

New York Uses Data to Transform Healthcare Delivery

An industrial-strength data warehouse provides the enriched data insights needed to improve Medicaid patient care.

There are six million eligible Medicaid recipients in the state of New York — the second most of any state. The program is costing the state \$18.2 billion in FY 2017, or 19 percent of its \$96 billion operating fund. That expense is expected to increase by another \$1 billion in FY 2018. These numbers mean that if New York can make Medicaid more efficient by even a fraction of a percent, it will positively impact other programs the state supports — not to mention its bottom line.

Most states — including New York — have transitioned to a managed care model to gain more control over Medicaid-related expenses and provide better care to this often-underserved population. But this can be a difficult undertaking without a strong foundation of coordination among the variety of providers serving Medicaid recipients, and a holistic view of their care.

In 2014, New York began to implement Medicaid's Delivery System Reform Incentive Payment (DSRIP) program, a federally funded initiative that promotes community-level collaborations and focuses on system reforms. The goal of the program is to reduce avoidable hospital visits by 25 percent over 5 years.

To meet this goal, the state not only needed data, but also the ability to glean valuable patient insights from that data to help pinpoint risks and inform care decisions.

"DSRIP provides the runway and the funding for providers to come together, begin to work and act differently, and better coordinate and collaborate patient care — all with the intention to drive better outcomes, says Ken Romanski, executive vice president of CMA, the IT solutions and services company New York contracted with to design and operate a data warehouse to achieve its DSRIP goals.

Tackling Data Challenges at the Speed of Thought

Central to DSRIP's success is the collaboration and coordination of a tightly organized group of providers, or Performing Provider Systems (PPS). PPS units include primary care physicians, hospitals, laboratories, pharmacies, home care agencies and even durable medical equipment providers. Regardless of where a patient goes for help, "the essence of a PPS is to create the information and insights necessary so there is no wrong door," says Jeff Wendth, vice president of CMA Healthcare Solutions.

Essential to this objective is an industrial-strength data warehouse of patient encounters and payment claim information.

New York Medicaid has long operated a data warehouse, serving as the system of record for 20 years' worth of claims and encounter data. As experienced as the Medicaid program was in amassing databases of claims data, however, the existing data infrastructure wasn't set up to provide insight into care needs of Medicaid recipients and identify disease trends and cost — all of which are necessary to manage care successfully and meet the goals of DSRIP.

"DSRIP provided the motivation to tackle the challenge of manipulating and analyzing the data to be considerably more beneficial," says Bob Nevins, director of health and human services strategy for Oracle, a key supplier of data warehouse infrastructure products for New York Medicaid.

"The speed and rate at which we receive data, the number of disparate sources for the data and the scale of the data is all increasing pretty significantly."

— Brian Dougherty, Chief Technical Architect for CMA

To equip healthcare providers statewide with the detailed information they need to fully understand the medical problems of the patients they are contracted to manage, the data warehouse must handle prodigious amounts of information.

But that's just the first step. The warehouse must also have a plan for how various data streams intersect and match them in intricate ways to yield insights and conclusions.

"The speed and rate at which we receive data, the number of disparate sources for the data and the scale of the data is all increasing pretty significantly," says Brian Dougherty, chief technical architect for CMA. "Now the big challenge for us is to handle those three dimensions and to do this at the speed of thought."

"Oracle provides a great set of technologies for dealing with the challenges that we have," adds Dougherty. "The database is very capable; it's been around for a long time — it's industrial-strength."

It has features that allow us to scale and manipulate the data — especially on the back end — very, very well."

Next Up: Whole-Health Management

Using the data warehouse as a foundation, CMA worked with the state to build an intelligence platform to extract additional granularity from the data. It can now group together individual patient characteristics, test results, current conditions and other factors based on a variety of queries. The platform also supports executive dashboards, standard reporting, guided query and data mining capabilities for DSRIP metrics, which are used by administrators, payers and care providers.

The information has allowed the state to stratify its Medicaid population, and group individuals according to common health conditions such as diabetes or heart disease so PPS units can target the most seriously ill and costly patients. It also helps identify opportunities for improvement and guide action at the point of care with the clinical data that providers can immediately access.

That won't be enough, though, as the program evolves into more focused population health management, which reaches beyond the clinical environment to embrace social, economic and care-coordination factors.

"I know the state recognizes the need to move beyond the data it's working with today and expand it to clinical and social-determinant data sets to achieve a more holistic, 360-degree view of the individual," Romanski says. "In order to negotiate, contract and manage a value-based payment system, the whole ecosystem is going to need enhanced capabilities that the state is mindful of and looking to support."

This translates to looking for data never captured before and developing different collection architectures to plug into the multitude of analytical dimensions already in place, says Dougherty. Medicaid recipients who are homeless are one example of the need for a larger scope of data. For this population, traveling without transportation is a health-influencing factor, as is their lack of housing.

"Much of the population health expansion is still in the planning stage," says Daniel Hallenbeck, director of the Medicaid data warehouse for the New York Department of Health. "But the state recognizes the value of incorporating new data sets to create the whole view, including social determinants that might assist in producing more meaningful metrics for measuring outcomes. This is the future we are working toward."

ORACLE®

The Oracle Cloud delivers hundreds of SaaS applications and enterprise-class PaaS and IaaS services to customers in more than 195 countries and territories while processing 55 billion transactions a day. For more information about Oracle, please visit us at oracle.com.



CMA has provided information technology products and services since 1984, serving commercial, industrial, and public sector industries, with a primary emphasis on Health & Human Services. CMA has offices in New York, Ohio, Texas, Arizona, and Washington DC. CMA provides its customers the best in proven technology and experienced professionals. With more than 450 employees, CMA has conducted thousands of technology-oriented consulting engagements and developed hundreds of application system solutions for our customers. CMA is a New York State certified woman-owned business.