



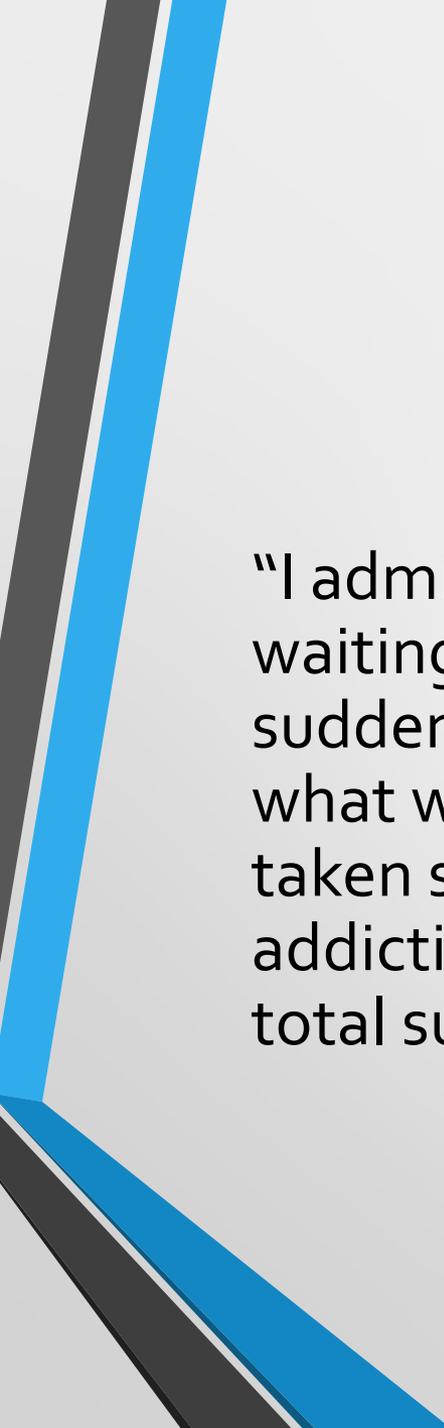
Substance Abuse Review and Update

2/24/2017

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“I admire addicts. In a world where everybody is waiting for some blind, random disaster or some sudden disease, the addict has the comfort of knowing what will most likely wait for him down the road. He's taken some control over his ultimate fate, and his addiction keeps the cause of his death from being a total surprise.”

-Chuck Palahniuk, Choke

Objectives

- Discuss the scope of the opioid epidemic
- Explain general concepts for treating substance use disorders
- Compare and contrast different medication-assisted treatment options available
- Identify symptoms that distinguish opioid overdose from over-medicated
- Compare and contrast the different naloxone formulations



Background and Statistics

Most Commonly Abused Substances

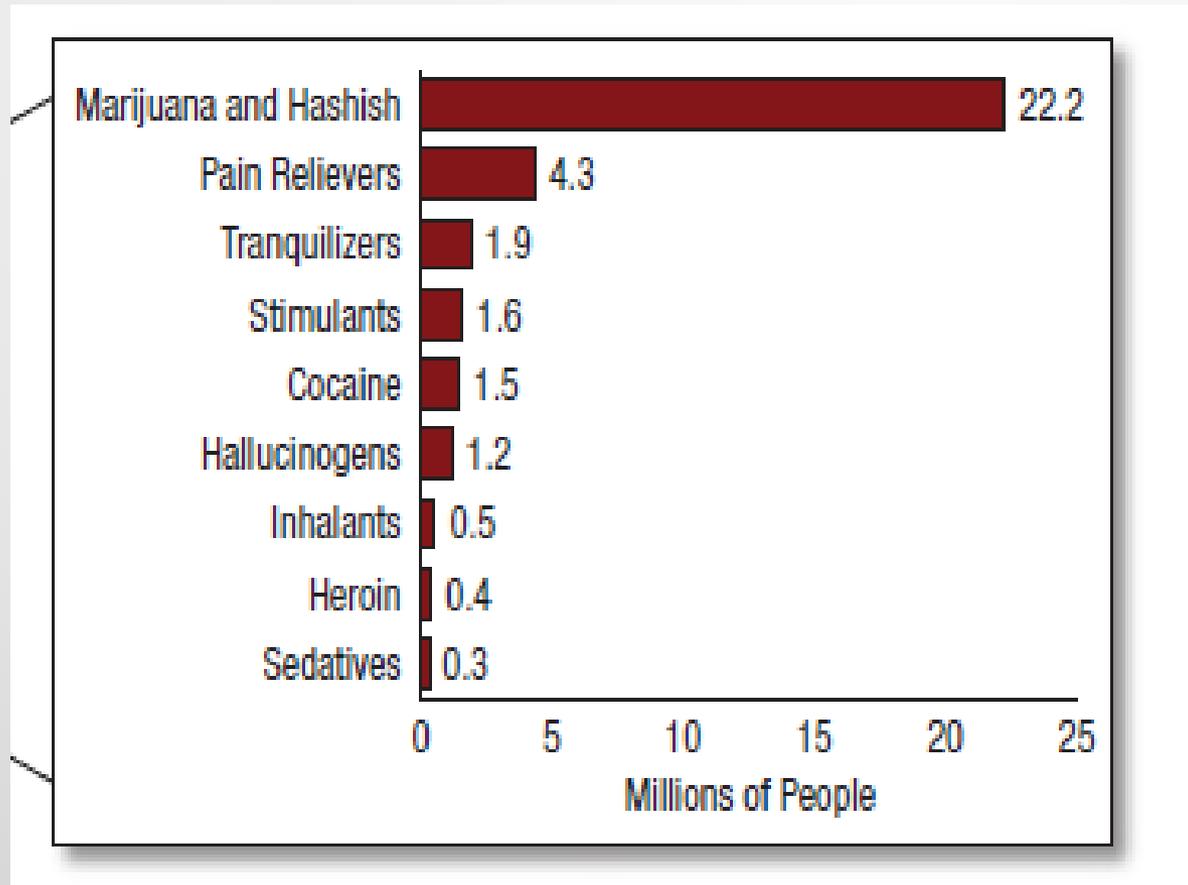


Figure 2.1 Past Month Illicit Drug Use among Persons Aged 12 or Older: 2013

Results from the 2014 National Survey on Drug Use and Health:
Summary of National Findings



Most Commonly Abused Opiates

- **Heroin** – China White, Dope, H, Horse, Junk, Skag, Skunk, Smack, White Horse
 - Injected, smoked, snorted
- **Oxycodone** - O.C., Oxycet, Oxycotton, Oxy, Hillbilly Heroin, Percs
 - Swallowed, snorted, injected
- **Hydrocodone** – Vicodin, Lortab, Lorcet Vike, Watson-387
 - Swallowed, snorted, injected
- **Codeine** - Captain Cody, Cody, Lean, Schoolboy, Sizzurp, Purple Drank
 - Injected, swallowed (often mixed with soda and flavorings)

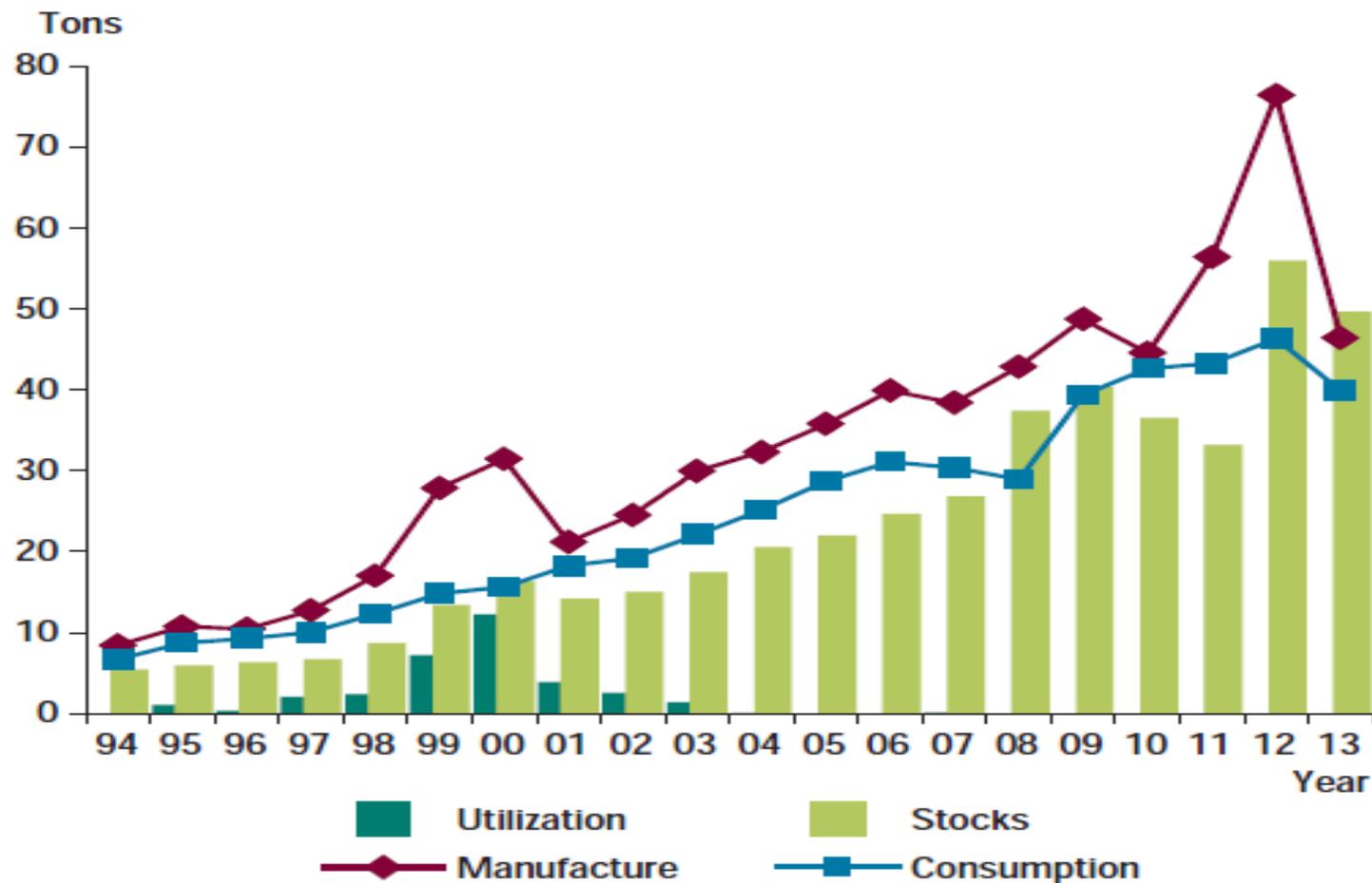


Background and Statistics

- According to the International Narcotics Control Board, in 2013, the US held 99% of global stock of hydrocodone which accounted for 49 tons¹
- Every day, over 1,000 people are treated in emergency departments for misusing prescription opioids²
- In 2015 approximately 20.8 million people aged 12 and older had a substance use disorder, including both alcohol and illicit drugs

1. International Narcotics Control Board-Availability of Internationally Controlled Drugs - <https://www.incb.org/incb/en/publications/incb-publications.html>
2. Results From the 2015 National Survey on Drug Use and Health <https://www.samhsa.gov/data/>

Figure 22. Hydrocodone: global manufacture, consumption, utilization^a and stocks,^{b,c} 1994-2013



^aUtilization for the manufacture of other drugs.

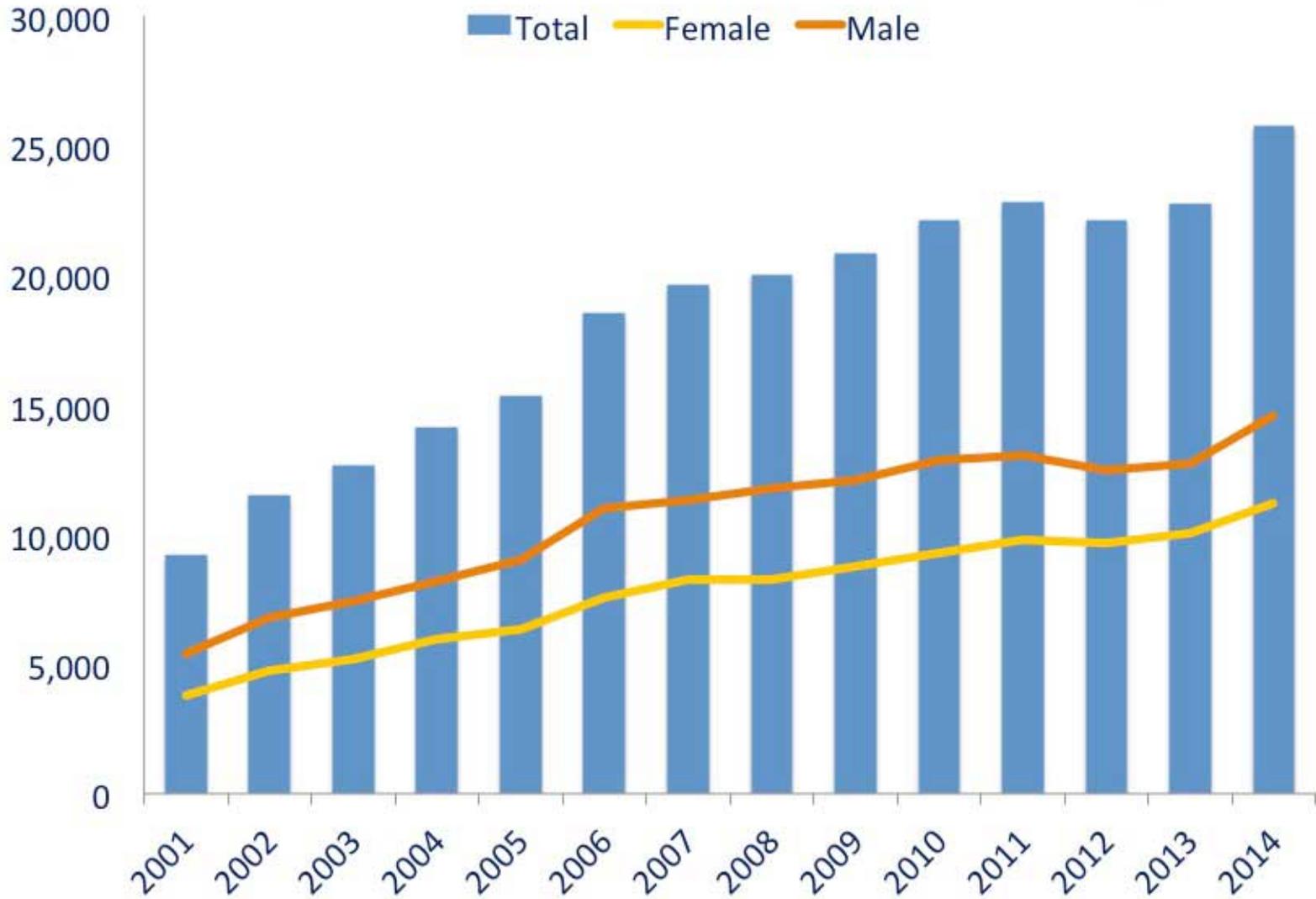
^bStocks as at 31 December of each year.

^cHydrocodone is subject to losses during the manufacturing process. This explains some gaps between manufacture and consumption/stocks.



National Overdose Deaths

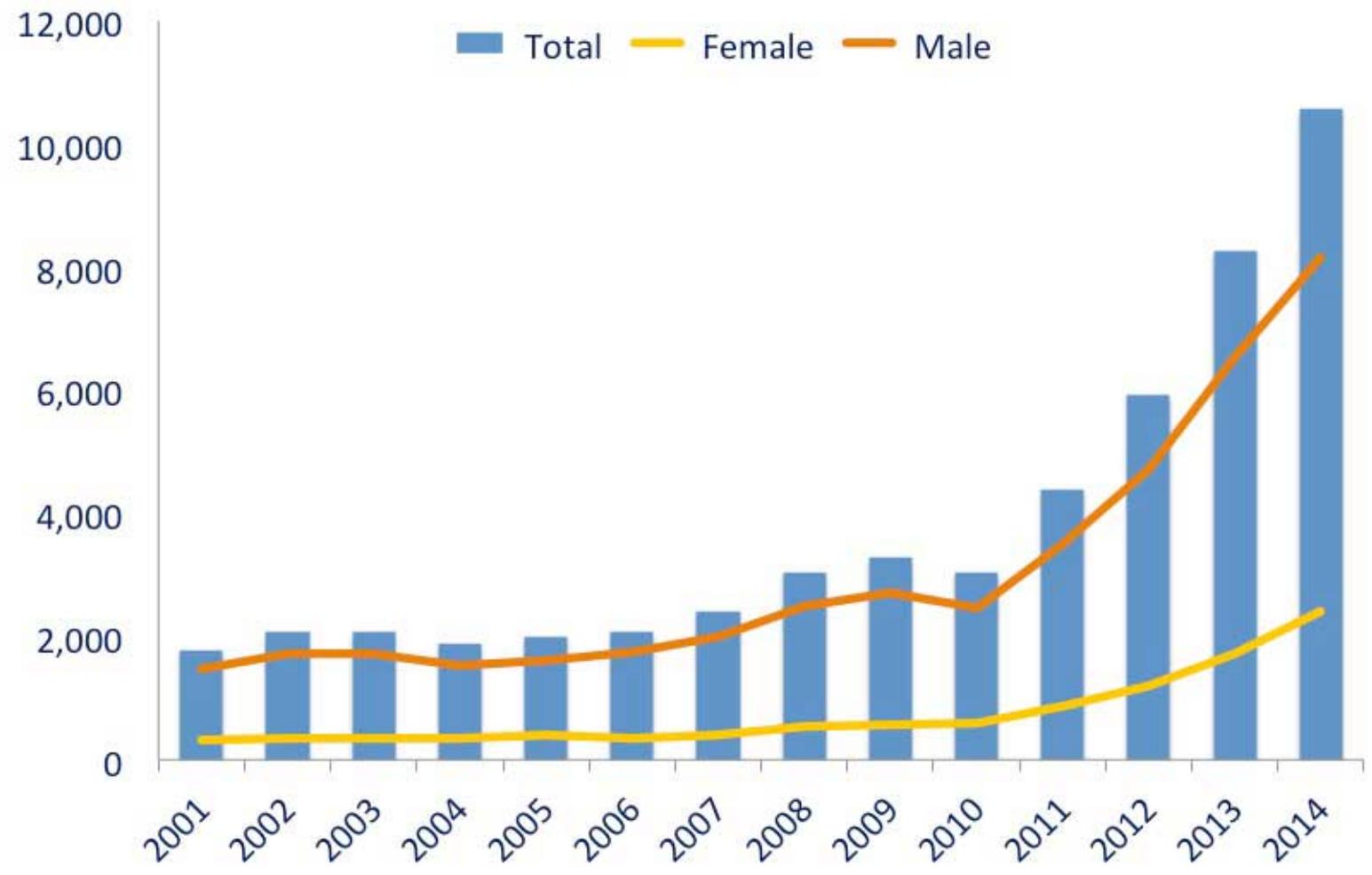
Number of Deaths from Prescription Drugs





National Overdose Deaths

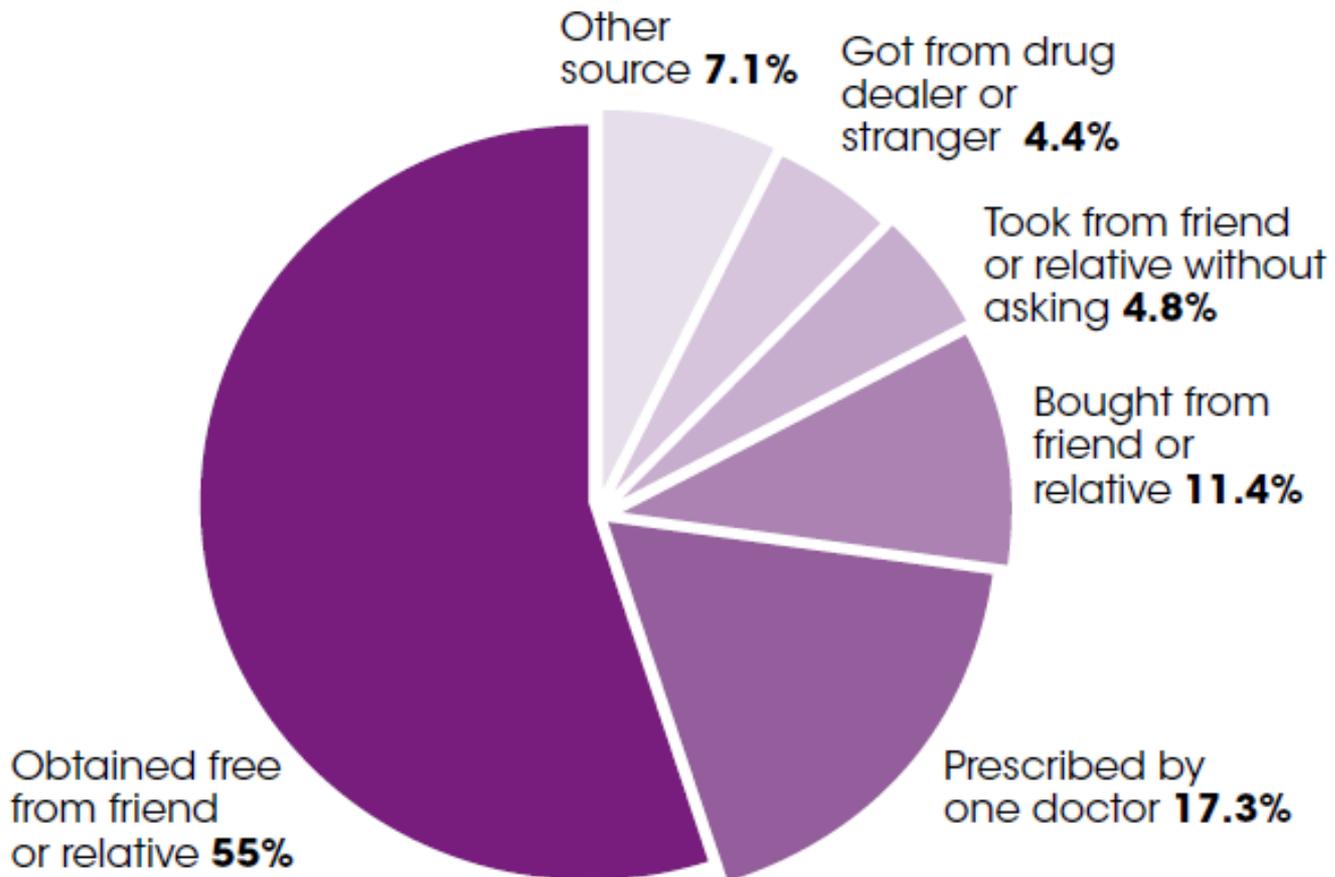
Number of Deaths from Heroin



Source: National Center for Health Statistics, CDC Wonder

Sources

People who abuse prescription painkillers get drugs from a variety of sources⁷





Tennessee trends

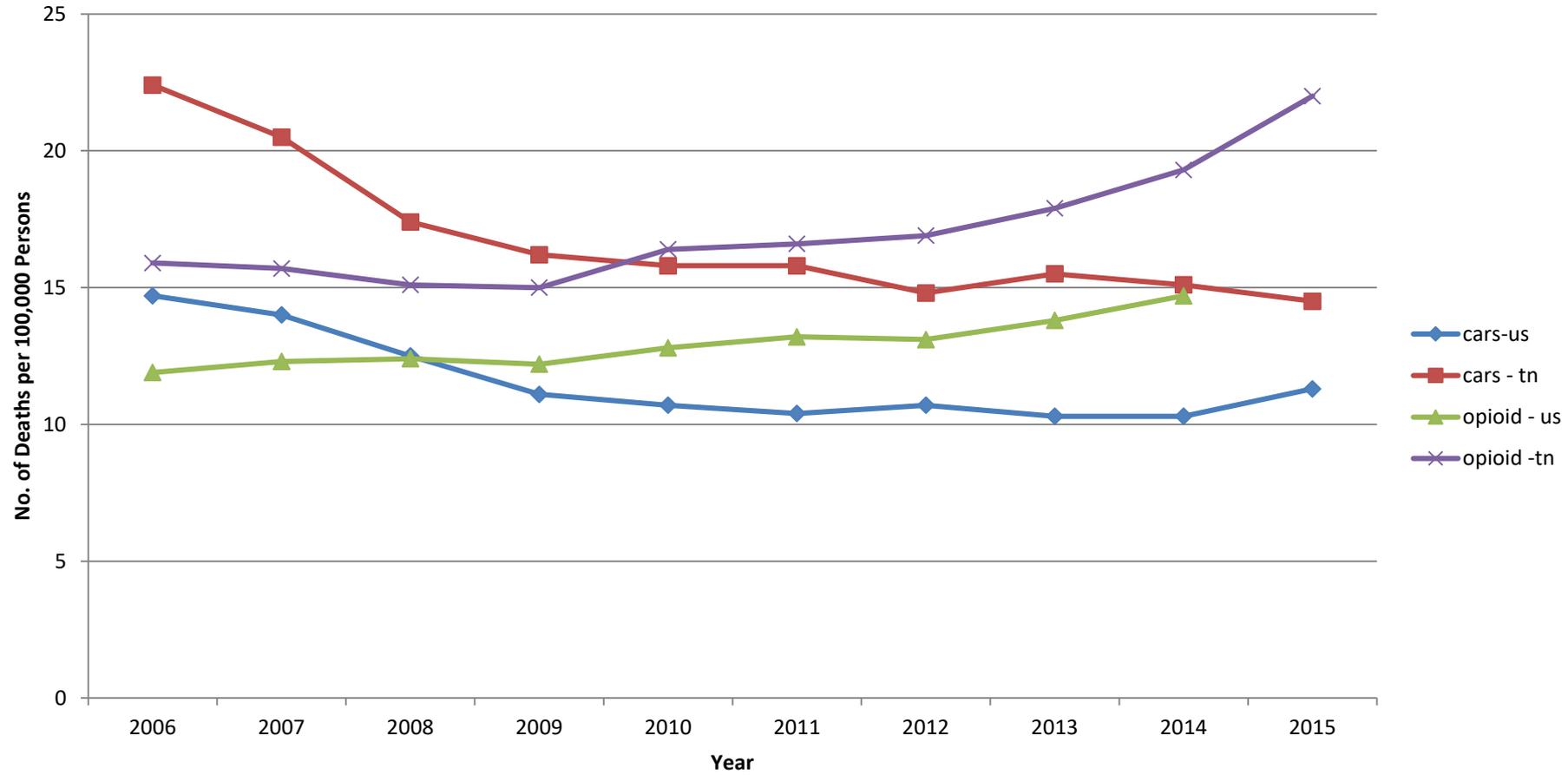
**Report Table 1. The Highest 10 Controlled Substances Reported in the CSMD,
2012-2015²**

Rank	2015	2014	2013	2012
1	Hydrocodone Products	Hydrocodone Products	Hydrocodone Products	Hydrocodone Products
2	Oxycodone Products	Alprazolam	Alprazolam	Alprazolam
3	Alprazolam	Oxycodone Products	Oxycodone Products	Oxycodone Products
4	Zolpidem	Zolpidem	Zolpidem	Zolpidem
5	Tramadol	Tramadol	Tramadol	Tramadol
6	Clonazepam	Clonazepam	Clonazepam	Clonazepam
7	Lorazepam	Lorazepam	Lorazepam	Lorazepam
8	Diazepam	Diazepam	Phentermine Products	Diazepam
9	Morphine Products	Phentermine Products	Diazepam	Phentermine Products
10	Suboxone	Morphine Products	Morphine Products	Buprenorphine Products



Current Trends in TN: Death Rates

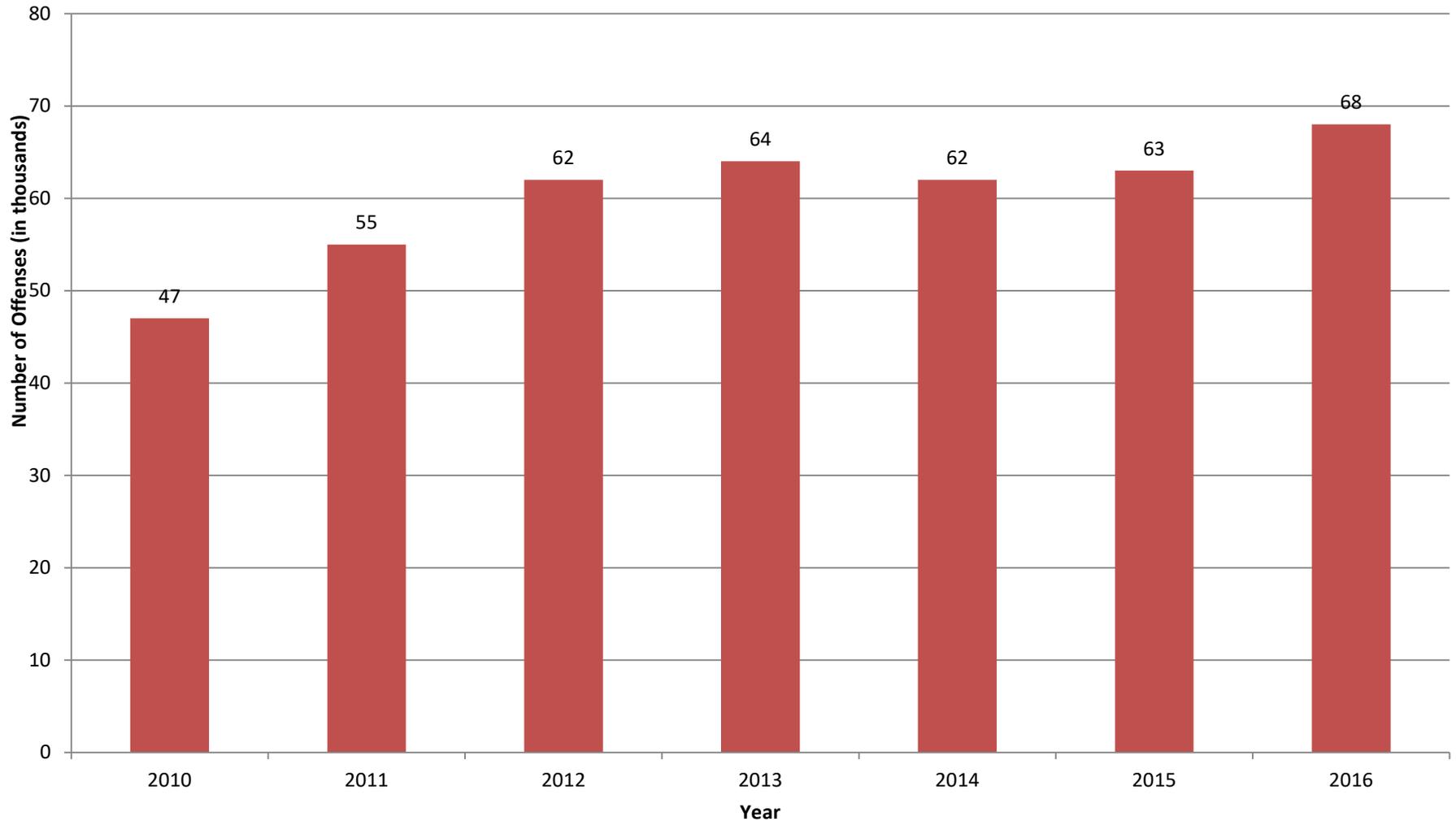
Death Rates in Tennessee vs. US



Source: "1,451 Tennesseans Die from Drug Overdoses in 2015", Tennessee Department of Health and Office of Policy, Planning and Assessment, Tennessee Department of health – Death Certificates
Source: NCHS Data Brief, no. 81, December 2011, "Drug Poisoning Deaths in the United States, 1980 – 2008", Data table for Figure 1



Current Trends in TN: Drug-Related Crime



Source: Tennessee Bureau of Investigation Crime Statistics. Obtained on 1/25/17.
< <http://www.tennesseecrimeonline.com/public> >



Health Consequences

- Infection
 - Cellulitis +/- abscess formation
 - Sepsis
 - Endocarditis
 - Osteomyelitis
 - Hepatitis B & C
 - HIV
- Pain
- Narcotic Bowel syndrome
- Overdose and increased mortality
- Neonatal Abstinence Syndrome

Doctor?



Neonatal Abstinence Syndrome

- In 2014,
 - 1,063 TennCare newborns were treated for NAS
 - Total cost for NAS infants in 1st year of life: \$51,443,381
 - Estimate for 1,063 non-NAS infants in 1st year of life: \$8,909,003
 - Difference - \$42,534,378
- Babies born with NAS are more likely to be put in Department of Children Services custody according to TennCare data, 2014.

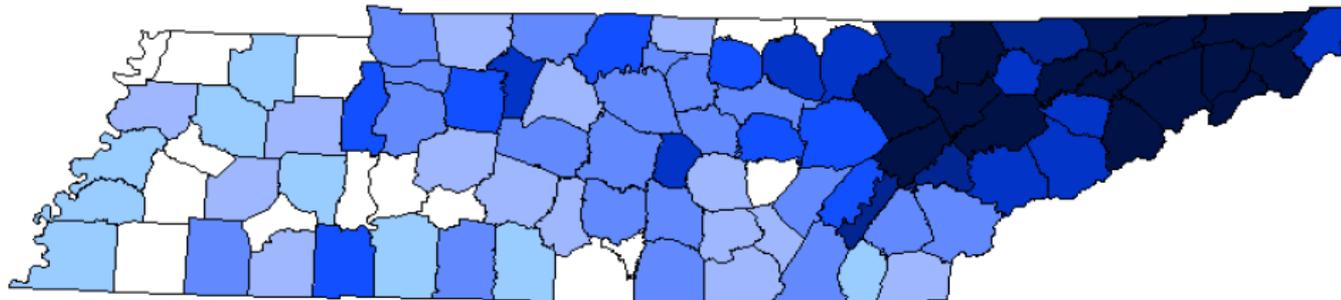
Table 3: Percentage of newborns in DCS custody within one year of birth - 2014 data

Metric	All Infants	NAS infants
Total # of Infants	63,240	1,063
Total # infants in DCS	661	201
% in DCS	1.0%	18.9%

Source: tn.gov TennCare NAS data 2014

Neonatal Abstinence Syndrome

Map 1: Incidence of NAS among TennCare recipients - 2014 data



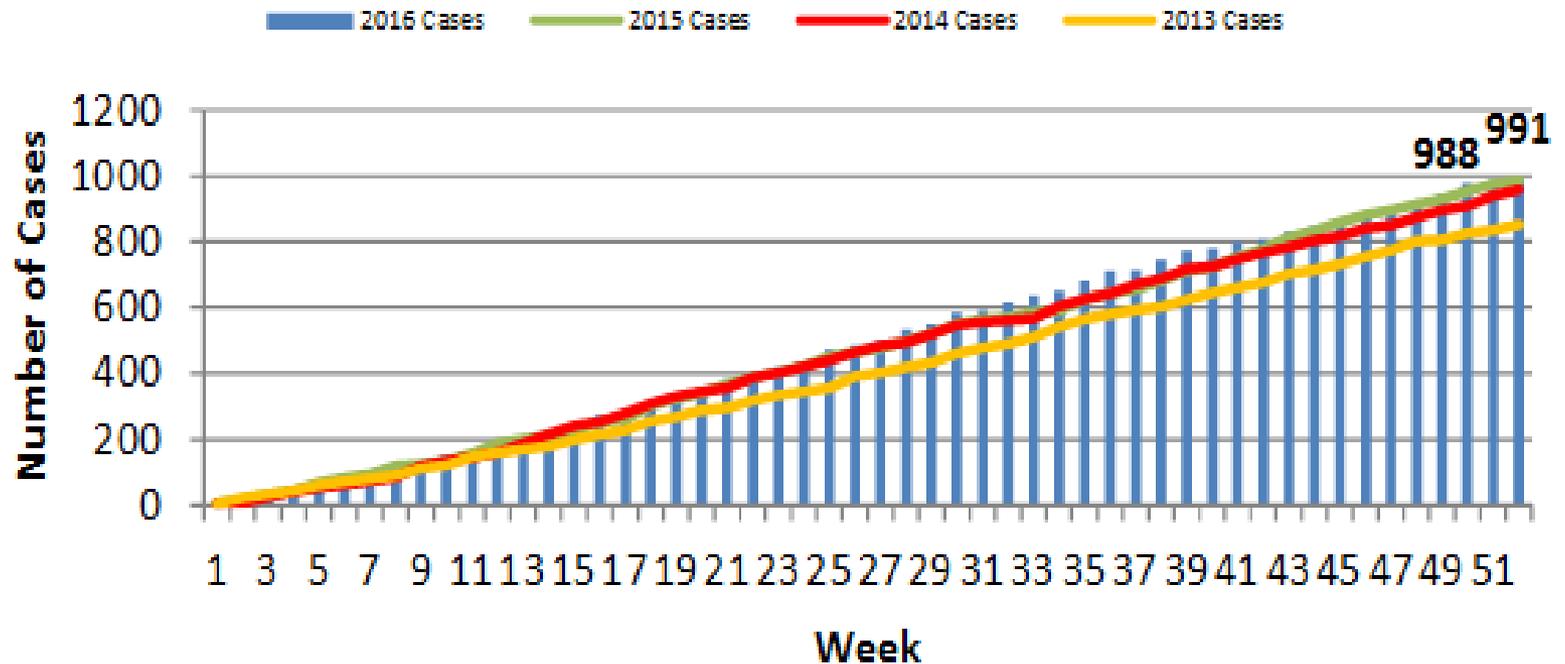
Rate of NAS per 1,000 Births:

0 - 4.9	5 - 9.9	10 - 19.9	20 - 29.9
30 - 39.9	40 - 49.9	50 +	

SOURCE: BUREAU OF TENNCARE 30NOV15

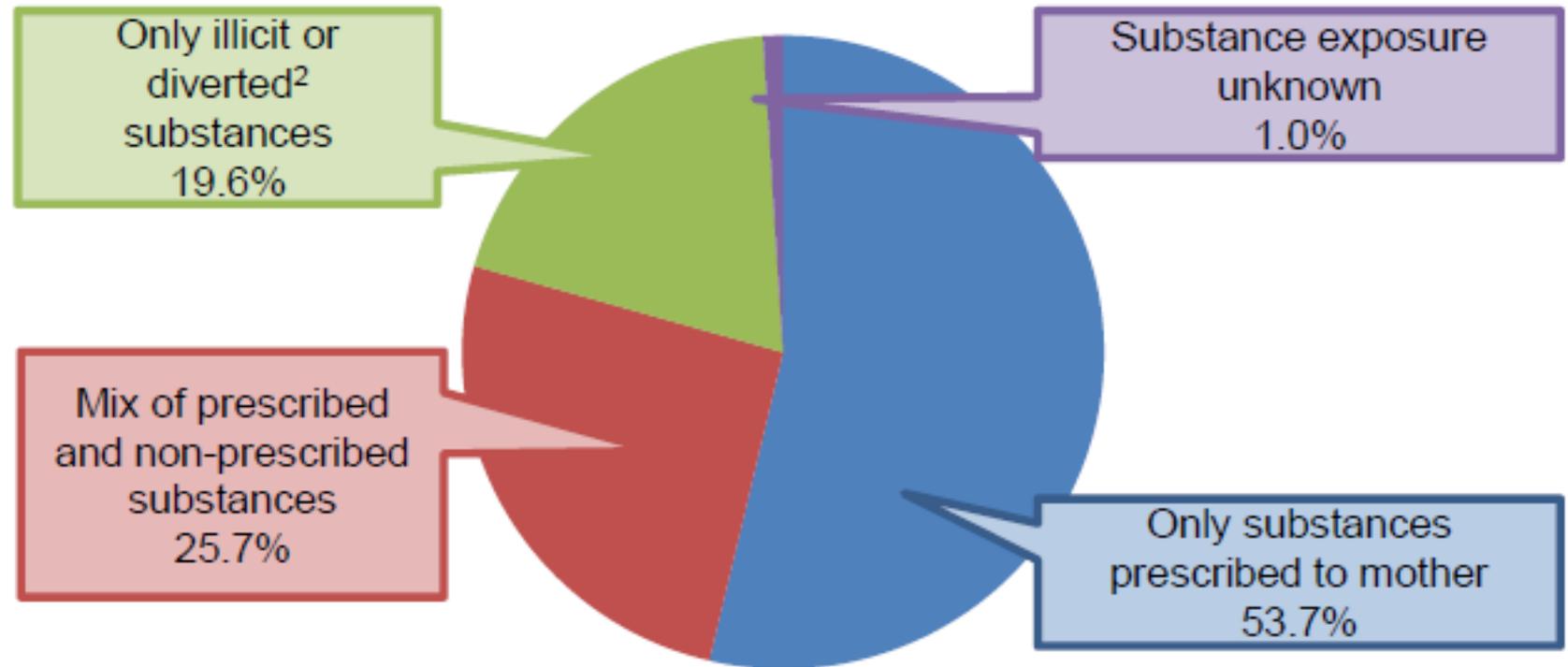
Current Trends in TN: NAS

Cumulative Cases NAS Reported



Current Trends in TN: NAS

Maternal Source of Exposure





General Treatment Concepts

Two Views of Opioid Dependence



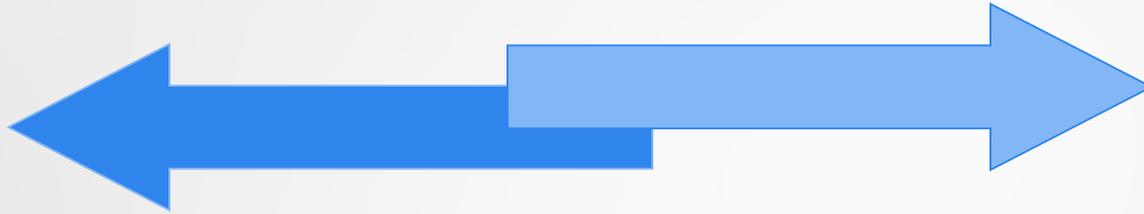
View 1

- Opioid addiction is a chronic, relapsing disease.

View 2

- Opioid addiction is caused by weak will, moral failing, or other psychodynamic factors or is predetermined.

Two Views of Opioid Treatment



View 1

- Medication Assisted Treatment

View 2

- Abstinence only (AA, NA, residential, faith-based)

Tolerance

- Through repeated exposure it takes a higher dose of the drug to achieve the same level of response achieved initially
- Tolerance is not mutually exclusive with addiction
- Over time tolerance is diminished when abstinent from the substance
- Particularly deadly when an individual who has lost tolerance uses an amount of a drug that they are familiar with when they were tolerant.

Dependence vs. Addiction

- **Dependence**- once the drug is stopped, a predictable physiological withdrawal syndrome occurs
- **Addiction**- the compulsive use, loss of control and continued use despite adverse consequences;
hallmark is craving

Comparison to Other Medical Disorders

- Opioid addiction is viewed as a medical disorder.
- Substance addiction is comparable to asthma, hypertension, and diabetes.
- Risk of relapse is highest during first 6 months.
- Patients respond best to a combination of pharmacological and behavioral interventions.
- Treatment improves outcomes of even severe cases.



General Treatment Considerations



Goals of Initial Screening

- Crisis intervention
- Eligibility verification
- Clarification of treatment alliance
- Education
- Identification of treatment barriers
- Identification of other medical and psychosocial risk factors

Substance Abuse Assessment

- History
 - Substance use
 - Previous treatments
 - Psych history
 - Family
 - Medical
 - Social
- Readiness to change



Types of Treatment Available

- Long-term Residential Treatment
- Short-term Residential Treatment
- Outpatient treatment
- Medication-Assisted Treatment (MAT)



Medication-Assisted Treatment

Medication-Assisted Treatment

- Methadone
- Buprenorphine
- Naltrexone

MAT - Methadone

- Full opioid agonist
- Generally dosed daily
 - Average dose of 80-120mg per day
- Drug of choice in pregnant women needing opioid addiction treatment, according to current guidelines
- Only available for addiction treatment in an Opioid Treatment Program (“Methadone Clinic”)

MAT - Buprenorphine

- First drug for office-based opioid treatment (OBOT) under DATA 2000 regulations (Allows prescriber to prescribe CIII-CV substances approved for addiction)
- Obtain DEA waiver, waiver ID is same as DEA # but begins with an "X"
- Max of 30 patients/ waiver for 100 after year
- -Effective Mid-August 2016, up to 275 after having the 100 patient waiver for one year
 - Must be board-certified or work in a qualified practice setting

MAT - Buprenorphine

- MOA
 - Partial agonist mu-opioid receptor, antagonist at kappa-opioid receptor
 - “Ceiling effect” limits effects of subsequently used opioids, considered safer in overdose and milder withdrawal symptoms
- Drug Interactions
 - Primarily metabolized by CYP_{3A4}
 - Ceiling effect can be negated by concurrent benzo or alcohol use
- Dosing
 - 4mg-24mg/day(or equivalent) with a target of 16mg/day

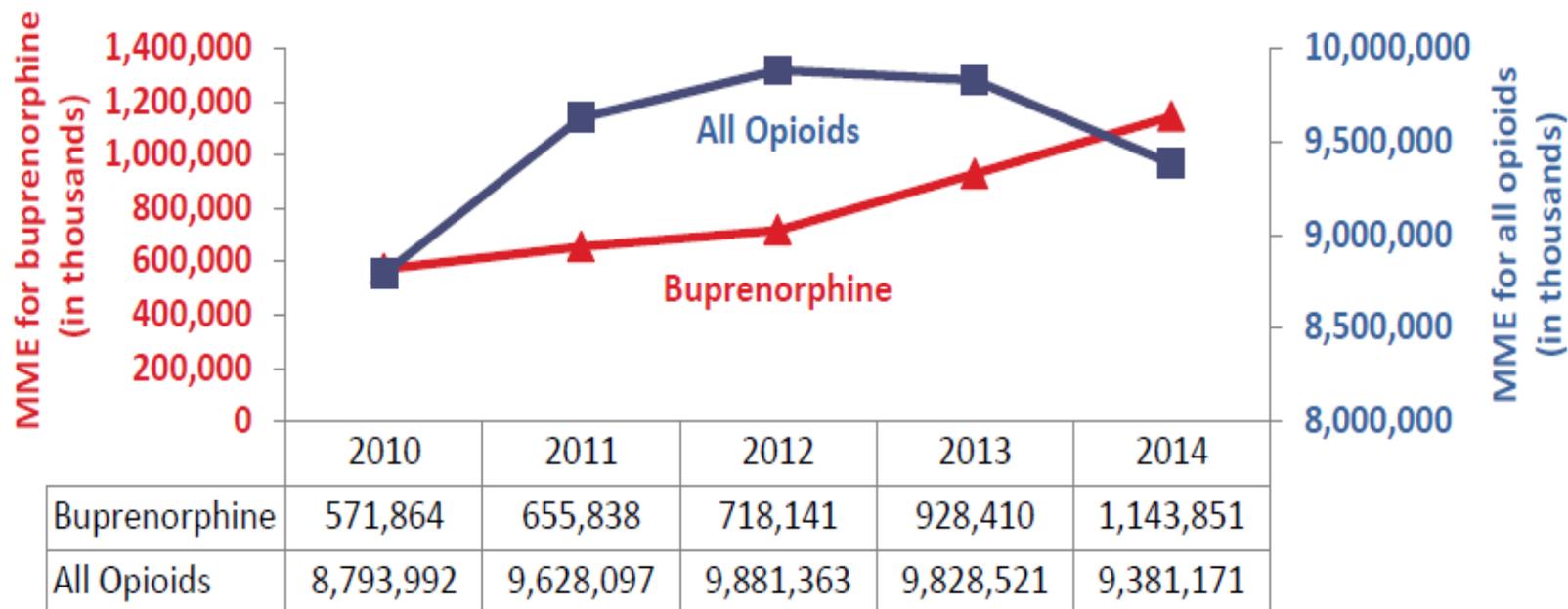
What Is Precipitated Withdrawal?



Full Agonist Opioid.
Perfect receptor fit. Maximum
intrinsic activity (opiate effect).

Partial Agonist Opioid
(Buprenorphine). Imperfect Fit.
Less intrinsic activity (opiate effect).

Figure 4. When prescribed opioids declined in 2012, buprenorphine increased.

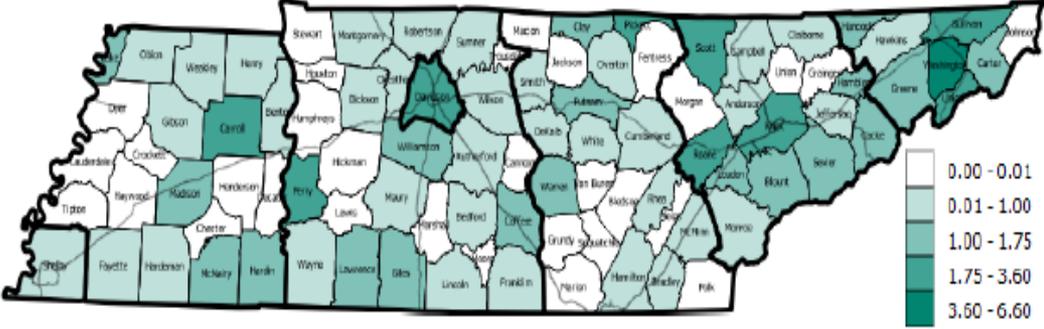


Note: The scale for Buprenorphine is smaller than the scale for all opioids.

(Tennessee Department of Health, 2015)

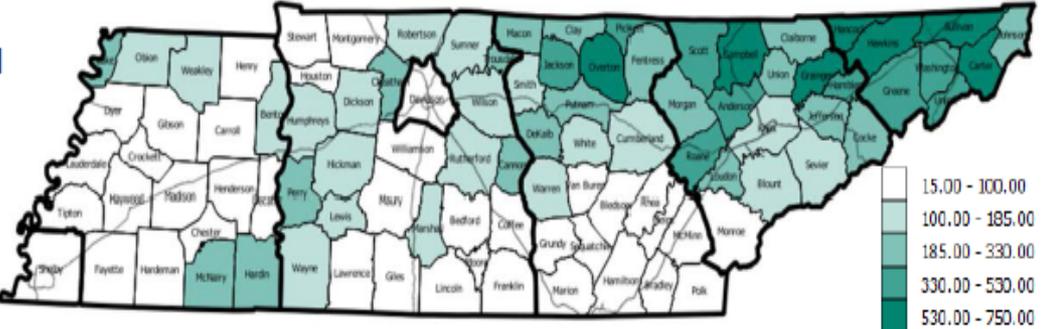
Map 1. Number of doctors certified to prescribe buprenorphine (per 10K population): 2015¹

Source: DEA (private communication), 2015



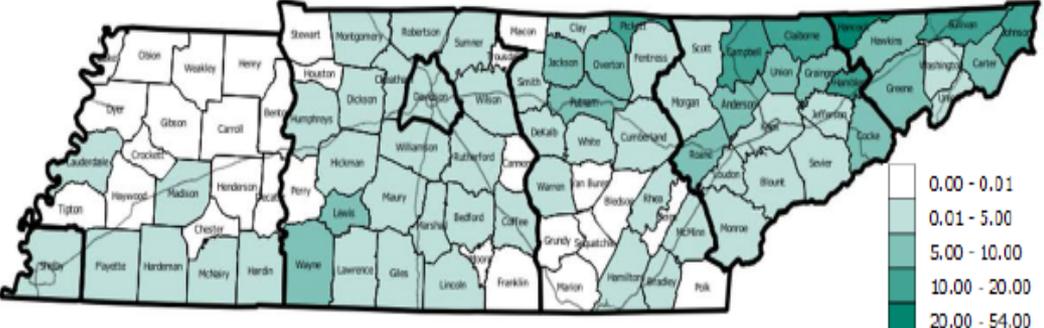
Map 2. Buprenorphine morphine milligram equivalents dispensed and reported to the CSMD (MME per capita): 2014

Source: Tennessee Department of Health Controlled Substance Monitoring Database, 2015



Map 3. Confirmed buprenorphine seizures (per 10K population): 2014-2015²

Source: Tennessee Bureau of Investigation (TBI) lab data, 2015



Buprenorphine Clinic Licensure

- Nonresidential office-based opioid treatment programs(OBOT clinics, buprenorphine clinics) now have to be licensed by the TN Dept. of Mental Health and Substance Abuse Services
- License is required for any facility that uses buprenorphine to treat an opioid use disorder to more than 150 patients and that accounts for more than 50% of the facility's total patients.
- Rules for minimum operating requirements became effective January 12th and includes language regarding clinic ownership, frequency of office visits and case management, frequency of drug screens, and instructions for those also being prescribed benzodiazepines.



MAT- Methadone and Buprenorphine: Swapping Addictions?

Research demonstrated:

- Normal function
- No euphoric, tranquilizing, or analgesic effects
- No change in tolerance levels over time
- Effectiveness when administered orally
- Relief for opioid craving
- Minimal side effects

MAT - Naltrexone

- Full opioid antagonist
 - Blocks the euphoric effect of alcohol and any effect of opioids. No abuse potential
- Approved to treat alcoholism since '95
 - Reduces number of heavy-drinking days
 - May prevent a misstep from becoming a relapse
- Monthly IM injection may improve patient adherence but at a cost
 - ~\$1,200 per injection
- Anyone authorized to prescribe can prescribe since not a controlled substance.
- Covered by TennCare

MAT - Naltrexone

- Available in 50mg tablets (ReVia) or 380mg IM injection(Vivitrol®)
- BB warning hepatotoxicity
- Precipitate withdrawal unless abstinent >7days, 10 days for long acting opioids
- Must counsel patient regarding the loss of tolerance while being treated with naltrexone. A relapse with an opioid dose familiar to patient prior to naltrexone may result in overdose and death



Tapering Off of MAT

Tapering Phase

- Tapering is gradual reduction of maintenance medication during treatment.
- Decision to taper should be made with careful consideration of the patient's situation.
- As medication is tapered, services should intensify.

Tapering Phase: Strategies

- Monitor drug and alcohol use, continue drug testing, and provide counseling support
- Monitor emotional status
- Monitor vocational and educational issues and be available for workplace issues
- Monitor family stability and refer to counseling as required
- Monitor ongoing legal issues and provide support as needed



Relapse After Tapering

- Risk of relapse increases because of physical and emotional stress of attempting to discontinue medication.
- Patients should discuss difficulties with tapering and readjustment to avoid relapse.
- Patients need education about how to reenter MAT if relapse is imminent.

Readjustment After Tapering

- Continue support
- Reinforce relapse prevention skills
- May initiate naltrexone therapy after tapering
- Consider problem solving counseling, positive behavior reinforcement, open-door policy, strengthening patients' support systems, developing relapse prevention plan

Reversion to MAT

- Reversion to MAT is not failure.
- Review reason for relapse
- Regain stabilization
- May reattempt tapering if appropriate. Patient and provider must be confident that patient can maintain abstinence.
- May be an indicator that medical maintenance is more appropriate for treatment.



Treatment of Opioid Overdose

Overmedication vs. Overdose

Overmedication

- Unusual sleepiness or drowsiness
- Difficult to be awakened
- Mental confusion, slurred speech
- Slow, shallow breathing
- Small, “pinpoint” pupils

Overdose

- Cannot be awakened or cannot speak
- Breathing is slow or stopped
- Body is limp, pale, clammy
- Fingernails or lips are blue or purple
- Vomiting or gurgling noises

Naloxone

- Opioid antagonist FDA approved for emergency treatment of opioid overdose
- Acts by competing with opioids for opioid receptor sites such as the mu, kappa, and sigma receptor
- Antagonist effect can last 30-90 minutes. Overdose can last for hours. Call 911 after 1st dose
- Depending on amount of opioids used, may repeat dose in 2-5 minutes if no response

Naloxone - Nasal

- 2mg/2mL Prefilled syringe with mucosal atomization devices
 - MAD requires assembly before use
 - Spray 1mL in each nostril
- 4mg/0.1mL intranasal spray (Narcan® Nasal Spray)
 - Peel back off of package, spray one dose into one nostril.



Naloxone - Injection

- 0.4mg/mL Solution (Narcan)
 - Intended for inpatient when IV line is available and trained staff to draw the dose
- 0.4mg/0.4mL auto-injector with trainer (Evzio®)
 - Contains a trainer that gives instructions through a speaker
 - About \$4,500 per kit (2 auto-injectors)

Recent Naloxone Legislation

- **July 2014 Tennessee passed Good Samaritan law for naloxone administration**
 - Liability immunity for physicians to prescribe naloxone to a patient or someone other than the patient
 - Lay persons required to complete training on how to give Naloxone available on department of health's website.
 - "Good Samaritan" civil immunity granted to person administering Naloxone to someone they believe is overdosing on an opioid
- **Naloxone Collaborative Pharmacy Practice Agreement**
 - Allows pharmacists to provide opioid antagonists via state-wide collaborative pharmacy practice agreement (CPPA) with the Chief Medical Officer for the Tennessee Department of Health
 - Pharmacists must have had opioid antagonist training within 2 years of signing CPPA

Conclusion

- Medication and psychotherapy enable patients to resume a normal life.
- Medication therapy needs to be closely monitored to ensure proper use and accountability if patients use medication-assisted treatment.
- Support those in recovery or those in need of treatment.
 - Perform SBIRT
 - Provide case coordination
 - Partner with local substance abuse providers
 - Bring these services in house

Resources

- “Facing Addiction In America” The Surgeon General’s Report on Alcohol, Drugs, and Health.
<https://addiction.surgeongeneral.gov/>
- Opioid overdose prevention toolkit
<http://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit-Updated-2016/SMA16-4742>
- Help with substance use disorder in Tennessee
 - Help Line: **800-560-5767** M-F 8am-4:30pm Central
 - Crisis Line: **855-CRISIS-1** 24/7 (For immediate help)
- Referral for substance use disorder treatment
800-889-9789 “Tennessee REDLINE” 24/7 every day
- List of Community Anti-drug Coalitions
<http://www.tncoalitions.org/coalitions/>



Questions?