

# Unlocking Data-Driven Solutions to the **Opioid Epidemic**



# The opioid epidemic is ravaging the country. Every day, more than 130 Americans die from opioid-related overdoses.<sup>1</sup>

**W**ith rising deaths, states are turning to a valuable resource to combat the crisis — data.

Pennsylvania launched the Overdose Information Network (ODIN) to create a centralized data hub for tracking overdoses, drug investigations and administrations of the life-saving drug naloxone. ODIN is a model in data sharing and collaboration. From law enforcement to health care providers, more than 1,300 agencies in every one of the state's 67 counties use this resource.<sup>2</sup>

In Indiana, leaders created the Management Performance Hub (MPH), which combines data from state agencies to help the Indiana Commission to Combat Drug Abuse make data-driven decisions like where to open new treatment centers and where to deploy naloxone.<sup>3</sup> Several other states, from Texas and Washington to Arizona and New Jersey, have launched opioid data dashboards to inform their near-term and long-term strategies and more effectively allocate law enforcement and public health resources.

Undoubtedly, states are trying to use data-driven methods to stop the epidemic — but they still have a long way to go. In late 2018, the Governing Institute, in collaboration with LexisNexis Risk Solutions, launched a research study and interviewed 53 leaders representing 47 states to learn how they are using data to respond to the opioid crisis and better understand their challenges and unmet needs. Thirty-five state leaders interviewed said they use prescription drug monitoring program (PDMP) databases to support opioid epidemic initiatives, while 18 use overdose tracking and mapping tools and 10 use data visualization tools.<sup>4</sup> But legal and resource constraints across agencies and jurisdictions prevent states from using data in a more impactful way. Our research indicates these barriers may have the biggest impact on states' data maturity and capabilities in the areas of predictive and real-time data, analytics and data sharing tools. Only a few state leaders interviewed indicated they use these data technology tools.

The opioid epidemic touches diverse swaths of the public sector — from health and human services and law enforcement to the judicial and child welfare systems. Bridging the gap between data housed in these disparate systems and using real-time analytics tools is a huge opportunity for state government leaders to better understand at-risk populations and take meaningful steps to save more lives.

## Using Data to Combat the Opioid Crisis: Where We are Today

Governing Institute research indicates state leaders have significant unmet needs and challenges to leverage data more effectively, including lack of real-time data, data silos and limited funding.

### **Lack of real-time data**

Availability of real-time data is the biggest unmet need, government leaders say. In addition, agencies often lack access to public records and insights such as social, environmental and socioeconomic determinants of health to drive better health outcomes for at-risk individuals.

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“Having real-time data is critical for both public health and law enforcement responses,” says Kelly Richburg, a senior policy analyst in the Washington State Office of the Attorney General. “On the public health side, if you see that spike in real time, you can notify people that, for example, there’s Fentanyl discovered in the supply or even counterfeit pills or other types of drugs, which could make outreach and potential harm reduction methods more timely and effective.”

### **Siloed data and systems**

Though real-time data is a pressing need, the challenge that underpins it is the siloed nature of government data and the disparate systems used to store information.

“What’s been made painfully clear is there’s a great deal of siloed data hindering states’ ability to react and deal with this type of situation as effectively as they would like,” says Doug Tomlin, director of business development at LexisNexis Risk Solutions, which helps agencies maximize the use of their data to fight the opioid epidemic.

In the state of Washington, for example, Richburg says law enforcement agencies don’t have wide-ranging access to PDMP data unless they already have a potential target they’re investigating.

Data silos not only restrict access between agencies that should be working collaboratively, but they create inefficiencies and confusion, like the same individual being represented multiple times within a state record.

Concerns about data privacy and security — and potential liability — also perpetuate silos and prevent many agencies

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from sharing data with other entities. Plus, many states rely on legacy systems that make granting data access to other entities and maintaining data integrity almost impossible.

“We already have a fair amount of data,” says Utah Attorney General Sean Reyes. “We have instantaneous data that’s generated at the time of a crisis like data coming into a 911 center. We have historical data that looks retrospectively at how we came to a crisis. This data may be housed with the Department of Health or Medical Examiner’s Office. Then we have law enforcement and other government agencies looking at different elements of the opioid challenge. The biggest problem is all this data remained largely compartmentalized. Without the ability to bring it all together we were losing significant opportunities.”

### **Limited funding**

Budgetary constraints also affect states’ ability to take full advantage of data.

Many state officials say they use federal funding streams for treatment, naloxone administration or prevention. Indiana, for example, has benefited from an increase in federal funding because of Medicaid waivers. Tennessee uses federal funding sources from the Bureau of Justice Assistance, the 21st Century CURES Act and the Substance Abuse and Mental Health Services Administration (SAMHSA).<sup>5</sup>

Overall, the states interviewed by the Governing Institute received more than \$709 million in SAMHSA funding alone. However, federal funding streams have a finite window and most state leaders say they need additional money to make a greater impact. This could come in part from new federal laws like the SUPPORT for Patients and Communities Act, which provides states grants to upgrade their PDMPs to integrate electronic health records and facilitate more interstate data sharing.<sup>6</sup>

### **Legal barriers**

Even with increased funding for data technology tools, current legal constraints may continue to hamper data sharing. For example, Title 42 of the Code of Federal Regulations (CFR) Part 2 — the federal law that prevents unauthorized disclosure of health records for individuals who seek substance abuse treatment — limits data sharing because this information only can be released in very limited cases.<sup>7</sup>

“What Title 42 has the impact of doing in many of our systems is inhibiting the flow of that data, even at a population level, into the conventional ways in which healthcare information is

## The Data States Have Today...So What?

Some of the data states have at their disposal include:

**De-identified data:** This includes data that doesn't contain protected health information like patient names, ZIP codes, Social Security numbers, medical record numbers and 14 other identifiers protected under the HIPAA Privacy Rule.<sup>9</sup>

**Public health, public records and surveillance data:** This includes quantitative data such as the age groups and the amount of people who have a particular health condition or behavior, qualitative data from health questionnaires and surveys,<sup>9</sup> public records information such as death certificates, and surveillance data on fatal and non-fatal opioid overdoses from state tracking systems.

**Medicaid and Medicare data:** States have access to Medicaid claims data, such as information on drug utilization, prescribing patterns and prescription-fill data. Medicare claims data such as prescription data linked to Medicare beneficiary summary files and data on non-fatal overdoses are also valuable information sources that states can use to shape public health policy.

**PDMP data:** Forty-nine states currently have an operational PDMP,<sup>10</sup> which contain information on opioid prescriptions, prescribing patterns and prescription-fill behavior. However, state law governs which parties or agencies can access the data.

**Public and private data sources:** This can include prescriber specialty and patient demographic information from insurance claims data, data from the SAMHSA Buprenorphine Waiver Notification System and the Drug Enforcement Agency Active Controlled Substances Act (DEA CSA) Registrants Database,<sup>11</sup> and policy data from the National Alliance for Model State Drug Laws and other nonprofit and governmental organizations involved in formulating policy.

Finding a way to link these disparate data sources will be critical to states' efforts to address opioid misuse. Public records data, in particular, can help them bridge the gap.

Effective data-linking strategies could include creating a data warehouse that cleans, standardizes, collects and uses linkage algorithms to analyze public data sets — such as criminal justice, child welfare and Medicaid claims data — from various state agencies to help states formulate prevention and treatment strategies.

When it comes to data, the whole truly is greater than the sum of its parts. Individual data sets can be greatly enhanced by complementary data sources that enable states to devise more effective, evidence-based policies and programs. Without a strategy to link all these data sources into a central repository for better analysis, the data states already have at their disposal may as well stay siloed.

aggregated and exchanged," says Beth Tanzman, director of Vermont Blueprint for Health, which designs community-led strategies for improving well-being and health in the state.

The Health Insurance Portability and Accountability Act (HIPAA) can also prevent data sharing because the law is often widely over-interpreted. Most agencies that store confidential health data would rather err on the side of patient privacy than risk inappropriately sharing the data with another entity.

More than half of the officials interviewed by the Governing Institute said data sharing is a concern for their states and many cited HIPAA as the primary impediment. However, officials said efforts to address these concerns could include state legislative updates, communication between stakeholder groups and advocating for change at the federal level.

While it will take time to address the legal, cultural and organizational constraints that limit data sharing, states still

must contend with issues such as the lack of common data standards for PDMPs and other data sources, non-standardized data collection and reporting methods, and the need for well-integrated and interoperable technologies and robust data visualization and analytics tools. All of these challenges make it difficult for government agencies to gain a holistic and up-to-date view of individuals to prevent opioid abuse — the ultimate goal.

“You need tools that can responsibly gather data, that can integrate and analyze data and that can deploy the data in a useful way. That is the secret to success, and it can be replicated at the most local level all the way up to the highest federal level,” Reyes says.

## Seizing the Data Opportunity: Lessons from States

States are using a range of data strategies to combat the crisis, but there are still many opportunities for them to leverage their data, such as using predictive data to better understand the social determinants of health and to identify at-risk populations as part of prevention efforts. Here’s what some states are doing effectively and where they can improve.

### Passing legislation to reduce data sharing barriers

Massachusetts passed a law to encourage more data collaboration among agencies, which led to an effort called Chapter 55 to combine 10 data sets from five agencies.

The state links data sources like death certificate records; emergency room, hospital and outpatient records; and incarceration and substance abuse records from these agencies<sup>12</sup> to uncover trends like the prescription history for fatal overdoses, people switching from legal to illegal opioids and how multiple prescribers elevate risk.

In Maryland, the governor introduced the Overdose Data Reporting Act to empower EMS and law enforcement personnel to share data about overdoses, which helps first responders deliver naloxone to identified hot spots of opioid misuse.<sup>13</sup>

Both states illustrate how getting legislative buy-in to break down data silos can help agencies respond more proactively to address the epidemic and surface trends that can lead to more effective policymaking.

### Leveraging data partnerships

States are collaborating with public and private entities to expand their data capabilities.

Indiana partners with Ohio and Kentucky in the Interact for Health program to coordinate data sharing among the three states. In Pennsylvania, state leaders collaborate with the Pittsburgh School of Public Health’s Prevention Technical Assistance Unit to gather opioid overdose data and Ohio partners with The Ohio State University on predictive modeling and analysis.<sup>14</sup>

Even when states don’t have a formal data partnership, they benefit from private entities’ data efforts. In Rhode Island, for example, Brown University’s School of Public Health developed a team to analyze non-fatal overdoses based on EMS data. The team used predictive analytics to develop a hot spot mapping tool, which could serve as a valuable resource for Rhode Island’s Department of Health, law enforcement and other agencies.<sup>15</sup>

This example showcases that commercially available or non-traditional data sets can be complementary to the public data sets states already have. By leveraging data from private and non-governmental entities, states can strengthen their public health data infrastructure and come closer to achieving a 360-degree view of the crisis.

### Using real-time analytics

Although gathering real-time data remains a challenge for many states, some are moving in this direction. For example, Arizona has a website that monitors prescription drop-offs in real time.<sup>16</sup> The state also has a real-time opioid data dashboard that tracks overdoses and breaks down trends by age group, counties with the highest number of verified overdoses and data by substance, such as Fentanyl or benzodiazepine.<sup>17</sup>

Minnesota uses its PDMP to send “Controlled Substance Insight Alerts” to prescribers and pharmacies when a patient has received prescriptions from multiple providers. In Houston, city leaders launched the Houston Emergency Response Opioid Engagement System (HEROES) and uses geospatial modeling and real-time analytics to create a heat map of opioid activity in different neighborhoods, so that it can allocate emergency response and treatment resources more effectively.<sup>18</sup>

“Identity data can provide opportunities because where you live, what your criminal and educational background looks like, and how close you are to your support network of relatives have all been shown to have a huge bearing on your health risk and your health outcomes.

— Trey Harrison, Business Development Director of Health and Human Services, LexisNexis Risk Solutions

### **Proving the value of medication-assisted treatment**

Data also can be a powerful tool to identify potential interventions, treatment and recovery opportunities and to collate the most effective support resources and services across the healthcare system.

Vermont Blueprint for Health uses clinical and claims data for this purpose. With the Hub and Spoke program — the state’s system for medication-assisted treatment (MAT) to support people in recovery from opioid use disorder — this data helps agency leaders better understand the population they’re treating with MAT.

Tanzman says her team can see participants’ total cost of care and major utilization patterns to evaluate the program and determine quality improvements.

Blueprint also links claims and incarceration data to track incarceration rates for people with opioid use disorder who receive MAT versus incarceration rates for those receiving non-MAT substance abuse treatment.

Blueprint discovered that having health insurance is an important factor in continuity of care. Medicare members who receive MAT treatment for at least 10 months are more likely to stay in treatment. Still, Tanzman says additional data linkages could make Blueprint’s work even more effective, as could getting access to more useful federal clinical data about substance use treatment. But even with these obstacles, data has helped Blueprint bolster the case for evidence-based treatment.

“We’re learning some things that help establish the value case for offering MAT,” Tanzman says. “We see evidence that individuals receiving MAT have lower acute healthcare spend than individuals with opioid use disorder who receive care as usual. We also see evidence they have lower rates of incarceration. In terms of the social good that’s accomplished by offering MAT, we’re able to use data in a way that helps us make that value case.”

### **Understanding at-risk populations and the social determinants of health**

While states are making progress, there’s one key area in which their data maturity can expand, and that is in using identity data for predictive analytics. This can help states better understand social factors that affect recovery.

Though much of the data states currently use is de-identified, identity data like where an individual resides, his or her employment status, and social and family networks can play a role in effective treatment of opioid misuse. States can use social determinants of health to improve patient engagement and strengthen prevention and treatment strategies. This occurs by weighing factors like whether an individual is undergoing financial or personal hardship such as a job loss or divorce, whether he or she lives in a high-risk neighborhood that is a hotspot for opioid overdoses or deaths (as some states are already doing), or whether this person is socially isolated and may face unique challenges to recovery. States can gather these inputs to improve patient engagement; develop targeted clinical programs; and better collaborate with payers, providers and pharmacies to identify high-risk pools of patients and prescribers.

“Identity data, in this context, can provide opportunities because where you live, what your criminal and educational background looks like, and how close you are to your support network of relatives have all been shown to have a huge bearing on your health risk and your health outcomes,” says Trey Harrison, LexisNexis Risk Solutions’s business development director of health and human services.

## **Confronting the Opioid Crisis: An Action Plan for State Leaders**

State leaders can employ several approaches to improve their use of data. States can implement some of these strategies on their own, but increased

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collaboration with federal public agencies and nonprofit organizations also will be necessary to drive change.

## **Push for change at the federal level**

States need to coalesce around an effort to push for change and gain more clarity in federal law around data sharing.

“Moving the needle will require a change of federal policy to transition the treatment of alcohol and substance use disorders under a framework that’s more consistent with the HIPAA framework,” Tanzman says. “That framework still does require consent for information to be shared and it sets out clear penalties, including criminal penalties, for any unauthorized disclosure of the information, so it does protect information. So, the first step is a change in federal policy.”

## **Break down legal barriers**

States can seek input from their attorneys general to develop guidance around data sharing among agencies and external partners, such as memorandums of understanding (MOUs) and data sharing agreements. In Camden, N.J., for example, an MOU between the police department and the Camden Coalition of Healthcare Providers allows both entities to share data with one another.

This legal guidance can be the foundation for data integration efforts and for ultimately creating a data sharing technology system that combines data from disparate sources. Having a legal framework to operate within can accelerate states’ efforts to take better advantage of their data.

## **Implement a data analytics platform**

A data analytics platform can help states manage an ever-increasing volume of data and use it to create risk scoring models and predict patterns of behavior.

The right platform will have automation capabilities and use algorithms to aggregate data from various sources, including public records and government programs. It also will facilitate consent management and federal reporting, support identity matching between data sets, and empower states to react in

near real-time when the data indicates a spike in overdoses or in the supply of opioids in the local population.

Reyes says it’s important first to convene leadership and key stakeholders in your data sharing efforts. Utah has done this with its Opioid Task Force, which includes Reyes and representatives from the DEA; USDA; other federal, state, tribal and local government organizations; law enforcement; and the medical, treatment and recovery communities. Once leaders are on board, the technology can follow, he says.

“You need a structural body where people agree to share information, and then a device or vehicle that will be able to gather the information in all sorts of different forms, in a constitutionally sound manner, integrate and prioritize it, protect privacy and allow the information to be accessed in a way where people can use it,” Reyes says. “We’ve found a solution in a transformational data aggregation and AI technology called Banjo. Not only can it integrate all current data sets from disparate agencies, it harnesses billions of data points to give us the most useful information we have ever had in live time. It has done this in areas of natural disasters and child abduction recovery and is now being applied to the opioid epidemic. We believe this system will become a national if not global standard for data-driven response to diverse threats and crises.”

Governing Institute research shows that most states are willing to partner with other agencies and organizations, but don’t have the resources or staff to fight the opioid epidemic alone. Therefore, this type of collaboration will be key.

## **Leverage real-time and predictive data**

Some states are beginning to use real-time data, as illustrated by a growing number of opioid data dashboards.

Real-time data can help states identify potential overdose clusters, deliver targeted and timely responses in emergency situations, and provide law enforcement with valuable information in their investigations.<sup>19</sup> But even with these advantages, it will be critical for states to have privacy

protections in place that safeguard the data as it is shared among systems and deployed by different entities for various uses.

It's a point Reyes emphasizes. "We absolutely must gather data in a constitutionally legal way. Safety is critical but so is privacy."

## Conclusion

From 1999 to 2017, 700,000 people died from drug misuse, and more than two-thirds of these deaths involved opioids.<sup>20</sup>

The opioid crisis strains every single public sector resource, from law enforcement and child welfare systems to courts and health and human services programs. This epidemic affects almost everyone, which is why it can't be solved in silos — data or otherwise.

States have several tools at their disposal to make headway, but too often budgetary, legal and bureaucratic restraints tie their hands. However, our research shows that several entities are ready and willing to collaborate to address this crisis, and that data will be central to their efforts.

"There's a passion in public interest now, and a political will to do something immediate about the opioid threat. People don't know what to do, and data is the key," Reyes says. "Data will be the answer if we can unlock it, make it accessible to the people who need it and bring in rich data that supplements the data every agency already has."

*This piece was developed and written by the Governing Institute Content Studio, with information and input from LexisNexis Risk Solutions.*

## ENDNOTES

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3. <https://www.in.gov/mph/899.htm>
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