Pharmacy Society of Wisconsin
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SCHOOL OF PHARMACY
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Exploring the Use of Opioid-Related Best Practice Alerts Across Wisconsin

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Key Points

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

In Wisconsin, little is known about the extent to which clinical decision support best practice alerts (BPAs) are being used or even whether 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.[1-3] 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 pharmacy practice into the future as part of opioid stewardship practices. Aggregate data from this survey will be used 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 pharmacy personnel. The purpose of the survey was to gain an understanding of pharmacists' experiences with, and perceptions of, BPAs in relation to optimizing opioid prescribing and dispensing. Specifically, the research team wanted to better understand the current status of, and opportunities for, using BPAs to optimize opioid prescribing and dispensing. Additionally, the team aimed to capture the extent to which pharmacy practices 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 University of Wisconsin Institute for Clinical and Translational Research's Research and Electronic Data Capture (REDCap) survey tool.[4-5] In late May 2022, an invitation to complete the survey was distributed to

TABLE 1. Respondent Characteristics (n=70)

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%)

TABLE 2. Software Usage in Respondent's Workplace (n=70)

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%)

PSW's membership via the PSW regular, weekly e-newsletter, *FastFacts*. 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 current alerts (Section 2) if they confirmed an opioid-related BPA was currently active or being implemented at their practice site. Respondents who indicated that they did not currently use an opioid BPA in their setting 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 pharmacy personnel 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%) (Table 1). Over half (64%) of respondents reported practicing in the role of clinical pharmacist and about a quarter (24%) indicated they practiced in a manager, director, or supervisor role in their work setting.

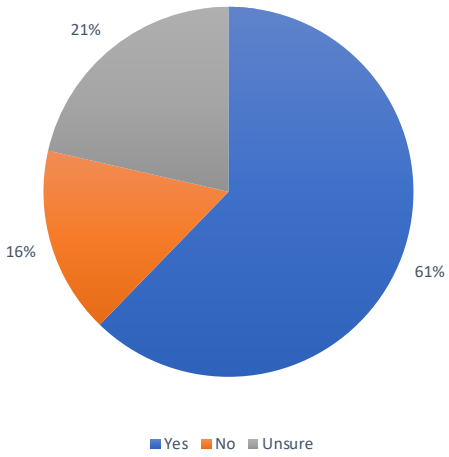
Software Used

The largest percentage of respondents working in inpatient settings (64%) reported using the Epic health-record software, and one respondent reported using Cerner health-record software as their inpatient EHR (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.

Current Status of Opioid-Related BPA Implementation in Setting

Respondents were asked if any opioid-related BPAs were currently being used to support clinical decision-making in their setting. Forty-three (61%) respondents reported that their sites were implementing or had implemented an opioid-related BPA and 11 (16%) reported that they did not currently use an opioid-related BPA. An additional 15 (21%) respondents reported that they were unsure whether an opioid-related BPA was being used or implemented at their practice site. One respondent did not submit an answer to this question (Figure 1).

FIGURE 1. Currently Implementing 1 or More Opioid-Related Best Practice Alerts



Part I. Characteristics of Existing Opioid-Related BPAs

If respondents indicated that their site currently was using or implementing a BPA (61%), they were directed to follow-up questions about the use of those alerts (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 (Part II). The following data represents the responses for Part I.

The 43 respondents who reported their clinical pharmacy practice sites were using or implementing an opioid-related BPA reported the following topics were being addressed by the BPA (Table 3).

The survey allowed respondents to select more than one topic, as the research team understood that some practice sites may use multiple BPAs to address different evidence-based opioid risk areas to better serve patients. Opioid-related clinical alerting addressed by BPAs in the other category, included: reminders to check the prescription drug monitoring program (PDMP); alerting that the specific patient had high risk for adverse events; alerts to the clinical team to check and confirm usual and customary doses for opioid naive patients; opioid naive 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 a urine drug screen (guideline-based care); PDMP check documentation 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

TABLE 3. Frequency of Opioid Topics Addressed by the Currently Implemented Best Practice Alerts (BPAs) (n=43)

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%)

prescription/order exceeded quantity limits on discharge prescriptions according to the indication (i.e. number of tablets).

About half (47%) of respondents indicated that Centers for Disease Control and Prevention guidelines had informed their opioid-related BPA(s) and about a fifth (21%) indicated the US Food and Drug Administration had informed them (Table 4). Similar numbers of pharmacists reported BPAs were developed to align with US Health and Human Services, Veterans Health Administration, or Wisconsin Medical Examining Board criteria.

About three-quarters of respondents 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%).

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%) respondents indicated that their site did not have any opioid-related BPAs and 15 (21%) responded they were unsure whether their site had one (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 respondents (i.e. Part II).

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

Respondents were asked to rank, from most to least important, four opioid prescribing best practice topics that would be affected by use of a BPA in their

TABLE 4. Opioid Prescribing Guidelines that Informed Best Practice Alerts 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%)

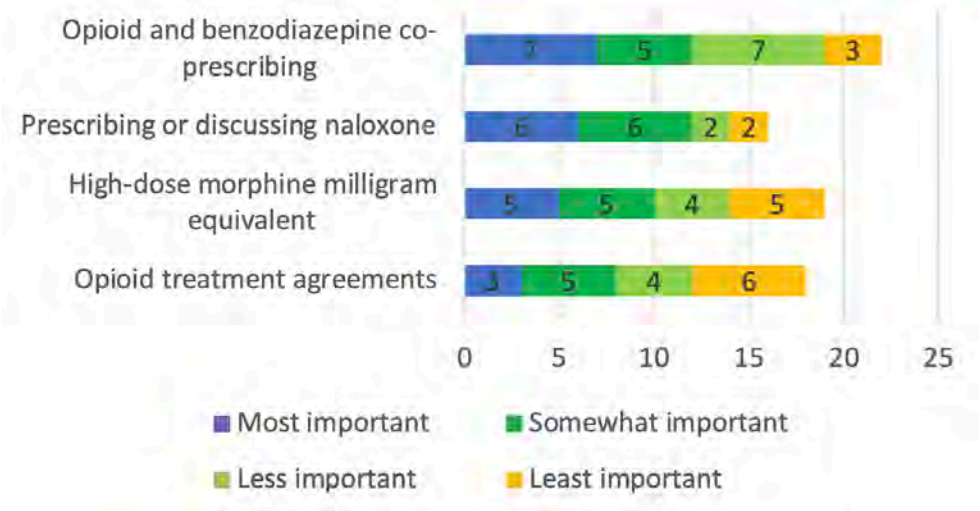
TABLE 5. How Data Captured by the Opioid-Related Best Practice Alerts is Used in the Practice Setting (n=43)

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%)

TABLE 6. How Valuable Implementing an Opioid-Related Best Practice Alert Would be at Workplace Setting (n=26)

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

FIGURE 2. Number of Pharmacists Indicating Importance for Each Best Practice Alert Topic



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). Opioid treatment agreements was identified as the least important BPA topic by the most respondents (6), followed by high dose morphine milligram equivalent (5).

Respondents 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%) (Table 7). Barriers like a site's prioritization of improving opioid prescribing, EHR functionality, and leadership support were identified only 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.

TABLE 7. Number of Respondents that Selected Each Barrier (n=26)

Barriers to implementing Best Practice Alert 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%)

TABLE 8. Level of Confidence in Being Able to Overcome Barriers to Implementing an Opioid-Related Best Practice Alert (n=22)

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

TABLE 9. Level of Interest in Implementing an Opioid-Related Best Practice Alert (n=26)

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

Part III. Opportunities and Interest in Implementing an Opioid-Related BPA

The respondents 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 (Table 8).

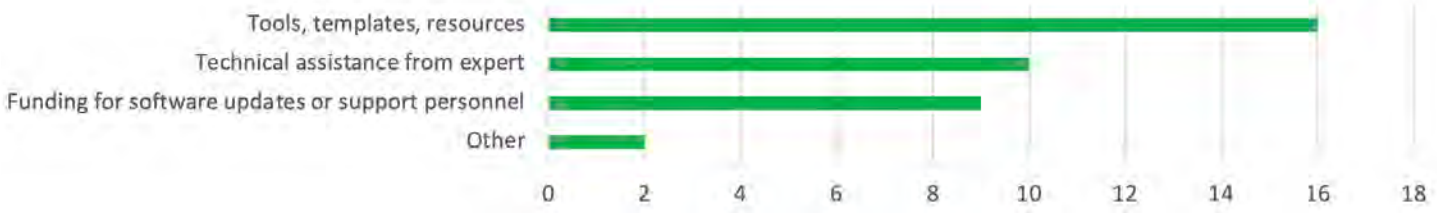
Respondents were asked to select all resources they deemed necessary to facilitate the implementation of a BPA at their practice. The most frequently identified resource was tools, templates, and resources to be used independently (n=16), followed by technical assistance from an external expert (n=10), and funding for software updates or support personnel (n=9) (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.

Finally, of the 26 respondents who 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 respondents were either neutral or not interested (Table 9).

Conclusions

Data gathered from this survey provides Wisconsin-specific information about the extent and nature of clinical decision support BPAs, as defined by pharmacy personnel, 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 respondents' knowledge, experience, and attitudes about the use of best practice alerts. The data provides insights on how respondents perceive the use of BPAs can optimize opioid prescribing and dispensing, and the barriers that prevent BPAs from being implemented and used 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

FIGURE 3. Number of Respondents Selecting Resources to Implement a Best Practice Alert



patient-focused opioid stewardship practices in their practices and communities.

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PR *This article has been peer-reviewed. The contribution in reviewing is greatly appreciated!*

Acknowledgments: The project described used REDCap software for data collection and management, which is supported by the Clinical and Translational Science Award (CTSA) program, through the NIH National Center for Advancing Translational Sciences (NCATS), grant UL1TR002373. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

This study was conducted in collaboration with the Pharmacy Practice Enhancement and Action Research Link (PearlRx) of Wisconsin, a statewide pharmacist practice-based research network which is in part supported by the Clinical and Translational Science Award (CTSA) program, through the NIH National Center for Advancing Translational Sciences (NCATS), grant UL1TR002373, the UW School of Medicine and Public Health from the Wisconsin Partnership Program, and the Pharmacy Society of Wisconsin.

The authors would like to acknowledge Dr. Michelle Chui for her oversight of the project.

Funding Disclosure: This material development was funded by the Cooperative Agreement NU17CE925003-02-02 Centers for Disease Control and Prevention (CDC). Its contents do not necessarily represent the official views of the CDC or the U.S. Department of Health and Human Services.

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