Indiana University Health: Health Catalyst delivers enterprise data warehouse in unprecedented 90 days

Client Background

Good data has always been at the heart of improving medicine. With the advent of digital health, though, the sheer volume of information has created a new challenge for healthcare leaders: how to transform terabytes of raw data into meaningful improvements in the quality and cost of care? IT leaders at Indiana University Health (IU Health) – an academic health system with 18 hospitals, 3,300 staffed beds, and more than 3,700 physicians and allied professionals – realized that fostering a genuinely data-driven culture meant pushing beyond the limits of IU Health’s existing technologies. Even powerful tools like IU Health’s Cerner electronic health record (EHR) needed to be augmented with new healthcare analytics and cost-accounting tools capable of connecting the dots between IU Health’s mountains of clinical data and the much-needed operational and financial insights it lacked.

What IU Health needed was an enterprise data warehouse (EDW).

Traditional vs. Late-Binding Data Warehouses

The problem is that traditional EDWs can take years to deploy across large enterprises, and IU Health is the largest health system in its state. Worse, through trial and error, IU Health discovered a critical flaw in “early-binding” data warehouse architectures commonly used in other industries. Early-binding EDWs impose business rules on data at the outset. But healthcare evolves, organizations evolve, rules change. The net effect is poor agility and lengthy time to value. Crucial near-real-time clinical data analysis is almost impossible.

“IU Health had previously struggled to create a data warehouse that would serve as the organization’s source of truth,” said Bill McConnell, IU Health’s Senior Vice President and CIO. Those early attempts ended with a few data stores each with a partial picture of the system.

Success in Just 90 Days

So IU Health turned to Health Catalyst to develop a platform based on its Late-Binding™ Data Warehouse architecture. The company offered IU Health an outstanding value proposition with a no-risk pledge. It promised to create a data warehouse and integrate IU Health’s Cerner EHR within 90 days. And it delivered.

Before even hitting the deadline, Health Catalyst successfully loaded 14 billion rows of data.
of data into the EDW—fully 10 years of clinical data from across IU Health’s network. Clinical events, encounters, lab and radiology, and other patient data were included, as were key pieces of IU’s performance management, revenue cycle, and patient satisfaction data.

Collaboration has been key to the EDW’s successful implementation. EHR vendor Cerner gave Health Catalyst rapid and complete access to its Kansas City-based database and provided ongoing support to ensure that Health Catalyst’s work would not tax IU Health’s system.

“...virtually any vital comparison our executives need to make critical business decisions.”

~ Bill McConnell, CIO and Senior VP, Indiana University Health

**Executive Dashboard in 90 Days**

Within 90 days of the EDW’s completion, IU Health put in place a newly developed interactive dashboard, effectively a window into the EDW. It provides IU Health’s leadership with the daily operational insights they need to solve the quality/cost equation. It offers visibility into key operational metrics and trends so that IU Health’s leadership can easily track the performance measures critical to controlling costs and maintaining quality.

IU Health’s operational dashboard went live with unprecedented speed and provides a near-real-time view into the data versus its previous manual reporting that was a 30-day retrospective.

The executive dashboard currently extracts data from the EHR and costing systems. IU Health plans to integrate additional source applications such as corporate billing and patient satisfaction in the near future. Health Catalyst’s agile architecture and methodologies can easily be applied across IU Health’s departments to analyze, track and measure clinical, financial, and patient experience outcomes.

**Expansion Plans**

Ultimately, IU Health’s EDW will add Health Catalyst Advanced Applications that will enable deep-dive analyses into such granular topics as workflow, hospital-bed turnaround times, the success of various cardiac care techniques, and hospital-acquired infections.

The project is proving a critical first step toward IU Health’s goal of capturing and analyzing clinical data to improve the quality of patient care while reducing costs.