The adoption of innovation in health care has the potential to slow down growth of healthcare spending in the United States. Specifically, the adoption or discontinued use of prescription drugs have the potential to reduce cost and improve health care. Newly introduced drugs may provide novel and effective treatment options for patients and drugs that are about to go off-patent often provide room for cheaper alternatives with clinically similar health effects. But despite these seemingly obvious benefits of some drugs over others physicians exhibit substantial variation in the rate at which they adopt new innovations and replace older innovations by generic alternatives. This project aims to understand the antecedents of the adoption and discontinuation of prescription drugs by physicians.

The researcher first identifies all newly introduced prescription drugs in the U.S. and all instances in which a patented prescription drug goes off-patent. The precise timing of these changes is used to construct pre- and post-event windows of observation. Second, the project uses data in the Massachusetts All Payers Claims Database, which contains remarkably comprehensive information derived from the medical and pharmacy claims of virtually every resident in Massachusetts. Third, de Vaan collects a dataset of all providers that practice under an MA license. Building on these data, the research explores how innovative new drugs and off-patent events alter treatment. The first question addressed is how prescription rates of the drugs that are being substituted change in the pre- compared to the post-event window. A second set of analyses will map variation between physicians in the rate at which they substitute one drug for another. The third set of analyses will focus on finding the antecedents of substitution. Specifically, are physicians in large provider groups (compared to doctors in solo or small practices) more or less likely to switch to alternative drugs when they become available?

In sum, this project aims to improve our understanding of how are innovations adopted within a population of physicians. The research has the potential to shed new light on why patients’ outcomes and health care costs vary.