Fighting the opioid crisis with data, analytics and waivers — a coordinated approach
As the United States addresses the opioid crisis, data and analytics play a key role. To qualify for certain federal funds and bolster treatment strategies, states must conduct a thorough inventory of their opioid program and data needs, identify gaps, and determine the processes necessary to procure the data and accurately report on outcomes and effectiveness.

New federal grants and waiver programs may enable states to tie together the hodgepodge of different data and analytics initiatives built over the last decade and create a proactive real-time approach to fighting the opioid crisis. Faster, better information can lead to better outcomes and save lives.

This paper describes the opioid epidemic and states’ responses, the role of data and analytics and the Medicaid waiver opportunity.

The opioid epidemic and state program response

On August 26, 2017, U.S. President Donald Trump formally recognized the opioid epidemic as a public health emergency, representing one of the latest efforts at a federal level to bring attention to a national problem that has grown over the past two decades. One estimate states that 2.6 million people in the United States abuse prescription opioids and heroin. Data from the Centers for Disease Control and Prevention found that more than 42,000 Americans died of opioid overdoses in 2016, a 28 percent increase over 2015. The cost of opioid misuse and abuse was $504 billion in 2015. While the epidemic continues to evolve with the addition of fentanyl, heroin and other new, deadly synthetic opioids, only an estimated 10 percent of individuals with substance use disorders (SUDs) receive any type of specialty treatment.

States have been addressing this problem for some time, and for good reason: Diagnosed opioid use disorder (OUD) has a prevalence of 8.7 per 1,000 Medicaid beneficiaries, more than 10 times higher than in populations under private insurers. Medicaid covers treatment for 30 percent of all OUD patients in the United States (approximately 770,300 members, according to 2015 data).

To address OUD, states have been investing in multiple approaches to rein in the problem, from building and improving prescription drug monitoring programs (PDMPs) to constructing OUD-specific hub-and-spoke models, similar to a patient-centered medical home. The federal government has also introduced multiple grant programs (through the Centers for Disease Control and Prevention and the Substance Abuse and Mental Health Services Administration, among others) to help strengthen substance abuse responses.
State-run and state-funded initiatives have been using data and analytics-based solutions to combat the problem from many different angles:

- **Identifying areas for improvement** — Pennsylvania found that most OUD patients did not receive medication-assisted treatment (MAT) from their primary care providers; Pennsylvania is now using this as the basis for a grant from the Agency for Healthcare Research and Quality (AHRQ) to increase the number of primary care physicians who provide MAT in rural counties.

- **Sharing data across departments** — States such as Indiana and Ohio are working on sharing data across multiple state government divisions to incorporate additional data sources and accommodate social determinants of health. They are also using hot spots of overdoses and paramedic-administered naloxone to determine where to locate new opioid treatments centers.

- **Improving PDMPs** — States are supplementing existing PDMPs with outlier analyses to identify irregular prescribing patterns (i.e., “pill mills”).

- **Identifying opioid overprescribers** — States are using standard program-integrity methods to address fraud, waste and abuse, provider misunderstanding, and prevention measures. OUD programs, as with other SUD programs, are at greater risk than typical physical health programs for this, due to confusion from multiple oversight agencies and conflicting compliance measures in state and health plan regulations, which can lead to unintentional fraud.

- **Incorporating social determinants of health** — States are building up or supplementing datasets to help identify opioid use, abuse and overdose, and to determine how to change specific behaviors and help communities build education and support programs.
• **Improving opioid overdose reporting** — States now enhance the reporting of opioid deaths by combining data from both PDMPs and the State Unintentional Drug Overdose Reporting System (SUDORS), which captures details of what happened when someone overdosed. The objective is to keep up with the changing nature of the opioid crisis as newer types of synthetic opioids become available.

• **Sharing data across states** — OUD knows no state borders, and OUD sufferers frequently obtain prescriptions from multiple states. Now more than 40 states are sharing PDMP data through the National Association of Boards of Pharmacy (NABP) prescription monitoring program (PMP), InterConnect.

• **Assessing the success of new programs** — The state of Washington is using analytics to determine the effectiveness of MAT in lowering the use of emergency departments by Medicaid beneficiaries.

Yet there is still much work to be done. The National Safety Council uses six key indicators of state progress (mandatory prescriber education, opioid prescribing guidelines, elimination of pill mills, prescription drug monitoring programs, increased access to naloxone and availability of OUD treatment) to assess progress, and has stated publicly that none of the states has met all six indicators due to gaps in service.7

Further, many programs in place must deal with an increase in fraud, waste and abuse. The challenge for program integrity is to balance appropriate proactive program oversight to avoid not doing enough with making oversight too aggressive and penalizing providers and programs too harshly for mistakes.

What’s needed is a smarter system — one that uses data in real time, leverages current programs (including existing data and analytics), and enables states to respond quickly and cost-effectively while saving lives.

**The opportunity: The Medicaid 1115A waiver program**

On November 1, 2017, Brian Neale, the former Centers for Medicare & Medicaid Services (CMS) deputy administrator and director for the Center for Medicaid and Children’s Health Insurance Program (CHIP) Services, under the direction of Seema Verma, the CMS administrator, sent a letter to Medicaid directors, encouraging them to use the 1115A waiver program to come up with innovative ways to address substance abuse via 5-year pilot programs while remaining budget neutral.8

The waivers, enabled by the 21st Century Cures Act, allow states to use Medicaid funds in ways that otherwise wouldn’t be permitted under federal rules. Among the resources states will be able to access is the use of federal financial participation (FFP) to include inpatient/residential treatment services. The 1115A waiver program also enables states to implement delivery systems that can improve efficiency and reduce costs. Examples include accountable care organizations and patient-centered medical homes.

For the opioid crisis, using the program may enable states to fill in gaps in their OUD treatment strategies. Recommendations include removing barriers to FDA-approved MAT programs, such as rules that prohibited Medicaid patients from using certain medical facilities for drug rehabilitation. Program resources should align to meet a spectrum of needs as defined by the American Society of Addiction Medicine (ASAM) or another set of accepted standards.9
Over the past 18 months, CMS has approved several 1115A waivers, including waivers for Virginia and West Virginia. West Virginia’s program, called Creating a Continuum of Care for Medicaid Enrollees with Substance Use Disorders, is proving to be a test case and an example other states should follow.

**Goals, milestones and the role of data and analytics**

CMS is encouraging such innovative approaches but is also emphasizing that states must report on their successes or failures, as well as how much money they have spent. Those that have implemented successful programs will continue to receive federal support, but those that fail to show improvement or that overspend will have funds taken away. This information will be fed into a CMS scorecard and made publicly available.

CMS has outlined a series of goals and milestones that states should focus on achieving:

- **Goals**
  - Increased rates of identification, initiation and engagement in treatment
  - Increased adherence to, and retention in, treatment
  - Reduced number of overdose deaths, particularly those due to opioids
  - Reduced use of emergency departments and inpatient hospital settings for treatment, where use is preventable or medically inappropriate because of improved access to other continuum-of-care services
  - Fewer readmissions to the same or higher level of care, where the readmission is preventable or medically inappropriate
  - Improved access to care for physical health conditions among beneficiaries

- **Milestones**
  - Access to critical levels of care for OUD and other SUDs
  - Widespread use of evidence-based, SUD-specific patient placement criteria
  - Use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications
  - Sufficient provider capacity at each level of care
  - Implementation of comprehensive treatment and prevention strategies to address opioid abuse and OUD
  - Improved care coordination and transitions between levels of care

OUD patients require continuous support, as they can cycle quickly from a steady state of managed OUD, to withdrawal, to potentially another overdose, and need a complete spectrum of services available as they either progress or relapse.

Data and analytics will be key in identifying the opportunities to fill gaps, run program operations more efficiently, and report on outcomes and effectiveness. Proper patient identification and financial risk identification — and/or coordination of care — will be vital for the proper planning and allocation of resources in this process, as well as matching patients to the right resource at the right place and time. Further, using existing data, along with benchmarks from other states, may help determine the best ways to address OUD challenges.
Filling existing gaps in state programs

In using 1115A waivers, states need to determine what programmatic changes are required to fulfill the needs for a broad spectrum of services for OUD, as well as a plan for addressing those needs.\textsuperscript{12}

Using the ASAM levels of care, states can look at their existing opioid abuse support structures and fill in gaps relative to their specific needs. For example, comparing the approved 1115A demonstration (i.e., pilot program) for West Virginia\textsuperscript{13} to Virginia\textsuperscript{14} services, one can see how the waiver might be used. See Figure 1.

### Figure 1
Comparison of SUD Demonstration Benefits in West Virginia and Virginia

<table>
<thead>
<tr>
<th>ASAM Level of Care</th>
<th>West Virginia</th>
<th>Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>Targeted Case Management</td>
<td>State Plan</td>
</tr>
<tr>
<td>N/A</td>
<td>Naloxone Administration Services</td>
<td>State Plan</td>
</tr>
<tr>
<td>0.5</td>
<td>Screening, Brief Intervention and Referral to Treatment</td>
<td>State Plan</td>
</tr>
<tr>
<td>1</td>
<td>Peer Recovery Support Services</td>
<td>Section 1115A</td>
</tr>
<tr>
<td>1</td>
<td>Outpatient Services</td>
<td>State Plan</td>
</tr>
<tr>
<td>2.1</td>
<td>Intensive Outpatient Services</td>
<td>State Plan</td>
</tr>
<tr>
<td>2.5</td>
<td>Partial Hospitalization Services</td>
<td>State Plan</td>
</tr>
<tr>
<td>3.1</td>
<td>Clinically Managed Low Intensity Residential Services</td>
<td>Section 1115A</td>
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<tr>
<td>3.3</td>
<td>Clinically Managed High Intensity Residential Services</td>
<td>Section 1115A</td>
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<tr>
<td>3.5</td>
<td>Clinically Managed High Intensity Residential Services</td>
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<tr>
<td>3.7</td>
<td>Medically Monitored Intensive Inpatient Services</td>
<td>State Plan</td>
</tr>
<tr>
<td>4</td>
<td>Medically Managed Intensive Inpatient Services</td>
<td>State Plan</td>
</tr>
<tr>
<td>1-WM</td>
<td>Ambulatory Withdrawal Management Services</td>
<td>State Plan</td>
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<tr>
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<td>Medically Monitored Inpatient Withdrawal Management Services</td>
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<td>Opioid Treatment Program Services</td>
<td>Section 1115A</td>
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<tr>
<td>OBOT</td>
<td>Office Based Opioid Treatment</td>
<td>State Plan</td>
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</tbody>
</table>

Figure 1 shows the SUD Demonstration Benefits for West Virginia and Virginia. Light gray represents state plans and dark gray represents section 1115A demonstrations. Information was compiled by DXC Technology from CMS letters of approval to both states for the 5-year section 1115A demonstration.
As seen in Figure 1, the gaps vary from state to state, as do the proposed solutions, but the ultimate goal of meeting the ASAM requirements is achieved. How would a state go about prioritizing those needs? With different decision models, such as Monte Carlo simulations, and the proper data, a state could potentially identify the best combination of resources available, determine its system’s gaps, and then determine what services should be requested and funded to meet those needs. Moreover, as new non-opioid medicines and digital therapies become available for both pain control or OUD treatment, these analytics will help identify which patients may benefit the most from these therapies and avoid addiction.

**Program operations, outcomes and effectiveness reporting**

Perhaps the most important aspect of all is the reporting of performance, both outcomes and financial. As part of the improvements to section 1115A on access and quality of treatment for Medicaid beneficiaries, CMS expects states to provide regular demonstration reports, information on milestones and key performance indicators once objectives have been met. CMS has said it will work with participating states to develop monitoring protocols that assess improvement and to determine data collection methodology, analytical methodology and performance-measurement baselines.

The emphasis is on meeting budget neutrality and financial reporting requirements that are assessed quarterly and annually against an established baseline.¹⁵

States wishing to participate must describe their capacity to report regularly on their progress, as well as their capacity to collect and report performance measures. Program resources should be aligned to meet a spectrum of needs as defined by ASAM criteria and provide evidence-based SUD practices.

Data gathered will be assessed about midway into the initiative — 2 to 3 years — to determine whether states are making sufficient progress to achieve goals and milestones. In their regular demonstration reports, states must include performance measures showing progress made in meeting goals. States that look likely to miss their targets will have to develop modifications to their implementation plans and may have to provide corrective action plans. Finances may be withheld if states aren’t making adequate progress.

It will be necessary to develop methods to ensure speed and accuracy of performance reporting, especially in light of the high cost of missing goals. For example, if a state doesn’t make sufficient progress or fails to put in place an adequate corrective action plan, the use of FFP for services may be withheld. In addition, if states fail to remain budget neutral, CMS will recover the difference, and states that fail to submit an evaluation design on time or miss subsequent reporting will be penalized with a $5 million deferral per item missing, late or incomplete. Ultimately, all the data will be presented publicly through a CMS scorecard.
The ability to gather the information needed to determine performance measures will require that states be able to pull data from multiple, sometimes disparate data sources, as well as issue timely reports: quarterly and annual operational reports, quarterly expenditure reports and closeout reports. States also need to assess programs, grants and initiatives available to them to assist with assessing and analyzing data.

Although performance measures are still being finalized, they include:

- Increased rates of identification, initiation and engagement in treatment
- Improved adherence to treatment
- Reduced number of overdose deaths, particularly from opioids
- Reduced use of emergency department and inpatient hospital settings
- Fewer readmissions to the same or higher level of care
- Improved access to care for beneficiaries with comorbidities

The measures are structured for regular progress reporting, as well as determining outcomes such as fewer overdose deaths. Measures help to assess whether states are meeting their goals, and they help states make corrections throughout the life of the program.

These measures and, by extension, the 1115A waiver program, may allow states to tie together the hodgepodge of different data and analytics initiatives built over the past decade, and create a standardized, real-time approach to successfully fighting the opioid crisis.

### Using analytics to fight the opioid crisis

The Centers for Disease Control (CDC) has been funding several analytics-based initiatives to help states fight the opioid crisis using reporting and analytics:

The **Prevention for States (PfS)** program is to assist with data analytics for prescription drug management programs (PDMP) to improve use, access and data availability, and evaluate prescribing patterns to address fraud, waste and abuse, and identify provider over-prescription (“pill-mills”). PfS has distributed $1.4 million in grants and competitive supplements over the last 3 years, along with a noncompetitive supplement of $19.3 million in 2017.

The **Data-Driven Prevention Initiative (DDPI)** is to help improve data collection and analysis of opioid use, abuse and overdose, assess how to change behaviors that lead to opioid abuse and build community-based prevention programs. DDPI had $21 million in funding over the last 2 years and an additional $4.6 million in supplemental funding last year to distribute in 12 states and the District of Columbia.

The **Enhanced State Opioid Overdose Surveillance (ESOOS)** program is to improve reporting of nonfatal opioid overdoses, using surveillance of emergency departments and emergency medicine services, and to improve reporting of fatal opioid overdoses. Over the last 2 years, ESOOS has distributed $12.8 million in program funds to 32 states and the District of Columbia (along with $4.7 million in supplemental funding at the end of last year).
Tying it all together

But what of the other OUD analytics initiatives that states have already invested time and effort in creating or maintaining?

Given the comprehensive nature of these new measures, the previous analytics work could be used as a way to bring these efforts together. In other words: These measures, and by extension, the 1115A waiver program, may allow states to tie together the hodgepodge of different data and analytics initiatives built over the past decade, and create a standardized, real-time approach to successfully fighting the opioid crisis.

Having the 1115A programs lets states fill gaps in their programs and knit together disparate analytics grant programs. Creating a smart, responsive health system, enabled with real-time data, would allow all state resources (coroners, medical professionals, law enforcement, state officials) to respond quickly and save lives. For example, if a new synthetic opioid that does not respond to Narcan (the medicine used to reverse overdoses) hits the state, information from the coroner’s SUDORS system can cross-reference data from medical professionals and law enforcement.

Going through the gap exercise will also allow states to identify policy roadblocks and potential solutions (such as 42 CFR reform, or using the Trusted Exchange Framework and Common Agreement for the transfer of opioid related data) that they need to implement.

This would enable medical professionals to be on the lookout for these types of overdoses (and prepare emergency rooms accordingly), and to alert police officers, emergency medical technicians and others that Narcan may not be effective. And if the synthetic opioid is poisonous through skin contact, then the warning would go out to wear hazmat outfits when handling these patients and crime scenes.

As states address the opioid crisis and marshal resources, it’s vital that they perform a thorough inventory of their program and data needs, perform gap analyses and determine the processes necessary to procure the data and accurately report their progress to optimize their chances for success.
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