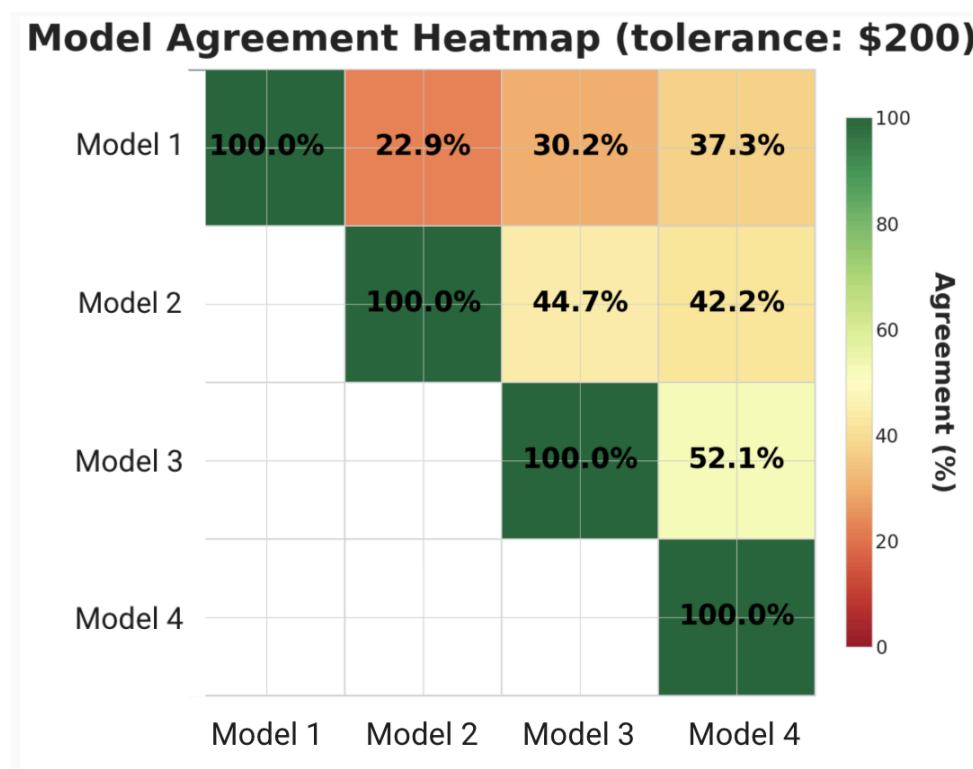Apollo Care is a Chicago-based company leveraging data analysis to provide analytical services to pharmaceutical companies. They tasked the Data Science Clinic team with developing an algorithm to estimate patient deductibles based on 18 months of insurance claims data. Their goal was to identify when patients are vulnerable to high costs and offer them coupons or copay assistance.

Many patients do not use their insurance enough to have a predictable deductible, so the team first built a funnel filtering algorithm to keep those that had sufficient data. Each team member developed their own algorithm to find the inflection point: the claim at which the patient hit their deductible and began to pay substantially less for subsequent claims. After evaluating all of their models on the same patient subset, they found that, for 34% of predictions, two or more models agreed within $200.

While the predicted percentage could increase, there was some encouraging agreement that suggested the models were capturing key patterns and accurately predicting some deductibles. Next steps may include exploring more high-paying patient data and combining considerations from the different models into one algorithm to ease implementation for Apollo Care.