

## CASE STUDY:

# Using Data Mining to Guide Employer's Healthcare Decisions

### ISSUES / CHALLENGES

An employer group needed to better understand what was driving its medical costs as well as understand what changes could be made in benefit design to help control costs and improve its population's health. The group being analyzed also had several care management programs in place and wanted to understand how well the vendor was managing its members within these programs.

### METHODOLOGY

Several decision support tools were used to uncover the findings; RPNavigator, RPN<sup>3</sup> and RPN Standard Reports. The underlying algorithm, 3Ms Clinical Risk Groups (CRGs) is used within these tools to categorize members by disease and severity using the employer group's medical and pharmacy claims data. These tools were utilized to understand how the diabetes disease management program was performing. A cohort study was used to determine the effectiveness of the diabetes disease management program and compare the managed to the unmanaged diabetics.

### FINDINGS

- Over 2,000 emergency room visits were found to be potentially avoidable or care could have been provided in another setting.
- Diabetes was identified as a top disease condition within this population, which also utilized a disease management program.
- 26% of diabetic members participate in the disease management program.
- Heart disease and hypertension were also prevalent, conditions that could easily complicate diabetes.
- 67% of healthcare dollars were being spent on members with one or more chronic diseases or a catastrophic condition. These members only represent 23% of the total population.
- Diabetics in the disease management program had higher ER use, hospitalization and overall PMPM.

### RECOMMENDATIONS

#### Emergency Room

- Consider increasing emergency room copays with correspondingly lower copays for urgent care facility use.
- Communication on the use of the emergency room vs. primary care or urgent care settings can be provided to the members. These communications may include guidelines for emergency room visits vs. use of physician office visits.
- Evaluate accessibility to providers by analyzing office hours and location relative to members' homes or places of work to ensure that members have options other than the emergency room as a source of urgent care.

#### Diabetes

- Encourage member's participation in disease management programs.
- Review the diabetes disease management program with the vendor to determine how members are selected for participation, expected number of members to be managed and program design and goals.
- Ensure vendor is identifying diabetic members early in their disease to improve opportunity to reduce downstream costs. These members can be monitored through active management, teaching and monitoring for routine follow up care and testing.
- Develop focused mailings on the disease process and routine care.
- Consider group educational classes for high risk individuals that are disease specific.



## ABOUT CAREADVANTAGE, INC

CareAdvantage, Inc. (CAI) provides healthcare management, information technology and consulting services to health plans, employers, national consulting firms, hospital systems, providers and other purchaser groups. The management and consulting services include care management program enhancement services, operational assessments, executive and clinical management services, and training programs.

CAI's integrated solutions incorporate data warehousing, data mining and analytics, risk stratification and predictive modeling. CAI has been utilizing the Clinical Risk Group (CRG) classification methodology for seven years, contributing to its evolution and development. This experience has been leveraged to develop and advance CAI's predictive modeling and decision support tools, which include:

- RPNavigator - Population health and network management, including case mix and severity adjusted provider and vendor performance
- RPN<sup>3</sup> - Advanced data mining using OLAP technology
- RPN APR-DRGs - Facility case mix and severity adjusted performance evaluation and quality benchmarking

These tools, in concert with the underlying CRG and the APR-DRGs algorithms from 3M Health Information Systems, may be used on an enterprise wide basis to accomplish any or all of the following functions:

- Predictive Modeling to Facilitate Data Transparency and Actionable Intervention Strategies
- Implementation of Cost Containment and Quality Enhancing Initiatives
- Medical, Network, and Benefit Management Decision Support
- Evaluation of Care Management (CM) Programs and Identification of CM Opportunities
- Case Mix and Severity Adjusted Analysis of Provider and Vendor Performance
- Risk Stratification to Quantify Disease Burden and Trends in Cost and Care
- APRs Risk Stratification used to evaluate performance and profile quality of care within the hospital setting

The CAI team consists of former health plan executives, senior medical directors and care management operations directors, as well as experts in clinical data analysis and information technology. Beginning with implementation and throughout the process, CAI assigns expert staff from each practice area to support your organization from a technical, clinical, and data analytical perspective.

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