DATA ANALYTICS FOR EFFECTIVE REFORM: **HOW STATE MEDICAID AGENCIES ARE LEVERAGING DATA FOR PAYMENT AND DELIVERY SYSTEM INNOVATION**

**EXECUTIVE SUMMARY**

As the pace of payment and delivery system reform accelerates in Medicaid programs, state agencies have begun to emerge as thought leaders and major players in health care data analytics. Medicaid programs are increasingly using internal and external expertise to realign payment and quality measurement in order to set their programs on the path to reform. They are broadening the sources of data they use, and incorporating interagency data and clinical data into new reimbursement strategies and outcome-based assessment. However, while progress has been substantial, states and their partners must remain committed to long term and sustained efforts to build and refine data analytics capacity in order for data-driven decision-making to become a permanent feature in Medicaid programs.

**INTRODUCTION**

In recent years, the health care sector has become fascinated with the use of data to transform institutions and businesses into smart, forward-thinking organizations that raise health outcomes and bend the cost curve. Medicaid programs are no exception to this movement, and are in some cases leaders of it. This is due to the frequent focus in Medicaid programs on high cost, high utilization populations that face an array of social, economic, and environmental factors that have an outsized impact on their health. In tandem with this focus is a growing federal impetus to promote transformation through a variety of initiatives directed at states that incentivize greater use of data. Given Medicaid’s complex populations and the implications for public budgets, state programs and federal partners are particularly interested in using data-driven innovations to enhance their programs, whether their reform strategies are based in health homes, bundled payments, shared savings, global payment or other new reform strategies.

With the support of The Commonwealth Fund, the National Association of Medicaid Directors (NAMD) brought together staff from six states – Arizona, Colorado, New Jersey, Tennessee, Texas, and Wisconsin – with robust data
analytics capabilities and reform efforts to discuss their internal operations, the expanding scope of data sources at their disposal, and their challenges and predictions for the future of data in their programs.¹ This issue brief describes state efforts to leverage data analytics for programmatic purposes and is complemented by NAM’s work on data analytics in its 2nd Annual Operations Survey.²

CREATING AN INTERNAL STRUCTURE FOR REFORM

The first step for a Medicaid agency to use data is to develop the capacity to do so. Medicaid agencies have long been great repositories of data by virtue of running an expansive claims payment enterprise. But while many agencies have been principally concerned with data collection in the past, they are now looking toward using the data to support innovative payment methodologies and quality assessment. Thus, they are collecting new data, expanding capacity to analyze the data they collect, and building more data-responsive program initiatives.

As expected, Medicaid agencies have varied approaches to data analytics capabilities in their programs due to existing delivery systems, institutional culture and history, and state hiring processes. The importance of data in Medicaid’s historical operations can be gleaned from the presence of the capability in programs. According to NAM’s 2nd Annual Operations Survey, 39 Medicaid programs maintain some data analytics or informatics capacity in-house, with 14 of those also maintaining a contracted outside vendor relationship to supplement their internal operations or handle other functions. (See Figure 2).

While no two Medicaid agencies use data in the same way, there are some common themes and experiences in how the capability is organized into units and how responsibility of functions are allocated. Furthermore, many of the challenges are similar across different organizational models, including staff recruiting and retention, and building a capability that can be sustained over the long term.

Organizational Aspects

Within agencies, data analytics capability can be organized in a number of different ways. Some states have data analytics units specifically designed and housed side-by-side payment and delivery system initiatives. Other states have units that were organized as the home of all data analytics for the Medicaid program, but had other functions as well. Their configuration could be a hub-and-spokes model, where they interacted with other designated policy and operational staff as needed, or they could serve as a free floating unit that took on internal customers as issues were identified – much like in-house Informational Technology (IT) units function in other governmental and private sector situations.

Some states had their capability diffused across the agency, embedding the data analysts in multiple policy and operational units

¹ NAM conducts a range of technical assistance and dissemination efforts around delivery system and payment reforms. Project support is provided by The Commonwealth Fund. Other work by The Fund has been used to forward these efforts with Medicaid directors. For more information, go to www.MedicaidDirectors.org and to www.CommonwealthFund.org.

Hiring and Retention

Because of the widespread interest across the health care sector, data analytics staff can command high salaries and lucrative forms of indirect compensation, two incentives that state agencies often cannot provide. State agencies consistently noted that recruiting staff is difficult, both in attracting the talent at the early stage and then offering a competitive compensation package. Furthermore, the skills and knowledge the analysts develop while on the job make them attractive to other employers, making retention a perennial concern. Some states have to rely on intangible benefits like the ability to publish in academic or policy journals, flexible work schedules, telecommuting options, and other non-financial compensation in order to attract and keep staff.

The hiring process across a state government may also have an impact on data analytics staffing. Hiring freezes and exemptions create time delays that may make recruitment very challenging. Combine this phenomenon with compensation issues, and it becomes exceedingly difficult for agencies to find and retain qualified analysts.

The heart of the issue is that these are “new economy” workers, even in public service, and behave in line with other workers in this vein. The jobs that they currently occupy may not be long term commitments. One state has attempted to address this by staggering the hiring and training of their staff in order to build continuity. States also suggested exceptional documentation and transparency of analytics work and projects to be kept within the agency. Continuity of the unit is a primary goal, not just retaining individual staff, as way to counter balance attrition.

The Use of Outside Contractors and Researchers

Agencies have relied on outside assistance for a range of activities, including data analytics. In managed care states, external quality review organizations and other consultants have long conducted quality measurement activities that are integral to managed care programs. Agencies have also developed relationships with academic and research organizations to study aspects of their programs over the long term. States with major reform efforts use this cadre of health care consultants to aid or in some cases run their data analytics efforts. This is happening alongside the move to better define the role of data analytics in the agency.

States are also enhancing their internal capabilities with sophisticated IT tools built around reform efforts. For instance, states contemplating or implementing payment and delivery system reform are increasingly factoring in new roles and responsibilities in their procurements of analytics tools, and even major systems upgrades like eligibility and enrollment systems and Medicaid Management Information Systems (MMIS).

External versus internal capabilities are the outer limits of approaches. The majority of states employ a model along this continuum. States avail themselves of all the options in order to build capability internally, buy it externally, or come up with a blended approach depending on the particular data function.
However, the management and oversight of outside analytics requires state resources; even when a state contracts for analytics services, it must have the capability to manage that contract and ensure that the work has applications for the program. Contractors frequently require extensive support in the beginning of a project to understand the data and data quality issues. There may also be extensive time spent transferring data, granting required access, and resolving other administrative issues. Because of regulatory frameworks, unique populations, and other factors, the analytics needs for Medicaid programs are different than commercial payers and often require tailored approaches designed in concert with states. The resource pressures on internal capacity can remain for states even when analytics is done by an outside entity.

Payment reform of all types increasingly relies on complex data needs in all aspects, whether it be modeling, standard business operations, refinement, or quality measurement. While the organizational outlook may differ in what data analytics capacities states must have, it is clear that states need this capability. Data analytics is crucial to reform efforts, whether they be managed care pay for performance, accountable care organizations, shared savings, episodic care or other strategies.

However, building and sustaining this capability in Medicaid programs is very difficult, as is ensuring analysts have sufficient time and resources. Success requires attention and commitment on the part of senior level managers in order to succeed.

**DATA AND REFORM STRATEGIES**

Just as the analytics units and capabilities have become more complex, the data that agencies are using to inform their reform efforts have also become more sophisticated. Agencies have traditionally relied on their own claims and/or encounter data, a comprehensive record of pricing and utilization data, to be the source of their analytics efforts. However, agencies are increasingly looking toward new sources. Most notably, they look at data collected by other governmental agencies on local, state, and federal levels to add further depth to their work. Commercial claims data and other private sector data can also be a valuable point of comparison.

States decide what data is important by focusing on their priorities. For managed care states, achieving better performance through capitation rates to health plans is one vehicle for affecting change. In a managed care pay-for-performance strategy, states generally withheld some portion of a capitation payment to the health plans and tied it to some measure of quality. Other states used accreditation processes or quality metrics to incentivize better performance for plans or providers.

States may be focused on the health system or physician practices themselves, through innovations like patient centered medical homes, accountable care organizations, and...
working on hospital reimbursement directly. Whatever the payment method (e.g. fully at risk or shared savings), the focus is paying for quality through accreditation mechanisms, metric benchmarking, and other assessments. States seeking to change behavior also implemented information sharing approaches like online portals for MCOs or providers to access quality reports and compare themselves. Plan and provider report cards also serve as dissemination vehicles for quality information.

Effectively assessing quality remains an ongoing goal, particularly in this era where outcome-based measurement is taking on greater importance. States are using metrics based on preventable hospital emergency department (ED) visits, hospital admissions and readmissions, complications, medical imaging, and similar services in a number of strategies. They were also moving toward metrics focused on primary and preventive care, long term care, maternity care, mental health, and substance abuse in similar initiatives. States acknowledged that nationally recognized measure sets exist that alleviate the need to create their own measures in many circumstances; however some expressed a desire to augment efforts so that measurement would be better tailored to their reform efforts and to Medicaid-specific issues and populations.

Across the range of strategies, the defining characteristic is states focusing on enhancing outcomes on the provider level with the tools and delivery system at their disposal. As a payer, one of Medicaid’s strongest leverage points remains reimbursement as a means to enhance outcomes and reduce costs. Alongside payment, states are also seeking to enable providers with access to actionable data at the point of care in order to push providers to adopt new behaviors. Data is increasingly being used to realign payment incentives at a program level and to increase the quality of care at the practice level.

Most of our data is administrative, with very little clinical information. We can see the claim or encounter, but are generally blind to the results…. Access to clinical data would greatly enhance our analytics.

Data Sources
To implement reforms, the foundational data that Medicaid agencies continue to use is their own claims and encounter data. It is by no means a small data set. Medicaid agencies reported that they had vast amounts of internal data, and if anything, were challenged in differentiating between what data was useful and what data was not.

The most commonly cited data sources aside from internal Medicaid data is data from other public entities at the local, state, and federal levels. Many states generally were very interested in receiving timely Medicare data. This was of importance to states, as Medicare data gives them a window into what happens with their dually eligible population that they might not otherwise have, which can make up a significant portion of a program’s beneficiary mix.

Medicare data sharing has been historically challenging between states and the federal government. However, in the past year, some states have been able to move forward with timely Medicare Parts A, B, and D data, which has supported duals demonstrations and other efforts.

Other state agency data, such as birth records, can add to information on birth outcomes. Juvenile justice data and corrections data can be used to smooth over enrollment functions and enhance transition planning and case management. Behavioral health claims can help inform reform efforts seeking to integrate behavioral and physical health, notably in health home and managed care contexts. States are interested in commercial data as a point of comparison and to see where their programs align with other payers in a state. Data sources beyond Medicaid claims and encounters are becoming more relevant.

Amassing and integrating new data sources is not an easy task. There are demands on staff time and other internal resources in order to be able to convert different data sources into a useable format for Medicaid programs. Negotiating

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and working with external partners can also be a challenge. Issues with timeliness also affect efforts – older data from other agencies may not be as useful to Medicaid programs. Government agencies have a wealth of data, but the often silo-ed nature of government programs – combined with technological hurdles – can present obstacles for Medicaid agencies looking to include new data sources. High level attention and leadership is needed to overcome these challenges.

Clinical Data

One of the most interesting and promising developments in the growing transition to outcome-based payment and measurement has been the possibility of incorporating of clinical data culled from electronic health records (EHR). As payment realignment and assessment of health care value shifts, the potential of clinical data is obvious. However, at this stage, the use of EHR is still emerging, and states generally do not have sufficient breadth to work it into their reform designs.

While there is great interest on the part of Medicaid agencies to use clinical performance and health outcomes as a measurement and reimbursement strategy, the necessary infrastructure is not yet developed to make it a reality in many cases. In order for the data to be worthwhile, there must be standardization and sufficient uptake on the part of providers. States have made great progress in the design of EHR networks through funds and guidance under the HITECH Act and related efforts undertaken by the Department of Health and Human Services and its internal agencies, like the Office of the National Coordinator for Health Information Technology (ONC). However, the present state of statewide EHR networks is not robust enough to be a source of data for payment and delivery system reform efforts for many states.

While there is a great interest in using clinical data to inform payment and quality measurement, states must continue to build the foundation for this data through the development of these networks.

TRENDS ON THE HORIZON

New challenges are arising as Medicaid agencies work to implement payment realignment and outcome-based measurement. They demonstrate that many Medicaid programs are at a crucial midway point on the road to reform, they have made substantial advances in reform efforts, but need continued support to make data analytics an established feature of their programs. Three integral components in particular emerge:

- Sustained commitment to clinical data is necessary to see return on investment;
- States must find their own contextual solutions to build capacity; and
- Data system interoperability and data sharing is key to long term development.

Sustained commitment to clinical data is necessary to see return on investment. The promise of clinical data to invigorate reform is substantial, but the critical infrastructure to make that promise a reality is still a work in progress. Medicaid programs need sufficient uptake on the part of providers in order to construct payment strategies and quality metrics that would work across their programs. The HITECH Act has been instrumental in enabling states to build electronic health information exchange systems and to lay the foundation for clinical data to be used by Medicaid programs to assess outcomes. The work to support the technological infrastructure will need to continue in order for Medicaid programs to see the potential benefits of clinical data realized.

As described by the Government Accountability Office (GAO), ONC, CMS, and other HHS offices are beginning to define the federal role in EHR adoption after the HITECH Act. Continued support for state efforts to build systems and promote EHR adoption among providers will be essential to using clinical data for payment and delivery system reform in the long term.

States must find their own contextual solutions to build capacity. As noted in NAMD’s 2nd Annual Operations Survey and this brief, Medicaid agencies are approaching data analytics capacity in a range of ways. These pathways are impacted by a number of factors, including state participation.

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employee hiring practices, salary guidelines, internal bureaucratic cultures, and other highly contextual factors. These factors determine how data analytics work inside of agencies, as either internal units or outside consultants. These factors cannot always be directly influenced by the Medicaid agency, so programs must work within these confines.

There is not one universal path to success, rather each agency must move forward in line with their experience that will make them successful. However, Medicaid agencies may need to demonstrate high level commitment to data analytics if they intend to take on the complex functions of payment and delivery system reform.

Data system interoperability and data sharing is key to long term development. State Medicaid staffs admit that aligning data efforts across systems can be a major undertaking. Medicaid programs are eager to add to their internal data with data from social services agencies, public health agencies and organizations, departments of corrections, as well as inter-governmental sources like Medicare. The process to do so can be resource intensive, as many of these agencies and other organizations have built data systems that were focused on managing internal information and not designed with interoperability in mind.

Furthermore, multiple payers working with the same group of providers may adopt different payment strategies and quality measurement strategies that have different data requirements. This can add another layer of data complexity.

One of the central efforts in the new era of reform is enabling better data sharing and the development of measurement strategies that are more seamless and less administratively burdensome for providers. This is not an easy lift - it requires senior level attention to data sharing efforts and a commitment to assemble relevant partners to bring about common strategy on sharing going forward. In many states, this role is being played by agency heads or Governor’s Offices in the State Innovation Model (SIM) grant process. Other states have similar state government leaders pushing for coordination. This work must also continue if states are to realize the benefits of a multipayer approach.

**CONCLUSION**

The use of data in Medicaid programs has a strong historical precedent in the work that agencies have done in the past. While it is logical outgrowth of program operations, the new era of payment and delivery system reform has raised the role of data to a new level of importance in Medicaid programs. Complex reforms that recast payment reimbursement and shift quality measurement to outcomes require data analytics capacity. While states may create that capacity in different ways, it is necessary for reform to be successful.

On the horizon, states must be supported in their long term efforts to incorporate clinical data and in breaking down silos to get other pertinent data to develop a fuller understanding of their programs. These advances are critical not only to implement payment and delivery system reform, but to reach the overarching goals that reform envisions: a sustainable Medicaid program that is based on quality care.
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