Pharosight: A Shiny-Based Interactive Platform with LLM-Enhanced Analyses and Predictive Modeling for Real-World Prescription Data

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Conclusions

Pharosight combines interactive data visualization, LLM-assisted interpretation, and predictive modeling to support efficient, engaging exploration of real-world prescription data by non-expert users.
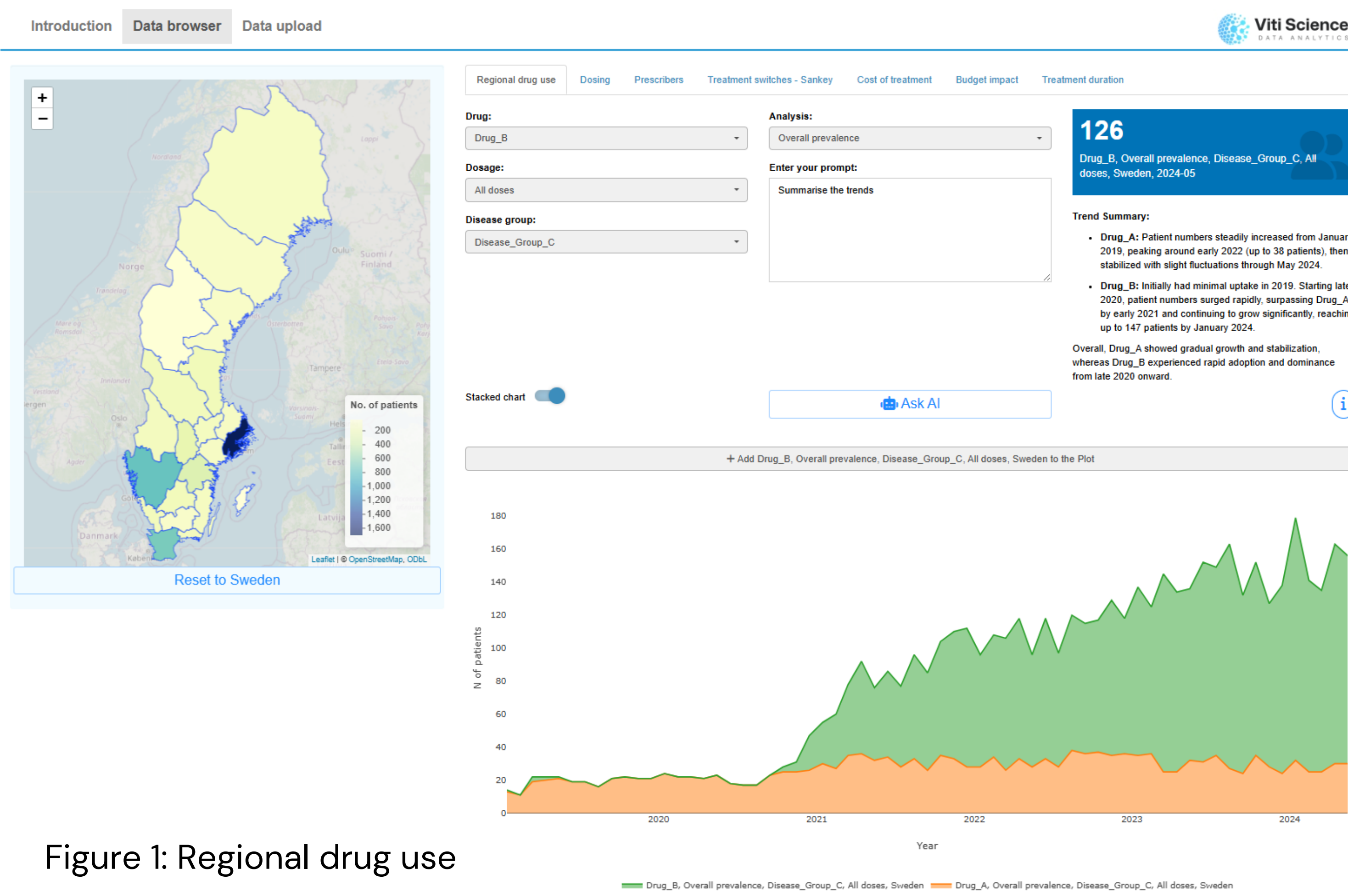

Figure 1: Regional drug use

Aim

We aimed to develop an intuitive Shiny-based application (Pharosight) for exploring and visualizing real-world prescription data.
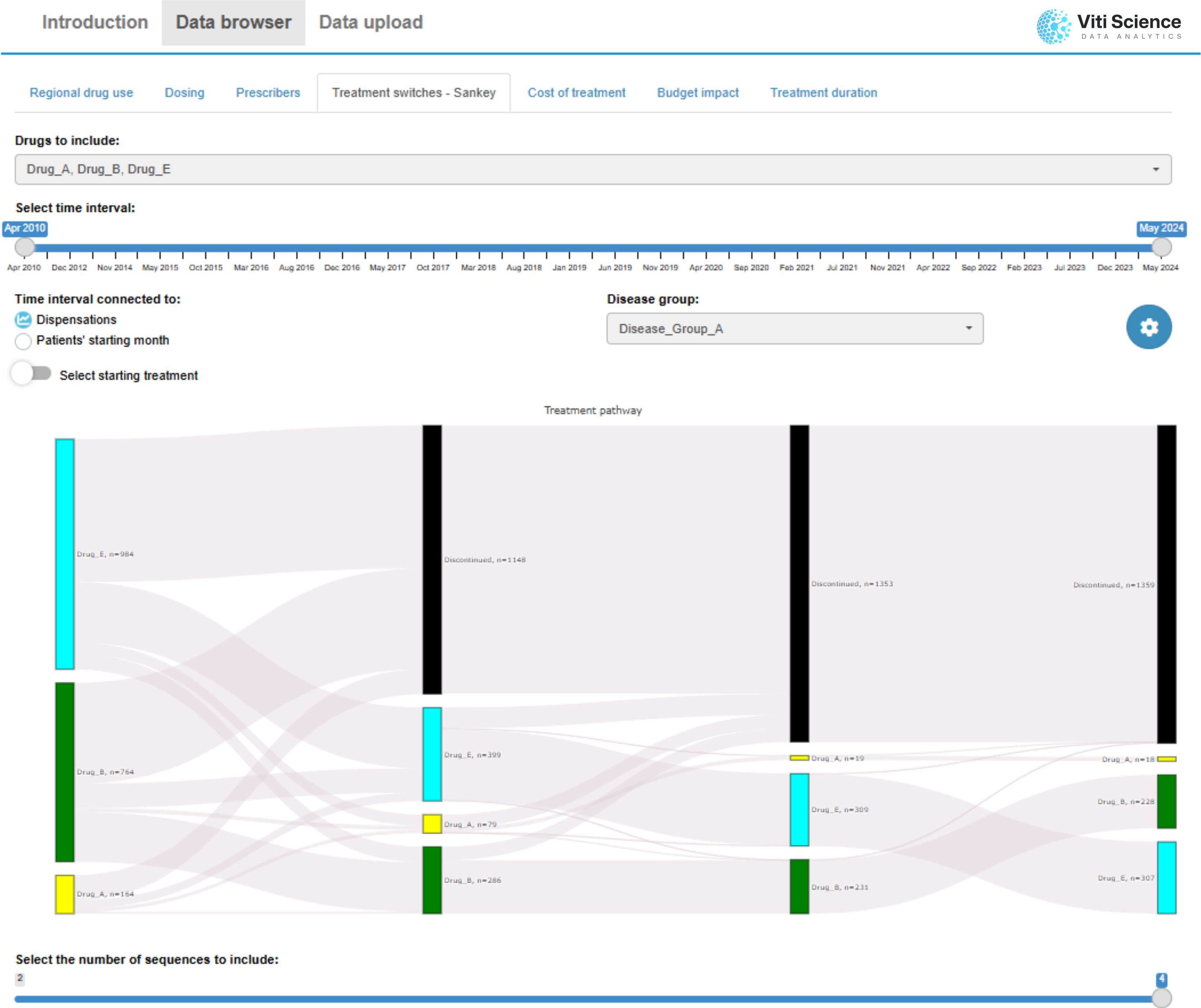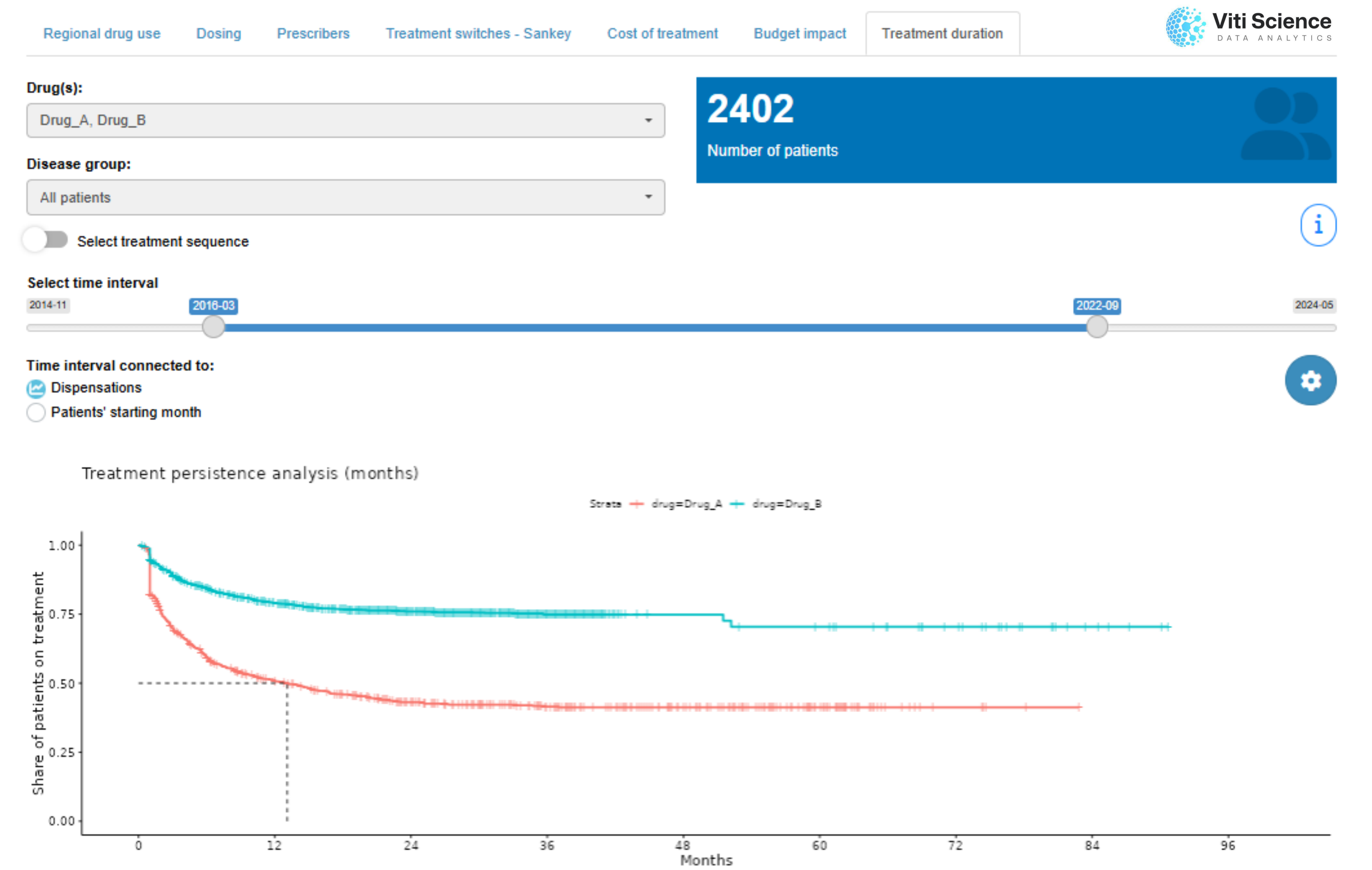

Figure 2: Treatment switches

Figure 3: Treatment duration analysis

Methods

Pharosight was developed as a cloud-based platform using R and Shiny, drawing on data from the Swedish Prescribed Drug Register. Interactive visualizations (based on the plotly and ggplot2 packages) and LLM-based functionalities were integrated into the web application. Predictive models leveraging time-series methods were implemented to calculate future costs.
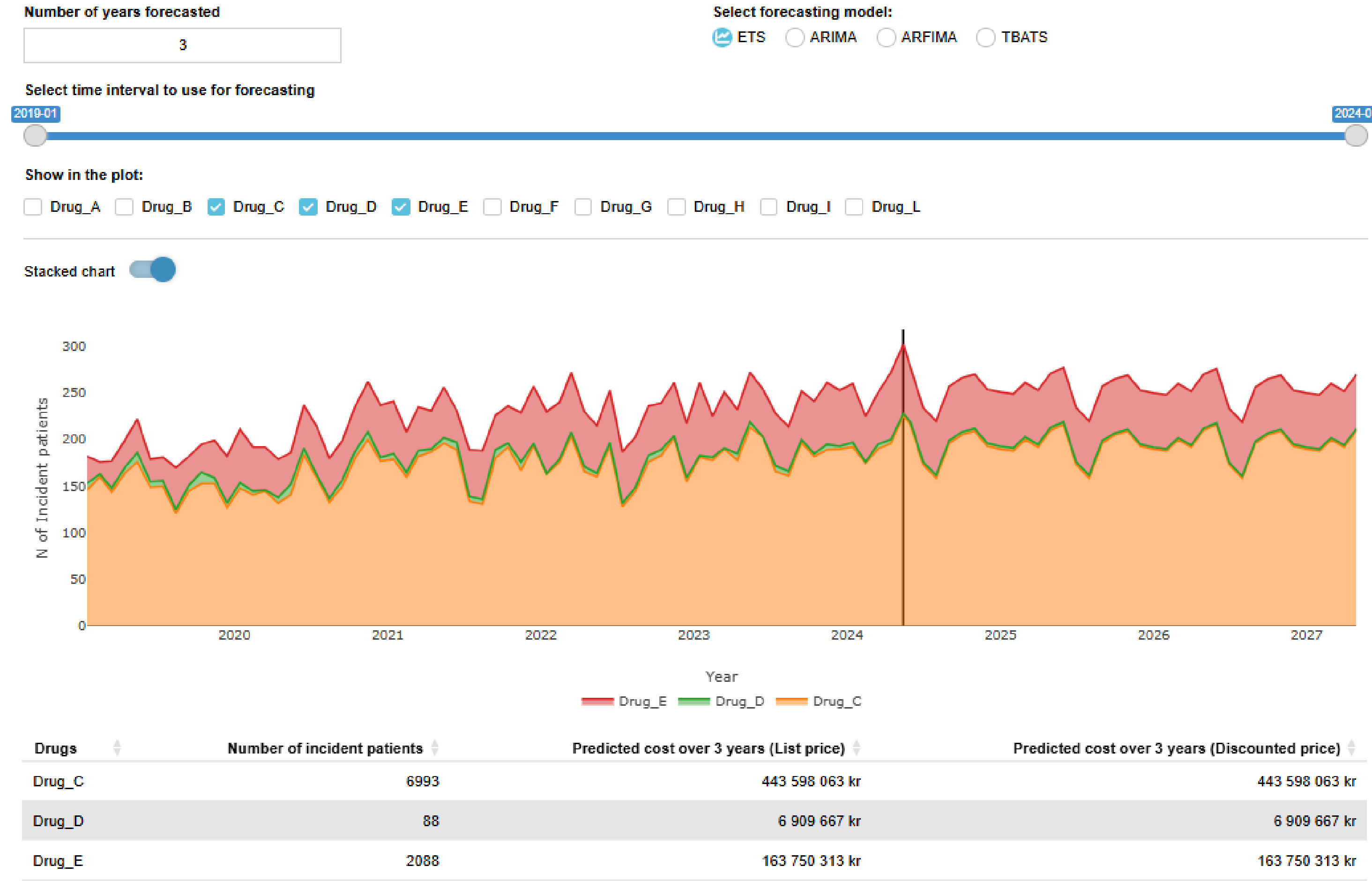

Figure 4: Forecasting and predicted cost

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