



DSECT/DSEN Monthly Seminar Series

“Comparing approaches for Confounding Adjustment in Secondary Database Analyses: High-Dimensional Propensity Score versus machine learning algorithms”

Presented by

Dr. Ehsan Karim, PhD

Scientist and Biostatistician, Centre for Health Evaluation and Outcome Sciences (CHÉOS), Saint Paul's Hospital, Vancouver

Thursday, Mar 23, 2017 at 3:00-4:00pm EST

Online webinar (GoToWebinar*)

RSVP: <https://attendee.gotowebinar.com/register/7362182906301773827>

The uses of retrospective healthcare claims datasets are frequently criticised for the lack of complete information on potential confounders. Utilising patient's health status related information from claims datasets as proxies of unobserved confounders, the high-dimensional propensity score (hd-PS) algorithm enables us to reduce bias. Using plasmode framework that mimicked a previously published cohort of post-myocardial infarction statin use, we compare the performance of the hd-PS algorithm with a few popular machine learning approaches for confounder selection in high-dimensional covariate spaces: random forest, LASSO and elastic net (compared with respect to bias and MSE of the estimated treatment effect).

Resources:

1. Schneeweiss S, Rassen JA, Glynn RJ et al. (2009) High-dimensional propensity score adjustment in studies of treatment effects using health care claims data. *Epidemiology*; 204:512–522. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3077219/>
2. hd-PS software (free): <http://www.drugepi.org/dope-downloads/>
3. Franklin JM, Eddings W, Glynn RJ et al. (2015) Regularized Regression Versus the High-Dimensional Propensity Score for Confounding Adjustment in Secondary Database Analyses. *American Journal of Epidemiology* 182 (7): 651-659. DOI: <https://doi.org/10.1093/aje/kwv108>

The **Drug Safety and Effectiveness Cross-Disciplinary Training (DSECT) program** and the **Drug Safety and Effectiveness Network (DSEN)** are presenting a monthly online seminar series for faculty, staff, trainees, decision-makers, and other stakeholders engaged in the field of drug safety and effectiveness.

For more information, please visit www.safeandeffectiverx.com or contact:

Lisa Dolovich
DSECT Principal Investigator
Email: ldolovic@mcmaster.ca

Melissa Pirrie
DSECT Program Coordinator
Phone: (905) 525-9140 x27766
E-mail: pirrie@mcmaster.ca