

Data Warehouse and Dashboard Improve Healthcare Client's Metrics and Financials



A home health program that had been awarded a federal grant to expand an existing care management program across its entire system, but needed to implement or improve on tasks related to administering and operating the home health program.

Project Overview

A client engaged [healthcare consulting firm](#) Freed Associates to support a home health program that had been awarded a federal grant to expand an existing care management program across its entire system. The client is a non-profit healthcare network comprised of physician organizations, acute care hospitals, surgery centers, home health and hospice programs, and medical research facilities. The client's care management program serves patients who have severe chronic illnesses but are not ready for hospice care, are in clinical, functional and/or nutritional decline, and are high-level consumers of health care.

Objectives and IT Infrastructure Support

The home health program's ultimate goals were to improve patient outcomes and meet financial performance targets. The client sought to implement or improve on tasks related to administering and operating the home health program, including grant management, data warehouse and business intelligence implementation and

program reporting and analytics.

A key aspect of Freed's support focused on the client's IT infrastructure needs to support the federal grant's goals and reporting requirements. Freed worked with the client team to establish a data warehouse and implement a business intelligence (BI) tool for program reporting and analytics. This engagement focused on care coordination for patients with advanced chronic illness through home-based medical care and phone visits.

Strategic Approach and Data Management

The client needed to be able to track individual patient activity, assess program staff efficiency and effectiveness and monitor the program's financial performance. Freed led a team of program and information systems analysts in developing the data warehouse and implementing the BI tool to support the reporting of program metrics and financial performance.

Program Management and Metrics Development

Freed's program management work and deliverables included:

1. Delivering subject matter expertise
2. Developing the project work plan, gaining approval of the work plan by multiple divisions within the organization, and providing oversight
3. Identifying and reaching consensus on key program metrics, for reporting
4. Identifying key project risks and issues for program leadership

Ultimately, Freed and the client developed 50 program metrics based on program model fidelity and desired program financial performance. This data was then used to support program goals, including adhering to state regulations, monitoring and intervening (as needed) to achieve desired patient outcomes, adhering to program model fidelity, and monitoring cost savings data to support program financial savings targets.

At the start of the engagement, the client identified a need to decrease the manual preparation required to produce the quarterly grant reports. Previously, this took six weeks of time using 1.5 full-time employees, using data from a data warehouse in its beginning stages of development. The program data warehouse build required data acquisition from two electronic health record systems, a legacy hospital system, and multiple stand-alone clinical and financial data systems within the organization.

During the engagement, Freed created ad hoc reports to track daily patient activity (admissions, visits) and create the required quarterly reports using manual entry into Excel spreadsheets from disparate system reports. This data

was compiled quarterly to produce initial program metrics and new metrics as they were implemented throughout the program.

BI Tool Implementation and Reporting Enhancements

Two phases of BI tool implementation occurred during client engagement. A new business intelligence tool was launched during the final 12 months of the engagement to produce dashboard reports for executive and program operational leaders using the program data warehouse data in support of quality patient care and financial reporting.

Phase one of the software tool produced 18 of 50 metrics. Phase one resulted in a decrease of staff time necessary to produce the final three quarterly reports (3 weeks of time using 1.5 full-time employees).

During the final months of the engagement (phase two), Freed successfully led a team of analysts (program and information systems) and developers (information systems) in developing and implementing the first of nine software tool dashboard reports. The approval and initial development of the operations dashboard reports provided program leadership with the opportunity to: (a) address data entry accuracy and the impact on reporting; (b) validate program metrics for patient care; (c) develop metrics for measuring staff productivity; and (d) establish new workflows for program teams in the use of data for patient care.

During the engagement, Freed completed one of nine dashboard reports to provide daily data to operations program leaders throughout the organization. The remaining eight dashboard reports were on schedule for release.

Project Impact and Future Reporting Capabilities

Thanks to Freed's assistance, the dashboard reports have enabled the organization's executive leaders to more quickly and effectively track key performance indicators and allowed program leaders access to data on staff activity, patient outcomes and financial performance.

Now that the health system is equipped with a business intelligence tool to build reports, the system's home health program team now has access to on-demand reporting capabilities. The program's dashboard data sets (within the business intelligence tool) will now serve as the foundation for automatic data reporting and provide the infrastructure for outcomes reporting, future metric development and operational reports. All of these documents will help program clinicians make better-informed, real-time decisions about patient care.