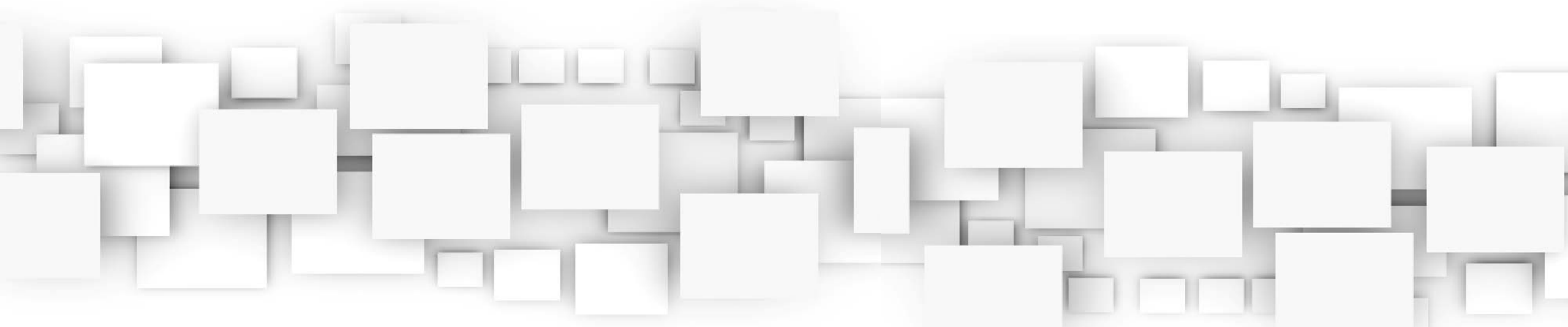




# OPIOID ABUSE AND TREATMENT



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- Doctorate in Osteopathic Medicine from GA-PCOM
- Anesthesia Residency and Pain fellowship at the University of Kentucky
- Board Certified in Anesthesia, Pain Medicine, and Addiction Medicine
- Currently practicing at Hamilton Neurosurgery and Spine Center in Interventional Pain Medicine
- Worked for Self-Refind for 4 years in Kentucky in Addiction Medicine
- Started Restoration Recovery in October 2017 in Chattanooga, TN

# Who Is Affected By This Epidemic?

## EVERYONE!

- This is a problem that does not discriminate
- A football player with an injury that requires surgery
- A mother who recently delivered a child via C-section
- Lawyer who fell and broke his wrist
- Doctor who had a recent back surgery

# American Society of Addiction Medicine

## Addiction Definition:

- Primary chronic disease of the brain reward, motivation, memory and related circuits. Where the dysfunction leads to an individual pathologically pursuing reward and/or relief by substance abuse.
- 4C's: Craving, Loss of control, Compulsion to use and Consequences

# Case Presentation

- 23 year-old female with a 18-month history of IV heroin abuse
- No history of prior drug use
- No prior utilization of opioids
- Started using with friends
- Now has HCV (Hepatitis C Virus) as well as opioid dependence



# What Are Opioids?

- Opioids are a class of drugs that act on the body's opioid receptors including natural, semi-synthetic and synthetic opioids. Natural opioids include drugs such as:
  - Morphine (derived from the resin of the opium poppy)
  - Semi-synthetic opioids such as Hydrocodone and Oxycodone
  - Synthetic opioids such as Fentanyl and Methadone

# Opioid Overview

- Opioids are often used for the treatment of severe pain. They are also used to treat cough suppression, diarrhea and even treat opioid use disorders.
- Opioids are very effective for treating severe pain associated with cancer, post-surgical pain or traumatic injuries.
- While opioids provide pain relief, they can cause physical dependency, respiratory depression, euphoria, reduced intestinal motility and other desired or undesired effects.
- Since these pharmacologic effects focus on blocking pain, they have a high potential for misuse.



# How Opioids Affect The Human Body

- Opioid drugs mimic the body's natural response to pain by stimulating the body's opioid receptors, mostly prominently the Mu( $\mu$ ) receptors.
- Mu receptors account for the most of the effects of opioids and are primarily located in the brain, spinal cord, peripheral nervous system, and intestinal tract.
- By stimulating the Mu receptors, opioids reduce the perception of pain by slowing down and blocking pain signal transmissions to the brain, while also triggering the release of Dopamine.
- Dopamine is a neurotransmitter used in the brain's pleasure or reward system. When activated, Dopamine produces a pleasurable, often euphoric feeling, which contributes to opioid misuse, as people seek to repeat these sensations.



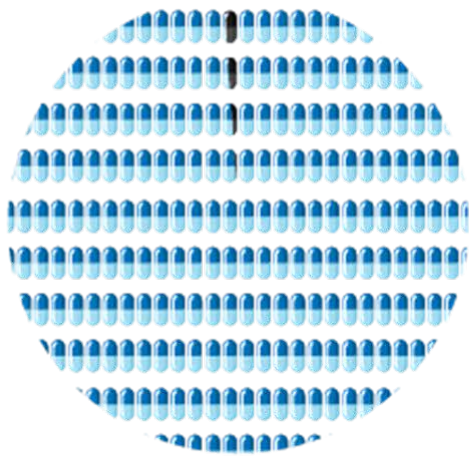
# How Opioids Affect The Human Body

- This means opioid users must take larger doses of opioids over time to achieve the same effect. (TOLERANCE)
- Additionally, opioid users must not stop taking these drugs abruptly or they will experience withdrawal symptoms such as: agitation, anxiety, muscle and bone pain, insomnia, vomiting or diarrhea. Withdrawal symptoms occur when the amount of opioids decrease or are stopped (PHYSICAL DEPENDENCE).
- “Substance use disorders are a chronic medical illness characterized by clinically significant impairments in health, social function and voluntary control over substance use (not a moral failing or character flaw).” - Surgeon General’s Report, Facing Addiction in America, 2016

# How Did We Get Here?

- In the 1990's, the American Pain Society developed pain as the fifth vital sign and reported that pain was vastly under treated.
- Simultaneously, several major drug manufacturers were advertising new sustained released opioids as “safe” and that their addiction potential was “minimal” based on flawed studies funded by drug companies.
- Huge increase in the utilization of opioids for chronic non-malignant pain due to these factors.

# United States' Utilization Of World's Opioid Supply



**99%**

Hydrocodone  
Consumption



**80%**

Oxycodone  
Consumption



**65%**

Hydromorphone  
Consumption

# The U.S. Opioid Epidemic

- In 2015, overdose deaths associated with prescription and illicit opioids increased to 33,091 from 28,647 in 2014 (CDC), suggesting that 90 people die daily on average in the U.S. from opioid overdoses.
- Over the past 15 years, overdose deaths related to opioids have reached epidemic proportions (Rudd et al., 2015). The rate of opioid-related overdose deaths has increased over 200% since 2000. Between 2011 and 2015, deaths related to heroin more than tripled to 12,990 (National Center for Health Statistics).

# The U.S. Opioid Epidemic

- Despite these staggering increases in deaths related to opioid overdose, the number of prescriptions written for opioid analgesics continues to increase (Volkow et al. 2014).
- The number of written prescriptions for opioid medications rose from 75.5 to 209.5 million over the past decade (National Institutes of Health, 2014). According to a recent report, sales of opioid analgesics quadrupled from 1999 to 2010 (Frenk et al., 2015).
- Misuse of prescription opioids and heroin use are also on the rise. In 2015, approximately 12.5 million Americans reported misusing pain relievers in the previous year and 2.0 million Americans had a pain reliever drug use disorder (SAMHSA, 2016).
- In the same year, approximately 914,000 Americans reported use of heroin and 519,000 Americans met diagnostic criteria for a heroin use disorder (SAMHSA, 2016).
- The cost of prescription opioid misuse is high, estimated at \$78.5 billion in 2013 alone (Florence et al., 2016).

# The U.S. Opioid Epidemic

- Studies found that about 80% of heroin users reported using prescription opioids for non-medical reasons before beginning use of heroin (Jones, 2013; Muhuri et al. 2013).
- Overall, these studies suggest a link between non-medical use of prescription opioids and heroin, particularly among people with frequent non-medical use, or people with prescription-opioid use disorder. However, it is important to note that only a small percentage (less than 5% of people who use prescription opioids for non-medical reasons) begin using heroin. This small percentage translates to several hundred thousand new heroin users per year and should not be minimized (Compton et al., 2016).
- While some argue that implementation of policies to address misuse and inappropriate prescribing of prescription opioids (e.g., PDMPs) could be a driver of increased deaths from heroin overdose, there is little empirical evidence of a causal link. Instead, the evidence suggests that market forces such as increased availability, reduced price and increased purity of heroin could be more important drivers of increased heroin use and heroin overdose deaths (Compton et al., 2016).

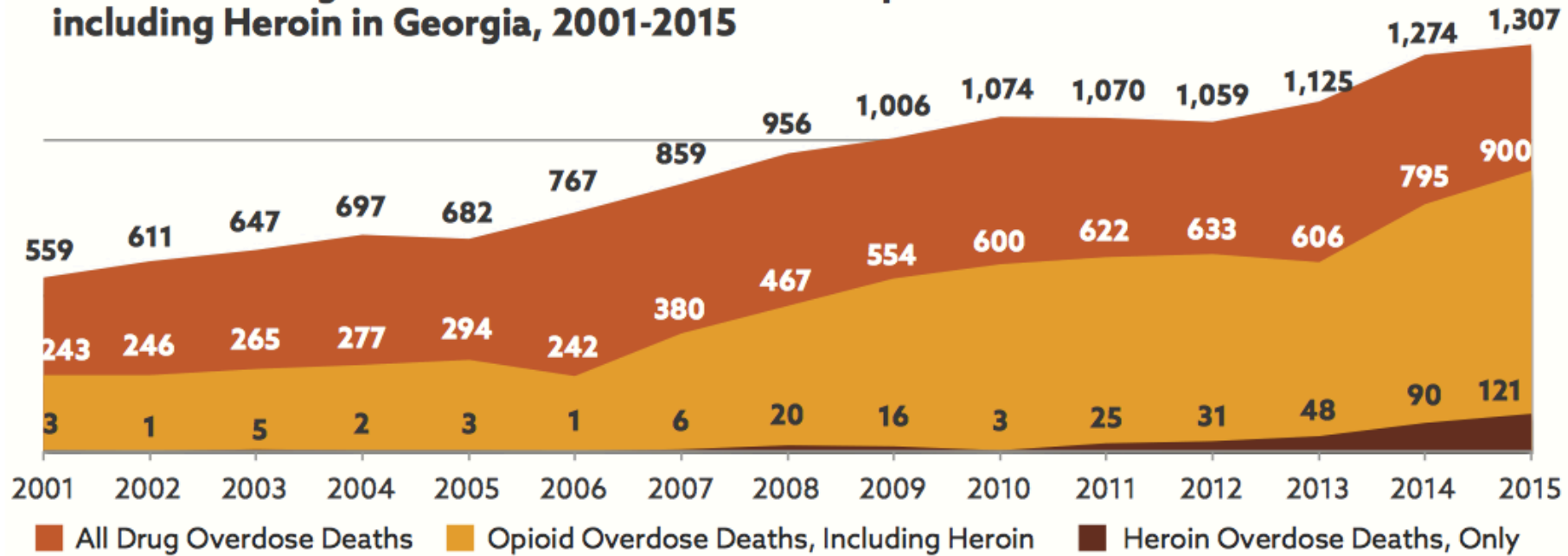
# Impact On Georgia

## Overdose Deaths In Georgia

- Opioid overdose death rates including heroin in Georgia increased 9-fold between 1999 and 2014.
- Sales of opioids also quadrupled in the U.S. between 1999 and 2014.
- Similar to national trends, deaths related to opioid overdose continue to rise in Georgia. Even more alarming, recent data from the Georgia Department of Public Health indicate that deaths related to drug overdose surpassed deaths due to motor vehicle crashes in 2014.

**Figure 2:**

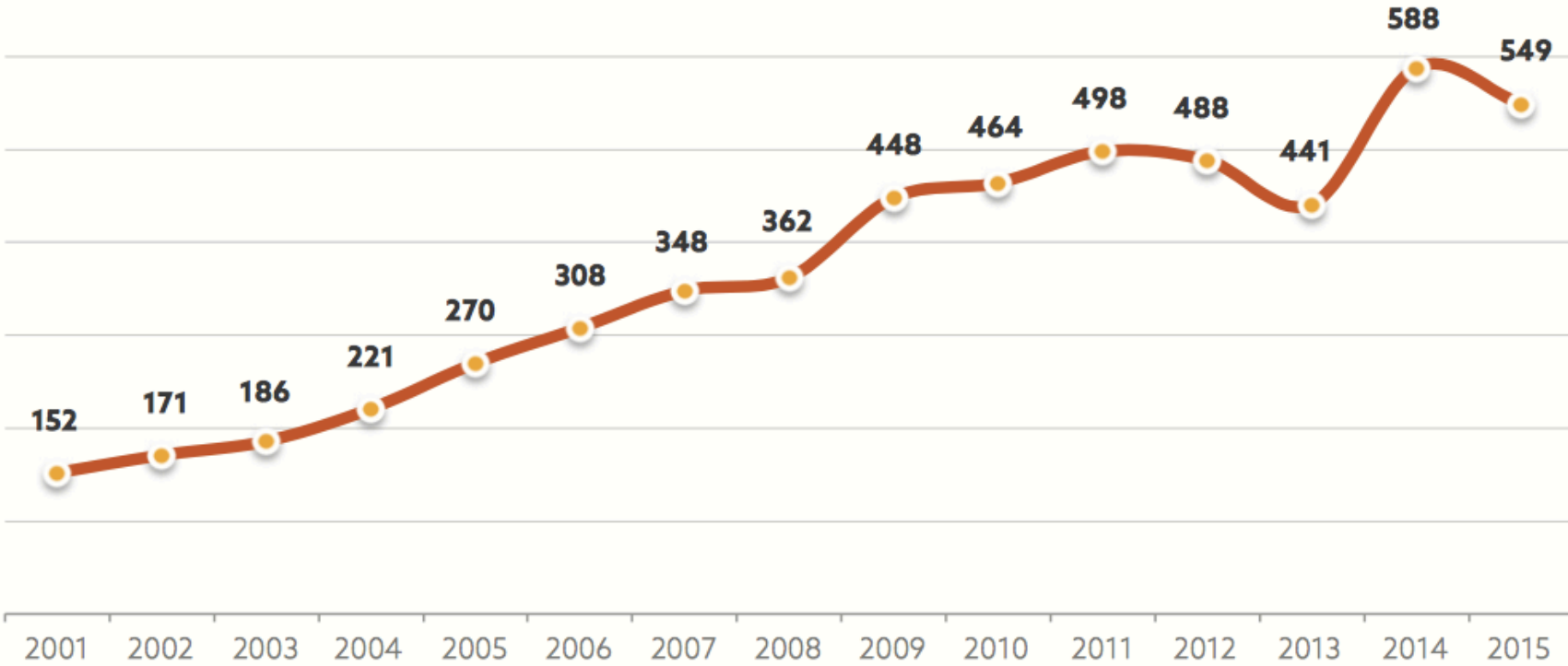
**Number of Drug Overdose Deaths Related to Opioids including Heroin in Georgia, 2001-2015**



Source: Office of Health Indicators for Planning (OHIP), Georgia Department of Public Health.



## Number of Prescription Opioid Overdose Deaths in Georgia, 2001-2015

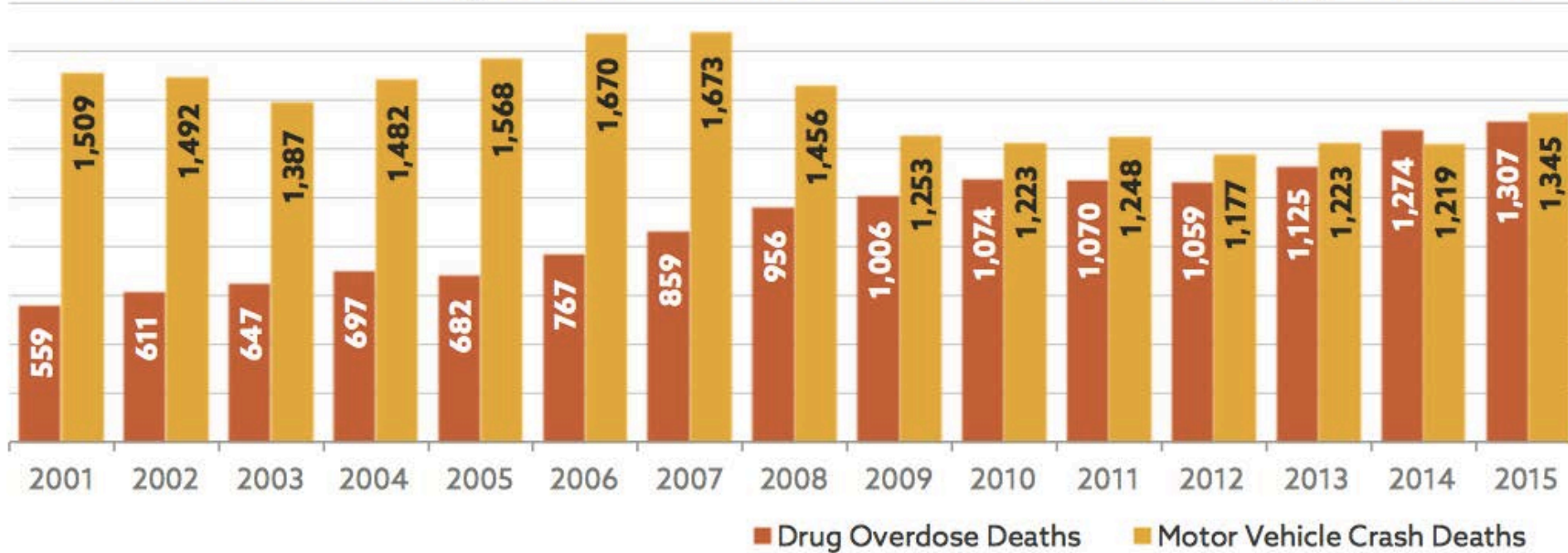


Source: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. Multiple Cause of Death 1999-2014 on CDC WONDER Online Database. Data are from the Multiple Cause of Death Files, 1999-2015.

**This puts Georgia in the top 11 states nationwide with the most prescription opioid overdose deaths.**

**Figure 1:**

### Deaths Related to Drug Overdose and Motor Vehicle Crashes, Georgia, 2001-2015



Source: Georgia Department of Public Health, Office of Health Indicators for Planning, Death files.

# Economic Impact On Georgia

- The economic burden of prescription opioid overdose, misuse and dependence in the U.S. was estimated at \$78.5 billion in 2013 with over one third of this amount coming from increased healthcare and substance use treatment costs (\$28.9 billion) (Florence et al., 2016).
- The healthcare costs associated with opioid misuse in Georgia alone were estimated at \$447 million in 2007 and the estimated per-capita costs were \$44 in Georgia.
- Given the increase in overdose deaths and use of opioids in Georgia since 2007, some experts have estimated a rise in those costs of at least as 80% since that time. Those same experts agree that the state needs to monitor the escalation. Hospitalizations related to opioid use and dependence in Georgia also have skyrocketed from about 302,000 in 2002 to about 520,000 in 2012.
- Similarly, the cost of opioid related inpatient care more than doubled during the same time period, rising to \$15 billion in 2012.

# How Can We Turn The Tide?

## Change the mindset

- We must throughout our medical communities, families, churches and legal systems better understand the disease itself and the implications for those affected.
- Not a moral failing, not just a choice to use....it's a real disease
- Emphasize treatment over incarceration
- Improve access to treatment that is legitimate and affordable

# What Are We Doing To Battle This?

## PHYSICIANS

- Limiting the prescribing of opioid based medications from physicians
- Utilizing opioids as a last resort therapy for chronic non-malignant pain
- Relying on non-opioid medications, PT, exercise, interventional techniques, smoking cessation
- Improved screening of patients prior to RX
- PDMP (Limits doctor shopping)
- Urine Drug Screening
- CDC guidelines - Implementation of conservative guidelines with regards to dosing
- Limiting co-administration of opioids and benzodiazepines
- Educating community about appropriate opioid prescribing
- ED, Post-operative pain, Primary Care

# What Are We Doing To Battle This?

- Educating the community
- Medication take-back programs
- Youth education and prevention
- Law enforcement
- Addressing influx heroin and illicit prescription pills
- Drug court

# What Are We Doing To Battle This?

## Opioid Reversal

Naloxone

Medication Assisted Treatment and Recovery Support

To meet the needs of patients with OUD, it is important for patients to have access to the full range of SUD treatment services including:

- Outpatient treatment
- Intensive Outpatient Treatment
- Residential treatment
- Detoxification
- Medications
- Recovery support services



# Naloxone

- Naloxone, available since 1971, is an opioid antagonist used to reverse opioid overdose through intravenous, intranasal (NARCAN<sup>®</sup> Nasal Spray), and intramuscular formulations. Intramuscular delivery is available by syringe in various generic forms or by auto-injector (EVZIO<sup>®</sup>).
- Naloxone is highly effective and safe and quickly (within a few minutes) restores breathing. It binds to opioid receptors, blocking the effects of opioids and endorphins. Side effects include withdrawal symptoms in most cases; while they are uncomfortable, they are not life threatening. It produces no effect in persons who do not have opioids present. Naloxone is not designated as a controlled substance.
- Expanded access—pharmacies, standing orders, home use, first responders

# Medication Assisted Treatment

- Medication-assisted treatment (MAT) refers to multi-faceted individualized substance use disorder treatment models that employ both medications and other services and supports for recovery maintenance.

Methadone

Buprenorphine

Naltrexone

- Combination of medications, counseling, group therapy/meetings, and social services support.

# Treatment Options

- Inpatient treatment
- Intensive outpatient treatment
- Residential treatment
- Detoxification
- Abstinence based programs
- Group therapy/treatment
- CR, NA, etc..



# Do Opioids Have A Place In Chronic Non-Malignant Pain?

- Tough, evolving question
- No long term studies indicate benefit for opioids in CNMP
- Recent studies indicate no better than NSAID's, APAP.
- What do we do with legacy patients?