**Abstract:**

**Impact of adherence to diabetes mellitus medical follow-up on hospital admissions: Panel data evidence from France**

Bussière C., Sirven N., Rapp T., Sevilla-Dedieu C.

Type I and II diabetes are associated with a large economic burden. The major cost driver is hospitalization: the French social security reports that hospital expenditures account for 40% of the total medical spending for diabetic patients, 80% being attributable to diabetes complications. Policy planners have developed strategies to prevent diabetes complications and limit hospital use. In particular, the French authority for health has issued eight guidelines for diabetes medical follow-up, including regular controls of blood pressure and lipids to reduce cardiovascular risk, and regular screening for damage to the eyes, kidneys and feet. However, less is known on the efficacy of that prevention strategy.

Our objective is to explore which dimensions of these guidelines have the highest impact of patients’ hospitalization risks. We analyze the impact of diabetes follow-up care on the probability of being hospitalized. We use six waves (2010-2015) of a longitudinal and large administrative dataset of detailed medical records from a major French social security provider. Our study sample is a balanced panel sample of 52,218 adults with diabetes. We construct a score of medical follow-up representing the quality of adherence to the eight current guidelines. We control for patient’s socioeconomic features, diabetes severity (type of therapy), and ambulatory care consumption. We also control for several geographic variables measuring the supply of care providers. We estimate a dynamic panel data model, which accounts for the impact of previous period hospital admissions, previous adherence to medical recommendations, and potential confounders. We also control for a potential simultaneous bias due to disregard of the reason of admission. Following previous research, we use a random effect model with a Mundlak correction to deal with the presence of potential biases associated with patients’ unobserved heterogeneity.

Our results indicate that higher adherence to medical guidance is associated with a lower probability of being hospitalized. Specifically, the following items contribute to reduce the risks of hospital use: determination of serum creatinine, fundus exam, electrocardiogram, dental exam and seasonal influenza vaccination. Optimizing adherence to diabetes follow-up guidelines may contribute to prevent the risk of hospitalization and avoid costs.