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## Prescription Drug Abuse Part I Introduction

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Your Life Your Health

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Recent publicity about a Southeast Texas Physician who lost his medical license for the prescribing of potentially addictive medications has raised the public consciousness about the abuse of and the potential for addiction to prescription drugs. Recent studies suggest that the abuse of prescription drugs is rapidly approaching if not exceeding the of illicit or non-prescription drugs.

Although many prescription drugs can be abused, there are several classifications of medications that are commonly abused. The three classes of prescription drugs that are most commonly abused are:

- Opioids, which are most often prescribed to treat pain
- Central nervous system (CNS) depressants, which are used to treat anxiety and sleep disorders
- Stimulants, which are prescribed to treat the sleep disorder narcolepsy and attention-deficit hyperactivity disorder (ADHD).

What are opioids?

Opioids are commonly prescribed because of their effective analgesic, or pain-relieving, properties. Medications that fall within this class-referred to as prescription narcotics-include morphine (e.g., Kadian, Avinza), codeine, oxycodone (e.g., OxyContin, Percodan, Percocet), and related drugs. Morphine, for example, is often used before and after surgical procedures to alleviate severe pain. Codeine, on the other hand, is often prescribed for mild pain. In addition to their pain-relieving properties, some of these drugs-codeine and diphenoxylyate (Lomotil) for example-can be used to relieve coughs and colds.

How do opioids affect the brain and body?

Opioids act on the brain and body by attaching to specific proteins called opioid receptors, which are found in the brain, spinal cord, and gastrointestinal tract. When these drugs attach to certain opioid receptors, they can block the perception of pain. Opioids can produce drowsiness, nausea, constipation, and, depending upon the amount of drug taken, depress respiration. Opioid drugs also can induce euphoria by affecting the brain regions that mediate what we perceive as pleasure. This feeling is often intensified for

those who abuse opioids when administered by routes other than those recommended. For example, OxyContin often is snorted or injected to enhance its euphoric effects, while at the same time increasing the risk for serious medical consequences, such as opioid overdose.

What are the possible consequences of opioid use and abuse?

Taken as directed, opioids can be used to manage pain effectively. Many studies have shown that the properly managed, short-term medical use of opioid analgesic drugs is safe and rarely causes addiction-defined as the compulsive and uncontrollable use of drugs despite adverse consequences-or dependence, which occurs when the body adapts to the presence of a drug, and often results in withdrawal symptoms when that drug is reduced or stopped.

Withdrawal symptoms include restlessness, muscle and bone pain, insomnia, diarrhea, vomiting, cold flashes with goose bumps ("cold turkey"), and involuntary leg movements. Long-term use of opioids can lead to physical dependence and addiction. Taking a large single dose of an opioid could cause severe respiratory depression that can lead to death.

Is it safe to use opioid drugs with other medications?

Only under a physician's supervision can opioids be used safely with other drugs. Typically, they should not be used with other substances that depress the CNS, such as alcohol, antihistamines, barbiturates, benzodiazepines, or general anesthetics, because these combinations increase the risk of life-threatening respiratory depression.

What are CNS depressants?

CNS depressants, sometimes referred to as sedatives and tranquilizers, are substances that can slow normal brain function. Because of this property, some CNS depressants are useful in the treatment of anxiety and sleep disorders. Among the medications that are commonly prescribed for these purposes are the following:

- Barbiturates, such as mephobarbital (Mebaral) and pentobarbital sodium (Nembutal), are used to treat anxiety, tension, and sleep disorders.
- Benzodiazepines, such as diazepam (Valium), chlordiazepoxide HCl (Librium), and alprazolam (Xanax), are prescribed to treat anxiety, acute stress reactions, and panic attacks. The more sedating benzodiazepines, such as triazolam (Halcion) and estazolam (ProSom) are prescribed for short-term treatment of sleep disorders. Usually, benzodiazepines are not prescribed for long-term use.

How do CNS depressants affect the brain and body?

There are numerous CNS depressants; most act on the brain by affecting the neurotransmitter gammaaminobutyric acid (GABA). Neurotransmitters are brain chemicals that facilitate communication between brain cells. GABA works by decreasing brain activity. Although the different classes of CNS depressants work in unique ways, it is through their ability to increase GABA activity that they produce a drowsy or calming effect that is beneficial to those suffering from anxiety or sleep disorders.

What are the possible consequences of CNS depressant use and abuse?

Despite their many beneficial effects, barbiturates and benzodiazepines have the potential for abuse and should be used only as prescribed. During the first few days of taking a prescribed CNS depressant, a person usually feels sleepy and uncoordinated, but as the body becomes accustomed to the effects of the drug, these feelings begin to disappear. If one uses these drugs long term, the body will develop tolerance for the drugs, and larger doses will be needed to achieve the same initial effects. Continued use can lead to physical dependence and - when use is reduced or stopped - withdrawal. Because all CNS depressants work by slowing the brain's activity, when an individual stops taking them, the brain's activity can rebound and race out of control, potentially leading to seizures and other harmful consequences. Although withdrawal from benzodiazepines can be problematic, it is rarely life threatening, whereas withdrawal from prolonged use of other CNS depressants can have life-threatening complications. Therefore, someone who is thinking about discontinuing CNS depressant therapy or who is suffering withdrawal from a CNS depressant should speak with a physician or seek medical treatment.

Is it safe to use CNS depressants with other medications?

CNS depressants should be used in combination with other medications only under a physician's close supervision. Typically, they should not be combined with any other medication or substance that causes CNS depression, including prescription pain medicines, some OTC cold and allergy medications, and alcohol. Using CNS depressants with these other substances - particularly alcohol - can slow both the heart and respiration and may lead to death.

What are stimulants?

As the name suggests, stimulants increase alertness, attention, and energy, as well as elevate blood pressure and increase heart rate and respiration. Stimulants historically were used to treat asthma and other respiratory problems, obesity, neurological disorders, and a variety of other ailments. But as their potential for abuse and addiction became apparent, the medical use of stimulants began to wane. Now, stimulants are prescribed for the treatment of only a few health conditions, including narcolepsy, ADHD, and depression that has not responded to other treatments.

How do stimulants affect the brain and body?

Stimulants, such as dextroamphetamine (Dexedrine and Adderall) and methylphenidate (Ritalin and Concerta), have chemical structures similar to a family of key brain neurotransmitters called monoamines, which include norepinephrine and dopamine. Stimulants enhance the effects of these chemicals in the brain. Stimulants also increase blood pressure and heart rate, constrict blood vessels, increase blood glucose, and open up the pathways of the respiratory system. The increase in dopamine is associated with a sense of euphoria that can accompany the use of these drugs.

What are the possible consequences of stimulant use and abuse?

As with other drugs of abuse, it is possible for individuals to become dependent upon or addicted to many stimulants. Withdrawal symptoms associated with discontinuing stimulant use include fatigue, depression, and disturbance of sleep patterns. Repeated use of some stimulants over a short period can lead to feelings of hostility or paranoia. Further, taking high doses of a stimulant may result in dangerously high body temperature and an irregular heartbeat. There is also the potential for cardiovascular failure or lethal seizures.

Is it safe to use stimulants with other medications?

Stimulants should be used in combination with other medications only under a physician's supervision. Patients also should be aware of the dangers associated with mixing stimulants and OTC cold medicines that contain decongestants; combining these substances may cause blood pressure to become dangerously high or lead to irregular heart rhythms.

Commonly used Opioids

- Oxycodone (OxyContin, Percodan, Percocet)
- Propoxyphene (Darvon)
- Hydrocodone (Vicodin, Lortab, Lorcet)
- Hydromorphone (Dilaudid)
- Meperidine (Demerol)
- Diphenoxylate (Lomotil)
- Morphine (Kadian, Avinza, MS Contin)
- Codeine
- Fentanyl (Duragesic)
- Methadone

Commonly used CNS Depressants

Barbiturates

- Mephobarbital (Mebaral)
- Pentobarbital sodium (Nembutal)

## Benzodiazepines

- Diazepam (Valium)
- Chlordiazepoxide hydrochloride (Librium)
- Alprazolam (Xanax)
- Triazolam (Halcion)
- Estazolam (ProSom)
- Clonazepam (Klonopin)
- Lorazepam (Ativan)

## Commonly used Stimulants

- Dextroamphetamine (Dexedrine and Adderall)
- Methylphenidate (Ritalin and Concerta)

Part II Introduction will continue the general discussion of prescription drug abuse and ways of treating the same. Part III and subsequent parts will talk about physician responsibility in helping patients avoid prescription drug abuse and the steps which SETMA is taking in that direction.