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SUBSTANCE USE IN PREGNANCY

Prepared By:

Aaron Fields, MD

University of Rochester Medical Center, NYS Maternal & Infant Health Center of Excellence

265 Crittenden Blvd, Rochester, NY 14642 – Tel: 585-276-7893 – Fax: 585-461-4532
mihcoe@urmc.rochester.edu – www.mihcoe.org

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Introduction

Although the opioid epidemic has become a popular topic of conversation in political and public policy arenas, many in the healthcare system have known for years that there was an impending tidal wave of people dependent on opioids and other drugs, which were preventing them from fully engaging as contributing members of society. The fields of Addiction Medicine and Addiction Psychiatry have been present in one form or another in the United States since the latter half of the 18th century. It wasn't until the 1950s and 1960s that physicians specializing in addiction began to organize. Thanks to the efforts of those pioneers of addiction treatment during the 1950s and 1960s, by the 1980s, the wider medical establishment was beginning to acknowledge the importance of specialized addiction treatment.¹

The purpose of this report is to summarize the current body of information and evidence regarding drug addiction during pregnancy. This report begins with a description of what addiction is and how it occurs. This is followed by a synopsis of what many of the more commonly abused categories of drugs are, and some basics about how these drugs cause their effects. Next, an overview of the rates at which the different categories of drugs are abused in the United States and among pregnant women (when such data is available), and the effects these drugs have on a developing fetus/infant and on the mother. Finally, the report concludes with an introduction to the clinical philosophy of “Screening, Brief Intervention, and Referral to Treatment” (SBIRT), how to recognize addiction or drug use problems, and how to access local resources to provide help.¹

Many of the explanations of how the brain works, how drugs work, and their effects on the body have been simplified. For a more detailed explanation of most of these subjects, please refer to our references, in particular The ASAM Principles of Addiction Medicine textbook.¹

To most efficiently utilize this report, the most important section is the review of SBIRT toward the end of the report. The skills discussed in that section are best learned over multiple repetitions, and should be reviewed 2-3 times at a minimum before attempting to use clinically. After an initial review of SBIRT, the section on the drugs of abuse will provide the basic information needed to recognize the various classes of abused drugs. The screening tools included in Appendix B can be printed or copied for use with patients. Rather than memorizing the effects of each different kind of drug on pregnancy, when use has been identified in a patient, go back to the section on effects of drug use during pregnancy, and review this information with the patient. Part of the power of SBIRT is in educating and empowering patients with knowledge. The section on the rates of use can be used to help patients put their own substance use/abuse into context—show them they are not alone, but that substance use, especially in pregnancy, is not normal.

What is Addiction?

Addiction is a chronic disease of the brain, which follows a classic remission and relapse pattern in which people recover for periods of time, then experience “flares” during which they return to use and suffer the consequences of their addiction. There are many ways addiction can develop, but once it has, it tends to be self-reinforcing through behavioral and emotional changes in the brain. Although many brain receptors and signals are triggered by drug use, none seem so strongly involved in the development of addiction as dopamine. Dopamine is often referred to as the “reward” signal in the brain. This oversimplifies the many roles of dopamine, but serves as a good general framework.¹

Each time a person uses addictive drugs, they experience a surge of dopamine in their brain, especially in the regions associated with reward and self-control (decision-making and emotional control). These pathways originally developed to respond to things such as food and sex, which explains why most people feel good after eating or after sex. Drug use leads to levels of dopamine significantly higher than those normally generated in these pathways. These surges of dopamine lead to reinforcement of the behaviors that caused them. This causes the person to compulsively repeat behaviors and actions, as though they have no control over themselves, despite negative impacts to their physical or social health.¹

Two of the pre-eminent drug and alcohol addiction treatment organizations are the American Society of Addiction Medicine (ASAM) and the National Institutes on Drug Abuse (NIDA). Both of these organizations, and many others, support the definition of addiction as a chronic disease of the brain, best treated by a chronic care model similar to that used to treat other medical conditions such as high blood pressure or diabetes. For more details on how these organizations define addiction, see Appendix A.

Drugs of Abuse

Opioids

Opioids are a class of drugs that bind to the opioid receptor throughout the human body. They fall into one of three categories: natural opioids (“opiates”), semisynthetic opioids, or synthetic opioids. The naturally derived opioids, also referred to as “opiates”, include codeine, morphine, and thebaine. Scientists have also created semisynthetic opioids that are created from these naturally occurring opiates. These include hydrocodone, hydromorphone, oxycodone, oxymorphone, and buprenorphine. Lastly, there is the group of “synthetic opioids” which are completely man-made and do not occur in nature. The most common of these are fentanyl, methadone, and meperidine. There are literally thousands of synthetic compounds that have been created that can activate the opioid receptor, most of these have not been produced other than in select research laboratories.^{1,2}

Many different types of opioid receptors exist throughout the body. These different receptors are involved with different effects of the drugs. Activation of some leads to pain relief, others cause sedation, and yet others cause constipation or mood stabilization.¹

Methadone in particular can also cause changes to a particular measure on EKGs, a test to measure the electrical activity of the heart, which can predispose to a potentially fatal heart rhythm. Because of this, anyone on methadone or planning to start methadone should have regularly scheduled EKGs before and throughout treatment, as well as before, during, and after a pregnancy.¹

With long-term use, the body adapts to the drugs, requiring larger amounts of drug to get the same effect. This is called “tolerance”. Tolerance to some effects can develop very rapidly, but others show no tolerance even with heavy use. People generally become tolerant to the euphoric effect (they don’t get high anymore), faster than they do to the side effects like sedation. As doses rise in an attempt to regain the euphoria, the risk of overdose becomes higher.¹

Stimulants

Illegal drugs like cocaine, as well as prescriptions such as amphetamines (Adderall, Vyvanse, Dexedrine, ProCentra) and methylphenidate (Ritalin, Concerta), fall into the Stimulant class of drugs. They have a similar chemical structure to naturally occurring chemicals in the brain, norepinephrine and dopamine. Cocaine is present in the leaves of the coca bush, found across much of South America. Cocaine is used in 2 forms, crack cocaine and powder. Crack cocaine is not water-soluble and is generally smoked. Although crack cocaine can also be dissolved in acid for injection, the acid is very damaging to the body and is very painful to inject. Cocaine powder is easily dissolved in water, which can then be injected, though it is often snorted or inhaled.¹

Cocaine has almost always been cut with other substances in order to increase profit margins. In more recent years it has become common for cocaine to be cut with the drug Levamisole. It is a de-worming medication and used to be used as chemotherapy, though it is no longer FDA approved for use in humans.³ As of 2009-10, approximately 70% of cocaine entering the United States contained Levamisole.⁴ Most important among the effects of Levamisole is that it can severely weaken your immune system.^{4,5} The effect can be so profound that some pop-culture references refer to it as “a chemical form of AIDS”, a claim that is not wholly unfounded.⁶

Synthetic stimulants are medications legally available by prescription or over the counter. Some stimulants are available in high-dose extended release forms and are used for treatment of ADHD. Illegal street amphetamines are generally made from substances that are legal to purchase. For example, methamphetamine can be made from pseudoephedrine, an over-the-counter cold medication, which is why there are restrictions on sales of it. Clinically, over-the-counter stimulants are used in the treatment of asthma, the common cold, sinus infections, and for appetite suppression. When stimulant medications are properly used in the treatment of ADHD, there is no evidence of an increased risk of developing substance abuse problems.¹

When used for non-medical purposes, even in over-the-counter formulations, stimulants have very high abuse potential. Injecting or snorting the drugs makes developing an addiction more likely. Stimulants are often used in combination with other drugs, especially opiates or sedatives, in order to offset negative side-effects of each other. So-called “speed-balls” are often said to produce a subjectively better “high” than either drug used alone.¹

The primary effects for which stimulants are used include increased alertness, energy, sociability, euphoria, and decreased fatigue, appetite, and need for sleep. Use and abuse of stimulants has been well documented in work, school, military and sports settings due to many of these effects. Typically, as the dose taken increases, the rate of side effects rises. Behaviorally, people abusing stimulants often present with restlessness, agitation, tremor, poor muscle coordination, and repetitive or patterned behaviors such as skin picking or foraging for drugs. Physical signs/symptoms include rapid heart rate, dilated pupils, sweating, and nausea. Sleep disturbance and weight loss occur in 10-40% of non-treatment seeking users, and up to 25% experience severe paranoia and/or hallucinations.¹

Stimulants also cause increases in heart rate and blood pressure, and are associated with an increased risk of abnormal heartbeats, which can lead to sudden death. Chronic cocaine use can also lead to the development of heart failure due to repetitive injury to the heart muscle. When smoked, stimulants can cause both acute and chronic lung damage. Stomach ulcers and perforations have also been associated with chronic cocaine use. Though the mechanism is unclear, cocaine use has also been associated with conditions affecting blood vessels and the immune system. Men can experience erectile dysfunction and problems with ejaculation. Women can experience irregular menstruation due to the effect of stimulants on hormone levels.¹

Nicotine

Nicotine is found in many plants, including tobacco, in which it is used to protect the plant from insects. When consumed it binds to one of the most common receptors in the brain and throughout the body, causing its effects.¹ Nicotine has traditionally been consumed in the form of tobacco (cigarettes, cigars, pipes, or chewing tobacco), but modern tobacco/smoking cessation efforts have led to the development of nicotine gum, patches, inhalers, lozenges, nasal sprays, and oral solutions. More recently, electronic cigarettes have been growing in popularity. They use a nicotine-containing solution to generate a vapor that is inhaled. Initially praised for their supposedly safer health profile, so-called “e-cigarettes”, “vaporizers”, or “vapes” have been shown to often result in exposure to high concentrations of contaminants, heavy metals, and many of the same carcinogens generated during tobacco smoking. While definitive answers are still lacking, some studies indicate risk of cancer due to components of the liquids and how they react to the heat exposure of the vaporizing process.^{1,7,8,9,10}

Nicotine is absorbed rapidly across the lining of the mouth, nose, and lungs, into the blood, which is then pumped to the brain, where the nicotine is delivered to its primary target. The duration of effect, frequency of dosing, tolerance, metabolism, and clearance of nicotine is variable across the population, with distinct differences between Caucasian, African American, and Asian populations based on genetic variation. These variations are potentially related to the different rates of lung cancer in smokers of different ethnic backgrounds.¹

The general effect of nicotine is as a mild stimulant—increasing blood pressure and heart rate, and causing the blood vessels in the skin to close. Psychologically, nicotine use is typically associated with arousal, relaxation, and enhancement of mood, attention, and reaction time. Although first-time smokers often report such stimulant effects, chronic smokers experience less benefits and report smoking in order to feel “normal”. As their body becomes dependent upon nicotine, they experience nicotine withdrawal. Symptoms include drowsiness, anxiety, mood fluctuations, difficulty focusing, and delayed reaction time. When nonsmokers, abstaining smokers, and non-abstaining smokers are compared on tests of cognitive function, the abstaining smokers scored worse on all metrics than did the nonsmokers and the non-abstaining smokers, who scored similarly to one another.¹

When used during states of low activity or low anxiety, nicotine tends to cause stimulation; but when used during states of high activity or high anxiety, it frequently acts as a relaxant. This leads to the patterns seen in many smokers in which they increase their smoking in settings of either too much or too little stimulation or anxiety.¹

Most of the negative consequences of nicotine use are linked to tobacco use specifically. This is due to the many toxic chemicals produced during the smoking process. The cancer-causing effects of cigarettes have been well documented for decades, including cancers of the skin, lungs, mouth, throat, pancreas, nasal cavity, sinuses, stomach, liver, kidney, uterus, cervix, and blood. Chemicals in tobacco also lead to staining of skin and teeth, as well as earlier onset and more rapid progression of wrinkles.^{1,11}

Alcohol

There exist a large number of naturally occurring and man-made alcohols. Historically speaking, ethanol is the only one that human beings voluntarily consume. When alcohol is discussed as a drug of abuse, it is ethanol that is being referenced. Ethanol is typically consumed in fermented or distilled beverages, ranging in concentration from 3% to 50% ethanol by volume. It can also be distilled up to 95% concentration.¹

Due to this wide range of concentrations, the concept of a “standard drink” is used to standardize how much ethanol is being consumed. Generally speaking, a “standard drink” is defined as one that contains 0.6 fluid ounces of ethanol.¹



Figure 1. Comparative volumes of different alcoholic beverages¹²

There are many patterns of unhealthy drinking: moderate or heavy episodes of daily drinking, light daily drinking with occasional binge drinking, abstinence on a normal basis followed by binges lasting anywhere from hours to weeks, and many more. When discussing these patterns of drinking, the term “binge” refers to a specific degree of excess drinking, which is dependent upon the age and gender of the person. The CDC and the National Institute on Alcohol Abuse and Alcoholism (NIAAA) define binge drinking as “a pattern of drinking that brings a person’s blood alcohol concentration (BAC) to 0.08 grams percent or above... when men consume 5 or more drinks, and when women consume 4 or more drinks, in about 2 hours.”¹³



Figure 2. Patterns of excessive alcohol use¹²

Alcohol is primarily used for its sedating effects. The early effects include loss of inhibition and behavioral arousal, which often manifest as increased talkativeness, relief of anxiety, feelings of confidence and euphoria, and enhanced assertiveness. As alcohol levels rise, drinkers experience impairment in judgment and reaction time, increased emotional outbursts, and loss of muscle coordination (ataxia). Alcohol acts on the brain as a sedative and hypnotic, though the quality of sleep it produces is often very poor. Individuals with sleep apnea,

or pauses in breathing while sleeping, experience an increased frequency and severity of apneic episodes, leading to episodes of low oxygen while they sleep.¹

As alcohol dependence develops, the depressant effect that alcohol has on the brain leads to problems. In order to maintain brain function in the setting of constant depressant effects, baseline activity of brain cells (neurons) increases, achieving a balance of sorts in the chronic drinker. However, should they decide to stop drinking, this higher amount of brain activity can result in hyperactivity, tremors, and seizures. Taken to an extreme, alcohol withdrawal can develop into a condition known as delirium tremens in which patients experience profound psychosis with delusions, hallucinations, and seizures that can lead to death. This is the reason that heavy drinkers are never recommended to stop drinking cold turkey without first consulting with their physician.¹

Marijuana

Cannabis sativa is one of the oldest plants used by humans for both recreational and spiritual purposes, primarily for its key psychoactive component, Δ^9 -tetrahydrocannabinol (THC). Marijuana also contains a number of non-psychoactive compounds, such as cannabidiol and cannabidiol, which are showing promise as therapeutic medications.¹

THC exerts its effects by binding to the “cannabinoid” receptors, CB1 and CB2. There is emerging evidence of other cannabinoid receptors, but these two are the most common. These receptors exist within the human body as receptors for the so-called “endocannabinoids”, compounds with similar structures to THC that are produced by our bodies, though in much lower levels than when THC is smoked or consumed.¹

The main effects of marijuana are on brain regions related to coordination, muscle control, and thinking. Functions such as distance and shape perception, reaction time, information processing, motor coordination, motor performance, signal detection, tracking, and time perception are altered. These effects are notable during the performance of difficult tasks that involve sustained attention. Thinking and memory are also impaired in both short and long term. Performance on tests of thinking such as reading and math become impaired under the effects of THC.¹

There is a strong link between marijuana use, especially in early adolescence, and development of schizophrenia later in life. Use of marijuana has been associated with a three- to six fold increase in severe mental illness.¹

Marijuana also has a number of other effects throughout the body—many mediated by the endocannabinoid system, though not all. Marijuana smoking injures the lungs, similar to tobacco smoke, leading to a chronic cough, airway inflammation, and direct damage to the fragile tissues of the lungs. Marijuana use causes an increase in heart rate, though typically accompanied by a slight drop in blood pressure, which can lead to lightheadedness or passing out. When combined with chronic alcohol use, marijuana use can lead to worsening liver disease. In women, marijuana use can disrupt the female reproductive system, causing spontaneous milk production (galactorrhea). In men, long-term use of marijuana can lead to low testosterone levels, breast development, and low sperm counts.¹

Marijuana is used either by smoking or eating. When smoked it is typically as dried plant material, or as an oil/resin referred to as hashish. When smoking marijuana, it is rolled into a paper cigarette (“joint”), smoked through a water pipe (“bong”), or used to fill a hollowed out cigar (“blunt”). There is also a more potent

extract called hash oil, made by extracting and concentrating THC from the other preparations, and can reach concentrations of 15-50% THC. Hashish and hash oil can be dripped onto tobacco before smoking. Any of these preparations can be mixed into baked goods or candies for consumption as “edibles”.¹

Over the past 10-15 years there has been a rising prevalence of synthetic marijuana products. These chemicals are structurally similar to THC and produce similar effects in the body. Because their molecular structure is slightly different than THC and they do not naturally occur in marijuana, they were not initially covered by existing marijuana legislation, and were considered “legal pot”. Many of these substances have since been made illegal, but the chemicals on the market change whenever the one being used is outlawed. They are often sold under the names Spice, K2, Kush, Potpourri, Black Mamba, Skunk, and many others. They are generally not picked up by urine drug screens and are readily available on the Internet, in head shops, convenience stores, or gas stations. Although they are often considered by users to be safe due to being “legal”, they are often more dangerous with a higher risk of overdose or side effects than true marijuana. Patients have been seen in Emergency Departments all over the country due to adverse effects from synthetic cannabinoids.^{1,14,15,16,17}

Sedative-Hypnotics

Sedative-Hypnotic medications are used to treat anxiety, insomnia, seizures, and muscle spasms, and are sometimes used as surgical anesthetic. In general, this class of drugs can be separated into benzodiazepines, non-benzodiazepine hypnotics, barbiturates, and other related compounds. The non-benzodiazepine hypnotics are a distinct group of compounds whose structure is different than benzodiazepines, though they exert their effects on the same receptors. These are well known by their brand names: Ambien, Lunesta, and Sonata are the three approved for use for insomnia in the USA.¹

Barbiturates are most commonly used as a component of general anesthesia and for treatment of seizures or alcohol withdrawal. For many of the clinical applications of barbiturates, they have been replaced by benzodiazepines due to improved safety profiles and slightly less risk of abuse, though these too are readily abused. The most abused benzodiazepines in the US are alprazolam (Xanax), clonazepam (Klonopin), diazepam (Valium), and lorazepam (Ativan). They are commonly prescribed as anti-anxiety medications, and generate dependence quickly, with a profound withdrawal syndrome similar to alcohol withdrawal. Benzodiazepines are the first-line medications used to *treat* alcohol withdrawal, and are steadily tapered in a controlled setting to wean someone off of alcohol or benzodiazepines themselves.¹

The compounds in this drug class slow breathing and cause sedation. Studies in multiple countries have demonstrated a higher rate of motor vehicle crashes associated with benzodiazepines—likely related to decreased reaction time, falling asleep at the wheel, or persistent impairment in visual-spatial processing. The depressant effect on breathing is even greater when combined with other drugs that do the same, such as alcohol or opioids. Mixing drugs like that can lead to life-threatening overdoses during which people stop breathing due to the drug overdose.¹

Hallucinogens

As a category of drugs, hallucinogens are not easily defined, and work in many different ways. In general, hallucinogens are used and abused for their potential to change cognitive, perceptual, and emotional processing of one's self and reality. Commonly referred to with the term "psychedelic", many of these substances are capable of liberating perception from cultural conditioning, often offering a transcendent view of humanity, the world, and our place in it. These drugs are often incorporated into cultural or spiritual awakening practices in some cultures.¹

The clinical effects of hallucinogen use include a wide variety of symptoms, which vary depending on the specific hallucinogen used. There are some common features: increases in heart rate and blood pressure, dilated pupils, and commonly increases in respiratory rate and body temperature. Nausea and vomiting, with general gastrointestinal distress (cramping or diarrhea) are also frequently reported. Sedating and hallucinatory effects are the predominant desired effect for which these drugs are used.^{1,18}

Common hallucinogens include LSD (acid), psilocybin (magic mushrooms), ibogaine, mescaline (peyote), MDMA (ecstasy, X, molly, MDA), and salvinorin A (salvia). These drugs act by altering the production, release, degradation, and levels of serotonin in the brain.¹

Inhalants

Although many drugs are "inhaled" as their means of ingestion, the drug class of Inhalants refers to gases or aerosolized liquids which are inhaled for a variety of intended effects—euphoria, lightheadedness, or passing out. Many of these compounds are available in over-the-counter products such as adhesives, paint thinner, paint, varnish, pesticides, inks, lighter fluid, cleaning products, or compressed air "dusters".¹

Regardless of the specific inhalant used, these chemicals are rapidly absorbed from the lungs into the blood, and pass quickly into the brain. The effects are generally brief unless the person continues to be exposed to the inhalant (falls with a gas-soaked rag on their face or collapses in a room filled with the gas) and symptoms resolve quickly. Sometimes body composition can lead to prolonged effects, as most inhalants build up in fat and can be slowly released over time. Little is known about the exact mechanism of action, side effects, or how people develop tolerance or dependence.¹

The means by which inhalants affect the brain is still poorly understood, other than that they disrupt normal brain functioning. What little is known about the specific mechanisms of these drugs suggest that they likely generate an alcohol or sedative type effect, though subjective reports also include hallucinations, tremors, and seizures. Due to the very diverse nature of the many different inhalants that are abused, the effects reported are understandably diverse. Among chronic inhalant abusers, the highest rates of damage are noted to the nose, mouth, lungs, brain, liver, and kidneys.^{1,19}

Rates of Drug Use

When working in the intersection of public health and drug abuse, it is important to understand not only *what* drugs are, but also how frequent their use is among the population you're working with. This is important in order to guide screening and interventions that may have the greatest benefits for the largest number of people.¹ If only 1 out a million people use a particular substance, it is inefficient to screen all million people for that substance in order to identify one person. However, if that number is larger, say 1 in 10 or 1 in 100, screening becomes more useful, and broad interventions directed at the general population tend to have a greater effect due to the higher frequency of use. In the 2015 National Survey of Drug Use and Health (NSDUH), 50.1% of respondents 26 years and older reported illicit drug use during their life, with 14.6% reporting illicit drug use during the past year. Rates of use were even higher among those 18 to 25 years old, with 57.5% reporting prior illicit drug use. 37.5% reported illicit drug use within the past year, and 22.3% within the past month.²⁰ Though the data from the 2015 NSDUH is widely considered to be reliable and accurate, it must be remembered that there are a number of sub-populations which were excluded from the survey, including people who were homeless and not living in shelters, active-duty military personnel, and residents of institutions such as prisons, jails, nursing homes, psychiatric hospitals, and long-term residential care facilities.¹

Let that sink in. More than 1 in 5 Americans aged 18 to 25 years old reported using an illicit drug within the past month. This is why screening for illicit drug use is valuable, especially among certain populations. Due to the relatively high prevalence compared to many other conditions, there is a great potential for intervention to prevent future social or health complications.²⁰

Opioids

Rates of prescription opioid and heroin use, abuse, and addiction vary tremendously nationwide. In 2015, for the first time, drug overdose was the leading cause of accidental death in the USA, with 52,404 lethal drug overdoses. The driving force behind this change is the opioid epidemic, with 20,101 prescription opioid overdose deaths and 12,990 heroin overdose deaths. This is in the larger context of 20.5 million Americans age 12 and over who were diagnosed with a substance use disorder in 2015. Of these, 2 million were using prescription opioids and 591,000 were using heroin.²¹ The American Congress of Obstetricians and Gynecologists reports that approximately 1% of pregnant

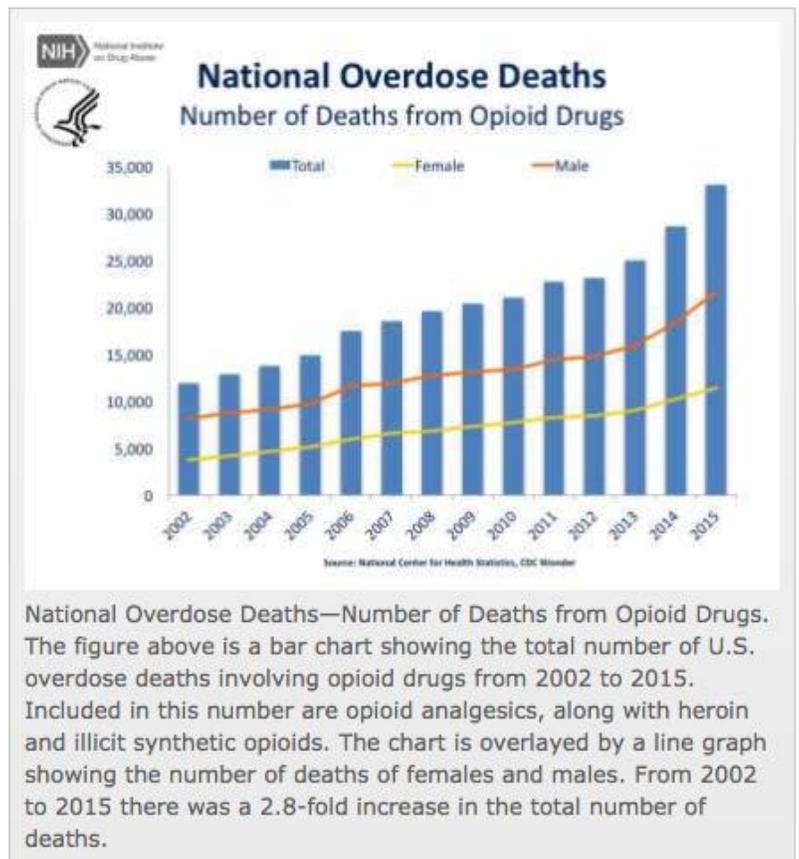


Figure 3. National Opioid Overdose Deaths²³

women report non-medical use of an opioid, and 0.1% are estimated to have used heroin within the past 30 days.²²

With regards to New York State specifically, the rates of prescription opioid and heroin use have been on the rise. In 2013 there were 2,175 drug-related deaths, an increase of more than 40% from 2009. Of the deaths in 2013, 29% (637) were heroin-related, up dramatically from 16% (242) in 2009. Prescription opioid related deaths increased 30% from 2009 to 2013 (735 to 952), and opioid related ED visits increased 73% from 2010 to 2014.^{24,25,26}

Stimulants

In a review by the American Congress of Obstetricians and Gynecologists published in 2013 of data from 2010, they concluded that the rate of cocaine use in pregnancy is unknown due to the drastically wide variance in different studies of the topic, which used different screening techniques. These ranged from as low as 1.1% of women who self-reported cocaine use during pregnancy in one study, compared with 30-45% positive testing during birth for maternal cocaine use in a number of studies from 1989-1999.²⁷

Similarly, little is known about the rates of use of amphetamines, including methamphetamine, during pregnancy. Few studies to date address the topic. In the one large study to report the prevalence of methamphetamine use in pregnancy, 5.2% of women self-reported methamphetamine use at some point during pregnancy. However, the important caveat to this study is that it was performed in an area of the USA where methamphetamine use is common.²⁸ There are some regions of the country where methamphetamine use is virtually nonexistent, so this rate of use is certainly an over-estimation.²⁹

Traditionally, ADHD medications such as Ritalin® or Adderall® (Methylphenidate, Amphetamine/Dextroamphetamine) were reserved for use in children. However, with a growing body of evidence of their efficacy in adults, the numbers of adults remaining on these medications after childhood has been rising.³⁰ With the rise in use among adults, it is expected that rates of use of prescription stimulants during pregnancy will likely rise, however specific data on this is not known.^{31,32}

Nicotine

Nationally, over 480,000 Americans die from cigarettes and cigarette-related illness every year, with 41,000 of those from exposure to second hand smoke. Approximately 15% of American adults are current smokers, with ¾ of them smoking daily, and ¼ smoking some days.³³ Among pregnant women, this number drops. In 2014, 10.9% of women reported smoking during the three months before pregnancy, and 8.4% reporting smoking at any time during their pregnancy.³⁴

Rates of tobacco smoking among the general population in New York state are about the same as national rates, 15.2%.^{34,35,36} However, the rate of tobacco use among pregnant women is lower in NYS than at the national level, with only 5.4% of pregnant New Yorkers smoking cigarettes. This does not, however, account for use of nicotine replacement such as patches, gum, or vaporizers/e-cigarettes, so this may be an underestimation of total rates of fetal nicotine exposure.³⁴

Alcohol

Alcohol is by far the most used intoxicating substance. Rates vary between countries and cultures, but the existence, use, and abuse of alcohol are pervasive throughout the world. In the United States, approximately 86.4% of adults over the age of 18 years drank alcohol at some point in their life. Of adults over the age of 18 years, 56% drank alcohol in the past month, 26.9% binge drank in the past month, and 7% engaged in heavy alcohol use in the past month. In 2014, 15.1 million people in America were diagnosed with alcohol use disorder, and 623,000 of those are between the ages of 12-17 years old.³⁷

The patterns associated with binge drinking are very different than those of dependent drinkers, though these individuals still meet many of the criteria for diagnosis of alcohol use disorder. Most of those who binge drink are not physically alcohol dependent, and do not experience withdrawal. One in six US adults binge drinks about 4 times per month, consuming approximately 8 drinks during each episode. Binge drinking is more than twice as prevalent among men than women, and binge drinkers are more than 14-times as likely to report alcohol-impaired driving than non-binge drinkers. Those who binge drink are more likely to have a household income above \$75,000 annually than those who do not binge drink. Binge drinking accounts for 90% of the alcohol consumed by those under the age of 21, and for more than half of the total alcohol consumed by adults in the United States.³⁸

Among pregnant women in America aged 18 to 44 years, 10.2% report alcohol use in the past 30 days, and 3.1% report binge drinking. Use of alcohol during pregnancy was highest among women aged 35-44 years (18.6%), college graduates (13%), and unmarried women (12.9%).³⁹

In CDC survey data from 2013, 52.4% adults in the state of New York reported drinking in the past 30 days, with 18.3% reporting binge drinking within the past 30 days.⁴⁰ Data reported by the CDC in 2016, of surveys from 2011-2014, reported that 10.4% of pregnant women in New York drank alcohol during their pregnancy. Though this may sound high, and a cause for concern (which it is), this rate places New York number 29th in the nation for this metric, from a low of 2.2% in West Virginia to a high of 17.5% in Oregon.⁴¹

Marijuana

Aside from alcohol, the most commonly used and abused intoxicant in the United States is marijuana. According to data from the 2015 National Survey on Drug Use and Health (NSDUH), the prevalence of marijuana use at any point in life is 44% for those aged 12 years and older. Despite this, those who report past year and past month use of marijuana represent only 13.5% and 8.3% of the population, respectively. Particularly among adolescents, who often spend a majority of time with like-minded peers, there is the mistaken impression that “everyone is doing it.” Even when focusing specifically on the age range with the highest rates of marijuana use, ages 18 to 25 years, past month use of marijuana is reported by 19.8%. This means that 4 out of 5 adolescents aged 18 to 25 years have *not* smoked marijuana in the last month. Among those aged 26 years and older, 10.4% report past year use, and 6.5% report past month use.^{1,42}

Since the mid-2000s, synthetic cannabinoids have become more common, though little is known about the prevalence of the use of such products among the general population. Most people use synthetic cannabinoids due to curiosity, enjoying the effect of the drug, relaxation, and a desire to get high without a positive drug test. Though often considered a “legal high”, with many such products not under active regulation, many users who initially used synthetic cannabinoids for their legality often continue to use them after they have been made illegal.⁴³

Rates of marijuana use during pregnancy are highly variable depending on the age of the mother, ranging from 16.5% in mothers 15 to 17 years of age, to 7.5% in those aged 18 to 25 years, and 3.3% for those aged 26 to 44 years. Rates of use also fall throughout pregnancy, with fewer women using during the 2nd and 3rd trimesters respectively.⁴⁴

Sedative/Hypnotics

Benzodiazepines are one of the most frequently prescribed mind-altering medications, and a large number of these prescriptions are being diverted to illicit use. In 2008, the rate of nonmedical use of sedatives and tranquilizers was reported to be 2.3% among adults in the United States. Of this number, 9.8% of them met criteria for abuse or dependence of benzodiazepines (~1 in 440 people in the USA). In 2010, there were 408,021 emergency department visits related to benzodiazepine misuse or abuse, a number that is part of a rising trend since 1998. Among those aged 20 years or younger, benzodiazepines are the most frequent cause of an emergency department visit due to drugs, with 38.6 per 100,000 people. In persons aged 21 years or older, the rate is 168.8 per 100,000 people—more than 4.3x as many, and is exceeded in this age group only by the class of opioid pain relievers.¹

After opioids, benzodiazepines are involved in the second-highest number of drug related suicide attempts, accounting for 28.7% of suicide attempts in 2009. Among certain high-risk populations, such as alcohol-dependent people, the rate of concurrent benzodiazepine misuse or abuse may be as high as 15-20%.¹

Hallucinogens

Data from the 2015 National Survey of Drug Use and Health (NSDUH) published by NIDA reports 15.3% of Americans aged 12 and over admit to using hallucinogens at some point in their life. This is further broken down by age groups—12 to 17 years (3.1%), 18 to 25 years (18.6%), and 26 years and older (16.2%). When looking at past year and past month hallucinogen use, the highest rates by a significant margin are all during the 18 to 25 year age range. This indicates that during the course of a lifetime, the most likely period of time to initiate hallucinogen use is between the ages of 18 to 25 years.⁴⁵

Data from the 2009 NSDUH and the Drug Abuse Warning Network (DAWN) have been used to demonstrate the relatively low frequency of Emergency Department visits resulting from hallucinogen use when compared to the number of active users. Less than 1% of hallucinogen users had an ED visit related to hallucinogen use, compared with 5.5% of methamphetamine users,

National Survey on Drug Use and Health: Trends in Prevalence of Various Drugs for Ages 12 or Older, Ages 12 to 17, Ages 18 to 25, and Ages 26 or Older; 2015 (in percent)*					
Drug	Time Period	Ages 12 or Older	Ages 12 to 17	Ages 18 to 25	Ages 26 or Older
Hallucinogens	Lifetime	15.30	3.10	18.60	16.20
	Past Year	1.80	2.10	7.00	0.80
	Past Month	0.50	0.50	1.80	0.20
LSD	Lifetime	9.50	1.30	7.70	10.70
	Past Year	0.60	1.00	2.80	0.10
	Past Month	0.10	0.20	0.60	0.00
PCP	Lifetime	2.40	0.20	0.80	2.90
	Past Year	0.00	0.10	0.10	0.00
	Past Month	0.00	0.00	0.00	0.00

Figure 4. Rates of Hallucinogen Use⁴⁵

8.8% of cocaine users, and 35.2% of heroin users.¹

Inhalants

Of all illicitly used addictive drugs, inhalants tend to skew toward a much younger population. The age range of peak lifetime, past year, and past month use is ages 18 to 25 years, similar to most drugs.

Although lifetime rates of use are similar between ages 12 to 17 and ages 26 and older, there is a dramatic difference between these two age groups with respect to use within the past year and the past month. Among ages 12 to 17, the rate of past month usage of inhalants is 7 times greater than for those age 26 and older, and it is 9 times greater for use within the past year. What this tells us is that the vast majority of people who will use inhalants at any time in their life do so between the ages of 12 and 25.^{46,47}

National Survey on Drug Use and Health: Trends in Prevalence of Inhalants for Ages 12 or Older, Ages 12 to 17, Ages 18 to 25, and Ages 26 or Older; 2015 (in percent)*					
Drug	Time Period	Ages 12 or Older	Ages 12 to 17	Ages 18 to 25	Ages 26 or Older
Inhalants	Lifetime	9.60	9.10	13.10	9.60
	Past Year	0.70	2.70	4.10	0.30
	Past Month	0.20	0.70	0.90	0.10

Figure 5. Rates of Inhalant Use⁴⁶

Though data is scarce regarding rates of inhalant abuse during pregnancy, it is known to afflict some subpopulations more than others. The poor, mentally ill, and those with juvenile or criminal justice involvement were more likely to abuse inhalants. In particular, adolescents with behavioral or emotional problems were dramatically more likely to screen positive for prior or current inhalant abuse.⁴⁷

For all the attention given to adolescent marijuana use, and how it may increase risk for future drug or alcohol problems, the evidence is far stronger for inhalants. Several studies have shown that early inhalant abuse is closely correlated with future progression to harder drugs such as heroin or cocaine. It has also been linked to a higher likelihood of IV drug use, which is an independent risk factor for numerous other health complications.¹

Effects of Drug Use During Pregnancy

Opioids

As rates of prescription opioid and heroin use continue to rise, there has also been a noted uptick in the rates of babies born with Neonatal Abstinence Syndrome.⁴⁸ These infants are typically irritable, jittery, have poor coordination, and poor suck, leading to poor oral intake/feeding. They frequently require extra nutrition and need a calm, quiet environment after birth. If severe, they may need morphine or methadone to treat their symptoms. Opioid exposure in the womb can lead to decreased responsiveness and slower heart beat, but is not generally associated with birth defects or long-term complications.¹

Illicit use of opioids, such as heroin, can also be associated with a wide number of other side effects depending on the specific substances mixed into the drugs prior to being sold. Depending on the substance, this can lead to kidney problems, heart problems, or overdose. Especially in the setting of maternal IV drug use, she is at a much higher risk to be exposed to HIV, Hepatitis B/C, bacterial infections at the site of injection, and bacterial or fungal infections of the bloodstream, heart valves, or numerous other sites throughout the body.¹

Stimulants

Stimulants are considered “category C” in pregnancy, meaning that risk of harm cannot be ruled out due to lack of data. Exposure to cocaine and other stimulants during pregnancy has been linked to placental abruption, which is when the wall of the placenta comes apart from the inner wall of the uterus. This can lead to the death of the fetus. It has also been associated with smaller head size, low birth weight, and premature rupture of membranes, which can lead to preterm delivery. Once the infant is born, they can have tremors, poor feeding, irritability, and erratic or unstable vital signs. Prenatal cocaine exposure is associated with impairments in attention and behavior regulation in pre-school age children, and in language and memory problems among adolescents.¹

All medical organizations recommend not using cocaine or crack cocaine during pregnancy, and many references still cite concern for brain malformations and risk of long-term developmental problems in children with cocaine exposure during pregnancy. However, recent studies of the so-called “crack babies” of the 1980s and 1990s offer evidence to the contrary—that cocaine exposed fetuses typically grow up to be developmentally normal children. If the fetus survives through delivery (see above-mentioned potential complications), there does not seem to be a clinically significant impact on long-term development from the cocaine exposure itself. Rather, the noted delays in development seem to stem from the often-chaotic home environments in which these children are raised, and mimic findings of children from households with adults addicted to other illegal substances.⁴⁹

Similar to cocaine, there has been concern for the impact of stimulant ADHD medication on fetal development. Review of the current literature suggests that other than decreased birth weight, there does not seem to be an increased risk of congenital malformations with appropriate use of prescription ADHD medication during pregnancy.^{50,51}

Nicotine

Nicotine use during pregnancy nearly doubles the risk of having a low birth weight infant. It also increases the risk of miscarriage. Exposure to nicotine can lead to abnormalities in brain development that place the child at high risk for sudden infant death syndrome (SIDS). Secondhand smoke is also harmful and increases the risk of SIDS, ear infections, asthma, and lung infections in children.¹

Alcohol

There is no known safe amount of alcohol consumption in pregnancy. Excessive alcohol consumption leads to fetal alcohol syndrome, which is a group of features including low IQ, small head circumference, delayed growth, and seizures. Later on in childhood, these children frequently have ADHD and other learning difficulties. They have characteristic facial features such as a smooth philtrum (crease between nose and lip), thin upper lip, and small, wide-set eye openings.¹

Marijuana

Little definitive evidence exists for the safety or risk of marijuana use during pregnancy. Those studies available seem to indicate a higher risk for low birth weight, maternal anemia, and need for placement into NICU after birth.^{1,56} Unfortunately, these findings are potentially all secondary to confounding factors such as poor nutrition, poor (if any) prenatal care, maternal psychiatric comorbidities, or concurrent drug use. In particular, there are high rates of concurrent alcohol and tobacco use in the individuals observed in prenatal marijuana studies. The pervasiveness of this limits the ability to generalize the findings to broader populations, as authors are unable to draw direct cannabis-only effects from the available data.^{53,54,55,56} In addition, the concentrations of THC in modern commercial cannabis are significantly higher than in the 1970s when much of the current literature regarding the safety of marijuana was generated.⁵²

THC accumulates in breast milk, and can be passed to the infant during feeding. Despite this, no reports exist of direct harm to infants from ingesting breast milk with THC (such as sedation). However, due to the lack of data, most organizations recommend the same precautions for marijuana-smoking mothers that they do for tobacco-smoking mothers. Namely, that they not smoke around their child, they change clothing between smoking and holding their infant so as to not expose the infant to smoke particles, and that they continue breastfeeding. The benefits to the child of breastfeeding are thought to outweigh the risks, as many of these risks are still present due to second-hand smoke, even if the child is formula-fed.⁵⁷

Sedative/Hypnotics

Older studies on the safety of benzodiazepines during pregnancy show potential increased risk for cleft lips or cardiac abnormalities. However, larger and more rigorous studies have failed to show this risk of birth defects from benzodiazepines or other sedative/hypnotic medications during pregnancy.^{58,59,60} Although the risk of birth defects seems to be low, there is evidence that use of benzodiazepines or similar medications may increase the risk for preterm birth or low birth weight.⁶¹ There is also indication of a possible link between these medications and abnormalities of the GI tract, though the number of cases is very low, so it is difficult to draw definitive conclusions.⁶¹

Benzodiazepines are found in low levels in breast milk, though a breastfed infant is unlikely to ingest a significant dose via this route. New mothers taking benzodiazepines are typically counseled to continue breastfeeding.⁶²

Hallucinogens

Given the variety of pharmacological effects of hallucinogens as a class of drug, there is little generalizable data available about their safety during pregnancy, or their impact on fetal development. Evidence from studies of South American tribes that traditionally consume ayahuasca (a drink brewed by native American tribe from herbs and roots) suggests that there may be little to no risk of birth defects from consumption of that particular hallucinogen during pregnancy.^{1,63} However, MDMA exposure in utero has been shown to result in developmental delays that can persist at least until age 2, which are not attributable to other drug or lifestyle factors.⁶⁴ This reaffirmed earlier studies that demonstrated poorer motor quality and lower milestone attainment by 4 months of age.⁶⁵

There is little to no data available about the safety of any particular classes of hallucinogens during pregnancy. Physiologically, many of the effects and side effects that these drugs generate could potentially result in pregnancy specific complications, and should always be avoided during pregnancy.

Inhalants

Inhalant use can lead to decreased fertility and spontaneous abortions. Clinical effects include low birth weight, small head size, and delayed physical and neurologic maturation. These children may resemble children with fetal alcohol syndrome, though the mechanism behind this is unknown.¹

SBIRT for Drug Use

What is SBIRT?

Screening, Brief Intervention, and Referral to Treatment—also known as SBIRT—is a therapeutic philosophy and technique often used in primary care, pediatrics, psychiatry, and addiction treatment. The first step of SBIRT is Screening, in which basic and easily implemented screening tools such as patient questionnaires are used to perform an assessment of risk for a wide variety of issues. Some screening questionnaires focus on drug or alcohol use, some focus on domestic violence, and yet others focus on more general health maintenance. These screening tools attempt to differentiate patients into tiers ranking from highest risk to lowest risk. Then, depending on the degree of risk determined by the screening tool, a Brief Intervention is recommended.⁶⁶

The Brief Intervention portion of SBIRT is quite often the most difficult, and can vary from something as simple as giving the patient a handout targeted at teaching them more about the thing they have screened high risk for, all the way to focused psychosocial interviews and Motivational Interviewing or further diagnostic testing. The Brief Intervention is the meat and potatoes of SBIRT, and training in SBIRT provides the resources and skills to empower people to help make a change in the lives of those struggling with drug or alcohol addictions, who may not quite need, or may not be ready to accept, involvement with a formal addiction treatment program.⁶⁶

Last but not least, Referral to Treatment focuses on empowering the general practitioner and supporting them in the decision to refer patients to a specialist. The data supporting the efficacy of referral is weaker than it is for the other aspects of SBIRT. This is mostly due to flaws in the design of major studies about SBIRT, most of which focused on the SBI portion. Many of these studies excluded people with the most severe drug or alcohol problems, who would likely have benefitted most from referrals to specialists. As such, few participants ended up in the Referral to Treatment arm of the Screening process. Nevertheless, most medical providers who incorporate SBIRT into their clinical practice agree with the clinical utility and applicability of the Referral to Treatment recommendations.⁶⁶

Screening Tools

AUDIT and AUDIT-C

The most widely used screening tool worldwide to detect alcohol use disorder is the Alcohol Use Disorder Identification Test, also known as AUDIT. Unlike many other screening tools, it has been approved for use in both adults and adolescents. It consists of 10 questions, an initial 3-question screen that is often used on its own as AUDIT-C, which assesses for over-consumption of alcohol (“c” for consumption). The seven questions that follow are related to symptoms of heavy drinking and some of the common consequences that arise with alcohol use disorder. Answers to the questions are scored on a pre-designed scale, and assigned numerical values. As such, AUDIT scores can be tracked over time to help determine if someone’s alcohol use is improving with treatment.⁶⁶

NIDA Quick Screen

The National Institute on Drug Abuse has developed a three-part screening tool to assess for drug or alcohol abuse. It begins with an initial assessment of past-year use of drugs or alcohol. If the person answers “never” to the initial questions, then the screening is completed. However, if they report any use within the past year, this should be followed up with the full “NIDA-modified ASSIST” (see Appendix B). This consists of 8 questions about the frequency of use, cravings, and consequences of use. Scores from questions 2-7 are totaled for each of the substances involved, which are scored independently to determine the level of risk for the person’s involvement with each type of substance, then rated as low, moderate, or high risk based on score cut-offs. Those determined to be high risk should be counseled, given feedback, and referred for further treatment. Those in the moderate risk category should be counseled, given feedback, and should be considered for referral but do not necessarily require assessment or treatment by specialists.⁶⁶

CRAFFT

The CRAFFT Screening Tool consists of nine questions whose goal is to identify risky behaviors that make a person more likely to have or develop a drug or alcohol problem. It is particularly popular for adolescents from the age of 14-21 years old, though it can be used effectively in any age group. The screening tool is broken up into two parts, an initial three questions to assess for whether any substances are being used, then six follow up questions that are used to assess risk. The name “CRAFFT” is a mnemonic from keywords in the six questions in the second (and more important) part. The goal of using a mnemonic is to make it easier to remember, and thus easier to integrate into casual conversation, making it less obvious that a formal screening is occurring.

If the initial three questions are all answered negatively, then only the first follow up question is asked. If the person answers yes to any of the initial three questions, the full set of six follow up questions is asked. If they answer yes to two or more of the follow up questions, it is considered a positive screen, and the person should undergo additional assessment by a specialist. Appendix B includes the full screening forms for CRAFFT, and includes diagnostic criteria for Substance Abuse and Substance Dependence. If a person does not meet the two-question threshold for a positive screen, but there are red flags about their use or they meet the diagnostic criteria, they may also benefit from either a brief intervention or referral to specialized care.

Ethyl Glucuronide

The last few decades have seen dramatic growth in the ability of addiction treatment providers to perform testing to detect substance abuse or relapse. One such test that has been met with fanfare is Ethyl-glucuronide (EtG). EtG is a minor metabolite of alcohol, and is generated by the liver when alcohol is present. The importance of this particular molecule is that it remains present in the urine for 4 to 5 days after even a brief episode of alcohol consumption.^{67,68} Studies comparing rates of self-disclosure to rates of detection of EtG in urine among groups of pregnant women revealed a dramatic discrepancy, with self-disclosure and food diaries significantly underestimating rates of alcohol consumption during pregnancy.⁶⁹

Signs and Symptoms of Addiction

Many of the patterns of addiction are evident in behavior, both in day-to-day encounters as well as in specific focused interactions. In general, as someone’s addiction becomes more severe, their life becomes more chaotic as they struggle to balance conflicting demands on their time and energy. This chaos is related to the denial that is common in those struggling with addiction, and the many half-truths and lies told in the name of

preserving their self-image or maintaining other's perception of them. Many of the common screening tools incorporate behaviors indicative of addiction. The following is a non-exhaustive list of examples of behaviors that may indicate an underlying addiction.^{1,70,71,72,73}

- Time spent acquiring or using substances
- Inability to stop or control degree of substance use
- Interpersonal conflicts with friends and family over substance use
- Worsening relationships with friends or family
- Obsessive or compulsive thinking about substance use
- Multiple unsuccessful attempts to quit using
- Attempting to hide the substance use
- Denial of substance use
- Rapidly fluctuating moods or low self-esteem
- Hoarding medications
- Expressing strong need or preference for a specific name or type of medication
- Refusal or difficulty agreeing to or complying with medication agreements
- Prioritizing the purchase of drugs over normal financial obligations such as rent or food
- Involvement with law enforcement as a consequence of substance use or decisions made while intoxicated
- Decline in personal hygiene
- Decline in cleanliness of living environment
- Increased frequency of acute physical illnesses such as respiratory infections, skin infections, or traumatic injuries
- Sudden and poorly explained loss of material possessions
- Unusual and poorly explained traumatic injuries (cuts or bruises)

Brief Interventions

Introduction

Ultimately, the reason this information in this report is important is to empower people to help. The first step in helping is recognizing that a problem exists, and understanding the basics about it. Recognizing and understanding fall short when people aren't trained on what to do next. The following section discusses how you, or any layperson or professional, can offer help to someone struggling with addiction.

A growing body of evidence supports the use of brief interventions (BIs), sometimes fully automated computer programs, to elicit self-directed change in persons who abuse drugs or alcohol.^{1,74,75,76,77,78} Particularly with respect to alcohol abuse, BIs have been shown in meta-analyses to decrease alcohol consumption and alcohol-related problems.⁶⁶ Most BIs take between 10-25 minutes, though some are as brief as a few minutes, and others can take up to an hour or more, or stretch into multiple sessions.

The primary means by which BIs encourage change is through educating the person about their addiction and the substance to which they are addicted. The concept is that by informing them of the facts surrounding their substance use, they will be able to perform their own internal weighing of risks and benefits and realize the tremendous harm their substance use has imposed on them.

The basic outline of a Brief Intervention (which will also serve as a framework for this section)⁶⁶:

- A. Engagement
- B. Pros & Cons
- C. Feedback
- D. Readiness Ruler
- E. Negotiate Action Plan
- F. Summarize and Thank

Engagement

The initial aspect of the Brief Intervention is engaging the person in the process. Approaching people can be difficult enough, but approaching them to talk about a taboo subject, and to talk about it in a way that encourages them to be open and honest, as well as receptive to what you tell them, is crucially important. This typically consists of asking the patient to tell you about themselves—their background, their family, what they do for fun, what they do for a living, where they are from, etc. The point of this aspect of the conversation is not necessarily to discuss their drug use (though this often comes up), but to help the patient recognize that you care about them as an individual, as a person with nuance and history—not as a number on a chart. Once the patient seems more comfortable, the interviewer proceeds to the next step.⁶⁶

Pros & Cons

Once you have established rapport with the person, it is time to prompt them to begin exploring the pros and cons, as they see it, of their substance use. During this time, it is important not to impart your own judgments or biases onto the patient. Allow them to explore their feelings regarding substance use, and express the impact that their substance of choice has had on their life. Despite the underlying addiction, many patients are able to easily recognize the many adverse effects that drug or alcohol use has had on their life.⁶⁶

A skill that can facilitate this step, particularly when working with adolescents or young adults, is called “reflective listening”. After listening to the person, you restate back to them what you have heard, typically restating it or summarizing it in a way that allows the person to experience the thoughts, emotions, or feelings in a different way. Although it may seem repetitive, reflective listening reassures the person that you are listening to them, and gives them an opening to further clarify, re-state, or specify not only what they *say*, but what they *mean*—which can often be very different than the words they initially speak.⁶⁶

While facilitating the person’s exploration of their thoughts and feelings, remind them of the positive things in their life and things they are doing well. When doing this, attempt to avoid “I” statements to the person, in order to avoid coming off as parental or paternalistic. Remember, the whole goal of the Brief Intervention is to help guide the person to recognize for him or herself the negative effects drugs or alcohol have had on their life.⁶⁶

Feedback

After allowing the patient to lead the conversation during the discussion of Pros & Cons, it is your turn to speak in the Feedback section. First, however, you must ask them permission to offer feedback or advice. Nothing is more counter-productive than giving feedback to someone who isn’t ready to listen. If they are not open to direct feedback, another option is to try discussing general guidelines such as the low-risk drinking thresholds.⁶⁶

The Feedback portion is your time to teach the person about the harmful effects of drug and alcohol use. Though it can be difficult, try to focus the discussion to topics most relevant to the patient's particular situation. For example, if they live near the water you can remind them that alcohol is implicated in two-fifths of drowning cases; or if they have a history of mental illness in their family, you can discuss the increased risk of depression and suicide in those who use alcohol or drugs.⁶⁶

Once you have given them Feedback on their list of Pros & Cons and performed some teaching to provide them with information they did not have, be sure to get their response to your feedback. This helps to set the stage for change by encouraging the person to contemplate and verbalize their thoughts and feelings about being confronted with information that may contradict their current opinion on their drug use.⁶⁶

Readiness Ruler

The Readiness Ruler is used to transition from the concepts discussed in Pros & Cons and the teaching performed during Feedback into an actionable plan for the person to work on. The concept is simple and utilizes a basic 1 to 10 scale.⁶⁶

"When considering how ready you are to make a change in your [substance] use, on a scale of 1 to 10, with 1 being not at all and 10 being completely ready, where would you say you are?"⁶⁶

Where they are with regards of their readiness to change will help determine what *can* be done. This is similar to the traditional concept of the Stages of Change. Regardless of their answer, you can reframe it into a more positive light. For example, "You marked 4, that's great! May I ask... why not lower, like a 1 or a 2?" This forces them into the position of restating all the reasons they're ready to make a change. Then one final re-framing of "What would it take for you to be more ready to make a change?"⁶⁶

Negotiate Action Plan

The last re-framing of the Readiness Ruler result segues into setting up their Action Plan. Ultimately, this is the most important step in the Brief Intervention, as it transforms the thoughts and feelings into a plan for real world change. The plan will be strongly influenced by where the person falls on the Readiness Ruler. Simple changes such as cutting down by a specified amount, keeping an honest journal of use (and amount), intentionally avoiding certain triggers, limiting the number of use days per week, or finding alternative activities to perform in order to cope with the stresses that often lead to their use.⁶⁶

Especially with regards to alcohol use, simply pointing out that someone's patterns of use qualify him or her as a moderate- or high-risk drinker can have a significant impact on drinking habits. The action plan must involve changes that the person thinks are reasonable and attainable, lest it become yet another source of stress and frustration.⁶⁶

Throughout this process, continue to frame the discussion positively, and keep the discussion future-oriented. Push them to envision a future in which they are not using drugs, which is something many people struggling with addiction have never stopped to think about. Once a plan has been agreed upon, be sure to write it down. Better yet, have the person write it down him or herself. They can keep this slip of paper on them to serve as a reminder of everything they are working towards.⁶⁶

Summarize and Thank

As the BI comes to a close, have the person summarize in their own words everything you have discussed, their plan for change, and the resources they will reach out to in order to help them achieve their goals. Provide them with any indicated informational packets, brochures, resources, or websites—encourage them to continue learning and growing on their own. Remind them that the Action Plan is an agreement between them and themselves, and that at the end of the day, the person they are accountable to is him or herself. Lastly, be sure to thank the person for their openness and honesty, and remind them (if appropriate) that you are available to them as a resource in their recovery.⁶⁶

Referral to Treatment

Does this patient need a referral?

At the end of the day, if there is any question of safety of either the mother or her children (born or unborn) due to drug use, the correct answer will always be to refer them to their Primary Care Physician and/or specialty addiction treatment providers. SBIRT enables those who feel comfortable providing basic teaching and interventions to do so for clients/patients/people with mild-to-moderate drug or alcohol use disorders. For patients whose substance use is more severe, brief interventions are likely to be of less immediate benefit. This is often due to physical dependence and withdrawal with attempts to quit or cut back. In these cases, it is prudent to refer the person to more intensive evaluation and treatment.

How to Access Local Resources

Unfortunately, there is no single national reference for how to access treatment. Addiction treatment is very segmented and varies tremendously from region to region. Ultimately, it comes down to learning your local system. At the very least, you can almost always reach out to local chapters of Alcoholics Anonymous (www.aa.org) or Narcotics Anonymous (www.na.org) for help accessing local resources.^{80,81}

In New York State we are lucky to have the Office of Alcohol and Substance Abuse Services (OASAS), which oversees most of the formal drug and alcohol treatment centers in the state. Some private treatment centers exist which do not receive state funding, are entirely privately run, and do not fall under OASAS jurisdiction. The website for OASAS (oasas.ny.gov) is an excellent resource of information about addiction, addiction treatment, how to get someone help, and even has a bed availability program which enables searches of the entire New York State OASAS system for open beds. In addition to this, there is a compendium of addiction treatment providers, which can be searched by location or by name.⁸²

Making the referral

Referral to formal addiction treatment typically occurs in one of two patterns. You can begin by first identifying a treatment program in the person's vicinity who can perform assessments and then connect them with the appropriate level of care. Alternatively, you can also determine the level of care needed, then identify the appropriate treatment center for their needed level of care. Once an addiction treatment provider has been identified, most are readily accessible by phone call to schedule intake appointments to begin treatment. Not all treatment providers offer the same services, so be sure to pay attention to what types of addictions the program treats, and the treatment modalities they incorporate. Some addiction treatment centers also incorporate mental health services, which are particularly important for addicted patients with underlying psychiatric disorders. Once engaged with a program, part of their intake process will

be determining the appropriate level of care for them—outpatient rehab, partial/residential outpatient rehab, inpatient rehab, or detox.⁶⁶

Though there are circumstances in which people can be mandated to attend addiction treatment programs, the vast majority of treatment programs operate on a voluntary basis, and do not force people into treatment. If the person is not open to treatment and willing to make a change in their life, recovery is unlikely. In many areas, detoxification and rehabilitation beds are scarce and valuable resources. Programs are often picky about who they admit into treatment because each time they fill a bed with someone who is resistant to treatment and doesn't want to get better, there is a good change there is someone else who DOES want to make a change who is unable to get into treatment because of the scarcity of beds.⁶⁶

Ultimately, treatment has to be the choice of the person him or herself. It is not uncommon, on first screening and intervention, for people to be resistant to the idea of becoming involved with addiction or substance abuse treatment. If they are unwilling to engage with treatment initially, do not try to force them. Discuss with them the benefits of treatment, and encourage them to leave the option open. As discussed in the Brief Intervention section, Motivational Interviewing techniques can be very helpful to get the person to engage in treatment.⁶⁶

Mandatory Reporters

An important caveat to all recommendations regarding treatment of pregnant patients is that the laws regarding mandatory reporting vary from state to state. Mandatory Reporting laws require certain public service or healthcare providers to report to governing agencies any potential instances of abuse that fall under certain definitions. In general these tend to relate to child abuse, elder abuse, and sexual abuse. However, in some jurisdictions it is also considered an equivalent of child abuse to drink alcohol or use drugs while pregnant. The consequences can vary from fines and mandated treatment to imprisonment or removal of parental rights once the child is born. Before implementing protocols to screen for drug or alcohol use in pregnant patients, be sure to familiarize yourself with your local regulations, since these will impact patient's honesty with you, as well as the legal implications of a positive screen.

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Appendix A: National Organizations Definitions of Addiction

American Society of Addiction Medicine (ASAM)

ASAM is a pre-eminent national addiction treatment organization, and addresses the definition of addiction with a public policy statement “Short Definition of Addiction,” reproduced below. They also offer a more nuanced “Long Definition” on their website.⁸³

“Addiction is a primary, chronic disease of brain reward, motivation, memory, and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social, and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by inability to consistently abstain, impairment in behavioral control, cravings, diminished recognition of significant problems with one’s behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.”⁸³

The National Institute on Drug Abuse (NIDA)

NIDA is the branch of the National Institutes of Health that focuses specifically on drug abuse research. The NIDA report “Drugs, Brains, and Behavior: The Science of Addiction” opens with a brief statement about how addiction is defined.⁸⁴

“Addiction is defined as a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences. It is considered a brain disease because drugs change the brain—they change its structure and how it works. These brain changes can be long lasting, and can lead to the harmful behaviors seen in people who abuse drugs.

Addiction is a lot like other diseases, such as heart disease. Both disrupt the normal, healthy functioning of the underlying organ, have serious harmful consequences, and are preventable and treatable, but if left untreated, can last a lifetime.”⁸⁴

Appendix B: Screening Tools

AUDIT-C ⁸⁵

Read questions as written. Record answers carefully. Begin the AUDIT by saying “I am going to ask you some questions about your use of alcoholic beverages during this past year.” Code answers in terms of “standard drinks.” Place the correct answer number in the box at the right.

Questions	0	1	2	3	4	Score
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times per month	2-3 times per week	4 or more times per week	
2. How many drinks containing alcohol do you have on a typical day of drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 +	
3. How often do you have 5 (for men under age 65) / 4 (for women and men over age 65) or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
AUDIT-C Score (add items 1-3): Adolescents Positive Screen= 1 Young adults/Adults age 18+ Positive Screen= 4 for men/3 for women If positive, ask the next 7 questions to administer the full AUDIT.						
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
AUDIT Score (add items 1-10)						

NIDA Quick Screen ⁸⁶

Name: Sex () F () M Age..... Interviewer.....

Date/...../.....

Introduction (Please read to patient)

Hi, I'm _____, nice to meet you. If it's okay with you, I'd like to ask you a few questions that will help me give you better medical care. The questions relate to your experience with alcohol, cigarettes, and other drugs. Some of the substances we'll talk about are prescribed by a doctor (like pain medications). But I will only record those if you have taken them for reasons or in doses other than prescribed. I'll also ask you about illicit or illegal drug use—but only to better diagnose and treat you.

Instructions: For each substance, mark in the appropriate column. For example, if the patient has used cocaine monthly in the past year, put a mark in the “Monthly” column in the “illegal drug” row.

NIDA Quick Screen Question:						
<u>In the past year</u> , how often have you used the following?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily	
Alcohol						
<ul style="list-style-type: none"> • For men, 5 or more drinks a day • For women, 4 or more drinks a day 						
Tobacco Products						
Prescription Drugs for Non-Medical Reasons						
Illegal Drugs						

- If the patient says “**NO**” for all drugs in the Quick Screen, reinforce abstinence. **Screening is complete.**
- If the patient says “**Yes**” to **one or more days of heavy drinking**, *patient is an at-risk drinker*. Please see NIAAA website “How to Help Patients Who Drink Too Much: A Clinical Approach” http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm, for information to **Assess, Advise, Assist, and Arrange** help for at risk drinkers or patients with alcohol use disorders
- If patient says “**Yes**” to **use of tobacco**: Any current tobacco use places a patient at risk. Advise *all tobacco users to quit*. For more information on smoking cessation, please see “Helping Smokers Quit: A Guide for Clinicians” <http://www.ahrq.gov/clinic/tobacco/clinhlpsmksqt.htm>
- If the patient says “**Yes**” to **use of illegal drugs or prescription drugs for non-medical reasons**, proceed to **Question 1** of the NIDA-Modified ASSIST.

¹ This guide is designed to assist clinicians serving adult patients in screening for drug use. The NIDA Quick Screen was adapted from the single-question screen for drug use in primary care by Saitz et al. (available at <http://archinte.ama-assn.org/cgi/reprint/170/13/1155>) and the National Institute on Alcohol Abuse and Alcoholism’s screening question on heavy drinking days (available at http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm). The NIDA-modified ASSIST was adapted from the World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), Version 3.0, developed and published by WHO (available at http://www.who.int/substance_abuse/activities/assist_v3_english.pdf).

Questions 1-8 of the NIDA-Modified ASSIST V2.0

Instructions: Patients may fill in the following form themselves but screening personnel should offer to read the questions aloud in a private setting and complete the form for the patient. To preserve confidentiality, a protective sheet should be placed on top of the questionnaire so it will not be seen by other patients after it is completed but before it is filed in the medical record.

Question 1 of 8, NIDA-Modified ASSIST	Yes	No
<p>In your <u>LIFETIME</u>, which of the following substances have you ever used?</p> <p><i>*Note for Physicians: For prescription medications, please report nonmedical use only.</i></p>		
a. Cannabis (marijuana, pot, grass, hash, etc.)		
b. Cocaine (coke, crack, etc.)		
c. Prescription stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)		
d. Methamphetamine (speed, crystal meth, ice, etc.)		
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)		
f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.)		
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)		
h. Street opioids (heroin, opium, etc.)		
i. Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)		
j. Other – specify:		

- Given the patient’s response to the Quick Screen, the patient *should not indicate “NO”* for all drugs in Question 1. If they do, remind them that their answers to the Quick Screen indicated they used an illegal or prescription drug for nonmedical reasons within the past year and then **repeat Question 1**. If the patient indicates that the drug used is not listed, please mark ‘Yes’ next to ‘Other’ and continue to **Question 2** of the NIDA-Modified ASSIST.
- If the patient says “Yes” to any of the drugs, proceed to **Question 2** of the NIDA-Modified ASSIST.

Question 2 of 8, NIDA-Modified ASSIST						
2. In the past three months, how often have you used the substances you mentioned (first drug, second drug, etc)?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily	
• Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6	
• Cocaine (coke, crack, etc.)	0	2	3	4	6	
• Prescription stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	0	2	3	4	6	
• Methamphetamine (speed, crystal meth, ice, etc.)	0	2	3	4	6	
• Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)	0	2	3	4	6	
• Sedatives or sleeping pills (Valium, Serepax, Ativan, Librium, Xanax, Rohypnol, GHB, etc.)	0	2	3	4	6	
• Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	0	2	3	4	6	
• Street opioids (heroin, opium, etc.)	0	2	3	4	6	
• Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	0	2	3	4	6	
• Other – Specify:	0	2	3	4	6	

- For patients who report “Never” having used any drug in the past 3 months: **Go to Questions 6-8.**
- For any recent illicit or nonmedical prescription drug use, go to **Question 3.**

3. In the past 3 months, how often have you had a strong desire or urge to use (first drug, second drug, etc)?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily	
a. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6	
b. Cocaine (coke, crack, etc.)	0	3	4	5	6	
c. Prescribed Amphetamine type stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	0	3	4	5	6	
d. Methamphetamine (speed, crystal meth, ice, etc.)	0	3	4	5	6	
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)	0	3	4	5	6	
f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Librium, Xanax, Rohypnol, GHB, etc.)	0	3	4	5	6	
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	0	3	4	5	6	
h. Street Opioids (heroin, opium, etc.)	0	3	4	5	6	
i. Prescribed opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	0	3	4	5	6	
j. Other – Specify:	0	3	4	5	6	

4. <u>During the past 3 months</u> , how often has your use of (first drug, second drug, etc) led to health, social, legal or financial problems?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
b. Cocaine (coke, crack, etc.)	0	4	5	6	7
c. Prescribed Amphetamine type stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	0	4	5	6	7
d. Methamphetamine (speed, crystal meth, ice, etc.)	0	4	5	6	7
e. Inhalants (nitrous oxide, glue, gas, pain thinner, etc.)	0	4	5	6	7
f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Librium, Xanax, Rohypnol, GHB, etc.)	0	4	5	6	7
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	0	4	5	6	7
h. Street opioids (heroin, opium, etc.)	0	4	5	6	7
i. Prescribed opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	0	4	5	6	7
j. Other – Specify:	0	4	5	6	7

5. <u>During the past 3 months</u> , how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc)?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
b. Cocaine (coke, crack, etc.)	0	5	6	7	8
c. Prescribed Amphetamine type stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	0	5	6	7	8
d. Methamphetamine (speed, crystal meth, ice, etc.)	0	5	6	7	8
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)	0	5	6	7	8
f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Librium, Xanax, Rohypnol, GHB, etc.)	0	5	6	7	8
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	0	5	6	7	8
h. Street Opioids (heroin, opium, etc.)	0	5	6	7	8
i. Prescribed opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	0	5	6	7	8
j. Other – Specify:	0	5	6	7	8

Instructions: Ask Questions 6 & 7 for all substances **ever used** (i.e., those endorsed in the Question 1).

6. Has a friend or relative or anyone else ever expressed concern about your use of (first drug, second drug, etc)?	No, never	Yes, but not in the past 3 months	Yes, in the past 3 months
a. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	6
b. Cocaine (coke, crack, etc.)	0	3	6
c. Prescribed Amphetamine type stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	0	3	6
d. Methamphetamine (speed, crystal meth, ice, etc.)	0	3	6
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)	0	3	6
f. Sedatives or sleeping pills (Valium, Serepax, Xanax, Ativan, Librium, Rohypnol, GHB, etc.)	0	3	6
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	0	3	6
h. Street opioids (heroin, opium, etc.)	0	3	6
i. Prescribed opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	0	3	6
j. Other – Specify:	0	3	6

7. Have you ever tried and failed to control, cut down or stop using (first drug, second drug, etc)?	No, never	Yes, but not in the past 3 months	Yes, in the past 3 months
a. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	6
b. Cocaine (coke, crack, etc.)	0	3	6
c. Prescribed Amphetamine type stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	0	3	6
d. Methamphetamine (speed, crystal meth, ice, etc.)	0	3	6
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)	0	3	6
f. Sedatives or sleeping pills (Valium, Serepax, Xanax, Ativan, Librium, Rohypnol, GHB, etc.)	0	3	6
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	0	3	6
h. Street opioids (heroin, opium, etc.)	0	3	6
i. Prescribed opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	0	3	6
j. Other – Specify:	0	3	6

Instructions: Ask Question 8 if the patient endorses any drug that might be injected, including those that might be listed in the other category (e.g., steroids). Circle appropriate response.

8. Have you ever used any drug by injection (NONMEDICAL USE ONLY)?	No, never	Yes, but not in the past 3 months	Yes, in the past 3 months
--------------------------------------------------------------------	-----------	-----------------------------------	---------------------------

- Recommend to patients reporting any prior or current intravenous drug use that they get tested for HIV and Hepatitis B/C.
- If patient reports using a drug by injection in the past three months, ask about their pattern of injecting during this period to determine their risk levels and the best course of intervention.
 - If patient responds that they inject once weekly or less OR fewer than 3 days in a row, provide a brief intervention including a discussions of the risks associated with injecting.
 - If patient responds that they inject more than once per week OR 3 or more days in a row, refer for further assessment.

Note: Recommend to patients reporting any current use of alcohol or illicit drugs that they get tested for HIV and other sexually transmitted diseases.

Tally Sheet for scoring the full NIDA-Modified ASSIST:

Instructions: For each substance (labeled a–j), add up the scores received for questions 2-7 above. This is the Substance Involvement (SI) score. Do not include the results from either the Q1 or Q8 (above) in your SI scores.

Substance Involvement Score	Total (SI SCORE)
a. Cannabis (marijuana, pot, grass, hash, etc.)	
b. Cocaine (coke, crack, etc.)	
c. Prescription stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)	
d. Methamphetamine (speed, crystal meth, ice, etc.)	
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)	
f. Sedatives or sleeping pills (Valium, Serepax, Xanax, Ativan, Librium, Rohypnol, GHB, etc.)	
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)	
h. Street Opioids (heroin, opium, etc.)	
i. Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)	
j. Other – Specify:	

Use the resultant Substance Involvement (SI) Score to identify patient's risk level.

To determine patient's risk level based on his or her SI score, see the table below:

Level of risk associated with different Substance Involvement Score ranges for Illicit or nonmedical prescription drug	
0-3	Lower Risk
4-26	Moderate Risk
27+	High Risk

The CRAFFT Screening Interview

Begin: "I'm going to ask you a few questions that I ask all my patients. Please be honest. I will keep your answers confidential."

Part A

During the PAST 12 MONTHS, did you: No Yes

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1. Drink any <u>alcohol</u> (more than a few sips)?
(Do not count sips of alcohol taken during family or religious events.) | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Smoke any <u>marijuana or hashish</u> ? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Use <u>anything else</u> to get high?
(“anything else” includes illegal drugs, over the counter and prescription drugs, and things that you sniff or “huff”) | <input type="checkbox"/> | <input type="checkbox"/> |

For clinic use only: Did the patient answer “yes” to any questions in Part A?

No



Ask CAR question only, then stop

Yes



Ask all 6 CRAFFT questions

Part B

- | | No | Yes |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1. Have you ever ridden in a <u>CAR</u> driven by someone (including yourself) who was “high” or had been using alcohol or drugs? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Do you ever use alcohol or drugs to <u>RELAX</u> , feel better about yourself, or fit in? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Do you ever use alcohol or drugs while you are by yourself, or <u>ALONE</u> ? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Do you ever <u>FORGET</u> things you did while using alcohol or drugs? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Do your <u>FAMILY</u> or <u>FRIENDS</u> ever tell you that you should cut down on your drinking or drug use? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have you ever gotten into <u>TROUBLE</u> while you were using alcohol or drugs? | <input type="checkbox"/> | <input type="checkbox"/> |

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The information recorded on this page may be protected by special federal confidentiality rules (42 CFR Part 2), which prohibit disclosure of this information unless authorized by specific written consent. A general authorization for release of medical information is NOT sufficient for this purpose.

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Las Preguntas CARLOS (CRAFFT)

Por favor responda a todas las preguntas con la mayor sinceridad posible; sus respuestas serán tratadas de forma confidencial

Parte A

Durante los últimos doce meses:

- | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| | No | Sí |
| 1. ¿Ha consumido <u>bebidas alcohólicas</u> (más de unos pocos sorbos)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. ¿Ha fumado <u>marijuana</u> o probado <u>hachís</u> ? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. ¿Ha usado <u>algún otro tipo</u> de sustancias que alteren su estado de ánimo o de conciencia?
El término " <u>algún otro tipo</u> " se refiere a drogas ilícitas, medicamentos de venta libre o de venta con receta médica, así como a sustancias inhalables que alteren su estado mental. | <input type="checkbox"/> | <input type="checkbox"/> |

Si respondió con un NO las tres primeras preguntas (A1, A2, A3), pase ahora a la pregunta B1

Si respondió con un SÍ a CUALQUIERA de las tres primeras preguntas (A1, A2, A3), pase ahora a las preguntas B1 a B6

Parte B (CARLOS)

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| | No | Sí |
| 1. ¿Ha viajado, alguna vez, en un <u>CARRO</u> o vehículo conducido por una persona (incluyéndolo a usted) que haya consumido alcohol, drogas o sustancias psicoactivas? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. ¿Le han sugerido, alguna vez, sus <u>AMIGOS</u> o su <u>familia</u> que disminuya el consumo de alcohol, drogas o sustancias psicoactivas? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. ¿Ha usado, alguna vez, bebidas alcohólicas, drogas o sustancias psicoactivas para <u>RELAJARSE</u> , para sentirse mejor consigo mismo o para integrarse a un grupo? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. ¿Se ha metido, alguna vez, en <u>LIOS</u> o problemas al tomar alcohol, drogas o sustancias psicoactivas? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. ¿Ha <u>OLVIDADO</u> , alguna vez, lo que hizo al tomar alcohol, drogas o sustancias psicoactivas? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. ¿Ha consumido, alguna vez, alcohol, drogas o alguna sustancia psicoactiva, encontrándose <u>SOLO</u> y sin compañía? | <input type="checkbox"/> | <input type="checkbox"/> |

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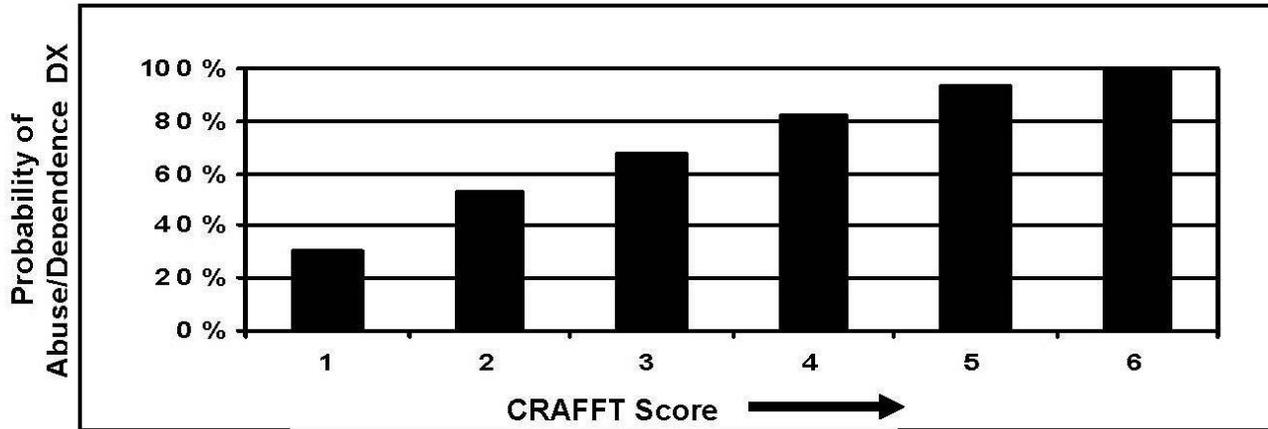
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SCORING INSTRUCTIONS: FOR CLINIC STAFF USE ONLY

CRAFFT Scoring: Each “yes” response in Part B scores 1 point.
A total score of 2 or higher is a positive screen, indicating a need for additional assessment.

Probability of Substance Abuse/Dependence Diagnosis Based on CRAFFT Score^{1,2}



DSM-IV Diagnostic Criteria³ (Abbreviated)

Substance Abuse (1 or more of the following):

- Use causes failure to fulfill obligations at work, school, or home
- Recurrent use in hazardous situations (e.g. driving)
- Recurrent legal problems
- Continued use despite recurrent problems

Substance Dependence (3 or more of the following):

- Tolerance
- Withdrawal
- Substance taken in larger amount or over longer period of time than planned
- Unsuccessful efforts to cut down or quit
- Great deal of time spent to obtain substance or recover from effect
- Important activities given up because of substance
- Continued use despite harmful consequences

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2. Knight JR, Sherritt L, Shrier LA, Harris SK, Chang G. Validity of the CRAFFT substance abuse screening test among adolescent clinic patients. Arch Pediatr Adolesc Med 2002;156(6):607-14.
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University of Rochester Medical Center, NYS Maternal & Infant Health Center of Excellence

265 Crittenden Blvd, Rochester, NY 14642 – Tel: 585-276-7893 – Fax: 585-461-4532
mihcoe@urmc.rochester.edu – www.mihcoe.org