



Department of

**Mental Health &**

**Substance Abuse Services**

# Tennessee: A State in Crisis

Wesley Geminn, PharmD, BCPP



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Epidemiology

- <https://www.youtube.com/watch?v=y1nEB58W4XM>

# Overdose Deaths in 2016

Pop Quiz: Which venue accurately reflects the number of nationwide overdose deaths in 2016?



Grand Ole Opry



Bridgestone Arena



Nissan Stadium

# Overdose Deaths in 2016

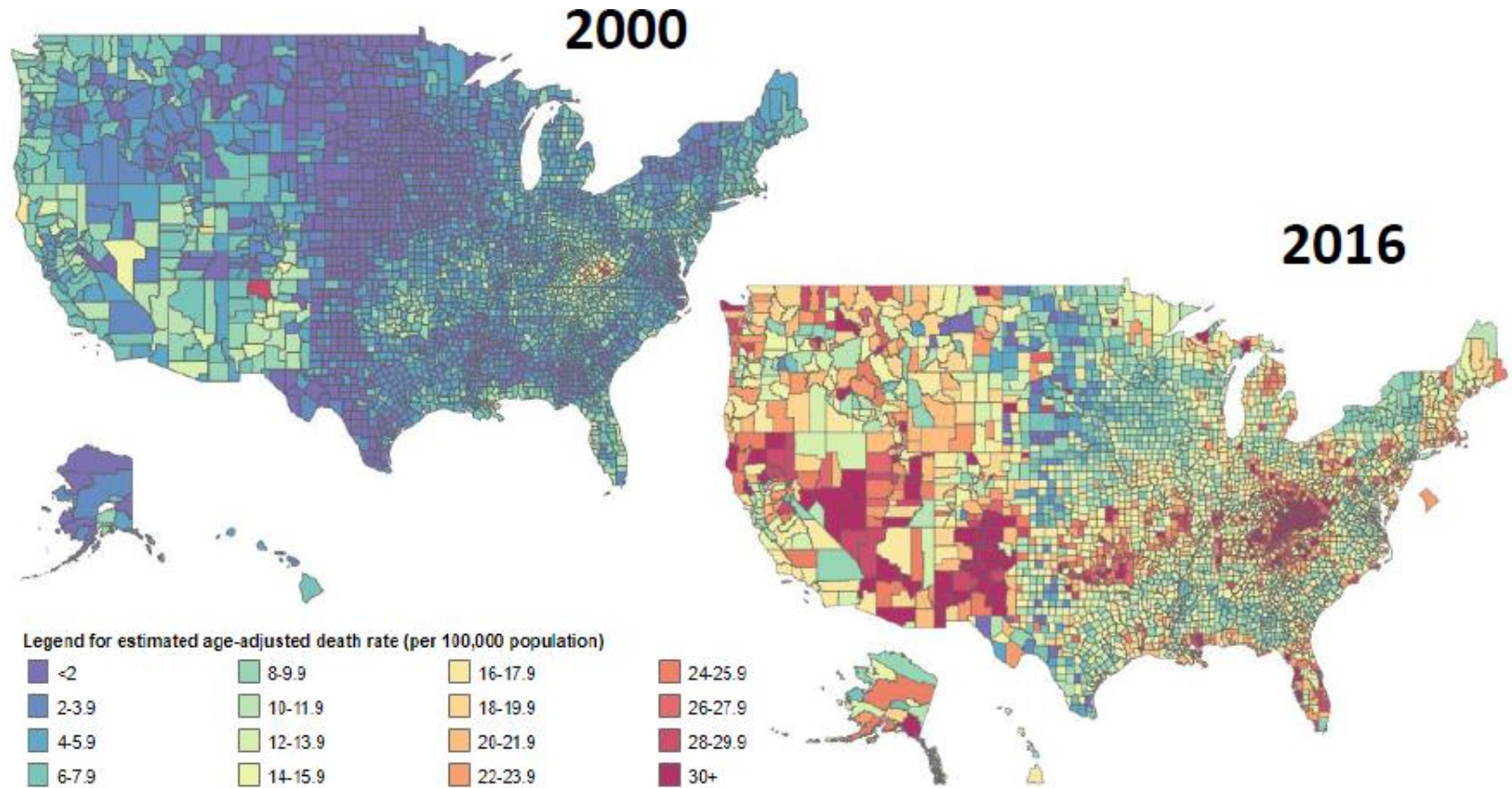
**64,000**

**Or**

**175 per day**

**7 per hour**

# Change in Trends



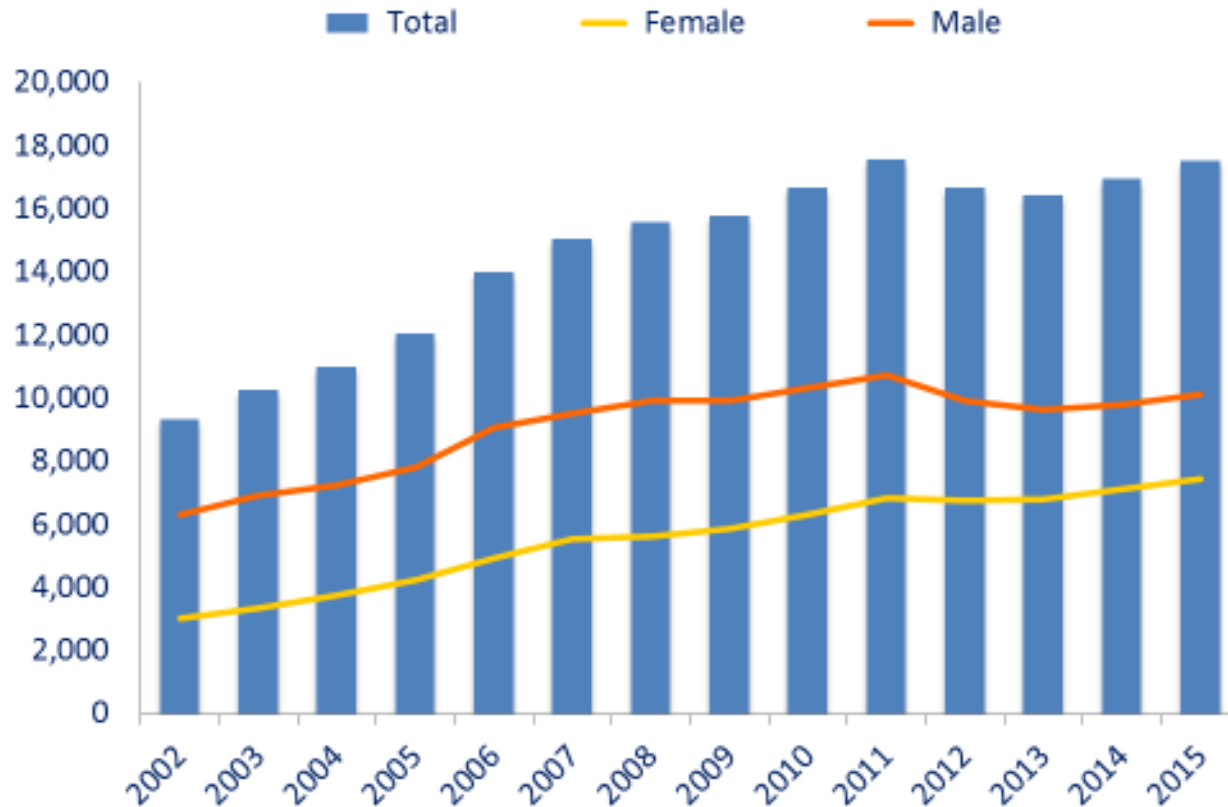
Source: <https://www.cdc.gov/nchs/data-visualization/drug-poisoning-mortality/>

# National Opioid Overdose Statistics



## National Overdose Deaths

Number of Deaths from Prescription Opioid Pain Relievers  
(excluding non-methadone synthetics)



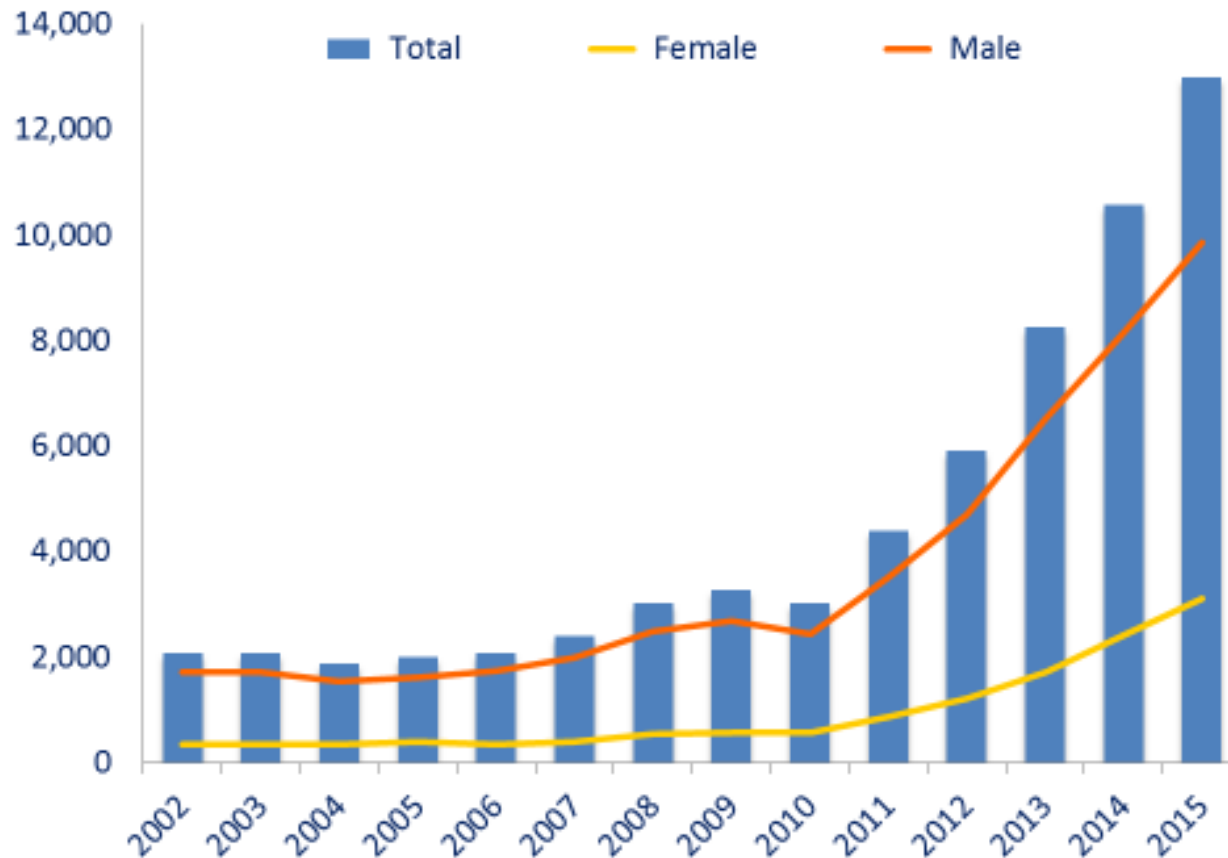
Source: National Center for Health Statistics, CDC Wonder



# National Opioid Overdose Statistics



## National Overdose Deaths Number of Deaths from Heroin



Source: National Center for Health Statistics, CDC Wonder



# Pop Quiz – What Drug is This?



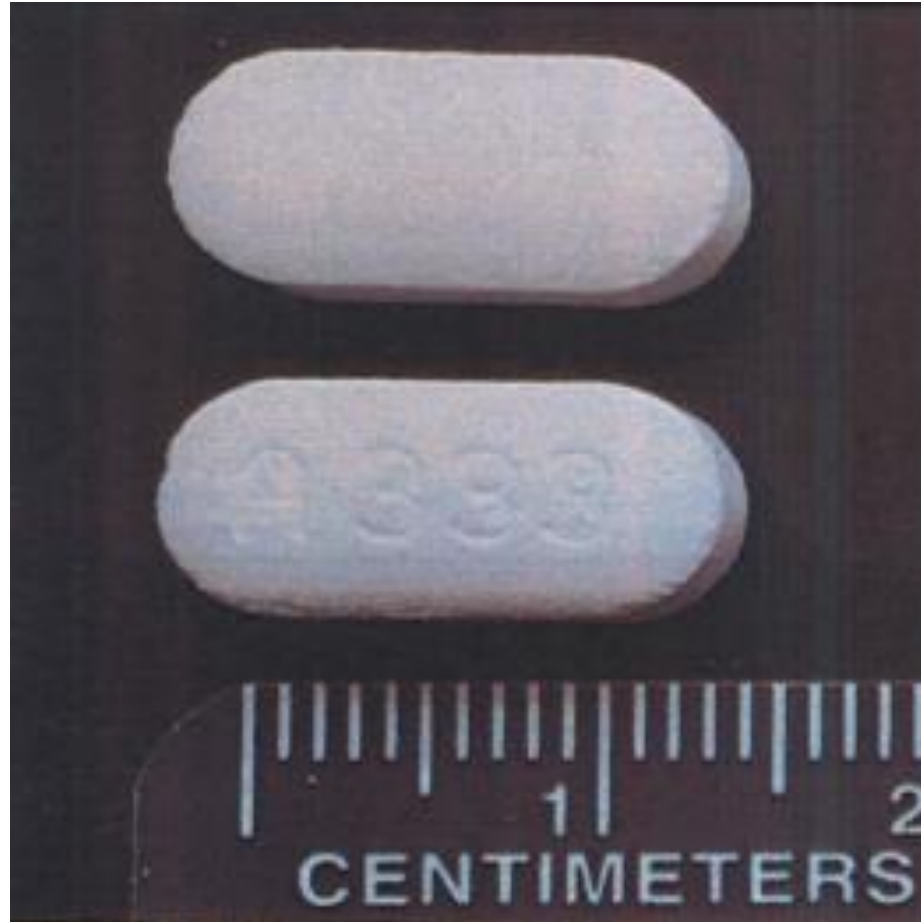
**Fentanyl**

# Pop Quiz – What Drug is This?



**Fentanyl**

# Pop Quiz – What Drug is This?



**Fentanyl and Alprazolam**

# Lethal Doses





# Lethal Dose of Carfentanil



# Current Trends in TN: Fentanyl



(Courtesy: 24th Judicial District Drug Task Force)



# Mobile Pharmaceutical Plant



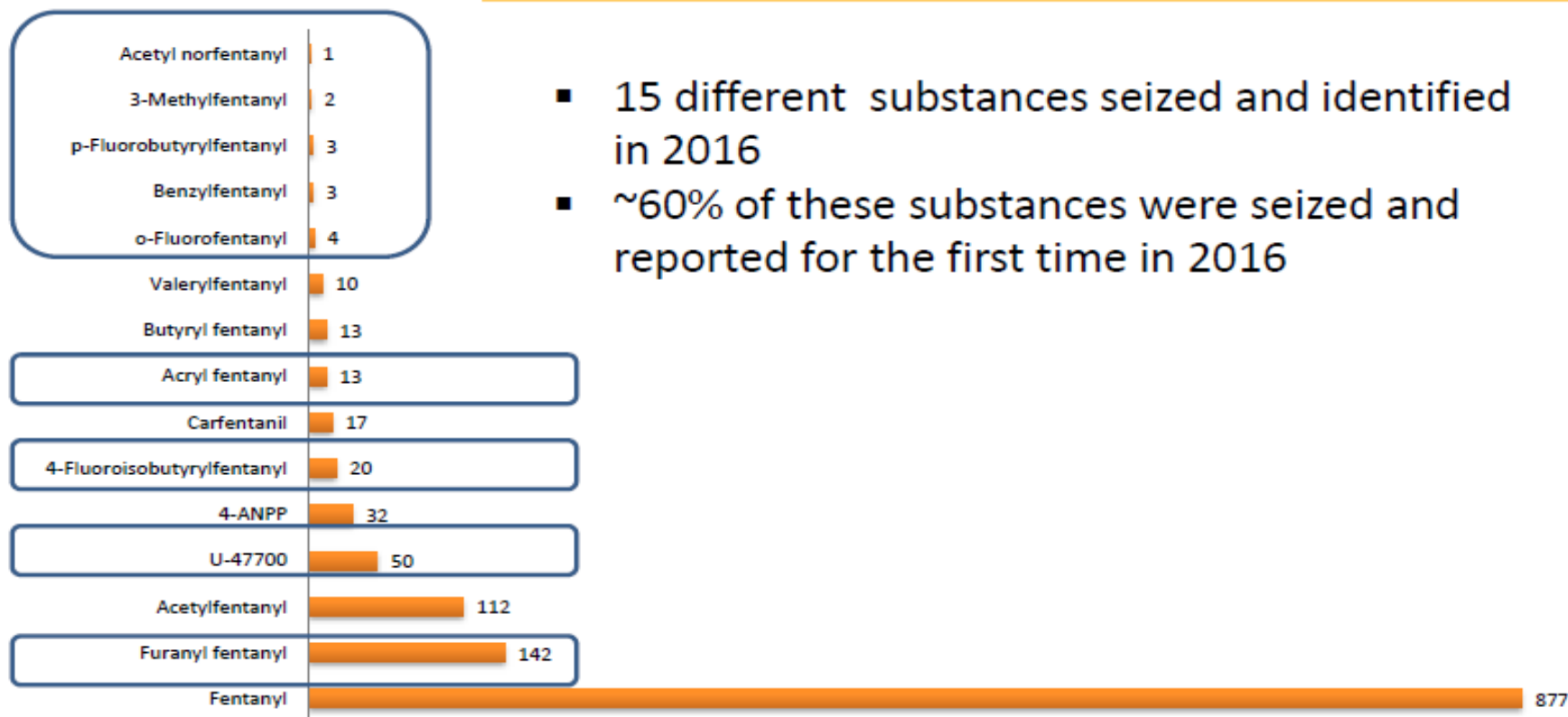


# Current Trends in TN: Fentanyl

DRUG ENFORCEMENT ADMINISTRATION  
SPECIAL TESTING AND RESEARCH LABORATORY  
EMERGING TRENDS PROGRAM



## Opioid & “Fentanyl-like” Identifications



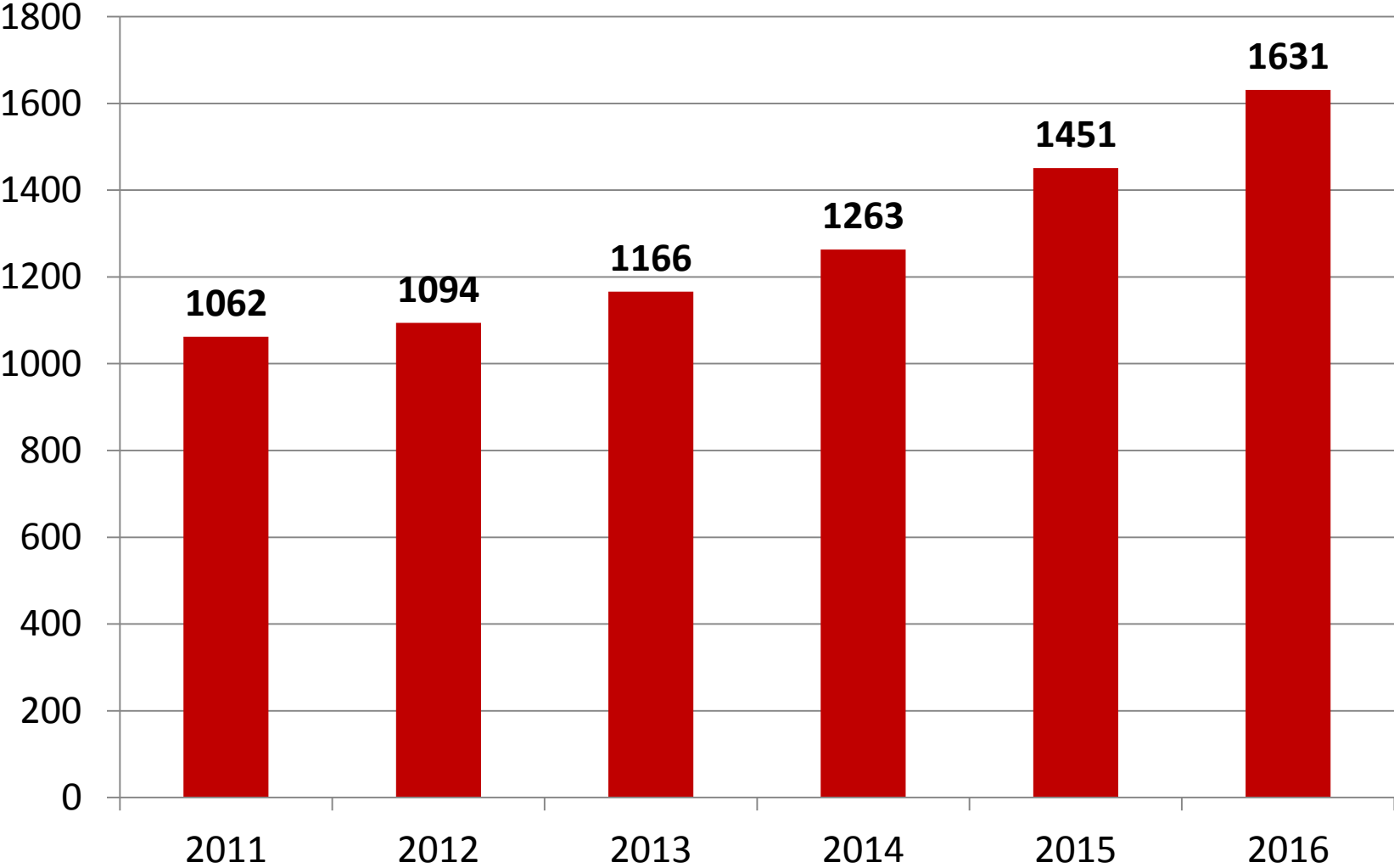
- 15 different substances seized and identified in 2016
- ~60% of these substances were seized and reported for the first time in 2016

### Notes:

- 1) This data was compiled from analytical results from the DEA laboratory system. It encompasses exhibits seized 01/01/2016 through 12/31/2016 that were analyzed by 12/31/2016. The data was retrieved on 01/04/2017.

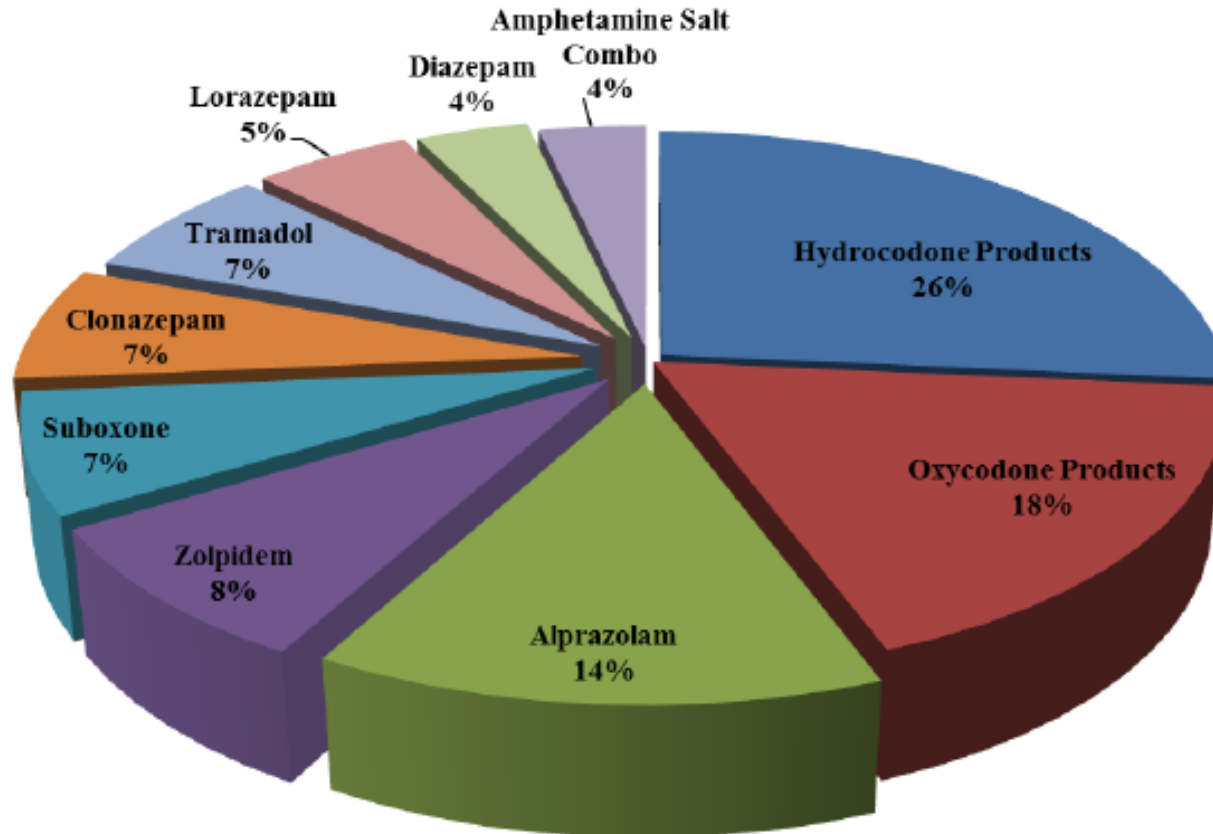


# Tennessee Overdose Deaths



# Most Common Controlled Substances Dispensed

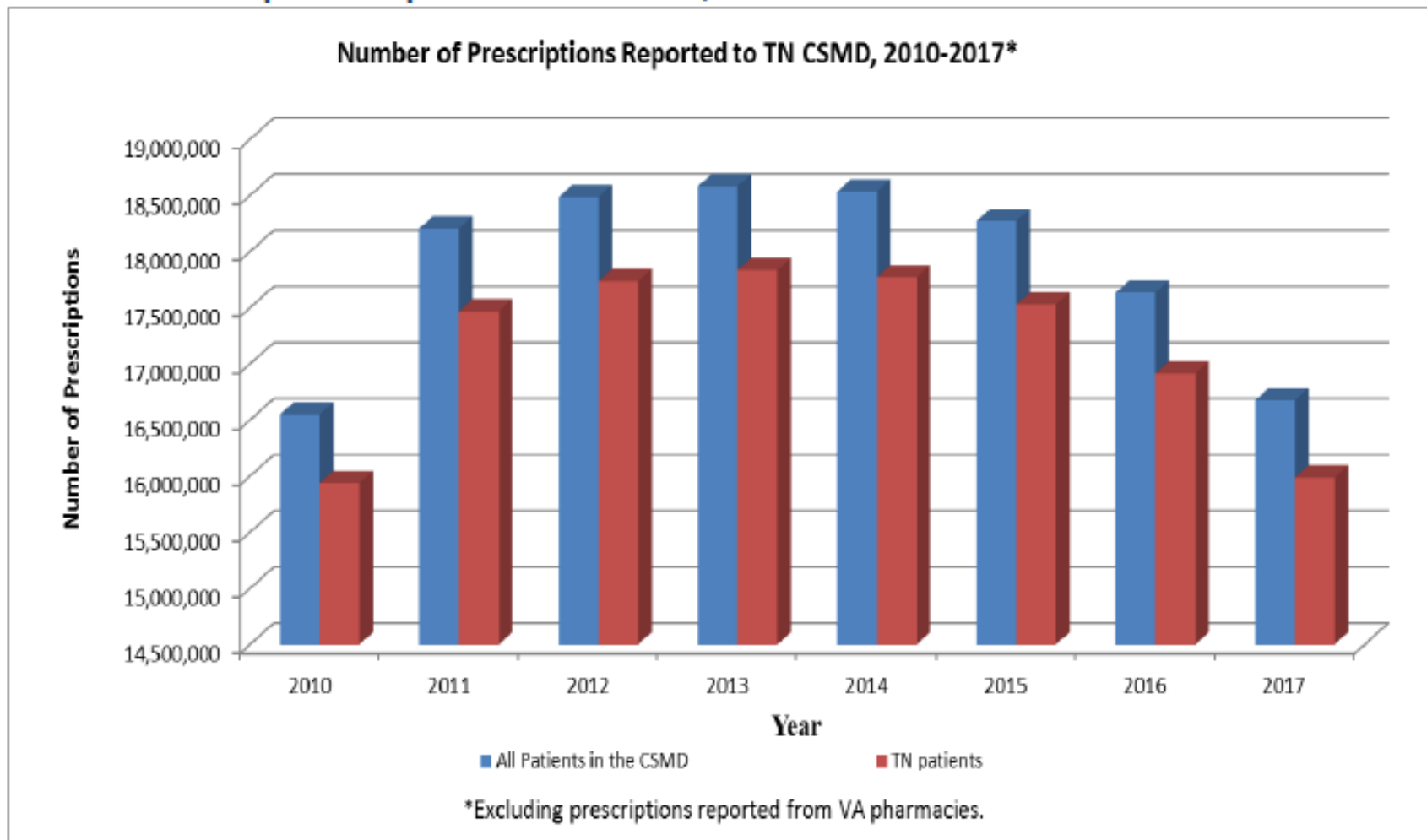
Distribution of the Top 10 Most Frequently Prescribed Controlled Substances Products in the CSMD for 2017\*



\* Including all dispensers who reported to the CSMD in 2017.

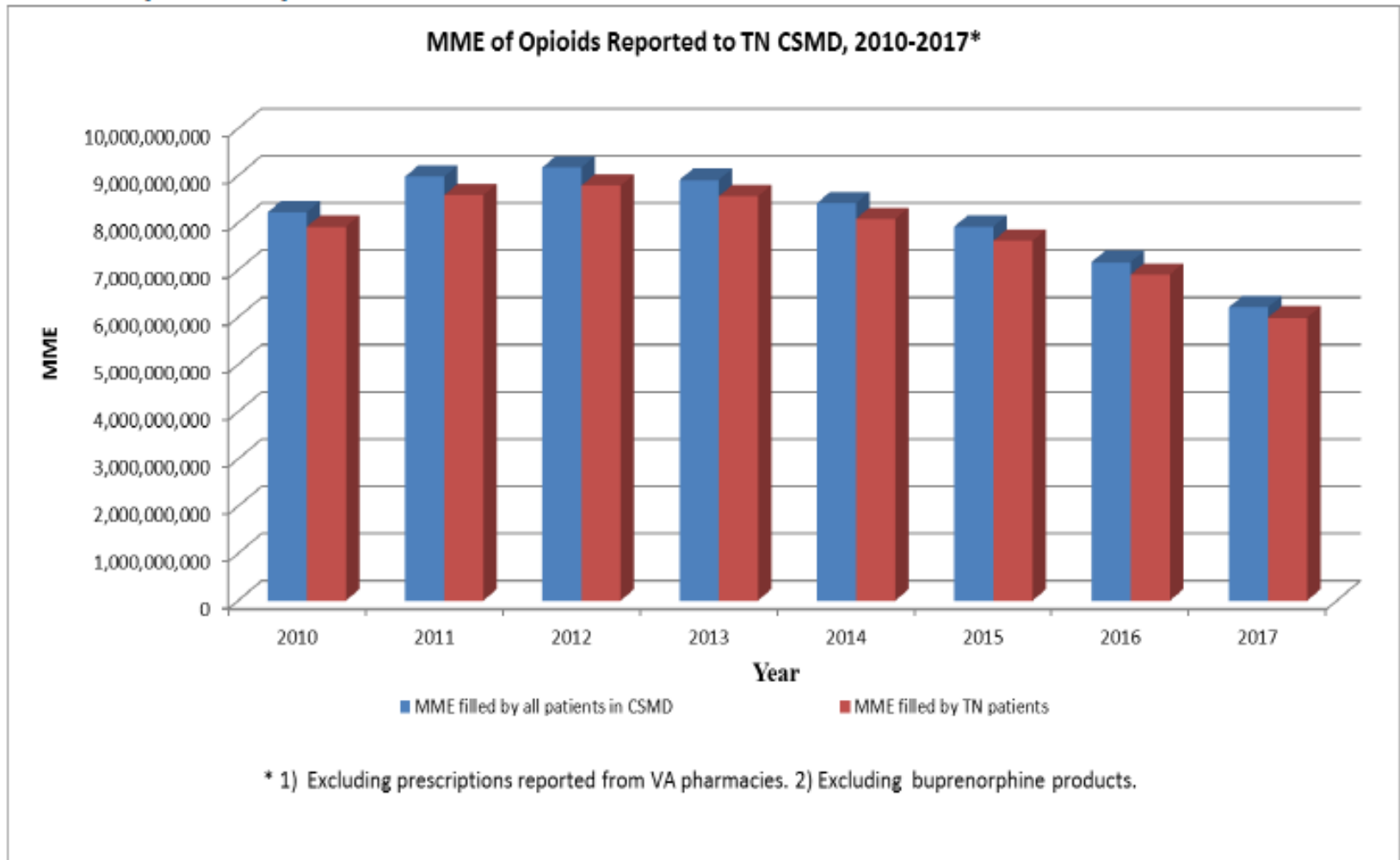
# Number of Controlled Substances Dispensed

Number of Prescriptions Reported to TN CSMD, 2010-2017

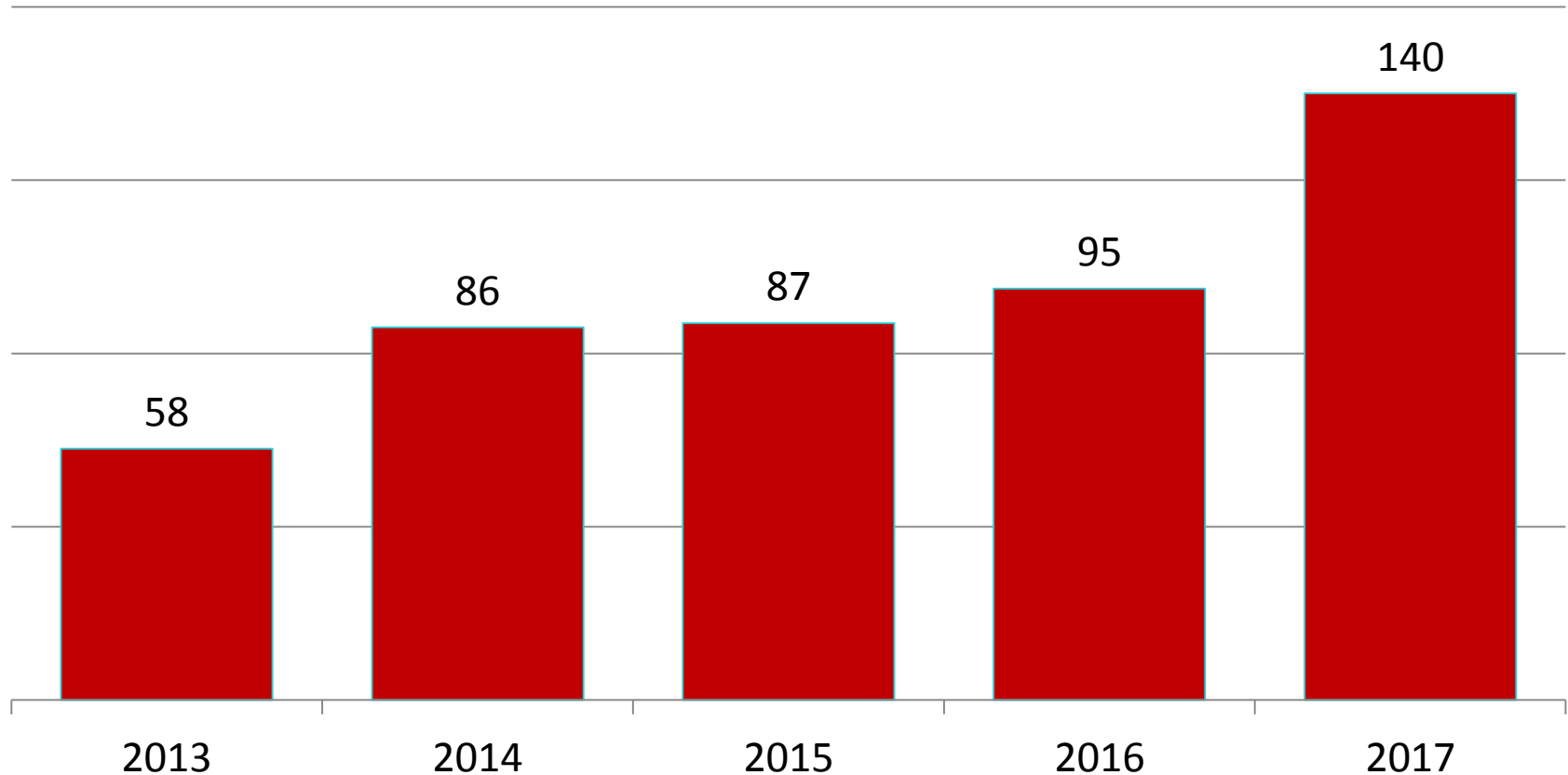


# Number of Opioid MMEs Dispensed

## MME of Opioids Reported to TN CSMD, 2010-2017



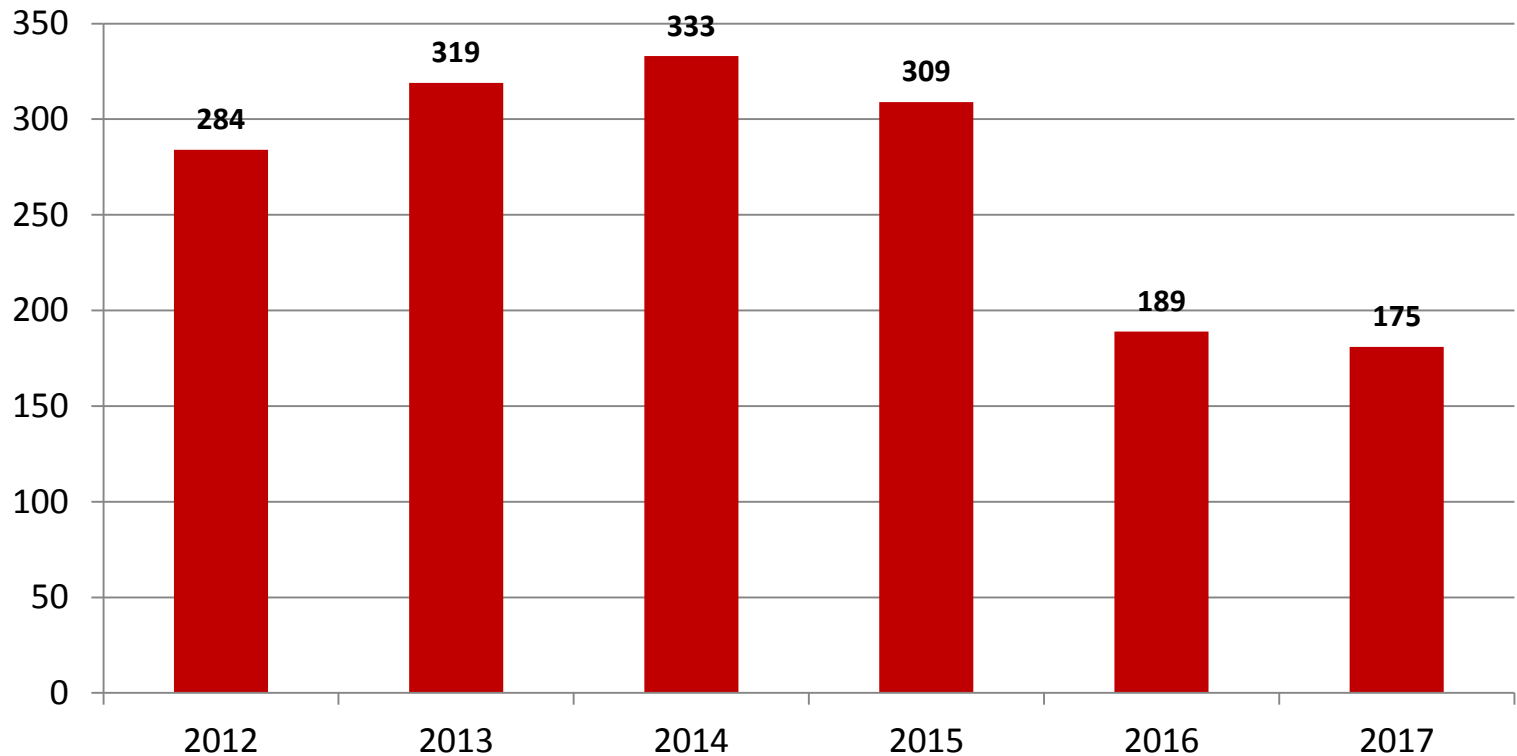
# Number of Board Actions\* (Suspended, Surrendered or Revoked) For Prescribing and Diversion, 2013 – 2017



\*Actions for diversion may have been undercounted in 2013-2015 because several categories were used for diversion. Implementation of LARS software allowed consistent categorization of these actions and increased reporting accuracy for 2016 and 2017.



# Pain Management Clinics - Number in TN



A “pain management clinic” is a privately owned clinic in which the majority of patients are prescribed or dispensed opioids, benzos, etc. for 90 days or more in a 12-month period for non-malignant pain.

**“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***

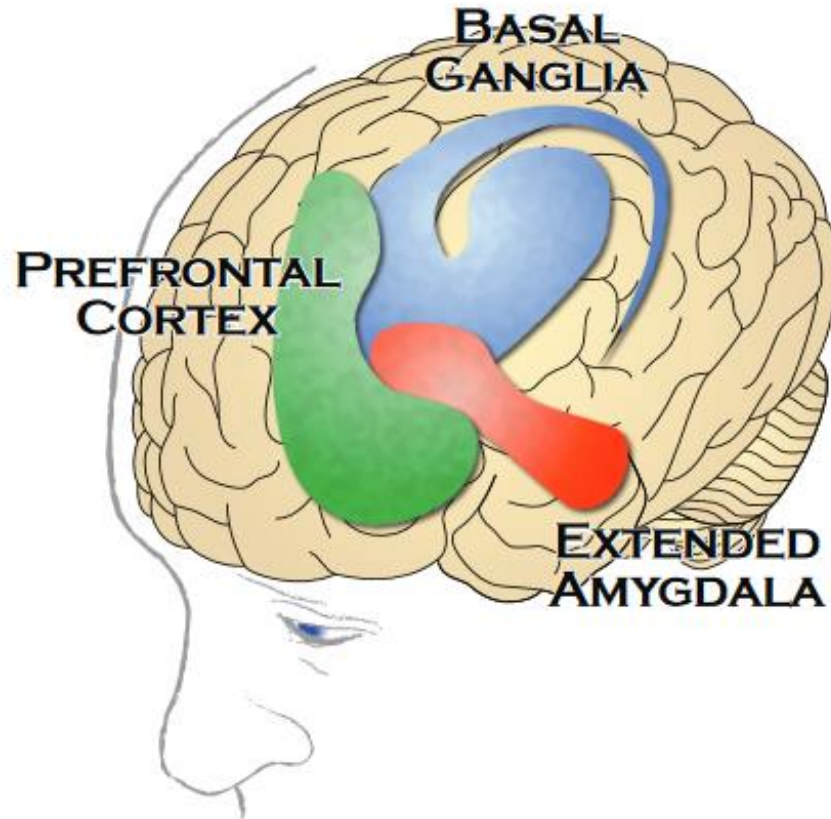
The logo consists of a red square containing the white letters 'TN' in a serif font. Below the red square is a thin dark blue horizontal bar.

TN

# Pathophysiology and Treatment of Opioid Use Disorder

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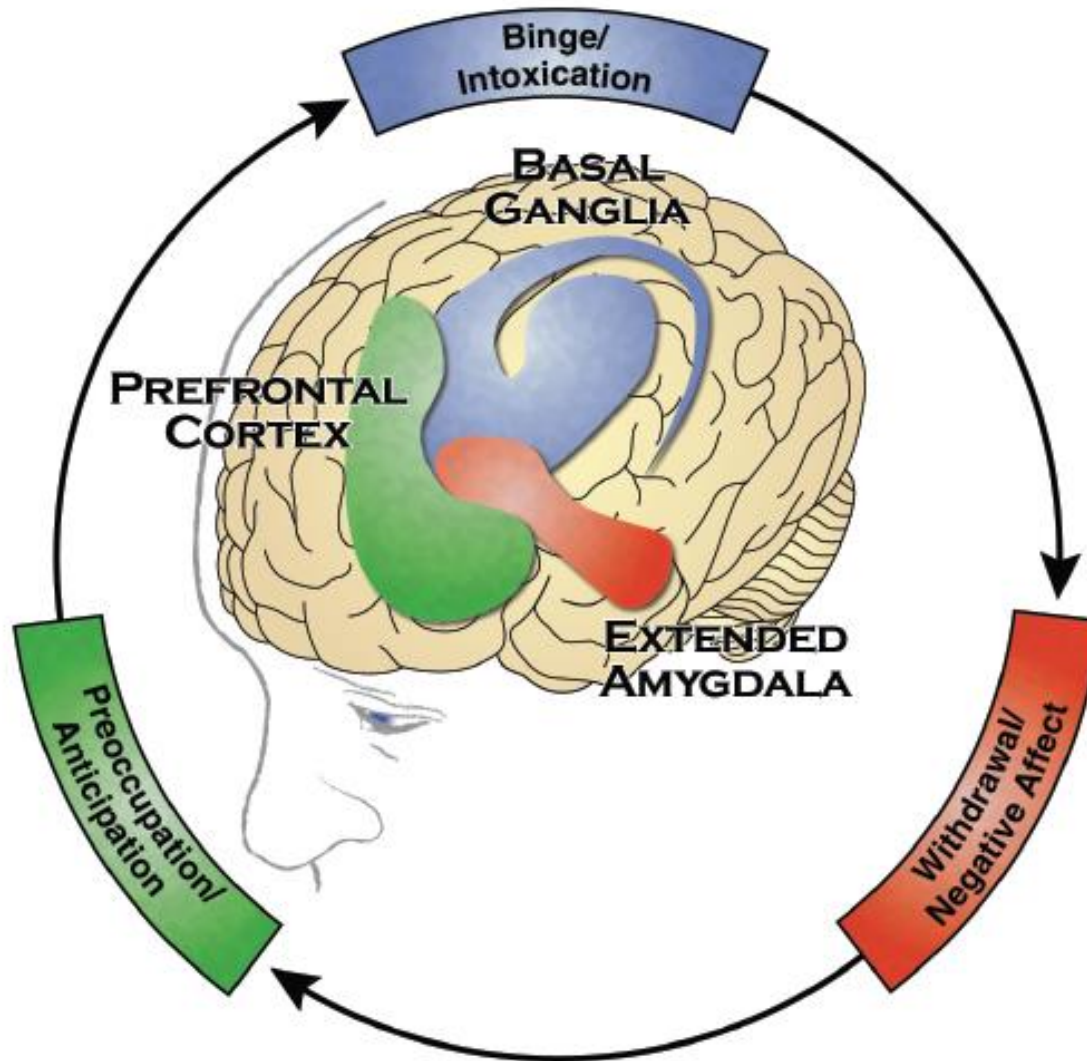
# Pathophysiology – Cycle of Addiction



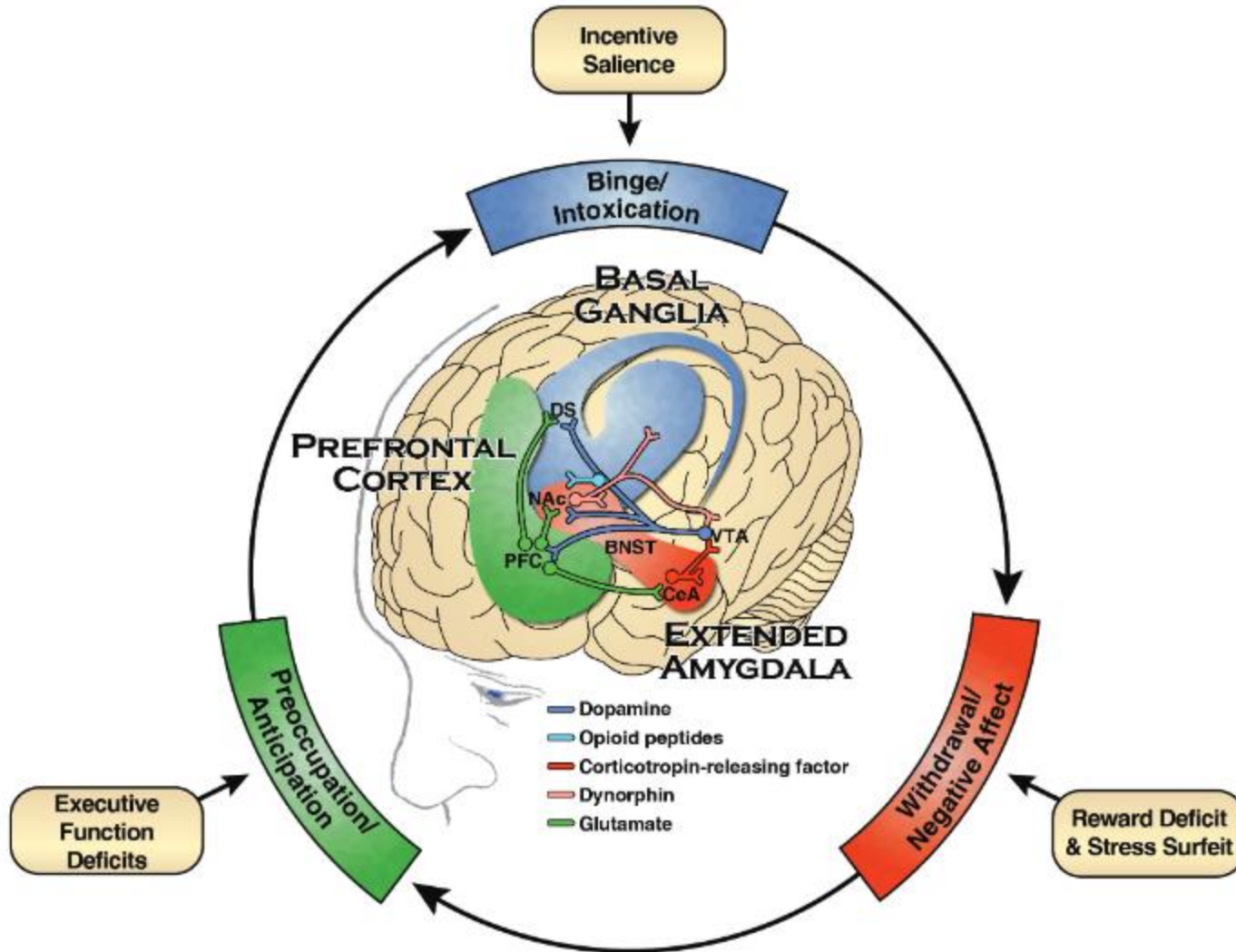
# Pathophysiology – Cycle of Addiction

- **Basal Ganglia - involved in coordination and learning routine behaviors and forming habits**
  - Nucleus Accumbens - routine behaviors and forming habits
  - Dorsal Striatum - habits and other routine behaviors
- **Extended Amygdala - regulates the brain's reactions to stress-including behavioral responses like “fight or flight” and negative emotions like unease, anxiety, and irritability**
- **Prefrontal Cortex – Responsible for executive functions, such as, organize thoughts and activities, prioritize tasks, manage time, make decisions, and regulate one's actions, emotions, and impulses**

# Pathophysiology – Cycle of Addiction



# Pathophysiology – Cycle of Addiction







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# Recent Published Literature

# Opioids Vs. Non-Opioids

## “Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain”

- Published: March 6, 2018
- Journal: *JAMA*
- Objective: To compare opioid vs nonopioid medications over 12 months on pain-related function, pain intensity, and adverse effects
- Primary Outcome: Pain-related function, assessed with the 7-item Brief Pain Inventory (BPI) interference scale

# Opioids Vs. Non-Opioids

Outcome	Opioid Group, Mean (SD) (n = 119)	Nonopioid Group, Mean (SD) (n = 119)	Between-Group Difference (95% CI) <sup>a</sup>	Overall P Value <sup>b</sup>
<b>Pain-Related Function (Primary Outcome)</b>				
BPI interference scale (range, 0-10; higher score = worse) <sup>c</sup>				
Baseline	5.4 (1.8)	5.5 (2.0)	-0.1 (-0.6 to 0.4)	.58
3 mo	3.7 (2.1)	3.7 (2.2)	0.0 (-0.6 to 0.6)	
6 mo	3.4 (2.1)	3.6 (2.4)	-0.2 (-0.8 to 0.4)	
9 mo	3.6 (2.2)	3.3 (2.4)	0.4 (-0.2 to 1.0)	
12 mo	3.4 (2.5)	3.3 (2.6)	0.1 (-0.5 to 0.7)	

- At 12 months, mean BPI interference was 3.4 in the opioid group (SD, 2.5) vs 3.3 in the nonopioid group (SD, 2.6);
- Secondary Outcomes: Health-related quality of life and mental health did not significantly differ between the 2 groups
- Overall, treatment with opioids was not superior to treatment with nonopioid medications for improving pain-related function over 12 months.

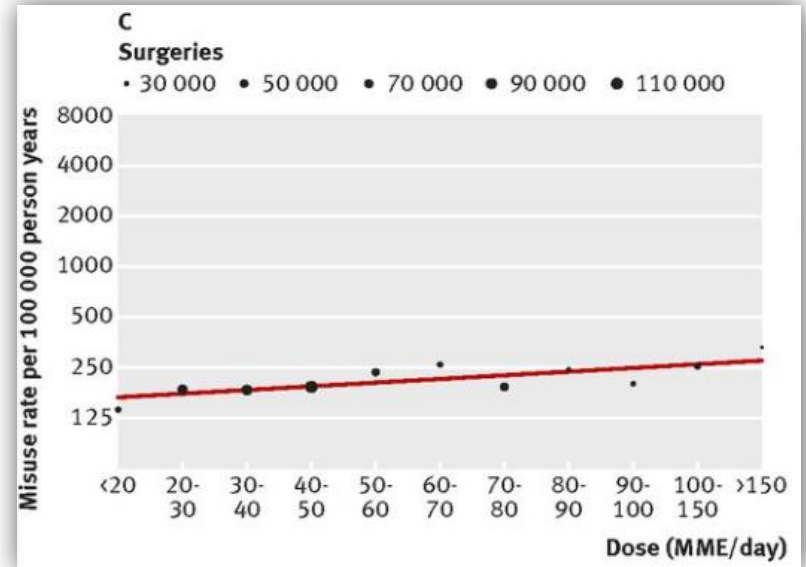
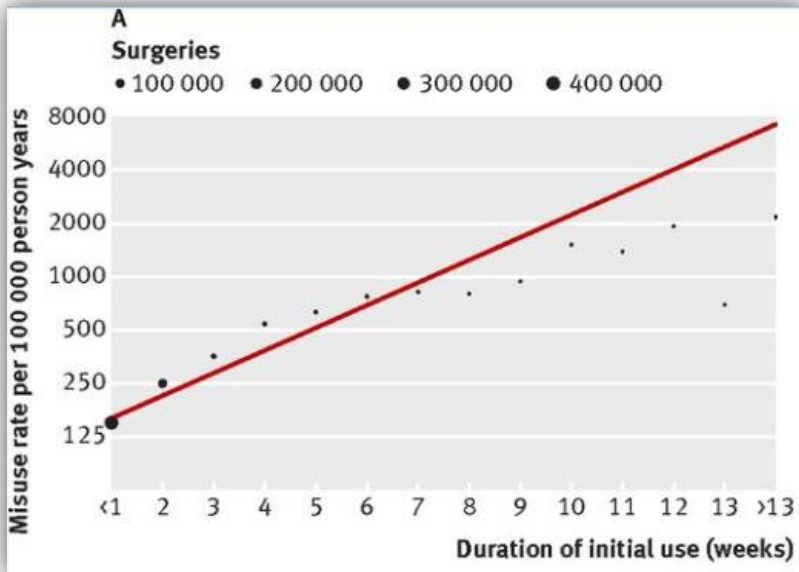
# Post-Op Opioid Misuse

## **“Postsurgical Prescriptions for Opioid Naïve Patients and Association With Overdose and Misuse: Retrospective Cohort Study”**

- **British Medical Journal**
- **Published January 17, 2018**
- **Objective: To quantify effects of varying opioid prescribing patterns post surgery on dependence, overdose, or abuse in an opioid naïve population**
- **Primary Outcome: An ICD-9 diagnosis code of opioid dependence, abuse, or overdose**

# Post-Op Opioid Misuse

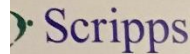
- Every refill fulfilled led to an adjusted **44%** increase in the rate of misuse
- Each week of opioid use led to a **34.2%** increase in the rate of misuse
- Each additional 10 MME/day was associated with only a **0.8%** increase in hazard of misuse



- **Conclusion: Duration of the prescription is more strongly associated with ultimate misuse in the early postsurgical period.**

# Use of Physical Therapy

Poster 365  
Nguyen, Victoria



## Does Early Physical Therapy (PT) Intervention Reduce The Opioid Burden In The Management Of Chronic Lower Back Pain (LBP)?

Victoria T. Nguyen, PharmD, MPH; Kimberly Tallian, PharmD, BCPP, APH; Jason van Dyke, MSPT; Harminder Sikand, PharmD

Scripps Mercy Hospital, San Diego, CA 92103 and Family Health Center of San Diego (FHCS), CA 92103

### BACKGROUND

Chronic lower back pain (LBP) is defined as pain and disability persisting for more than 3 months.<sup>1</sup> The cost of LBP is about \$100 – 200 billion USD annually with an estimated loss of work days of 149 million days per year.<sup>2</sup> Kidner et al. found that the work-return rate for the very high opioids (>120mg of morphine equivalent dose daily) subgroup was approximately 76% while it was nearly 94% in the no opioids subgroup.<sup>3</sup> The use of opioids in the management of chronic, nonmalignant pain continues to be controversial especially with its tolerance and addictive potential. There was a 7.35% increase in opioid prescription per capita between 2007 to 2012 in family practice, general practice, and internal medicine when compared to other specialties.<sup>2,4</sup>

### OBJECTIVE

The primary objectives of this study were to assess the impact of early physical therapy (PT) interventions on the reduction of opioid burden on the management of chronic LBP.

### METHODS

#### Treatment Groups:

- Opioids 1<sup>st</sup> Group: Opioids were the initial treatment before PT
- PT 1<sup>st</sup> Group: PT was the initial treatment

#### Inclusion Criteria

- Patients ≥ 18 years
- LBP ≥ 3 months
- Had ≥ 6 clinic visits with a FHCS physical therapist
- Opioid therapy as first line therapy or PT as first line therapy at the beginning of study
- Concomitant use of non-opioid pharmacological and non-pharmacological therapy in the PT Group

#### Exclusion Criteria

- Patients < 18 years of age
- LBP < 3 months
- Had < 6 clinic visits with a FHCS physical therapist
- Use of opioids and physical therapy together at the beginning of the study

### RESULTS

- Screened 180 patients for inclusion
- 120 patients had baseline data analyzed per-protocol analysis
- Majority of patients in the study were Caucasian females. There was a significantly higher diagnosis of depression and history of falls within the past 12 months in the opioids group compared to the non-opioid group.
- Only 5% of PT 1<sup>st</sup> Group required the addition of opioid as opposed to 60% of Opioid 1<sup>st</sup> Group patients, who remained on opioids after the initiation of PT treatment
- Significant reduction of opioids use in the Opioids 1<sup>st</sup> Group after PT treatment (P = 0.0003)
- Significant reduction of non-opioids use in the PT 1<sup>st</sup> Group after PT treatment (P = 0.0001)

Table 1. Patient Demographics

Patient Characteristic	Opioids 1 <sup>st</sup> Group (n = 60)	PT 1 <sup>st</sup> Group (n = 60)	P-value
Average Age, SD	53.4 ± 12.2	46.1 ± 14.9	0.0041
Sex			0.26
Male	19	26	
Female	41	34	
Race			NS
White	30 (50%)	36 (60%)	
Hispanic	16 (27%)	11 (18%)	
Asian	3 (5%)	3 (5%)	
Declined	1 (1%)	3 (5%)	
Other	10 (17%)	7 (12%)	
Depression	32 (53%)	17 (28%)	0.0090
History of Falls	27 (45%)	8 (13%)	0.00020
Musculoskeletal Disorders	46 (77%)	37 (62%)	0.11
Non-Opioid Injectables	17 (28%)	8 (13%)	0.071

Table 2. Primary Outcomes

Outcome	Opioids 1 <sup>st</sup> Group (n = 60)	PT 1 <sup>st</sup> Group (n = 60)	P-value
Failed PT and Used Opioids	36	3	0.0001
Lost to Follow-Up with PT	41	28	0.026

Outcome	Pre PT Pain Score	Post PT Pain Score	P-value
Opioids 1 <sup>st</sup> Group (n = 60)	9.2 ± 1.0	4.7 ± 2.9	0.0001
PT 1 <sup>st</sup> Group (n = 60)	8.5 ± 1.0	3.7 ± 1.0	0.0001
P-value between groups	P < 0.05	NS	

Figure 1. Pharmacological Agents at Baseline

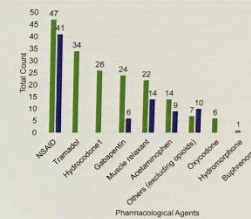
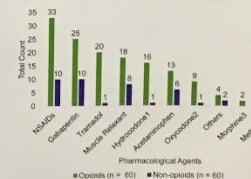


Figure 2. Pharmacological Agents During and After Treatment



### CONCLUSIONS

Significant reduction of medication burden for both treatment groups after PT initiation. Significant reduction of opioids used in the Opioids 1<sup>st</sup> Group after PT treatment. Significant reduction of non-opioids used in the PT 1<sup>st</sup> Group. In addition, there was a significant reduction in symptomatic pain relief was seen between opioids and PT group after PT treatment (P = 0.0001). The findings suggested that PT intervention should be first-line, non-pharmacological treatment option along with non-opioid pharmacological agents to manage chronic LBP before considering the initiation of opiate therapy.

#### Secondary observations:

- Significant history of falls and depression in the Opioids 1<sup>st</sup> group as compared to PT 1<sup>st</sup> Group
- Significant number of patients were noted as "Lost to Follow-Up with PT and Continued with Opioids" in the Opioids 1<sup>st</sup> Group

- Common opioid agents prescribed was tramadol followed by hydrocodone-acetaminophen

#### Limitations:

- Retrospective chart review and one center study
- Small sample size

### FUTURE DIRECTIONS

FHCS implemented the Oswestry Low Back Disability Questionnaire in September 2017, an objective functional outcome measure. It is used at baseline and repeated every 30-days for all patients with chronic LBP. A follow-up study that compares outcomes utilizing the Oswestry scores with the data from this study would provide additional guidance on how early PT intervention can improve functional status as well as a reduction in pain and opioids use.

### DISCLOSURES

The authors report no conflicts of interest and have nothing to disclose.

### REFERENCES

- Low Back Pain Fact Sheet. National Institute of Neurological Disorders and Stroke. <http://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Low-Back-Pain-Fact-Sheet.pdf>. Updated 2015.
- Dowell D, Haegerich TM, Chu R. CDC Guidelines for Prescribing Opioids for Chronic Pain — United States. *Morbidity and Mortality Weekly Report*. 2016;65(11):48. doi:10.1093/mmwr.mm6511a1
- Kobak CL, Mayer TG, Galbraith RJ. Higher opioid doses predict poorer functional outcome in patients with chronic low-back pain. *Spine (Phila Pa 1976)*. 2009;34(14):1519-1527. doi:10.1097/BRS.0b013e3181900000
- Loew F, Pechlitz J, Mehl SA, Lorenz DM. Trends in Opioid Prescriptions Prescribing Rates for Specialists. *Clin J Pain*. 2015;31(10):933-939. doi:10.1097/AJP.0000000000000020



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# Legislative Update



# Legislative Update - Brief

- **Controlled substances Update**
  - Includes fentanyl analogue language and gabapentin (C-V)
- **Opioid Limits**
  - See next slide
- **Partial filling schedule II's**
  - Patient or prescriber must request; subsequent fills have to be at original pharmacy; expires 30 days after issuance
- **Neonatal Abstinence Syndrome (NAS) education**
  - For opioids >3 days or >180MME; women 15-44yo; exception for women not able to reproduce or if educated < 3 months prior

# TN Together

## Prevention



- Place reasonable limits on supply and dosage of prescription opioids.
- Increase public awareness through outreach campaign and targeted education.
- Promote best practices in the medical community for pain management.

## Treatment



- Ensure that all Tennesseans who need treatment have better access to recovery services and resources.
- Effectively target areas for resources through data, improved access and sharing.
- Expand treatment options and recovery programs, including those within the criminal justice system.
- Create incentives for offenders to complete intensive substance use treatment programs while incarcerated.

## Law Enforcement



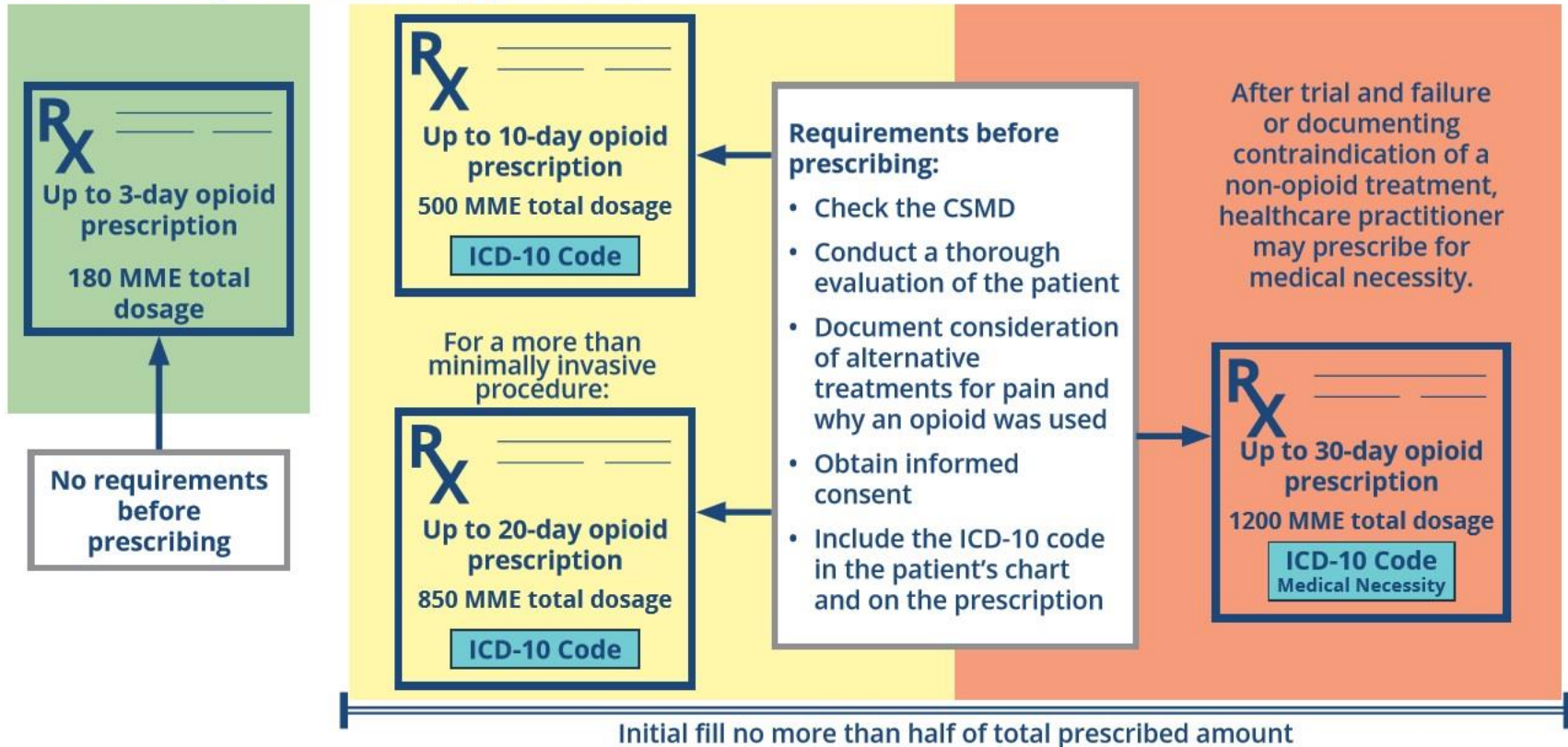
- Increase funding to address unlawful sale and trafficking of opioids.
- Provide every Tennessee state trooper with Narcan for emergency treatment of overdoses.
- Update the schedule of controlled substances to better track, monitor and penalize the use and unlawful distribution of opioids.

**HB1831/SB2257 Proposed Amendment** | To place more guidelines for and checkpoints between healthcare practitioners and patients before an individual is put on a chronic regimen of opioids.

# TN TOGETHER

## ENDING THE OPIOID CRISIS

### A healthcare practitioner may prescribe:



The following are individuals exempted if the prescription includes the **ICD-10 Code** and the word “exempt”:

- Patients receiving active or palliative cancer treatment
- Patients receiving hospice care
- Patients with a diagnosis of sickle cell disease
- Patients in a licensed facility
- Patients seeing a pain management specialist
- Patients who have been treated with an opioid for 90 days or more in the last year or who are subsequently treated for 90 days or more
- Patients being treated with methadone, buprenorphine, or naltrexone
- Patients who have suffered severe burns or major physical trauma



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# Challenges and Opportunities

# Challenges and Opportunities

## Challenges

- Patient attitudes towards pain treatment
- Provider buy-in
- Access to alternative pain therapies
- Access to quality and meaningful data
- Lack of administrative support

# Challenges and Opportunities

## Opportunities

- **Development of opioid prescribing teams**
- **Mandatory (or “highly suggested”) provider education**
- **Modifications to CPOE/EHR including clinical decision support and development of a opioid dashboard that is accessible to providers and administration**
- **Increased naloxone distribution**
- **Implementation of a safe medication disposal box**
- **Developing a network of good pain and substance abuse providers**



- <http://michigan-open.org/provider-resources/>

- *"The names of the patients whose lives we save can never be known. Our contribution will be what did not happen to them. And, though they are unknown, we will know that mothers and fathers are at graduations and weddings they would have missed, and that grandchildren will know grandparents they might never have known, and holidays will be taken, and work completed, and books read, and symphonies heard, and gardens tended that, without our work, would never have been."*

*-Donald M. Berwick, MD, MPP, President Emeritus, Institute for Healthcare Improvement*