



Epidemiology, Biostatistics & Occupational Health
EPIDEMIOLOGY SEMINAR SERIES
Fall 2013

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Causal approach to adherence-based analyses: A comparison of intention-to-treat, per protocol, as treated and other alternative analytical strategies

Monday, 21 October 2013
4:00 pm - 5:00 pm - Purvis Hall,
1020 Pine Ave. West, Room 25

ALL ARE WELCOME

SYNOPSIS: Most methodologists recommend intention-to-treat (ITT) analysis in order to minimize bias when assessing treatment effectiveness in a randomized controlled trial. Although an unbiased estimator for the causal effect of treatment assignment, the ITT estimator is biased for the actual effect of receiving treatment. Alternatives to the ITT analysis have become increasingly popular, including Per Protocol, As Treated, Average Causal Effect, and Complier Average Causal Effect analyses. The purpose of this presentation is to 1) review these different approaches, and 2) illustrate the similarities, differences, and underlying assumptions so that the appropriate analysis is matched to the appropriate context.

OBJECTIVES:

- 1.** To understand that although the intention-to-treat analysis is useful from a policy perspective, it is much less useful from a patient perspective.
- 2.** To understand the underlying assumptions and limitations of the Per Protocol and As Treated analyses.
- 3.** To learn the basic concepts used in calculating the complier average causal effect through both the Principal Stratification and Instrumental Variable approaches.

BIO: Dr. Ian Shrier has been practicing sport medicine physician for over 25 years, with doctoral training in physiology and post-doctoral training in epidemiology. He has over 175 peer-reviewed publications on exercise, sport medicine injuries, and methodological research, and is an editorial board member of four international sport medicine journals. His current methodological work includes injury epidemiology, meta-analysis and causal inference.