Testimony for the
United States Senate Committee on Health, Education, Labor, and Pensions

The Front Lines of the Opioid Crisis: Perspectives from States, Communities, and Providers

November 30, 2017

Testimony of
Andrea Magermans
Managing Director of the Wisconsin Prescription Drug Monitoring Program
Wisconsin Department of Safety and Professional Services

Chairman Alexander, Ranking Member Murray, and Members of the Committee, thank you for the opportunity to testify about the Wisconsin Prescription Drug Monitoring Program as part of Wisconsin's efforts to address the opioid crisis. I am Andrea Magermans, Managing Director of the Wisconsin Prescription Drug Monitoring Program (WI PDMP) in the Wisconsin Department of Safety and Professional Services. My testimony will focus on the creation and operation of the Wisconsin *Enhanced* Prescription Drug Monitoring Program (WI ePDMP) as a clinical healthcare, public health, and public safety tool. The WI PDMP was recently transformed to optimize its utility as a tool to address this epidemic.

**Overview of WI PDMP**

I have been involved with the WI PDMP since it became operational in 2013 as a tool to help promote the safe prescribing and dispensing of opioids and other controlled substance prescription drugs. State PDMPs are widely recognized as effective tools for combatting the opioid epidemic by helping prevent prescription drug misuse, abuse, and diversion. In its most basic form, the WI PDMP is a statewide database to which pharmacies and other dispensers submit information about the controlled substance prescriptions dispensed in the state. The WI PDMP operates in accordance with Wis. Stat. 961.385 and Wis. Admin. Code Chapter CSB 4. The Wisconsin Department of Safety and Professional Services (DSPS) oversees the operation of the WI PDMP in accordance with the policies established by the Wisconsin Controlled Substances Board.

The WI PDMP collects approximately 750,000 dispensing records per month about controlled substance prescriptions in schedules II-V. It then makes the 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 WI PDMP has been successfully sharing data with other states, including its border stares, via the National Association of Boards of Pharmacy's Prescription Monitoring Interconnect (PMPi) since October of 2013. This means that a WI practitioner who has reason to

believe a patient picked up prescriptions in a different state can request records through the WI PDMP from the other state's PDMP, and vice versa.

In 2015, although the WI PDMP had only been operational for several years, the decision was made to enhance and optimize the WI PDMP. Several factors went into the decision to transform the WI PDMP. State legislative requirements were going to demand functionalities for law enforcement and medical coordinator users that did not exist in the original WI PDMP software and that were not available in any other PDMP technology solutions. Further, legislation was going to be implemented requiring prescribers to review patient records in the PDMP prior to issuing a prescription order for any controlled substance medication. The previous PDMP system, although an effective tool, was cumbersome to use and had limited enrollment and utilization. Knowing that the new legislative requirement would increase the number of users and the number of daily patient queries dramatically, it was essential that the enhanced PDMP functionality help overcome the reported barriers to use of the PDMP system that was in place at the time. The goals of the development project were therefore to maximize the WI PDMP's clinical workflow integration, data quality capabilities, and public health and public safety uses. The result was the WI ePDMP, launched in January 2017.

**Key Features of the WI ePDMP**

Keeping these goals in mind, the development of the WI ePDMP redefined the role of the state's PDMP. The WI ePDMP has been transformed from a prescription tracking tool to a multi-faceted clinical and communication tool that considers the needs of all of its potential users. The WI ePDMP is now a robust, sophisticated clinical healthcare decision support tool, a prescribing practice assessment tool, an interdisciplinary communication tool, and a public health tool.

*Clinical Healthcare Tool*

As a clinical healthcare tool, the goal of the WI ePDMP is to address controlled substance prescription drug abuse by helping healthcare professionals evaluate their patients' use of controlled substance prescription drugs to make more informed prescribing, treatment, and dispensing decisions. The information available in the WI ePDMP can also facilitate better coordination of care to patients seeing multiple professionals and help identify individuals who may be addicted to prescription drugs and may benefit from referrals to treatment.

The WI ePDMP goes beyond the basics as a clinical healthcare decision support tool. The enhanced user interface has a redesigned patient prescription history report composed of a series of widgets that are designed to bring the most relevant clinical information in a patient's controlled substance prescription history to the immediate attention of the user. This first takes the form of alerts in red at the top of the report. A patient with no concerning history alerts or law enforcement-reported incidents would not have any alert buttons at the top of the report. The alerts inform prescribers of concerning prescription patterns or potential harmful interactions. Analytics of a patient's prescription history determine whether a patient has a daily opioid dose over 90 MME, concurrent opioid and benzodiazepine prescriptions, early refills, multiple

prescribers or pharmacies, multiple same-day prescription or dispensing events, or long-term opioid therapy with multiple providers. Alerts can also be added by prescribers to indicate patients who are on pain or addiction agreements; the alerts can thereby facilitate communication among providers and better coordination of care. Further, the alerts are a mechanism for notifying providers of law enforcement reports of suspected opioid overdose events, controlled substance violations, and stolen prescriptions. This is a unique feature of the WI ePDMP that creates a completely different but clinically relevant data field for providers to consider when making prescribing and dispensing decisions. Clicking on any of the large red buttons at the top of the patient report provides more details about the criteria that triggered the alert and education about why that information is concerning. All the possible alerts at the top of a patient's prescription history report highlight the most relevant and concerning aspects of that patient's prescription history and give a more complete picture of that patient's controlled substance history to support more informed prescribing, treatment, and dispensing decisions.

The use of analytics to provide actionable, meaningful information to healthcare users of the WI ePDMP system goes beyond the concerning patient history alerts at the top of the report. On the patient prescription history report, under any alerts and the patient demographics, a chart graphically shows a patient's opioid and benzodiazepine prescriptions over time by indicating the patient's cumulative morphine milligram equivalent (MME) dosage level as a line in relation to two benchmarks at 50 and 90 MME. According to the Centers for Disease Control and Prevention (CDC), risks for motor vehicle injury, opioid use disorder, and overdose increase at higher opioid dosages. Patients with 50-99 MME per day have 2x – 5x the overdose risk as someone with 1-19 MME per day. Patients with more than 100 MME per day have up to 9x the overdose risk as someone with 1-19 MME per day.[1] An explanation of the risk factor when a patient's level is above 50 or 90 is included right on the chart, and shading on the chart shows the additional risk factor of concurrent benzodiazepine and opioid prescriptions because, according to the CDC, concurrent use of an opioid and a benzodiazepine is likely to put a patient at greater risk for a potentially fatal overdose.[2] This visualization provides education about safe prescribing practices and can help a prescriber quickly look for overdose risk factors prior to prescribing a controlled substance to a patient.

Each patient report also includes a map widget that shows a visual depiction of the patient's controlled substance prescription history. This quick snapshot can help a provider identify indications of a patient who obtains controlled substance prescriptions from multiple prescribers or pharmacies or who travels long distances to obtain controlled substance prescriptions. Clicking on prescriber, dispenser, and patient icons on the map provides information about the name and the address of the individual or entity at that location. The map can therefore also facilitate communication among providers.

Below the widgets in a patient prescription history report is a table of the patient's controlled substance prescriptions. The table includes information about the prescription drug,

---

[1] http://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm
[2] http://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm

the quantity dispensed, the refill status, the date prescribed and date dispensed, the prescriber name and location, the dispenser name and location, the patient's name and address as they appear on the prescription record, and the method of payment the patient used when picking up the prescription. The table can be searched, and it can be exported for further manipulation.

A lot of collaborative effort went into the design of the prescription history report to ensure the report met the needs of the prescribers and others who would be using the report as a clinical decision-making tool. Before the WI ePDMP was launched in January 2017, prescribers, pharmacists, and other potential WI ePDMP end users reviewed designs and provided feedback about the redesigned report. The revamped report is only effective, however, if it is easy to access: efforts were therefore also made to make the site easier to use. The number of clicks required to access a patient report was reduced significantly compared to the previous PDMP system, the registration process was streamlined, and a responsive design was used so that the site and the patient reports render nicely on mobile devices. To further improve access to patient prescription histories, the WI ePDMP includes a patient panel which shows prescribers a list of patients to whom they have recently prescribed controlled substances. The list is searchable and sortable, and, once the desired patient name is found, it provides one-click access to the patient's prescription history report.

The ultimate expression of one-click access to a patient's record in the WI ePDMP is through direct integration with electronic medical records (EMR). There are currently eight health systems live in WI with a direct EMR integration with the WI ePDMP, and several other systems have signed contracts to obtain the service and are testing the connection. Through the direct EMR-WI ePDMP integration, a prescriber can click on a button within the patient's medical record in the EMR platform to retrieve the patient's PDMP report within seconds. The provider does not have to log out of the EMR and log into the PDMP, nor does the provider have to enter the name and date of birth of the patient. What is more, the patient prescription history report that is returned to the provider is the same report that the provider would see when logging into the WI ePDMP website and looking up a patient, including the alerts and visualizations. That way, a prescriber gets the benefits of the analytics and visualizations that are part of the redesigned patient prescription history report, regardless of how the report was accessed. This type of integration was only possible because Wisconsin developed its own unique, homegrown PDMP platform.

*Prescribing Practice Assessment Tool*

The only functionality that is currently available to users through the EMR integration is the review of a patient's prescription history report. In order to access other functionalities, a user must log into the WI ePDMP website. Users of the EMR integration are required to be registered with the WI ePDMP, so they are still able to log into the website to benefit from the additional functionalities. One of the functionalities available to prescribers is the review of their own prescribing practices through the Prescriber Metrics Report. In this self-assessment tool, prescribers can evaluate their own prescribing practices in relation to other prescribers in their

specialty. The report includes a table showing all the controlled substance prescriptions that are attributed to a prescriber's DEA number in order to help prescribers look for unauthorized use of their DEA number. The report goes beyond just presenting a simple table, however. Indeed, located above the table on the report is a series of graphics showing prescribing volume by drug class and the average number of doses per prescription for the same drug classes. The values for a given prescriber are shown in relation to other prescribers in the same specialty area. The report also shows the number of patients the prescriber has who meet the criteria for the concerning patient history alerts or about whom law enforcement agencies have submitted violation, overdose incident, or stolen prescription reports. Prescribers also have insight into the total number of controlled substance prescriptions they have written compared to the number of patient queries they or their delegates have performed. This gives prescribers a basic estimated indication of whether they are adhering to the requirement to review PDMP records before writing controlled substance prescriptions. For more details about their and their delegates' use of the PDMP system, prescribers can also access WI ePDMP usage audit trails when logged into the WI ePDMP website. The knowledge gained by prescribers through these self-assessment functionalities empowers prescribers to maintain safe prescribing practices.

Furthermore, Medical Coordinator users of the WI ePDMP can encourage prescriber accountability by assessing the prescribing practices of the prescribers they oversee. The WI ePDMP medical coordinator role was created pursuant to 2015 Wisconsin Act 266, which requires the WI ePDMP to disclose information to a person who medically coordinates, directs, supervises, or establishes standard operating procedures for a practitioner if the person is evaluating the job performance of the practitioner or is performing quality assessment and improvement activities, including outcomes evaluation or the development of clinical guidelines. A new role was developed for these purposes, and an individual can register to become a Medical Coordinator user. Medical Coordinators have limited functionality that allows them to manage lists of the prescribers they oversee and view the Prescriber Metrics Report for the individual prescribers. Medical Coordinators do not have access to personally-identifiable data, so they do not see the complete prescribing history of the prescribers. Rather, they see the metrics about prescribing volume by drug class. The Medical Coordinator functionality is currently being enhanced to respond to feedback from the Medical Coordinator users of the system. A future release of the Medical Coordinator role will allow an easier comparison among providers that a Medical Coordinator oversees.

*Interdisciplinary Communication Tool*

Since March 2016, law enforcement agencies have been required to submit information to the WI PDMP about specific events, and the WI PDMP has been required to disseminate the information to relevant PDMP users. The previous PDMP system in Wisconsin did not allow this functionality, so part of the redesign was to incorporate this functionality in a meaningful way. The WI ePDMP includes a secure login for law enforcement employees and allows them to submit reports about suspected opioid-related overdose events, suspected violations of the

controlled substances act involving prescription drugs, and stolen controlled substance prescription incidents. The reports are reviewed by PDMP administrative staff to ensure they are attributed to the correct patient in the WI PDMP database and are relevant to the type of report submitted. The alerts themselves contain a disclaimer stating that "Law enforcement agencies are required by Wis. Stat. 961.37 to submit reports based on 'reasonable suspicion' or 'belief.' The alert does not necessarily mean that the individual was arrested, convicted or is guilty of any violation of criminal law." Once the submissions are processed, they are disseminated to relevant WI ePDMP users in two ways. Prescribers who have prescribed to the patients in the incidents receive emails indicating that they have a patient about whom a law enforcement report has been submitted. They then need to log in and check their alert tab to view the details of the alert, including the contact information of the submitting law enforcement agency to request more information about the incident, if desired. The report is also displayed as an alert at the top of a patient prescription history report for healthcare professionals who are accessing the PDMP record of the patient in question prior to prescribing to, dispensing to, or treating the patient. The providers therefore have a more complete picture of the patient's involvement with controlled substances and can make better-informed prescribing, dispensing, and treatment decisions. The WI ePDMP thus functions as a communication tool between law enforcement and healthcare professionals. The reports submitted by law enforcement are also tracked for public health reporting purposes.

*Public Health Tool*

Another unique feature of the WI ePDMP is the Public Statistics Dashboard, which provides interactive data visualizations about the controlled substance prescriptions dispensed in Wisconsin, the law enforcement reports submitted to the WI ePDMP, and the use of the WI ePDMP by healthcare professionals and others. The Public Statistics Dashboard was developed as part of a Harold Rogers grant project with the intent of providing statewide and county-level data to the public. Previously, DSPS created quarterly statistics sheets with basic dispensing information and a heatmap showing the density of controlled substance prescriptions dispensed in Wisconsin. The Public Statistics Dashboard makes similar information available in an interactive format and includes additional statistics, many of which are available for specific counties. The WI ePDMP also provides a unique registration and login functionality for researchers, who can upload information about the studies they are undertaking and retrieve de-identified data sets. The WI ePDMP thereby supports public health research on trends in dispensing of opioids and other prescription controlled substances.

**Impact and Effectiveness of the WI ePDMP**

Many of the statistics available on the Public Statistics Dashboard show that the efforts that were made to enhance the WI ePDMP have already had a large impact. Before the launch of the WI ePDMP in January 2017, there were approximately 19,000 registered healthcare users in the previous PDMP system. All users had to re-register in the WI ePDMP, which is why efforts

were made to streamline the registration process. The process proved easy for many users, some of whom even reported that they completed registration within a matter of seconds during a patient encounter. By March 30, 2017, there were over 31,000 registered healthcare users, and there are currently nearly 42,000 registered healthcare users of the WI ePDMP. The increased usage of the WI ePDMP is also reflected in the number of daily patient queries made by healthcare professionals. Prior to January 2017, healthcare users made approximately 4,800 patient queries per day, on average. In anticipation of the requirement for prescribers to review patient records in the WI ePDMP that went into effect on April 1, 2017, there were 17,489 patient queries made by healthcare professionals in one day. By late August 2017, there were as many as 35,000 patient queries made in a day. Currently, healthcare professionals perform an average of over 20,000 patient queries per day, with weekday numbers ranging from 25,000 to 35,000 daily patient queries, and weekend numbers remaining under 5,000 patient queries per day.

Beyond the increased registration and utilization of the WI ePDMP system, it is possible to see the effects of the WI ePDMP on prescribing practices. It is important to note that the WI ePDMP is just one part of the State of Wisconsin's efforts to promote safe prescribing of controlled substances, so the changes noted cannot solely be attributed to the WI ePDMP. Nonetheless, the number of opioid prescriptions and doses dispensed in WI has decreased significantly from January 2016 through June 2017. Data from the WI ePDMP show that 175,269 fewer opioid prescriptions were dispensed from April 1, 2017 to June 30, 2017, compared to the first quarter of 2016, a 14.1% decrease. This equates to13 million fewer doses dispensed, a 16.4% decrease. Furthermore, there has been a dramatic decrease in the number of patients whose prescription history meets the criteria for the data-driven concerning patient history alerts in the WI ePDMP system. The total number of concerning patient history alerts dropped by close to 30% from January 2017 to September 2017. The decrease is particularly noticeable for the number of patients with multiple providers or pharmacies. The analytics for this type of alert were applied to data from previous years, and a significant change can be seen in February 2017, right after the launch of the WI ePDMP. Prior to January 2017, there were consistently over 21,000 alerts per month. This number dropped below 21,000 in February 2017. Another steady decrease began in April of 2017, when the requirement for prescribers to review patient records in the WI ePDMP went into effect. The number of alerts in April 2017 was less than 19,000, and by September 2017, the number had dropped below 11,000. From January 2017 to September 2017, the number of multiple prescriber or pharmacy alerts dropped by nearly 50%, from 21,088 in January to 10,264 in September. Part of this change is likely due to the greater number of prescribers accessing the WI ePDMP because of their requirement to review. Beyond the number of prescribers who are accessing the WI ePDMP, however, this decrease can also be considered an indication of the effectiveness of the WI ePDMP because it is based on a specific report element that is presented back to end users. End users are alerted to high patient MME, multiple provider episodes, and opioid and benzodiazepine prescriptions overlaps, as well as overdose events a patient may have been involved in. It appears that the analytics going into

the alerts and the way the relevant information is being presented to the end users is changing prescribing behaviors.

**Development Process**

Beyond the unique key features of the WI ePDMP, the WI ePDMP is also unique because of the level of involvement of stakeholders and subject matter experts in the process to develop the enhanced PDMP application. The project goal was not only to address shortcomings of previous system, but also to reimagine the role of the system in addressing opioid crisis. The strong support for the project came from agreement among stakeholders, legislators, and administration that the epidemic required a strong response. Because the goal was to meet the users' needs for efficient, accurate, and actionable data, a concerted effort was made to include user and stakeholder engagement at every step of the process. This meant that there was subject matter expert and user review and involvement during the scoping, designing, development, and testing of the new application. DSPS collaborated with professional associations to identify subject matter experts and potential users who were regularly involved in continual feedback loops. The development process was iterative, with two-week development cycles. Users would review designs and provide feedback; the feedback would then be implemented in the development of the application. The iterative improvement process continued throughout 2016 before launching the new PDMP system and still continues to this day as informed by feedback from actual users in the field. One example of the impact of continued feedback loops on the functionality of the WI ePDMP system decreased the number of clicks to get to get to a patient's record by suggesting that the cursor on a search page be defaulted to the first name field. The suggestion was made by multiple users, and the change was subsequently implemented. This small change not only improved the user experience with the WI ePDMP but also showed the end users that they are an important part of the development and success of the system. The increased user buy-in has given users a sense of pride and ownership, which has led in part to the success of the WI ePDMP. Prescribers in particular are beginning to see checking the PDMP as something more than just a requirement; they are recognizing it as a useful clinical tool and making suggestions to continue to make it better. DSPS was recently awarded a Harold Rogers PDMP grant to continue enhancing the WI ePDMP, and the grant project will be a continuation of this collaborative model by working to implement user-led enhancements.

The development of the WI ePDMP would not have been possible without interagency collaboration and grant funding from federal partners. DSPS is appreciative of the opportunities that have been afforded to it through federal grant awards from the Substance Abuse and Mental Health Services Administration (SAMHSA), the Office of Justice Programs in the Bureau of Justice Assistance at the U.S. Department of Justice, and the CDC. The SAMHSA grant allowed DSPS to implement a previous PDMP-EMR integration and work toward the current direct EMR-PDMP integration model. DSPS received two Harold Rogers PDMP Enhancement Grants in 2014 and 2015, first to build the Public Statistics Dashboard, which was originally envisioned as a stand-alone website along side the previous PDMP system, and later to build the WI

ePDMP. Grant funding from a CDC Drug Overdose Prevention Grant in partnership with the Wisconsin Department of Health Services further supported the development of the WI ePDMP.

**Lessons Learned/Recommendations**

The involvement of PDMP administrators, subject matter experts, and potential WI ePDMP users at every step of the development process was critical to the success of the WI ePDMP. The administrators of other state PDMPs have shown a keen interest in learning about and from the experience of developing the WI ePDMP, not only from a technology perspective but also from a project methodology perspective. Collaboration among PDMP administrators should be encouraged by providing opportunities for PDMP administrators to meet, discuss challenges, and learn from each other's experiences. It is difficult to know the types of functionalities to strive for without first understanding the realm of possibilities by knowing about what is going on in other states. The sharing of actual PDMP technology could also be facilitated through the encouragement of open-source PDMP software solutions. The WI ePDMP has also been successful because of the way it redefined the role of the state PDMP and took bold steps to transform the PDMP system to meet the needs of those who use it. This type of innovation should be encouraged but is sometimes stifled because of a lack of awareness of possibilities. In general, states are very appreciative of grant funding opportunities to improve their PDMP; however, they may be tempted to defer to the use of grant dollars for known solutions or vendors if they do not have the drive, awareness, and support to innovate. In the case of the WI ePDMP, innovation led to a successful home-grown solution that is tailored to the situation in WI. Furthermore, the involvement of PDMP administrators at every step of the development process proved invaluable in WI, but this involvement is not always the case, especially when funding involving a state's PDMP is awarded to an agency that does not house the state's PDMP. Wisconsin has been fortunate to be able to collaborate closely with the Wisconsin Department of Health Services to enhance the WI ePDMP as part of a CDC grant. Funding opportunities that involve a state's PDMP should require that PDMP admins be directly involved in the projects.

**Conclusion**

Thank you again, Chairman Alexander, Ranking Member Murray, and Members of the Committee, for the opportunity to share this information with you about the WI ePDMP's role in addressing the opioid crisis in WI. The transformation of the WI ePDMP into a robust clinical decision support tool has been well received by the medical community in WI. The success of the WI ePDMP as a tool to help combat the opioid abuse epidemic would not have been possible without the involvement of stakeholders and users throughout the development process. The collaborative nature of the WI ePDMP development project, including the involvement of PDMP administrative staff, interagency support, and federal grant funding, has led to impressive results and has set the stage for continued enhancements to the WI ePDMP based on user feedback to

ensure that it remains an effective tool in the State of Wisconsin's efforts to combat the opioid crisis.