

# Discerning Clinician Perceptions of an Established Opioid Stewardship (DISCLOSE) Program

Cynthia Ramasubbu, Kseniya Chernushkin, Karen Ng, and Michael Legal

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## ABSTRACT

**Background:** The Opioid Stewardship Program (OSP) was created to promote safe and rational prescribing of opioids, where the risks associated with providing opioids for patients must be balanced against the risk of patients experiencing uncontrolled pain. The pharmacist-led OSP was established at 2 Fraser Health Authority (FHA) sites, British Columbia, to provide clinical services through patient referrals and screening. The rate of acceptance of OSP pharmacists' recommendations has been high, but there was a need to assess clinicians' perceptions of the program.

**Objectives:** To assess the perceptions of health care professionals at FHA hospitals offering the OSP regarding various aspects of the program and to identify areas of the program that could be modified to further optimize service delivery.

**Methods:** A prospective cross-sectional survey was distributed to about 250 targeted health care professionals, who answered questions regarding their perceptions of the OSP. Data were analyzed using simple descriptive statistics.

**Results:** A total of 71 respondents initiated the survey, of whom 59 were included in the final analyses. Most participants indicated that the OSP pharmacists' suggestions were valuable for optimizing pain management (52/57, 91%) and preventing adverse events (49/56, 88%). Most participants were satisfied with the quality of communication (51/56, 91%), timeliness to consults (51/52, 98%), and recommendations provided (52/55, 95%). Increasing knowledge transfer, improving communication about intentions for patient follow-up, and expanding services at current sites and to other sites were recommended to improve the OSP.

**Conclusions:** Clinicians responding to the survey reported a high level of satisfaction with and positive views of the pharmacist-led OSP. Providing more education and clarifying intentions for patient follow-up are modifications that could be made to improve the program.

**Keywords:** opioids, stewardship, pharmacist, perception, survey, questionnaire

## RÉSUMÉ

**Contexte :** L'Opioid Stewardship Program (OSP) [programme de gestion des opioïdes] a été mis sur pied pour encourager la prescription sûre et rationnelle d'opioïdes qui permet de peser les risques associés à leur délivrance contre les risques que le patient ressent une douleur incontrôlée. L'OSP, dirigé par les pharmaciens, a été mis en place sur 2 sites de la Fraser Health Authority (FHA) (Colombie-Britannique) afin de fournir des services cliniques par l'entremise de l'aiguillage et du dépistage des patients. Le taux d'acceptation des recommandations des pharmaciens de l'OSP était élevé, mais il était nécessaire d'évaluer la perception des cliniciens à l'égard du programme.

**Objectifs :** Évaluer les perceptions des professionnels de la santé dans les hôpitaux de la FHA offrant l'OSP à l'égard de divers aspects du programme et cerner ceux qui pourraient être modifiés pour optimiser la prestation de services.

**Méthodes :** Une enquête prospective transversale a été distribuée à environ 250 professionnels de la santé ciblés, qui ont répondu à des questions portant sur leur perception de l'OSP. Les données ont été analysées à l'aide de statistiques descriptives simples.

**Résultats :** Au total, les réponses de 71 répondants ont fait l'objet d'analyses. La plupart des participants ont indiqué que les suggestions des pharmaciens de l'OSP étaient utiles pour optimiser la gestion de la douleur (52/57, 91 %) et prévenir les événements indésirables (49/56, 88 %). La plupart des participants étaient satisfaits de la qualité de la communication (51/56, 91 %), de la rapidité des consultations (51/52, 98 %) et des recommandations fournies (52/55, 95 %). Les recommandations suivantes ont été formulées pour améliorer l'OSP : amélioration du transfert des connaissances; amélioration de la communication sur les intentions de suivi des patients; et élargissement des services sur les sites actuels et à d'autres sites.

**Conclusions :** Les cliniciens qui ont répondu au sondage ont fait état d'un niveau élevé de satisfaction et d'opinions positives à l'égard de l'OSP dirigé par les pharmaciens. Une formation accrue et la clarification des intentions quant au suivi des patients sont des modifications qui pourraient être apportées en vue d'améliorer le programme.

**Mots-clés :** opioïdes, gestion, pharmacien, perception, sondage, questionnaire

## INTRODUCTION

Opioid stewardship has been described as “coordinated interventions designed to improve, monitor, and evaluate the use of opioids in order to support and protect human health”.<sup>1</sup> Opioid prescribing practices in Canada have changed in recent years, with trends toward reduced prescribing and increased tapering.<sup>2</sup> Although seemingly positive, these trends signal a possible shift toward opioid phobia. In response to the identified need to optimize opioid use, the Fraser Health Authority (FHA) initiated the first pharmacist-led inpatient Opioid Stewardship Program (OSP) in British Columbia. Two clinical pharmacy specialists (K.C., K.N.) were hired at the 2 largest hospitals in the FHA: the first at Royal Columbian Hospital in 2018 and the second at Surrey Memorial Hospital in 2019. These pharmacists provide daytime coverage on weekdays, without backfilling for days off. Each pharmacist has completed a Canadian Pharmacy Residency Board hospital residency program and has earned a Doctor of Pharmacy degree, with additional self-training in pain and opioid stewardship. The objectives of the FHA OSP are to prevent opioid-related adverse outcomes by promoting optimal opioid prescribing in hospital and on hospital discharge without compromising pain management, and to provide immediate local impact and long-term community improvements in opioid use.

The FHA OSP is delivered by means of direct clinical care, quality improvement work, research, and education. The clinical portion of the FHA OSP was modelled after the audit and feedback method of antimicrobial stewardship programs (i.e., prospective case review and feedback). In a cross-sectional survey aiming to gather information about opioid-related hospital practices, 23% of 133 responding hospitals reported having an opioid stewardship program,<sup>3</sup> but only 9 of the 133 hospitals reported having a prospective screening process. Most of these hospitals were in the United States. Some OSP programs in North America are led by pharmacists.<sup>4,5</sup> In British Columbia, a similar OSP exists within a different health authority, incorporating an audit and feedback process led by a pharmacist and a physician.<sup>6</sup>

Clinical work began in March 2019 at Surrey Memorial Hospital and June 2019 at Royal Columbian Hospital. The OSP pharmacists identified patients at high risk of opioid-related adverse outcomes using the following criteria: personal or family history of substance use disorder, psychiatric illness, opioid-related aberrant behaviour, increased risk of overdose (e.g., pulmonary disease), morphine milligram equivalent above 50 mg/day, concurrent use of opioid and benzodiazepines or other sedatives, long-acting opioid use by opioid-naïve patients, escalating opioid use without apparent cause, and non-decreasing opioid requirements for management of acute pain.<sup>7,8</sup> The OSP

pharmacists also accept patient referrals from prescribers, pharmacists, and patient care coordinators (i.e., unit-based nurse managers). Patients whose care is managed by the addiction medicine, palliative care, or acute pain services are generally excluded from OSP pharmacist care. Optimization of opioid use throughout the hospital stay, referrals to outpatient clinical pharmacists, and handover to community prescribers provide opportunities for the OSP pharmacists to influence opioid prescribing in the community.

The FHA OSP recorded an overall 92.5% acceptance rate for the 3026 recommendations put forth between August 2019 to July 2020 (unpublished data). A total of 1408 patients received interventions in this period. Most of these patients were identified through screening (62% of those at the Royal Columbia Hospital, 70% of those at Surrey Memorial Hospital) rather than referral. At the Royal Columbian Hospital, there was an almost equal split between medicine and surgical cases (42% versus 57%), whereas at Surrey Memorial Hospital, most of the patients who received an intervention were admitted under the medicine service (67%), with a smaller proportion from the surgical service (31%). The number of patient referrals increased over the same period, with the total number of referrals across both sites reaching 453 for the year. Patient referrals were made by physicians/nurse practitioners (43%), pharmacists (41%), and patient care coordinators (16%).

Successful delivery of the OSP is reliant on cooperation among clinicians. The literature indicates that the implementation of antimicrobial stewardship programs may be impeded by concerns about threatened autonomy among prescribers, a hierarchical hospital culture, and lack of support.<sup>9</sup> Such concerns were expected to be elucidated by this study, which aimed to determine whether the OSP pharmacists have been successful in offering a collaborative, supportive service that encourages opioid optimization.

The primary objective of the study was to assess the perceptions of health care professionals at FHA hospitals offering the OSP regarding various aspects of the program. The secondary objective was to identify areas that could be modified to further optimize the program.

## METHODS

Local research ethics boards approved this research, which was in accordance with the Helsinki Declaration. Participants provided written consent.

### Study Design and Participants

The study was based on a prospective cross-sectional survey developed using REDCap software, version 9.1.0.<sup>10,11</sup> A convenience sample from the 2 study sites was sought. The Royal Columbian Hospital and Surrey Memorial Hospital are regional hospitals with 490 and 650 acute care beds, respectively. Both hospitals provide primary, secondary,

and tertiary care, and both have addiction medicine, palliative care, and acute pain services, all without clinical pharmacists on the team. The following groups of health care professionals were invited to participate in the survey: attending (or staff) physicians, medical fellows, medical residents, nurse practitioners, pharmacists, and patient care coordinators. These potential participants represent health care providers who may have had contact with OSP pharmacists, through either pharmacist screening or referrals. Providers who were not aware of the OSP or the purpose and types of interventions completed by the OSP pharmacists, as well as those who indicated that they had never had any interaction with the OSP pharmacists, were excluded from the majority of the study; however, they were able to complete demographic questions, a question about the types of interactions they had with the OSP pharmacists (if applicable), and a question about how valuable they perceived the OSP pharmacists could be to their practice (based on a description of the OSP provided within the survey). Similarly, we targeted health care professionals working on units where the OSP pharmacists provide routine screening, including the clinical teaching unit, general surgery, neurosurgery, orthopedic surgery, trauma, vascular surgery, cardiac surgery, psychiatry, infectious diseases, general medicine, pain services, and addiction services. It was anticipated that the survey would be disseminated to approximately 250 health care professionals.

### Survey Tool

The anonymized survey used 7 rating-scale, 10 Likert-type, 8 multiple-choice, 1 ranking, and 7 yes/no questions to elucidate participants' demographic characteristics and to assess the primary and secondary objectives. Four mandatory free-text questions allowed participants to provide additional feedback. The questionnaire was developed according to recommendations in the literature,<sup>12</sup> and feedback was provided by 2 pharmacists who were aware of the OSP program and pilot-tested the tool. The survey was anticipated to take approximately 15 minutes to complete. Reliability and validity were not formally assessed.

Medical department heads, patient care coordinators, and pharmacy department administrative staff were contacted by email and asked to disseminate the study invitation to their team members. A letter containing the questionnaire link with an embedded consent form was sent by email by the pharmacy administration assistant 3 times between November 2020 and February 2021. Respondents had 4 months to complete the questionnaire. There were no incentives for participants; however, the overall benefits of optimizing the OSP were discussed in the invitation letter.

### Analytical Plan

A convenience sample was used because this survey research was not data-driven. Most individual survey questions were

optional. Responses were analyzed on the basis of the number of respondents answering each question, not the total number of survey respondents. Participants who indicated having no awareness of the program or the purpose and type of interventions and those reporting no previous contact with the OSP pharmacists were excluded from completing most of the survey. At minimum, each respondent had to answer at least one question other than those for demographic characteristics for that respondent's data to be included in the analysis.

Planned subgroup analyses compared responses according to each participant's profession, hospital site, and prescriber specialty, as well as those with frequent ( $> 7$ ) versus infrequent ( $\leq 7$ ) interactions with the OSP pharmacists. Simple descriptive statistics were used for most responses. REDCap version 9.1.0,<sup>10,11</sup> a secure electronic data capture tool, was used to report these frequencies, and Excel spreadsheet software (Microsoft Corporation) was used to analyze the responses. Two investigators (C.R., K.C.) identified recurrent and unique opinions in the free text.

## RESULTS

The survey was distributed to an estimated 250 individuals. A total of 75 clinicians initiated the survey (estimated response rate 30%), and 71 (95%) of these answered the required questions to be included in at least some of the final analyses. Demographic information is presented in Table 1.

### Awareness

Nearly all 71 participants were aware of the OSP (Table 2). Individuals who indicated a lack of awareness of the OSP (either the program or associated interventions) or had no previous interaction with the OSP pharmacists were then given a description of the OSP. Two-thirds of these individuals (8/12 [67%]) thought this program would be valuable to their practice.

Of the 71 participants included in the analyses, 63 indicated that they had interacted with the OSP pharmacists in the following ways: reading an OSP pharmacist's note in a patient's chart (56/63 [89%]), consulting the OSP pharmacists (47/63 [75%]), and/or being contacted by their OSP pharmacist (39/63 [62%]). Participants were asked to rank various reasons for consulting with the OSP pharmacists, by assigning each reason a rank from 1 (high importance) to 7 (low importance). In terms of reasons with high importance (rank = 1), 42% (24/57) of participants identified opioid use management, 38% (21/55) identified optimizing pain management, 29% (16/56) identified opioid tapering, 17% (9/53) identified patient education, 13% (7/54) identified discharge assistance, and 11% (6/55) identified opioid risk assessment. Among participants who completed the entire survey ( $n = 59$ ), more than half had interacted with their OSP pharmacist more than 7 times (35/58 [60%]).

## Main Perceptions

### Value and Satisfaction

Most participants indicated that they thought the OSP pharmacists were valuable for optimizing pain management and preventing opioid-related adverse events (Table 3, Figure 1), and most participants were satisfied with the

**TABLE 1. Participant Characteristics by Profession, Specialty, Hospital, and Duration of Work**

Category	No. (%) of Participants <sup>a</sup>
Profession	<i>n</i> = 68 (96)
Physician	31 (46)
Pharmacist	29 (43)
Patient care coordinator	4 (6)
Nurse practitioner	3 (4)
Medical resident	1 (1)
Medical fellow	0
Prescriber <sup>b</sup> specialties	<i>n</i> = 35 (49)
Medicine + subspecialties <sup>c</sup>	21 (60)
Surgery <sup>d</sup>	5 (14)
Addictions	6 (17)
Psychiatry	3 (9)
Hospital	<i>n</i> = 71 (100)
Royal Columbian Hospital only	41 (58)
Surrey Memorial Hospital only	28 (39)
Both hospitals	2 (3)
Duration of work (years)	<i>n</i> = 67 (94)
< 1	4 (6)
1–5	19 (28)
> 5	44 (66)

<sup>a</sup>The first row of each section shows the number of respondents who answered the specific question (and percentage of 71 participants). In subsequent rows of each section, the percentages are based on the number of respondents for the question.

<sup>b</sup>Prescribers consisted of 31 physicians, 3 nurse practitioners, and 1 medical resident.

<sup>c</sup>Medicine + subspecialties = general medicine, internal medicine, hospitalist practice, geriatric medicine.

<sup>d</sup>Surgery = general surgery, thoracic surgery, orthopedic surgery, vascular surgery, neurosurgery.

quality of services provided by the OSP (Figure 2). The majority consensus was that the OSP pharmacists are easily accessible. A few respondents stated that the service is missed when there is no OSP coverage. One pharmacist reported that they occasionally had concerns that the OSP recommendations tended toward polypharmacy. One prescriber reported being unsatisfied with the recommendations and interventions, indicating a perception that the OSP pharmacists lacked clinical experience in this area. Conversely, another prescriber stated that they now suggest that all attending physicians consult the OSP pharmacist. A common sentiment is illustrated by the following quote: “The OSP [pharmacist] is a valuable colleague with deeper understanding of opioid use, and collaboration helps in optimization of patient care.”

The majority of respondents (50/52 [96%]) did not perceive the OSP pharmacists to have limited their own autonomy. Overall, 90% (46/51) of participants reported that they often or always agreed with OSP recommendations and were very or extremely comfortable following the recommendations (46/52 [88%]). Only 1 respondent (the prescriber who reported a lack of satisfaction with OSP recommendations) indicated rarely agreeing with recommendations and being only slightly comfortable following OSP recommendations. The most frequent reason for not accepting OSP recommendations was “having new information that the OSP pharmacist did not have” (14/59 [24%]; Table 4).

### Services

With respect to follow-up by the OSP pharmacist, most participants named tapering medications (42/59 [71%]) as the top scenario in which such follow-up would be required. A small number of participants believed that OSP follow-up would be required only if specifically requested (Table 5). Several participants noted a lack of clarity about whether the OSP pharmacist was providing one-time interventions or ongoing follow-up throughout a patient’s hospital stay.

Study participants indicated that patients with the following characteristics would be most likely to benefit

**TABLE 2. Participants’ Awareness of the Opioid Stewardship Program (OSP)**

Question <sup>a</sup>	Group; No. (%) of Participants				
	Total Group ( <i>n</i> = 71)	Hospital A ( <i>n</i> = 43)	Hospital B ( <i>n</i> = 30)	Prescribers ( <i>n</i> = 35)	Pharmacists ( <i>n</i> = 29)
Are you aware that there is an OSP in this hospital?	70 (99)	43 (100)	29 (97)	35 (100)	29 (100)
Are you aware of the purpose and types of interventions made by the OSP pharmacists?	61 (86)	35 (81)	28 (93)	28 (80)	27 (93)
Is it clear to you when you would consult the OSP versus addiction medicine, acute pain service, or palliative care?	55 (77)	31 (72)	25 (83)	24 (69)	26 (90)

<sup>a</sup>Answering “no” to either of the first 2 questions in this table led to participant’s exclusion from subsequent analyses. Overall, after application of all exclusions (including those not represented in this table), 59 of the initial 71 participants had complete survey responses and were included in the final analyses.

from OSP services: those at high risk of opioid use disorder (47/50 [94%]), those with difficult-to-control pain (43/50 [86%]), those with psychiatric illnesses (38/49 [78%]), those with opioid-seeking tendencies (46/50 [92%]), those receiving high doses of opioids (46/50 [92%]), those taking concomitant benzodiazepines or other sedatives (38/49 [78%]), and those at high risk of adverse effects (41/50 [82%]).

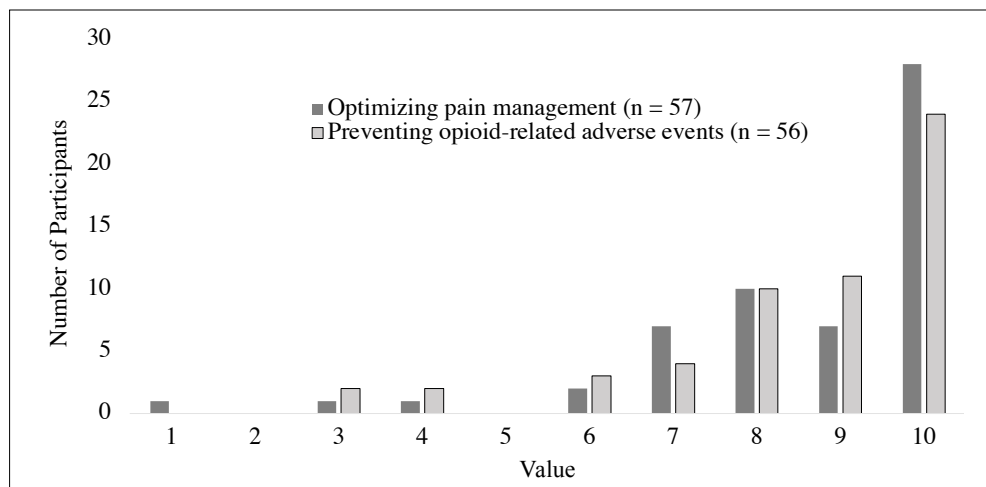
Common themes for the most helpful aspects of OSP services were completing a thorough assessment of the patient's pain history and/or opioid use (mentioned by 5 participants), exploring multiple modalities to target pain (mentioned by 4 participants), and assisting with the management of complex pain and/or opioid-seeking tendencies (mentioned by 6 participants). The least helpful

**TABLE 3. Value of OSP Pharmacists' Suggestions Reported as  $\geq 7$  for 2 Outcomes<sup>a</sup>**

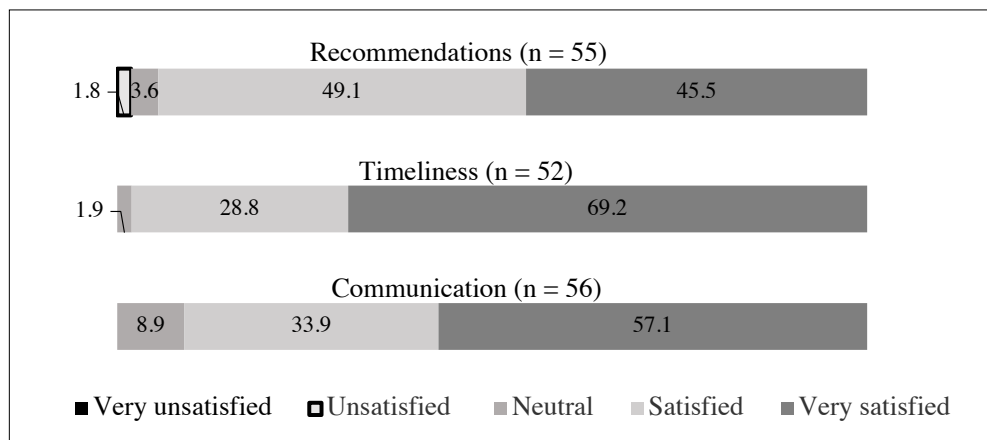
Question	Group; No. (%) of Participants				
	Total Group	Hospital A	Hospital B	Prescribers	Pharmacists
How valuable do you feel the OSP pharmacist suggestions are to optimizing pain management?	52/57 (91)	33/35 (94)	21/24 (88)	22/27 (81)	25/25 (100)
How valuable do you feel the OSP pharmacist suggestions are in preventing adverse events related to opioid use?	49/56 (88)	31/34 (91)	20/24 (83)	22/27 (81)	22/24 (92)

OSP = Opioid Stewardship Program.

<sup>a</sup>Value of suggestions was graded from 1 (not very valuable) to 10 (very valuable).



**FIGURE 1.** Value of suggestions made by the Opioid Stewardship Program pharmacists for 2 outcomes. Value was graded from 1 (not very valuable) to 10 (very valuable).



**FIGURE 2.** Satisfaction with various aspects of the Opioid Stewardship Program, specifically recommendations provided, timeliness to consultations, and quality of communication.



aspect was lack of follow-up after providing an intervention (mentioned by 3 participants).

### Prescribing Patterns

Among prescribers, 58% (15/26) agreed and 31% (8/26) were neutral when asked whether the OSP pharmacists had influenced their opioid prescribing patterns. Respondents were mostly either in agreement (31/51 [61%]) or neutral (17/51 [33%]) when asked whether the OSP pharmacists had influenced their approach to pain management; a small number of respondents disagreed with this statement (3/51 [6%]).

Participants thought that OSP involvement promoted safer opioid use, with 96% (50/52) indicating that such involvement was moderately to extremely effective at achieving this goal. Equal numbers of participants (23/51 [45%]) thought that the OSP pharmacists' attitude toward prescribing long-term opioid therapy tended toward an avoidance of prescribing as thought that these pharmacists took a balanced approach (i.e., neither avoided prescribing nor engaged in overprescribing). More than two-thirds of participants believed the OSP pharmacists took a balanced approach to acute pain management (35/51 [69%]). One prescriber reported that the OSP pharmacists might be overly conservative with their analgesic approach.

### Expansion of the OSP

Most participants indicated that the current OSP model, combining screening and referrals, was the most effective method of service delivery (44/49 [90%]). There was consensus regarding this combination approach among participating pharmacists (21/21 [100%]), whereas a few prescribers put higher value on clinician referrals (3/25 [12%]). As illustrated in Table 6, most respondents reported that they were more likely to prioritize pain as a medical issue after interacting with their OSP pharmacist than beforehand, and indicated that they were likely to consult their OSP pharmacist again and to recommend the OSP to colleagues. Most participants believed that the OSP should be expanded to other institutions. The most common suggestions for additional OSP services were providing more educational presentations, creating patient handouts, and expanding services to support patients with chronic benzodiazepine use.

### DISCUSSION

To the authors' knowledge, this is the first study to explore clinician perceptions of a pharmacist-led inpatient OSP that combines screening and consultations. The demographic characteristics of the participants closely reflected those of

**TABLE 4. Reasons for Disagreement with OSP Pharmacists' Recommendations**

Reason <sup>a</sup>	Group; No. (%) of Participants				
	Total Group (n = 59)	Hospital A (n = 35)	Hospital B (n = 26)	Prescribers (n = 27)	Pharmacists (n = 27)
Disagreed with OSP pharmacist rationale	5 (8)	3 (9)	2 (8)	3 (11)	2 (7)
Patient disagreed with OSP pharmacist rationale	10 (17)	6 (17)	4 (15)	5 (19)	5 (19)
New patient information that OSP pharmacist did not have	14 (24)	8 (23)	7 (27)	6 (22)	8 (30)
Personal preference	8 (14)	4 (11)	4 (15)	4 (15)	4 (15)
Did not want to write opioid prescription	0	0	0	0	0
Never disagreed	10 (17)	8 (23)	2 (8)	6 (22)	2 (7)

OSP = Opioid Stewardship Program.

<sup>a</sup>Participants could select more than one option.

**TABLE 5. Scenarios for Which Follow-Up Is Thought to Be Necessary**

Scenario <sup>a</sup>	Group; No. (%) of Participants				
	Total Group (n = 59)	Hospital A (n = 35)	Hospital B (n = 26)	Prescribers (n = 27)	Pharmacists (n = 27)
Tapering	42 (71)	25 (71)	19 (73)	23 (85)	16 (59)
Changing acute pain medication	36 (61)	23 (66)	14 (54)	15 (56)	19 (70)
Directing opioid discharge prescribing	25 (42)	17 (49)	8 (31)	14 (52)	9 (33)
No follow-up necessary unless requested	2 (3)	2 (6)	0	1 (4)	1 (4)

<sup>a</sup>Participants could select more than one option.

the main users of the OSP, based on unpublished statistics collected by the program, which strengthens the validity of the results. Among participants, there was an almost universal awareness of the OSP, and most were frequent users of the OSP. At the time of this study, delivery of OSP clinical services had been available for just over 1 year. These results indicate that the current OSP model can quickly achieve wide program awareness and strong receptiveness.

The results of this survey indicated a strong consensus among participants regarding the value of a pharmacist-led OSP in optimizing patient care and preventing opioid-related harms. Survey responses indicated that most recommendations provided by the OSP met with agreement, which is congruent with the high acceptance rate observed in the first year of program implementation. Collaboration with OSP pharmacists was largely appreciated, especially in the care of patients with complex medical needs, where meticulous history gathering is time-consuming but necessary. Although many participants reported being likely to prioritize pain as a medical issue after their interaction with the OSP pharmacists, a notable percentage of participants still responded that they would not prioritize pain in this way. This may indicate that some prescribers prefer to delegate pain management to the OSP pharmacists. Ultimately, clinicians felt confident that recommended OSP interventions were in each patient's best interest.

The approach to pain management may require the use of multiple non-opioid analgesic agents to reduce opioid dosages. This may be perceived as polypharmacy or a conservative strategy, as indicated by some respondents. A single participant expressed the belief that the OSP pharmacists lacked the clinical experience to provide pain recommendations, but this opinion was at odds with the vast majority of feedback. There can be resistance when a new program is introduced, especially if collaboration has not been requested through consultation. The FHA OSP is run by pharmacists without dedicated opioid stewardship physicians. Nonetheless, the program appears to be effective at both sites where it has been implemented. This is likely because the pharmacists have expertise in optimizing appropriate use of medications and monitoring response to drug therapy, and are therefore well equipped to be

advocates for opioid stewardship. In fact, the literature provides supporting evidence regarding clinical pharmacists and how they improve quality and safety of care.<sup>13,14</sup> Since program inception, the OSP has aimed to be perceived as a patient care service rather than a policing entity. Survey responses aligned with this orientation, in that most participants did not perceive the OSP as limiting their professional autonomy. Clinicians likely appreciated the efficiency of having opioid-related assistance by means of systematic screening, without being required to seek help each time.

The overarching goal of programs like the OSP is to broadly influence the culture of opioid use and shift practice toward evidence-based opioid prescribing. This study supports the provision of OSP clinical services through both screening and consultation as a successful approach to achieving positive perceptions of recommendations among providers. Notably, participants suggested offering more education related to opioid stewardship as a way to improve the program. According to conclusions drawn in the antimicrobial stewardship literature, passive education (e.g., presentations) alone was inferior to active screening (audit and feedback) in achieving stewardship goals.<sup>15,16</sup> However, adding passive education to existing clinical services may help in achieving OSP goals.

Some participants expressed confusion about whether OSP pharmacists provide follow-up on the interventions they recommend. In some straightforward cases, a single intervention may be sufficient, whereas longer-term monitoring (e.g., follow-up phone call) may be required in other cases. Clearly indicating intentions for follow-up in the chart notes may help to avoid misunderstandings in the future.

A final common suggestion was to expand OSP services to other hospitals, as well as within the current hospitals to ensure constant OSP pharmacist coverage. This would reduce the number of patients who might benefit from OSP pharmacist interventions but are missed because of pharmacist unavailability.

Survey research has inherent limitations. Volunteer bias might have resulted in poor representation of the attitudes of the various groups. However, although the response rate was low (in relation to the number of potential participants), the total number of responses ( $n = 71$ ) was relatively

**TABLE 6. Participants' Beliefs about Expansion of the Opioid Stewardship Program (OSP)**

Question	Group; No. (%) of Participants				
	Total Group	Hospital A	Hospital B	Prescribers	Pharmacists
Would you consult the OSP pharmacist in the future (or again)?	49/50 (98)	31/31 (100)	20/21 (95)	25/25 (100)	21/21 (100)
Do you believe the OSP should be expanded to other institutions?	48/50 (96)	30/31 (97)	20/21 (95)	24/25 (96)	21/21 (100)
Would you recommend the OSP to colleagues?	49/50 (98)	31/31 (100)	20/21 (95)	25/25 (100)	21/21 (100)
Are you more likely to prioritize pain as a medical issue after interacting with the OSP team?	38/49 (78)	23/30 (77)	16/21 (76)	18/24 (75)	17/21 (81)

high for this type of survey. Participation by pharmacists and physicians was nearly equal, whereas few individuals from other health care professions responded to the survey. This may have skewed the opinions represented, given that the OSP is a pharmacist-led program. Ideally, there would have been equal numbers of respondents from each health care profession; however, analyses of the various subgroups revealed attitudes that were mostly congruent with the total group. Finally, given time and resource constraints, the survey was not validated, and piloting was limited to 2 pharmacists. However, the questions were created with generic wording to ensure that the context would be appropriate for each profession.

The FHA OSP has had largely positive reviews, which supports its success as a novel program. Addressing the feedback for program improvement, continuing to advocate for opioid stewardship, and supporting clinicians to safely prescribe opioids are crucial to ensure continued program growth. Future research to assess recommendation acceptance rates and perceptions of the OSP will be instrumental in further strengthening this program and optimizing patient care.

## CONCLUSION

Inpatient health care providers at the 2 FHA hospital sites believed that the pharmacist-led OSP had a positive impact on optimizing pain management and preventing opioid-related harms. After 1 year of implementation, the OSP pharmacists were perceived to have influenced clinicians' approach to pain management. Increasing knowledge transfer, improving the clarity of communication regarding patient follow-up, and expanding services were recommended as ways to improve the program.

## References

1. Opioid stewardship. Institute for Safe Medication Practices Canada; © 2000–2022 [cited 2022 Jan 26]. Available from: [https://www.ismp-canada.org/opioid\\_stewardship/](https://www.ismp-canada.org/opioid_stewardship/)
2. *Opioid prescribing in Canada: How are practices changing?* Canadian Institute for Health Information; 2019.
3. Ardeljan LD, Waldfoegel JM, Bicket MC, Hunsberger JB, Vecchione TM, Arwood N, et al. Current state of opioid stewardship. *Am J Health Syst Pharm.* 2020;77(8):636-43.
4. Erickson AK. Knocking out pain: hospital pharmacists launch new approach to pain management. *Pharm Today.* 2015;21(6):5-6.
5. Ghafoor VL, Phelps P, Pastor J. Implementation of a pain medication stewardship program. *Am J Health Syst Pharm.* 2013;70(23):2070-5.
6. Chen A, Legal M, Shalansky S, Mihic T, Su V. Evaluating a pharmacist-led opioid stewardship initiative at an urban teaching hospital. *Can J Hosp Pharm.* 2021;74(3):248-55.

7. Klimas J, Gorfinkel L, Fairbairn N, Amato L, Ahamad K, Nolan S, et al. Strategies to identify patient risks of prescription opioid addiction when initiating opioids for pain: a systematic review. *JAMA Netw Open.* 2019;2(5):e193365.
8. Tilli T, Hunchuck J, Dewhurst N, Kiran T. Opioid stewardship: implementing a proactive, pharmacist-led intervention for patients coprescribed opioids and benzodiazepines at an urban academic primary care centre. *BMJ Open Qual.* 2020;9(2):e000635.
9. Gouloupoulos A, Rofe O, Kong D, Maclean A, O'Reilly M. Attitudes and beliefs of Australian emergency department clinicians on antimicrobial stewardship in the emergency department: a qualitative study. *Emerg Med Australas.* 2019;31(5):787-96.
10. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377-81.
11. Harris PA, Taylor R, Minor BL, Elliott V, Fernandez M, O'Neal L, et al. The REDCap consortium: building an international community of software platform partners. *J Biomed Inform.* 2019;95:103208.
12. Gehlbach H, Artino AR Jr. The survey checklist (manifesto). *Acad Med.* 2018;93(3):360-6.
13. Kaboli PJ, Hoth AB, McClimon BJ, Schnipper JL. Clinical pharmacists and inpatient medical care: a systematic review. *Arch Intern Med.* 2006;166(9):955-64.
14. Bond CA, Raehl CL, Franke T. Interrelationships among mortality rates, drug costs, total cost of care, and length of stay in United States hospitals: summary and recommendations for clinical pharmacy services and staffing. *Pharmacotherapy.* 2001;21(2):129-41.
15. Tang SSL, Zhou YP, Loo L, Kwa AL, Chlebicki P. Comparison of active versus passive strategies in improving compliance to antimicrobial stewardship interventions [poster abstract 187]. *Open Forum Infect Dis.* 2018;5(Suppl 1):S83.
16. Landgren FT, Harvey KJ, Moulds RF, Mashford ML, Guthrie B, Hemming M. Changing antibiotic prescribing by educational marketing. *Med J Aust.* 1988;149(11-12):595-9.

**Cynthia Ramasubbu**, BSc(Psych), PharmD, ACPR, is with Lower Mainland Pharmacy Services, Abbotsford Regional Hospital, Abbotsford, BC.

**Kseniya Chernushkin**, BSc(Pharm), PharmD, ACPR, is with Lower Mainland Pharmacy Services, Royal Columbian Hospital, New Westminster, BC.

**Karen Ng**, BSc(Pharm), PharmD, ACPR, BCPS, BCIDP, is with Lower Mainland Pharmacy Services, Surrey Memorial Hospital, Surrey, BC.

**Michael Legal**, BSc(Pharm), PharmD, ACPR, is with Lower Mainland Pharmacy Services, Vancouver, BC.

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**Address correspondence to:**

Dr Cynthia Ramasubbu  
Specialized Seniors Clinic  
32900 Marshall Road  
Abbotsford BC V2S 0C2

**email:** [Cynthia.ramasubbu@fraserhealth.ca](mailto:Cynthia.ramasubbu@fraserhealth.ca)

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