

## Exploring the use of opioid-related best practice alerts across Wisconsin

### Key Points:

- Seventy pharmacists holding various pharmacy roles and representing a variety of practice settings responded to the survey completed in May to June 2022
- Forty-three (61%) of responding pharmacists reported that their sites were currently implementing an opioid related best practice alert (BPA); Twenty-six (37%) pharmacists indicated they did not have (or were not aware of) an existing opioid BPA within the electronic health record / pharmacy software at their setting
- More than three-quarters of respondents that did not currently have an opioid related BPA in their workplace setting were interested in implementing an opioid BPA but acknowledged a need for additional support to facilitate implementation.

### Background:

In Wisconsin, little is known about the extent to which clinical decision support best practice alerts (BPAs) are being used or even if they exist within electronic health record (EHR) systems or community pharmacy software or other technology. BPAs have been shown to optimize opioid prescribing and dispensing.<sup>1,2,3</sup> BPAs are defined as clinician decision support tools available in the EHR, community pharmacy software, or state prescription drug monitoring programs that direct clinician attention to patients who meet criteria for being at risk of negative health outcomes. BPAs leverage the power of technology to identify gaps in care that can be addressed for patients or customers and do so without requiring the clinician to search the patient chart for this information. Emerging findings in the literature suggest that pharmacists play a critical role in initiating and implementing these types of alerts and that they are effective at optimizing opioid prescribing practices consistent with evidence-based clinical guidelines (e.g., [Centers for Disease Control Guidelines for Prescribing Opioids for Chronic Pain](#)). Therefore, it is important to examine the current pharmacy practice in this area as well as the level of interest in implementing this type of alert in the pharmacy practice into the future as part of opioid

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<sup>1</sup> Duan L, Lee MS, Adams JL, Sharp AL, Doctor JN. Opioid and Naloxone Prescribing Following Insertion of Prompts in the Electronic Health Record to Encourage Compliance with California State Opioid Law. *JAMA Netw Open*. 2022;5(5):e229723. doi:10.1001/jamanetworkopen.2022.9723

<sup>2</sup> Malte CA, Berger D, Saxon AJ, et al. Electronic Medical Record Alert Associated with Reduced Opioid and Benzodiazepine Co-prescribing in High-risk Veteran Patients. *Med Care*. 2018;56(2):171-178. doi:10.1097/MLR.0000000000000861

<sup>3</sup> Coffman R, Johnson A, Frede S, Pleiman M, Johnson K. The evaluation of mandatory alerts on long-acting opioid prescriptions and the use of a community pharmacy naloxone protocol. *J Am Pharm Assoc JAPhA*. Published online December 2, 2021:S1544-3191(21)00493-3. doi:10.1016/j.japh.2021.11.032

stewardship practices. Aggregate data from this survey will be utilized to inform future research and programmatic decisions related to addressing the opioid crisis in Wisconsin.

In response to this need for more information and data, the Pharmacy Society of Wisconsin (PSW) partnered with the University of Wisconsin-Madison School of Pharmacy (UW SoP) Sonderegger Research Center for Improved Medication Outcomes to develop and administer a survey to Wisconsin pharmacists. The purpose of the survey was to gain understanding of pharmacists' experiences with and perceptions of best practice alerts (BPA) in relation to optimizing opioid prescribing and dispensing. Specifically, the research team wanted to better understand the current status of, and opportunities for, using best practice alerts to optimize opioid prescribing and dispensing. Additionally, we aimed to capture the extent to which pharmacists are interested in implementing this type of alert as part of opioid stewardship practices in their work setting.

### Data Collection:

A team from PSW and UW SoP collaboratively developed a short survey and subsequently built it in the REDCap survey tool. In late May 2022, an invitation to complete the survey was distributed to PSW's membership via their regular, weekly e-newsletter, Fast Facts. The survey was also distributed via a PSW and UW SoP partner, PearlRx, which is a UW SoP administered research network, through a regular e-newsletter. Four additional invitation reminders were included in subsequent e-newsletters through the survey closure at the end of June 2022.

The survey was divided into three sections. All respondents were instructed to complete Section 1 to share information about role, practice setting, and type of health-record software used. Respondents were directed to respond to follow up questions related to currently alerts (Section 2) if they confirmed an opioid related BAP was currently active or being implemented at their practice site. Pharmacists who indicated that they did not utilize an opioid BPAs in their setting currently, were directed to respond to a series of questions in Section 3, which asked respondents to summarize barriers and challenges they noted preventing them from implementing a BPA. In follow up, respondents in Section 3 of the survey were also asked to share their level of interest in implementing a BPA in the future.

### Survey Results:

#### Respondent characteristics.

A total of 70 pharmacists responded to the survey. Respondents represented a variety of workplace settings. The most common sites included *in-patient pharmacy* (27%), *community – health system outpatient pharmacy* (26%), *community – independent pharmacy* (19%) and *clinic pharmacy* (14%). (See Table 1) Over half (64%) of respondents reported practicing in a role of Clinical Pharmacists and about a quarter (24%) indicated they practiced in managerial or supervisory roles in their work setting.

Workplace setting	Frequency (%)
In-patient pharmacy	19 (27%)
Clinic pharmacy	10 (14%)
Community – Chain pharmacy	5 (7%)
Community – Health System Outpatient pharmacy	18 (26%)
Community – Independent pharmacy	13 (19%)
Other (managed care organization, PBM)	5 (7%)
Role in workplace setting	Frequency (%)
Manager/Director/Supervisor	17 (24%)
Clinical Pharmacist	45 (64%)
Informatics Pharmacist	1 (1%)
Technician	5 (7%)
Pharmacy Intern (PharmD Student)	0 (0%)
Other	2 (3%)

**Software used.**

The largest percentage of inpatient pharmacists (64%) reported using the Epic health-record software and one respondent noted using Cerner health-record software as their inpatient EHR. (See Table 2) Other inpatient software used included Meditech, MTM Exchange, Centric, LTC Rx and CPRS. Epic Willow and PioneerRx were the most frequently reported outpatient/community pharmacy software systems used in the community workplace setting, followed by an equal number of pharmacists who reported use of QS1 and Enterprise Rx.

Inpatient electronic health record (EHR) vendor software used in setting	Frequency (%)
Epic	45 (64%)
Cerner	1 (1%)
Not Applicable	14 (20%)
Other	10 (14%)
Outpatient / community pharmacy software used in setting	Frequency (%)
Pioneer Rx	12 (17%)
QS1	7 (10%)
Rx30	5 (7%)
Enterprise Rx	7 (10%)
Epic Willow	18 (26%)
Not applicable	14 (20%)
Other	7 (10%)

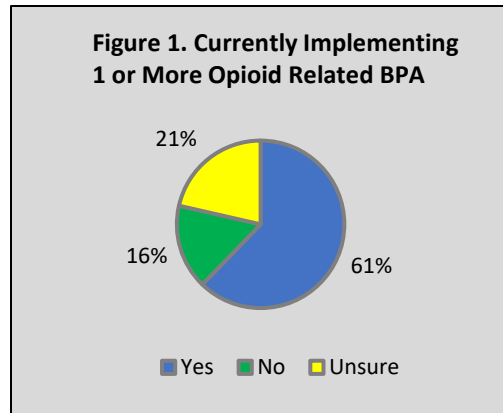
**Current Status of Opioid Related BPA Implementation in Setting.**

Respondents were asked if any opioid related BPAs were currently being utilized to support clinical decision making in their setting. Forty-three (61%) of respondents reported that their sites were implementing or had implemented an opioid related BPA and 11 (16%) reported that they did not currently utilize an opioid related BPA. An additional 15 (21%) respondents reported that they were unsure if an opioid related BPA was being used or implemented at their practice site. One respondent did not submit

an answer to this question. (See Figure 1)

**Part I. Characteristics of existing opioid related BPAs.**

If pharmacists responded that their site currently was utilizing or implementing a BPA (61%), they were directed to follow up questions about those the use of those alerts (See Part I). Respondents indicating no active use of any opioid BPAs in their practice setting currently, were directed to respond to an alternate series of questions focusing on the barriers and challenges perceived by respondents preventing implementation of a BPA. Additional questions asked the respondent to indicate level of interest in implementing a BPA in the future. (See Part II) The following data represent the responses for Part I.



Of the forty-three respondents that reported their clinical pharmacy practice sites were utilizing or implementing an opioid related BPA, participating pharmacist reported the following topics were being addressed through the use of the BPA. (See Table

Topic	Frequency (%)
Prescribing or discussing naloxone	32 (74%)
High-dose morphine milligram equivalent (MME)	33 (77%)
Opioid treatment agreements	22 (51%)
Opioid and Benzodiazepine Co-prescribing	25 (58%)
Other	7 (16%)

3) The survey allowed respondents to select more than one topic, as the research team understood that some practice sites may utilize multiple BPAs to address different evidence based opioid risk areas to better serve patients. Opioid related clinical alerting addressed by BPA alerts included: reminders to check the prescription drug monitoring program (PDMP), alerting that the specific patient had high risk for adverse events alerts, alerts to the clinical team to check and confirm usual and customary doses for opioid naïve patients, opioid naïve patient flag alerting clinicians the patient has not previously used opioid medications routinely, cash paying patient warning, alerts noting that the patient had arrived too early to refill their prescription, a recommendation to the clinical team for the need for urine drug screen (guideline based care), PDMP check documentation check missing (Wisconsin regulation), alerting to the clinical team that the patient is at risk for co-prescribing of multiple central nervous system depressants (including gabapentin, multiple opioids, benzodiazepines, etc.), and alerting that the prescription/order exceeded quantity limits on discharge prescriptions according to the indication (i.e. number of tablets).

About half (47%) of pharmacists indicated that Centers for Disease Control and Prevention guidelines

Table 4. Opioid prescribing guidelines that informed BPAs currently implemented in practice setting (n = 43)	
Prescribing Guideline	Frequency (%)
US Centers for Disease Control and Prevention	20 (47%)
US Food and Drug Administration	9 (21%)
US Health and Human Services	6 (14%)
US Surgeon General	3 (7%)
Veterans Health Administration	5 (12%)
Wisconsin Medical Examining Board	5 (12%)
Unsure	16 (37%)
Other	1 (2%)

had informed their opioid related BPA(s) and about a fifth (21%) indicated the US Food and Drug Administration had informed them. (See Table 4) Similar number of pharmacists reported BPAs were developed to align with US Health and Human Services, Veterans Health Administration or the Wisconsin Medical Examining Board criteria.

About three-quarters of pharmacists reported that existing and active BPAs in their workplace settings were created to assist and aid prescribers (77%) and to a greater extent to aid and support pharmacists (84%).

Table 5. How data captured by the opioid related BPAs is used in the practice setting (n = 43)	
Use for Data	Frequency (%)
Reviewed and analyzed to measure quality outcomes	22 (51%)
Reviewed and discussed to inform patient care improvements	22 (51%)
Reported to site leadership to inform compliance with regulatory requirements	19 (44%)
Other	6 (14%)

Pharmacist respondents were also asked what the data captured by the opioid related BPAs was used to evaluate at their practice setting. Table 5 shows that collected BPA activation/firing data were used for quality improvement, to improve patient care, and to

inform compliance with regulatory requirements. Some respondents were not aware of, or involved in, the data capture/review process and another respondent's practice site was just implementing the BPA, and data had not yet been collected.

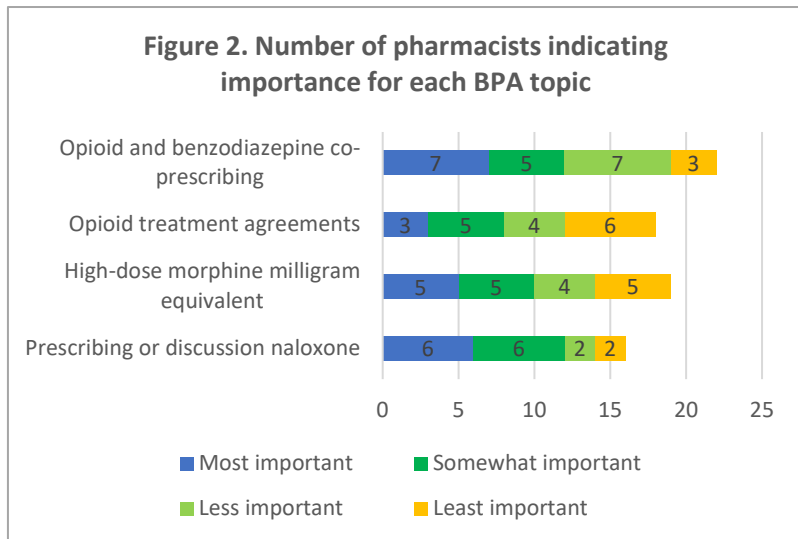
**Part II. No existing BPA being implemented.** Eleven (16%) pharmacists responded that their site did not have an opioid related BPAs and 15 (21%) responded they were unsure whether their site had one. (See Figure 1) These respondents were directed to a series of questions about barriers to implementing a BPA and whether they had any interest in pursuing an alert in the future. The following data represent the responses from these 26 pharmacists (i.e. Part II).

Prescribing Guideline	Frequency (%)
Very valuable	12 (47%)
Valuable	7 (21%)
Neutral	5 (14%)
Not valuable	2 (7%)
Not at all valuable	0 (0%)

Nearly 70% of pharmacists that reported their practice site did not have an opioid related BPA or were unsure if the practice site had one, indicated that implementing an opioid related BPA in their setting would be valuable or very valuable. (See Table 6)

Respondents were asked to rank order four opioid prescribing best practice topics from most important to least important that would be impacted by use of a BPA in their workplace setting. Figure 2 displays the number of pharmacists who assigned a level of importance for each BPA topic.

*Opioid and benzodiazepine co-prescribing* was identified as the most important topic by the highest number of respondents (7) followed by *prescribing or dispensing naloxone* (6). The topic, *Opioid treatment agreements*, was identified as the least important BPA topic by the most respondents (6) followed by the topic, *high dose morphine milligram equivalent* (5).



Pharmacists were asked to identify barriers to implementing an opioid related BPA at their practice site.

The two most frequently identified barriers were *provider alert fatigue* (62%) and *lack of resources to support the technology infrastructure and staffing needed to implement a BPA* (42%). (See Table 7) A site’s prioritization of improving opioid prescribing, EHR functionality and leadership support were only identified by a few respondents each. Other barriers mentioned included: initial setup and training to implement a BPA, lack of time, and negative experiences with BPAs in past that disrupted workflow or did not require a thoughtful response.

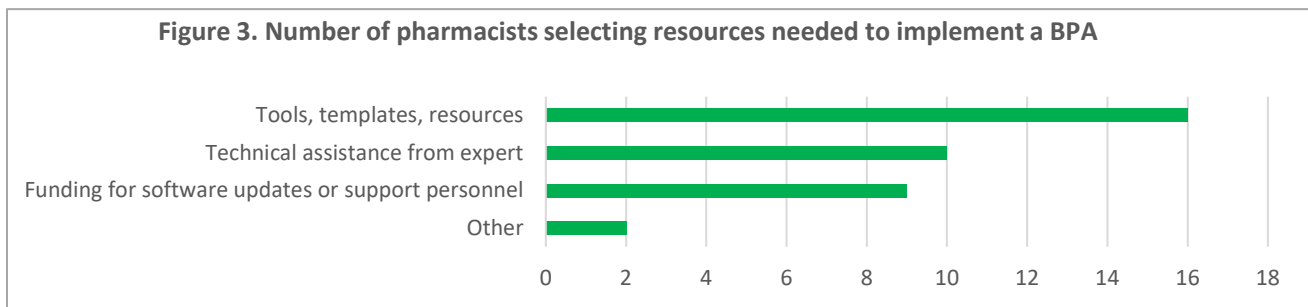
Barriers to implementing BPA at site	Frequency (%)
Improving opioid prescribing is not a high priority at site	1 (4%)
Leadership is not supportive	2 (8%)
Lack of resources to support the technology infrastructure and staffing needed to implement a BPA	11 (42%)
Current EHR vendor/package does not provide functionality option for opioid-BPAs	1 (4%)
Prescribers are resistant to introducing another BPA – “alert fatigue”	16 (62%)
Other	3 (12%)

**Part III. Opportunities and interest in implementing an opioid related BPA.**

Responding pharmacists in this subset (n=22), 9 (41%) felt *confident* or *very confident* that barriers to implementing an opioid-related BPA could be addressed in their practice site with additional support from external experts and tools and 18% were *not confident*. (See Table 8).

	Frequency (%)
Very confident	5 (23%)
Confident	4 (18%)
Neutral	9 (41%)
Not confident	4 (18%)
Not at all confident	0 (0%)

Pharmacists were asked to select all resources they deemed were needed to facilitate implementation of a BPA at their practice. The most frequently identified resource to facilitate implementation was *tools, templates, and resources* (n=16) to be used independently, followed by *technical assistance from an external expert* (n=10) and *funding for software updates or support personnel* (n=9). (See Figure 3) Other resources identified by respondents included leadership buy-in and ensuring that the stakeholders who can most directly impact change are the focus of the BPA.



	Frequency (%)
Very interested	10 (38%)
Somewhat interested	10 (38%)
Neutral	4 (15%)
Not interested	2 (8%)
Not at all interested	0 (0%)

Finally, of the 26 pharmacists that reported their practice site did not have an opioid related BPA or were unsure if the practice site had one, 20 (77%) indicated that they were *very* or *somewhat interested* in implementing an opioid related BPA, while the remaining were either *neutral* or *not interested*. (See Table 9) A subset of these respondents provided the specific site name and an email contact.

**Conclusions:**

Data gathered from this survey provides Wisconsin-specific information about the extent and nature of clinical decision support best practice alerts, as defined by pharmacist professionals, which are embedded in electronic health record systems, community pharmacy software or other technology to aid pharmacists in optimization of opioid prescribing and dispensing. The survey data additionally characterizes the pharmacist respondents’ knowledge, experience and attitudes about the use of best practice alerts embedded in the electronic health record / pharmacy software. The data provides insights on how pharmacist respondents perceive the use of BPAs can optimize opioid prescribing and dispensing and the barriers that prevent BPAs from being implemented and utilized at their practice sites. As it relates to future work and methods to improve patient care and reduce risk associated with opioids, the survey captured the extent to which respondents were interested in implementing this type

of clinical decision support alert as part of patient-focused opioid stewardship practices in their practices and communities.

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