

Prescription Drug Abuse and Prevention

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Target Audience

This continuing education activity was designed specifically for pharmacists and pharmacy technicians.

Disclosure Statement

The authors have indicated that they do not have any conflicts of interest, nor do they have financial relationships with a commercial interest, related to this activity.

Learning Objectives

At the end of this activity, participants should be able to:

- define physical and psychological dependence.
- explain the methods by which pharmacy professionals can impact rates of drug abuse and diversion.
- explain the role of corresponding responsibility in pharmacy practice.

Introduction

In the United States (U.S.), alcohol, tobacco, illicit and prescription drug addiction and abuse cost more than \$700 million in increased health care costs, crime and lost productivity. More than 90,000 Americans die annually due to prescription and illicit drug use.¹ Greater than 15 million people in the U.S. abuse prescription drugs specifically, which is more than the number of people who abuse cocaine, hallucinogens, inhalants and heroin combined. Every day, approximately 2,500 youths (12 to 17 years old) abuse a prescription drug pain reliever for the first time.² Table 1 below lists common drugs of abuse and their street names.³

Table 1. Common Drugs of Abuse and Associated Street Names³

Drugs of Abuse	Street Name(s)
Alcohol	None
Ayahuasca	Aya, Yage, Hoasca
Bath Salts (Synthetic Cathinones)	Bloom, Cloud Nine, Cosmic Blast, Ivory Wave, Lunar Wave, Scarface, Vanilla Sky, White Lightning
Cocaine	Blow, Bump, C, Candy, Charlie, Coke, Crack, Flake, Rock, Snow, Toot
DMT	DMT, Dimitri
GHB	G, Georgia Home Boy, Goop, Grievous Bodily Harm, Liquid Ecstasy, Liquid X, Soap, Scoop
Heroin	Brown Sugar, China White, Dope, H, Horse, Junk, Skag, Skunk, Smack, White Horse <i>With Over-the-counter (OTC) Cold Medicine and Antihistamine: Cheese</i>
Inhalants	Poppers, Snappers, Whippets, Laughing Gas
Ketamine	Cat Valium, K, Special K, Vitamin K
LSD	Acid, Blotter, Blue Heaven, Cubes, Microdot, Yellow Sunshine
Marijuana (Cannabis)	Blunt, Bud, Dope, Ganja, Grass, Green, Herb, Joint, Mary Jane, Pot,

	Reefer, Sinsemilla, Skunk, Smoke, Trees, Weed; Hashish: Boom, Gangster, Hash, Hemp
MDMA (Ecstasy/Molly)	Adam, Clarity, Eve, Lover's Speed, Peace, Uppers
Mescaline (Peyote)	Buttons, Cactus, Mesc
Methamphetamine	Crank, Chalk, Crystal, Fire, Glass, Go Fast, Ice, Meth, Speed
Dextromethorphan	Robotripping, Robo, Triple C
PCP	Angel Dust, Boat, Hog, Love Boat, Peace Pill
Opioids	Captain Cody, Cody, Lean, Schoolboy, Sizzurp, Purple Drank <i>With glutethimide:</i> Doors & Fours, Loads, Pancakes and Syrup Apache, China Girl, China White, Dance Fever, Friend, Goodfella, Jackpot, Murder 8, Tango and Cash, TNT, Vike, Watson-387, D, Dillies, Footballs, Juice, Smack, Demmies, Pain Killer, O.C., Oxycet, Oxycotton, Oxy, Hillbilly Heroin, Percs, Amidone, Fizzies <i>With MDMA:</i> Chocolate Chip Cookies, Biscuits, Blue Heaven, Blues, Mrs. O, O Bomb, Octagons, Stop Signs
Prescription Sedatives	Barbs, Phennies, Red Birds, Reds, Tooies, Yellow Jackets, Yellows, Candy, Downers, Sleeping Pills, Tranks, Forget-me Pill, Mexican Valium, R2, Roche, Roofies, Roofinol, Rope, Rophies
Prescription Stimulants	Bennies, Black Beauties, Crosses, Hearts, LA Turnaround, Speed, Truck Drivers, Uppers
Psilocybin	Little Smoke, Magic Mushrooms, Purple Passion, Shrooms
Salvia	Magic mint, Maria Pastora, Sally-D, Shepherdess's Herb, Diviner's Sage
Steroids (Anabolic)	Juice, Gym Candy, Pumpers, Roids
Synthetic Cannabinoids (K2/Spice)	K2, Spice, Black Mamba, Bliss, Bombay Blue, Fake Weed, Fire, Genie, Moon Rocks, Skunk, Smacked, Yucatan, Zohai
Tobacco	None

Pharmacists, as the overseeing health care provider of many of these medications, can play a significant role in decreasing these statistics and ensuring the health and safety of patients.

Definitions: Addiction and Dependence

There are two specific types of dependence: physical and psychological. Physical dependence is a true physiological dependence on the drug. This dependence occurs with chronic exposure to a medication, and, as a result, the body requires a certain amount of the drug in order to function normally.⁴ This can occur with many medications, even those that are considered to have no addictive potential, like sympathomimetic vasoconstrictors, bronchodilators and organic nitrate vasodilators. One hallmark of physical dependence is the manifestation of withdrawal syndrome when the drug is discontinued abruptly, the dose is decreased rapidly or an antagonist is administered. Withdrawal is observed in varying degrees after chronic exposure to most drugs of abuse and showcases the adaptive changes that were made to the body during drug use.⁵

Psychological dependence is classified as addiction.⁵ Addiction is defined as a brain disease with genetic, psychosocial and environmental factors, which is chronic and relapsing in form.

Addiction is characterized by behaviors referred to as “the five C’s:” chronicity, impaired control over drug use, compulsive use, continued use despite harm and craving.⁴ It is considered a brain disease because ingested substance affects and alters the patient’s brain chemistry. These changes in the brain can be long lasting and lead to many harmful, commonly self-destructive, behaviors.¹ At times, use may be triggered by cravings that occur in response to contextual cues. The hallmark of addiction is when the drug use becomes compulsive, meaning the individual wants the drug potentially without really knowing why.⁵

With either type of dependence, physical or psychological, tolerance can become an issue after prolonged exposure. Tolerance occurs when an escalation of the dose is required to maintain the same effect in the body. There are many factors that affect tolerance, including increased clearance of the drug, shorter duration of action in target systems and/or changes of the mu opioid receptor function. It should be noted, however, that tolerance is a naturally occurring physical effect and does not automatically lead to addiction or imply that the patient is more likely to exhibit addictive behaviors.

Although “addiction” is not considered a specific diagnosis, in the fifth edition of *The Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), substance abuse and dependence fall into one category: substance use disorder.¹ Diagnostic criteria of substance abuse disorder include evidence of impaired control, social impairment, risky use and pharmacological criteria (i.e., tolerance and withdrawal). DSM-5 describes the patterned use of intoxicating substances leading to clinically significant impairment or distress when patients exhibit at least two of the following within a 12-month period:¹

1. The substance is taken in higher amounts or over a longer period than intended
2. There is an unsuccessful effort or no persistent desire to decrease or control use of the substance
3. A large amount of time is devoted to the substance in either obtaining, using or recovering from it
4. There is a strong desire or craving to use the substance
5. Repetitive use of the substance causing a failure to complete major responsibilities
6. Continued use of the substance even though there are frequent or repetitive problems (social or interpersonal) caused or worsened by the effects of the use
7. Important activities are given up because of the use of the substance
8. Repetitive use of the substance even in situations in which it is physically hazardous
9. Continued use of the substance while knowingly having a psychological or social problem that is created or worsened by the substance
10. Tolerance, as defined by either:
 - a. A need for markedly increased amounts of the substance to achieve intoxication effects
 - b. A greatly diminished effect from continued use of the same amount of the substance
11. Withdrawal, as manifested by either:
 - a. The characteristic withdrawal syndrome for that substance (as defined by DSM-5)
 - b. The substance or a similar one is taken to avoid withdrawal effects

Of the patients who are prescribed a drug of abuse, only a small percentage will become addicted. For example, there are very few patients who receive opioids as analgesics that desire or crave the drug after they have completed their withdrawal period.⁵ On the contrary, relapse is very common in addicts after successful withdrawal when no longer dependent. Those who were

addicted remain at risk for relapsing even after a prolonged drug-free period. This relapse can be triggered by re-exposure to addictive drugs, stress or a context that recalls prior drug use.⁵

STOP AND REFLECT

What is one of the hallmark signs of physical dependence on a drug? How does physical dependence differ from psychological dependence?

Risk and Identification of Drug Abuse

The risk of drug abuse increases in all patients when prescribed addictive prescription medications. Even when patients are prescribed medications for a legitimate cause, many patients will develop a tolerance and fear they will become addicted and begin abusing the medication. Some of the risk factors for prescription drug abuse include:⁶

1. Past or present addictions to other substances or alcohol
2. Younger age, specifically teens to early 20s
3. Exposure to peer pressure and/or a social setting that includes drug use
4. Lack of knowledge about prescription drugs
5. Easier access to prescription drugs (like working in a health care setting)
6. Specific pre-existing psychiatric conditions

As health care practitioners who arguably have the most face-to-face interactions with patients, it is important for pharmacists to check in on patients taking chronic opioids and other medications at high risk for abuse, and to be cognizant of signs of potential abuse or addiction. While a majority of patients take their medication as prescribed and will not fall into abuse and addiction, identifying potential warning signs is an important aspect of patient safety. Some of the common signs of potential misuse include:^{7,8}

1. Deterioration in home or work functioning
2. Resistance to changes in therapy
3. Use of the drug by injection or nasal route
4. Consistent early refill requests
5. Claiming a prescription was lost or stolen
6. Receiving prescriptions for controlled substances from different prescribers at different practice sites
7. Reports use of the medication more often than prescribed

Providing regular counseling to patients in the pharmacy when they are dropping off or picking up prescriptions gives the pharmacist many opportunities to identify some of these common signs of potential drug misuse.⁸ Depending on the situation and openness of the patient, many of these warning signs may become evident simply after having a short conversation. For example, does the patient mention recently losing a job or speak of problems with a spouse or significant other? Has the patient's insurance recently changed from private to publicly funded? These may be signs of a deterioration in home or work functioning. If you warn a patient about a potential high dose of a medication and recommend an alternative, are they accepting of your suggestion? This could be a sign of a resistance to changes in therapy.

STOP AND REFLECT

What signs of potential drug abuse or misuse can a pharmacist easily identify by asking questions of the patient?

Preventing and Addressing Drug Abuse and Diversion

Frequent patient interactions also put pharmacists in an exceptional position to address potential problems with drug abuse and diversion as they develop. This can be done through educating both patients and prescribers, tracking prescription filling trends and prescribing practices, proper use of corresponding responsibility and ensuring knowledge of proper drug disposal techniques.^{9,10}

Education is a crucial first step in addressing prescription drug abuse. Many people are still under the misguided assumption that abusing prescription drugs is safer than abusing illicit drugs because prescription drugs are FDA approved.⁹ This dangerous misconception has led to addiction and even death in many patients. Although there have been many efforts to raise awareness in parents, youth, patients and health care providers, still more education is necessary to continue decreasing the rates of drug misuse.

Pharmacists are regularly rated by the public as one of the most trustworthy health care professionals. Combine this with opportunities for regular patient interactions, and pharmacists are in a position to have a great impact on prescription drug abuse rates through education. Proper patient education and counseling at each new fill regarding potential adverse effects, especially when taken in doses greater than prescribed, is important to conduct with each patient as well as an honest discussion of the possibility of drug dependence and addiction in interested patients.^{9,10} Proper storage suggestions (i.e., in a locked cabinet, out of reach of children) may help to deter any family members or housemates from potential drug theft or diversion.

Educating prescribers is another important way that pharmacists can positively affect prescription drug abuse rates. For prescribers, a Risk Evaluation and Mitigation Strategy (REMS) program was developed in 2011 for all practitioners who provide prescriptions for extended-release and long-acting opioid medications.¹¹ This REMS program requires prescribers to complete continuing education activities and to counsel each patient when prescribing these medications. This physician counseling should include information about how the drug works, how to take it as prescribed, the importance of adherence to the dosing regimen, the risks of dependence and abuse, and potential drug interactions and adverse effects. Pharmacists should be aware of the requirements of this and other REMS programs, and should also perform similar counseling at the time of dispensing to ensure understanding and to give the patient a chance to ask and have any questions answered. Depending on the practice setting, many prescribers receive little, if any, other education or training on appropriate prescribing practices for commonly abused drugs, or on how to recognize substance abuse in their patients.⁹ Ensuring that the prescriber is adequately educated and involved in the patient's care is crucial to ensure effective patient care, especially if the patient is exhibiting any of the warning signs of abuse or addiction listed above.

Corresponding responsibility is a commonly misunderstood and sometimes unknown concept within pharmacy practice, and it can have a large impact on recognizing and avoiding drug abuse and diversion.¹² The Drug Enforcement Administration (DEA) regulations addressing corresponding responsibility (21 CFR §1306.04) state that in order for a prescription for a controlled

substance to be valid, it must be issued for a legitimate medical purpose by an individual practitioner acting in the usual course of his or her professional practice.¹³ The responsibility for the proper prescribing and dispensing of controlled substances lies with the prescriber, but there is a corresponding responsibility that rests with the pharmacist who fills and dispenses the prescription. The pharmacist must exercise sound professional judgment when making a determination about the legitimacy of a controlled substance prescription.¹⁴⁻¹⁶ While every situation must be assessed on a case-by-case basis, the DEA has identified red flags that may indicate a prescription is not legitimate and may be used for the purposes of diversion or abuse.

Patient Red Flags:^{14,15}

1. Distance: either or both the prescriber and patient are not located within the pharmacy's geographic area
2. Patient is traveling distances to the pharmacy or physician
3. Cash payment for prescriptions, especially if the patient has active insurance
4. Patients arriving in groups to have narcotic prescriptions filled
5. Patient requests specific drugs by brand name or description (i.e., "blues" or "Mallinckrodt blues")
6. Patient appears to be visibly impaired, intoxicated or incoherent
7. Patient attempting to refill early or consistently showing up at the first available moment when refill can be obtained under standard practice
8. Evidence of multiple doctors prescribing controlled prescriptions for patients after review of profile or prescription drug monitoring program (PDMP) data
9. Patient remains on long-term high dose opioid long after injury has healed
10. Age or presentation of the patient (i.e., young patients seeking chronic pain medications)

Prescriber Red Flags:^{14,15}

1. Prescribes the same medication in the same dosage and amount to most or all patients
2. Use of preprinted or stamped prescriptions
3. Routinely prescribes the same combination of pain medications for most or all patients
4. Prescribes combinations that the DEA has identified as having a high potential for abuse (i.e., hydrocodone/APAP, alprazolam and carisoprodol a.k.a. "Trinity" or "Holy Trinity.")
5. Prescriptions for drugs not consistent with the prescriber's area of specialty (i.e., an ophthalmologist regularly prescribing Oxycontin)
6. Overprescribing large doses of controlled substances

There are many tools and methods that pharmacists can utilize to ensure that they are exercising their corresponding responsibility and making a sound decision regarding the dispensing of medications. First, being cognizant and knowledgeable of the patient's history will assist in decision making. This is most helpful with patients who regularly use the pharmacy, and can give important insight into situations that require unique drug therapy or unusually high doses of medication. Utilization of functions within a pharmacy computer system that enables patient-specific notes is especially helpful in these cases to ensure that all pharmacists are notified of special circumstances. Similarly, becoming knowledgeable about local prescribers is an important tool to drive decision-making. Pay attention to the prescription forms that each office uses, so that it is easy to identify a potential forgery. Be aware of the scope and area of practice of physicians to ensure that they are prescribing within that scope.¹⁷ For unknown prescribers or suspicious prescriptions, ensure that the provider has a valid DEA number and is licensed to prescribe the applicable schedule of controlled substances in the specific state. The DEA Office of Diversion Control

provides an online tool to validate prescriber DEA numbers at <https://www.DEAdiversion.usdoj.gov/webforms/validateLogin.jsp>. It is recommended to validate the DEA number of any unknown or non-local prescribers.¹⁵

When it is suspected that a patient is seeing more than one doctor or filling prescriptions at multiple pharmacy chains, state-specific PDMPs can be useful tools for gathering information. Forty three states (including Michigan) utilize some form of PDMP, which aims to detect and prevent the abuse and diversion of prescription drugs at the retail level. In Michigan, this system is known as the Michigan Automated Prescription System, or MAPS, and collects information about Schedule 2-5 drugs dispensed by all pharmacies and prescribers.¹⁸ Effective July 1, 2014, all pharmacies are required to submit their prescription data to MAPS on a daily basis. Pharmacists and other health care providers can query the data contained in this database to review a patient's controlled substance prescription records, which gives the most current and accurate picture of the patient's controlled substance drug use.^{15,18}

Proper counseling and education on disposal methods is another way in which pharmacists can impact drug abuse and diversion rates, as improper disposal of medications, especially controlled substances, leads to increased risk of diversion and abuse.⁹ Though in the past it was recommended that patients flush unused medication down the toilet to ensure disposal and reduce the risk of accidental exposure to a family member, housemate or pet, this is no longer recommended largely due to environmental concerns. Medication counseling at the pharmacy should include information on the different methods and locations for safe medication disposal. Many sheriff or police department offices contain disposal receptacles that accept controlled substances. Additionally, with the finalization of the DEA's Secure and Responsible Drug Disposal Act in October 2014, many pharmacies may soon be participating in the taking back and destroying of controlled substances as well. The National Association of Boards of Pharmacy (NABP)-run Web site www.AwareRx.org provides a map of local drug disposal sites based on provided location and can be used by both patients and pharmacists.¹⁹

There are three main parties that can be useful in the identification of drug abuse: physicians, patients, and pharmacists.²⁰ When these three groups work together, the risk significantly decreases.

More than 80 percent of Americans see a physician throughout the year, which makes physicians a good candidate for identification. A physician should be expected to check on all medications during a patient visit and identify their indication. This can help the physician and/or patient realize when a medication is being used without an appropriate indication. Physicians can also perform regular screenings for drug abuse at their clinics.²⁰ If there is a rapid increase in the dosage a patient needs or frequent early refill requests, the physician should also note that there could be a potential problem with abuse. Many of the drugs of abuse are medically necessary for most patients, so physicians should not stop prescribing medications like stimulants, CNS depressants, or opioid pain relievers.²⁰ Rather than refusing to prescribe, physicians need to be aware of common red flags for abuse to avoid escalation to addiction.

By being well informed about their medications, patients can play a major role in identifying and preventing their potential for drug addiction and dependence. The patient should always take their medication as prescribed and never stop abruptly or change a dosing regimen without discussing it with his or her physician first.^{20,21} Also, patients should not use another person's prescription medication and be aware of potential interactions with other medications. Patients should inform their health care providers of all medications (prescription, OTC, herbal, etc.) they are taking before beginning any new medications.^{20,21}

There are many available resources that can be offered to patients who exhibit symptoms of addiction who are interested in help. The Substance Abuse and Mental Health Services Administration (SAMHSA) has a wide variety of tools that can be accessed through their Web site

(www.SAMHSA.gov/find-help), including a directory of opioid treatment programs, behavioral health treatment services locator and a suicide prevention hotline. In Michigan, the Health Professional Recovery Program is available to assist pharmacists and other health care professionals in recovery from both substance abuse and mental health disorders. Information can be found at www.HPRP.org.

Pharmacists can serve as the first line of defense in recognizing prescription drug abuse and diversion. Whether it is in identifying an early refill, falsified prescription or when counseling a patient on proper administration, the pharmacist can address any potential red flags that are identified with the patient and/or physician. Pharmacists can also contribute to decreasing rates of drug abuse and diversion by providing education to both physicians and patients, utilizing their own training and knowledge to make sound decisions regarding the validity of a prescription and provide education regarding the proper disposal methods for controlled substances.

Continuing Education Self-assessment Questions

1. Which of the following best describes physical dependence?
 - a. Physiological dependence in which the body requires a certain amount of drug in order to function normally
 - b. A brain disease with environmental, psychosocial and environmental factors
 - c. Characterized by behaviors referred to as the “five Cs”
 - d. Involves compulsive drug use

2. Which of the following pain medications are associated with potential abuse?
 - a. Meloxicam
 - b. Morphine
 - c. Metformin
 - d. Ibuprofen

3. Which of the following best describes tolerance?
 - a. Occurs when the body requires a certain amount of drug in order to function normally
 - b. Results in the patient needing increased amounts of medication to reach the same level of symptom relief
 - c. Syndrome that occurs when a medication is discontinued abruptly or an antagonist is administered
 - d. Results in the patient continuing to use the drug despite potential physical harm

4. Which of the following patients may be exhibiting a problematic pattern of use of an intoxicating substance?
 - a. PQ, who says that he sometimes experiences cravings for morphine between scheduled doses

- b. KB, a patient who has been slowly working to wean herself off of Norco over the past nine months
 - c. ST, a patient who mentions at your last counseling session that she is considering decreasing her dose of Adderall due to side effects
 - d. PT, who has been taking large doses of oxycodone over the past six months, despite losing his job three weeks ago due to excess sedation caused by the medication
5. Which of the following is an example of a pharmacist exercising corresponding responsibility?
- a. Kate, who refuses to fill a prescription for an abortifacient due to conflicting religious beliefs
 - b. Sherman, who fills a prescription for amoxicillin even though the patient has an allergy to penicillin on their profile
 - c. Caleb, who refuses to fill a prescription for morphine written by an out-of-state prescriber that the patient requests he fill for cash
 - d. Cole, who refuses to fill a prescription for Adderall because it is not signed by the prescriber
6. The FDA requires that prescribers participate in a REMS program to prescribe which of the following drugs?
- a. Amphetamine ER
 - b. Ritalin
 - c. Oxycontin
 - d. Vyvanse
7. How often are pharmacies and other dispensing entities required to report to the Michigan Automated Prescription System (MAPS)?
- a. Yearly
 - b. Monthly
 - c. Weekly
 - d. Daily
8. Which of the following is an example of a method by which pharmacists can positively impact rates of drug misuse and abuse?
- a. Filling and dispensing all prescriptions for controlled substances, no matter the situation
 - b. Calling a prescriber to verify a diagnosis code on a prescription for long-term opioid therapy in a 12-year-old patient
 - c. Allowing a patient to fill their controlled substance prescription early on a regular basis
 - d. Calling a prescriber and accusing them of running a pill mill
9. Which of the following is an important counseling point to mention to patients regarding proper storage and disposal of their controlled substance medication?
- a. Flush all unused medication down the toilet.
 - b. Keep medication in an easily-accessible, open spot.
 - c. Most pharmacies will accept returns of controlled substance medications.
 - d. Take all unused medication to your local sheriff's department or other site for proper disposal.
10. Which of the following patients is most at risk for prescription drug abuse?
- a. A nurse who is a recovering alcoholic

- b. An 18-year-old high school student and social marijuana user who is diagnosed with bipolar disorder
- c. A 79-year-old male with depression
- d. A 27-year-old female currently being treated for cocaine addiction

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