

Medicaid agencies turn to 'big data' to tackle costs

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Computers constantly churn through the billing claims of nearly 1 million low-income individuals enrolled in Oklahoma's Medicaid program, using complex algorithms to sift out the sickest patients.

The [Oklahoma Health Care Authority](#) wants to know not just who has, but who is at risk of developing a chronic disease like diabetes or asthma. Once isolated, these potentially expensive patients are enrolled in the state's [chronic disease management program](#), giving them access to special health coaching and other targeted services to help keep them out of the hospital or emergency department before they run up high bills.

"It became apparent we needed some way to identify certain members that we wanted to work with," said Della Gregg, manager of the state's Health Management Program.

Enter predictive analytics. Insurance companies and health care systems are using these "big data" techniques to rein in costs, and now states are too, driven by the urgency of holding down Medicaid costs in an era of shrinking or flat-lined budgets.

Oklahoma since 2008 has used technology from LexisNexis called Medical Artificial Intelligence, or [MEDai](#), for its work. The state passes along billing claims every two weeks, almost 19 million in the last two years, and MEDai pares the data with clinical guidelines, standards of care and other proprietary formulas to predict good candidates for the program.

An analysis earlier this year showed that the technology — which costs roughly \$800,000 a year — has [saved the state \\$182 million](#) in 5 ½ years of use, a 562 percent return on investment.

Oklahoma's system was discussed in Denver in August at the four-day [Medicaid Enterprise System Conference](#), where Medicaid agencies huddled with technology vendors, contractors and federal health officials. Data analytics was a major focus for the 1,400 in attendance, as states — along with the rest of health care — struggle with how to employ the flood of digital information.

Medicaid agencies are looking at new ways to use the data they collect to gain knowledge about patients and providers, according to a [brief](#) from the National Association of Medicaid Directors. It found that 39 Medicaid programs maintain some data analytics or informatics in-house, while 14 of those also contract vendors for the work.

States are expected to spend in excess of \$530 billion on health care this year, almost a fifth of the nation's bill. With nearly 65 million Medicaid enrollees, the program will be the second largest source of health coverage for Americans after employer-sponsored coverage.

"This is becoming a business imperative for states. It's an investment that needs to be made," said Kathleen Nolan, director of state policy and programs at the National Association of Medicaid Directors in Washington. "If we keep shoving [patients and money] down the same hole, we're not going to get any better."

Putting data into action

Medicaid programs are putting a closer eye on the quality of care that managed care organizations and doctors are delivering, as well as on patients.

In Iowa, the short-term complication rate for diabetics [doubled](#) between 2009 and 2011. With each hospitalization resulting in a \$21,000 bill to the state, the problem was eating its budget.

So Iowa's Department of Human Services applied for and received a \$1.9 million CMS grant that helped it team with IT vendor Optum, a division of UnitedHealthcare, to better track the clinical quality of its adult diabetics. Under the program, Medicaid providers in the state are prompted when the state identifies a gap in care or a patient is deemed at high risk for a complication and possible hospital admission.

Over less than a year of operation the state has seen a 21 percent drop in the number of short-term diabetic complications. Iowa has realized similar numbers from a related program on adult asthma.

"This is a chance to understand how you're managing these conditions," said Andria Seip of the Iowa Medicaid office.

Mississippi Medicaid spent \$10 million on a three-year contract with [MedeAnalytics](#), which took 10 years of claims history and combined it with

clinical data from EHRs to spot what the company calls “real-time gaps in care.”

That information can be pushed back to providers through either their EHR or a provider portal. It allows physicians to “provide better care at a much better dollar standpoint,” said Scott Paddock, senior vice president and general manager at MedeAnalytics. Some of the EHRs allow the vendor to see provider notes that “are pretty rich” in information.

Having real-time information from EHRs allows doctors’ offices to learn of prescribing patterns, for example, and spot drug interactions or “doctor shopping” for illicit drugs like narcotics.

Most states have generally been slower to [adopt data analytics than commercial insurers](#) and providers.

“States are very risk averse. That’s the reason why technology has been slower to come,” said Arvinder Singh, senior vice president of health and human services at health technology vendor CNSI. “They want the technology to mature before they adopt it.”

Use of predictive modeling is still more common in managed care organizations than in states running programs themselves, experts said.

For example, UnitedHealthcare, which operates a large number of Medicaid managed care plans, uses predictive analytics to create a monthly report in Ohio identifying who is at risk for medical complications.

“Every state is experimenting right now, and we’re trying to see what works,” said Jim Bush, medical director of Wyoming Medicaid.

Wyoming used Xerox’s technical capabilities to cut its costs from emergency department visits by 20 percent in one year. The company flagged those who visited the emergency department more than 10 times in the past year, and the state set them up with care managers. It also established a 24/7 nurse advice line.

Watching managed care plans

The Kaiser Family Foundation [estimates about three-quarters](#) of Medicaid enrollees are in managed care, and data analytics are becoming key to state oversight of these organizations. The techniques allow them to determine whether or not plans perform better or worse with certain kinds of patients or conditions, pay claims appropriately, or skimp on care to increase revenue

in capitated plans. Data analytics can also help pinpoint areas of fraud, waste and abuse.

New Hampshire started a managed care program in December and requires plans to submit 430 unique quality metrics. The state crunches those numbers to spot areas of concern.

"If we realize that there is an unacceptable delta between the number of non-emergent medical transportation trips that are approved versus actually delivered, then we have an area of quality assurance that we need to immediately address with our MCOs," said Lisabritt Folsky, deputy Medicaid director in New Hampshire.

When Kansas moved all of its Medicaid beneficiaries into managed care in 2012, it didn't want to hand over the reins completely. It launched a pay-for-performance program where managed care organizations could "earn back" a certain amount of their capitated payments if they met certain performance benchmarks.

The state withheld about 1 percent or \$23 million in the program's first year, said Mike Randol, chief financial officer for [KanCare](#), Kansas's Medicaid program. In the second year, 5 percent of payments had to be "earned back" and results are still coming in.

Medicaid agencies in Tennessee and Ohio, for example, can step in and recover money from the managed care plans if they spot areas of serious concern in their data analysis.

"As the state, if you have all of that data in one place, you're going to have the ability to look at that data in a way that nobody else is going to be able to," said Drew Gattine, senior project manager at Optum, which works with Washington state on its oversight of managed care plans.

This report is part of an ongoing series focusing on eHealth reforms in Medicaid. Reporter David Pittman is pursuing the project as part of an [Association of Health Care Journalists' Reporting Fellowship on Health Care Performance](#). The fellowship program is supported by The Commonwealth Fund.

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