



PSI Webinar: Causal Inference

Thursday 2nd November 2017, 13:00 - 15:00

<http://www.psiweb.org/events/psi-events>

Defining the estimand of interest in a clinical trial is crucial to align its planning, design, conduct, analysis, and interpretation. The need for more precise specifications of estimands is highlighted in the draft addendum ICH E9(R1) which was published for public consultation in August 2017. Although not explicitly mentioned in ICH E9(R1), the addendum brings causal reasoning – besides randomization and ITT – into our world of pharmaceutical statistics. In this webinar, we will discuss the link between the ICH E9(R1) and causal inference. Furthermore, per protocol analyses will be discussed from a causal inference perspective and a case study where a principal strata estimand was investigated will be presented

Daniel Scharfstein

Professor of Biostatistics, Johns Hopkins Bloomberg School of Public Health



Estimands and Causal Inference

Abstract: Recently, the ICH proposed an addendum to the E9 Guidance: Statistical Principles for Clinical Trials. This addendum is focused on estimands and sensitivity analysis for randomized trials with intercurrent events. In this webinar, I will discuss the potential outcomes framework for causal inference and use it to formally define estimands that address different types of intercurrent events. I will then discuss the assumptions required to identify these estimands from the observable data and discuss the important role of sensitivity analysis.

Baldur Magnusson

Novartis Pharma AG



Using principal stratification to address post-randomization events: A case study

Abstract: In a randomized controlled trial, occurrence of post-randomization events associated with treatment and the primary endpoint may complicate the interpretation of the overall treatment effect. In this presentation, we discuss how these events may be accounted for at the estimand and the estimator level in the context of a recent case study. We define a principal stratification estimand derived from the scientific question of interest. Consideration is given to identifying assumptions, model-based derivation of an estimator, handling of covariates and missing data. We also discuss the role of sensitivity analyses.

Wanjie Sun

FDA/CDER/OB/DBVIII



Estimating Causal Effects in Clinical Endpoint Bioequivalence Studies in the Presence of Treatment Non-compliance and Missing Data

In this paper, we propose a causal framework and co-primary causal estimands to test equivalence by applying Frangakis and Rubin (2002)'s principal stratification in causal inference. We identify three conditions when the current per-protocol (PP) estimator is unbiased for one of the proposed co-primary causal estimands – the "Survivor Average Causal Effect" (SACE) estimand, and propose a tipping-point sensitivity analysis to evaluate the bias and robustness of the PP estimator when the underlying sensitivity parameters deviate from the three identified conditions.

Registration cost: Free

More details and registration at: <http://psiweb.org/events/psi-events>

Please contact the PSI secretariat on psi@mci-group.com if you have any queries.