



SPH SEMINAR SERIES

What can the analysis of wastewater reveal about communities

Wastewater is known to contain the accumulated biomarkers of endogenous human metabolism that directly reflects the exposure and stressors placed upon all those in a contributing community. Quantitatively measuring these specific biomarkers in wastewater collated from defined communities allows the averaged patterns of exposure and/or effect to be evaluated with the potential to provide excellent spatial and temporal coverage. Thus far the quantitative analysis of wastewater for specific human biomarkers (so-called wastewater-based epidemiology (WBE)) has primarily focused determining the level of community drug use but there is also the clear potential to develop a range of innovative techniques as a solution to quantitatively assess patterns of other factors within populations, such as chemical exposure, nutrition and disease. WBE can already provide ecological data on the prevalence of community licit and illicit drug use, pesticide and phthalate exposure and combined oxidative stress response. The margin of exposure (MOE) approach has allowed the assessment of the risks posed from a number of these. The approach however has the potential to provide data on community exposure to a much wider range of chemicals, including pesticides, flame retardants, per- and poly-fluoroalkyl substances (PFAS) and personal care products, to provide information on a range of health effects (e.g. asthma, allergies, depression), diseases (e.g. cancer, diabetes, obesity) as well as a whole range of infectious disease agents (pathogens such as bacteria, viruses and protozoa) including antibiotic resistance. QAEHS has established a broad and collaborative network of wastewater sampling stations, essential to realise the potential that WBE affords with archived samples dating back to 2009 and for certain years covering up to 70% of the Australian population. The broad range of possibilities that the WBE approach currently offers will be presented and future possibilities assessed in order to allow for the improved assessment of community health.

Date: Tuesday 12th September
Time: 1-2pm
Room: 113
Location: Public Health Building, Herston

