

A network graphic consisting of white dots connected by thin white lines, set against a dark teal background.

Creating Connections X Seizing Opportunities



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The Opioid Crisis: A Potential Risk for the Life Mortality Experience



What are opioids?

- Drugs containing opium or one of its derivatives used to help induce sleep or relieve pain
 - Opiate: medication derived from opium poppy (*Papaver somniferum*)
 - Includes: codeine, morphine, heroin, opium
 - Opioid: medication that is synthetically & semi-synthetically produced
 - Includes: hydrocodone, oxycodone, hydromorphone, methadone, fentanyl
- Narcotic refers to any substance that induces sleep, insensibility or stupor

Relative potency of opioids

Type	Generic name	Brand name	Relative potency
Natural opiates	Codeine		0.15
	Morphine	MS Contin	1
Semi-synthetic opioids	Hydrocodone	Norco, Vicodin, Lortab	1
	Oxycodone	OxyContin	1.5
	Hydromorphone	Dilaudid	5
Synthetic opioids	Methadone	Dolophine	3
	Fentanyl	Sublimaze	50-100
Illicit opioids	Heroin		1000+
	Illegally made fentanyl		1000+



Effects of opioids

- Opioids produce their effects by binding with neuro-receptors within the central and peripheral nervous systems
- Response to opioids vary and include:
 - Analgesia (decrease pain perception), euphoria
 - Respiratory depression & sedation, hallucinations, psychosis, dysphoria, seizures
- Adverse reactions and toxicities can be potentiated by other medications or any underlying liver and kidney disease
 - Opioids often prescribed in concert with other analgesics such as NSAIDs, acetaminophen or muscle relaxants

Risks of addiction, abuse and overdose

Tolerance – need to increase medication dose to achieve same effect

Dependence – ability to function normally only in the presence of the drug

Addiction – compulsive, difficult to control, drug-seeking behavior despite harmful consequences

Opioid use disorder is a medical condition characterized by a problematic pattern of opioid use that causes clinically significant impairment or distress. It often includes a strong desire to use opioids, increased tolerance to opioids, and withdrawal syndrome when opioids are abruptly discontinued.



Other side effects of opioids

- Constipation
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Confusion
- Depression
- Itching and sweating

Risk factors for opioid abuse and overdose

- Overlapping prescriptions from multiple doctors and pharmacies
- High daily doses
- Mental illness or a history of alcohol or other substance abuse
- Family history of substance abuse
- Highest risk group =
 - Age 25-54 y/o
 - Non-Hispanic whites
 - Men > Women
 - 4x more likely to buy the drugs from a dealer or other stranger

www.cdc.gov

Source of misused opioids



Source: 2015 National Survey on Drug Use and Health, Table 6.58B

Treatment of overdose

- Airway maintenance and assisted ventilation when required
- Administration of naloxone (Narcan)
 - Reverses receptor binding
 - Rapid onset of action but short duration
 - Naltrexone and Nalmefene longer acting
 - 2015: the use of naloxone was expanded to help reduce opioid use disorder and overdoses
 - First responders, prophylaxis for patients and family members
- Methadone may be used to block withdrawal symptoms but has a high risk for abuse and addiction itself



The path to the crisis

- Opium, cultivated from ~1500 BC, established itself in North America in the 1800s for pain and recreational use
- 1914 Harrison Narcotics Act made opiates prescription drugs
- 1970s: FDA approval of quick release opioids
- 1980s: Medical Journals touting opioids as low addiction solution for pain control
- 1990s: Push to treat pain symptoms more effectively
 - Pain became the “5th vital sign”
 - 1995 OxyContin “sustained release” opioid for “long term pain management” was approved
 - 1998 Fentanyl approved for treatment of pain due to cancer
 - Significant increase in marketing efforts by large pharmaceutical companies
 - Purdue Pharma spent \$207M to market OxyContin
- 2001: Standards introduced requiring pain monitoring and control
 - Joint Commission on Accreditation of Healthcare Operations (JCAHO) & others

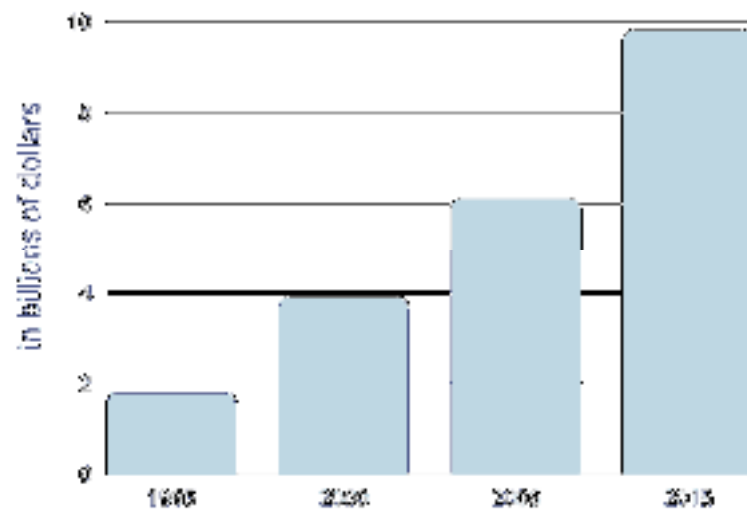


The path to the crisis

- From 1998 to 2002 opioid prescriptions dramatically increased:
 - Morphine by 73%
 - Hydromorphone by 96%
 - Fentanyl by 226%
 - Hydrocodone by 402%
- From 2002 to 2010 the number of opioid prescriptions, rates for diversion and abuse, and opioid deaths continued to increase significantly in the U.S.
- All three plateaued or decreased from 2011 to 2013 followed by an 14% increase in opioid related overdose deaths from 2013-2014

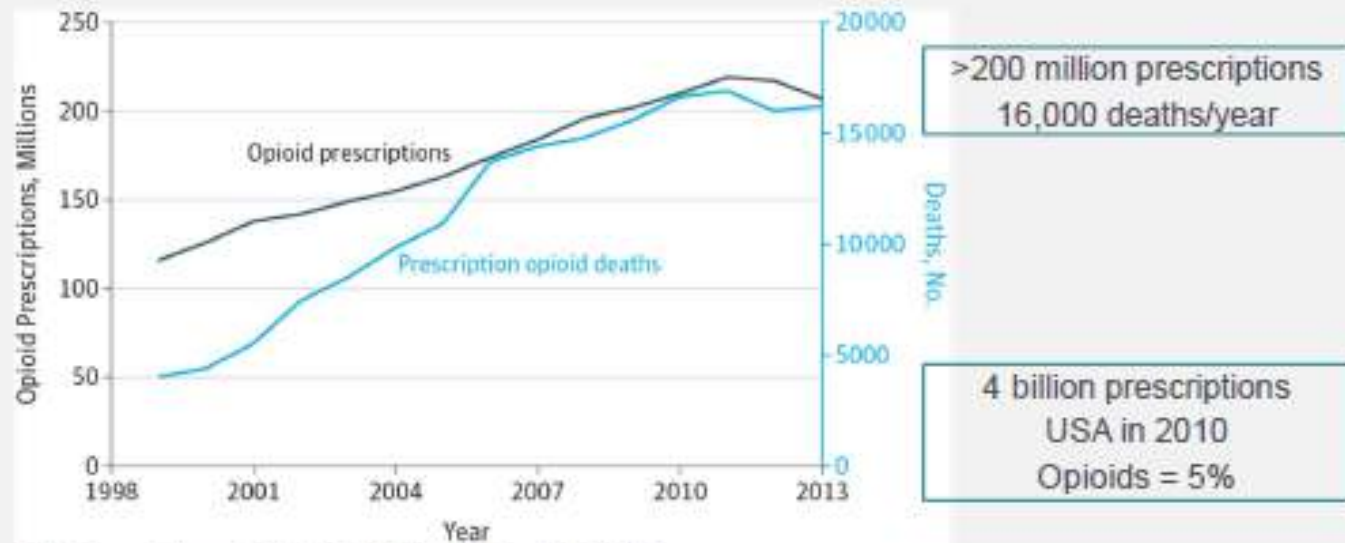
Prescription sales take off

U.S. prescription opioid sales



Source:
IMS
iBase.com
IMS MIDAS

Opioid prescriptions vs. opioid deaths



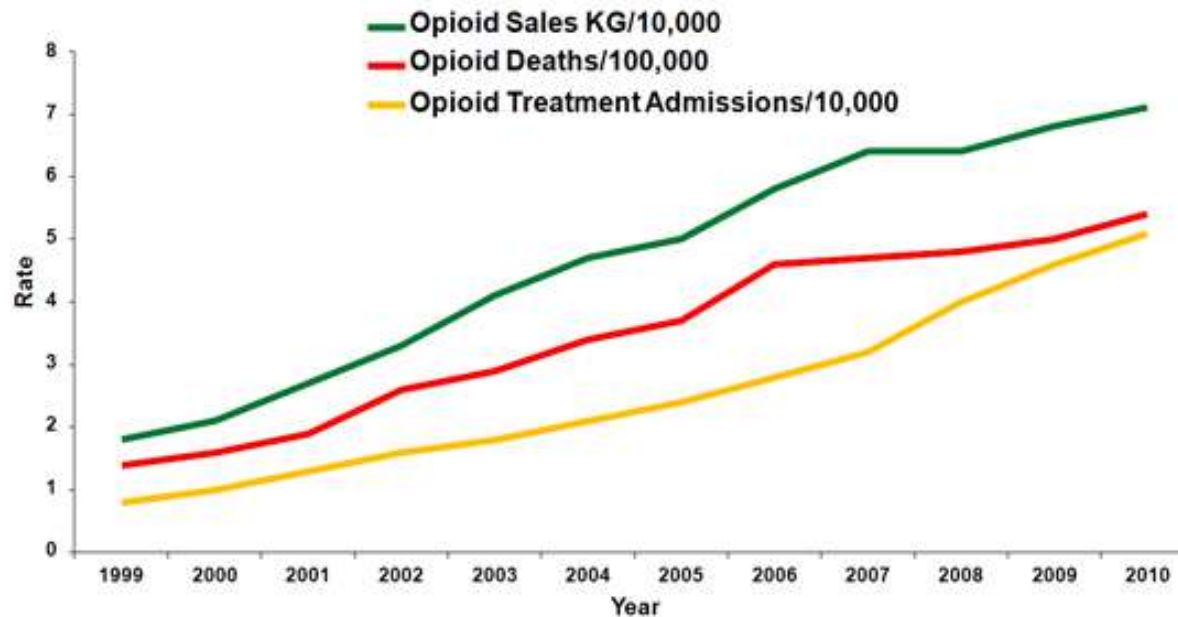
Opioid Prescriptions and Opioid-Related Deaths From 1999-2013
Data compiled from National Institute on Drug Abuse, 2014, and National Prescription Audit, 1997-2013.
JAMA Neurol. 2016;73(5):513-514. doi:10.1001/jamaneurol.2016.0535

Date of download: 4/25/2017

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 The JAMA Network

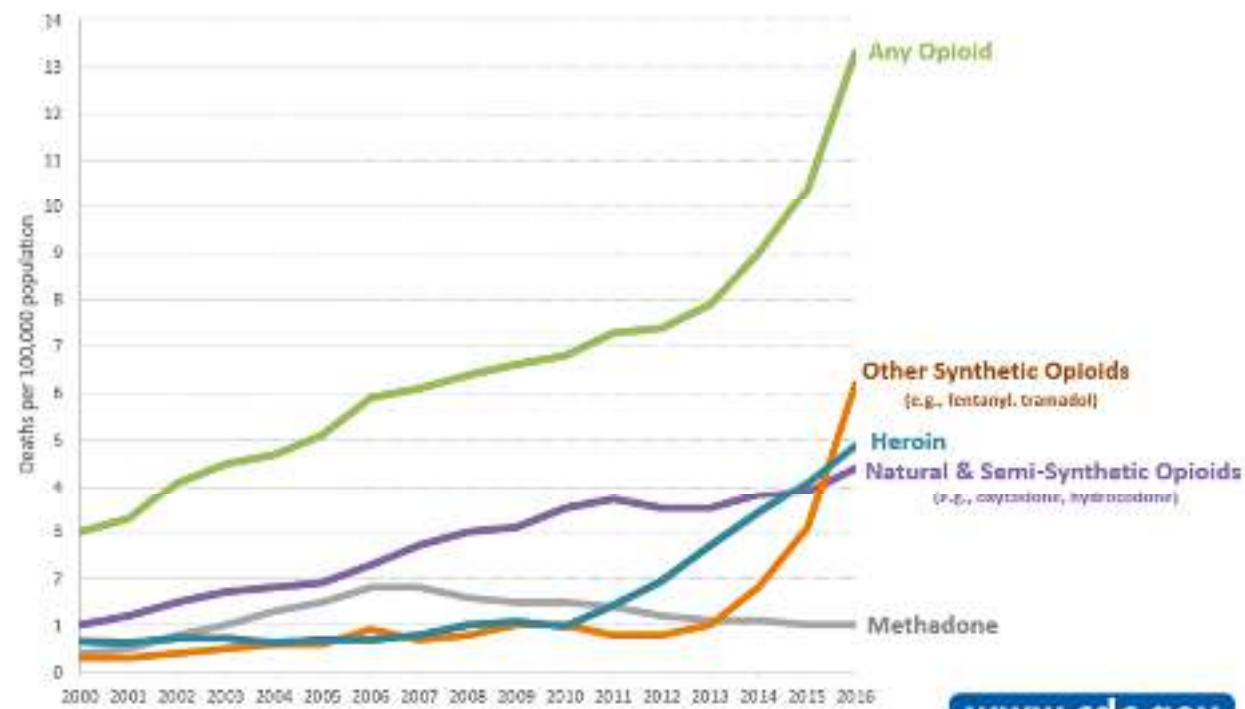
Opioid sales vs. treatment & deaths



National Vital Statistics System, DEA's Automation of Reports and Consolidated Orders System, SAMHSA's TEDS

Accelerated deaths due to heroin and fentanyl

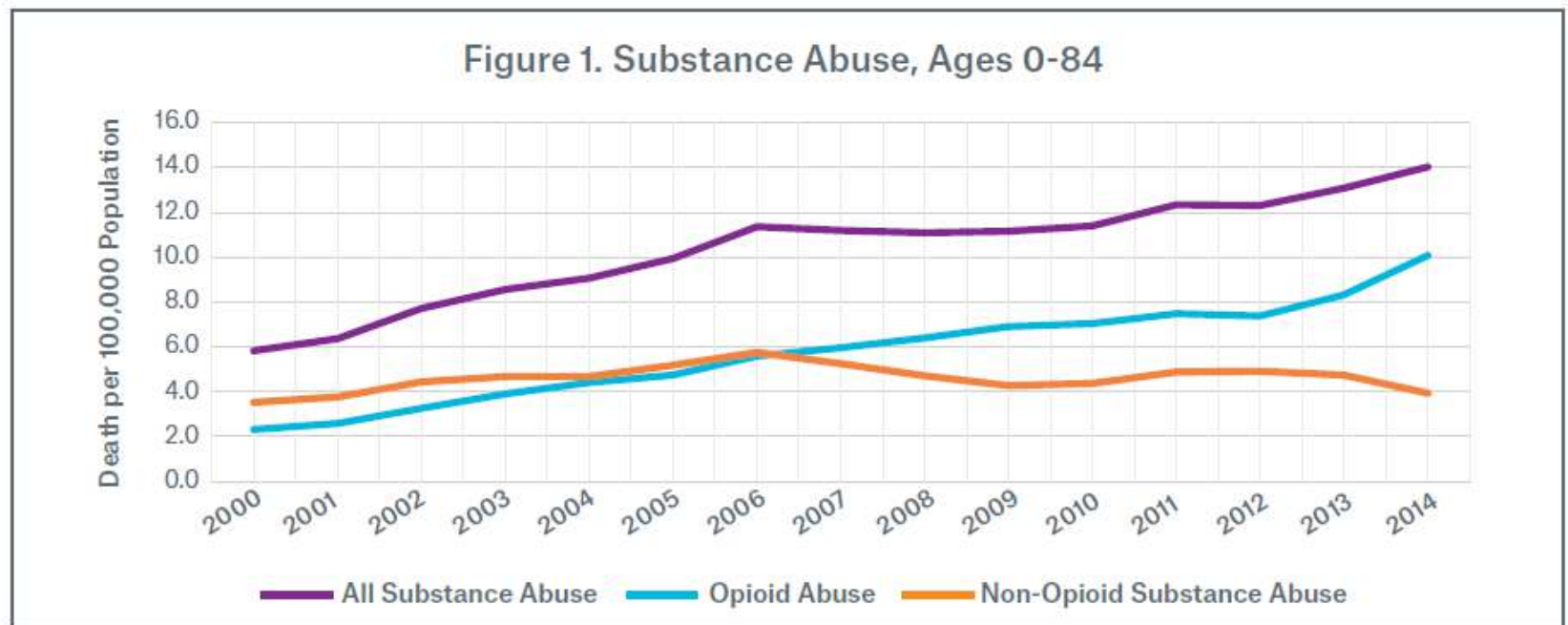
Overdose Deaths Involving Opioids, by Type of Opioid, United States, 2000-2016



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality, CDC WONDER, Atlanta, GA; US Department of Health and Human Services, CDC, 2017.
<https://wonder.cdc.gov/>

www.cdc.gov
Your Source for Credible Health Information

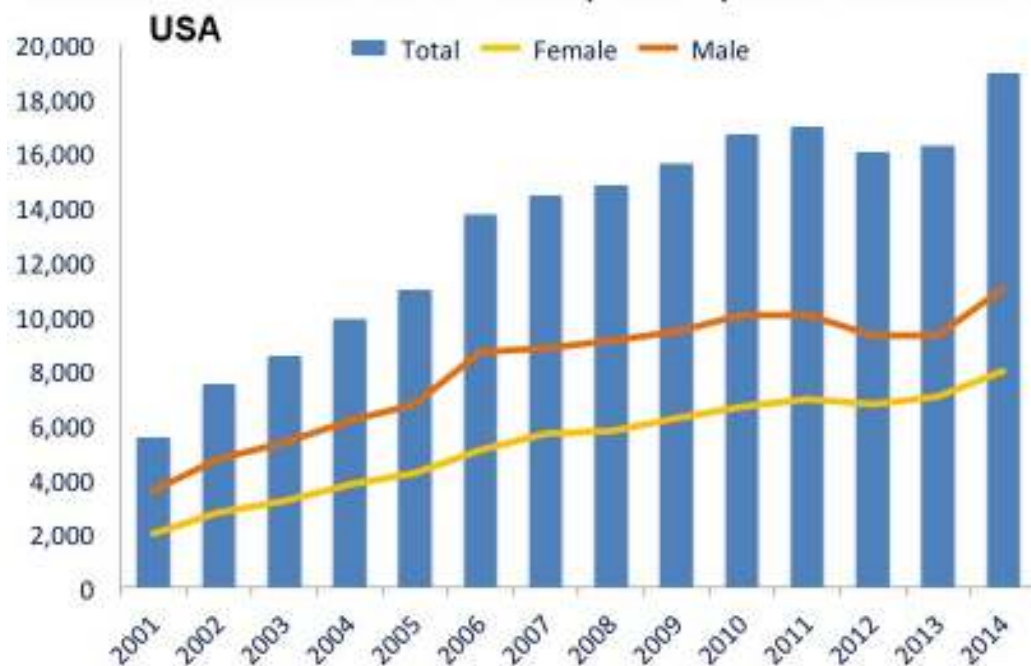
Opioid vs non-opioid



Data Source: Mortality Multiple Cause-of-Death Public Use Record from the CDC



Number of Deaths from Prescription Opioid Pain Relievers



Source: National Center for Health Statistics, CDC Wonder

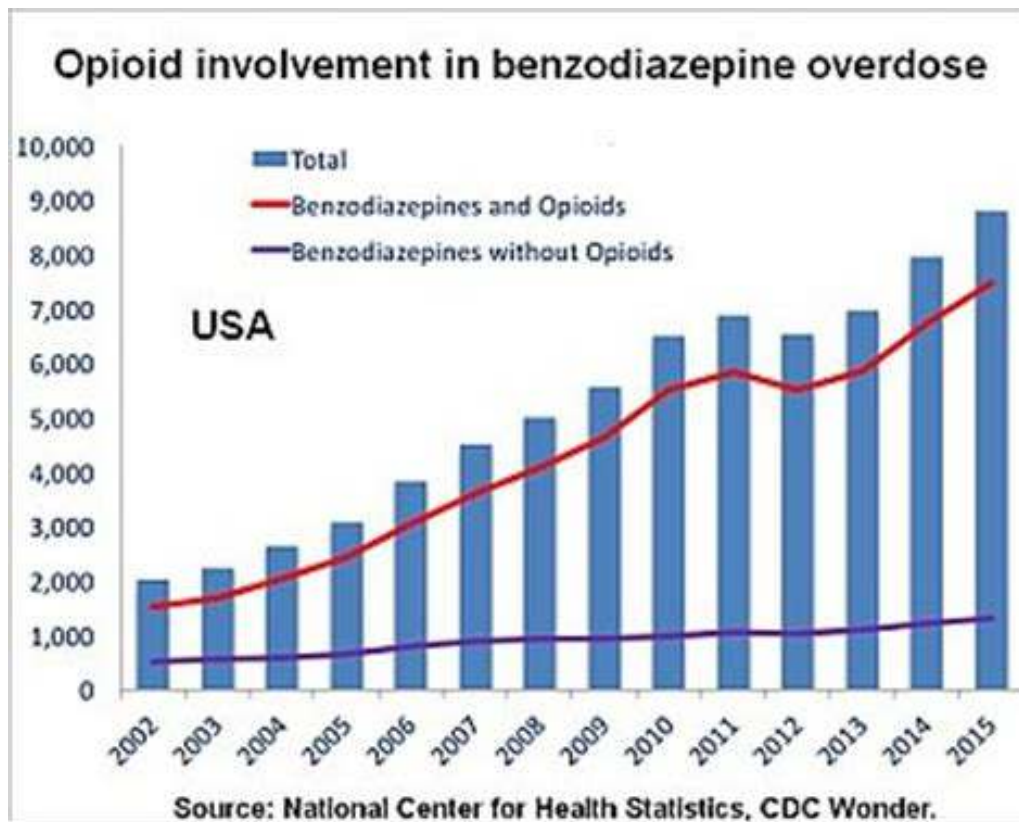
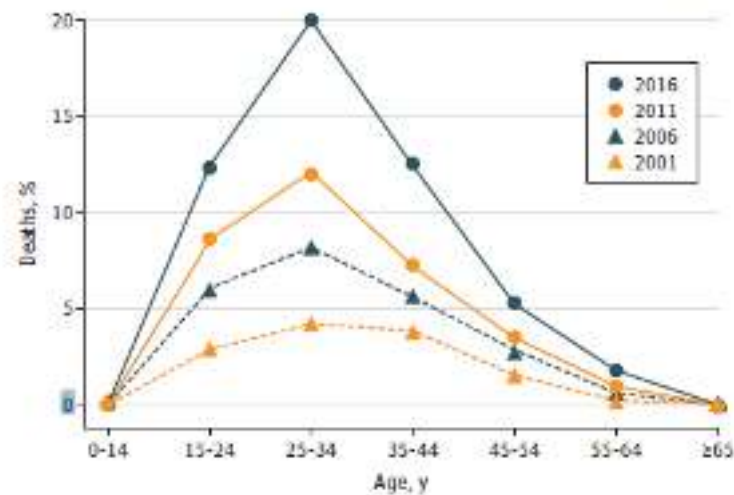




Figure. Proportion of Deaths Related to Opioid Use by Age Group in 2001, 2006, 2011, and 2016



[JAMA Network Open. 2018;1\(2\):e180217. doi:10.1001/jamanetworkopen.2018.0217](https://doi.org/10.1001/jamanetworkopen.2018.0217)



TABLE 1. CAUSE-OF-DEATH RANKINGS, 2014				
Rank/Age	20-29	30-39	40-49	50-59
1	Accidents	Substance abuse	Circulatory system	Neoplasms
2	Substance abuse	Accidents	Neoplasms	Circulatory system
3	Suicides	Circulatory system	Substance abuse	Digestive system
4	Crime	Suicides	Accidents	Respiratory system
5	Neoplasms	Neoplasms	Suicides	Nutritional & metabolic

Deaths per 100,000 of population, 2014

TABLE 2. DEATHS PER 100,000 OF POPULATION, 2014				
COD/Age	20-29	30-39	40-49	50-59
Substance abuse	17.0	24.0	24.8	24.8
Accidents	22.9	19.3	21.9	29.5
Suicide	14.6	15.7	18.4	20.4
Neoplasms	5.4	15.3	53.9	184.7
Circulatory system	5.3	17.9	58.1	156.8
All Other	26.9	40.1	81.1	193.7

Data Source: Mortality Multiple Cause-of-Death Public Use Record from the CDC

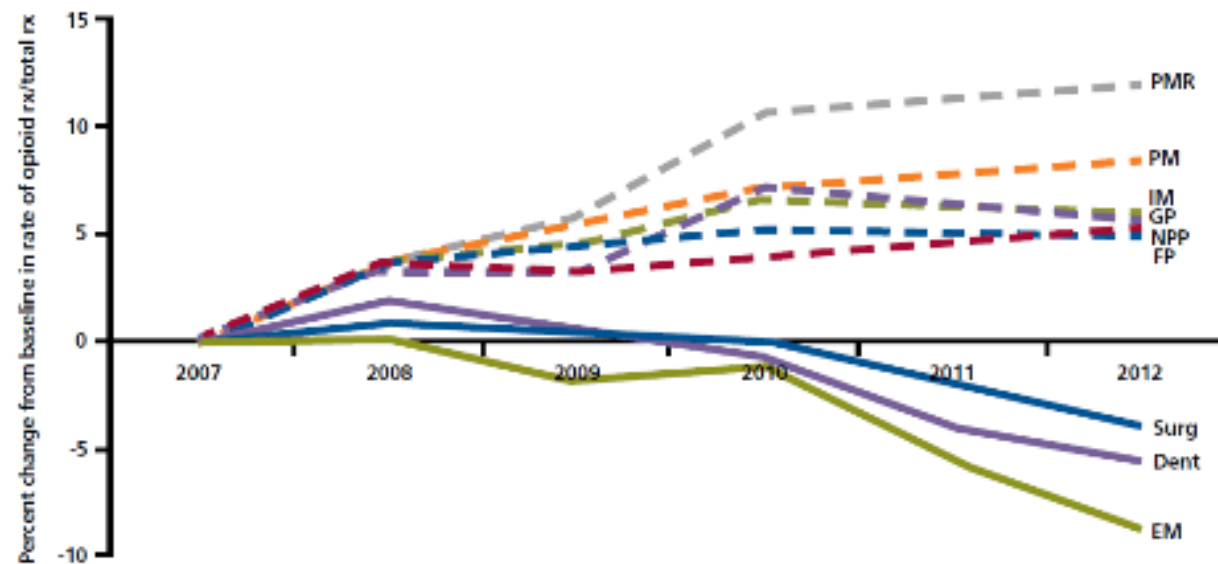


Response to the crisis

- 2016: Surgeon General's report on the Opioid Crisis was released
- Prescribing guidelines for opioids tightened
 - The medical profession, licensing agencies and federal enforcement increasingly focusing on prescribing practices for short and long term use of narcotics
- 49 States have enacted legislation prescription-drug monitoring programs
 - Many States formulating action plans for dealing with the crisis
- 2017: Federal agencies combining efforts to stem the crisis
 - SAMHSA, CDC, FDA, NIH, DEA

Rx Opioid Prescribing by Medical Specialty, US, 2007-2012


■ Family Practice ■ Internal Medicine ■ General Practice
 ■ Emergency Medicine ■ Non-Physician Prescribers ■ Surgery
 ■ Physical Medicine/Rehab ■ Pain Medicine ■ Dentistry



American Journal of Preventive Medicine. Trends in Opioid Analgesic-Prescribing Rates by Specialty, U.S., 2007-2012. Sept. 2015; 49(3):409-13.

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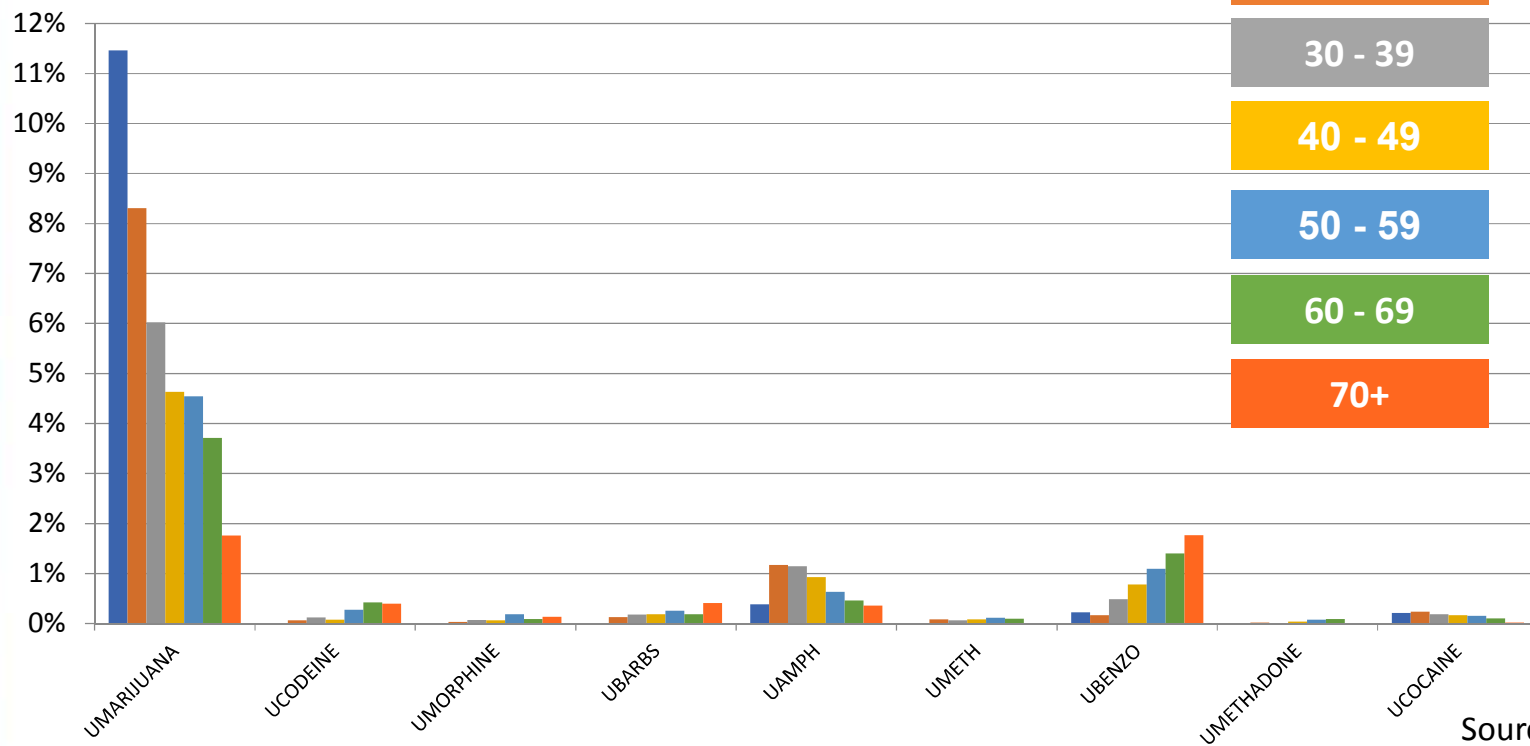


Industry data on drug & opioid use and mortality

Quest Diagnostics/ExamOne

Age group positivity

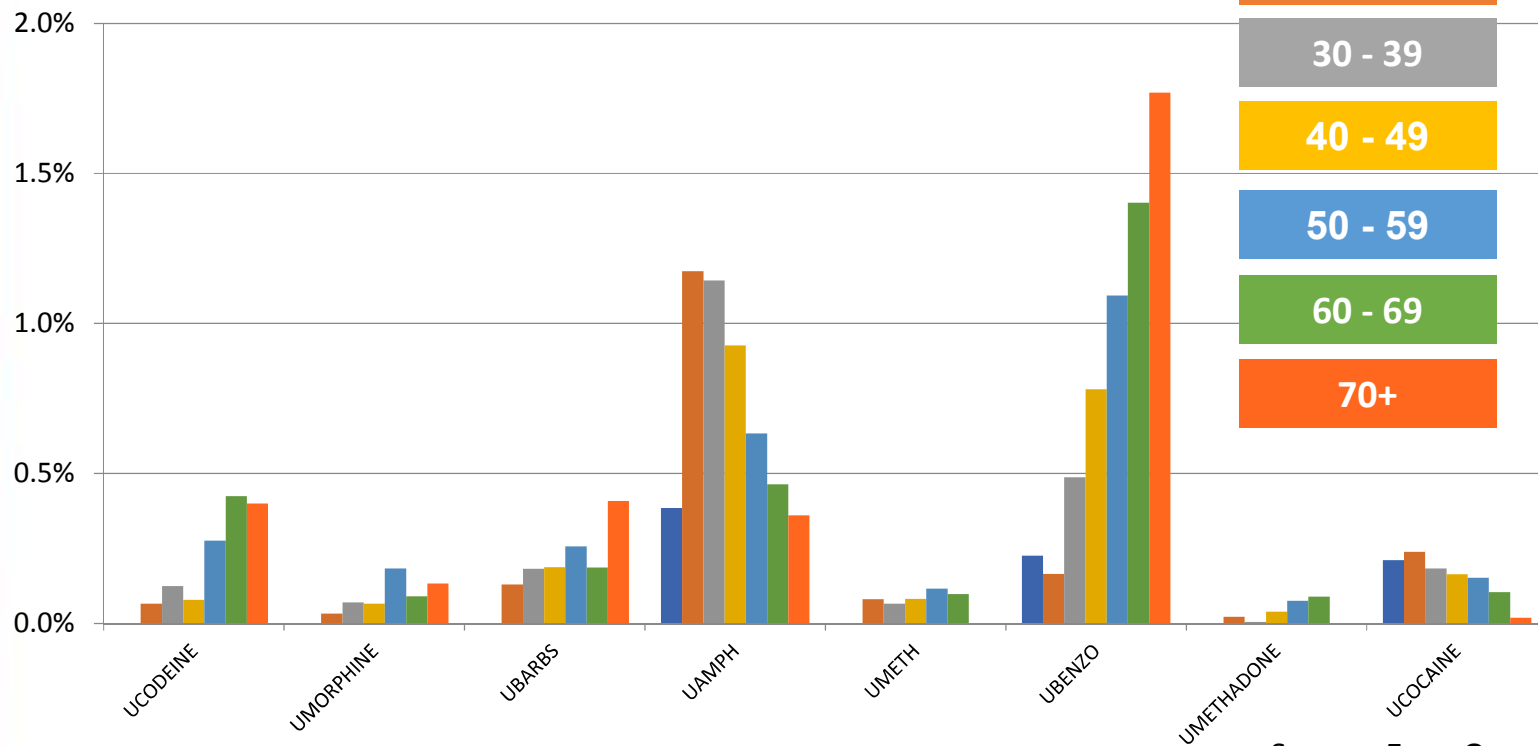
Full drug screen



Source: ExamOne

Age group (w/o MJ)

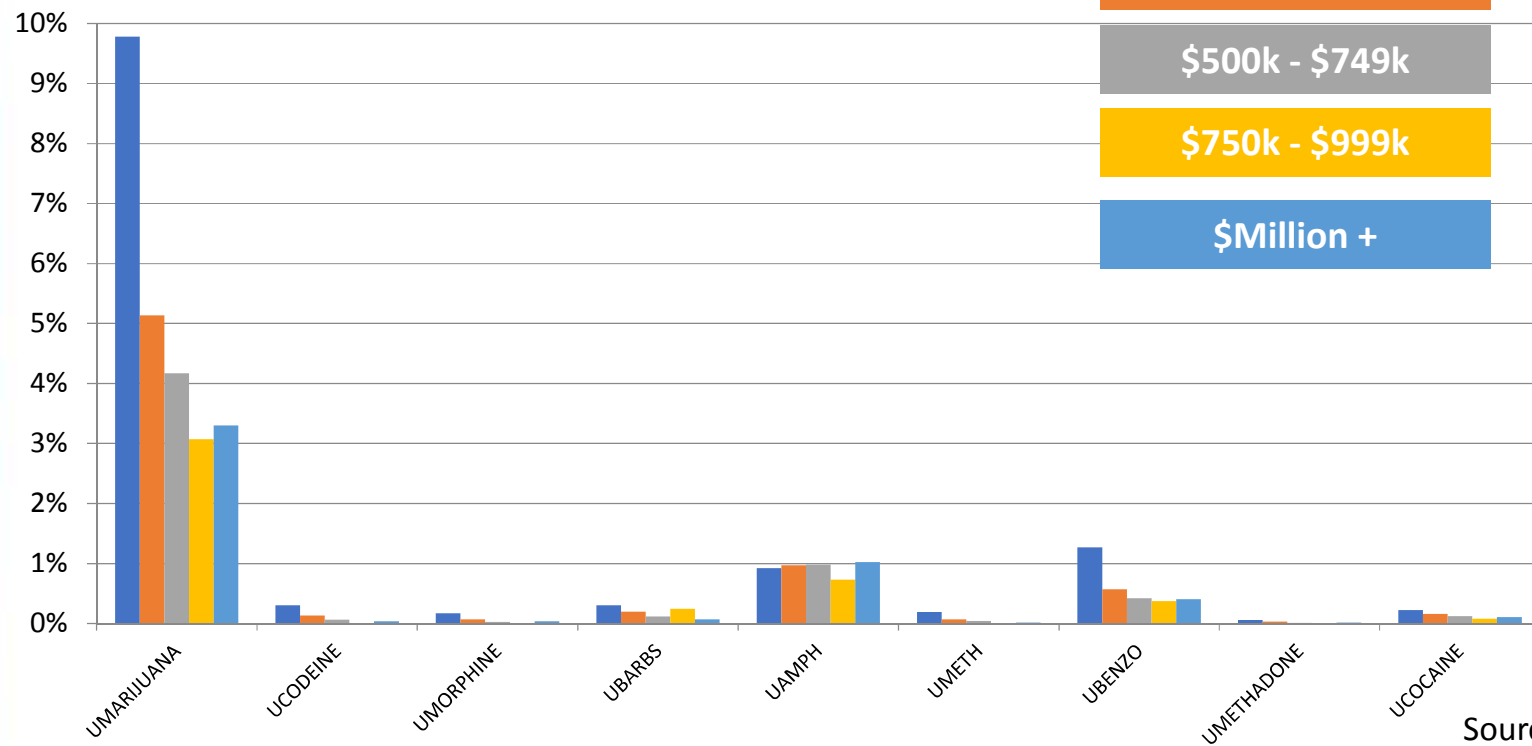
Full drug screen



Source: ExamOne

Policy size

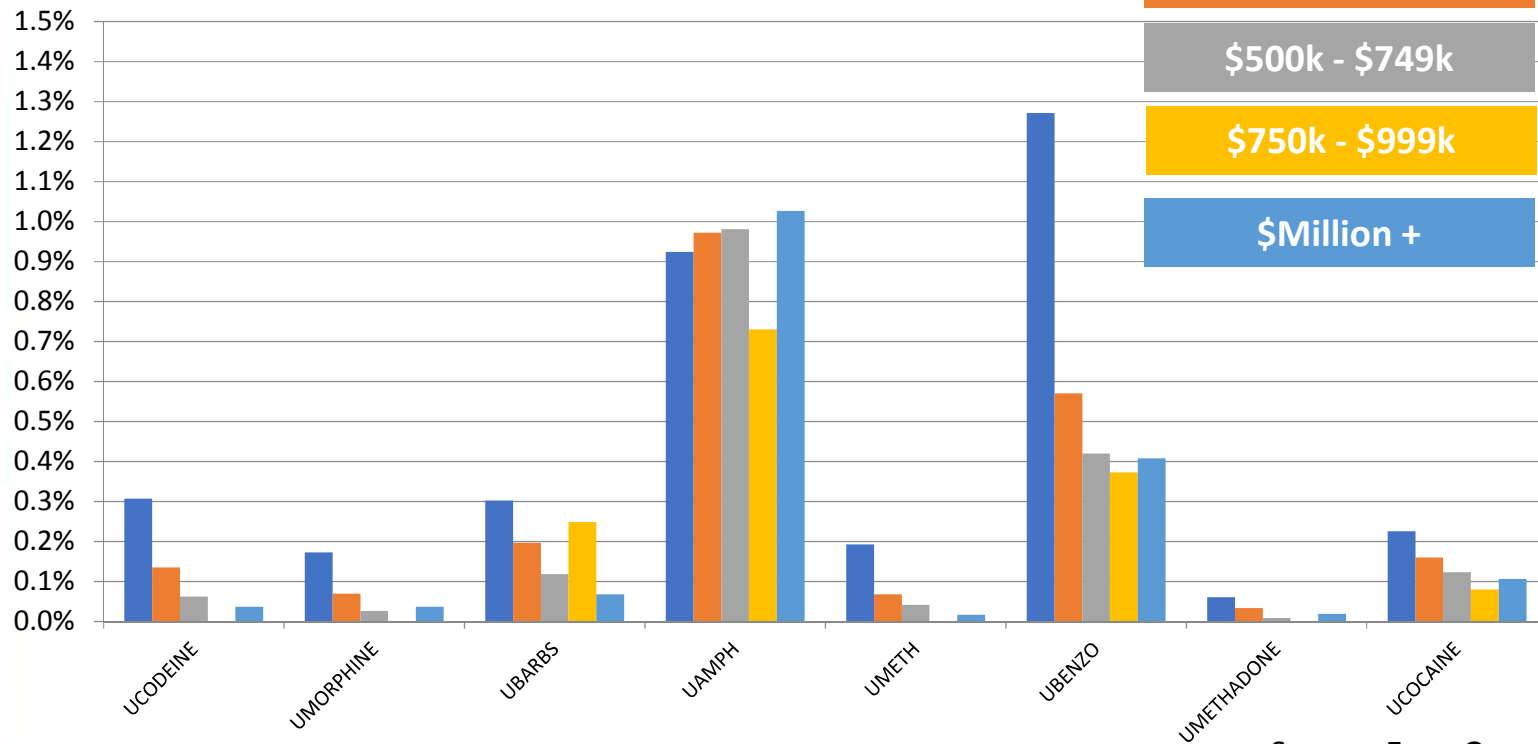
Full drug screen



Source: ExamOne

Policy size (w/o MJ)

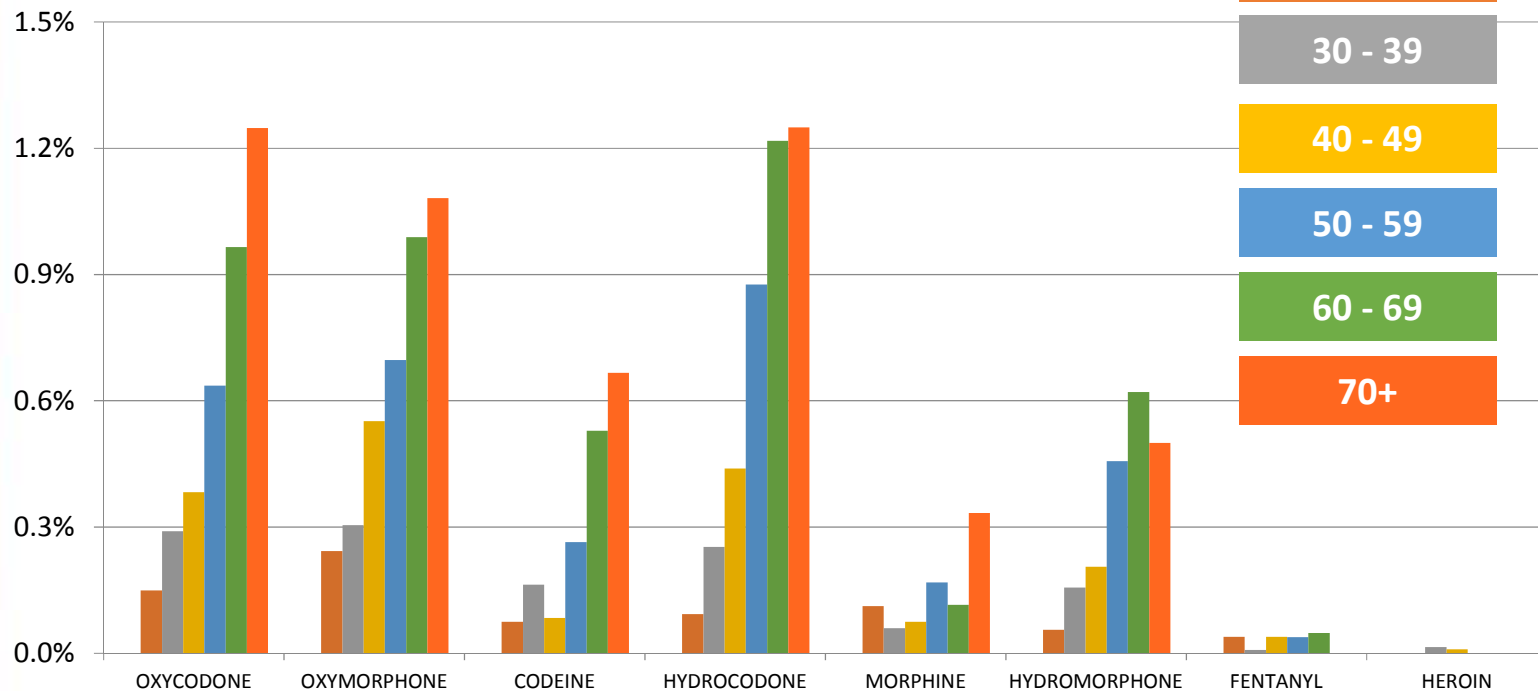
Full drug screen



Source: ExamOne

Age group positivity

Expanded opioid panel



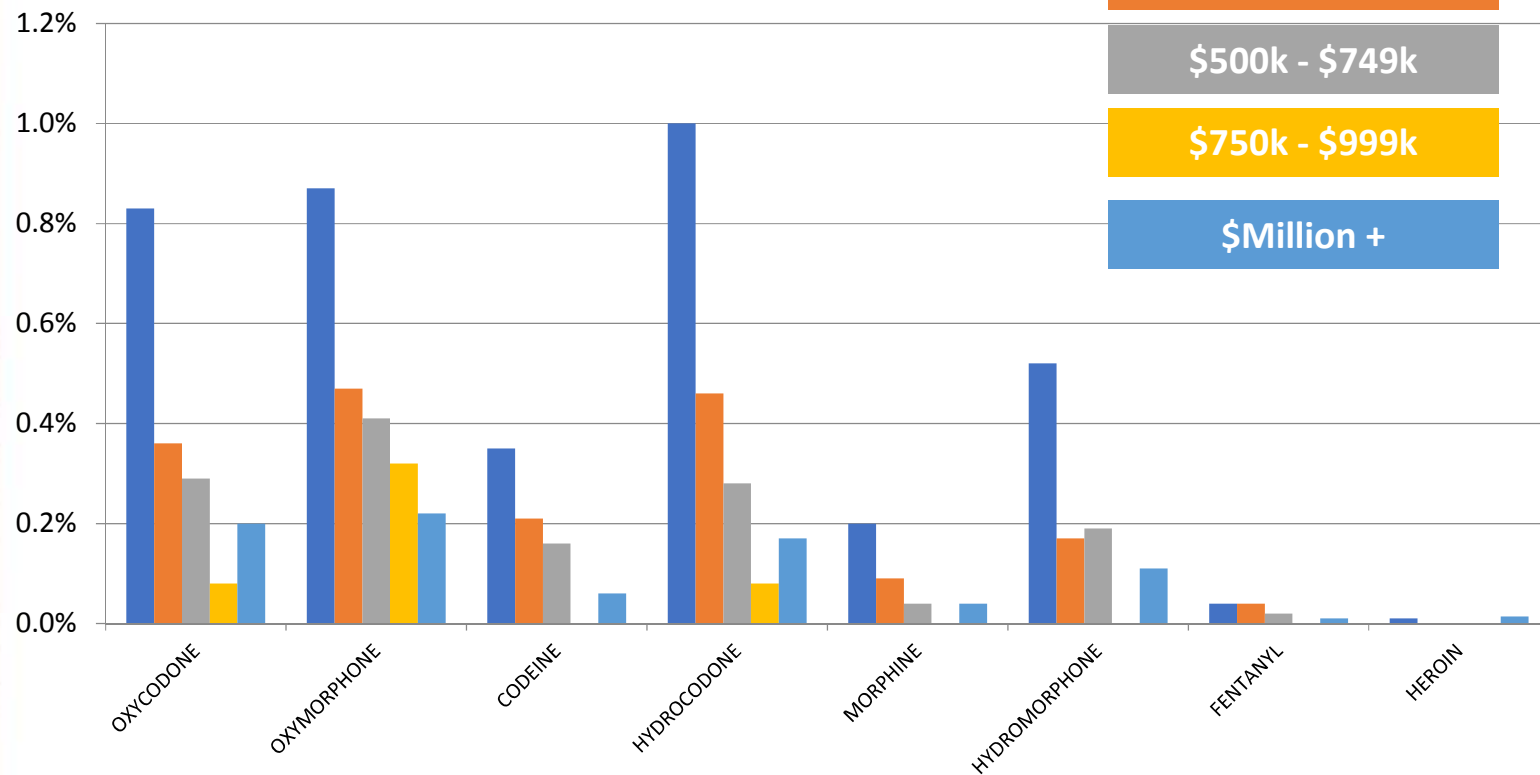
Source: ExamOne

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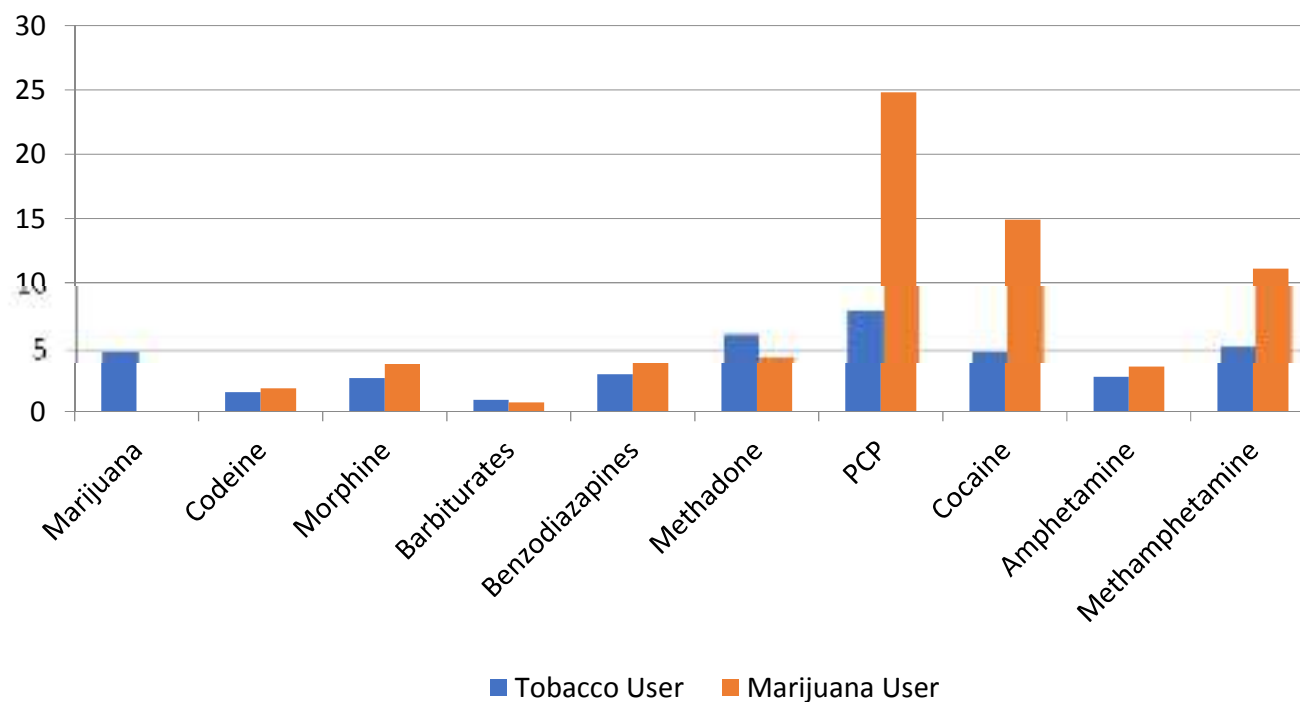
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Policy size

Expanded opioid panel



Relative risk for selected drugs of abuse



ExamOne data 2018

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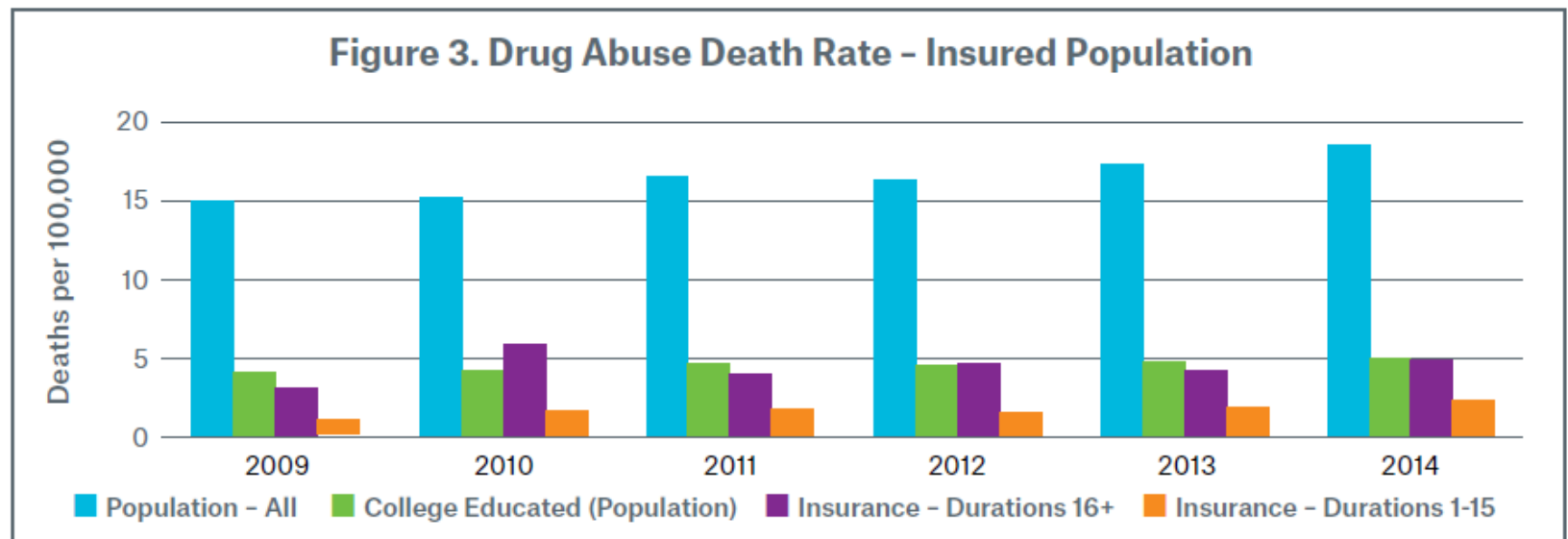
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Industry data on drug & opioid use and mortality

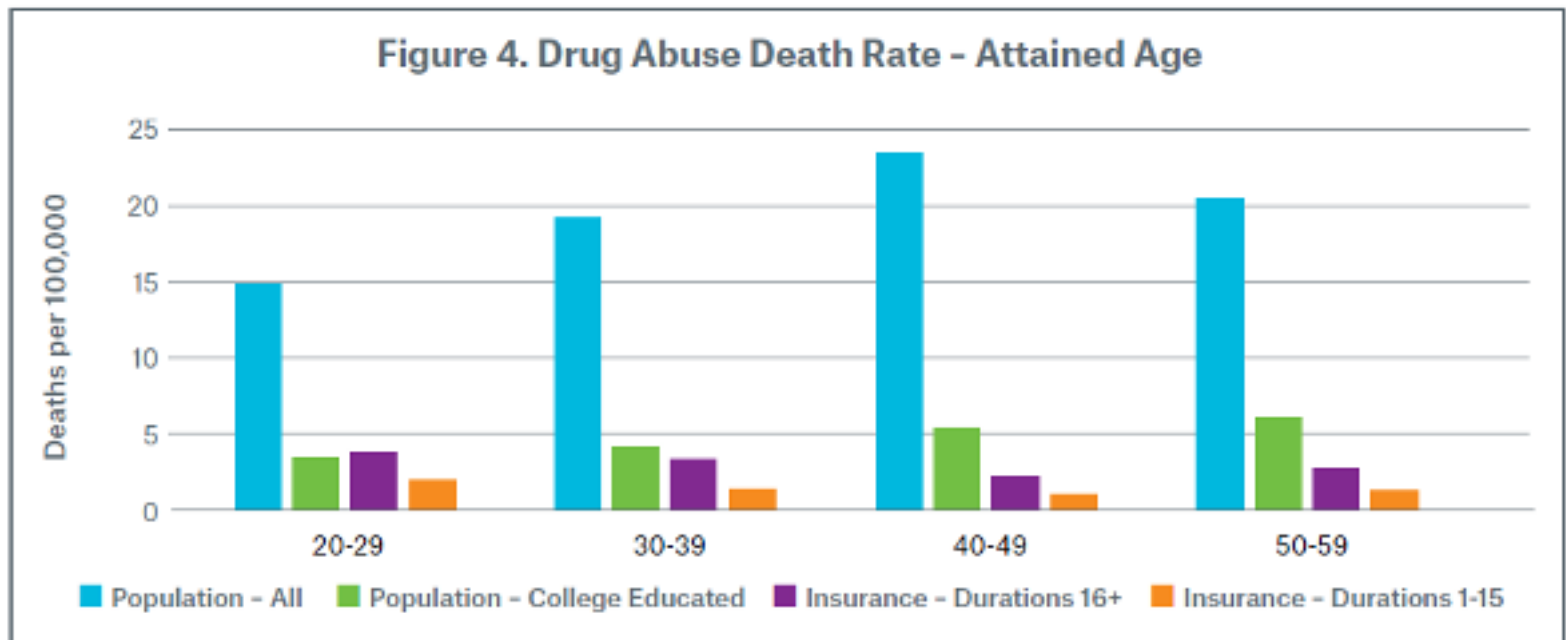
Munich Re Drug Abuse Mortality Study 2017

Munich Re Drug Abuse Mortality Study 2017



Population Data: Mortality Multiple Cause-of-Death Public Use Record from the CDC; Insurance Data: Munich Re Internal Data

Munich Re Drug Abuse Mortality Study 2017



Population Data: Mortality Multiple Cause-of-Death Public Use Record from the CDC; Insurance Data: Munich Re Internal Data

Munich Re Drug Abuse Mortality Study 2017

- Other findings of the study
 - Higher substance abuse mortality in smokers
 - Declining trend in drug-related mortality as face amounts increased
 - No significant increase of drug-related mortality in early durations to suggest adverse selection



Drug abuse & deaths in Life Insurance

- The Opioid Crisis is a national concern but probably not seeing a large impact to the life industry currently. Future risk continues to exist as long as the Opioid Crisis persists
- Monitoring of claims experience especially in drug-related, overdose, accident and suicide claims
 - Closer surveillance of the higher risk segments may be in order
 - Lower face amount, smokers, younger ages
- Review of underwriting policy and requirements
 - Available tools include
 - Pharmaceutical databases, targeted drug screening, MVR, criminal records

Underwriting focuses for opioid use

- Diagnosis of chronic pain
- Comorbid history
 - Depression, anxiety, bipolar disease or other addictive propensities
- History of substance or alcohol abuse
- Drug combinations:
 - Especially those that include opioids and benzodiazepams
 - Those with multiple prescribers
 - Higher dosages with frequent adjustments
- Impaired driving history or accidents
- Criminal history
- Smokers (?)

References

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Thank You!