Upper left – FORT LAUDERDALE, FL – Surveillance video captured a man using nearly super human strength fueled by the drug Flakka. He was trying to kick in the door at, of all places, Fort Lauderdale Police Headquarters.

Lower left – Heroin and fentanyl, the “new speedball”

Upper right – BEN!
Introduction

- SME video of the month
- Review of Overdose / Poisoning SOPs
- Scenarios
Announcements

• Region
  – Now (still) taking suggestions for 2016 SOP updates
    • tiny.cc/sop2016
    • Deadline for submission of suggestions is September 10, 2015

• System
SME video

tiny.cc/july2015
Street Drugs: The Old, the New, the What?
Al Qaeda gets 65% of its budget from charitable donations and the rest from narco-trafficking. Because of the market getting flooded with heroin to support their terrorist activities there are places in Chicago where heroin is roughly a few dollars a hit. The Mexican cartels are having turf wars to make up for their lost profits. Meth is smuggled into the US by tunnels and trucks all along the border with Mexico.

**Drugs are Profitable**

- Major source of revenue for gangs/cartels
- ~$80B/year spent on illegal drugs in US
- Cartels can lose 90% of their product and still make profit
- $1,500 kilo of cocaine → $66,000 street value (Columbia)
- $2,600 kilo of cocaine → $133,000 (Pakistani)
- 35% of Al Qaeda budget comes from narcotic sales
- Much of the methamphetamine in US is factory produced in Mexico
Chicago Gang / Cartel Involvement

- Sinaloa cartel controls ~45% of entire US drug market
- Biggest cash generator in Chicago is heroin
- High grade, white heroin
- Much less expensive than a few years ago
Street Drugs Overview 2015

- Heroin
- Synthetic Cannabinoids
- 2M2B (2-methyl-2-butanol)
- MDMA / Ecstasy / LSD / Bromo Dragonfly
- Bath Salts / a-PVP / Flakka
- Methoxetamine (Mexxy)
- Krokodil
- Party Pills
Schedule I drugs, substances, or chemicals are defined as drugs with no currently accepted medical use and a high potential for abuse. Schedule I drugs are the most dangerous drugs of all the drug schedules with potentially severe psychological or physical dependence.
Schedule II drugs, substances, or chemicals are defined as drugs with a high potential for abuse, less abuse potential than Schedule I drugs, with use potentially leading to severe psychological or physical dependence. These drugs are also considered dangerous.

**Drug Class Schedule II**

- Limited medicinal use
- Potential for addiction (somewhat less?)
  - Cocaine
  - Methadone
  - Combination products with < 15 mg of hydrocodone per dosage unit (Vicodin)
  - Methamphetamine
- Meperidine (Demerol)
  - Oxydocone (Oxycontin)
  - Hydromorphone (Dilaudid)
  - Adderall
  - Ritalin
  - Dexedrine
  - Fentanyl
Schedule III drugs, substances, or chemicals are defined as drugs with a moderate to low potential for physical and psychological dependence. Schedule III drugs abuse potential is less than Schedule I and Schedule II drugs but more than Schedule IV.
Schedule IV drugs, substances, or chemicals are defined as drugs with a low potential for abuse and low risk of dependence.

**Drug Class Schedule IV**

- Medicinally useful
- Addiction potential (many benzodiazepines)
  - Darvon
  - Soma
  - Xanax
  - Valium
  - Ambien
  - Darvocet
  - Talwin
  - Ativan
  - Tramadol
Schedule V drugs, substances, or chemicals are defined as drugs with lower potential for abuse than Schedule IV and consist of preparations containing limited quantities of certain narcotics. Schedule V drugs are generally used for antidiarrheal, antitussive, and analgesic purposes.

Drug Class Schedule V

- Medicinally useful
- Least known for addictive potential
  - Cough suppressants with < 200 mg codeine
    - Robitussin AC
  - Lomotil
  - Motofen
  - Lyrica
  - Paracetamol

Schedule V drugs, substances, or chemicals are defined as drugs with lower potential for abuse than Schedule IV and consist of preparations containing limited quantities of certain narcotics. Schedule V drugs are generally used for antidiarrheal, antitussive, and analgesic purposes.
Antidepressants - There are several types of antidepressant medications, and a wide variety of drugs within each type. The three most commonly used types of anti-depressants are selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), and atypical antidepressant medications. There are others, such as the older varieties known as tricyclic and tetracyclic medications, as well as MAOIs. These are seldom used because their side effects can be very disruptive and/or hazardous. All of these drugs work differently and it is sometimes necessary to try several before relief is achieved. They all have potentially dangerous side effects when combined with other medications. Stopping these drugs can have serious side effects. Tapering off must be medically supervised.

Anti-anxiety drugs - These drugs are primarily used to calm the symptoms of anxiety and stress. Some are prescribed for use as sedatives or sleeping pills. The class of drugs used here is most frequently benzodiazepines. These cause drowsiness, slowed heart rate and breathing, and interfere with normal functioning. Dangers are for abuse, due to increased need for drugs to function normally. Severe dangers are present in combining these medications with others, such as alcohol, barbiturates and narcotic pain medications. Some stimulant medications may also cause severe symptoms and can lead to death. Stopping these drugs after even short-term use can have serious consequences. Medications must be managed and tapered off by a physician.

Barbiturates - These are drugs used primarily for sedation. Barbiturates can include some drugs prescribed as anti-anxiety medication, but are usually used for purposes of sedation and as tranquillizers. They have relatively high potential for abuse and dependence. Each particular drug in this type is rated differently. They range from Schedules II through IV. Serious health consequences, including fatal overdose are often seen with these drugs.

Cannabis - Marijuana, hash and hash oil are classed in this type. Various laws govern growing, selling, buying and possession of these drugs,
depending upon the state. Laws are changing quickly, nationwide, as medical purposes for marijuana are being touted and recognized. These drugs currently are listed with the Federal Drug Enforcement Agency as Schedule I. State laws have decriminalized marijuana for use by individuals in varying degrees. There is high risk of dependence on this drug, along with potential for interaction with other drugs. Some users may use cannabis to counteract the effects of stimulant medications, with the possibility of severe anxiety and panic attacks. Other interactions include potential for overdose when under the influence of marijuana, due to its effects on decision making and cognitive functions.

Club and Street Drugs - Ecstasy, rohypnol, and GHB are three club drugs frequently used and abused. Ecstasy and GHB are schedule I drugs, and rohypnol is schedule IV. GHB and rohypnol are sedative hypnotic medications. Rohypnol is infrequently used for surgical purposes in veterinary settings. Ecstasy is a stimulant medication used frequently at gatherings like raves. There is serious danger of drug interactions with these medications. Since they are produced outside clinically monitored settings, there is no standard of production and other chemicals may be introduced when they are being manufactured.

Dissociative Drugs - These drugs vary by schedule. Several are popular for abuse. One of these drugs is less than Schedule I, while two of them have no schedule. While two are medically-indicated for use, they are abused often. These drugs are: Ketamine, a Schedule III medication, sometimes used for anesthetic on animals; Salvia, a nonscheduled, plant based drug. This is smoked most often and has no medicinal applications; Dextromethorphan is a nonscheduled substance added to many cough suppressant and cold medications; PCP is a schedule I and II drug. Dissociative drugs induce sedative effects, along with a sense of disconnection from self and others. These drugs can induce mild hallucinations. Danger exists for serious drug interactions and psychotic episodes for those who suffer from mild to severe mental illness.

Hallucinogens - These drugs produce vivid hallucinations for users. LSD, psilocybin, and mescaline are the most popular hallucinogenic medications, all of which are Schedule I substances. They have no medically-recognized purposes, although extensive research has been done to determine their possible effectiveness in treating mental illness in varying forms. Dangerous side effects have been recognized by those who suffer from mental disorders and at high doses. There is danger, also when used with other drugs.

Inhalants - Inhalants are seldom scheduled as drugs, but are commonly used to gain an altered state and have been frequently abused. Solvents are the most popular form of inhalant. These can range from spray paint to gasoline and Freon. Because they are dangerous, often lead-based chemical compounds, side effects can be severe. Brain damage from inhalants is frequent. Health risks are severe and interaction with other drugs is sometimes fatal.

Narcotics - This is a classification that includes all medications based on opiates. Primarily used for pain management, opioids are drugs highly likely to cause addiction. Lower levels of opiates are scheduled lower than those with higher levels. Some of the opioid narcotics are synthetically produced. These range from Schedule I, such as heroin, to Schedule V, very low levels of codeine in some cough suppressant medications.

Steroids - A group of naturally-occurring chemical compounds, some are used medicinally and others are used/abused for purposes of body-building and restructuring of muscle and bone. Anabolic steroids are the type most often abused, since there is little medicinal purpose for these drugs. There are also corticosteroids, which are those used for anti-inflammatory purposes. All steroids are designed for short-term use, as there are severe medical complications when used. Some persons have had fatal reactions to steroid use, even short-term. Dangerous side effects occur from use of these drugs.

Stimulants - A central nervous stimulant gives the user a burst of energy, along with increased alertness and euphoria. They feel powerful and unstoppable. Agitation, nervousness and hyper-manic mood swings are symptoms of use of these drugs. Medically, they are used to treat obesity, ADHD and ADD, as well as narcolepsy. Schedule II drugs include cocaine, methamphetamine and amphetamine. The use of these drugs for recreational purposes leads to severe medical consequences, as well as some permanent cognitive and behavioral damage.

Nicotine - A central nervous stimulant AND depressant, nicotine may relax some users while invigorating others. Some users receive both benefits from tobacco
use. Nicotine can be smoked, chewed or taken in other forms when replacing tobacco. Highly addictive, tobacco products are legally obtained and not scheduled. Serious health risks are recognized by tobacco users and those who breath their blown out smoke or live in the same vicinity with tobacco smokers.
WHAT'S HOT ON THE STREET?
The Hot Corner

- Synthetic Cannabinoids
- Flakka (alpha-PVP)
- Fentanyl
- Opana
- MDMA / PMMA
- Heroin
Opiates, such as heroin and codeine, are derived from the poppy plant, which contains opium. Heroin is the most popular opiate, and has flooded the U.S. and reached a large market of American pain-pill addicts seeking a less-expensive high. Overdoses and emergency room visits have skyrocketed across the country, and more abusers are dying from a drug whose purity can be hard to judge. Codeine appears in dozens of different formulations, including cough syrup. Some users use scams to obtain prescription strength cough syrups from doctors, others burglarize pharmacies, and others purchase syrup that has been smuggled in from Mexico.

**Opioids**

- Derived from the poppy plant, which contains opium
- Cheaper, purity hard to judge
- Dozens of formulations, including cough syrup
- Obtained by
  - Scamming doctors
  - Burglarizing pharmacies
  - Smuggling drugs / syrup in from Mexico
- Narcan more available
  - Police
  - BLS first responders
  - Families / friends of opiate users
Opium is the dried latex from the poppy plant and contains 12 percent morphine, plus other analgesic (pain killing) alkaloids such as codeine and thebaine. Opium has been used as a painkiller since ancient times. Illegal painkilling drugs derived from opium are known as narcotics. Morphine, codeine, and thebaine are three of six medically significant alkaloids produced in the opium poppy plant. (The other three do not work as painkillers.) Morphine is the most abundant opiate found in opium, it was the first active ingredient purified from a plant source, originally isolated in 1804 in Germany. Morphine was widely used after the invention of the hypodermic needle in 1857. It acts directly on the nervous system to relieve pain and has a high potential for addiction and dependence.

Codeine was isolated in 1832 in France, and is now the most widely used opiate in the world. Codeine can be directly extracted from opium, but most codeine is synthesized from the more abundant morphine. Codeine is commonly available through prescription-based cough syrups and tablets.

Heroin was synthesized in 1874 in Germany by mixing morphine with two types of acids. Twenty three years later, Bayer pharmaceutical company claimed to have originated heroin while trying to produce codeine. The company marketed heroin as a “miracle drug,” more effective than codeine as a cough medicine and better than morphine as a pain killer. In 1913, the number of heroin addicts began to skyrocket and heroin became banned in many countries.

Hydromorphone (Opana) is a semi-synthetic derivative of morphine. Hydromorphone is to morphine as hydrocodone is to codeine.

Methadone is a synthetic opioid developed in 1937 in Germany as an alternative to morphine. During World War II, a team of German scientists began synthesizing a substance called Hoeschst 10820 as a result of short supplies of morphine. It was introduced into the U.S. in 1947 as an analgesic. Methadone is mainly used in the treatment of opioid dependence, such as with heroin. Abuse of methadone results in 5,000 overdose deaths per year.

Fentanyl was first synthesized from pethidine at a pharmaceutical company in Belgium. Pethidine was one of the first synthetic opioids created to replace morphine. The fentanyl transdermal patch and the flavored lollipop were introduced in the 1990s. To date, more than 12 different analogues of fentanyl have been produced and trafficked into the U.S. Fentanyl analogues may be hundreds of times more potent than heroin and morphine. Some dealers mix fentanyl powder with heroin to increase potency or to compensate for low-quality heroin, causing an outbreak in overdose deaths beginning in 2006 in the northeast U.S.
Opana probably ranks among the top three of all abused prescription drugs in the United States, even though most people have never heard of it. As agents from the U.S. Drug Enforcement Agency put it, Opana is “trending rapidly” in many parts of the country. They know this is true because of the increase in deaths attributed to this drug, the increasing number of people entering residential treatment for Opana, and because the number of Opana prescriptions will be over a million this year alone, even though Opana has only been on the market since 2007.

The Opana trend is due to a change in the formulation of OxyContin, a powerful narcotic painkiller that is a chemical cousin of Opana and heroin. OxyContin was sold as pills, but addicts typically crushed them into a powder to be snorted through the nose or mixed with liquid and injected. Under pressure from the federal government and physicians, Purdue Pharmaceuticals reformulated OxyContin pills so they turn into goo when crushed, making it impossible to inject or snort the drug. It cakes in the nose and gets stuck in the teeth.

The Federal Food and Drug Administration approved the new formula in April 2010, prescriptions for Opana increased as those for OxyContin declined. Unfortunately, Opana is twice as strong as OxyContin and six to eight times stronger than morphine, which means it is extremely addictive and has some of most severe detrimental effects on the human body of all opioids when abused. Opana has been called “morphine on steroids” and the most dangerous drug of all time.

Opana is a powerful narcotic painkiller, classified by the government as a Schedule II Controlled Substance. This means it is among the most highly
addictive of drugs with the strictest of regulations on it. The penalties for trafficking in Opana are among the most severe.

Oxymorphone, the active ingredient in Opana, is a semi-synthetic opioid made from both natural and manmade chemicals. Oxymorphone is more toxic than the natural opioid morphine, but less toxic than the fully synthetic ones like methadone.

Oxymorphone is 4,5a-epoxy-3,14-dihydroxy17-methylmorphinan-6-one. It appears as a white or slightly off-white, odorless powder that dissolves easily in water but is less soluble in alcohol or ether.

Endo Pharmaceuticals received approval from the Federal Food and Drug Administration to market Opana in June 2006. At the end of 2007, doctors had written over 268,000 Opana prescriptions, and in the year 2010, that number was up over 1.01 million.

Opana is used to treat adults in moderate or severe chronic pain. It is not prescribed for occasional use or on an “as-needed” basis. Opana ER is extended release version of the drug with effects that can last up to 12 hours. Since some people have severe allergies to narcotics and can die the first time they take them, doctors usually introduce Opana on a gradual basis, starting with 5mg every four hours and then increasing it to the level at which their patients no longer feel pain.

Opana comes as octagon-shaped pills; the pink are 5 mg, orange, white, red and yellow are 10mg, 20 mg, 30mg and 40mg respectively.

Common side effects are similar to other narcotic drugs, and they might include euphoria, relaxation, loss of anxiety, constipation, cough suppression, slowing of respiration, and constricted pupils. Other side effects might be headache, dry mouth, low blood pressure, dizziness, nausea, fatigue, lightheadedness, slow heart beat, increased sweating, vomiting, and itching. Less common side effects are blurred vision, confusion, pounding in the ears, thirst, decreased urination, wheezing, chest pain, cough, insomnia, hallucinations, irritability, lethargy, mood swings, swelling, difficulty swallowing.

Opana interacts with many different medications, including all central nervous system depressants and alcohol. Any medicine that causes drowsiness interacts with Opana, including antihistamines, cold medicines, tranquilizers and sleeping pills. It also interacts with muscle relaxants, anesthetics (including those used by dentists) and many common drugs such as carisoprodol, chloral hydrate, Daltane, Demerol, etc. Opana should not be taken by people with histories of drug abuse or alcoholism, Addison’s disease, breathing problems, underactive thyroids, mental illness, brain tumors, head injuries, liver or kidney diseases, gallbladder or prostrate problems, pancreatitis, low blood pressure or low blood volume, seizures, or certain intestinal problems.

Agents in drug enforcement believe that most people abuse Opana as a substitute for OxyContin. The euphoria that Opana produces does not last long as OxyContin, which in turn causes users to take more to maintain their “high.” Most people who abuse Opana do so because they are addicted. The original addiction might occur by chance, or as a way to cope with problems, to screen out anxiety, depression and boredom, and to create an inner world safe from the
real world.

Street names for Opana are Blue Heaven, Blues, Mrs. O, New Blues, Octagons, Oranges, Orgasna IR, OM, Pink, biscuits, Pink Heaven, Pink Lady, Pink O, Stop Signs, and The O Bomb. The drug costs about $1 per milligram — in other words, a 30mg Opana is $30 and so forth. The Drug Enforcement Agency says that street dealers are getting their supplies through forged and fake prescriptions, robberies, and from large drug cartels.

Endo Pharmaceuticals, the manufacturer of Opana, plans to develop a tamper-proof version of the drug in the near future.
Fentanyl is a powerful synthetic opiate analgesic similar to but more potent than morphine. It is typically used to treat patients with severe pain, or to manage pain after surgery. It is also sometimes used to treat people with chronic pain who are physically tolerant to opiates. It is a schedule II prescription drug.

In its prescription form, fentanyl is known as Actiq, Duragesic, and Sublimaze.

Like heroin, morphine, and other opioid drugs, fentanyl works by binding to the body's opiate receptors, highly concentrated in areas of the brain that control pain and emotions. When opiate drugs bind to these receptors, they can drive up dopamine levels in the brain's reward areas, producing a state of euphoria and relaxation. Medications called opiate receptor antagonists act by blocking the effects of opiate drugs. Naloxone is one such antagonist. Overdoses of fentanyl should be treated immediately with an opiate antagonist.

When prescribed by a physician, fentanyl is often administered via injection, transdermal patch, or in lozenge form. However, the type of fentanyl associated with recent overdoses was produced in clandestine laboratories and mixed with (or substituted for) heroin in a powder form.

Mixing fentanyl with street-sold heroin or cocaine markedly amplifies their potency and potential dangers. Effects include: euphoria, drowsiness/respiratory depression and arrest, nausea, confusion, constipation, sedation, unconsciousness, coma, tolerance, and addiction.
Purple Drank or Lean, a mixture of Sprite, Jolly Ranchers, and codeine, is consumed by youth. If prescription codeine is unavailable, DM cough syrup is often substituted.

Purple drank originated in the Southern hip hop community, specifically Texas. Other names include sizzurp, syrup, drank, barre, purple jelly, Texas tea, and Tsikuni. Cough syrup containing promethazine and codeine are usually purple in color, but there are other colors of cough syrup that work the same way, including a golden-colored hydrocodone-based syrup.

The prescription-only cough syrup is a controlled substance with widespread recreational use. It is not unusual to see large quantities of the substance being sold and transported, according to the DEA. It is usually obtained by doctor shopping, forged prescriptions, and pharmacy theft.

Demand for the syrup has sent its price soaring on the streets. Syrup that typically costs $12 per pint is sold to street dealers for $300 per pint. Dealers sell it by the ounce for $40-$80.

The drink produces euphoria and causes motor skill impairment that make users move slowly or lean over. Overdosing on the syrup is potentially fatal. Too much codeine, which is produced from morphine, can depress the central nervous system and stop the heart and lungs.
Synthetic cathinones have one or more synthetic chemicals related to cathinone, an amphetamine-like stimulant found naturally in the Khat plant. Chemically they are similar to amphetamines (such as methamphetamine) as well as to MDMA (ecstasy).

In 2012, the President signed legislation making many chemicals used in synthetic drugs illegal. However, manufacturers are expected to respond to the new law by producing new chemicals to evade legal restriction.
Until recently, bath salts were legal and considered cheap substitutes for cocaine and amphetamines.

Bath salts are typically a white or brown crystalline powder sold in small plastic or foil packages labeled “not for human consumption.” They are sometimes marketed as plant food, jewelry cleaner, or phone screen cleaner, and are sold online and in drug paraphernalia stores under a variety of names, including Ivory Wave, Cloud Nine, Lunar Wave, Vanilla Sky, White Lightning, and Scarface.

The synthetic cathinone bath salts should not be confused with products such as Epsom salts that are sold to improve the experience of bathing. The latter has no drug-like properties.

Bath salts are taken orally, inhaled, or injected. The hallucinatory effects reported by users are consistent with other drugs such as MDMA or LSD.

Negative reactions include cardiac symptoms and psychiatric symptoms, including paranoia, hallucinations, and panic attacks. They may also produce a syndrome known as “excited delirium” resulting in dehydration, breakdown of skeletal muscle tissue, and kidney failure. Bath salts have even been linked to incidents involving zombie behavior.
Alpha-PVP is chemically similar to other synthetic cathinone drugs popularly called "bath salts," and takes the form of a white or pink, foul-smelling crystal that can be eaten, snorted, injected, or vaporized in an e-cigarette or similar device.

Vaporizing, which sends the drug very quickly into the bloodstream, may make it particularly easy to overdose. The worst outcomes are associated with snorting or needle injection.

Like other drugs of this type, alpha-PVP can cause a condition called "excited delirium" that involves hyperstimulation, paranoia, and hallucinations that can lead to violent aggression and self-injury. “the main issue with this category of drugs is that the user doen’s know what they’re taking or the stregneth of what they are taking and they are literally guinea pigs”

The drug has been linked to deaths by suicide as well as heart attack. It can also dangerously raise body temperature and lead to kidney damage or kidney failure.

The energizing and often agitating effects reported in people who have taken bath salts are consistent with other drugs like amphetamines and cocaine that raise the level of the neurotransmitter dopamine in brain circuits regulating reward and movement. A surge in dopamine in these circuits causes feelings of euphoria and increased activity. A similar surge of the transmitter norepinephrine can raise heart rate and blood pressure.
Bath salts have been marketed as cheap (and until recently, legal—see Box) substitutes for those stimulants. A recent study found that MDPV—the most common synthetic cathinone found in the blood and urine of patients admitted to emergency departments after bath salts ingestion—raises brain dopamine in the same manner as cocaine but is at least 10 times more potent.

The hallucinatory effects often reported in users of bath salts are consistent with other drugs such as MDMA or LSD that raise levels of another neurotransmitter, serotonin. A recent analysis of the effects in rats of mephedrone and methylone showed that these drugs raised levels of serotonin in a manner similar to MDMA.
FLAKKA STATS

2013 60 cases
2014 670 cases

BY 2014, 60 CASES HAD RISEN NEARLY 1000%.

FLAKKA IS POPULAR AMONG THE 18 TO 30 YEAR OLD CROWD.
"FLAKKA" SIDE EFFECTS
Agitation
Death
Extreme Aggression
Psychosis
Rapid Heart Rate
Severe Hallucinations

WHAT IS FLAKKA?
MDMA was initially popular among White adolescents and young adults in the nightclub scene or at “raves” (long dance parties), but the drug now affects a broader range of users and ethnicities.

How Is MDMA Abused?
MDMA is taken orally, usually as a capsule or tablet. The popular term Molly (slang for “molecular”) refers to the pure crystalline powder form of MDMA, usually sold in capsules. The drug’s effects last approximately 3 to 6 hours, although it is not uncommon for users to take a second dose of the drug as the effects of the first dose begin to fade. It is commonly taken in combination with other drugs. For example some urban gay and bisexual men report using MDMA as part of a multiple-drug experience that includes cocaine, GHB, methamphetamine, ketamine, and the erectile-dysfunction drug sildenafil (Viagra).

How Does MDMA Affect the Brain?
MDMA acts by increasing the activity of three neurotransmitters, serotonin, dopamine, and norepinephrine. The emotional and pro-social effects of MDMA are likely caused directly or indirectly by the release of large amounts of serotonin, which influences mood (as well as other functions such as appetite and sleep). Serotonin also triggers the re-release of the hormones oxytocin and vasopressin, which play important roles in love, trust, sexual arousal, and other social experiences. This may account for the characteristic feelings of emotional closeness and empathy produced by the drug; studies in both rats and humans have shown that MDMA raises the levels of these hormones.
The surge of serotonin caused by taking MDMA depletes the brain of this important chemical, however, causing negative after effects—including confusion, depression, sleep problems, drug craving, and anxiety—that may occur soon after taking the drug or during the days or even weeks thereafter.

Some heavy MDMA users experience long-lasting confusion, depression, sleep abnormalities, and problems with attention and memory, although it is possible that some of these effects may be due to the use of other drugs in combination with MDMA (especially marijuana).
Acts as a hallucinogen and stimulant. It can cause increased heart rate, heavy sweating, teeth clenching, chills and in some cases a very sharp increase in body temperature that can lead to organ failure and death. The synthetic drugs found in Molly can cause chest pains, paranoia, hallucinations, psychotic and violent behavior, dehydration and kidney failure. Withdrawal symptoms include depression, fatigue, loss of appetite and trouble thinking.
The Problem

“No buyer of Molly knows exactly what he or she is getting.”

http://nymag.com/daily/intelligencer/2015/03/molly-drug-tests.html
The authors of the article bought samples of MDMA and tested them:

No buyer of molly knows exactly what he or she is getting, of course. But there are ways to find out, and New York arranged to test several samples obtained in the city over the past year. Home-test kits, sold through dancesafe.org, involve placing a couple of drops of dye on a few grains of the drug. They show results within 30 seconds, which can then be compared with a color chart. There are four such tests in the standard kit, and they indicate various ingredients and levels of purity. But they can be inexact — among other things, they do not distinguish between MDMA and its sister drug MDE — and the color changes can be difficult for amateurs to detect. (One of the four tests, for example, produces almost the same hue for heroin, LSD, and MDMA, although the others draw those distinctions more clearly.)

So we tested the tests. Earth and Fire Erowid, a couple who run a California nonprofit, arrange anonymized testing of molly and other drugs through Drug Detection Laboratories — one of the very few private labs certified for this work — and then post the results and photos (atecstasydata.org) as a kind of spotter’s guide, partly with the intent of keeping clubgoers out of the hospital. At their other site (erowid.org), they have posted thousands of detailed reports filed by users of psychoactive substances, forming a huge database of pharmacological experience.
As the chemicals in synthetic drugs are designated controlled substances, chemists are actively inventing new compounds to circumvent legal restrictions. One such product that has replaced bath salts is Pump-It Powder, marketed as an enhanced plant vitamin.

Geranamine, aka methylhexanamine, is the active ingredient similar to an amphetamine and decongestant found naturally in the geranium plant. Methylhexanamine is a legal substance.

Users report effects similar to bath salts. Some users have suffered seizures, hallucinations, and paranoia. It produces effects considered to be more powerful than cocaine and methamphetamine. It is particularly popular in the Midwest and Plains states, and is sold in gas stations and head shops.

It is easy to find and relatively cheap, $30 for a tin container packed with the powder. The drug can be snorted, injected, or smoked. The high is somewhat delayed, which may cause users to double or triple the dose if the effects are not felt right away, resulting in a likely trip to the hospital.

“Getting a lot of calls from parents of kids who end up in the hospital,” said Sgt. Brad Dumit with the Tyler, Texas P.D. “They can snort it, smoke it, and put it in their food. Basically, they can take it any way they want to take it.”

 Symptoms include the acceleration of the heart and blood temperature. There may be dilated pupils and piloerection (gooseflesh or goose pimples). The high could last four to six hours, although some claim to have felt the effects 12 hours or longer.
Krokodil (desomorphine)

- **Street Names**
  - Russian Magic
  - Cheornaya
  - Himlya

- **What / How**
  - Injected opioid (codeine combined with other substances, frequently household chemicals)

- **Effects / Symptoms**
  - Fast-acting kick
  - 8x effect of morphine
  - Shorter half-life (< 2 hours)
Krokodiil - The Flesh-Eating Zombie Drug

Highly Addicted With Awful Consequences

- A Krokodiil high lasts for only 90 minutes.
- 7 hours less than heroin
- A very fast turnaround of withdrawal symptoms
- Nausea, a heightened sense of pain, smell, sound, light
- Actively have 30 minutes to cook up and inject another dose
- Krokodiil users soon develop greenish, scaly-like, damaged skin - Dragon-like skin
- The number of addicts is low because they die within 2 years.
- Cause of death: severe tissue damage, phlebitis, gangrene
- Desomorphine is not a new drug
- 5-10 times more potent than morphine
- Legal status: prohibited

Krokodiil - A Homemade Version Of Peronid

- The recipe originated in a Siberian military base 10 years ago
- Cooked on the stove for 30 minutes
- The ingredients are few and easily obtained
- Simplified chemical process without purification
- Krokodiil is highly impure, crude, unrefined and toxic injectable drug
- Most users are from Russia and the Ukraine
- Just a few known cases in the US

Peronid - Patented in 1932

- Desomorphine is not a new drug
- 5-10 times more potent than morphine
- Legal status: prohibited

StudyHealth.com
Methoxetamine or MXE is a new designer “research chemical product” often taken for its hallucinogenic and dissociative effects and is relatively new to the recreational drug culture in the United States.

MXE is considered to be an analog to the drug Ketamine, classified as a dissociative anesthetic originally used as a powerful tranquilizer on animals. The packaging reads “research chemical” and “not for human consumption.”

MXE is marketed as a safe alternative to Ketamine and is sold as a white powdery substance. It is currently unscheduled in the United States but may emerge as a popular synthetic drug of abuse. Users report effects including hallucinations, euphoria, warmth, enlightenment, and being detached from the world around them.

Increased heart rate and blood pressure, involuntary eye movement, loss of balance and coordination, and slurred speech have been reported. It has been linked to deaths in Europe and placed under temporary class drug control in Great Britain.

It takes 10-15 minutes for the effects of MXE to be felt and can sometimes take 60-90 minutes, causing some users to double dose and die from overdose. MXE is usually snorted or ingested in capsule. It is primarily sold online under the names MXE, M-Ket, Kmax, or Mexxy.
Tricyclic antidepressants (TCAs) are secondary or tertiary amines that have variable abilities to inhibit reuptake of neurotransmitters (norepinephrine, dopamine, and serotonin) and to be anticholinergic, antihistaminic, and sedating. These properties are important to consider when prescribing these agents and when managing an intentional or accidental overdose.

TCAs are one of the most common causes of death from prescription drug overdose in the U.S. Available TCAs: amitriptyline, imipramine, desiprane, nortriptyline, doxepin, amoxapine, clomipramine, protriptyline, and others.

**PHYSICAL FINDINGS & CLINICAL PRESENTATION**

- **Cardiovascular:** Intraventricular conduction delay (QRS prolongation), Sinus tachycardia, Atrioventricular block, Prolongation of the QT interval, Ventricular tachycardia, Wide complex tachycardia without P waves, Refractory hypotension (the most common cause of death from TCA overdose), Late arrhythmias or sudden death (in addition to the arrhythmias, which occur during the first 24 to 48 hours; late problems can occur up to 5 days after the overdose)
- **Central nervous system:** Coma, Delirium, Myoclonus, Seizures
- **Other:** Hyperthermia, Ileus, Urinary retention, Rhabdomyolysis, Kidney failure, Pulmonary complications (e.g., aspiration pneumonia), Life-threatening overdose exists with the ingestion of more than 1 g of a TCA. Among patients who reach a hospital, most deaths occur within the first 24 hours
# Cyclic Antidepressant Overdose / Toxicity

<table>
<thead>
<tr>
<th>Toxic Effect</th>
<th>Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged QRS complex / AV Block</td>
<td>Cardiac sodium channel → slowed depolarization in atrioventricular node, His-Purkinje fibers, and ventricular myocardium</td>
</tr>
<tr>
<td>Sinus tachycardia</td>
<td>Cholinergic blockade, inhibition of norepinephrine uptake</td>
</tr>
<tr>
<td>Ventricular tachycardia – monomorphic</td>
<td>Cardiac sodium channel inhibition → reentry</td>
</tr>
<tr>
<td>Ventricular tachycardia – Torsades de Pointes</td>
<td>Cardiac potassium channel inhibition → prolonged repolarization</td>
</tr>
<tr>
<td>Ventricular bradycardia</td>
<td>Impaired cardiac automaticity</td>
</tr>
<tr>
<td>Hypotension</td>
<td>Vascular alpha-adrenergic receptor blockade, cardiac sodium channel inhibition, impaired relaxation-contraction</td>
</tr>
</tbody>
</table>
TRICYCLIC ANTIDEPRESSANT TOXICITY

- TCA toxicity:
  - Sodium channel blockade: conduction delay
  - Alpha, adrenergic blockade: hypotension
  - Cholinergic (muscarinic) blockade: mydriasis, dry mucus membranes, tachycardia, ileus, urinary retention
  - Histamine blockade

- Treatment:
  - Sodium bicarbonate
  - Direct alpha, adrenergic agents as pressors
  - Benzodiazepines as seizure prophylaxis/treatment
  - NaHCO₃ is indicated for any QRS > 100 ms
Wide Complex

Rhythm: ECG in tachycardia overview. (From Scardino PT, Monten J. Textbook of medicine, ed 4, Jostin, 2002, Churchill Livingstone.)
Calcium channel blockers are prescription medications that relax blood vessels and increase the supply of blood and oxygen to the heart while reducing the heart's workload.

CCB's reduce pressure in the arteries thereby reducing making it easier for the heart to pump blood and as a result the heart needs less oxygen.

CCB's also help relieve or prevent angina.

CCB's decrease the excitability of the heart muscle and thereby are used for treating certain types of abnormally rapid heart rhythms.

**Calcium Channel Blocker**

- **Trade names:** Verapamil, Diltiazem, Nifedipine, Nicardipine, Amlodipine, Bepridil, Felodipine, Isradipine, Nisoldipine
- **Category:** Calcium channel blockers
- **Actions:** Calcium channel blockers prevent calcium from entering cells of the heart and blood vessel walls, resulting in lower blood pressure. Also called calcium antagonists, they relax and widen blood vessels by affecting the muscle cells in the arterial walls.
Overdose Effects

- Verapamil has the deadliest profile, combining severe myocardial depression and peripheral vasodilation
- Verapamil and diltiazem act on the heart and blood vessels
- Dihydropyridines such as nifedipine cause primarily vasodilation and subsequent reflex tachycardia
- Calcium antagonists have negative effects on heart rate, contractility, conduction, and vascular tone
  - Except for nifedipine which tend to result in tachycardia even in severe toxicity
Calcium Antagonists
"Very Nice Drugs"
Verapamil
Nifedipine
Diltiazem

SIDE EFFECTS
Decreased BP
Bradycardia
May Precipitate A-V Block
Headache
Abdominal Discomfort
Peripheral Edema

Decreses contractility, conductivity & oxygen demand of the heart

WWW.NURSEBUFF.COM
<table>
<thead>
<tr>
<th>Organ System</th>
<th>Manifestations / Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>Hypotension, sinus bradycardia, sinus arrest, AV block, AV dissociation, junctional rhythm, asystole (1)</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>Respiratory depression, apnea, pulmonary edema, ARDS</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>Nausea, vomiting, bowel infection (rare)</td>
</tr>
<tr>
<td>Neurologic</td>
<td>Lethargy, confusion, slurred speech, coma, seizures (uncommon), cerebral infarction (rare)</td>
</tr>
<tr>
<td>Metabolic</td>
<td>Lactic acidosis, hyperglycemia (mild), hyperkalemia (mild)</td>
</tr>
<tr>
<td>Dermatologic</td>
<td>Flushing, diaphoresis, pallor, peripheral cyanosis</td>
</tr>
</tbody>
</table>

(1) Overdose effects
Beta Blockers work by blocking the effects of the hormone epinephrine. When you take them the heart beats more slowly and with less force, thereby reducing blood pressure. Beta blockers also help blood vessels open up to improve blood flow.

<table>
<thead>
<tr>
<th><strong>Beta Blocker</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Names:</strong> Acebutolol (Sectral), Atenolol (Tenormin), Betaxolol (Kerlone), Bisoprolol/hydrochlorothiazide (Ziac), Bisoprolol (Zebeta), Carvedilol (Cantrol), Metoprolol (Lopressor, Toprol XL), Nadolol (Corgard)</td>
</tr>
<tr>
<td><strong>Category:</strong> Beta-Adrenergic Blocking Agents</td>
</tr>
<tr>
<td><strong>Actions:</strong> Reduces blood pressure by blocking the effects of the hormone epinephrine. This causes the heart to beat slower and with less force.</td>
</tr>
</tbody>
</table>
Slow heart rate allows left ventricle to fill completely and lowers the heart workload.
Understanding the direct and indirect effects of beta-receptor blockade is crucial to rapid identification and appropriate treatment of beta-blocker toxicity. Beta-blockers act as competitive inhibitors of catecholamines, exerting their effects at both central and peripheral receptors. Blockade of beta-receptors results in decreased production of intracellular cyclic adenosine monophosphate (cAMP) with a resultant blunting of multiple metabolic and cardiovascular effects of circulating catecholamines.

Beta1-receptor blockade reduces heart rate, blood pressure, myocardial contractility, and myocardial oxygen consumption. Beta2-receptor blockade inhibits relaxation of smooth muscle in blood vessels, bronchi, the gastrointestinal system, and the genitourinary tract. In addition, beta-adrenergic receptor antagonism inhibits both glycogenolysis and gluconeogenesis, which may result in hypoglycemia.

Other than the direct effects of the beta-adrenoreceptor blockade, toxicity may result from other mechanisms, including sodium and calcium channel blockade, centrally mediated cardiac depression, and alteration of cardiac myocyte energy metabolism.
**B-BLOCKERS:** (Ends in LOL)

**Action:** Blocks Beta Receptors in the Heart Causing:
- ↓ Heart Rate
- ↓ Force of Contraction
- ↓ Rate of A-V Conduction

**Side Effects:**
- Bradycardia
- Lethargy
- GI Disturbance
- CHF
- ↓ BP
- Depression
(1) Overdose effects

<table>
<thead>
<tr>
<th>Organ System</th>
<th>Manifestations / Effects</th>
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</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>Bradycardia, hypotension</td>
</tr>
<tr>
<td>Neurologic</td>
<td>Decreased level of consciousness, seizures (cellular hypoxia from decreased cardiac output), coma</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Bronchospasm (more likely in patients with bronchospastic disease like asthma), pulmonary edema (secondary to heart failure), respiratory arrest</td>
</tr>
</tbody>
</table>
Synthetic Cannabinoids

- **Chemical name:** Gosh only knows what is in these (dried, shredded plant material with chemical additives)
- **AKA:** Spike, K2, fake weed, Yucatan Fire, Skunk, Moon Rocks, Bliss, Black Mamba, Bombay Blue, Genie, Zohai
- **Category:** Psychoactive (mind-altering)
- **Similar to:** Cannabis
- **Actions:** Users report experiences similar to those produced by marijuana—elevated mood, relaxation, and altered perception—and in some cases the effects are even stronger than those of marijuana. Some users report psychotic effects like extreme anxiety, paranoia, and hallucinations.
A highly concentrated version of THC known as Butane Hash Oil, Dabs, or Wax is made using highly explosive butane. A clear, golden-brown cannabis derivative, BHO has little smell, either in its solid form or when vaporized. It sells on average for $50 a gram. BHO is 15 percent THC, and a drop or two can be as potent as a joint. It is said to be so potent that it will keep a person high for more than a day.

The process for producing BHO is extremely dangerous. The finely ground marijuana is stuffed into an extractor, which is a tube or cylinder made of glass or stainless steel. The cylinder is then filled with liquid butane, which extracts the active ingredients from the marijuana and drips down out of the cylinder. The butane is evaporated from the mixture using a hot water bath. What’s left is the concentrated hash oil.

Butane is so flammable that a spark can set off an explosion. On the East Coast, there have been incidences of fires and explosions that have blown out windows, walls, and caused numerous burn injuries. First responders should receive training to identify items used in hash oil extraction as it can be mistaken for pipe bombs or meth lab explosions. But the creation process is not the only dangerous thing about BHO.
Transdermal patch delivery system. These patches contain medication which release their active ingredients so they can be absorbed thru the skin to elicit a desired effect.
On Feb. 5, 2014 a Grand Chute, WI police officer conducted a vehicle stop, during which a K9 alerted to the presence of marijuana.

The driver was questioned and disclosed information about the sale of “puppy chow” containing THC in the Fox Valley, Wis. area. He further stated that the product moves very fast and often can’t keep up with demand.

Puppy chow is a common party food made by melting chocolate and butter and combining it with powder sugar and Chex cereal. The THC oil is added to the butter during the cooking process. Users are also mixing the THC oil with Cinnamon Toast Crunch cereal.

The high lasts approximately five hours and costs $10 per cup. Marijuana is not visible on the product. It does have a faint odor of marijuana, which grows stronger when the bag is shaken.
Pharm / Pharming / Punchbowl Party

- Attendees must bring pills to add to mix
- Most common among teens
- They bring whatever they can pilfer from parents, grandparents, siblings, neighbors
- Random handful = random effects
- Never quite sure of what you took
Assessment

Cardiovascular signs
- Some antimetics, alcohol
- Electrocardiogram, bradycardia, tachycardia, conduction disturbances

Respiratory signs
- Reduced: tachypnea, diaphoresis
- Increased: tachycardia

Blood pressure
- Hypertension, tachycardia, hypotension, coarctation

Neurologic symptoms
- Altered mental status, coma, seizures
- Skull fracture

Urinary symptoms
- Hematuria, oliguria, anuria

Ocular symptoms
- Photophobia, ptosis, miosis

Eczematous skin lesions
- Redness, swelling, itching

Drug indicators
- Needle tracks, drug paraphernalia, drug packing
- Hypothermia, hyperthermia, hypoglycemia, hypoxemia

Sources of information
- Reviews, articles, textbooks

Critical signs of poisoning by pharmaceutical agents and drugs of abuse

Comprehensive Exam of the Poisoned Patient
Nasal Atomizer

- Indications:
  - Unable to obtain venous access
  - Need for administration of
    - Versed (midazolam)
    - Narcan (naloxone)
Review concentrations of medications
Versed 2 ml/10 mg
Narcan 2 mg/2 ml

Nasal Atomizer

- Contraindications
  - Facial trauma
  - Inappropriate volume/concentration of medication
  - Nose bleed, nasal congestion or nasal discharge

- Spontaneous respirations are required to atomize Narcan (naloxone)
Procedure

1. Draw up the appropriate dose of medication in 2ml of fluid
   • Adult seizure – Versed: 10mg in 2ml fluid
   • Adult overdose – Narcan: 2mg in 2ml
   • Pediatric seizure - Versed: 0.2 mg/kg (diluted to 2ml)
   • Pediatric overdose – Narcan:
     o <20 kg, 0.1 mg/kg (diluted to 2ml)
     o >20kg, 2mg in 2ml of fluid
2. Attach atomizer to syringe
3. Insert atomizer 1.5 cm into one nostril
4. Breathe compress the syringe to administer half of medication (<1ml total volume)
5. Remove and repeat in the other nostril until all of the medication has been administered
6. Monitor patient
7. Document medication, route, dose and fluid amount
8. Continue on-going assessment
Delayed ALS, If BLS did not administer Alternatively, Police give Narcan.
Audience: What are your concerns based on the dispatch information?

1. Scene safety (unknown weapons or intox)
2. Get law enforcement to accompany, secure scene
3. What substances are likely to be involved?
4. Known drug activity in building – possibility of drug kitchen / production?
5. What units do you dispatch?

Dispatch Info

- Multi-unit apartment building (known drug activity on premises)
- Possible overdose
- Dispatch confirms one patient, unknown weapons or intoxication
- Patient unconscious, breathing

- Based on above, what units should be dispatched?
Scenario will differ depending on the audience / agency. Either the police or the Non-Transport Vehicle should administer Narcan, for the purposes of the scenario. If neither carry Narcan in the agency being taught, then provide BLS care and await the ALS Ambulance.
Concerns?
1. Bloodborne pathogens
2. Airway
3. Breathing
4. Circulation

---

**Initial Assessment**

- Approx 35 year old male
- Thin, numerous visible tattoos and piercings
- Slumped over on couch, needlestick L arm antecubital area, minor hemorrhage
- Apparently used syringe/needle on couch next to pt's L side
- Unconscious, GCS 6
- Cyanotic
- Breathing 8x per minute, strong carotid pulse ~ 100/min
- Pupils 2mm

Opioid Toxidrome
<table>
<thead>
<tr>
<th>First Responders On Scene</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Responders with Narcan</strong></td>
</tr>
<tr>
<td>• Assist ventilations</td>
</tr>
<tr>
<td>• Administer Narcan IN</td>
</tr>
<tr>
<td>• Re-assess</td>
</tr>
<tr>
<td><strong>First Responders without Narcan</strong></td>
</tr>
<tr>
<td>• Assist ventilations</td>
</tr>
<tr>
<td>• Wait for EMS arrival</td>
</tr>
<tr>
<td>ALS Ambulance On Scene</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>First Responders</td>
</tr>
<tr>
<td>Administered Narcan</td>
</tr>
<tr>
<td>• Re-assess</td>
</tr>
<tr>
<td>• IMC</td>
</tr>
<tr>
<td>• Consider repeat Narcan</td>
</tr>
<tr>
<td>• Consider advanced airway if no response to Narcan</td>
</tr>
<tr>
<td>First Responders did not give administer Narcan</td>
</tr>
<tr>
<td>• IMC</td>
</tr>
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</tr>
<tr>
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<tr>
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</tr>
</tbody>
</table>
## ADULT TOXICOLOGIC EMERGENCIES

**BLS/ALS**

**STABLE:** alert, oriented, normotensive

1. Initial Medical Care SOP, p. 4
   - HazMat precautions

**ALS**

**UNSTABLE:** altered mental status, airway compromise, and/or hypoperfusion

1. Initial Medical Care SOP, p. 4
   - HazMat precautions
2. GCS score ≤ 8 and evidence of airway compromise, INTUBATE. The use of Alternate Airway is contraindicated in ingestion of caustic substance.
3. Unknown etiology with respiratory compromise:
   - Administer NARCAN (naloxone) 1 mg IV/IN. Repeat dose 0.5 mg IV/IN PRN q 2 minutes up to max dose 2 mg if transient response observed

### NARCOTIC OVERDOSE

For known narcotic overdose with GCS score ≤ 8:

4. Protect airway, HIGH FiO₂ or VENTILATION
5. Consider NARCAN (naloxone) 1 mg IV/IN, repeat dose 0.5 mg IV/IN PRN q 2 minutes up to max dose 2 mg if transient response observed before intubation if airway is able to be controlled and ventilations are effective.
Remind crews that if Narcan given prior to arrival to document who administered/ effects and dosage. Also to make sure crews relay to hospital (ECRN) that Narcan was given prior to arrival when giving report.
"Ondansetron3Dan" by Fuse809 at English Wikipedia. Licensed under CC BY-SA 3.0 via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Ondansetron3Dan.gif#/media/File:Ondansetron3Dan.gif
Zofran (ondansetron)

- Class – Antiemetic
- Dosage – 4 mg orally dissolving tablet, 4 mg / 2 mL solution
- Action – Antiemetic, selective serotonin antagonist, exact mechanism of antiemetic action not fully understood
- Indications – Nausea, vomiting
- Contraindication – Hypersensitivity to ondansetron
- Side Effects – Diarrhea, headache, lightheadedness
Wide complex tachycardia caused by overdose (cyclic)

CARDIAC RHYTHM OF THE MONTH
EKG consistent with sodium-channel blockade on a suspected tricyclic antidepressant OD = intraventricular conduction delay (QRS > 100 ms in lead II)

Most common dysrhythmia is sinus tachycardia with wide complex
<table>
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     minutes up to max dose 2 mg if transient response observed

**CYCLIC ANTIDEPRESSANT OVERDOSE**

- Associated with wide QRS complex (possible cyclic ingestion)

4. Administer NORMAL SALINE 1 L IV bolus
5. Administer SODIUM BICARBONATE 8.4% 1 mEq/kg IV
### ADULT TOXICOLOGIC EMERGENCIES

#### BLS/ALS

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### BETA-BLOCKER / CALCIUM CHANNEL BLOCKER OVERDOSE

- Hypoperfusion associated with bradycardia (possible beta blocker or calcium channel blocker ingestion)

4. Administer GLUCAGON 1 mg slow IV. May repeat x 1.
5. If no response consider transcutaneous pacing (TCP).
Zofran / pregnancy class action suit (BREAKING NEWS), Medical Directors decided to not make any changes for now
Overview

Zofran (ondansetron) is a powerful anti-nausea medication marketed by GlaxoSmithKline. It was approved in 1991 to treat nausea and vomiting in patients undergoing surgery and chemotherapy.

Although it is not approved for use by pregnant women, Zofran is sometimes prescribed off-label to treat morning sickness during pregnancy, including a severe form called hyperemesis gravidarum. It may be prescribed as a tablet, liquid or as an orally disintegrating tablet (ODT).

In 2012, GlaxoSmithKline reached a $3 billion Zofran settlement with the U.S. Department of Justice, which accused the drug maker of illegally marketing Zofran for morning sickness and paying kickbacks to doctors who prescribed the drug off-label for such purposes.

Zofran birth defect lawsuits make similar claims, and accuse GSK of failing to warn women and the medical community that Zofran pregnancy use can cause serious fetal harm.
Region VIII

- As of the time of this CE, the Region VIII EMS Medical Directors have decided not to change the SOPs
- If in doubt, contact Medical Control hospital prior to giving Zofran to pregnant patients
What to do With Unused Drugs

- Dr. Phillips mentioned the probability that you have unused medications in your medicine cabinet
- Where do you dispose of those in your area?
Illinois EPA

- Disposal locations
- [http://www.epa.illinois.gov/topics/waste-management/waste-disposal/medication-disposal/locations/index](http://www.epa.illinois.gov/topics/waste-management/waste-disposal/medication-disposal/locations/index)
ALS

SCENARIO: THE SECOND
Audience: What are your concerns based on the dispatch information?
1. Scene safety
2. Get law enforcement to secure scene
3. What substances are likely to be involved?
4. What units do you dispatch?

Dispatch Info
- Single family residence, nicest neighborhood in town
- Police called for a loud party, arrived to find a punchbowl party, several high school age patients with various levels of impairment
- Five patients “to be checked out”
Enroute Info

- Police advise “a big bowl containing dozens of different shapes and colors of pills”, and also an unknown purple liquid
- The patients you are going to be seeing all took pills plus either the purple liquid or vodka
Triage

- First EMS unit arrives, triage:
  1. 16 y/o female, GCS 7 (1/2/4) with snoring respirations
     • RR 28, CR < 2 sec, GCS 7
  2. 17 y/o female, GCS 11 (4/2/5) with slurred speech, vomiting
     • RR 24, CR < 2 sec, GCS 11
  3. 16 y/o male, GCS 11 (4/2/5) with slurred speech
     • RR 14, CR < 2 sec, GCS 11
  4. 17 y/o male, GCS 7 (1/2/4) with snoring respirations
     • RR 8, CR > 2 sec, GCS 7
  5. 16 y/o female, GCS 9 (3/2/4) with slurred speech
     • RR 18, CR < 2 sec, GCS 9

Which patient should receive priority care? #4 is triaged immediate.
Patient # 4
17 y/o male, GCS 7 (1/2/4) with snoring respirations, RR 8, CR > 2 sec

- Bystander reports he “took a handful” of pills and “washed it down with several glasses of vodka”, on a dare
- About ten minutes later he began having slurred speech, followed a few minutes later by vomiting once in a trash can, and then became unconscious
- Duration of altered mental status ~ 15 minutes

- Priorities?

1. Assess
2. ABC’s
3. Identify treatable / reversible conditions
Assessment

- GCS 7
- Airway – snoring respirations
- Breathing - 8/min
- Circulation – weak, rapid radial pulse
- Sinus tachycardia @ 150 with widened QRS (Lead II)
- BP 80/48
- Room air SpO2 90%
- Lungs clear
- Pupils 7 mm, slow to respond
- Blood sugar = 71
Consider Glucagon for beta blocker OD? Less of a priority because beta blockade seems unlikely because of tachycardia.

It might not be in the patient’s best interest to give an additional medication or two that would further alter their mental status, but if the airway was threatened? Discuss.
ALS SKILL REVIEW

System-specific procedure / policy
ADULT PSYCHOLOGICAL EMERGENCIES

1. Assess SCENE AND PERSONAL SAFETY. Call law enforcement personnel to scene, if needed. Above all, DO NOT JUGGERIZE YOUR OWN SAFETY.
2. Initiate Medical Care SOP. p. 4, as situation warrants:
   - Determine and document if patient is a threat to self or others, or if patient is unable to care for self. Do not leave patient alone.
   - Protect patients from harm to self or others.
   - ALS may be waived in favor of basic transport, if patient is uncooperative or dangerous.
3. Verbally attempt to calm and restraint the patient to reality as able. Do not participate in patient detentions or hallucinations.
4. If patient is combative, use restraints as necessary per System-specific policy.
5. Consider medical etiologies of behavior disorder and treat according to appropriate SOP:
   - Hypertension
   - Hypothermia
   - Substance abuse/Overdose
   - Neurologic disease (tremors, intracranial bleed, head injury, etc.)
   - Metabolic imbalance (hyperglycemia, thyroid disease, etc.)
   - Seizure/Postictal
6. Consult Medical Control from the scene in ALL instances where refusal of transport is being considered.

ALS
7. For severe anxiety or agitation:
   - Administer VERSED (midazolam) 2 mg increments IV q 2 minutes up to 10 mg
   - May administer VERSED (midazolam) IM if unable to start IV
     - 3.75 mg for < 70 kg
     - 5 mg for > 70 kg