barnes-Jewish Hospital, St. Louis, MO, USA, [2]Cardiovascular Surgery Unit of Guatemala, Guatemala City, Guatemala, [3]Washington University/Division of Renal Diseases, St. Louis, MO, USA, [4]Washington University/Division of Public Health Sciences, St. Louis, MO, USA

Background: CKD of non-traditional causes (CKD-nt) is a growing entity and leading cause of death in Nicaragua and El Salvador, known to mostly affect young men often working in agriculture. Some evidence suggests CKD-nt epidemic may be present to a lesser extent in Guatemala as well. While epidemiologic research is underway to identify the presence of CKD-nt in Guatemala, there have been no investigations focusing on local perceptions of the illness. Exploring the cultural understanding of the illness and the help-seeking behaviors can help identify barriers that inhibit implementation of awareness programs and adherence to clinical recommendations.

Methods: We conducted a semi-structured interview to determine perceptions of chronic kidney disease and help-seeking behaviors in 19 adult patients receiving hemodialysis at Roosevelt Hospital in Guatemala City. Patients were recruited by convenience sampling and responses were analyzed by mixed-methods approach across demographic groups.

Findings: We found that most patients reported swelling, nausea and vomiting as initial symptoms, and believed the kidneys to be the affected organs. There was a strong reliance on family support while seeking treatment, and most patients had seen at least one health-care provider prior to admission. Fifteen patients cited previous treatment with pills (for widely varying indications). Perceived causes also varied greatly and less than half the patients with diabetes acknowledged it as a possible cause. The concern of death or lack of cure prevailed, but very few expressed concerns about financial burden of disease or risk of catheter-related infections. Most cited the function of hemodialysis was to "clean the blood," but were unable to expand beyond that. Across the demographic groups the one recurring theme was lack of understanding about the causative factors and feelings of uncertainty and helplessness towards of the illness in general.

Interpretation: Our findings suggest that implementing inpatient education for hemodialysis-initiating patients may improve the overall confusion and uncertainty associated with the illness. Better patient understanding towards the disease, it's prognosis and treatment options can pave the way for behavior-changing initiatives and can be expanded to community awareness programs in the future.
Abstract #: *2.006_PLA*

Contribution of space heating to ambient air pollution in a Peri-urban village in northern China

Jiawen Liao[1], Anna Zimmermann[1], Zoë A. Chafe[1,2], Ajay Pillarisetti[1], Tao Yu[3], Ming Shan[3], Xudong Yang[3], Haixi Li[4], Guangqing Liu[4], Kirk R. Smith[1]; [1]Division of Environmental Health Sciences, University of California, Berkeley, CA 94720, USA, [2]Energy and Resources Group, University of California, Berkeley, CA 94720, USA, [3]Department of Building Science, Tsinghua University, Beijing, China, [4]Beijing University of Chemical Technology, Beijing, China

Background: Cooking and heating with biomass and coal is associated with a significant global health burden. Household air pollution (HAP) and ambient air pollution (AAP) due to emissions resulting from cooking with biomass and coal are estimated to cause about one million premature deaths yearly in China. The contribution of space heating to HAP and AAP is not well studied, however, even though heating with biomass and coal is common.

Methods: We randomly recruited 33 households out of a 200-household village in peri-urban Beijing, China. We conducted surveys on fuel use and monitored solid fuel heating and cooking devices using the Stove Use Monitors System (SUMS) in recruited households. Ambient $PM_{2.5}$ concentrations were measured on two rooftops using gravimetrically calibrated DustTrak II air monitors, and a meteorological station was installed at the village center. We estimated $PM_{2.5}$ emissions and developed time-series and box models to explore the relationship between emissions and AAP and to assess the contribution of household emissions to AAP during the 2013heating season. Committee for Protection of Human Subjects of UC Berkeley approved this study.

Findings: From January to March 2013, the mean ambient $PM_{2.5}$ concentration in the sampling village was 126 ± 107 $\mu g/m^3$, and the