Emerging Poisoning Trends: Understanding What is Hot in the Poison World and Who is at Risk

Amy Hanoian-Fontana, M.A., EMT-B
Connecticut Poison Control Center
hanoian@uchc.edu
860-679-4422
April 27, 2012

Overview

- The Connecticut Poison Control Center: attributes, services, roles, how SBHC can utilize
- Poisoning across the lifespan
- *Poisoning trends*
- Interactive small group activity

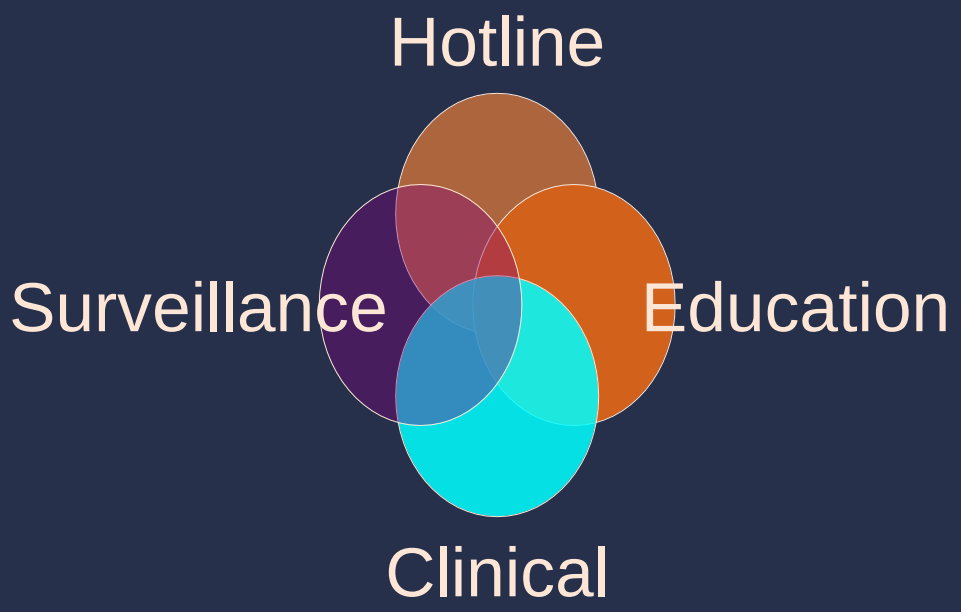
The CPCC Serves the Entire State of Connecticut - 33,000 calls/year

Toll-Free National Telephone Number

What images come to mind when you think of a poisoning happening? What poison is involved? Who is being poisoned?

Connecticut Poison Center Mission

To protect the public health by providing toxicology-related patient care, information and education for the people of Connecticut and their health care providers.



The Basics

- 24/7/365
- Free
- Confidential
- Interpreters & TDD lines & relay
- Expert advice
  - Specialists in poison information (MD, RN, PharmD)
  - Medical Toxicologists on call & bedside
  - Over 200 years combined experience

The Basics

Who calls us?

- Perform telephone triage
- Take poisoning exposure calls
- Take poison information calls
- Provide immediate treatment advice

What do they call about?

The Basics

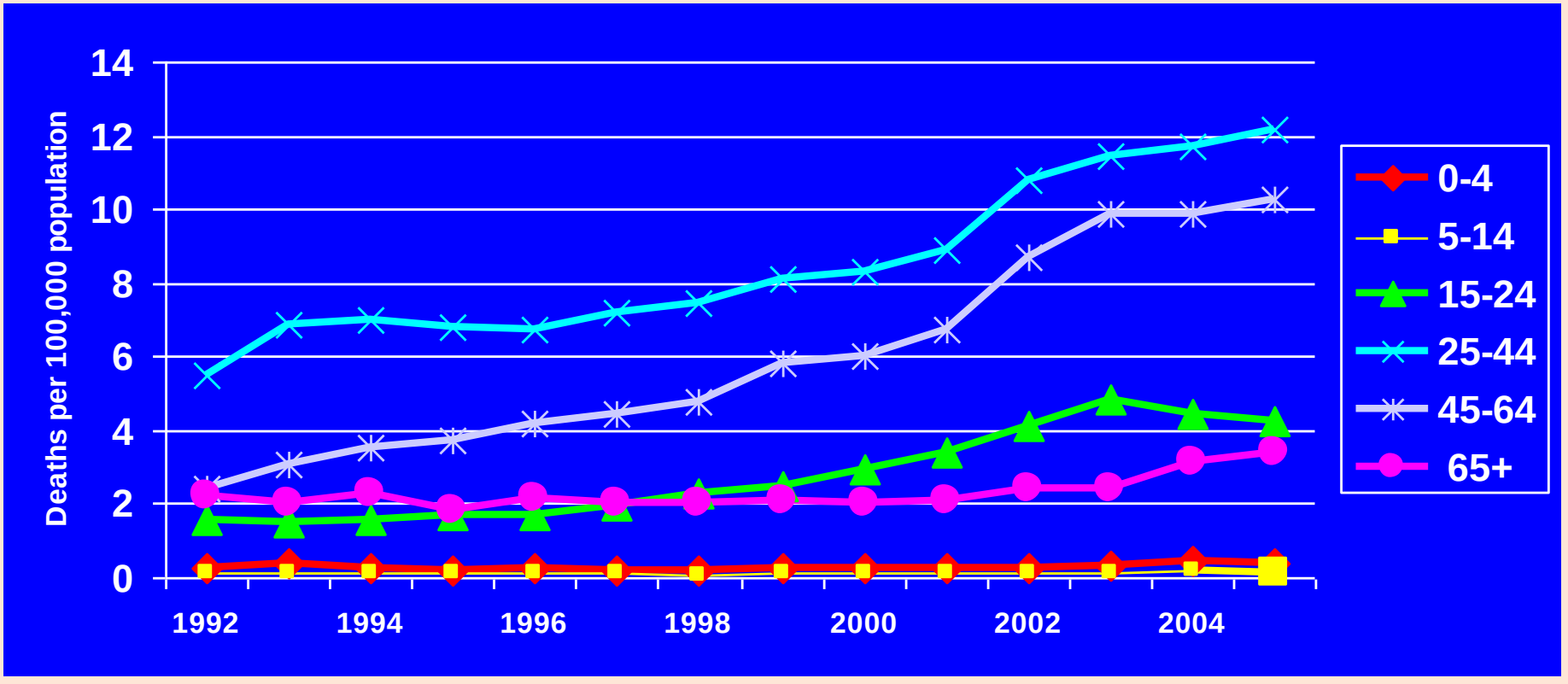
- What to expect when you call
- Plan of treatment
  - case-tailored and age-specific
  - follow-ups done if patient is symptomatic or the case warrants it
  - nearly 75% of cases are managed at home, preventing unnecessary ambulance trips and hospital visits
- HIPAA
- 1983 CT mandate
  - Existence of poison center
  - Reporting poisonings to the poison center

Who gets poisoned and what does poisoning look like across the lifespan?

Poisoning Statistics

- Nearly 2.5 million people report an exposure to poisonings
- 51% younger than 6-years-old
- 38% younger than 3-years-old
- More than 70% of all poisoning deaths occur in adults ages 20-59
- Males 35-44 account for the greatest number of drug-related poisoning deaths

Poisoning Statistics



Poisoning Across the Lifespan

- Children under 6 years tend to be very curious. They often take a lick, a taste, or a touch of a poison. Usually the amount they get into is small and does not have a serious negative effect on their bodies.
- Typical call: My 2 year old just drank some dish soap.

Poisoning Across the Lifespan

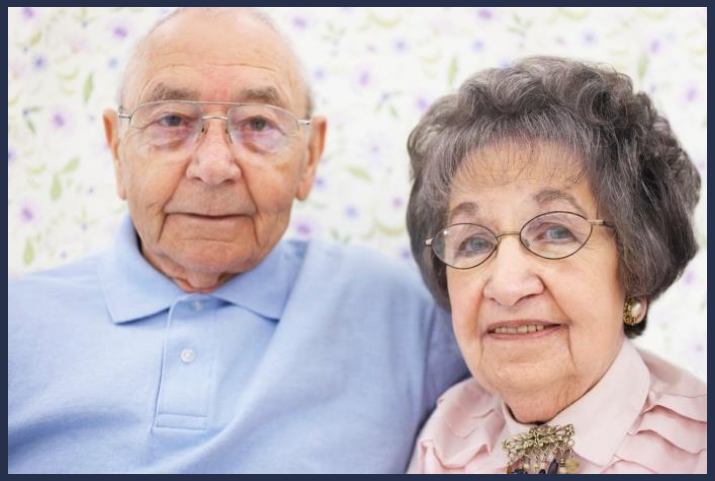
- Teens/young adults are more likely to try to hurt themselves. More suicidal callers in this age group. Also experimenting.
- They show increasing rates of inhalant abuse and abuse of prescription & over-the-counter drugs.
- Typical call: A school nurse reports that an 8th grader is having symptoms after drinking 3 highly caffeinated beverages.

Poisoning Across the Lifespan

- Adults suffer more intentional poisonings and tend to make more serious mistakes with more potent poisons than children do.
- Typical call: A man was exposed to pesticides on a windy day while applying them to the golf course he works at.
- Typical call: A 42 year old woman had back pain and took 2 of her sister's prescription pain pills.

Poisoning Across the Lifespan

- Older adults/Seniors tend to be involved with medication and product errors and misuse.
- Typical call: An 89 year old took his wife's daily medications instead of his own.



How School Based Health Centers Utilize the Poison Center

Cases

- 12 yo sniffing sharpie marker
- How do I thoroughly wash peanut butter from surfaces?
- 5 yo dipping pretzels in hand sanitizer
- 19 yo inadvertently takes 2nd dose of Adderall
- 4 yo ice pack innards leak into mouth
- 3.5 yo eats mushroom
- 15 yo menstrual relief med OD

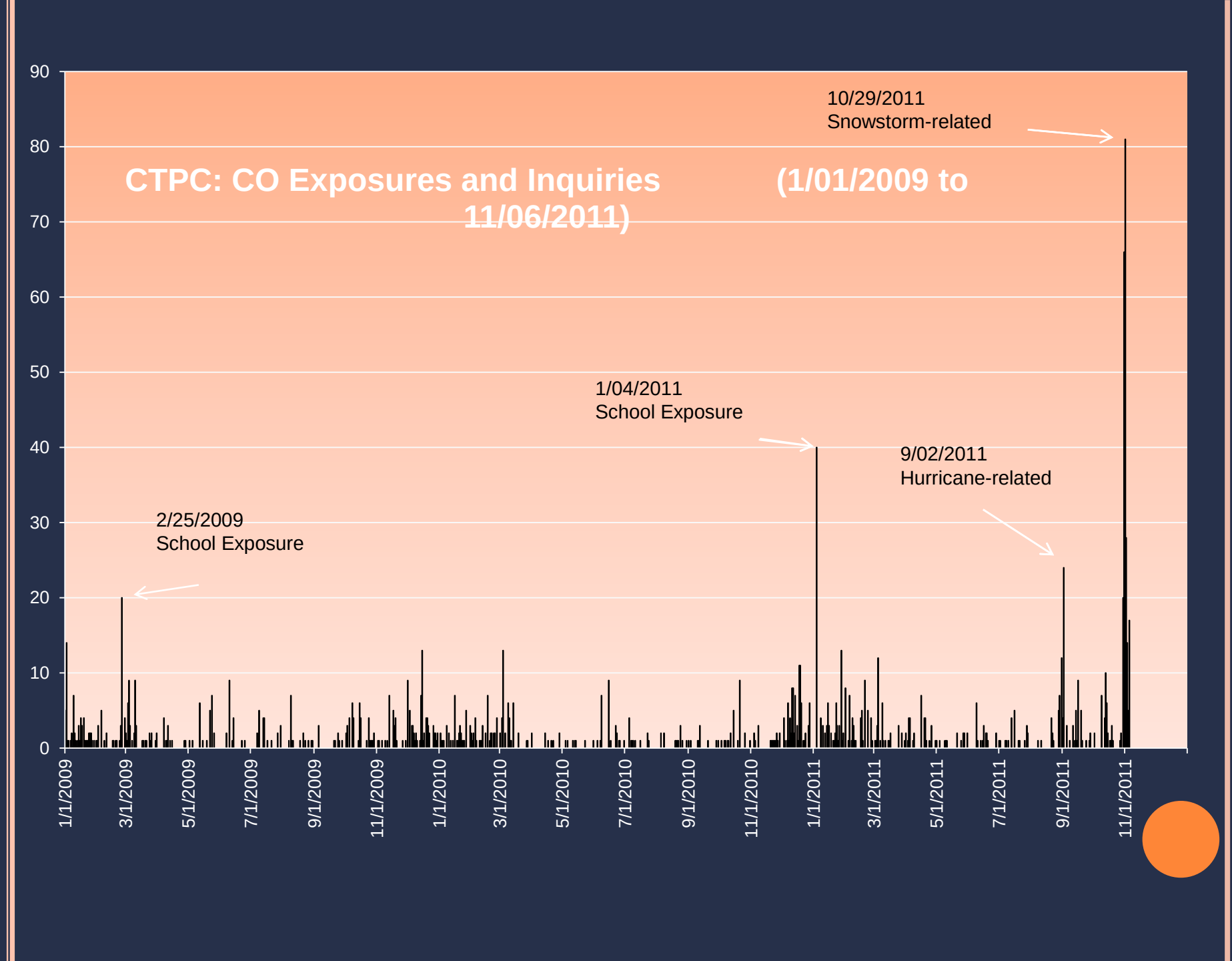
When to call?

- Medication errors
- What is in this product and is it a problem?
- Eye exposures – how do I know if there is a problem?
- Overdoses
- Unintentional poisonings
- Symptoms to watch for (in a patient or to keep manpower safe)
- Advice on when to transport
- Antidote information and coordination
- Hazardous materials
- Reporting a poisoning
- Protecting the public health
- Information on trends of abuse

Beyond the Basics: Additional Roles of the CT Poison Control Center

Beyond the Basics

- Standardized data/national surveillance
  - 1983 National Poison Data System (NPDS)
  - Cases uploaded in real time
  - Thresholds set
  - Maintain surveillance for toxic terrorism (chemical, biological and radiological)
- Notify HCFs of an event directly or via Everbridge system
- Expertise recognized:
  - State of CT Consequence Management Plan for Deliberately Caused Incidents Involving Chemical Agents
  - Chempack, Field Operations Guide


CTPC: CO Exposures and Inquiries (1/01/2009 to 11/06/2011)
10/29/2011
Snowstorm-related
1/04/2011
School Exposure
9/02/2011
Hurricane-related
2/25/2009
School Exposure
90
80
70
60
50
40
30
20
10
0
1/1/2009
3/1/2009
5/1/2009
7/1/2009
9/1/2009
11/1/2009
1/1/2010
3/1/2010
5/1/2010
7/1/2010
9/1/2010
11/1/2010
1/1/2011
3/1/2011
5/1/2011
7/1/2011
9/1/2011
11/1/2011

Beyond the Basics

- Antidote coordination
- Student rotation site
- HazMat

Case: 2007 Cyanide

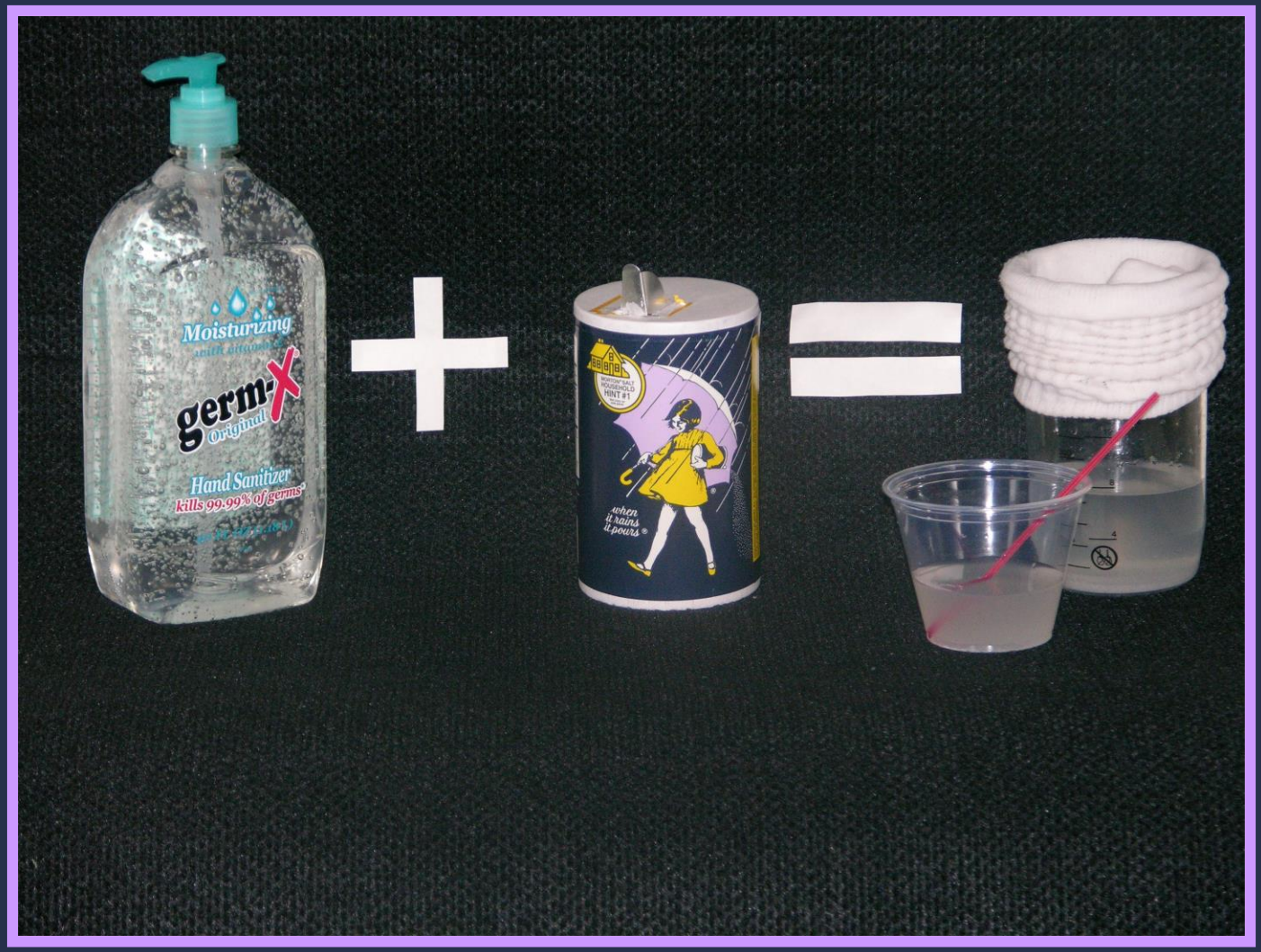
Local factory had a special vacuum bag container, it exploded, creating dust through the ventilation system.
8 patients evaluated (2 pts c/o of strange **"almond taste"**)
3 hospitals involved in their care
Poor decontamination – powder still visible on clothing

Case commentary:

Case not discovered directly - Are we having a drill? (CCMC, NB, St. Francis)

Emerging trends

Trends: Hand Sanitizer



K2/Spice

- What is it actually? Synthetic cannabinoids
  - Synthetic version (herbal substitute) of marijuana
  - Mixture of herbs sprayed with synthetic compound similar to THC
  - Not detectable in drug tests
  - Really, who knows?
- Prevalence?
  - In CT: 155+ cases since May 2010 (mostly teens, young adults)
  - In U.S. – Over 7,000 calls 2011 (3,000 in 2010)

K2/Spice

- What is it marketed as?
  - Frequently sold as incense
  - Labeled not for human consumption
- Where can I get it?
  - Smoke shops
  - Gas stations/convenience stores
  - Head shops

K2/Spice

- What is the hoped for effect?
  - Similar to marijuana, relaxed, euphoria, distortion of time
- What is the actual effect?
  - Symptoms: fast heart rate & BP, confusion, nausea & vomiting, agitation, hallucinations, and seizures
- What is the appeal?
  - Users prefer marijuana – but will use synthetic marijuana products while on probation, or before work drug screenings
  - Popular in the military, treatment settings, etc

Synthetic Cannabis: Street Names

Spice	Genie	Zohai
Blaze	Ex-ses	K2
Fake Pot	Spike 99	Fire
Yucatan	Dream	Fusion

Bath Salts

- What is it actually?
  - Synthetic drug similar to natural cathinone psychostimulants - various possibilities: MDPV (Methylenedioxypyrovalerone) or Mephedrone (methylmethcathinone) or other
  - Really, who knows?
- Prevalence?
  - CT – 20 calls
  - Louisiana PC over 200 calls, banned
  - Nationwide – Over 6,000 calls 2011 (304 in 2010)

White powder, pills or capsules
Odor: fishy
Price: $20 for 300 mg
Dosage:
light: 50-100 mg
common:150-200 mg
heavy: 300+ mg

Bath Salts

- What is it marketed as?
  - Marketed as a legal cocaine, but symptoms & cravings more closely aligned with methamphetamines
  - Most say not for human consumption
  - Labeled as bath salts or plant food

- Where can I get it?
  - Head shops
  - Internet
  - Gas stations/convenience stores

Bath Salts

- What is the hoped for effect?
  - Stimulant effects – burst of energy, euphoria,, mood lift, increased alertness, sociability, creativity
  - Increase HR & BP
- What is the actual effect?
  - Symptoms: delusions, hypertensive episode, seizure, agitation, hyperthermia, extreme paranoia, psychosis that can last 48 hours (+)
  - In some cases, symptoms lead to combativeness, assaults or suicide attempts
- What is the appeal?
  - "Legal" cocaine
  - Perception that it is safer?

Bath Salts Common Names

Meow Meow	Vanilla Sky	Ivory Wave
Meph	Blast Salt	MDPV
Diablo	White Lady	Bliss
Blue Silk	Legal Cocaine	Bloom
MCat	Bubbles	4-MMC

Legislation Re: K2 and Bath Salts

- These substances are currently classified as Schedule I drugs both federally and in the state of Connecticut.
  - P.A. 11-210 *An Act Concerning Emergency Medical Assistance for Persons Experiencing an Overdose and the Designation of Certain Synthetic Stimulants as Controlled Substances* signed in 2011
  - P.A. 11-73 *An Act Regulating the Sale and Possession of Synthetic Marijuana and Salvia Divinorum* signed in 2011.
- Department of Consumer Protection Regulations (DCP)
  - Section 21a-243-7 makes the sale of any product(s), containing the designated chemicals illegal to possess or sell.
  - May take a period of time before full regulation and enforcement are in place
- Possibility of manufacturers altering compounds to get around the law

Trends: Lazy Cakes

- 2.5 inch brownie with melatonin
- 7.8mg of melatonin per brownie
- "For Adults Only"
  - No age restrictions on sales

Trends: Alcohol "Energy Drinks"

- Caffeine + Alcohol
  - 11-12% alcohol in ~24 ounces
    - Two-three times the content in twice the volume = 4-6 beers equivalent
  - "Blackout in a can"

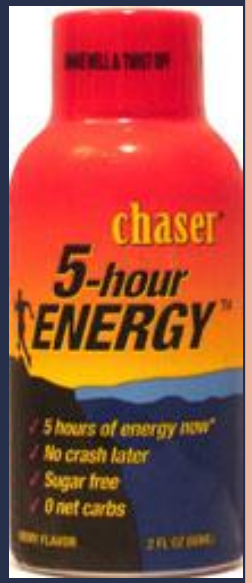
Trends: Whipahol

- 15-18% alcohol content
- About 30-36 proof
- Equivalent to several beers
- About $12

"Introducing Whipped Lightning®, the world's first alcohol-infused whipped cream."

Trends: Caffeine

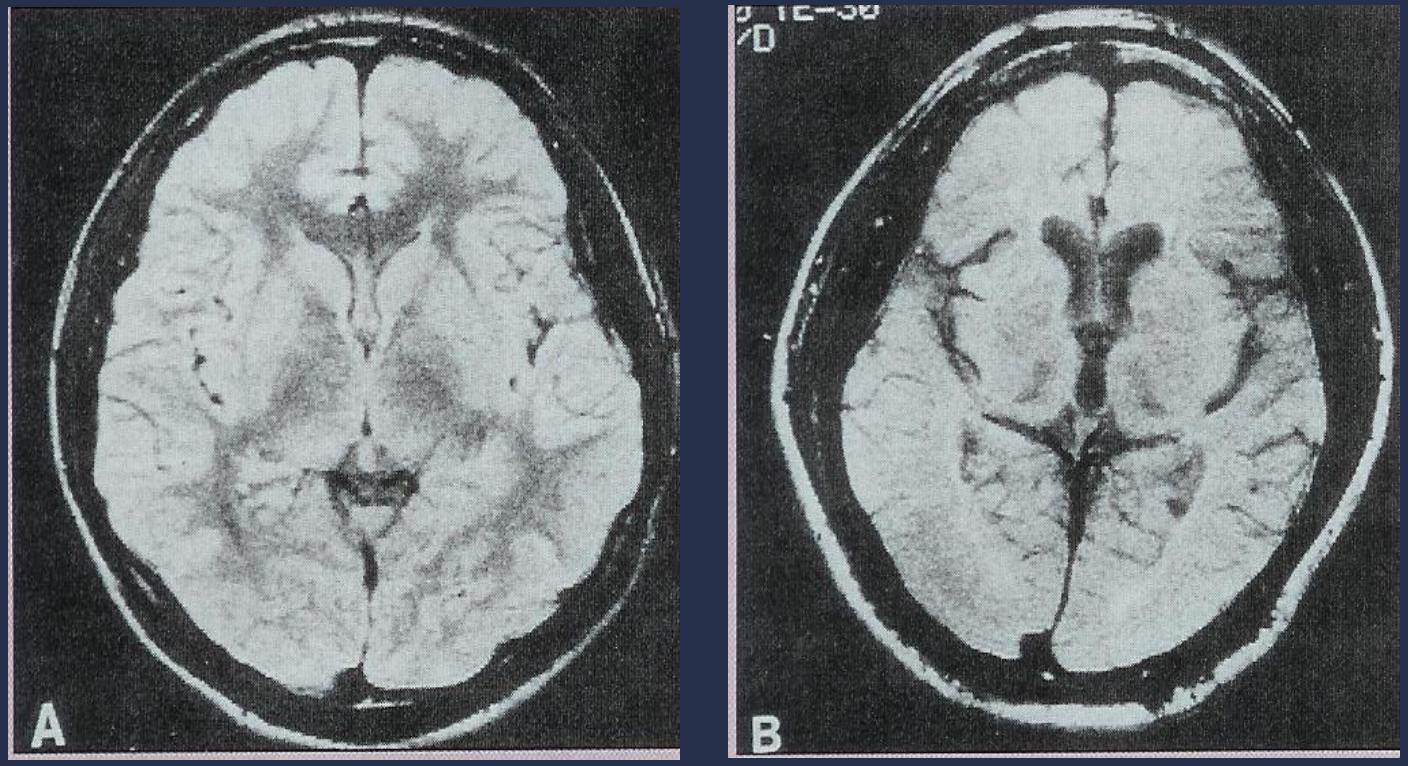
- Caffeine is a stimulant
- Multiple products: energy drinks, coffee, tea, soda, energy bars, gum, mints, alcohol, etc
- Used to increase energy, enhance mood, and delay sleep
- Symptoms: GI, seizures,↑HR
- Use caution with caffeine in combination with exercise, alcohol and medicines



Trends: Inhalants

- Availability: legal, low cost, accessible
- Signs & symptoms
- Physiological & neurological effects
- Sudden sniffing death
- SBHC staff can help:
  - Keep pt calm
  - Give supportive care & monitor ABCs
  - Observe scene

Brain Damage In A Toluene User



Brain images show marked atrophy (shrinkage) of brain tissue in a toluene abuser, picture B, as compared to a non-abusing individual, picture A.

Note the smaller size and the larger, empty (dark) space within the toluene abuser's brain.

Source, National Institute on Drug Abuse, courtesy of Neil Rosenberg, M.D.

Trends: DXM

- Generally regarded as a safe and effective anti-tussive
- Abused products sometimes referred to as Triple C, Skittles, red hots, red devils, poor man's PCP
- Sedative and euphoric effects
- Availability: OTC = legal, low cost, access
- Look for OD of other OTC ingredients: acetaminophen, antihistamines, etc
- Resource: Erowid.com

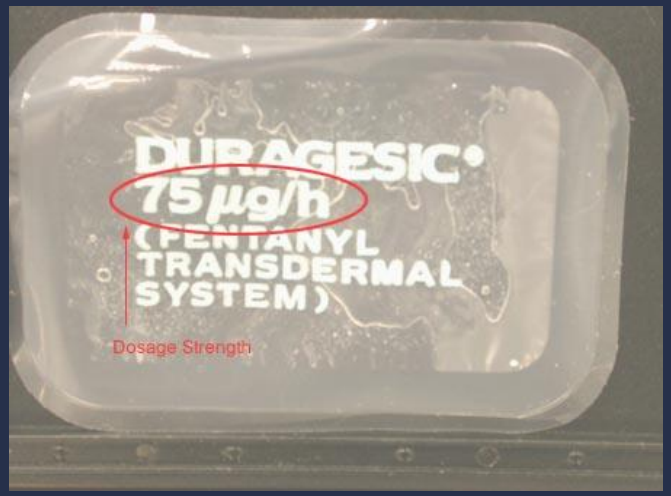
Trends: Pharming & Academic Doping

- Pharming – using RX and/or OTC for recreational use
  - Parties
  - Alcohol often involved
  - Risky behavior
  - Don't forget about DXM

- Academic doping
  - Misusing Ritalin, Adderall (schedule 2)
  - Purpose – ↑ performance/stamina on papers & tests
  - High school & college students
  - Don't forget about caffeine

Trends: Fentanyl Patches

- Schedule 2
- Typically used for chronic severe pain
- Transdermal
- Dose time-released over 72 hours
- Scoop drug from reservoir and deliver dose all at once



Pranks & Dares

- Fire extinguishers
  - → Sodium bicarbonate & ammonium phosphate
    - Respiratory irritation and GI symptoms
    - Asthmatics may require bronchodilator
- Pepper spray
  - → Capsaicin
    - Decontaminate skin, irrigate eyes, fresh air
    - ED evaluation if respiratory or eye symptoms persist
- Stink bombs
  - → Ammonium sulfide & hydrogen sulfide
    - Fresh air

Pranks & Dares

- Eating what?
  - Berries
  - Wild mushrooms – may be deadly!
  - Cinnamon challenge
- Hand sanitizer in jello
- Visine in drinks
- Viagra in soda
- Ex-lax as chocolate

Rx Opioids

The Problem – ↑ Deaths & Treatment

- Drug poisoning – overdose - is the leading cause of injury-related (accidental) deaths in CT.
  - Most poisoning deaths are from Rx opioids
    - 34-54 yo males
  - CT is one of only 16 states in which mortality from overdose is more prevalent than MVA
  - Drug-related deaths claimed the lives of about one CT resident each day in 2006
  - In CT, treatment admissions due to opioid painkiller addiction have increased more then admissions for any other substance over the past several years.

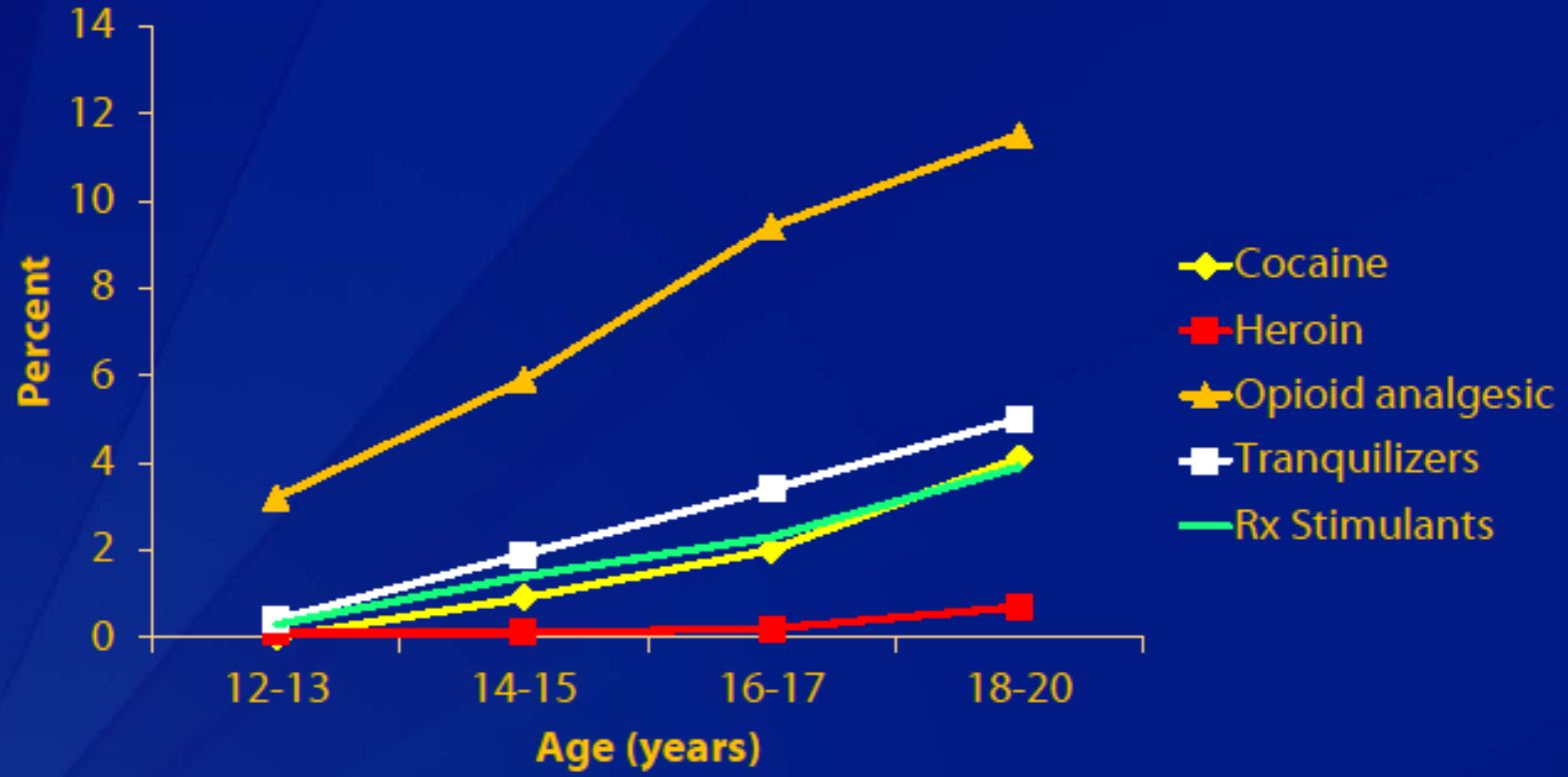
The Problem - ↑ Rates Among Youth

- CDC reports increasing trend in poisoning deaths for 15-19 year olds, 2000-2009
  - Poisoning death rate increased by 91% from 1.7 to 3.3 per 100,000
  - In part, from an increase in prescription drug overdose
  - While annual unintentional injury rate is declining

Self-reported lifetime use of a prescription drug without a prescription, by grade, US, 2009

Source: CDC Youth Risk Behavior System, MMWR Surveillance Summary, 2010: 59, 17 and 87.

Self-reported illicit use in past year by drug type and age group, US, 2010



Source: Substance Abuse and Mental Health Services, 2010 National Survey of Drug Use and Health

Did You Know?

- From 1997 to 2007 148 of the 169 CT towns experienced at least one opioid-related overdose death
- Overdose deaths involving a prescription opioid had the largest increase over this time
- Heroin overdose deaths tended to occur in the large cities among white males and those aged 17-34
- Methadone deaths were more common in large cities and among females
- Overdose deaths related to other prescription opioids were more likely to take place in suburban and small town areas, among females, and to involve other medications

Why Abuse Rx Drugs?: Perceptions

- Why?
  - Perceived as safer (than illegal drugs)
  - We don't fear the familiar
  - Awareness
  - Availability (access) *and* opportunity
- Where are people getting the drugs from?
  - Most people obtain the Rx from a friend/relative who obtained it from a (1) doctor.

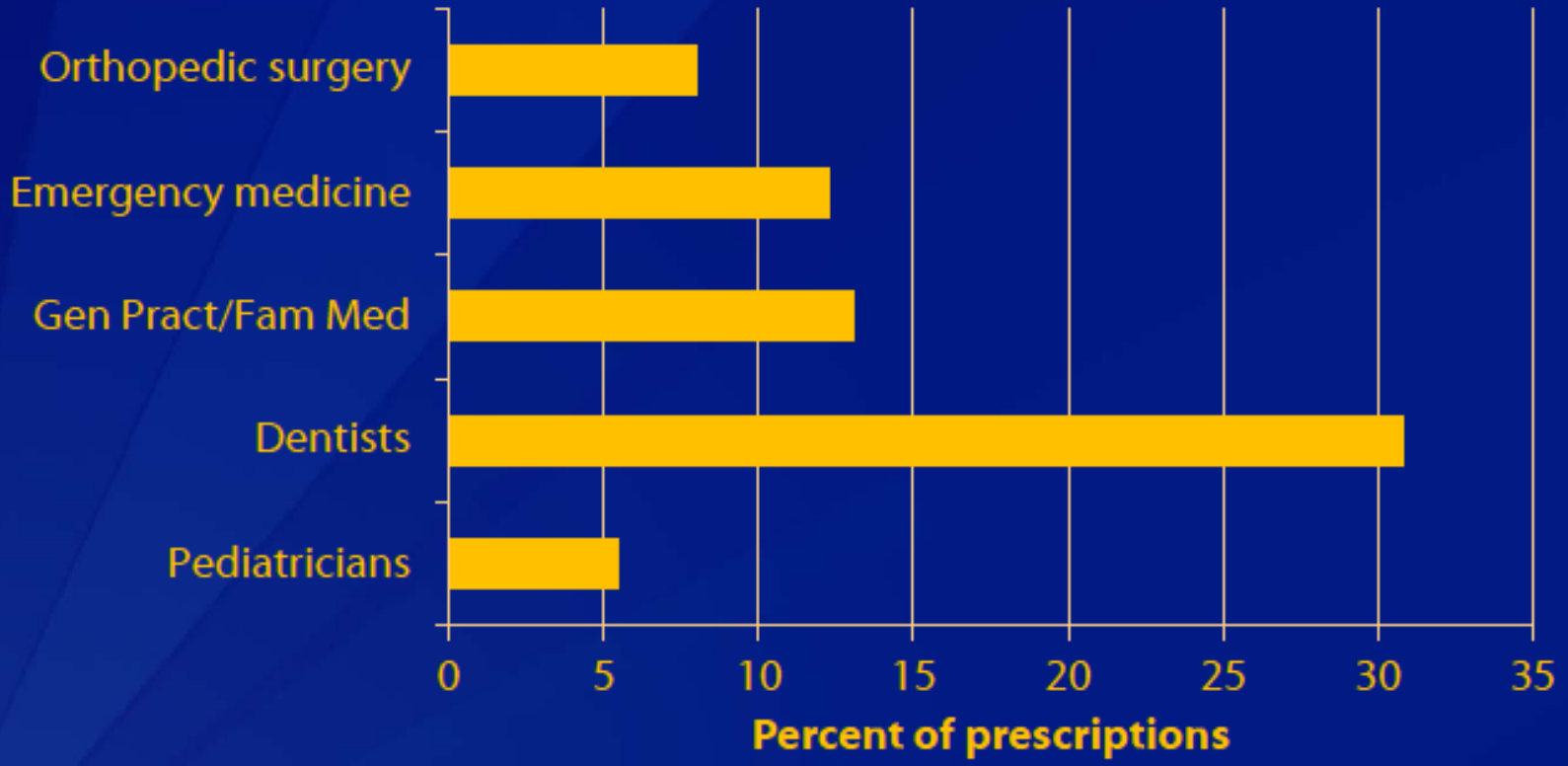
Why Abuse Rx Drugs?: Access

SAMHSA From Table 7.43A. Source where pain relievers were obtained for most recent nonmedical use among past year users 12 and older, 2006.

Source	All Ages		26 and Older	
	N*	%	N*	%
From friend or relative for free	6,472	55.7	3,659	57.9
From one doctor	2,214	19.1	1,378	21.8
Bought from friend or relative	1,083	9.2	461	7.3
Took from friend or relative without asking	632	5.4	256	4.0
Bought from drug dealer or other stranger	455	3.9	2.8	2.8
From more than one doctor	190	1.6	86	1.4
Stole from doctor's office, clinic, hospital, or pharmacy	52	0.4	39	0.6
Bought on the Internet	11	0.1	0.1	0.1
Wrote fake prescription	10	0.1	---	---
Some other way	503	4.3	261	4.1

*Number in thousands.
Note: Dashes (---) indicate low precision; no estimate reported.
The question arises as to where the friend or relative got the pain reliever. Table 7.44A (not shown here) indicates that a doctor was the source in about 80% of cases. In about 11% of cases the friend or relative obtained the drug from another friend or relative, either bought or for free. http://oas.samhsa.gov/NSDUHlatest.htm

Distribution of prescriptions for opioid analgesics by physician specialty, children 10-19 yrs, US, 2009



Source: Volkow ND, et al. Characteristics of opioid prescriptions in 2009. JAMA 305:13:1299-1301

What is being abused and what do abusers feel like?

Drug Class	Medical Uses	Examples
Painkiller (Opioid Analgesic)	• Management of acute or chronic pain • Relief of coughs • Anti-diarrheal	• Codeine (Empirin®, Tylenol 1, 2, 3) • Hydrocodone (Vicodin®) • Hydromorphone (Dilaudid®) • Meperidine (Demerol®) • Methadone (Dolophine®) • Morphine • Oxycodone (OxyContin® Percodan®) • Propoxyphene (Darvon®)
Sedative-hypnotics	***Benzodiazepines*** • Anxiety and panic disorders • Acute stress reactions ***Barbiturates*** • Insomnia • Anxiety • Seizure control	• Alprazolam (Xanax®) • Chlordiazepoxide HCL (Librium®) • Clonazepam (Klonopin®) • Diazepam (Valium®) • Lorazepam (Ativan®) • Butalbital (Fiorinal®) • Meprobamate (Miltown®) • Pentobarbital sodium (Nembutal®) • PhenobarbitalSecobarbital (Seconal®)
Stimulants	• Attention deficit disorder and attention deficit/ hyperactivity disorder (ADD, AD/HD) • Narcolepsy • Weight loss • Depression (rarely)	• Amphetamine-dextroamphetamine (Adderall®) • Dextroamphetamine (Dexedrine®) • Methylphenidate (Ritalin®) • Sibutramine (Meridia®)

Opioids: Pain Relievers

- All users of opioids develop tolerance over time
- TOLERANCE means that the body becomes "used to" the amount of drug, and it takes increasingly more and more of that drug, to achieve the desired effects (the high)
- Overdose potential= DEATH

Opioids: Signs/Symptoms of Use

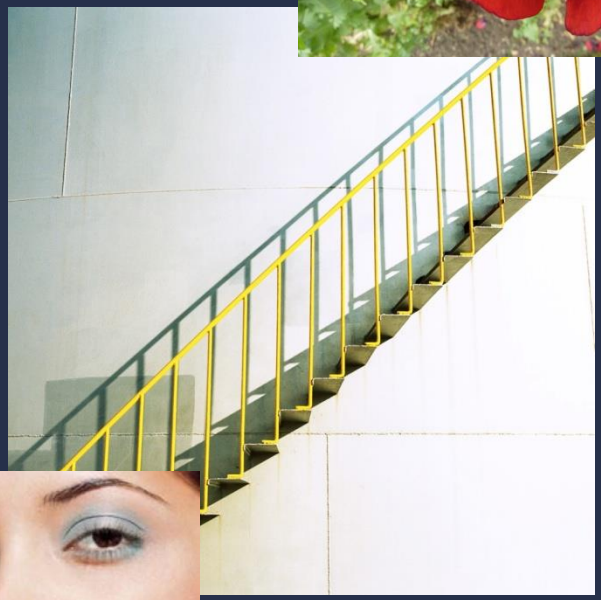
- Duration: 3-12 hours
- Effects: Euphoria, drowsiness, respiratory depression, constricted pupils, nausea
- Effects of Overdose: Slow & shallow breathing, clammy skin, convulsions, coma, death
- Withdrawal Syndromes: Watery eyes, runny nose, yawning, loss of appetite, irritability, tremors, panic, cramps, nausea, chills, sweating

Signs of Abuse & Addiction

- Cycles of increased energy
- Inability to sleep
- Abnormally slow movements-speech, reaction
- Cycles of excessive sleep
- Dental problems
- Drug paraphernalia
- Unexpected changes of clothing
- Sudden weight loss or gain
- Confusion, disorientation

Trends: Rx Opioids

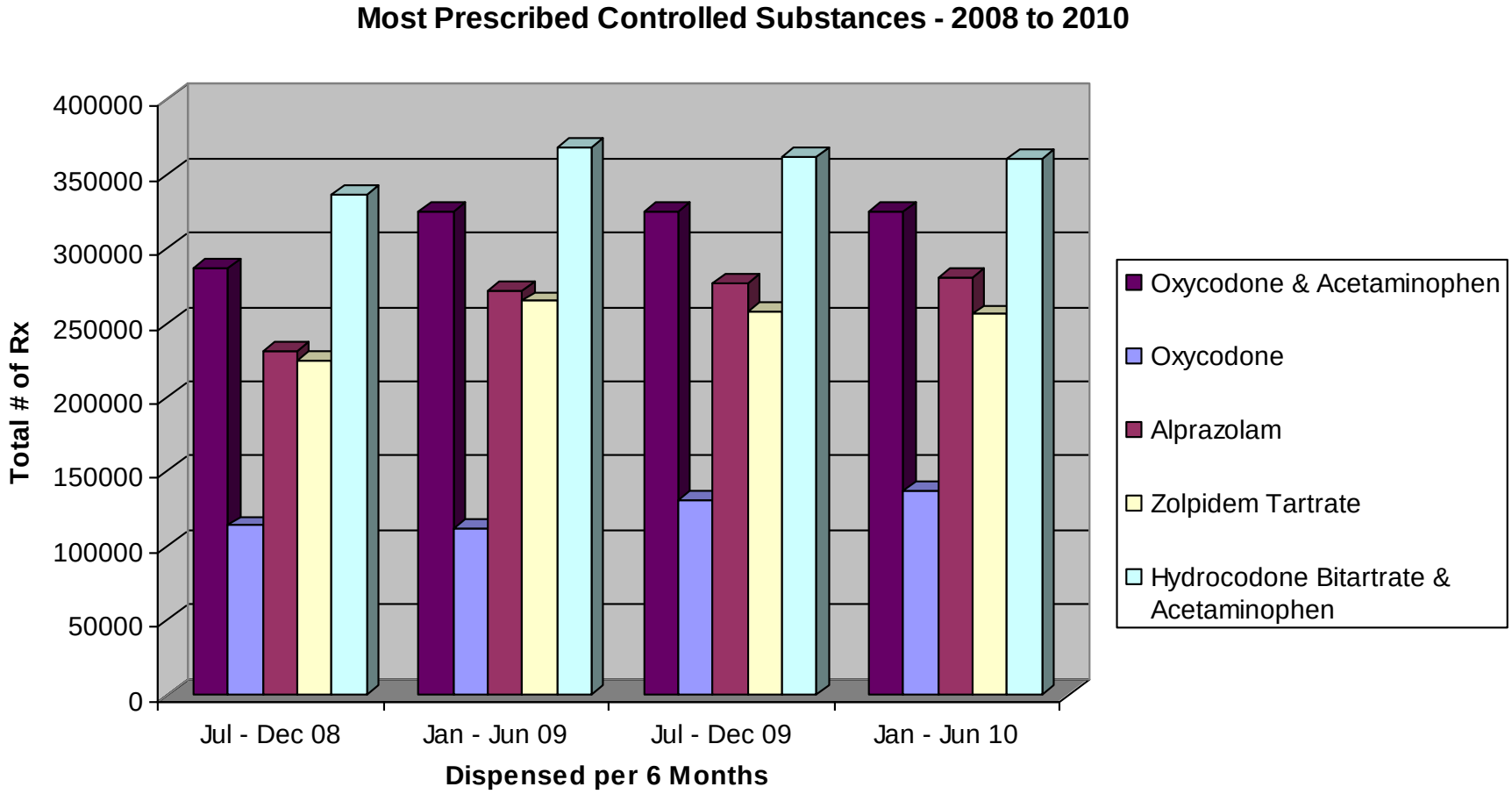
- Rx pain killers as a stairway to heroin
  - Start on pain killers
  - Rx drugs become harder to find &/or too much $$$, so switch to heroin
  - Heroin is DEA's #1 concern in CT



Trends: Rx Opioids, OxyContin®

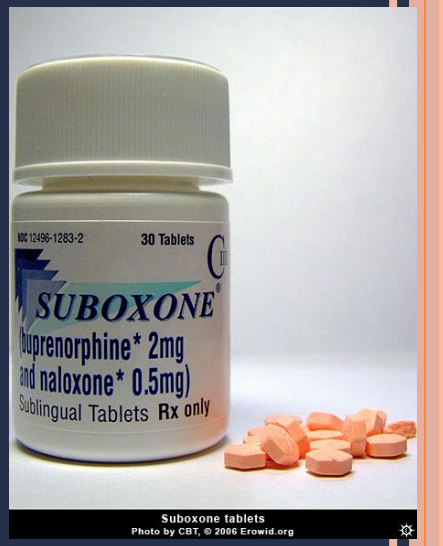
- Oxycodone prescription business is in excess of $2 billion annually.
- Oxycodone is the preferred opiate type of abusers:
  - In addition to the depressant effect of the opiate, oxycodone also provides an amphetamine-like effect – increased levels of dopamine = BUZZ, which is desired by abusers.
  - Schedule 2 = harder to get, so although preferred, other schedule 3 prescription opioids are more commonly used

CT Prescription Monitoring Program Data

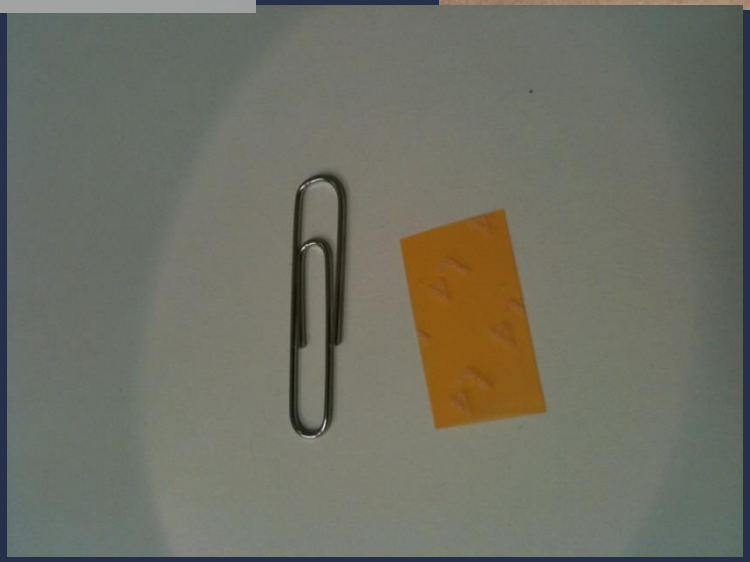


Trends: Opioid Treatment

- Suboxone (buprenorphine)
  - Sublingual tabs
  - Subutex (no naloxone); Buprenex (injectable)
  - Schedule 3
  - Treat opioid dependence
  - Opioid + antagonist (naloxone/Narcan) creates a ceiling effect
  - Abusers
    - Try to bypass the naloxone by crushing and taking intranasal route
    - Can result in rapid withdrawal



Suboxone Film



Interactive Small Group Activity

Small Group Activity

- Form small groups
  - Same SBHC if possible
- Outline 3-5 action steps you will take to ensure the most important trend information gets brought back to your SBHC community
  - Which trend(s) will you focus on/are most salient?
  - Who should know about these trends?
  - How will you get these trends on the radar?
  - How will you educate SBHC staff, other non-clinical school staff (teachers, administrators, SROs, etc), parents, students, community members?
- Choose someone to report back to the larger group