

## Case Study: Reducing Acute Care Utilization Through NDC-Based Risk Stratification and Pharmacogenetics

Bolton Client: 11,500 health plan members - Analysis Period: October 2024 – September 2025

### The Challenge

Bolton Client faced rising medical and pharmacy costs driven by a subset of members experiencing adverse drug responses, avoidable emergency room visits, and inpatient admissions. Traditional cost-containment levers offered limited visibility into whether medications themselves were driving downstream utilization.

### The Approach

Using pharmacy claims analyzed at the National Drug Code (NDC) level, each medication was classified as high, medium, or low risk based on its inclusion on the Bolton vendor's pharmacogenetics testing list and the clinical significance of genetically influenced drug response. Members were assigned an overall risk tier based on the highest-risk drug identified during the analysis period.

### Key Findings

High-risk members averaged **91.1 inpatient stays per 1,000 members**, compared to 29.8 for medium-risk and 25.0 for low-risk members. High-risk members were approximately 3.4 times more likely to experience an inpatient stay.

Emergency room utilization followed the same pattern. High-risk members experienced **363.8 ER visits per 1,000 members**, nearly twice the rate of medium- and low-risk peers.

### The Solution

Pharmacogenetic testing through a simple mouth swab identifies members on medications misaligned with their genetic profile, enabling earlier intervention, reduced trial-and-error prescribing, fewer adverse drug events, and improved medication adherence.

Contacted by Bolton's Nurse advocate or offered through the Client's Advanced Primary Care health center, plan members voluntarily enrolled and were educated on action to take based on results.

### Why This Matters Now

With pharmacy costs continuing to rise, plan sponsors have limited tools left that address true cost drivers. Pharmacogenetics is one of the few levers that prevents pharmacy spend from turning into avoidable medical spend by ensuring members are on the right drug the first time.