



Optimizing Opioid Abuse Prevention Strategies: Role of Pharmacist in Safe Dispensing

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Misuse, violence, and distribution of opioids are also a public health concern. Pharmacists are at the forefront of the health-care response to the opioid epidemic because they have more opportunities to engage with patients than primary care or specialist medical practitioners. Because of these situations, pharmacists have more chances to provide proper prevention advice and reinforce proper opioid drug usage. Understanding dosage restrictions, learning how to use prescription drug monitoring programmes, knowing when drug take-back programmes are taking place, and advising consumers about the dangers of substance addiction are both techniques that pharmacists should be informed about. Recognising "red flag" actions that may suggest opioid abuse; using tests to determine a patient's risk of opioid abuse; collaborating with other health-care providers to plan a patient's treatment; knowing how abuse-deterrent antidepressants function and what they can't do. Pharmacists can help mitigate substance misuse and improve patient outcomes by implementing these techniques. All patients who require legitimate and effective pain management through the use of opioids must have access to them. While further study is needed in a variety of areas, pharmacists may make efforts today to follow proposed recommendations, rules, and legislation to reduce drug misuse and diversion of restricted drugs.

Keywords: Opioid abuse; prescription drug monitoring programme; red flag; drug take back policy; safe dispensing.

1. INTRODUCTION

Opium is a combination of alkaloids extracted from the poppy seed, while opiates are naturally occurring alkaloids. All compounds that bind to opioid receptors are referred to as opioids [1]. Opioids exert their pharmacologic effects by binding to opioid receptors found both within and outside the central nervous system. Opioids are categorised as full or partial agonists, mixed agonist– antagonist, or opioid antagonists depending on which receptors they attach to and their degree of intrinsic activity. There are three types of opioid receptors (m, g, and k) and three types of endogenous receptors (B-endorphins, enkephalins, and dynorphins). The word "opioid" refers to a group of compounds and other synthetic chemicals that bind to one or more opioid receptor forms [2].

Prescription opioid abuse, as well as synthetic drugs like heroin and, more recently, fentanyl and fentanyl analogues, are all contributing to opioid-related deaths [3]. Rather than limiting opioid prescribing on a community level, we should concentrate on providing and enhancing known evidence-based care for people with opioid use disorder. Methadone and buprenorphine decrease opioid cravings, improve medication adherence, decrease illegal opioid use, and improve overall survival [3].

Prescription opioid drugs, more than other medications, are associated with increased risks of misuse, theft, and diversion. Prescription Opioids used for nonmedical purposes are harmful because frequent recreational use can lead to addiction or death. The most common method of violence is oral administration, which involves swallowing the tablet or capsule whole or chewing it and then swallowing it [4]. When non-opioid treatment alone is ineffective in treating acute pain, Opioids are used [1]. The complete opioid agonist methadone, the partial opioid agonist buprenorphine, and the long-acting injectable opioid antagonist naltrexone are the FDA-approved drugs [3]. Patients, pharmacists, and prescribers are all at risk of dying from an opioid overdose. To better understand where the solution to preventing overdoses and deaths could lie, the medical community should begin to discuss pharmacological treatment of pain, addiction, and violence at the same time [5]. The revised

Guideline for Prescribing Opioids for Chronic Pain was released by the Centers for Disease Control and Prevention, with the goal of improving communication about the risks and benefits of opioid use for chronic pain, improving the safety and efficacy of pain therapies, and lowering the risks associated with longer-term opioid therapy [6].

The FDA's 2018 strategic policy Roadmap outlines an approach to lowering opioid usage and abuse, which targets multiple aspects of this complicated issue, as there are no simple solutions to reverse this pandemic [7]. The president signed the Substance Use Disorder Prevention that promotes Opioid Recovery and Treatment (SUPPORT) for patients and Communities Act into law on October 24, 2018 [8].

2. ADDRESSING THE PHARMACIST PREVENTION STRATEGIES

The roles of pharmacists in relation to opioids often clash. It's possible that dispensing opioid without properly examining each prescription will lead to increased abuse and diversion [9].

Chronic opioid treatment can only be provided to patients with a history of substance misuse, psychological disorders, or abnormal drug-related habits if the clinician is able to enforce more rigorous and regular supervision. Referral to an appropriate healthcare provider can be beneficial in difficult cases [1]. If pharmacists unintentionally dispense drugs to diverters or abusers, they must handle these duties in the face of possible regulatory scrutiny [9]. Pharmacists should concentrate on reducing the effects of opioid abuse and avoiding opioid overdose deaths [10].

Prescription drug monitoring services, initiatives in community, outpatient, and inpatient environments, overdose prevention, and education on abuse-deterrent formulations of opioid analgesics are all ways pharmacists can help avoid, manage, and treat opioid misuse [11].

2.1 Prospective for Practice

2.1.1 Prescription drug monitoring programme

Prescription drug monitoring programmes (PDMPs) are computerised databases that track

controlled substances prescriptions and are managed by states [11]. Electronic databases are used to gather data on opioid and other controlled substances, as well as non-controlled drugs with abuse potential [12]. There is three components to these programmes. The first is prescription data collection, it shows which doctors and pharmacies are responsible for each prescriptions [13]. The second part of a PDMP is a central repository. Third, proper protocols for data transfer from the central repository to the appropriate authoritative agencies must be in place [13].

In general,

- (1) Track prescribing and dispensing to specific patients, thus providing treatment background information to the health practitioners responsible for a patient's care [1].
- (2) Provide information to parties, including law enforcement, for the detection and prevention of prescription drug abuse and diversion [1].
- (3) Provide information to clinicians and third parties in order to identify people at risk of being addicted to a controlled substance [1].
- (4) Provide information to researchers and public health authorities in order to identify drug use patterns and public health needs [1].

“Doctor shopping” is a term used to describe the process of looking for a doctor obtaining prescriptions for controlled substances from multiple prescribers and pharmacies.9 Future studies are needed to compare the efficacy of various policies and practices aimed at increasing the range and effectiveness of prescription drug monitoring programmes [14]. The report lists the following features and activities of PDMPs as best practises:

1. Providing access to the database to prescribers and dispensers.
2. Giving oversight commissions, state Medicaid and public health departments, medical examiners, and law enforcement access to the database (under appropriate circumstances).
3. Providing data and connectivity in real time.
4. Data sharing with other states
5. Integrating with other health information technologies in order to increase provider adoption.

PDMPs are also useful tools for physicians and third-party payers, as they provide information on patient's use of controlled drugs, which is critical for delivering proper medical care and maintaining patient safety. According to a new cost-benefit report, PDMPs will save states millions of dollars by reducing prescription drug misuse and diversion [15].

Table 1. Opioid prevention what we can do [12]

<p>✓ Let us just talk about it: Opioids have the potential to be both addictive and harmful. All pharmacists should have a discussion on how to avoid drug misuse and overdose.</p> <p>✓ To stay safe: Only use Opioids as recommended. Always keep your medications in a secure location. Dispose away any medicine that hasn't been used correctly.</p> <p>✓ Understand that non-opioid pain: Treatments are helpful in treating pain and may provide a lower risk of damage. Consult your physician.</p> <p>✓ Understand addiction: Addiction is a chronic illness that alters decision-making and affects the brain. People can heal with the appropriate therapy and support.</p> <p>✓ Be ready: Overdose deaths from Opioids may happen anywhere, including at home. recognize what we can do to help save a life</p> <p>✓ Integration of electronic health care systems with PDMPs : Allows providers to quickly and easily examine PDMP data before prescribing.</p> <p>✓ Controlled substance e-prescribing : Helps to prevent drug misuse and diversion while also enhancing pharmacist workflow.</p> <p>✓ Telehealth: By offering care remotely through videoconferencing or other modalities, telehealth can assist extend access to addiction treatment programme.</p>

2.1.2 Implications for health-care systems medication-use policies

Opioids are classified as a high-alert drug by the Institute for Safe Medication Practices and necessitate increased hospital and health-care system monitoring [1]. Pharmacists discuss whether it is reasonable for pharmacists to participate in the assessment and follow-up of clinical results, or whether their position should be limited to education and therapy. Currently, pharmacists who dispense Naloxone are involved in all parts of the method. Counseling and education are important components of harm reduction and prevention [5].

The word "harm reduction" refers to any strategy for reducing the harmful effects of a particular behavior without actually focusing on the behavior itself [12]. Computerized prescriber order entry (CPOE), clinical decision support (CDS), pharmacy and therapeutics committee–approved guidelines, and formulary constraints may also help to ensure that adequate screening, assessment, and prescribing for pain is done consistently [1]. Harm reduction strategies used strategically have the potential to provide options for some of our most disadvantaged patients to interact more fully with the healthcare system [12].

2.1.3 Drugs take back Policy

The drug take back initiative seeks to not only provide a discreet, easy, and responsible way to dispose of prescription medications, but also to inform the general public about the dangers of drug addiction and medication [16]. A preventive technique that has been commonly used to minimize the supply of prescription drugs for diversion or misuse is organized recycling of controlled medications, such as take-back events and permanent drug donation boxes [17].

The Drug Enforcement Administration (DEA) created a programme that holds events twice a year to raise awareness about proper prescription disposal and provide a place for proper disposal [18]. They will designate a specific day as "drug-take-back day," and DEA-authorized collectors will collect unused, unwanted, or expired prescriptions from the general public on that day. They also accumulated more than 200 pounds of expired drugs in previous years that would have been disposed of inappropriately otherwise [16].

Flushing directions are used on prescription medications such as strong narcotic pain

relievers and other controlled substances to minimize the risk of accidental usage, poisoning, and illegal violence [19]. The fentanyl patch, for example, is an adhesive patch that provides a powerful pain reliever through the skin. It comes with instructions to flush any used or unused patches. Too much fentanyl can cause serious respiratory issues and possibly death in newborns, toddlers, pets, and even adults, especially in people who have not been prescribed the medicine. A large amount of medicine remains in a patch once it has been used [19]. Patients can return any unwanted or unused drugs for free to certain retail and hospital pharmacies' in-store disposal units. Pharmacists should be aware of places where patients can conveniently dispose of their expired prescriptions and should advise patients on how to properly dispose of their medications. To locate a nearby drug disposal facility, pharmacists can contact their local law enforcement officers or the DEA [18].

If no designated recycling sites are open, pharmacists should advise patients on how to properly dispose of expired drugs in the household garbage, which involves combining medicines with soil, cat litter, or used coffee grounds and putting the mixture in a sealed jar or plastic bag to be discarded. Pharmacists are advised to refer patients to their local health departments for more details on safe drug disposal if are regional standards for proper medication disposal [18].

2.1.4 Patient education and identification

The dangers of opioid dependence, misuse, and diversion, which involve respiratory distress and death, should be discussed with patients. Patients should be told to take their drugs exactly as directed and should be warned of the dangers of not doing so [18]. Although some attempts to develop curricula and training materials for pharmacists to effectively practice with those who use substances have been made in the past [20]. The direct, responsible provision of medication-related treatment with the aim of achieving definite results that enhance a patient's quality of life is the goal of pharmacy education and training [18].

When filling new and existing opioid prescriptions, it's important to talk about the side effects. Pharmacists should also emphasize the importance of using a single pharmacy for all medications; this allows pharmacists to review

the patient's prescription history for potential drug reactions and offer effective medication therapy [18].

Before prescribing this to patients, pharmacists should be mindful of local and other ordinances governing drug disposal. Unused drugs left in the home may be mishandled, sold, or stolen, posing a risk to children and pets. Patients should be advised on how to safely store their prescriptions, preferably in a locked jar or cabinet, for the same reasons [18].

2.2 Prospective for Research

2.2.1 Identification of red flag

There are a few main "red flags" that may warn pharmacists to patients that are seeing several doctors or pharmacies at the same time, or who are misusing opioids. Patients who live far away from their prescriber and pharmacy, particularly if state lines are crossed, may be attempting to avoid being detected by PDMP [21].

While these red flags can signify abnormal conduct, they may also indicate that a patient requires further instruction on proper administration, assistance with insurance problems, or a medication adjustment because his or her pain is not being properly handled. Patients can also have multiple prescribers identified on their PDMPs if they go to a clinic that has multiple prescribers. If a pharmacist is unsure if a new prescriber is a member of a

community practice, they can check with the clinic [18].

In medication development, fundamental scientific research on opioid pharmacology, as well as clinical and implementation research, research pharmacists will undoubtedly play a significant role. Compounds that interact with the opioid system to obstruct pain signals without causing reward or respiratory depression are one avenue for research into new pharmacotherapies for pain. One intriguing class of agonists is those that are biased against the mu-opioid receptor. New formulations of current medicines (buprenorphine, methadone, and naltrexone), including depot injections, are expected to emerge, extending the reach and effectiveness of these treatments, particularly in rural areas where healthcare is scarce [10].

It is also necessary to do research into the viability of administering methadone on a daily basis through pharmacies rather than solely through licensed opioid treatment programmes. Medication-assisted therapy is currently unavailable to a large number of people, and stigma is one of numerous barriers to widespread use. In many parts of the world, pharmacies are where methadone is distributed. In New Mexico, physician-based methadone maintenance via community pharmacy distribution was effectively established. Extending this method looks to be a potential strategy to improve access to a highly successful opioid use disorder therapy, assist de-stigmatize it, and integrate addiction treatment into the rest of the healthcare system [10].

Table 2. "Red flags" that may suggest abnormal drug-taking habits or opioid abuse. Adapted from a position paper by the national association of boards of pharmacy

<ul style="list-style-type: none"> ✦ Early refills are frequently requested. ✦ The patient lives a long way from the prescribing physician and or pharmacy. ✦ Patients travel in clusters, all with the same controlled drug prescriptions from the same doctor. ✦ A handwritten prescription that appears to have been tampered with or that is flawlessly thorough when viewed at the pharmacy. ✦ The prescriber's DEA registration has been suspended. ✦ The patient went to a pharmacy, and the pharmacist knows or has reasonable grounds to assume that another pharmacy has declined to fill the prescription. ✦ Via implicit or explicit intimidation, the patient exerts pressure on the pharmacist to dispense the regulated substances. ✦ The patient seems to be inebriated or experiencing withdrawal symptoms. ✦ Patient has prescriptions for both regulated and non-controlled substances (e.g., antibiotics and Opioids), but only wants the controlled drug filled. ✦ Prescriptions for heavily abused "cocktails" of controlled drugs are presented by the patient (eg, opioid, benzodiazepine, muscle relaxant) ✦ The patient expresses his or her desire to have the drug diverted.

2.3 Prospective for Education

2.3.1 School based prevention programme

Prevention programmes may be implemented in a variety of environments, including the classroom, the community, and the home. Schools are critical places to introduce preventive strategies that aim to eliminate the risk of participating in early use and potential delinquency because youth spend so much of their time there. School-based settings offer ideal conditions in which to impart information and resources for preventing and reducing adolescent substance use [22].

There are two types of services: targeted programmes (SUCCESS and TND) and universal programmes (ALERT and LST).

2.3.1.1 Targeted Programs

➤ Project SUCCESS

The Project School Using Coordinated Community Efforts to Strengthen Students is a service developed specifically for high-risk youth (a targeted intervention). Highly trained specialists are stationed in schools to offer a variety of drug abuse prevention and early intervention support [22].

The following are programme elements:

- **Prevention Education Series-** The PSC offers an eight-session substance abuse prevention education programme.
- **Individual and Group Counselling-** after an evaluation, the school conducts a series of eight to twelve time-limited individual or group sessions.
- **Parent program-** Via parent engagement services, Project SUCCESS engages parents as strategic partners in prevention.
- **Referral-** Students and parents who need care, more comprehensive therapy, or other services are referred to community-based programmes or practitioners [22].

➤ Project TND

The Project toward No Drug Abuse is a focused intervention and interactive system for high school students (ages 14–19) who choose to stay away from drugs and alcohol. Over the

course of four weeks, this school-based curriculum includes twelve 40- to 50-minute lessons that include motivational activities, social skills instruction, and decision-making elements provided through group discussions, games, role-playing exercises, animations, and student worksheets [22].

2.3.1.2 Universal programs

➤ Project ALERT

ALERT is a commonly used drug awareness programme for middle school a student that was once a universal programme. ALERT claims to support high-risk adolescents by reducing tobacco, marijuana, and alcohol use. ALERT, like Project SUCCESS and TND, has been assessed and found to have promising outcomes [22] It assists students in recognising and resisting pro-drug stresses, as well as assisting students in comprehending the social, mental, and physical effects of harmful substances [22]

➤ Project LST

The first of the three main components is intended to teach students a collection of basic self-management skills. The second part of the programme teaches general social skills. The third dimension consists of knowledge and expertise specific to the issue of substance abuse [22].

2.3.2 Family based prevention programme

Individuals and their families are affected by drug abuse issues. As a result, a family strategy recognizes the need for substance abuse services to assist families in preventing or reducing substance abuse by husbands, mothers, and children, while also shielding other family members from those who misuse alcohol and other substances [23].

The factors that affect whether or not a person becomes a drug abuser are heavily influenced by the family of that person. If their parents drink or use drugs, their children are more likely to do so as well [23].

Typically, these services provide information about the effects of substance abuse on foetal development. Parents must be trained and encouraged after their child is born in order to foster family bonding and healthy child-parent interaction [23].

Table 3. Out line the screening, short intervention, and referral to treatment approach [24]

<ul style="list-style-type: none"> ▪ Patients who need additional assessment or treatment for drug use disorders are identified by screening; widely used screening devices include: Drug Abuse Screening Test Alcohol Use Disorders Identification Test Alcohol, Smoking, and Substance Involvement Screening Test ▪ Brief intervention is a single or multiple sessions of motivational discussion aimed at increasing insight and awareness about substance use as well as motivation to change behaviour; it can be used as a stand-alone treatment for those at risk as well as a vehicle for engaging those who require more extensive levels of care. ▪ Brief therapy is offered to people seeking or currently receiving treatment for drug abuse disorders; it consists of a small number of highly concentrated and structured therapeutic sessions with the goal of removing hazardous or dangerous substance usage. ▪ Those who are recognised as needing more intensive therapy than the screening, short intervention, and referral to treatment programme can give are sent to specialist care.
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In these initiatives, it is important to train practitioners to work as a team. They must deepen their understanding of the complex medical, social, legal, and ethical problems that arise when caring for substance-abusing mothers and their children, as well as establish a shared vocabulary, viewpoint, and priorities in order to prepare and implement organised interventions [23].

3. CONCLUSION

Many interventions are currently being implemented in different stages to help reduce prescription opioid misuse, violence, and diversion. For optimum prevention of prescription opioid misuse and diversion, the efficacy of these interventions would need to be assessed and adapted.

Pharmacists in hospitals and health facilities can help identify different types of opioid toxicity and avoid unnecessary prescribing and opioid diversion. It is possible to recover from a drug addiction, but it is not easy. Stop using drugs, remaining drug-free, and being productive at home, at work, and in society are all things that addiction treatment can help with. Detoxification, behavioural therapy, and medication are all stages toward a successful recovery plan (for opioid, tobacco, or alcohol addiction). Co-occurring mental health conditions such as depression and anxiety are assessed and treated, as well as long-term follow-up to avoid relapse. To relieve withdrawal effects, avoid relapse, and treat co-occurring illnesses, medications and equipment may be used.

Pharmacists can improve patient outcomes by implementing the techniques outlined here.

Providing adequate pain relief, assessing patients at risk of addiction or those who are actively abusing opioids, and anticipating possible opioid overdoses can help to avoid or reduce the number of patients that embark on an abuse path that leads to illegal substance usage or serious medical morbidity, including mortality.

All patients who require legitimate and effective pain management through the use of opioids must have access to them. While further study is needed in a variety of areas, pharmacists may make efforts today to follow proposed recommendations, rules, and legislation to reduce drug misuse and diversion of restricted drugs.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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