

# Faculté de pharmacie

## Séminaire de l'axe

« Médicament et santé des populations »



*"Methods to evaluate the effect of treatment regimens using Electronic Health Record data. Illustration and performance in diabetes research."*

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**Vendredi, 6 juin 2014**

**Pavillon Jean-Coutu**

**12h00 – S1-125**

*À l'invitation du professeur Mireille Schnitzer*

A frequent goal of comparative effectiveness research (CER) is to contrast survival outcomes between exposure groups defined by time-varying interventions. For instance, the progressive nature of type 2 diabetes mellitus (T2DM) results in frequent revisiting of treatment decisions for many patients as glycemic control deteriorates, yet the effectiveness of various pharmacotherapy strategies remains uncertain. To evaluate the impact of progressively more aggressive glucose-lowering strategies, we assembled a large retrospective cohort study of US adults with T2DM using the electronic health records (EHR) from patients of seven sites of the HMO Research Network. Using this practical CER study, I will present the motivation for and principles of marginal structural modeling (MSM) and discuss various MSM approaches based on inverse probability weighting and targeted learning. I will demonstrate the applicability and performance of these methods using results from the analyses of both real-world EHR and simulated data.