Digital Transformation of Healthcare

with MicroStrategy 10
The challenge
The healthcare industry is undergoing tremendous change driven by regulatory reforms, technological advances, and the explosive growth of data. Initiatives such as the Affordable Care Act are shifting the industry’s focus toward value-based healthcare, giving consumers more options for how they receive and pay for their health services while exposing providers to new levels of accountability and competitive pressure. In this new model, healthcare organizations must be more attentive to the cost and quality of care delivery, and they must be more willing to leverage new technologies to deliver more cost-efficient and convenient care to patients.

The solution
MicroStrategy 10 is an integrated platform upon which healthcare organizations can deploy customized, data-driven applications that boost their operational efficiency, expand their businesses, improve the quality of care, and deliver an exceptional patient experience. It provides the high-performance analytics, advanced mobile capabilities, and multi-factor security features that healthcare organizations require to deliver care more cost-effectively and conveniently.
APPLICATIONS FOR HEALTHCARE
ANALYTICS APPLICATION:
SUPPLY CHAIN MANAGEMENT

The challenge
Medical supplies, pharmaceuticals and third party support services consume 30-40% of a hospital’s budget. Hospital supply chains are complex and often segregated from other hospital systems. The resulting inefficiencies impact financial performance, hinder the availability of patient services, and limit the full use of revenue-generating facilities.

The solution
MicroStrategy supply chain solutions can optimize the way hospitals perform price benchmarking, enabling representatives to interact with clients, explore their data in real time, and quickly identify where they can save money by adjusting their buying patterns.

Using MicroStrategy solutions, hospitals and entire health systems can:
• Monitor stock usage and inventory across the enterprise in real time
• Align stocking levels with usage demands
• Improve volume pricing through hospital or system-wide purchases
• Gain a clear understanding of costs, service levels, and performance of competing vendors to negotiate best value for supplies and services

An application that gives buyers deep insight into the costs, service levels, and performance of competing vendors so they can negotiate the best values for supplies and services.
The challenge

Time wasted due to inefficient communications within healthcare workflows cost the average US hospital $1.75 million annually.*

The solution

Healthcare facilities experience fluctuating capacity. Underestimating demand for appointments and procedures can leave patients waiting, reducing satisfaction and perceptions of care, while overestimating demand results in under-utilized clinical staff and unnecessary expenses.

MicroStrategy helps hospitals use real-time data to minimize patient wait times, optimize hospital resources, and proactively prepare for emergency visits. With MicroStrategy mobile apps, medical centers can mobilize key systems so the entire staff is aligned, from the boardroom down to the frontline clinicians, leading to increased productivity, significant cost savings, and a better patient experience.

HOSPITAL OPERATIONS
mobilize internal workflows to boost productivity, increase utilization of scarce clinical and ER resources, and reduce patient wait times.

MOBILE APPLICATION:
HOSPITAL OPERATIONS

Evaluate operational efficiency in specific functional areas of the hospital

Quickly assess the efficiency of specific hospital workflows

Advanced analysis via metric comparison and conditional formatting

In-depth analysis of hospital performance based on demographics

The challenge

More than 20% of US hospitals have negative total profit margins.*

Hospitals operate with lean margins; managing cash flow and expediting payments and insurance reimbursements is critical. CFOs and revenue cycle leadership must be on the same page to monitor and analyze the financial metrics that contribute to net revenue.

The solution

With the MicroStrategy analytics platform harmonizing billing and cash/remittance data, hospitals can monitor and forecast financial performance more effectively. Mobile dashboards allow executives to track revenue cycle developments on the go, enabling them to quickly respond to issues such as delayed reimbursements and denied claims. They can easily drill into billing data to help uncover the root cause of revenue cycle delays like incorrect diagnostic coding, confusion over patient insurance eligibility, or required co-payments. Physicians can also be included in the dialogue as they can be provided a secure, personalized view of their own financial performance.

Uncover cash flow anomalies, improve claims processes, and reduce the burdens of pay-for-performance reporting and cost accounting.

MOBILE APPLICATION: HOSPITAL PERFORMANCE

The challenge
According to a 2016 survey, 46% of consumers would travel a greater distance to receive services from a health system recognized as “best in field.”

In today’s highly competitive healthcare environment, hospitals and other healthcare organizations must understand how they are performing compared to their competitors in areas such as patient satisfaction, key quality measures, and service fees.

The solution
Using MicroStrategy solutions, healthcare organizations can readily analyze internal and external data sources to help uncover new opportunities for expanding their business, increasing operational efficiency, and delivering a better patient experience.

MicroStrategy solutions empower users to access and explore operational and public data to measure and better track against performance benchmarks, standards, and organizational goals. This insight enables hospitals to quickly uncover shortcomings and identify areas for performance improvement.

HOSPITAL PERFORMANCE assess performance versus peer organizations and uncover shortcomings in operational efficiency, quality of care, and patient satisfaction.

ANALYTICS APPLICATION: 
DOCTOR PERFORMANCE

The challenge
With the industry moving toward value-based healthcare, and away from a pay-for-service model, healthcare organizations must have visibility into doctor performance to ensure that they are productive and deliver high-quality care.

The solution
Using MicroStrategy, organizations can examine public and in-house data to uncover inefficiencies or anomalies in their doctors’ time management or billing practices. With deeper insight into performance, a healthcare organization can make adjustments to maximize the quality of patient care. Using this application, one can efficiently evaluate physician behaviors against benchmarks, guidelines, and best practices. This will provide a greater level of understanding around key drivers of costs as well as identify areas for improvement.

DOCTOR PERFORMANCE applications use public and in-house data to optimize physician time management and promote proper billing practices.
The challenge
According to the Department of Health and Human Services, there were 253 healthcare breaches in 2015 that affected 500 individuals or more with a combined loss of over 112 million records.*

The solution
Usher lets healthcare providers issue digital badges to physicians, nurses, and support staff so they can securely log into healthcare systems and gain access to approved facilities using multi-factor, proximity-based authentication. These include push notifications, biometrics, one-time passwords, face-to-face validation, and Bluetooth proximity. Authentication helps secure all sensitive patient information and ensures that only qualified staff have access to records. Usher also helps secure facilities by restricting physical access based on individual credentials and gives administrators a real-time view of where badge holders are located. With these insights, administrators and security staff can more effectively monitor on-site activity.

Source: Health and Human Services – Office of Civil Rights

DIGITAL STAFF BADGES issued to physicians and clinical staff to secure hospital facilities, restrict access to sensitive patient information, and effectively monitor onsite activity.
The challenge
The healthcare industry is undergoing tremendous change with a renewed focus on providing value-based care. Organizations need to communicate securely and effectively with patients no matter their location.

The solution
Usher gives healthcare providers, payers, and patients the tools to manage the healthcare lifecycle from a single app. Payers can digitize insurance cards, and patients can manage their care by accessing their medical information from within the app. Providers can deliver a better patient experience by using Usher to digitize scheduling, appointment follow-up, and information sharing. It helps ensure that sensitive information is secure yet available to designated parties. Remote, in-person, or mobile verification of the customer’s identity helps secure access to medical records, avoid possible identity fraud, and mitigate any patient record error.

DIGITAL PATIENT ID BADGES digitize the healthcare experience with smartphone-based patient badges.
The challenge
According to a 2016 PwC Health Research survey, 60% of consumers are willing to have a video visit with a physician through a mobile device.* Consumers are now demanding transparency, convenience and value; providers must respond by finding new channels for delivering care.

The solution
MicroStrategy mobile solutions provide healthcare professionals with critical information at their fingertips, allowing them to deliver superior levels of care no matter their location. Mobilized doctors and nurses can accurately diagnose illnesses, provide treatment options, and educate their patients remotely without the need for an office visit. These solutions can also take advantage of remote monitoring and data collection capabilities available from wearable devices. Furthermore, patients can leverage mobile applications to find the best doctors and hospitals for a given medical procedure, schedule appointments, or access their medical records.

MOBILE CARE DELIVERY are MicroStrategy mobile applications empower healthcare professionals to deliver the best possible care to patients.

Access rankings for patient experience, standards compliance, and outcomes of care
Interactive dashboards featuring superior analytics and visualizations
Get timely and actionable data in a comprehensive manner to educate patients
Analyze hospitals based on calculated rankings

MOBILE APPLICATION: PATIENT-CENTERED MEDICAL HOME

The challenge
The promise of the patient-centered medical home model is that with coordinated care across an ecosystem of providers, patients can receive a higher level of service delivered at lower costs. However, keeping patient data aligned across multiple care settings and presenting it to providers in a consistent fashion is a significant challenge.

The solution
MicroStrategy enables PCMH teams to efficiently and effectively manage their patient population by providing access to accurate and updated patient data across care settings. This allows providers to take actions that result in decreased duplication of services, lowered hospitalization rates, and improved quality of care and patient outcomes. PCMH analytics also helps in tracking monthly cost and quality performance of the physicians and care teams. MicroStrategy solutions extend well beyond the boundaries of satisfying the PCMH standards; users gain great insight into patient populations, have access to actionable reports, and can drill down from population-based reports to the individual patient level.

PATIENT-CENTERED MEDICAL HOME is an application that helps PCMH teams lower hospitalization rates, boost quality of care, and improve patient outcomes by leveraging data collected across care settings.
ANALYTICS APPLICATION:

POPULATION HEALTH MANAGEMENT

The challenge
Population health management is the new frontier for healthcare delivery, enabling providers to make care recommendations proactively based on complete insight into their patients’ medical histories. While EHR deployments are now capturing massive volumes of patient records, the challenge is in how to predictively analyze historical data to assess patient risk as well as recommend appropriate care.

The solution
Architected for big data applications, the MicroStrategy Analytics platform can source structured and unstructured patient data from multiple, disparate EHR systems. By applying predictive analytics across a wide array of patient information (past medical history, vital signs, SOAP notes, diagnoses, medications, immunization dates, allergies, lab data, imaging scans, and reports) the application can stratify patient risk and suggest an initial action plan, such as an in-home assessment or mini-clinic visit.

This analysis, along with relevant information such as insurance, demographic data, and even data imported from personal wellness devices, can be consumed on highly-organized, easy-to-read dashboards, making it effortless for authorized practitioners to review patient history.

Features such as pop-up reminders, easy menus, and vivid user interfaces make this application far less time-consuming than paper charts. The application can also be transaction-enabled to immediately write back any changes to the record directly from a web or mobile interface.

By applying sophisticated, predictive analytics to EHRs, health organizations can assess patient risk, proactively deliver care, and improve overall population health.
**ANALYTICS APPLICATION:**

**CLAIMS ANALYSIS**

**The challenge**

Health insurance is all about managing risk. As part of the claims analysis process, health plans must be able to ensure risk score accuracy to maximize reimbursement flows from government entities and other payers.

**The solution**

MicroStrategy solutions help insurers efficiently process massive volumes of claims with analytics that validate patient coverage levels and confirm that the rendered care services are consistent with the patient’s treatment profile. Additionally, insurers can run predictive analytics against all patient data, internal data, and public data sources to generate accurate patient risk scores. Using these scores as benchmarks, insurers can demonstrate that the provided treatment is reducing patient risk and helping to reduce future health costs, entitling them to reimbursement from government entities (such as the CMS in the US) or other payers. This helps improve their quality ratings, making the health plan more attractive to consumers seeking coverage.

**CLAIMS ANALYSIS** proactively analyzes and manages the healthcare claims process to optimize reimbursements, decrease member risk, and reduce overall healthcare costs.
The challenge
According to the Blue Cross and Blue Shield Association, each family in the U.S. pays more than $800 extra in healthcare costs every year because of healthcare fraud. Claims costs are continuing to rise and healthcare payers need to proactively reduce costs by managing clinical outcomes for members.

The solution
MicroStrategy data discovery capabilities can help healthcare payers identify providers who are charging above normal rates or excessively billing expensive procedures. This dashboard application contains both procedure and payments information for a specific hospital and compares submitted charges against paid charges for each procedure. Using interactive filters, payers are able to isolate the problem areas and identify providers who need to be evaluated in more detail. This application also helps identify claims that arise from readmissions for procedures. The Sankey diagram identifies distinct patient demographics and the frequency of readmission by procedure. Payers are able to correlate which members don’t take medication and are able to initiate proactive measures to better manage clinical outcomes.
Customer case studies

Learn how our customers are using MicroStrategy to digitally transform their business.
Prior to using MicroStrategy, Liverpool Community Health (LCH) would prepare for board meetings by manually analyzing data and preparing reports in Excel. This process took several weeks so the information given to the board was typically outdated. Additionally, every month employees would spend hours printing packages for each board member. These packages were hand delivered by courier. Now, with the implementation of MicroStrategy, the LCH Board has and can access that data anytime/anywhere on their iPads with their Organizational Performance Electronic Reporting Application (OPERA).

LCH is saving money several ways through the use of this application. They are greatly reducing printing costs that were required to create the paper packages each month. Additionally, they are now able to free up staff time previously spent manually creating reports and packages. Furthermore, for the first time ever, the LCH Board is able to drill down into the data to find answers to their own specific questions. They are able to research and analyze data at their convenience thanks to the OPERA mobile application. This makes for more efficient board meetings and improves internal operations.

LCH believes that a mobile device is a critical tool necessary for all staff and will greatly improve the way they work as an organization. From an information governance perspective, clinicians are able to more securely collect patient information and no longer need to handle paper records. Another benefit is the ability of LCH to obtain patient feedback in a confidential manner. The staff is now able to hand the mobile device over to the patient, who can answer a survey and hit submit on the spot. This new approach provides greater confidentiality and ensures more completed surveys than previous paper-based versions. Likewise, the mobile application provides instant analysis from the patients’ feedback and acts as a diagnostic tool allowing staff to focus on correcting any highlighted issues.

PROFILE
Industry Specifics: Healthcare provider
Location: United Kingdom
Products: Architect, Desktop, Mobile
Core Capabilities: Enterprise Analytics, Mobile Analytics, Mobile Productivity Apps
Application

Boston Children’s Hospital (BCH), like every research and teaching hospital, needs to react quickly to patient needs and groundbreaking research. BCH used to face difficulties surrounding functional data silos, lack of coordinated development, and significant query performance problems -- some queries would require hours to yield results. While slow query performance inhibited consumer usage, it also made it difficult to produce useful visualizations of data. Knowledge of data was problematic to communicate, and there was no coordinated development effort. In addition, physicians and other personnel were in need of better access to patient data, especially on mobile devices where data could be visualized at the patient’s bedside.

Patient data needed to be readily available, but it also had to be in a format that did not compromise patient privacy. Ensuring privacy to meet state and federal compliance requirements was a primary concern for BCH and continues to be an important decision factor for all healthcare institutions.

BCH chose MicroStrategy to provide solutions for its analytics and mobile needs. With the help of MicroStrategy Professional Services, BCH was able to effortlessly get up, running, and connected to underlying databases to quickly develop several projects. Once accomplished, these ongoing initiatives required only a single administrator and three developers. BCH staff members are now able to visualize diverse information from a number of separate databases on their mobile devices.

Since development efforts can now be reutilized, in-house developers do not have to spend time building separate mobile applications and dashboards from the ground up. BCH developers are able to produce compliance reports in real-time complete with running totals. All this is done while meeting strict regulatory requirements for security and auditability.
Hospitals face challenging capacity issues. With a large volume of patients and a strict “seen within four hours” waiting policy, NHS Forth Valley was resolved to allocate beds in the most efficient way possible to cope with growing demand and increased patient flow. Prior to working with MicroStrategy, NHS Forth Valley would undertake a ward-by-ward check of bed and flow status. This was time consuming, inefficient, and often times incorrect because by the time it was completed, the staff would find that the provision of beds around the hospital had changed. It needed a clear, easy-to-understand system that would allow staff to see the whole system capacity and flow in near to real time.

The organization worked with MicroStrategy to create a detailed dashboard that pulls data from existing systems and produces a real-time, overall picture of patient movement and bed availability. With its intuitive front-end, the dashboard shows the previous day’s overall system status as well as historical trends relating to demand and access. With numerous graphical layouts and an automated alerts system, staff have the information they need to understand how to best utilize beds to meet their four-hour deadline. Should the deadline approach or be exceeded, staff now had the ability to analyze the root causes and draw out predictive patterns. Used in tandem with a comprehensive escalation policy, triggers are put in place in a systematic and consistent approach to facilitate effective clinical governance.

Also of great benefit, the dashboard allows key personnel to see what is happening on other wards in the hospital. This increased awareness helps promote a more effective patient flow; it similarly provides the ability to look back and assess previous efficiency over time.
Mirus Australia observed that it had several reporting systems that captured Medicare data, but the information was often outdated, incomplete, or incorrect. The development of a mobile app was the clear solution for the company to provide staff with the tools necessary to access and update information while caring for patients.

Mirus Australia worked with MicroStrategy to develop its Aged Care Metrics (ACM) app for the iPad as an intuitive reporting and analytic solution. ACM directly addresses the frustrations voiced by many aged care providers regarding the lack of appropriate management reporting and the ability to analyze Medicare data.

ACM delivers executive management with operational metrics for site-to-site comparison and monitoring of leading KPIs. Executives are able to view facility-level reporting that presents raw Medicare data in an easy-to-understand format allowing for a targeted improvement plan. Residential aged care facilities are able to track their funding at the resident (patient) level and adjust their claims for revenue as care need increases.

Facility staff members now use the app to complete administrative tasks. ACM is used to assess care needs, validate information, and record notes to assist in any reassessment processes. Furthermore, AMC allows the user to update records in real time – ensuring that all information is up-to-the-minute. With AMC, Mirus Australia has a strong advantage over its competition in the healthcare industry.

PROFILE

Industry Specifics: Healthcare - other
Management Consulting Services
Location: Australia
Products: Architect, Desktop, Mobile, Web
Core Capabilities: Enterprise Analytics, Mobile Analytics, Mobile Productivity Apps