

APRU GLOBAL HEALTH CONFERENCE 2019

PRE-CONFERENCE WORKSHOP

Workshop 2

Date: 17 November 2019 (Sunday)

Time: 0900-1200

Venue: to be confirmed

Title: Mendelian randomization: From concept to implementation

Language: English

Target Audience: Epidemiologists; Researchers interested in causal inference; Postgraduate students working in global health or relevant disciplines

Workshop Description

Identifying causes of diseases is an important but challenging aspect of global health research given most studies are observational and hence susceptible to bias. This workshop provides an overview of Mendelian randomization, a technique referred to as “Nature’s randomized trial”. Mendelian randomization is an increasingly popular means of assessing causality in observational studies by exploiting genetic differences. The workshop will explain the principle of Mendelian randomization and the underlying assumptions needed for valid estimation of causal effects. The workshop will particularly focus on using Mendelian randomization to obtain comprehensive estimates of causal effects from publicly available data, using a 2 sample approach. The Workshop will go through all the steps involved in conducting a valid 2 sample Mendelian randomization study with comprehensive sensitivity analyses. Participants will conduct their own 2 sample Mendelian randomization study using an online-web tool, MR-Base.

Learning objectives:

1. To describe the principle of Mendelian randomization
2. To recognize the strengths of 2 sample Mendelian randomization studies and the key steps involved in conducting such a study
3. To gain experience of conducting a potentially publishable 2 sample Mendelian randomization study

Bio sketch of the chair

Dr Ryan Au Yeung is currently an Assistant Professor at the School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong (HKU). He received his Master of Public Health training (with distinction) in 2008 and PhD training in 2012 at HKU. As an advocate for triangulation of evidence, he is interested in using different methods to segregate correlation from causation. He is particularly interested in the use of Mendelian randomization (MR) to identify causes of diseases

using various data sources such as large Biobanks (individual level data MR) and summary statistics from genome wide association studies (2 sample MR). He was awarded American Journal of Epidemiology (AJE) 2015 Article of the Year for his paper evaluating the role of moderate alcohol use in QT intervals among Chinese using Mendelian randomization. He was a visiting fellow at Bristol Medical School: Population Health Sciences, University of Bristol, supported by the Health and Medical Research Fund Research Fellowship Scheme on Mendelian randomization from 2016-17.