Customer Profile

Organization

St. Luke's University Health Network is a non-profit, regional, fully integrated, and nationally recognized network providing services at seven hospitals and more than 270 outpatient sites.

St. Luke's University Health Network

The Challenge

Diverse sources of data made it difficult to obtain a single, consolidated view of critical information in support of clinical, financial, and operational analysis.

The Strategy

Create an enterprise health data warehouse with a single view of key business entities to support analytical applications that allow stakeholders to gain insights across all mastered data domains and covering the full continuum of patient care.

The Results

The new technology platform has enabled St. Luke's stakeholders access to a single source of trusted information that is truly actionable and drives improvements in operational processes.

Information Builders Solution

Omni-HealthData, WebFOCUS, and WebFOCUS Portal.

Information Builders helps organizations transform data into business value. Our business intelligence, integration, and data integrity solutions enable smarter decision-making, strengthen customer relationships, improve performance, and drive growth.
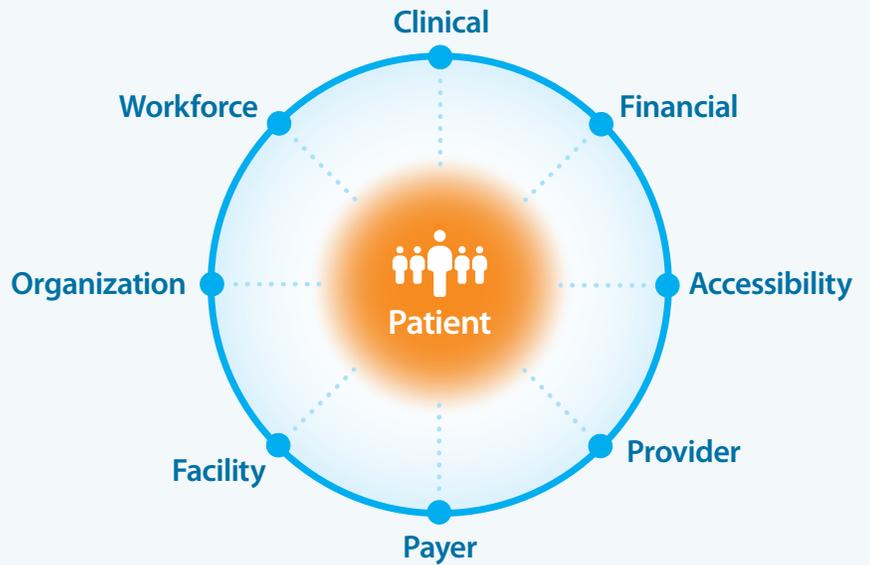
St. Luke's University Health Network Drives Decisions With Data

Omni-HealthData Supports Advanced Data Management and Analytics

A non-profit, regional, fully integrated and nationally recognized network, St. Luke's University Health Network (SLUHN) provides services at seven hospitals and more than 270 outpatient sites. The network's service area includes Warren County in New Jersey, and Pennsylvania's Lehigh, Northampton, Carbon, Schuylkill, Bucks, Montgomery, Berks, and Monroe counties.

St. Luke's has earned many honors for clinical excellence, including Truven Health's 100 Top Major Teaching Hospital and 50 Top Cardiovascular Hospital. It is also a multi-year recipient of the Most Wired award, recognizing the breadth of its informa-tion technology applications for electronic medical records, telehealth, online scheduling, and pricing information.

As a testament to technology excellence, St. Luke's is well on its way to transforming itself into a data-driven organization by creating Insights, a comprehensive healthcare enterprise data warehouse (EDW) and business intelligence (BI) platform that supports a large suite of reporting and analytics applications. This system was implemented with Information Builders' WebFOCUS and Omni-HealthData.

According to Amanda Mazza, director of Analytics and BI at St. Luke's, the requirements for this BI/EDW initiative included improving clinical quality, reducing costs, improving patient experience, building market share, and fostering success under value-based reimbursement models. Senior executives from across the network helped establish

these goals and priorities. The entire team was committed to increasing self-service reporting capabilities for end users and replacing a legacy warehouse and BI system.

Time-To-Value Strategy

Rather than getting mired in lengthy data integration and master data management (MDM) processes without any short-term benefits, stakeholders decided to focus on time-to-value by letting business priorities drive program deliverables. "We simultaneously proceeded with data integration, data governance, and BI development to achieve our business objectives as part of a continuous flow," explains Dan Foltz, program manager for the EDW and analytics Implementation at St. Luke's. The business priorities drove the BI plan, which in turn drove a data integration and MDM plans. "The business had new BI assets to meet their needs in a timely fashion, while the MDM initiative improved those assets and enabled progressively better analysis," he adds.

This unique approach allowed the St. Luke's team to deliver value throughout the implementation, avoiding a lengthy approach to building an EDW that might not ultimately align with business needs. Working on analytics in parallel with the data integration and data mastering processes enabled St. Luke's to launch an initial set of quality dashboards in just four months.

Value-Driven Architecture and Technology

St. Luke's considered more than ten technology and service providers before selecting Information Builders' WebFOCUS BI and analytics platform and Omni-HealthData. "We needed more than just data management and reporting tools," Foltz says. "Information Builders supported everything we needed to do, including migrating a large number of complex data sources, providing comprehensive MDM, and delivering analysis with integrated BI tools. Their healthcare data model was another plus. Information Builders enabled us to quickly build and deploy an environment that leverages data to boost performance, capture revenue, reduce costs, and compete more effectively with other regional health networks."

Business-Driven Planning

St. Luke's started with a comprehensive data integration plan designed to optimize the accuracy, completeness, reliability, and security of enterprise information. Omni-HealthData's out-of-the-box data model provided a ready-to-go launch pad for the project, and its built-in features supported rapid implementation methodologies, such as massively parallel processing and ELT-based warehousing architectures. More than 40 stakeholders in a variety of roles helped outline the needs and priorities from a BI perspective.

"We reverse-engineered our implementation approach based on BI needs," says Mazza. "Instead of starting with mastered domains, we started with our strategic business priorities, developed BI requirements to support those priorities, and let those BI requirements drive the implementation plan. Omni-HealthData's flexibility allowed us to take this approach. It would have been impossible to accomplish our goals with the other vendors and options we looked at."

The integration team started with the largest, most complex, and most important sources of data. This included multiple legacy hospital and ambulatory billing and electronic medical record (EMR) systems. Other data sources quickly followed, including a newly implemented Epic EMR, multiple internal physician databases, patient experience survey data, modeled cost data, staffing data, U.S. census and market data, clinical quality benchmarks, and more.

Omni-HealthData is a single application that simplifies complex data integration, promotes data quality, and facilitates ongoing data governance to ensure sustainability.

Ultimately, the team integrated data from 31 sources in 18 months. This data was integrated and standardized by harmonizing disparate demographic, clinical, and financial codesets. For example, they cleansed and standardized patient and provider demographic information, such as names, addresses, and identification numbers. They also mastered all patients, facilities, and providers, eliminating errors and duplications, and created consistent reference sets for reporting and analysis. An ongoing data governance program supports continuous improvement in data quality.

"We began this process with a specific goal, added the necessary new data sources to meet the next round of BI requirements, and embarked on an ongoing mastering process spanning multiple domains simultaneously," Mazza explains. "This iterative approach allowed the BI team to create and improve reports while we improved the data – and ultimately enabled us to deliver value to the business quickly."

For example, the MDM team consolidated multiple physician databases to establish "golden" master records for more than 15,000 unique providers that are employed by or interact with the health network. MDM experts and data stewards keep the data current and in sync, thus helping to ensure that vital patient information is communicated in a timely manner to the right location.

Value, Insights, and Return on Investment

Today, St. Luke's Insights comprises the EDW and more than 60 InfoApps™ – pre-built applica-tions that include dashboards for monitoring activities across the clinical, operational, and financial spectrum, opening information to business users for both guided and advanced self-service analytics. These InfoApps access the data provided by the Health Views component of Omni-HealthData, a system of consumption-oriented data structures generated over Omni-HealthData's operational repository. Some of the key InfoApps are:

Hospital Patient Experience

In the past, members of the patient experience team relied on reports from Press Ganey, a company that performs patient satisfaction surveys, and e-mails them to management. This process was labor-intensive and provided limited information. "Using Information Builders technologies, we combined Press Ganey reports with data from our electronic medical records systems," Mazza says. "Now we have more insight into the patient's entire experience throughout their stay – what units or departments they visited, who was involved in their care, to identify any potential issues during their stay. We draw more interesting correlations between patient satisfaction and staffing, departments visited, and other factors."

Hospital Quality and Safety

A suite of hospital quality and safety InfoApps™ support performance improvement. These InfoApps cover core measures, outcomes, infections, patient safety indicators, and patient safety events. They also include metrics and benchmarks. The InfoApps enable users to look at trends and review individual patient cases.

Hospital Network Balanced Scorecard

St. Luke's has adopted the Balanced Scorecard approach to performance management and has built more than 30 balanced scorecards covering many departments, functions, and service lines. The Hospital Network Balanced Scorecard includes important key performance metrics for the network related to service, quality, people, finance, and growth.

Working on analytics in parallel with the data integration and data mastering processes enabled St. Luke's to launch an initial set of quality dashboards in just four months. By the end of the 18-month implementation program, they delivered 60 InfoApps servicing more than 800 users.

Physician Practice Management

A Physician Practice Management Dashboard is used as part of a strategic performance management program. Executives and managers who are accountable for a wide range of performance metrics use this InfoApp™ to determine where to identify operational and financial improvement opportunities. They now have a single source for tracking key physician practice performance metrics.

Population Care Analytics and Targeted Outreach

Population Care Analytics and Targeted Outreach is an important application that helps St. Luke's succeed under emerging payment models. This InfoApp allows authorized users to model populations to analyze quality measures (such as HEDIS and PQRS), utilization, and costs at the network, practice, and physician levels. They analyze populations by payer type and individual payers, analyze utilization and cost for specific episodes of care, and identify patients for targeted outreach based on risk, gaps-in-care, and other criteria using available clinical, billing, and claims data.

Ongoing Expansion

St. Luke's continues to expand its analytics environment by building and deploying new InfoApps™. A BI steering committee is responsible for defining and prioritizing these InfoApps. With the help of Omni-HealthData, much of the tough integration work has been completed.

"Data is now truly actionable," Foltz concludes. "Thanks to Omni-HealthData and WebFOCUS, actionable information is ingrained into operational processes; it's becoming part of the culture."

Mazza concurs. "This is a business-driven program," she adds. "New analytic assets are purpose-built in alignment with network strategy. Stakeholders across the organization develop information requirements to support the business priorities of their respective areas. Our information strategy is in lockstep with the business strategy of St. Luke's University Health Network."

What are InfoApps™?

InfoApps deliver highly interactive analytic content, such as data visualizations, charts, graphs, and reports, to users through an easy app store-like experience. Instead of learning complex tools and worrying about data preparation, users can tap into InfoApps to serve themselves and quickly get answers and insights from relevant data, right when they need it. InfoApps make it easy for non-technical, mainstream users to access and analyze information on web browsers and mobile devices.

Find Out More

We can help you succeed. Talk to your local Information Builders representative to learn how. Visit us at **informationbuilders.com**, e-mail **askinfo@informationbuilders.com**, or call **(800) 969-4636** in the U.S. and Canada. To improve your skills, visit **education.ibi.com**.

Corporate Headquarters
Two Penn Plaza, New York, NY 10121-2898 (212) 736-4433; Fax (212) 967-6406