



## NASCIO State IT Recognition Awards

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# Digital Government: Government to Business Category

## State of Wisconsin Enhanced Prescription Drug Monitoring Program (ePDMP)

Project Initiation: 2015  
Project Completion: 2017

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## 1. Executive Summary

Opioid abuse is a national health crisis. In 2016, overdose deaths exceeded 50,000 nationwide; 827 of these occurred in Wisconsin. The Wisconsin enhanced Prescription Drug Monitoring Program (ePDMP) tracks key information about controlled substance prescriptions and allows healthcare professionals, law enforcement agencies, and public health officials to work together to reduce the misuse, abuse and diversion of prescribed controlled substance medications. The Wisconsin ePDMP is a sophisticated clinical healthcare decision support tool, a prescribing practice assessment tool, an interdisciplinary communication tool, and a public health tool. The ePDMP collects approximately 750,000 dispensing records per month about controlled substance prescriptions dispensed in Wisconsin.

The sophistication of the ePDMP can be seen in its focus on four areas: data accuracy, system generated alerts, transparency of patient information, and metrics.

**Data accuracy:** By implementing business rules that identify duplicate patients, prescribers have more accurate data to assess prior to prescribing medication.

**System generated alerts:** Prescribers typically spend as much time analyzing medical records and interpreting data as they do engaging with patients. The ePDMP addresses this problem by automatically generating alerts to analyze patient information and identify concerning factors in the patient prescription histories.

**Transparency of patient information:** In turn, the data accuracy and alerts allow for a transparency of patient data which allows prescribers to easily gauge whether a patient is misusing or diverting prescriptions, or the patient is at risk for overdose.

**Metrics:** Metrics provide prescribers an easy way to validate compliance and assess their own prescribing habits to determine whether they deviate from the norm.

Combined, these features improve quality, reduce errors, save time, and uncover irregularities. The ePDMP has received national attention for these features and is viewed as the new standard in PDMP systems.

The new system went live in January 2017 and is administered by the state's Department of Safety and Professional Services (DSPS).

"It's a clear improvement ..." said Donn Dexter, the chief medical officer of the Wisconsin Medical Society, a physician advocacy group. "There's no doubt that the new PDMP is better." Dexter said he believes that once more physicians are using ePDMP, patterns of abuse will be rooted out more frequently.

## 2. Project Narrative: Concept

In its most basic form, a prescription drug monitoring program (PDMP) is a statewide database which tracks information submitted about controlled substance prescriptions dispensed in that state. State prescription drug monitoring programs are widely recognized as effective tools to combat the opioid epidemic and help prevent prescription drug misuse, abuse, and diversion.

The original Wisconsin PDMP was implemented in 2013 to help promote safe prescribing and dispensing of opioids and other controlled prescription drugs in Wisconsin. In 2015 the state undertook to enhance and optimize the Wisconsin PDMP. State legislation would soon require prescribers to review patient records in the PDMP prior to issuing a prescription order for any controlled substance medication. Legislation also mandated functionality to accommodate law enforcement and medical coordinator users. The original PDMP was cumbersome to use and had limited enrollment and utilization. Given that the new legislation would dramatically increase both number of users and number of daily patient queries, it was essential that the PDMP be enhanced to overcome the barriers to use which affected the original system. The goals of the enhancement project therefore were to maximize the PDMP clinical workflow integration and data quality, optimize the user experience, and facilitate public health and public safety use of the system. The result was the Wisconsin Enhanced Prescription Drug Monitoring Program, ePDMP, launched in January 2017.

The Wisconsin ePDMP has been transformed from a prescription-tracking tool to a multifaceted clinical and communications tool that addresses the needs of all potential users. The ePDMP is a robust, sophisticated clinical healthcare decision-support tool, a prescribing-practice assessment tool, an interdisciplinary communication tool, and a public health tool.

The Wisconsin PDMP collects approximately 750,000 dispensing records per month about controlled substance prescriptions. It makes information available to authorized healthcare professionals, law enforcement agents, medical examiners, and state regulatory agency employees. De-identified PDMP data is also made available for public health research purposes. The ePDMP also shares data with other states. A Wisconsin practitioner for example who believes a patient received prescriptions in a different state can request records from the other state through the ePDMP from the other state, and vice versa.

## 3. Significance

### **Clinical Healthcare Tool**

As a clinical healthcare tool, the ePDMP helps healthcare professionals evaluate their patients' use of controlled substance prescription drugs and make more informed prescribing, treatment, and dispensing decisions. Information available in the ePDMP also facilitates better coordination of care for individual patients among healthcare professionals and helps to identify individuals who may be addicted to prescription drugs and may benefit from referrals to treatment.

The ePDMP Prescription History Report highlights the most relevant and concerning aspects of a patient's prescription history and provides a more complete picture of that patient's controlled substance history to support more informed prescribing, treatment, and dispensing decisions.

The user interface includes prescription history in an interface designed to bring a patient's most relevant history to the immediate attention of the user. Analytics automatically assess whether a patient has a history of high daily opioid dose, early refills, multiple prescribers or pharmacies, multiple same-day prescription or dispensing events, or long-term opioid therapy with multiple providers. The system-generated alerts triggered by the analytics inform prescribers of concerning prescription patterns or potential harmful interactions. Further, alerts notify providers about law enforcement reports regarding suspected opioid overdose events, controlled substance violations, and stolen prescriptions. Prescribers can access details about the criteria which prompted the alerts as well as education about why the information is flagged as concerning.

The ePDMP also uses analytics to provide actionable, meaningful information to healthcare users. Individual patient data is presented graphically through visualizations that provide education about safe prescribing practices to help prescribers quickly locate overdose risk factors prior to prescribing a controlled substance to a patient.

Each patient report includes a map which visually depicts the patient's controlled substance prescription history. This snapshot can help a provider identify patients who obtain controlled substance prescriptions from multiple prescribers or pharmacies or who travel long distances to obtain controlled substance prescriptions. Prescriber, dispenser, and patient information linked to the map provides detailed information about the locations, allowing the map to facilitate communication among providers.

Substantial collaboration informed the design of the prescription history report to ensure the report met the needs of the prescribers and others who would use it as a clinical decision-making tool. During the design and development of ePDMP, prescribers, pharmacists, and other potential end users reviewed designs and provided feedback, which resulted in a superior user experience. The number of clicks required to access a patient

report was also reduced significantly compared to the previous system, the registration process was streamlined, and a responsive design was applied so the site and patient reports render nicely on mobile devices. The Patients Panel, a list of patients to whom a prescriber has recently prescribed, allows one-click access to patient prescription history reports.

### **Electronic Health Records Integration**

The Wisconsin ePDMP provides one-click access to a patient's records through direct integration with electronic health records (EHR) systems. Through EHR/ePDMP integration, a prescriber can click a button in the EHR platform to retrieve the patient's full ePDMP report, including alerts and visualizations, within seconds and without having to log in to a different system. To date, a dozen health systems have implemented direct EHR integration with the ePDMP, and several other organizations are in progress to implement the EHR integration.

### **Prescribing Practice Assessment Tool**

The Prescriber Metrics Report self-assessment tool allows prescribers to view their prescribing practices in relation to other prescribers in their specialty. It allows them to view the number of patients who meet criteria for concerning patient history alerts or for whom law enforcement agencies have submitted violation, overdose incident, or stolen prescription reports. Prescribers also have insight into the total controlled substance prescriptions they have written compared to the number of patient queries they or their delegates have performed, allowing them to confirm they are adhering to PDMP review requirements. The knowledge gained by prescribers through these self-assessment functions empowers them to maintain safe prescribing practices.

The ePDMP also encourages prescriber accountability by allowing entities such as hospital systems to assess the prescribing practices of the prescribers they oversee. The Medical Coordinator role provides functionality that allows the user to manage lists of prescribers they oversee and view individual Prescriber Metrics Report for those individual prescribers.

### **Interdisciplinary Communication Tool**

Since March 2016, law enforcement agencies have been required to submit information about specific events, and the ePDMP has been required to disseminate that information to relevant PDMP users. The ePDMP provides a secure law enforcement portal which allows those users to report suspected opioid-related overdose events, suspected violations of the controlled substances act involving prescription drugs and stolen controlled substance prescription incidents. After these reports are processed, the system notifies prescribers, who are able to log in to review the details of the reports. The reports are also presented as alerts on patient prescription history reports in the system to healthcare professionals requesting patient prescription histories. The Wisconsin ePDMP thus serves as a communication tool between law enforcement and healthcare professionals.

## Public Health Tool

The Public Statistics Dashboard provides interactive data visualizations about the controlled substance prescriptions dispensed in Wisconsin, the law enforcement reports submitted to the ePDMP, and the use of the ePDMP by healthcare professionals and others. The Public Statistics Dashboard was built to provide statewide and county-level data to the public. Underlying de-identified data is also available for download.

## 4. Impact

The Wisconsin ePDMP launched in January 2017. There were approximately 19,000 registered healthcare users in the previous PDMP system. By March 30, 2017, more than 31,000 healthcare users had registered in the new ePDMP; today there are more than 56,000 registered users in the system.

Increased usage of the ePDMP is also reflected in the number of patient queries made by healthcare professionals. Prior to January 2017, healthcare users made an average of approximately 4,800 patient queries a day in the old system. Today, healthcare professionals perform an average of 25,000 to 35,000 daily patient queries on weekdays using the ePDMP. The system has performed more than 8,313,273 since it was implemented. More than 1,600,000 of those queries were performed via EHR integration.

Beyond the increased registration and utilization of the system, ePDMP has impacted prescribing practices. 175,269 fewer opioid prescriptions were dispensed from April 1, 2017 to June 30, 2017, compared to the first quarter of 2016. This equates to 13 million fewer doses dispensed, a 16.4% decrease. There has also been a dramatic decrease in number of patients whose history meets criteria for concerning patient history alerts. Total concerning patient history alerts dropped by nearly to 30% from January 2017 to September 2017. Particularly notable is the number of patients with multiple providers or pharmacies: prior to January 2017, there would have been consistently more than 21,000 such alerts per month. This number dropped below 21,000 in February 2017, a month after the launch of ePDMP.

Feedback for design of the ePDMP has been very positive. A March 2017 article from the Capital Times ([http://host.madison.com/ct/business/technology/doctors-prepare-to-use-smarter-prescription-drug-tracking-system/article\\_0014d5f5-ae68-5b8c-919c-ccb43ada8ce.html](http://host.madison.com/ct/business/technology/doctors-prepare-to-use-smarter-prescription-drug-tracking-system/article_0014d5f5-ae68-5b8c-919c-ccb43ada8ce.html)) documented some of the encouraging reaction to the new system.

"The ePDMP has more functionality than the first version," said Gregory Love, a pain management specialist at an SSM Health facility in Madison. "It really helps a lot to check and see that we're not having patients getting narcotics from one provider, and that they're getting good amounts."

Love said the overall consensus among his peers is that the ePDMP will be a boon to the fight against opiate abuse. "Generally speaking, this has been well received," he said. "This is being looked at as a tool that can help us do our job."

The ePDMP has received national attention for its functionality (see, for instance, <https://blog.microsoft.com/2017/04/saving-lives-with-better-data-wisconsins-epdmp-gets-a-national-audience/>), and was featured at the annual National Rx Drug Abuse and Heroin Summit in Atlanta, Georgia (<https://vendome.swoogo.com/2017-rx-summit/>) in both 2017 and 2018. In September 2017, the WI ePDMP was invited by the National Alliance of Model State Drug Laws (NAMSDL) to present at the PDMP Briefing to the Congressional Caucus on Prescription Drug Abuse as an example of the “PDMP of the Future” containing all the components of a strong PDMP. In November 2017, DSPS was invited to testify before the U.S. Senate Committee on Health, Labor, Education, and Pensions about the WI ePDMP as part of Wisconsin’s efforts to address the opioid crisis.

DSPS is committed to generating additional user feedback on ePDMP and improving the system accordingly. Feedback is obtained through user surveys and user groups.

The ePDMP draws on iterative user feedback loops, in which a representative group of users influences the features, design, and usability of the ePDMP. Interviews are cataloged, tracked and fed into the software development process. Users request features, review designs, and test new features before release to assess usability and workflow. The users then promote enhancements and new features to their respective communities, including health systems, state and national governing boards, and associations.

The Wisconsin DSPS was awarded a 2017 Harold Rogers PDMP grant to continue enhancing the Wisconsin ePDMP, and the grant project will continue this collaborative model to identify and implement user-led enhancements.