



UMass Memorial Health Care Unlocks Trustworthy, Actionable, Authoritative Information Assets to Grow Patient Population with Informatica

Central Massachusetts's largest not-for-profit healthcare delivery system relies on Informatica Platform to help steer journey to becoming one unified, agile, and data-centric healthcare organization—and maximize return on data

“Using the Informatica Platform, we will know who our primary care patients are and how many there are of them... This data will be vital in the development of the strategy to improve clinical outcomes, grow the patient population, and increase efficiency.”

— George Brenckle, SVP and CIO, UMass Memorial Health Care

UMass Memorial Health Care, the largest not-for-profit healthcare delivery system in central Massachusetts, consists of an academic medical center, four community hospitals, and more than 60 outpatient clinics. Four independent patient registration systems support the operations of the health system, with each of these having its own means of identifying patients, assigning medical record numbers, and recording patient care and encounter information. As a result, UMass Memorial lacked an accurate, reliable, and trustworthy picture of how many unique patients were being treated by its health system.

The organization also lacked a reliable view of the relationships between individual patients and the providers that made up the patient's care team. For example, the health system could not accurately measure the patient care population as a metric for growing market share and considering becoming an accountable care organization (ACO). This hindered the health system's ability to make strategic market decisions and drive key business and clinical imperatives.

In response, UMass Memorial is deploying the Informatica® Platform to introduce an integrated view of patient information, encounters, providers, and UMass Memorial locations to support improved decision making. Moreover, the technology is being used to compute the number of primary care physicians cared for by the enterprise as a way of gauging its position with respect to being an ACO. The project requires that encounter and master data be merged from the core hospital information system applications and processed to derive the primary care patient count. One of the initial projects—the primary care patient population program—was completed in just seven weeks. This and other data integration initiatives will help UMass Memorial to improve clinical outcomes across central New England, grow the patient population, increase efficiency, and ultimately maximize its return on data.

FAST FACTS

BUSINESS INITIATIVES

- Deliver efficient, high-quality, safe, patient- and family-centered care
- Focus on cost control, productivity, and implementing value-based processes
- Develop and execute comprehensive referral management strategy
- Grow patient population by partnering with other community health care providers and by investing in selected services

TECHNOLOGY STRATEGY

Deployed the Informatica Platform—in particular, Informatica PowerCenter and Informatica Data Quality—to harness clinical, financial, and administrative data regardless of location, format, or volume and introduce pervasive data quality across the entire reach of UMass Memorial's campuses, projects, and applications.

BENEFITS

- Improves decision making and clinical outcomes
- Helps grow the patient population
- Transforms UMass Memorial's previously fragmented group of hospitals, clinics, and programs into one unified, agile, and data-centric healthcare organization
- Increases administrative and operational efficiency, eliminating majority of previous report creation time
- Resolves patient, provider and encounter data quality problems across 11 source systems to allow aggregation and analysis of data not previously possible
- Deployed primary care patient population report in only seven weeks
- Enhances relationships with referring physicians/providers

NUTS & BOLTS

- Solution: Data integration and data quality to support business intelligence
- Products: Informatica PowerCenter Advanced Edition, Informatica Data Quality, and Informatica Data Quality Identity Match Option
- Services: Informatica Professional Services, Informatica Global Customer SupportSM, Informatica Global Education ServicesSM
- Sources: Four hospital information systems, three practice management systems, and four physician credentialing systems; booking systems, other historical, legacy, and unstructured systems
- Targets: Multiple data marts/warehouses

Central Massachusetts's Largest Not-for-Profit Healthcare Delivery System

UMass Memorial Health Care is the largest nonprofit healthcare system in central and western Massachusetts and the clinical partner of the University of Massachusetts Medical School. Approximately 1,700 physicians are members of the active medical staff, and UMass Memorial has 12,350 employees. In 2010, the system treated 58,937 inpatients and counted more than 1.4 million outpatient visits.

UMass Memorial Health Care lacked a top-down, comprehensive view of clinical and financial performance across the extended healthcare enterprise. Already in the midst of a five-year overhaul of its information systems, the next horizon was analytics and business intelligence. A key requirement was for the healthcare delivery system to determine critical success factors, such as the size and composition of its patient population and the number of unique patients served by primary care physician providers—and at which location. Without this knowledge, the organization would struggle to make effective decisions regarding strategic direction, clinical policy, and financial management in a largely unknown future of accountable care organizations, value-based reimbursement, and other evolving clinical and financial care delivery models.

As a complex integrated delivery network, there was good reason for these data challenges. UMass Memorial covers the complete healthcare continuum with UMass Memorial Medical Center, its academic medical center, member and affiliated community hospitals, freestanding primary care practices, ambulatory outpatient clinics, home health agencies, hospice programs, a rehabilitation group, and mental health services. All of these organizations and departments depend on data to deliver patient care and get paid. But they were frequently using separate, fragmented systems to manage clinical care and administrative functions.

However, progress was being made with the deployment of a common ambulatory electronic health record, Allscripts Enterprise.

Unlocking Trusted Data

Data that is adequate for one purpose, such as delivering patient care or billing for services for a specific department or hospital, is frequently inadequate for other purposes. One example is aggregation and analytics, where needing to combine data across systems and organizations can be stymied by data inconsistencies, incomplete population of fields, or other types of data quality problems. These issues make it difficult, and frequently impossible, to use such data to support analytics.

For UMass Memorial Health Care, the data contained many duplicate patients—people who had been treated at different sites and had different medical record numbers, but who were in fact the same patient.

This was true even though UMass Memorial had implemented an Enterprise Master Patient Index (EMPI) application to resolve patients to a unique individual; however, the application was focused on enabling operational processes, not analytics, so there remained a large number of patients who were identified as potentially being duplicates but had not yet been resolved.

Similarly, a patient's primary care physician was a required entry at registration time, but each organization within the health system had defined its own physician identifier. As a result, even if the patient remembered the correct physician, and the correct physician was entered into a patient registration application, the data still could not be used for analysis because the physician identifiers were different.

First among the analytical initiatives was a need to measure and report on the number of primary care patients being treated by the health system. This is a key planning and strategy metric because primary care patients are the focus of investments in wellness and prevention programs, as well as the source of specialty visits and inpatients. Future care delivery and reimbursement models also tend to focus on the primary care patient as the core unit of measure.

"We had an urgent need for improved clinical and business intelligence across all our operations," explains George Brenckle, senior vice president and chief information officer, UMass Memorial Health Care. "We needed an integrated view of patient information, encounters, providers, and UMass Memorial locations to support improved decision making, advance the quality of patient care, and increase patient loyalty. To put the problem into perspective, we have more than 100 applications—some critical, some not so critical—and our ultimate ambition is to integrate all of these areas of business, leverage analytics, and drive clinical and operational excellence."

UMass Memorial is deploying the Informatica Platform—specifically the Informatica PowerCenter® Advanced Edition™ and Informatica Data Quality™ components—as a proven, scalable foundation to address its critical healthcare needs, automate key UMass Memorial processes, achieve new efficiency and transparency, and help ensure that data is accurate and accessible.

Pervasive Data Quality Throughout UMass Memorial's Operations

Informatica PowerCenter will allow UMass Memorial to harness all of its clinical, financial, and administrative data regardless of location, format, or volume, and improve internal and external transparency. The Informatica Data Quality technology, meanwhile, will introduce pervasive data quality across UMass Memorial's campuses, projects, and applications. By turning dirty data into clean data, Informatica Data Quality will enable the healthcare organization to build an analytics solution supported with trusted data. The solution will also enable business managers, data stewards, and business analysts to collaborate in addressing data quality.

By standardizing on Informatica technology, UMass Memorial Health Care will also be able to measure the number of primary care patients served by the health system. This measurement had been an unmet objective for many years due to the fragmented nature of the necessary data across different sources and the data quality challenges within each source. Although you would expect that such a basic measure would be readily available to an organization as large and sophisticated as UMass Memorial Health Care, this was not the case. The measure is also not so basic; its calculation depends on having a source of unique patients across the enterprise, a source for unique providers across the enterprise, and reliable and trustworthy relationship data between these two that establishes the existence of a primary care relationship between an individual patient and provider.

Using the Informatica Platform, UMass Memorial Health Care will be able to quickly resolve its patient and provider records as a first step in performing that primary care patient analysis. It will then be able to profile and understand the data quality challenges inherent in the patient-provider relationship data. This analysis is key because the initial objective was to use the data currently available to create the patient population report; trying to “fix” more than a decade of registration data was not an option (and more likely was impossible). Using Informatica technology to provide this insight is a great enabler of the project because data with known quality issues can be useful if the problems with the data are understood and documented, whereas poor-quality data with unknown issues is useless.

The result of this effort is that in less than seven weeks, start to finish, the UMass Memorial Health Care executive team had a reliable measure of its primary care patient population. It now has trusted data and an accurate understanding of the total number of unique patients served by the hospitals (approximately 3.2 million), an accurate view of the number of active patients (i.e., those treated within the last three years—approximately 1.7 million), and the number of unique providers (approximately 24,000). Supported by the skills, knowledge, and experience of Informatica Professional ServicesSM, the patient panel project was completed in only seven weeks.

According to Brenckle, this approach to data integration will transform the reporting capabilities and decision making at UMass Memorial. “Using the Informatica Platform, we will know who our primary care patients are and how many there are of them, whether the volume of patients is rising or decreasing, how many we are treating in an ambulatory or acute care setting, and what happen to those patients as they move through the healthcare system. We will also be able to examine which providers they saw and at which location. This data is vital in the development of the strategy to improve clinical outcomes, grow the patient population, and increase efficiency.”

A Trusted View of the Patient Population

Brenckle and his team can also be confident that the data they are examining is accurate. Kuldeep Rana, chief architect at UMass Memorial Health Care, explains, “We will know the degree of quality and completeness of the data. Informatica Data Quality will sift out the duplications, the inaccuracies, and the redundant data. For the first time, we will be in a position to trust the data we are using in the patient panel.”

As part of this strategy, UMass Memorial is planning a “virtual” data governance program to help govern and share patient master data. “Data integration is just one component in our efforts to standardize, improve, and coordinate care across all of our entities,” says Brenckle. “UMass Memorial is an open system and the definition of in-network and out-of-network can be somewhat fluid depending on the type of care being provided.”

Improved analytics will also enhance the relationships UMass Memorial has with another important audience: referring physicians. A detailed view of these providers will help the healthcare provider to meet and exceed their needs by supplying timely communication and efficient service. UMass Memorial will also be more easily accessible to referring physicians and better able to return their patients to their care as quickly as possible.

LEARN MORE

Learn more about the Informatica Platform. Visit us at www.informatica.com or call +1 650-385-5000 (1-800-653-3871 in the United States).

ABOUT INFORMATICA

Informatica Corporation (NASDAQ: INFA) is the world's number one independent provider of data integration software. Organizations around the world rely on Informatica to gain a competitive advantage with timely, relevant and trustworthy data for their top business imperatives. Worldwide, over 4,440 enterprises depend on Informatica for data integration, data quality and big data solutions to access, integrate and trust their information assets residing on-premise and in the Cloud.



Worldwide Headquarters, 100 Cardinal Way, Redwood City, CA 94063, USA
phone: 650.385.5000 fax: 650.385.5500 toll-free in the US: 1.800.653.3871 www.informatica.com