Final oral presentation: Baseline analyses of soil-transmitted helminths in Timor-Leste

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Bob Douglas Lecture Theatre, Building 62 NCEPH (entrance on Eggleston Road)

Suzy Campbell is a PhD Candidate in Global Health Division, studying infectious disease epidemiology. She transferred to ANU mid-way through her PhD Candidature, having completed the first two years of her PhD at the University of Queensland. Suzy’s PhD combines field epidemiology and quantitative analysis of baseline data from the Australian National Health and Medical Research Council-funded “WASH for Worms” trial, integrating water sanitation and hygiene interventions and chemotherapy for soil-transmitted helminth control in Timor-Leste. Prior to her PhD Suzy was a Principal Policy Advisor in Queensland Health. She has worked on infectious disease policies in federal and state governments in Australia. Her research interests include neglected tropical diseases, quantitative epidemiology, and global health.

Abstract:
Soil-transmitted helminths (STH) are a significant human parasitic infection, causing long-term morbidity. They are prevalent in impoverished regions lacking adequate water, sanitation and hygiene (WASH).

Baseline data from the “WASH for Worms” randomised controlled trial (RCT) were used to analyse STH epidemiology in Manufahi District, Timor-Leste. Epidemiological analyses have focused on assessing community prevalence of STH infection, WASH risk factors for infection, intensity of infection using qPCR, and impacts of STH on community haemoglobin and child stunting, wasting and being underweight. Analyses have employed biostatistical modelling using different techniques including principal component analysis, anthropometric z-score development, assignment of cutpoints for PCR-derived STH infection intensity, and mixed-effects logistic and multinomial regression. All analyses are the first reported examples for Timor-Leste. The thesis findings provide an informed position for establishing national STH control strategies, and useful baseline for monitoring and evaluating control programmes once implemented.

This PhD has been undertaken during a period of debate around deworming benefit on morbidity, and global prioritisation of neglected tropical disease (NTD) control and elimination activities. Two narrative reviews are also presented: one is an analysis of recent evidence of STH morbidity, and an appraisal of systematic reviews, to highlight evidence shortfalls for direct morbidity measures indicating possible benefits from deworming. The second review is an analysis of evidence for deworming, WASH, and current NTD integration, which highlights the need for comprehensive “multi-component” integration.