

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

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**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

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**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<sub>2.5</sub> 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<sub>2.5</sub> 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 2013 heating season. Committee for Protection of Human Subjects of UC Berkeley approved this study.

**Findings:** From January to March 2013, the mean ambient PM<sub>2.5</sub> concentration in the sampling village was 126 ± 107 µg/m<sup>3</sup>, and the