Data Sharing and Analytics: Changing HHS For the Better

Adam Stone | January 9, 2015

$xlt

All that is changing, as the Missouri Department of Health and Senior Services has begun a data-sharing project with the state's departments of Mental Health and Social Services. Under the new Health Homes initiative, "we are finding data wherever we can find it and then figuring out how to plug it in," said Joe Parks, director of MO HealthNet.

Missouri is not alone. In many states, IT planners in health and human services have sought ways to bridge the divide, gathering data from disparate sources across government in order to forge cohesive pictures that can inform the public, drive better policy and ultimately improve social outcomes.

—

Indiana's Management and Performance Hub, which provides real-time data for policymakers and state employees, has been called the "bridge of the Enterprise" by Gov. Mike Pence. Photo by Drew Endicott

—

Gathering Data

Much has to happen behind the scenes in order to share data among government entities and open it to the public. Policies, technologies — there are a lot of moving parts. Before examining these, it's worth taking a look at the kinds of data that may come into play in this kind of an IT upgrade.

In San Francisco, for instance, planners started modestly two and a half years ago by releasing the food safety scores compiled by 36 inspectors in their examinations of 10,000 restaurants. The information went up on the city website — datasf.org — and drew over 6,000 views. (On the city's data site, "public health" is one of the most commonly searched terms, with more than 20,000 queries in 2014.)

Why start with restaurants? Because the data was already there and in relatively clean form. "It was the low-hanging fruit," said Cyndy Comerford, planning and fiscal policy manager for the San Francisco Department of Public Health.

More recently the city expanded the scope of its data sharing to encompass more ambitious aims. With its San Francisco Indicator Project, the city is gathering some 100 data points from such far-flung agencies as transportation, education, housing and economics. On the health side, the system brings together data on hospital beds, prenatal care, preventable hospitalization — a range of measures related to access and quality.

Much of this information was already in use for various assessments, but often it could only be accessed by special request, an inefficient system for requestors as well as for holders of data. With easier access to data, city agencies can cross-pollinate their ideas, Comerford said. Housing officials, for instance, may poll local hospital capacity before approving developments, while traffic officials may draw upon comingled data in order to correlate traffic density to pollution and health issues.

—

In March 2014, Indiana Gov. Mike Pence created the Management and Performance Hub , a statewide initiative to improve effectiveness and efficiency through the use of data sharing and analytics. In this clip, Indiana CIO Paul Baltzell explains some of the initiative's components.

—

These scenarios remain largely theoretical. Although the city has drawn some funding from the Centers for Disease Control and Prevention to help measure outcomes, there has been no formal evaluation yet. "That is our next phase in the open data world," Comerford said. "So far we have been removing the barriers to get it all up there. The next step will be the evaluation phase: How successful is this? What is the impact? At the very least it has freed up a lot of our staff time, which is valuable to me."

Missouri has more solid numbers in hand. Parks reports that under the open data strategy, hospital use is down by 20 percent among enrollees in the state's Medicaid program and emergency room visits fell by 12 percent among enrollees. The drop in emergency room visits alone will save an estimated $8 million annually.

In Indiana, meanwhile, state IT leaders have taken on infant mortality as their lead effort in a program of data sharing among agencies. To understand the phenomenon, it was necessary to look beyond the first few rows of data, said state CIO Paul Baltzell. Demographics can help paint the picture, but a fuller round of figures is needed to ferret out causations.

That meant dipping into the data vaults of the state's Family and Social Services Administration, the Department of Corrections, the Department of Revenue and the Workforce Development agency. Together these have generated some 5 billion rows of data, Baltzell said.

—

Indiana's Management and Performance Hub includes a technology center located in the basement of the state Capitol. In this clip, CIO Paul Baltzell talks about why a physical collaboration space is important to the state's data analytics initiative.

—

Taken together, this data has the real-world effect of helping case workers better allocate their resources. "We wanted to give that field worker real data so they would know whether there is an 80 percent chance that something bad will happen to this child, or whether there is a 10 percent chance," said Baltzell. "Then we can directly connect them with the people who can make that happen. Here is the parole officer's name, here are the workforce development people, they are going to be notified as well. That is when you start to change outcomes."

Laudable as these efforts may be, such results do not come easily. A range of challenges, both technical and procedural, must be overcome in order to compile data across agencies and make them work toward health and human services ends.

Legal Landscape

In Illinois, state CIO Sean Vinck has teamed with Kathleen Monahan, executive director of the Illinois Framework project, to develop a massive data project. The multiagency framework encourages technology sharing among 60 programs in nine health and human services agencies.

Before organizers could even begin to manage the data, they first had to establish the rules of the road. First and foremost was understanding privacy rules. It's understood, for example, that the Health Insurance Portability and Accountability Act restricts the use of personal medical information. Less well known is the law's ban on the use of certain depersonalized data, even for statistical purposes.

Other rules posed similar problems. In Illinois you can remove personal information from juvenile court records for statistical purposes, but once you do that, the usefulness of

those records diminishes. Planners would like to correlate crime to location, age and other personal factors, but that can't be done under the present regulations.

For some, this effort to establish data-sharing policies began as a shot in the dark. "When we started doing our open data process, the city did not really have guidelines of what to publish or how to publish," said Comerford in San Francisco. Beyond privacy concerns, planners had to make careful selections from among the masses of data. Transportation, for instance, turned out to be of limited use: Its format would have been incomprehensible for the layman.

In Missouri, guiding principles took on a distinctly HR feel. In addition to opening channels of shared communications, the individuals within the varied agencies involved had to be prepared to commit to data-sharing as an ongoing endeavor.

—

The first goal for Indiana's data analytics initiative was reducing the state's infant mortality rate. In this clip, CIO Paul Baltzell talks about future targets for the initiative.

—

"Nobody should underestimate the amount of managerial attention or administrative effort it takes. We are always remapping our underlying tables, either when new software updates come down or when there are updates to the service codes, and then you have to constantly monitor the staff to make sure they are looking at the stuff and using it," Parks said. "It's like building sand castles on a beach."

In Illinois, opening up information required legislative action, in the form of a bill that created an open data platform and regulatory architecture. The law requires agencies to make architectural choices with open data in mind.

In Indiana, meanwhile, those same choices led to physical imperatives on the IT side. There, the IT shop includes a secure room for use only by cleared individuals, for purposes of data security. In the basement of the governor's office, a $338,000 secure space houses aggregated data as it's processed into the system. (The total cost to the state was $214,000, after a private grant covered $123,000.)

Finally, policies regarding open sharing need to balance the desire for immediate action versus the IT need to take things slow, said Este Geraghty, former deputy director of the Center for Health Statistics and Informatics at the California Department of Public Health. Geraghty, who led the launch of California's first open health data portal, now serves as chief medical officer and health solutions director at GIS provider Esri.

"In some cases there is a directive from the city officials who will say: 'We want to put everything up as fast as possible.' You may not get a lot of detail, but you will get the data very quickly," she said. "Some people will be OK with that, just get it up there and they will clean it up, where other people want to know they have a more reliable source."

Geraghty tends to back the tortoise, more so than the hare. "People may be fast in getting it up there, but then they just have to go back and fix it later," she said.

Making the Tech Choices

Once policies are in place, it’s time to make technological choices that will eventually meld masses of disparate data into a unified whole that can be cross-referenced and shared.

—

Illinois CIO Sean Vinck: Data-sharing solutions rely on equal parts technology and procurement savvy.

—

Even in states with successful programs, the smooth integration of data has been problematic. In Missouri, for instance, emergency room data has to be emailed to Medicaid health-care providers each morning. Clearly a more integrated, automated system would be preferable. As use of the system increases, “we are getting close to where we would need to convert to that,” Parks said. “But as a state agency, I am not resourced to do it.”

Some states have looked for outside help to make the money work. Indiana received a $500,000 grant from the Lilly Endowment Inc. for technology enhancements to help drive its project. But the bulk of project funds will still have to come from the Indiana Office of Technology’s regular budget.

For state IT leaders, it’s not just about the money. Even when they can identify appropriate solutions, and can find the money to buy them, there’s still the buying process itself to contend with. “You have to have enough technology savvy and also procurement savvy,” said Vinck. “In part this means appreciating the timing. Where data sharing is desired, it likely won’t be in the budget until other systems come due for upgrades. No one gets to jump the line just to make social services data interoperable.”

If all this talk of money seems tangential to the technology issues, there may be good reason. “The initial setup is a bit of work, but after that it just rolls,” Parks said. “Once you set up the extract algorithm, it just dumps the files. It’s not real fancy software.”

Vinck concurred: “The technology part is easy, in principle.”

—

In this clip, Indiana CIO Paul Baltzell explains how analytics helps the state model the impact of policy decisions.

—

While the tools of “big data” processing might prove valuable here, even the vast amounts of municipal information rarely rise to the volume produced by, say, Target or Walmart in a single day. “We do have some really large data sets. We have 10,000 restaurants being inspected two to three times a year. But that is 200,000 records at most. We are not creating terabytes of data every day,” Comerford said.

The larger challenge comes in forging shared links between data sources. While this takes some effort, for instance in the standardization of fields and coding of metadata, it is ultimately more a human problem than an IT issue.

“Interoperability among different data systems comes down to just working with people, trying to manage different city agencies,” Comerford said. “It’s about working with different IT departments and program managers to show them that this is a valuable idea for their department.”

Parks backed this notion that the most valuable IT asset here is the people who will ultimately drive the systems from within their varied agencies. “The real key is having basic trust and a willingness to take shared risk,” he said. “It’s about having a true partnership. You need to be willing to see the other man’s problem as being just as important as your problem.”

Editor's note: This article was updated to show that the cost of Indiana's Management and Performance Hub was $338,000.

http://www.govtech.com/health/Data-Sharing-and-Analytics-Changing-HHS-For-the-Better.html