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Biostatistics Seminars
Winter 2017

SPECIAL SEMINAR

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Latent class analysis: An indispensable tool for diagnostic research

Friday, January 20th, 2017
3:30 pm – 4:30 pm
Purvis Hall, 1020 Pine Ave. West, Room 24

ALL ARE WELCOME

Abstract:
The lack of an adequate diagnostic test is a fairly common problem in many disease areas including childhood tuberculosis, pneumonia and Alzheimer's disease. Latent class analysis has been applied to estimate disease prevalence or sensitivity and specificity of a new diagnostic test in these settings. It can also be used to develop prediction models, estimate overdiagnosis and support cost-effectiveness analyses. Despite its utility, the number of applications of latent class analysis in diagnostic research remains limited. This presentation will discuss some of the reasons for this and some solutions to make latent class models more accessible. One particular impediment has been the promotion of simple but biased alternative approaches, particularly composite reference standards. Other challenges include the handling of non-identifiability and conditional dependence, which are common in these problems, and model validation in the absence of a perfect reference test.

Bio:
Nandini Dendukuri is Director of the Technology Assessment Unit of the McGill University Health Centre. She is also an Associate Professor at the Departments of Medicine and Epidemiology, Biostatistics and Occupational Health (EBOH), McGill University, Montreal. Her research program in the area of developing Bayesian statistical methods for health technology assessment diagnostic studies is supported by a Chercheur Boursier, Senior award from the Fonds de recherche du Québec -Santé. Her research projects are supported by grants from the Canadian Institutes of Health Research (CIHR) and Natural Sciences and Engineering Research Council of Canada (NSERC). She is a co-Instructor for an introductory course on Health Technology Assessment taught as part of the summer program at EBOH and Instructor for an introductory course in quantitative methods in the Department of Experimental Medicine.
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