

Multi-year Data and Analytics Journey Yields Significant Improvements in Organizational Performance and Patient Outcomes



More than a **15:1** analytics benefit-cost ratio.



More than **\$100M** in improvements over eight years.

PRODUCTS

- ▶ Health Catalyst® Data Operating System (DOS™)

EXECUTIVE SUMMARY

Healthcare is no stranger to change. From new technology to global pandemics, the industry has learned how to flex and respond to a rapidly changing environment. The most successful healthcare systems have mastered the utilization of data and analytics, ensuring optimal cost-effectiveness in their analytical endeavors. UnityPoint Health embarked on a data and analytics journey that advanced analytics adoption and acumen, improved decision-making effectiveness, and positively impacted organizational performance and patient outcomes. Augmented intelligence (AI) plays a pivotal role, leveraging advanced analytics techniques to provide predictive insights and continually enhancing UnityPoint Health's data science program.

IMPROVED ANALYTICS COST-EFFECTIVENESS

Technological advancements, demographic shifts, and emerging medical discoveries continuously reshape the healthcare landscape. Global events such as pandemics and economic fluctuations introduce additional layers of complexity, further underscoring the industry's need for data, analytics, agility, and adaptability. To sustain profitability and ensure high-quality patient care, health systems must navigate their financial well-being by optimizing their analytics cost-effectiveness.

APPLYING ANALYTICS TO CONTINUOUS PROCESS IMPROVEMENT

UnityPoint Health recognized the need to improve decision-making processes, enabling the organization to make faster, data-informed decisions. This includes identifying, investing in, and deploying solutions to enhance quality, access, and patient outcomes while reducing costs.

The organization had strong C-level support for analytics, setting the stage to improve analytics acumen, establish the right data and analytics infrastructure, decrease unwarranted variation in operational workflows, and develop the skill sets of its analysts and analytic consumers.

DEDICATED ANALYTICS RESOURCES BENEFIT THE ENTIRE ORGANIZATION

UnityPoint Health adopted the Health Catalyst Data Operating System (DOS™) platform, initiating a multi-year analytics journey. The organization established an enterprise analytics team, which serves as a problem-solving partner, focusing on delivering the most viable solution. The team prioritizes their work to high-impact areas:

- Identifying areas of opportunity to improve clinical/patient outcomes, organizational effectiveness, and financial performance.
- Embedding analytics into the strategic planning process.
- Enabling clinicians and business leaders to use data to make decisions.
- Developing solutions to predict population health and financial trends.

The organization developed a strategic analytics charter outlining the best practice management to enable improved outcomes and long-term sustainability. The charter includes best practices for continual process improvement, effective operational leadership, strategic data management, and strategic analytics and insights development.

DRILLING INTO THE DATA REVEALS OPPORTUNITIES

The UnityPoint Health analytics team provides three broad reporting and analytics capabilities:

- **Reports, dashboards, and scorecards:** Report key performance indicators and provide standard, ongoing reports that are broadly accessed and easily interpreted.
- **Exploratory analysis:** Highly consultative work explores various ideas and opportunities while remaining neutral and objective about the findings.
- **Augmented intelligence (AI):** Provides predictions at the decision-making point using advanced analytics techniques and continued expansion of the UnityPoint Health data science program.



ABOUT UNITYPOINT HEALTH

UnityPoint Health is one of the nation's most integrated health systems, providing care to both metropolitan and rural communities across Iowa, western Illinois, and southern Wisconsin in its hospitals, clinics, and home care settings.

UnityPoint Health continually identifies and prioritizes improvement opportunities, implementing standard work to improve organizational performance and patient outcomes as demonstrated in three examples of the organization's work.

- **Blood product utilization:** The organization created an outcomes improvement task force to develop and implement a plan for optimizing blood management. The team developed clear and concise objectives and achievable goals to monitor success. UnityPoint Health standardized guidelines and documentation standards and improved wastage management. The organization progressed from using spreadsheets to monitor performance to dashboards; it then began using AI to help providers understand transfusion decisions across the organization, facilitating the adoption of evidence-based transfusion decisions.
- **Readmissions and length of stay:** UnityPoint Health leveraged a multidisciplinary approach to improve length of stay (LOS) and readmissions. Using data from the DOS platform and AI, UnityPoint Health predicts each patient's expected LOS. The organization also risk-stratifies patients, proactively identifying those at the highest risk of readmission. Care teams intervene to help patients achieve safe discharge and intervene post-discharge to provide patients with needed support, avoiding unnecessary readmissions.
- **Care management:** As UnityPoint Health expanded its accountable care organization (ACO) presence, it had new opportunities to identify patients most likely to benefit from support, articulate clear success measures, celebrate high-performing facilities and providers through shared savings, and leverage common measures and tools across the ACO network. The organization created AI-enabled care management tools to provide care managers with a one-page view of utilization, each patient's chronic conditions, and care gap data needed to identify patient needs and to intervene to close care gaps, improve primary and preventative care, and decrease unnecessary utilization.

CHOOSING THE RIGHT METRICS MOVES PROGRESS IN THE RIGHT DIRECTION

Data and analytics are integrated into UnityPoint Health's strategic planning. The organization created an operating framework to ensure each team member focuses on powering the strategy. The organization starts with its "true-north" metrics—long-range metrics used by governance teams that inform all other metrics and mobilize teams around what matters most. "Guiding the way" metrics are leading, supporting metrics that provide additional life and context to true-north metrics and goals. Management system metrics are detailed metrics used to understand performance in real-time.



Our commitment to leveraging data and analytics isn't just about navigating the complexities of healthcare—it's about shaping its future. Through our strategic embrace of data from our Health Catalyst Data Operating System platform and analytics, we've transformed challenges into opportunities, propelling us toward a future where every decision is grounded in insights and every action drives tangible impact.

Rhiannon Harms, Vice President,
Chief Data and Analytics Officer,
UnityPoint Health

Rather than arbitrarily selecting a numerical improvement target every hospital must achieve, UnityPoint Health uses Healthcare.AI to develop meaningful targets for the system and individual facilities that demonstrate actual, achievable improvement in a transparent and reproducible way that motivates change. The organization also eases the interpretation burden for key performance indicators. It combines automated statistical process control modeling with natural language generation to create visuals and text that identify sustained or significant changes to accurately identify meaningful variation. This helps ensure that every leader can come to discussions with the same understanding about performance.

RESULTS

UnityPoint Health's analytics journey has advanced analytics adoption and acumen, improved decision-making effectiveness, delivered cost-effective analytics and AI, and positively impacted organizational performance and patient outcomes. Results include:

- More than a 15:1 analytics benefit-cost ratio.
- More than \$100M in improvements over eight years, including:
 - \$41M avoided expense due to a reduction of excess LOS days.
 - \$31M in average annual shared savings.
 - \$32M reduction in healthcare spend in just one year, the result of a:
 - 39 percent relative reduction in emergency department visits and a 54 percent relative reduction in inpatient admissions.
- \$17.4M reduction in direct costs over six years, the result of decreasing unnecessary red blood cell transfusions.



WHAT'S NEXT

UnityPoint Health will continue its analytics journey. It plans to expand its AI capabilities further and will balance short-term constraints against long-term value, continuing to push for significant improvements across clinical, operational, and financial domains. 🚀

ABOUT . EALTH CATALYST

Health Catalyst is a leading provider of data and analytics technology and services to healthcare organizations committed to being the catalyst for massive, measurable, data-informed healthcare improvement. Its more than 500 clients leverage the cloud-based data platform or its other software applications—powered by data from over 100 million patient records and encompassing trillions of facts—as well as its analytics software and professional services expertise to make data-informed decisions and realize measurable clinical, financial, and operational improvements. Health Catalyst envisions a future in which all healthcare decisions are data informed.

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