

PRESCRIPTION DRUG MISUSE AND DRUG DIVERSION

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Topic Overview

From 1999 to 2020, the number of deaths steadily climbed from just under 20,000 per year to over 100,000 deaths in 2021. These numbers expose how important it is for pharmacists and pharmacy staff to be aware of the signs of drug addiction and drug misuse. Pharmacists and pharmacy technicians should be aware of the behavioral characteristics and physical symptoms of a substance use disorder when dispensing medications that are often misused. However, there is a danger of overreacting and being too stringent when it comes to prescribing controlled substances. If providers are too stringent, patients who have a medical need for medications, may be denied adequate treatment. Pharmacy staff must also understand how race and ethnicity affect decisions when prescribing and dispensing opioids and pain medication.

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Target Audience: This educational activity is for pharmacists.

How to Earn Credit: From December 19, 2022, through December 19, 2025, participants must:

1. Read the “learning objectives” and “author and planning team disclosures;”
2. Study the section entitled “educational activity;” and
3. Complete the Course Test and Evaluation form. The Course Test will be graded automatically. Following successful completion of the Course Test with a score of 70% or higher, a statement of participation will be made available immediately. (No partial credit will be given.)

Learning Objectives: Upon completion of this educational activity, participants should be able to:

1. **Review** the history of prescription drug misuse and describe the current problem
2. **Identify** the signs of drug misuse and dependency by patients
3. **Identify** methods to detect drug misuse, with a focus on drug diversion tactics
4. **Learn** to control prescription drug misuse while not denying medication to patients for whom it is medically indicated

Disclosures

The following individuals were involved in the development of this activity: Steve Malen, PharmD, MBA, and Susan DePasquale, MSN, PMHNP-BC. There are no financial relationships relevant to this activity to report or disclose by any of the individuals involved in the development of this activity.

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Introduction

The number of people misusing prescription drugs, or dying from a drug overdose of prescription and illicit drugs in the United States has reached record highs in recent years. Pharmacists and pharmacy staff can help reduce this crisis by being aware of the behavioral and physical signs of drug addiction and drug misuse. Pharmacists and pharmacy staff also need to be aware of drug diversion and the steps they may take to detect drug diversion. While preventing drug diversion or drug misuse is important, it is also important to not underprescribe. Pharmacy staff must also understand how race and ethnicity affect decisions by healthcare providers when they prescribe and dispense opioids and pain medication.

History of Prescription Drug Misuse

The first addictive substance to be extracted from a natural product, within the scientific community, was morphine in 1806.¹ In that year, German pharmacist Friedrich Wilhelm Sertürner extracted morphine from crude opium.¹ By 1872, attention had been drawn to the potential misuse and addictive properties of morphine.² This was followed in 1878 by Eduard Levinstein's publication of "Morbid Craving for Morphia: A Monograph Founded on Personal Observations."² In the preface, the author wrote that the object of this work was to "demonstrate the ill effects which continued injections of morphia have upon the human body; to show the dangers threatening society by such a continuous use of the drug; and to point out the remedies for the redress of this abuse."²

By the late 1800s and continuing into the early 1900s, several theories were proposed to explain the causes of drug addiction.¹ These ranged from changes in brain cells to blockage of endocrine gland passages.¹ During this time, cure rates for drug addiction were reportedly as high as 75-99%, so there was tremendous optimism regarding the treatment options.¹ This optimism faded in the US following the end of World War I, when a sharp increase in drug use, including morphine, heroin, opium, and cocaine, was

reported.¹ Morphine addiction actually plagued the physician community as opioid addiction.¹

In 1914, the Harrison Anti-Narcotics Act was the first attempt to regulate these harmful behaviors. Regulations promulgated under the Harrison Act stated that “maintenance of nonmedical addicts on narcotics to avoid withdrawal would not be considered legitimate medical practice.”¹ The federal government used the Act and regulations to prosecute doctors who issued prescriptions for narcotics to assist with withdrawal.¹ This would be the equivalent of prosecuting physicians today for prescribing buprenorphine, naloxone, or methadone, which are standard drug treatments for patients with an opioid or substance use disorder.³

In 1919 the backlash by the medical community reached the United States Supreme Court, where doctors argued not only that this was an intrusion on their medical practice but, more importantly, that addiction was a medical disease that needed to be treated. During this time, it was quite controversial since addiction was viewed as “psychological” and not seen as a true medical problem. This position by government agencies restricted opportunities to conduct research into addiction and its causes.¹

Despite the controversy, during the 1920s and 30s, the Public Health Service (PHS), the Rockefeller Institute, and the National Research Council (NRC) studied prescription drug misuse. The conclusion of the research was that there was no point in studying population data further, and instead, the research needed to focus on finding a non-addictive substitute for these drugs, *e.g.*, morphine.¹ A substitute for morphine was found by German scientists during World War II.^{1,4} Methadone is a synthetic narcotic that was developed because morphine was in short supply during the war.⁴

By 1961, the research in the United States expanded to other familiar drugs such as naloxone and naltrexone. A year later, the President's Commission on Narcotics and Drug Abuse reported that drug addiction should be treated as a disease, and by 1965 drug addiction became recognized as a disease by the WHO.¹

Thereafter, federally funded community centers were established, and by 1970, penalties for narcotics possession had softened. During the 1970s and 1980s, there were significant changes in the politics around drug addiction, which led to increased funding for research into drug addiction, building on earlier efforts to study this problem.¹

Over the past 30 years, there have been sharp increases in prescription drug misuse. Misuse continually rose into the late 1990s and then plateaued at just below 3 million initiators per year.¹ By 2012, only marijuana was more prevalent than illicit prescription drug use and substance use disorders.⁵

By 2012, the most common class of prescription drugs to be misused were opioids, and this can be seen with the following statistic: from 1992 to 2012, the number of adults misusing prescription opioids increased from 4.9 million to 12.5 million.⁵ Tranquilizers were the second most misused prescription drug class at 6 million people in 2012, and stimulants were third at 3.3 million people. Surprisingly, a study at a substance use disorder treatment facility found that 17% of patients misuse antipsychotic medications. Not surprisingly, the US has the highest prevalence of drug misuse, with Canada, New Zealand, and India also at the top of the list. In Canada, a study in 2013 found that 5% of the population misused opioids. In 2012, the US had roughly the same number of opioid prescriptions as adults.⁵

Around this time, prescriptions for opioids increased tremendously in adult and pediatric emergency departments, and ambulatory settings. Interestingly, from 2003 to 2013, stimulants increased, and opioids decreased among college students.⁵

Studies found that prescription drug misuse increased in the following populations:⁵

- Native Americans and Caucasians
- Younger and unmarried
- Other substance use disorders and psychiatric illness
- Rural areas

- Exposure to violence
- Delinquent behavior

The Current Prescription Drug Misuse Problem

The statistics have been grim in the US over the past decades, causing morbidity and mortality that lowered life expectancy in 2019. From 1999 to 2020, the number of deaths steadily climbed from just under 20,000 per year to over 100,000 deaths in 2021.^{6,7} Specifically, of people 12 or older, 5.8% misused prescription psychotherapeutic drugs, and 3.3% misused prescription pain relievers;⁶ and, an estimated 5% of 12th graders misused prescription drugs over a 12-month period in 2021.⁶ Among people aged 12 or older in 2020, almost 800,000 had a disorder relating to the use of stimulants.⁶ In 2020, over 1.2 million people had a prescription tranquilizer or sedative use disorder over the prior 12 months.⁶ Finally, and most disturbing, over 2.3 million people in the US had a disorder relating to prescription opioids over the prior 12 months.⁶

In 2020, the NIDA reported almost 6000 deaths due to antidepressants, over 12,000 deaths due to benzodiazepines, and over 16,000 deaths due to *prescription* opioids.⁶ These numbers are part of a bigger picture that culminated with 107,622 deaths from a drug overdose in the United States in 2021.⁷

Signs of Drug Addiction and Misuse

The number of people misusing prescription drugs, or dying from a drug overdose of prescription and illicit drugs in the US, described above, exposes how important it is for pharmacists and pharmacy staff to be aware of the signs of drug addiction and drug misuse. As healthcare professionals, pharmacists and pharmacy staff can help reduce the opioid epidemic and still provide patient care, but this requires a delicate balance. Pharmacists and pharmacy staff must balance the need to reduce prescription drug misuse (and a reduction in prescribing opioids) with the legitimate role opioids, and other

prescription drugs may have in providing proper patient care and legitimate drug prescribing.

Behavioral Signs

Koob, *et al.* (2016) describes the DSM-5's definition of drug addiction as "a chronically relapsing disorder, characterized by compulsion to seek and take the drug, loss of control in limiting intake, and emergence of a negative emotional state (eg, dysphoria, anxiety, irritability) when access to the drug is prevented."⁸ A full review of the causes and neurobiological aspects of drug addiction are beyond the scope of this course, but it is important to know the behaviors and personality characteristics that flow from or are associated with drug addiction.

Pharmacists and pharmacy technicians should be aware of these behaviors and personality characteristics when dispensing medications that are often misused. In the pharmacy setting, signs of an addiction problem could be a patient becoming agitated when he or she is told there will be a delay in prescribing or dispensing the patient's medication. A patient with a drug addiction problem may be easily confused, and engage in blame-shifting. These are signs and behaviors that may be a sign of drug addiction. Adolescent patients with poor school attendance or performance are especially at risk of prescription drug misuse or a substance use disorder.⁹ Pharmacists and technicians should not ignore these signs or disregard them because they do not want to deal with these patients.

Physical Signs

In addition to emotions, there are some physical symptoms to watch out for, such as opioids causing slurred speech. Stimulants, on the other hand, cause rapid and repetitive speech. Regarding a person's energy level, stimulants cause people to be hyper, and opioids cause sleepiness.¹⁰

A patient's overall appearance may change, and the patient may have bloodshot eyes, widely dilated pupils, or pin-point pupils, which may indicate drug use.¹¹ Dilated pupils may mean that a patient is using cocaine, amphetamines, or a hallucinogen. Pinpoint or constricted pupils (miosis) may mean that a patient is using opioids, barbiturates, or heroin.¹¹ Pharmacists and technicians are particularly situated to observe these physical signs.

Drug Diversion, Doctor Shopping, and Doctor Hopping

Historically, people who used illicit drugs needed to know a dealer to access or buy them. While this scenario still occurs, people who use controlled substances for non-medical purposes are increasingly interested in obtaining prescription drugs as their drug of choice, often resorting to various methods of obtaining prescription drugs, such as drug diversion, doctor shopping, and doctor hopping.^{12,13}

Drug diversion describes the process of transferring prescription drugs to a person, for whom they were not intended or prescribed, for illicit use.¹² Drug diversion can be seen with established patients who sometimes genuinely need medication for pain control, but who may sell their extra medications as a way of making money. Some people divert drugs because they have a substance use disorder. These individuals who have access to prescription drugs, for one reason or another, may sell a prescription drug and use the money to buy a drug they crave. Also, people may divert drugs from others, such as friends or partners. Diversion also occurs at the healthcare provider level.¹²

Those who misuse prescription drugs may also practice doctor shopping or doctor hopping.¹³ Doctor shopping occurs when a patient seeks out multiple prescribers to obtain more opioids or other controlled substances than their provider is willing to prescribe and dispense.¹³ Patients who doctor shop often travel great distances to obtain their drugs.¹³ They will even cross state lines to obtain the prescription they seek.¹³ Some clinicians refer to this behavior as doctor hopping.¹³ Doctor hopping is "characterized by above average patient-to-prescriber travel distances and patients bypassing nearby

prescribers in favor of more distant ones.”¹³ Doctor hopping is a clear indication of high-risk opioid use and is distinct from and complementary to doctor shopping. Prescription Drug Monitoring Programs may be used to evaluate a patient’s travel patterns as an indicator of potential misuse.¹³

If the patient is seeking to refill their prescription early, especially if this happens often, they may be diverting their prescription, or they may be addicted to the substance. When patients prescribed a controlled substance claim that they lost their prescription, this may be a sign of addiction and misuse, especially if losing their drugs is a pattern.

There are many other methods that people use to gain inappropriate access to controlled substances. These techniques not only hurt the people who are diverting and misusing drugs, but they also usually result in barriers to care for patients who need these drugs for appropriate medical reasons.

Drug Theft and Prescription Forgeries

Drug theft can occur at any point in the prescription drug supply chain from the manufacturer to the pharmacy. Theft can also happen in the patient’s home from relatives or friends who have access.¹⁴ Prescription pad theft and forgery are common, which has caused states like New York to create laws requiring electronic prescriptions.¹⁵ Finally, illicit prescribing or “pill mills” are prescribers who take cash from patients to prescribe whatever they want in very large amounts.¹⁶ These prescribers have been shut down all over the country due to “pill mill legislation.” This legislation from 2000 to 2016 has resulted in an 8.5% reduction in drug-related suicide, which represents a reduction of almost 700 drug-related suicides annually.¹⁷

Systematic Methods of Detection

A pharmacist or technician should not rely solely on their intuition but should follow systematic rules set up by the pharmacy. Additionally, some pharmacies will require different rules based on the location and frequency of diverted medication. In order to detect drug diversion systematically, it is

important to know which drugs are more likely to be misused, and which drugs have the highest demand or “street value.” These are the prescription drugs that patients will try to divert, or that are popular with drug dealers. The following drugs fall into these categories, and they should be flagged in the system for special attention:¹⁸

- Methyltestosterone, testosterone
- Pentobarbital, alprazolam, diazepam
- Ketamine, diphenoxylate
- Fentanyl, hydrocodone, hydromorphone, meperidine, methadone, morphine, oxycodone, oxymorphone
- Amphetamine, dextroamphetamine, methamphetamine, and methylphenidate.

Prescription Drug Monitoring Program

The prescription drug monitoring program (PDMP) is the first and most important system for detecting diversion.¹⁹ This system can tell what prescriptions a patient has filled at any pharmacy in the state and other states.¹⁹ This includes prescriptions that are through insurance and cash, so it is quite comprehensive. As a pharmacy, it is important to check the PDMP every time a controlled prescription is verified and to act whenever there are any red flags, such as doctor shopping or hopping, pharmacy shopping, or early refills.

Illegal internet pharmacies attempt to evade state licensing requirements by operating across state and international borders. They provide controlled prescriptions to patients without requiring a prescription.²⁰ It is not unreasonable for pharmacists and technicians to consider this as a possibility when other behavioral and physical addiction signs are present. This means that even if a patient is not flagged on PDMP but shows troubling signs of misuse, addiction, or diversion, pharmacists and staff may consider whether the patient is evading state law by using an illegal online internet pharmacy.

Morphine Milligram Equivalents

Morphine Milligram Equivalents (MME) system is a great program that is automatically calculated in the PDMP.^{21,22} This system allows a clinician to calculate the total amount of opioids someone is prescribed, regardless of the specific opioid, as it standardizes them all based on their potency. This number is helpful in seeing the trends of how much a patient is prescribed, and if there are any significant increases.²² This number also helps a clinician stratify patients based on their risk of overdose. For instance, when a patient takes more than 50 MME/day, the patient is twice as likely to overdose compared to dosages of 20 MME/day.²³ This stratification is a good tool to uncover which patients may benefit most from naloxone, which in most states is available to patients without a prescription from their doctor as long as the pharmacy has a standing order in place either from the state or a doctor.²⁴ Additionally, this stratification allows a pharmacist to focus on the patients with the highest chance of being addicted. When drugs are diverted, they are usually in large doses to make the diversion worthwhile.

Early fill rules are another important system pharmacies need to implement, not to let bias affect decision-making. Most pharmacies follow the two-day rule, which means a patient cannot refill more than two days per month. This means if the prescription is for 30 days, then two days, but if the prescription is for 15 days, only one day early is allowed. The Microsoft Office calculator application has a useful date calculation tool that bypasses counting days on a calendar. The last date the patient picked up the prescription is input, and it then calculates the total number of days since the drug was dispensed. It is important not to bypass this rule unless the prescriber authorizes it. It is also important to document in the general profile so that the next time the patient tries to fill it early, there will be a clear notation, and the staff will not have to search for the information.

Mile radius restrictions are another great system for preventing drug diversion and misuse. When people have issues with their pharmacy, they often will drive far distances to resolve these issues. Pharmacy hopping, discussed above, is a red flag for drug diversion. Depending on a community's

population density, the exact mile radius may vary; however, each pharmacy should have a geographical area that the pharmacy serves, and the pharmacy should *generally* limit its services to within that area. This radius should apply not only to the patient but also to the doctor's address, as many patients will have doctors that are far from their home and will want a pharmacy nearby. The point of this radius restriction is to allow a pharmacy to take care of the patients in its community, thereby limiting diversion. It is also a good way to remove bias from decision-making when deciding whether to fill a prescription.

If a pharmacy receives a first-time prescription for a controlled prescription, opioids in particular, and it is more than a seven-day supply, the better practice is to call the doctor to confirm the prescription. There are states, such as New York, which require this; however, even if a state does not require this, it would be a good systematic practice to prevent diversion.¹⁵ The reason for this practice is that if a patient has just started an opioid, there is no reason for them to have more than a seven-day supply of the medication, as most pain does not last that long. If the pain does last longer than it is recommended for further evaluation as it can be a sign of a more serious problem.

Early Intervention

The most effective intervention for a person at risk of an opioid or substance use disorder is to reach the patient early, preferably before the patient starts using addictive medications or before the patient develops a use disorder.^{25,26} This usually means reaching patients when they are adolescents.²⁶

Controlling Prescription Drug Misuse without Denying Patients Proper Treatment

Confronting the opioid crisis and misuse of prescription drugs is crucial; however, there is a concern that healthcare providers may overreact and underprescribe pain medications that are medically needed by patients. There

is also evidence that race and ethnicity play a role in prescribing and dispensing pain medications when they should not, leading to negative health outcomes for these populations. Finally, there are patients who have substance use disorders and need pain medications. These patients should not be denied treatment for their pain, but healthcare providers need to handle these patients differently.

Underprescribing for Pain

The harm of overprescribing opioids carries significant risks of a substance use disorder, overdose, and injury or death. However, underprescribing can also cause harm to a patient.^{21,27} First of all, patients who are not given enough pain medication from their doctor may seek that pain relief from other, more dangerous sources. The illegal drug market, for many people, is a competitor to the legal pharmacy market as patients can get drugs from a drug dealer often much easier and cheaper than from a pharmacy. Pharmacists also need to be aware of this. If they are too stringent on patients that have legitimate pain, those patients may get the same medication from another, illicit source. Unfortunately, not only is it illegal for a patient to go this route, but it could also be more dangerous as fentanyl-laced drugs are increasingly the cause of drug-related deaths in the country. The difficulty for the prescriber and the pharmacist is that there is a fine line between not overprescribing and prescribing medications for legitimate pain conditions. This is exactly why the systematic methods above are often the best option for prescribers and pharmacists. During the past 30 years, there has been an uptick in opioid prescriptions and, at the same time, an uptick in opioid deaths from illegal and legal sources. Some researchers have found that opioid deaths can result from underprescribing opioids.²⁷ Some providers have “dumped” patients, who then have no choice but to seek medication from other sources, which are not always legal sources.²¹

Some researchers state that underprescribing for pain may have contributed to the emergence of the opioid crisis.²¹ On the other hand, it may have been the tremendous increase in opioid prescriptions that drove the

opioid crisis.⁵ In either case, undertreatment of pain is returning, and this is contributing to the opioid crisis.²¹

Discrimination in Prescribing Controlled Substances

Race discrimination in the healthcare setting continues to impact patient outcomes negatively.²⁸⁻³² Racial discrimination in healthcare is also a risk factor for opioid misuse.²⁸ Disparity in pain management is most notable in the African American community.²⁸⁻³¹ Schulson, *et al.* (2019) reported that African Americans perceive higher levels of discrimination, whereas Latinos, immigrants, and patients with limited English proficiency reported a decline in discrimination.³⁰ Nguyen, *et al.* (2018) found a decline in reports of discrimination from Black patients and no change in reports from Latinos.³⁰ Nevertheless, Nguyen, *et al.*, acknowledged that race and ethnic discrimination is still too common.³²

For example, Schulson, *et al.*, reported that Black patients were more likely to report discrimination than White patients (20% vs 1%), and less likely to report opioid misuse (6% vs 8%). However, when normalizing the data for discrimination, the data shows that discrimination increases opioid misuse.³⁰

The African American community consistently has high rates of discrimination, which affects patient perceptions and patient care.³⁰ Statistically, White patients are more likely to misuse opioids than Blacks and more likely to be prescribed opioids as well. However, one study found that PDMPs appear to reduce opioid dispensing more in Black patients than White patients.²⁹ Finally, Whites have higher rates of opioid use nationally, but opioid deaths have risen more steeply among Blacks (43%) than whites (22%) over the last five years.³¹

Treating Patients Who Have Pain and a Substance Use Disorder

When a patient has a substance use disorder, the safest treatment is to avoid opioids and benzodiazepines.³³ If an opioid is necessary, then screening tools should be used to assess the level of risk of addiction. If a patient falls

into a high-risk category, then a “written informed consent and treatment agreement” should be initiated to create as much structure as possible. This structure will allow only one prescriber and one pharmacy to dispense commonly misused drugs. Additionally, this agreement will prevent refills or replacement medications in case of loss, damage, or theft. Random urine drug screens and PDMP reports are also important for the clinical team to assess whether the patient is misusing. Ideally, chronic opioid treatment should be avoided in patients with an addiction to alcohol or illicit drugs. These patients are recommended to participate in “intensive substance abuse treatment.”³³ Risk factors include the following:

- Young age
- Benzodiazepine use
- Depression, anxiety, and heavy smoking

Non-opioid treatment should be tried first in this patient population. The best evidence supports the use of NSAIDs like ibuprofen and naproxen, which is comparable to 15 mg of morphine. Acetaminophen can be attempted, but the evidence shows it will usually not help.³⁴ Cognitive behavioral therapy and physical activation are other options that are much safer and more effective than opioids for pain. Antidepressants such as amitriptyline and anticonvulsants such as gabapentin can also be effective for pain and are safer than opioids. These medications can also be effective for comorbid conditions such as depression and anxiety in this patient population. Finally, ketamine and cannabinoids also show some evidence for pain treatment and are safer than opioids. These options have less evidence given legal reasons; however, for some patients could be the only solution that helps.³⁵

Finally, there are new treatment options available that may improve patient adherence compared to daily options like buprenorphine/naloxone and methadone.^{3,36} There is also a form of naltrexone that is a once-monthly injectable that is approved for alcohol dependence and opioid dependence.³⁷

Sample Case Study

A pharmacy technician is working in the pharmacy when a new patient comes in with an opioid prescription. The patient lives far away, but the doctor is in the same town as the pharmacy. What systematic methods can be used by your pharmacy to make sure the medication can be safely filled?

First, it is important to check the prescription and ensure all the necessary parts and information are on it. This can vary from state to state, so check local laws to ensure what is required. There are items such as a patient's address, and date of birth that can be filled in by the pharmacy staff in most states. Then there are items such as directions and strength, which can be filled in after a conversation with the prescriber. Finally, there are items on the prescription which cannot be added even with a conversation with the prescriber, such as a prescriber's signature.

Second, the PDMP is an important tool, especially since the patient lives far away. Also, it is important to check any neighboring states in relation to the pharmacies where the patient lives. After reviewing the PDMP, a reasonable determination can be made whether there are red flags that the patient may be diverting drugs. The more doctors and pharmacies on the list, the higher the chance a patient is misusing drugs. Finally, from the PDMP, a clinician can ensure that the patient is not filling a prescription beyond the two-day policy. This policy helps assure that a patient is not dispensed excess medication at a specific time.

Summary

From 1999 to 2020, the number of deaths steadily climbed from just under 20,000 per year to over 100,000 deaths in 2021. The number of people misusing prescription drugs, or dying from a drug overdose of prescription and illicit drugs in the US, described above, exposes how important it is for pharmacists and pharmacy staff to be aware of the signs of drug addiction and drug misuse.

Pharmacists and pharmacy technicians should be aware of the behavioral and personality characteristics of a patient with a substance use disorder when dispensing medications that are often misused. In addition to emotions, there are some physical symptoms to watch out for, such as opioids causing slurred speech. Stimulants may cause rapid and repetitive speech. Regarding a person's energy level, stimulants cause people to be hyper, and opioids cause sleepiness

Drug diversion describes the process of transferring prescription drugs to a person, for whom they were not intended or prescribed, for illicit use. Those who misuse prescription drugs may also practice doctor shopping or doctor hopping. A pharmacist or technician should not rely solely on their intuition but should follow systematic rules set up by the pharmacy. Additionally, some pharmacies will require different rules based on the location and frequency of diverted medication. The PDMP is the first and most important system for detecting diversion.

Detecting drug misuse can be difficult. There is a danger of being too stringent when prescribing or dispensing controlled substances. Therefore, while preventing drug diversion or drug misuse is important, it is also important to not underprescribe. Patients who are underprescribed may seek illegal sources. Illegally sourced drugs may be corrupted, *e.g.*, they may be laced with fentanyl, or other deadly contaminants, which can increase the risk of death. Pharmacy staff must also understand that discrimination toward minority populations has led to poorer outcomes for minority patients who were denied needed pain medication.

Course Test

1. Drug diversion is when prescription drugs are taken

- a. more frequently.
- b. by a different route than intended.
- c. to get "high."
- d. by a patient who was not prescribed the drug.

2. Drug misuse is when prescription drugs are

- a. taken more frequently.
- b. taken by a different route than intended.
- c. taken to get "high."
- d. All of the above

3. Studies show that _____ increases the risk of prescription drug misuse.

- a. married status
- b. living in urban areas
- c. exposure to violence
- d. older age

4. Which of the following drugs has very little "street" value?

- a. Alprazolam
- b. Fentanyl
- c. Hydrocodone
- d. Ibuprofen

5. True or False: The prescription drug monitoring program (PDMP) is a useful systematic tool for drug misuse detection.

- a. True
- b. False

6. Which of the following are risk factors for substance use disorder?

- a. Young age
- b. Benzodiazepine use
- c. Depression, anxiety, and heavy smoking
- d. All of the above

7. Ibuprofen is equivalent to ___ mg of morphine.

- a. 10
- b. 15
- c. 20
- d. 25

8. _____ is a non-opioid treatment that is ineffective for pain with substance use disorder.

- a. Ibuprofen
- b. Acetaminophen
- c. Cognitive behavior therapy
- d. Physical activation

9. True or False: Pharmacy staff should go with their "gut" when deciding to accept or deny a prescription for a controlled substance.

- a. True
- b. False

10. Amitriptyline is _____ that may be used for pain with substance use disorder

- a. an antiviral
- b. an SNRI
- c. a tricyclic antidepressant
- d. a skeletal muscle relaxant

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