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Proper Pharmacologic Prescribing and Disposal for Dental Practitioners, The RX Opioid Epidemic

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Maryland Regulations

- To articulate and inform licensees about COMAR 10.44.22 (Maryland Dental regulation on Continuing Education)
- COMAR 10.44.22.04: “A dentist seeking renewal shall complete a 2 hr. Board -approved course on proper prescribing and disposal of prescription drugs”

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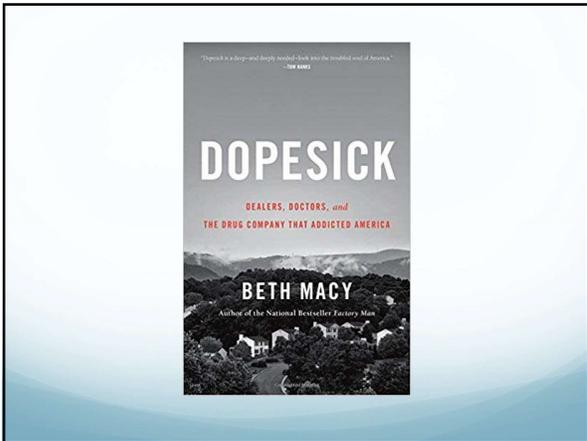
Objectives

- Identify best practices for appropriate handling and disposal of medications and controlled substances.
- Educate licensees regarding protection of prescription pads
- Review PDMP

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Mortality



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Background

- Aug. 27, 2019 – NBC News
- The maker of OxyContin, Purdue Pharma, and its owners, the Sackler family, are offering to settle more than 2,000 [lawsuits against the company](#) for \$10 billion to \$12 billion.

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The Washington Post

Business

The man who made billions of dollars from OxyContin is pushing a drug to wean addicts off opioids

By Lindsey Bever

September 8

Following hundreds of lawsuits over the years against pharmaceutical giant Purdue Pharma, Colorado's attorney general is suing the OxyContin creator for its "significant role in causing the opioid epidemic."

The lawsuit claims Purdue Pharma L.P. and Purdue Pharma Inc. deluded doctors and patients in Colorado about the potential for addiction with prescription opioids and continued to push the drugs. And it comes amid news that the company's former chairman and president, Richard Sackler, has patented a new drug to help wean addicts from opioids.

"Purdue's habit-forming medications coupled with their reckless marketing have robbed children of their parents, families of their sons and daughters, and destroyed the lives of our friends,

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The New Oxycontin

- Reformulated OxyContin
- Physical and chemical properties that make abuse via injection and intranasal snorting difficult
- The original formulation of 1995 went off patent on April 16, 2013

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First wave of Abuse Drug Dealers With Degrees

- Single Dr. Prescribed 1,729,845 pills of alprazolam, diazepam, and hydrocodone over a two-year period in a medical practice.
- Average 2500 pills per day
- Sixteen months in federal prison and fines of about \$100k

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Friends, Family and the Medicine Cabinet



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Brief History

- 1804 Morphine synthesized from the Poppy seed
- 1839 Soldiers Disease
- 1898 Heroin sold OTC in pharmacies
- Cough Syrup, Coca Cola with Cocaine

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Brief History

- 1960 – Sackler labs created Diazepam
 - First 100 million dollar drug
- 1980 – NEJM – "Addiction is Rare"
- 1996 – Purdue Pharma introduced OxyContin. Sales grew from \$48 million in 1996 to almost \$1.1 billion in 2000.¹
- 1996 – Pain as the 5th vital sign by the American Pain society

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Reference Statistics

- 1.7 million practitioners in US can write prescriptions
- 70,000 pharmacies in US
- 60 Docs prosecuted last year for drug related crimes

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Scheduled Drugs

Type of Substance	Potential for Abuse	Approved for Medically Accepted Use?	Dependence	Prescription and Refills	Examples
Schedule I	High	No	Severe	Not available by prescription	Heroin, Marijuana, Ecstasy, LSD

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Schedule II & III Drugs

Schedule II	High	Yes, with severe restrictions	Severe	By prescription only, no refills	Cocaine, Ritalin, Opium, Vicodin, Oxycodone, Methamphetamine, Morphine
Schedule III	Moderate	Yes	Moderate or low-physical; high-psychological	By prescription only, up to 5 refills in 6 months	Anabolic steroids, Ketamine, Marinol

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Schedule III & IV Drugs

Schedule IV	Low	Yes	Limited	By prescription only, up to 5 refills in 6 months	Xanax, Valium, Ambien
Schedule V	Low	Yes	Limited	May be available without prescription, for medical use only	Cough suppressants containing Codeine, Lyrica, Pyrovalerone

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Natural vs. Synthetic Opioids

- "Opioid" includes drugs that are derived naturally and semi-synthetically
 - From the opium poppy plant.
- Naturally derived opioids can be extracted directly from the poppy plant.
 - Codeine and Morphine.
- The illegal drug Heroin is an opioid derived from morphine, a natural opioid.

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Opioid

- Semisynthetic opioids are a hybrid and go through some laboratory chemical modifications
 - Hydrocodone (Vicodin) and Oxycodone (Percocet).
- Synthetic opioids are entirely laboratory manufactured to mimic the chemical makeup of natural opioids.
 - Fentanyl (Duragesic), typically used for cancer pain.

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Dopamine and Opioids

- There is a neurological process that occurs in the brain after taking an opioid that will occur in every person
- Increase in dopamine production in the limbic reward system.
- The brain remembers rewarding experiences and makes them easier and more likely to repeat.

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Opioids

- Binds to receptors in the brain involved in the control of pain and other functions
- Opioid Intoxication Effects
 - Pain relief, euphoria, drowsiness, sedation, weakness, dizziness, nausea, impaired coordination, confusion, dry mouth, itching, sweating, clammy skin, constipation

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Opioids

- Potential Health Consequences
 - Slowed or arrested breathing, lowered pulse and blood pressure, tolerance, addiction, unconsciousness, coma
- Death
 - Risk increased when combined with alcohol or other CNS depressants

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M and M

- **Black Box Warning 8-15-2012**
- Food and Drug Administration is reviewing reports of children who developed serious adverse effects or died after taking codeine for pain relief after tonsillectomy and/or adenoidectomy for obstructive sleep apnea syndrome.

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Metabolism of Codeine

- Converted to Morphine in the liver by the enzyme cytochrome P450 2D6 (CYP2D6).
- Some people have DNA variations that make this enzyme more active and are ultra-rapid metabolizers
- Average 1 to 7 people per 100
- African/Ethiopian populations, rate is:
 - 35 of 122 people = 29%

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Guidelines for Opioid Prescribing in Children and Adolescents After Surgery

- American College of Surgeons (ACS) Education Committee, the American Academy of Pediatrics Section on Surgery, pediatric anesthesia, pediatric nursing, general surgery residency, pediatric surgery physician assistants, and addiction science.
- New and persistent use in children who are naive to opioids occurs at rates up to 20% after surgery.
- *JAMA Surg.* 2021;156(1):76-90. doi:10.1001/jamasurg.2020.5045

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Guidelines for children

- 4.8% of patients filled additional prescriptions within 6 months, compared with a 0.1% opioid fill rate in a comparative nonsurgical group.
- A second study of 70 942 adolescents and young adults who were opioid-naïve (70% ≤18 years old) found that a filled perioperative opioid prescription after **wisdom tooth extraction** was associated with **2.7** higher odds of persistent opioid use compared with those who did not fill an opioid prescription after extraction.

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Guidelines for Children

- Tramadol and codeine in children are contraindicated to treat pain or cough in children **younger than 12 years** and pain after surgery to remove the tonsils and/or adenoids of children younger than 18 years
- FDA also warns against the use of codeine and tramadol in adolescents aged between 12 and 18 years who are obese or have conditions that increase the risk of serious breathing problems (eg, obstructive sleep apnea, severe lung disease).

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Guidelines for Children

- We recommend that caregivers and children be educated about expectations and methods of pain management both before the day of surgery and again perioperatively.
- Health care professionals dedicate less than 6 minutes to pain management education on the day of surgery.
- Optimal timing of pain management education reduces parental anxiety, which is strongly associated with a child's preoperative anxiety and postoperative pain.
- Caregivers prefer education to be in plain, nonmedical language, regardless of health literacy level

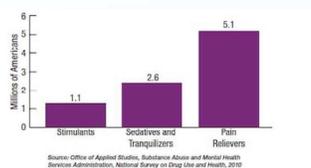
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Guidelines for Children

- If opioids are prescribed, we recommend perioperative education should include instruction regarding possible adverse drug events, seriousness of adverse drug events, and what to do if they occur.
- Only 3 parents reported receiving written instruction to hold medication if their child was sleeping, sedated, or overly sleepy.
- We recommend educating caregivers and older children to store opioids in a secure location and properly dispose of unused medication.

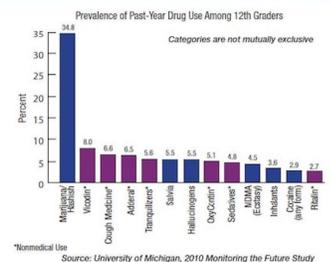
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Prevalence of Substance Abuse



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Prevalence



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Prevalence

- In 2009, 2.2 million persons aged twelve or older used pain relievers non-medically for the first time
- 9.2% of Americans older than 12 years use illicit drugs monthly
- 6,000 new users per day

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Prevalence

- Americans
 - 4% of world population
 - Consume 80% of all opioids
 - Consume 99% of all Hydrocodone

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Prevalence

www.cdc.gov/drugoverdose

- 2014 - 28,648 deaths
- 2015 – 33,000 deaths
- 2017 – 70,000 deaths
- 2018 – 67,000 deaths
 - 142 deaths per day
 - 10% inc. in Fentanyl deaths, 30% inc. Cocaine deaths
- More Americans are dying from drug overdoses than in motor vehicle crashes each year.

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COVID-19 AFFECTS

- The CDC looked at a 12-month span from June 2019 to May 2020 and found more than **81,000 overdose deaths**
- Highest number of overdose deaths ever recorded in a 12-month period.
- Synthetic opioids—especially illicitly manufactured fentanyl appear to be the primary driver, increasing overdose deaths

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Prevalence

- 25% of people who use opioids become addicted
- 54% percent of Americans say they personally know someone who has been addicted to prescription pain medication.
 - Kaiser Family Foundation

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The Three Waves of Opioid Overdose Deaths

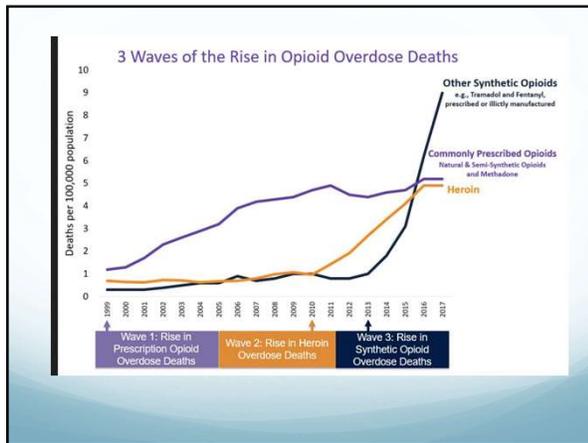
This rise in opioid overdose deaths can be outlined in three distinct waves

The first wave
1990's - Overdose deaths involving overprescribing

Second wave
2010- Increases in overdose deaths involving heroin.

Third wave
2013- Increases in overdose deaths involving synthetic opioids

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OVER-PRESCRIBING

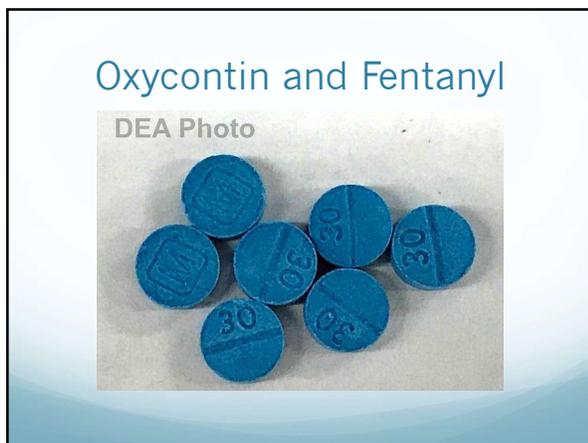
- In a study at the University of Pennsylvania, 79 patients had outpatient dental surgery were given 28 opioid pills
- After 3 weeks patients had an average of 15 pills left over
- Unused pills ultimately become available for others
- Recommendation
 - Reduce the quantity of opioids prescribed after surgery
 - Make it easier for patients to dispose of unused pills by providing disposal kiosks in pharmacies.

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Common Prescribing Methods

- In 2011 the most common opioid prescribed by oral surgeons
 - Hydrocodone > Oxycodone
- Percent of OMFS that prescribe an opioid for surgery pain
 - 85
- Average pill count by GP's of an opioid for post op surgery
 - 10-20 tabs

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Dental Use

- JAMA – Association of Opioid Prescriptions From Dental Clinicians for US Adolescents and Young Adults With Subsequent Opioid Use and Abuse, 2019;179(2):145-152
- Retrospective cohort study, 2015, Ages 16-25, 1-year duration, with health insurance coverage.
- 754,002 enrolled with health plan, 12.9% received an opioid RX, 30.6% of those were for dental.
- 6.9% received another opioid RX vs .1% of non treated cohort.

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Dental Use

- 5.8% of opioid exposed ultimately had an opioid abuse related diagnosis compared with .4% of non-exposed.
- Dentists are the leading source of opioid RX for ages 10-19, accounting for 31% of RX's.

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Govt. Resources and Recommendations

- The president's fiscal year 2017 budget proposed \$1.1 billion in funding to ensure treatment for opioid use disorder.
- Expand overdose prevention strategies.
- Increase the availability of medication-assisted treatment programs
- More overdose-reversal drug Naloxone

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Society Costs

- In 2001
 - 8.6 Billion was spent on Prescription Drugs and treatment of their abuse.
 - 2.6 Billion healthcare costs
 - 1.4 Billion criminal justice costs
 - 4.6 Billion workplace costs
- Clinical Journal of Pain 2006;22:667-676

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Society Costs Since 2001

- 1 TRILLION DOLLARS

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Bag of Heroin



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Cost of Opioids

- 1980
 - 1 Gram of Heroin was \$2200
- 2020
 - 1 Gram about \$500.
- 2020
 - A bag of Heroin (.1gram) is 5-10\$
 - \$200 per day
- 2020
 - Oxycontin – 1\$/mg dose = \$60 for 60 mg tab

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Heroin

- People are skipping pills and going straight to heroin

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Snorting

The Dangers Of
SNORTING OXYCONTIN
(Oxycodone Insniffation)

Abuse of oxycodone (Oxycontin) can lead to many risks or dangers. These risks are enhanced when a person snorts the drug, as snorting (insufflation) produces a faster onset of effects than was originally intended for the drug.

RehabCenter.net

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Guidelines Do Work

- Evidence-based prescribing guidelines reduced postoperative opioid consumption for nine general surgeries by roughly 30%
 - The New England Journal of Medicine* (2019;381[7]:680-682).

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Figure 1.0 – Opioid Limits for Adults Ages 18 Years Old or Older

Pain	Average Daily MME (allowing for tapering)	Prescription TOTAL MME based on expected duration of pain	Common average DAILY pill counts	Commonly associated injuries, conditions and surgeries
Minor pain	No Opioids	0 total MME	0 hydrocodone 0 oxycodone 0 hydromorphone	molar removal, sprains, non-specific low back pain, headaches, fibromyalgia, un-diagnosed dental pain
Moderate pain	24 MME/day	0-3 days: 72 MME 1-5 days: 120 MME	4 hydrocodone 5mg or 3 oxycodone 5mg or 3 hydromorphone 2mg	non-compound bone fractures, most soft tissue surgeries, most outpatient laparoscopic surgeries, shoulder arthroscopy
Severe pain	32 MME/day	0-3 days: 96 MME 1-5 days: 160 MME	6 hydrocodone 5mg or 4 oxycodone 5mg or 4 hydromorphone 2mg	many non-laparoscopic surgeries, maxillofacial surgery, total joint replacement, compound fracture repair
For patients with severe pain and extreme circumstance, the provider can make a clinical judgement to prescribe up to 7 days so long as the reason is documented in the medical record.				
Extreme Pain	50 MME/day	7 day MAX: 350 MME	10 hydrocodone 5mg or 6 oxycodone 5mg or 6 hydromorphone 2mg	similar to the severe pain category but with complications or other special circumstances

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PDMP

- Controlled substances that are dispensed to patients in Maryland and surrounding states
- Electronically report to database
- Access to Nurse Practitioners, Doctors and Pharmacists
- May only access data for patients of record
- Identify harmful drug interactions

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PDMP

- All states have PDMP
 - Database does not cross all state lines
- Many states require their use
- Less than 20% use PDMP when not required
- Most of the 7.5 Million people at high risk for addiction could be identified by previous narcotics use.

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PDMP

Prescribers must with some exceptions, query and review their patient's PDMP data prior to:

1. Initially prescribing an opioid or benzodiazepine AND at least every 90 days
2. Prescribers must also document PDMP data query and review in the patient's medical record.

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Commonly Abused Prescription Drugs

- CNS Depressants:
 - A class of drugs that slow CNS function, some of which are used to treat anxiety and sleep disorders
 - barbiturates and benzodiazepines

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Barbiturates

- CNS depressant prescribed to promote sleep
 - Nembutal, Seconal, Phenobarbital

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- Examples of Drugs that may cause sedation
- Antihistamines
 - Diphenhydramine, Promethazine
- Carbamates
 - Anticonvulsants
- Imidazopyridine
 - Ambien, Sonata, Lunesta

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Benzodiazepines

- A type of CNS depressant prescribed to relieve anxiety and sleep problems.
 - Diazepam (Valium)
 - Lorazepam (Ativan)
 - Triazolam (Halcion)
 - Clonazepam (Xanax)

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Benzodiazepines

- Most commonly prescribed and abused sedative-hypnotics, less respiratory depression than barbiturates.
- Long-acting metabolites often cause intoxication that lasts for several days.
- Benzodiazepine overdose is most dangerous in combination with other sedative-hypnotics.

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Sleep medications

- Ambien (zolpidem)
- Sonata (zaleplon)
- Lunesta (eszopiclone)

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Stimulants

- Amphetamines
 - Biphphetamine, Dexedrine, Adderall
- Methylphenidate
 - Concerta, Ritalin

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Stimulants/Amphetamines

- Intoxication Effects
 - Exhilaration, increased energy, mental alertness
- Potential Health Consequences
 - Increased heart rate, blood pressure, and metabolism, reduced appetite, weight loss, nervousness, insomnia, seizures, heart attack, stroke

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Robotripping



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Dextromethorphan

- Found in some cough and cold medicines
 - Robotripping
- Intoxication Effects
 - Euphoria, slurred speech
- Health Consequences
 - Increased heart rate and blood pressure, dizziness, nausea, vomiting, confusion, paranoia, distorted visual perceptions, impaired motor function

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Non-prescription drugs abused

- Heroin
- Methamphetamine
- Marijuana
- Xylazine
- Bath salts
- Cough syrup

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How much Anesthetic?



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Horse Anesthesia



- Xylazine

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The Magazine of the Maryland State Education Association Volume 16 Issue 2 December 2015

FIGHTING HEROIN

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a sports injury and had ACL replacement surgery. That's when doctors gave him oxycodone the first time. I recently found the medication schedule following his surgery and it was three oxycodone in the morning, three at night, and other medications in between—for nearly a week. Now, it seems like JP became addicted immediately, like so many people I've met. After he graduated from college, he couldn't keep a job. He always had an excuse and he was constantly sick, but we never knew why. I would drive him some place as he was secretly trying to detox himself and he would ask me to pull over so he could vomit. Finally, he said, "Mom, I'm addicted to pain pills and it's really bad, I need help." He went right into rehab and six months later he was clean and working again.

After that, it was more rehabs, hospital stays, halfway houses, battles with insurance. You just can't imagine this nightmare as a mom. This was a



Arny (left) and his friend James (right) at the FudUp Rally in October. Arny is a second grade student in Montgomery County and James is a fourth grade student in July 2015.

cause of work and they left. He loved me, "Mom, I made it home. I love you." The next morning, I got up, had my coffee, and I texted him, "Are you at work yet?" And then, as I was sitting on my porch drinking coffee, three police officers walked up and said, "We need to talk to you."

JP and his girlfriend must have stopped in Baltimore to pick up that night before they came to see us. I believe they used before they came by and again when they got home. He died in his sleep. There's seems to be no answer to this crisis. Nobody knows what the left hand is doing. Counties don't talk to each other. The doctors prescribe the stuff. I was at the FudUp Rally in October and speakers were comparing this crisis to the AIDS epidemic—how it was just ignored until finally the government couldn't ignore it any more. There are more kids dying from heroin and opioid overdoses

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Heroin

- Most commonly abused illicit opiate in US
- Neuropathologic changes
 - Parkinson symptoms, movement disorders

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Heroin Helper
We're not horsing around.

you are here: home / curious / chemistry / injecting pills jay

angry curious worried user sick bored blog

Preparing Pills for Intravenous Injection

It is common practice for intravenous opioid users to inject pills that have been crushed and dissolved into a solution. The reasons that an user would prepare and inject a pill are varying: some may do this primarily for the rush associated with intravenous injections, while others may do it because they think that they are getting higher than they would if they were to take the pill orally or intranasally. Injecting pills can be hazardous to the user's health. Despite this knowledge (and years of constant admonitions by *Heroin Helper*—Dr. H), many people still choose to continue injecting pills. It is my goal to make pill injection safer by giving instruction on the safest possible preparation method for injecting pills.

I think it first necessary to state that the pills are designed for oral administration. That being the case, there have traditionally been no doctors or scientists studying and producing the safest and most efficient methods to inject pills; drug users have had to experiment and find the best ways to do this themselves. Because of this, many unsafe preparation methods, rumors, and bad information have been propagated. Fortunately, there are a few scientists in the world who are studying the most commonly used preparation methods, and trying to determine the safest methods possible.[1]

To Cook or Not to Cook

One popular method of preparation is to boil the solution before extraction. It is a contentious and often debated issue among users of whether to cook the solution or "cold shoot" it—to extract the largest drug with cold water. It seems, however, that those advocating cold water extraction were right, at least in part. A group of scientists working in Australia determined that heating the solution causes no higher solution concentration of the drug. In fact, adding heat to the mixture actually increases the amount of particulate matter in the solution by causing melted wax to pass through the filter, which produces particles when it cools and solidifies within the syringe.

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Methamphetamine

- Most widely abused drug recognized in dental literature
- Meth mouth - buccal smooth surface and interproximal caries
- Increased parafunction
- Xerostomia: increased consumption of carbonated beverages, poor oral hygiene

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Lethal doses of Fentanyl and Carfentanil relative to a lethal dose of Heroin

Substance	Relative Lethal Dose
Fentanyl	0.5
Carfentanil	0.1
Heroin	1.0

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The synthetic opioid carfentanil has killed four people in Maryland in recent weeks. The opioid is 100 times stronger than fentanyl and 10,000 times stronger than morphine. (Thinkstock)

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Carfentanil

- Elephant tranquilizer used by veterinarians.
- 10,000 times more potent than morphine,
- *4000 times more potent than heroin*
- *1 kilogram of Carfentanil would be equivalent to four metric tons of pure heroin"*
- Officers and EMT's are giving 4–8 doses of naloxone just to get a response.

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Erowid

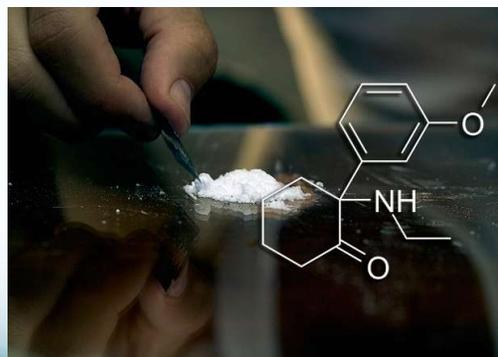


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MDMA, Methylenedioxymethamphetamine, Ecstasy



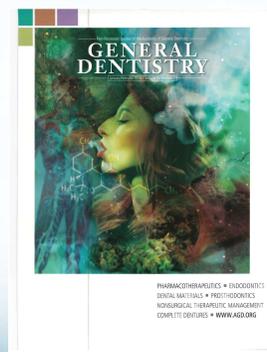
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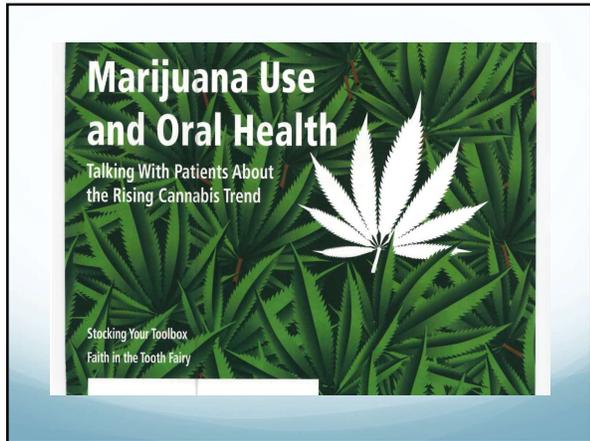
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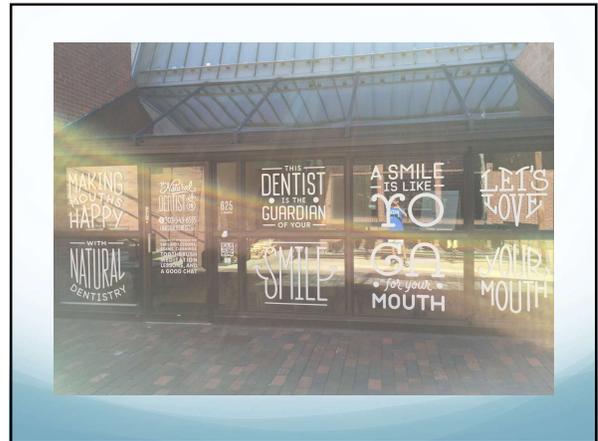
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Cannabis

- There is a lack of multicenter randomized trial data due to cannabis being illegal at the federal level.

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Bong – water pipe



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Medical Marijuana

- Colorado
- 23 states and DC allow medical marijuana
- May provide benefit in painful conditions, seizures, reducing inflammation
- Mostly studied in synthetic form

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MARIJUANA

- Between 2001 and 2009
 - 5000 users of MM
- Between 2014 and present
 - 271K Applications for medical use
 - 115K registered users

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FORMS OF MARIJUANA

- Buds
- Hash oils lotions
- Sodas
- Infused candy
- Pizza sauces
- THC content 5-90 percent with no controls

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MARIJUANA STATISTICS

2011-2013

- 57% increase in ED visits
- 82% increase in hospitalizations
- Accidental ingestion in children
- 268% increase in exposures to children 0-5yrs
- Documented addictive potential

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CONCLUSIONS: MARIJUANA

- Need larger , longer controlled studies
- “We need to stop flying the plane while we are building it. Science should determine a medication not public opinion”
 - Ken Finn – CO springs rehab.

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Marijuana

- Oral manifestations-
- Poor OH, caries, xerostomia, inflammation
- Skin cancers - related to increased risk of HIV
- Tachycardia, peripheral vasodilation
- Illegal forms of marijuana: K2, spice
- Heavy use
 - d/c use 1 week prior to avoid tachycardia and vasodilation

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How to Detect Cannabis Use

- Urinalysis detection is inexpensive, quick, and accurate.
- Blood samples may be used to measure quantitative levels of cannabinoids.
- Saliva testing is a better indication of recent use than the presence of THC in urine.

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The screenshot shows a website interface for 'CANNABIS BLOG'. The navigation bar includes 'HOME', 'ABOUT', 'CONTACT', 'FAQ', and 'SEARCH'. The main content area features a search bar with the query 'Saliva Drug Testing For THC' and a list of search results. The top result is titled 'Saliva Drug Testing For THC—What You Need To Know' and includes a Trustpilot rating of 4.7/5. The search results list includes: 1. How do saliva drug tests work? 2. How long can THC be detected in saliva? 3. Which jobs test saliva for THC? 4. Do saliva drug tests check for CBD?

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Cocaine



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Cocaine Intoxication

- Euphoria, hypervigilance, talkativeness, grandiosity
- Violent behavior
- Nausea, vomiting, perspiration
- Respiratory depression, chest pain, or dysrhythmia
- Disorientation, seizures, dyskinesias
- Blood pressure change

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Bridging

- Use of other prescription medications to minimize physiologic withdrawal until individuals can obtain their next "chemical high" with their drug of choice.

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Prescription Drug Abuse

- Use of a medication without a prescription
- In a way other than as prescribed
- For the experience or feelings
- Recurrent use leading to failure to fulfill major obligations

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Addiction

- A chronic, relapsing disease
- Compulsive drug seeking
- Despite serious adverse consequences
- Long-lasting changes in the brain.

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Physical Dependence

- An adaptive physiological state that occurs with regular drug use and results in a withdrawal syndrome when drug use is stopped
- Often occurs with tolerance. Physical dependence can happen with chronic—even appropriate—use of many medications.

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Tolerance

- A condition in which higher doses of a drug are required to produce the same effect achieved during initial use; often associated with physical dependence.

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Receptors

- Agonist
 - A chemical entity that binds to a receptor and activates it, mimicking the action of the natural (or abused) substance
- Antagonist
 - A chemical entity that binds to a receptor and blocks its activation.

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Pain Management Strategies to Limit Narcotic Use

- Long acting local anesthetic
 - Bupivacaine
- Repeat local anesthetic at end of procedure
- Combination NSAIDs and Acetaminophen pre-op or immediately post op.

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Choosing an Analgesic

- Quality of pain
 - Dull, sharp, neuropathic
- Quantity of pain
 - Mild, mod, severe
- Locus of action
 - Central, local

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Aspirin

- Inhibition of prostaglandin synthesis
- Advantages
 - Analgesic, antipyretic, anticoagulant, anti-inflammatory
- Disadvantages
 - Uric acid (exacerbates gout), salicylism, allergy, caustic
- Contraindications
 - Allergy, asthma, gastritis, gout-probenecid, anticoagulants, pregnancy

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Acetaminophen

- CNS action, some peripheral
- Analgesic, antipyretic
- Does not have
 - Gastritis, anti-platelet effects
 - Anti-inflammatory effects
- Acetaminophen reduced to 2.5 gms /day for >2 drinks /day

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Non-steroidal Anti-Inflammatory Drugs

- Inhibits cyclooxygenase-1 and/or COX 2
- Combined COX-1 and COX-2
 - Ibuprofen ; max dose 3200mg/day
 - Naproxen (Naprosyn): max dose 1250mg/day
 - Naproxen sodium (Anaprox DS)
 - Better absorption

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NSAIDS

- COX-2 inhibitors
 - No greater efficacy than ibuprofen
 - Minimal gastric irritation
- Celecoxib (Celebrex)
 - No effect on platelet aggregation
 - 100-200mg/day
 - Acute/chronic pain
 - Acute - 400mg start, 200mg/24hrs

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NSAIDS

- Contraindications
 - Allergic response to NSAIDS/ASA
 - Gastritis
 - Blood thinners
 - Asthma
 - Pregnancy

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Ibuprofen - Cautions

- Side effects:
 - Edema
- Interactions:
 - long term may reduce effectiveness of antihypertensives

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Tramadol (Ultram)

- Not a controlled substance but with addiction potential
- Equal to ibuprofen in pain relief
- Dose 50-100mg Q4-6hr, Max 400/day

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Indicators of drug abuse

- Personality changes - hyperactivity, irritability
- Malnourished
- Missed appointments
- Poor compliance
- Skin lesions
- Poor response to preventative treatment

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Warning Signs of Drug Seekers

- Name the drug
- Want the Rx phoned in
- After hours
- Out of towners
- Unusual behavior
- Excuses for lost prescriptions

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Strategies

- Thorough exam
- Document
- Photo ID
- Confirm telephone and address
- Prescribe limited amounts
- NSAIDs when possible

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Drugs Abused by Dentists

- Valium
- Alcohol
- Tylenol#3, Hydrocodone
- Nitrous Oxide

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Whippets



- Nitrous oxide balloons

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Whipped Cream



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The Dentist Well Being Committee Maryland

- Purpose
 - Assists dentists with problems of stress, alcohol and drug abuse, depression
 - Confidential and Non-disciplinary
- Advocacy
 - Licensure issues
- Contact
 - 410-328-8549
 - 1-888-233-9044
 - www.dentistwellbeing.com

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Prevention

- Dentists who are practicing in good faith and who use professional judgement regarding the prescription of opioids for the treatment of pain should not be held responsible for the willful and deceptive behavior of patients who successfully obtain opioids for non-dental purposes.
- Prevention of prescription opioid abuse: The role of the dentist, JADA 2011; 142(7):800-809
 - Denisco RC, Kenna GA, O'Neil MG et al.

141

Treatment

- Addiction is a disease, and does not affect all people the same
- General population has a 15-18% recovery
- Physicians and airline pilots have a 90% recovery

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Treatment

- 2016 - 21 million people in the USA have a substance use disorder.
 - Only 10 percent of these individuals receive care
- 2011-2014
 - 40 percent of Americans with a substance use disorder that required treatment didn't go to rehab because they believed they could not afford it or they did not have health insurance.

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Treatment

- Detoxification
 - A process in which the body rids itself of a drug
- Withdrawal
 - Symptoms that occur after chronic use of a drug is reduced abruptly or stopped.

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Behavioral treatment

- Individual counseling
- Group or family counseling
- Cognitive behavioral therapies

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Rehab Centers

- Inpatient centers
 - 30,60,90 day programs
 - Counselors, round the clock supervision
 - Bed, bathroom, shared room, accommodations vary on location
 - \$14,000-\$27000 for a 30-day program

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Rehab Centers

- Outpatient Centers
 - Access to group, individual or family therapy
 - Live outside the facility
 - Free to \$500 per session
 - Detoxification period - \$600-\$1000/day
- Lower cost sliding scale community centers
- Insurance covers some but not all services

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Narcan Atomizer



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Naloxone

149

Naloxone should be prescribed to the following individuals

- Individuals at risk of experiencing or witnessing an opioid overdose include, but are not limited, to:
 - Those who have been prescribed opioids for pain
 - Those who have been treated for an opioid use disorder
 - Those who have received prescriptions for both an opioid and a benzodiazepine
 - Those who reside or spend time with an individual who is prescribed opioids, misuses opioids, or has an opioid use disorder
- Those who resume opioid use after a period of ceasing or reducing opioid use (perceived tolerance may be different from actual tolerance)
- Those who have respiratory problems such as chronic obstructive pulmonary disease (COPD) or sleep apnea

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Naloxone

- Co-prescribing Naloxone: Maryland law allows any healthcare provider with prescribing authority to prescribe naloxone.
- Maryland Standing Order: Patients may obtain naloxone from a pharmacy by presenting a prescription written by their healthcare provider.
- In the absence of such a prescription, individuals in Maryland can obtain naloxone from a pharmacy through the statewide standing order.
 - A person-specific paper or electronic prescription is not required for a pharmacist to dispense naloxone under the standing order.

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Narcan 4mg/.1ml



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Naloxone/Narcan

- Synthesized in 1961 and off patent since 1985
- 2010 – Cost for a reversal dose was about 1\$
- 2020 –
 - Nasal spray- 4mg/.1 ml = \$150
 - Syringe- 2mg/2ml = \$51
 - Vial- 4mg/ml, 10 ml multidose vial = \$125

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Nasal Narcan



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Nasal Admin Narcan



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Pharmacologic treatment

- The injectable long-acting form of Naltrexone (Vivitrol),
- Effects last for weeks, Vivitrol is ideal for patients who do not have ready access to healthcare or who struggle with taking their medications regularly.

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Pharmacologic treatment

- Methadone
- Synthetic opioid agonist that eliminates withdrawal symptoms and relieves drug cravings by acting on the same brain targets as other opioids
- Used successfully for more than 40 years to treat heroin addiction, but must be dispensed through opioid treatment programs.

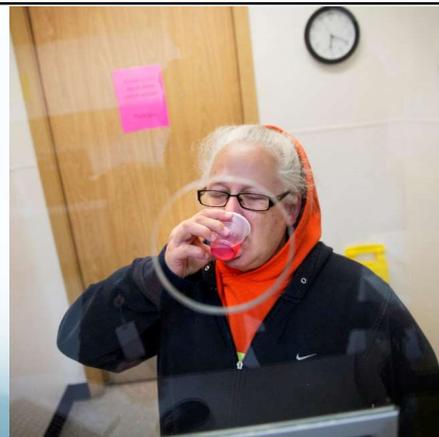
157



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Pharmacologic treatment

- Buprenorphine
- Partial opioid agonist (i.e., it has agonist and antagonist properties), which can be prescribed only by certified physicians
- Like methadone, it can reduce cravings and is well tolerated by patients.

161

Chronic Pain

- Risks of development of drug tolerance, hyperalgesia (increased pain sensitivity), and addiction.
- Patients may be reluctant to take an opioid medication prescribed to them for fear of becoming addicted.
- Estimates of addiction are 3-40%

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Disposal & Safe Storage

FDA Disposal in Household Trash

NO Drug Disposal?

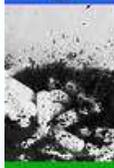
Follow these steps:
Go to www.fda.gov

1. Mix drugs with kitty litter or used coffee grounds in a zip lock bag (no crushing of tablets or capsules)
2. Seal plastic bag
3. Place in the trash



GADSA: Building Community Capacity to Prevent Rx Drug Abuse...

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1	2	3	4
			
Mix with an unappealing substance.	Place in a sealed container.	Throw into household trash.	Scratch out personal information.

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Disposal

- Household trash, but first:
- Take them out of their original containers and mix them with an undesirable substance, such as used coffee grounds or kitty litter.
- Put them in a sealable bag, empty can, or other container to prevent the medication from leaking or breaking out of a garbage bag.
- Scratch out all identifying information on the prescription label to make it unreadable.

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Don't Rush to Flush

- Water Contamination



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Practitioner Disposal

- Dispose of out-of-date, damaged, or otherwise unusable or unwanted controlled substances, by transferring them to a registrant who is authorized to receive such materials.
- These registrants are referred to as "Reverse Distributors." The practitioner should contact the local DEA field office for a list of authorized Reverse Distributors.

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Narcotic Disposal

- Schedule I and II controlled substances should be transferred via the DEA Form 222,
- Schedule III-V compounds may be transferred via invoice.
- Maintain copies of the records documenting the transfer and disposal of controlled substances for a period of two years.

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Disposal

- Police Station Drop Box



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Disposal

- Best disposal is incineration
- Pharmacy mailbox receptacles
- Must be non-retrievable
 - Cannot be altered to be re-used
 - Manufacture may give recommendations for disposal
- Need 2 witnesses

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Safe keeping

- Lock your meds at home
- Doctor is responsible for proper record keeping

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Home Lock Box or Durable Double Lock in Drawer



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Record Keeping

- Keep records for scheduled drugs for 2-years
- Schedule 2 drugs records should be kept separate from sched 3-5
- Data requirements
 - Storage at registered location, readily retrievable
 - Physical count
 - Date of medication received
 - Count at beginning or close of business
 - Names, dosages, units, containers and how distributed

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Emergency Phone Prescriptions for Opioids

- Only if there is no alternative
- Limited quantity for emergency period, i.e. 3-7 days
- Doctor must call the pharmacy
 - Cannot delegate to staff.
- Follow with paper original
 - If not received pharmacist will call the DEA

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Theft

- Unexplained loss of 5% or more
- Report to DEA within 1 business day, Form 106
- What was lost and report to local law enforcement as well

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Form 106

- Theft Reporting

DEA Form 106 - now an online process

REPORT OF THEFT OR LOSS OF CONTROLLED SUBSTANCES

- Date of Theft or Loss
- Notifying Police
- Number of Items
- Type of Theft or Loss
- Purchase Value of the Controlled Substance
- Pharmaceuticals or Merchandise Taken

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Take back Event



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Take Back Events

- DEA holds its National Prescription Drug Take Back Day the last Saturday of April and October of every year,
- 2014 - 371 tons of prescription medications were collected from more than 5,829 locations.
- Since 2010, the DEA has collected and incinerated over **4,982 tons** of unused, and potentially dangerous medications.

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Authentication Parameters for Narcotics

Need two of the following -

1. **Something you know** - Password
2. **Something you have** - hard token - Random generated password
3. **Something you are** - biometric information - fingerprint

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Electronic Prescriptions

- All states now allow e-prescribing for drugs, including opioid painkillers and other controlled substances. Still, only 7% of doctors do so.
- Between 3 and 9% of opioid abusers use forged prescriptions, says Surescripts' chief legal officer
- E-prescribing would prevent forging and doctor-shopping

Sources: Virginia Gazette; Bearing Drift; Centers for Disease Control and Prevention; CBS Local; WHPDR

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Electronic Prescription Advantages

- Automatic check on Rx by software
- Insurance eligibility
- Renewals are ok
- Gives interactions and precautions
- Financial incentive by government

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Electronic Prescriptions

- Ok for schedules 2,3,4,5
- Most major pharmacies
- Identity proofing for prescription writer
 - Card, phone, fingerprint etc.
- Mandatory use in 21 states
- Medicare will require all practitioners to sign up in 2021

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Delegation of prescriptions

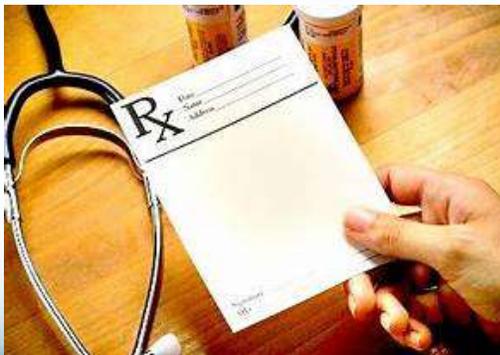
- May delegate a prescription of a controlled substance to your staff.
 - Schedule 3,4,5
 - You must direct and authorize and sign

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Prescriptions

- Prescription pads, prescription writing programs, electronic prescribing information must be in a secure location not accessible to the public or staff.

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Prescriptions

- Cannot replenish office stock with a prescription

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Form of Written Prescription

- Superscription: patients name and address and age and date
 - Must be filled within 120 days from date of issue
- Inscription: name of drug, dosage form and amount
 - Write amount and number, I.e. 5, five
 - Use leading zero for less than 1, I.e. 0.5mg
 - Do not use a trailing zero for whole numbers, I.e. 1.0

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Signature-sig-directions

- How to take the medication, how often, and why.
- Refills; specify written number or none
- Generic vs. non-generic

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DEA number

- Protect your DEA and identifier numbers
 - Don't preprint on prescription
- If evidence of tampering
 - Local police
 - MSBDE 410 402 8538
 - DEA 410 962 7580
 - Maryland division of drug control
- ONLY NECESSARY FOR SCHEDULED DRUGS

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Requirements for prescriptions written for controlled substances

- Name and address of prescriber
- Name and address of patient
- DEA number
- Date of prescription
- Written in pen

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Thank you

- Have great day!
- Be safe

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