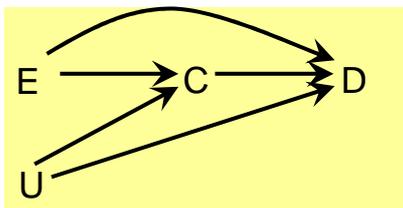# Graphs for Causal Inference in Epidemiology

One-day workshop
SUNDAY July 6th
Registration from 8.30am
Workshop 9am-5pm

Brisbane Convention Centre

BCA Biostatistics Collaboration of Australia   SSAI Statistical Society of Australia Inc.   AEA Australasian Epidemiological Association

The Australasian Epidemiological Association (AEA, http://www.aea.asn.au), the Biostatistics Collaboration of Australia (BCA, http://www.bca.edu.au) and the Statistical Society of Australia (SSAI, http://www.statsoc.org.au) are pleased to announce a one-day workshop on Graphs for Causal Inference in Epidemiology to take place in Brisbane an Sunday July 6th 2008, immediately preceding the AEA/PHAA annual conference. The presenters at the workshop will be Miguel Hernán and Sonia Hernández-Díaz of the Department of Epidemiology at the Harvard University School of Public Health. Both are internationally renowned epidemiologists in the area of causal inference in epidemiology and have published fundamental methodological and conceptual work in this area, as well as in many substantive areas of epidemiological research.

The cost of the workshop is $240 per person, which includes course materials and catering (lunch, morning and afternoon tea). Please note that the number of places for this workshop is strictly limited in order to maximise the scope for discussion and interaction.

Workshop Summary

Draw your assumptions before your conclusions:
Graphs for causal inference

Causal directed acyclic graphs (DAGs) can be used to summarize, clarify, and communicate one's qualitative assumptions about the causal structure of a problem. The use of causal DAGs is a natural and simple approach to causal inference from observational data. It is also a rigorous approach that leads to mathematical results that are equivalent to those of counterfactual theory, which is now widely regarded as the best approach to providing a solid conceptual foundation for discussions of causation. As a result, causal DAGs are increasingly used in epidemiologic research and teaching.

The first part of the workshop will provide a non-technical overview of causal DAGs theory, its relationship to counterfactual theory, and its applications to causal inference. It will describe how causal DAGs can be used to provide a systematic classification of biases in observational and randomised studies.

The second part will present practical applications of causal DAGs theory to examples taken from various research areas in epidemiology, including cancer, pregnancy outcomes, and HIV/AIDS. It will also describe the bias induced by the use of conventional statistical methods for the analysis of longitudinal studies with time-varying exposures.

Prerequisite knowledge for this workshop is an understanding of basic epidemiological and statistical concepts. Knowledge of advanced statistical methods is not assumed. The workshop will be presented in a manner such that the content can be absorbed by the audience in "real time".

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Brief Biography of Presenters

Miguel Hernán is Associate Professor of Epidemiology and Associate Director of the Program on Causal Inference in Epidemiology and Allied Sciences at the Harvard University School of Public Health. His methodological research is focused on causal inference from longitudinal data, in which statistical methods are applied to observational studies to simulate hypothetical randomised experiments, under strict assumptions. Current areas of application of this methodology include optimal use of antiretroviral therapy in persons infected with HIV, and assessment of lifestyle and pharmacological causes of cardiovascular disease. His substantive research is focused on the aetiology of diseases of the central nervous system, such as multiple sclerosis, Parkinson's disease, and amyotrophic lateral sclerosis.

Sonia Hernández-Díaz is Assistant Professor of Epidemiology and Director of the Pharmacoepidemiology Program at Harvard University School of Public Health. Her research activities include the application of innovative methodological concepts to pharmacoepidemiologic studies, including the use of causal structural approaches to define confounding and selection biases that might facilitate the identification, communication, and resolution of common analytical problems. Her substantive areas of research interest are in drug safety evaluation from observational data, with a special emphasis on the analysis of patterns of use and safety of drugs during pregnancy, and in gastrointestinal and cardiovascular safety of steroidal and non-steroidal anti-inflammatory drugs.

WORKSHOP REGISTRATION

Invoice: ABN 93 597 475 807

Please send this registration form to:

Associate Professor Leigh Blizzard
AEA Honorary Treasurer
Menzies Research Institute
Private Bag 23
HOBART TAS 7001
Fax: +61 3 6226 7704

Name_____

Position_____

Department_____

Organisation_____

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Payment by cheque: Please send a cheque for $240 payable to *Australasian Epidemiological Association* with this registration form.

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