



Overview of Acute Drug-Related Deaths, 2008-2018

March 22, 2019

Stephany Fiore, MD
Santa Cruz County Sheriff-Coroner's Office

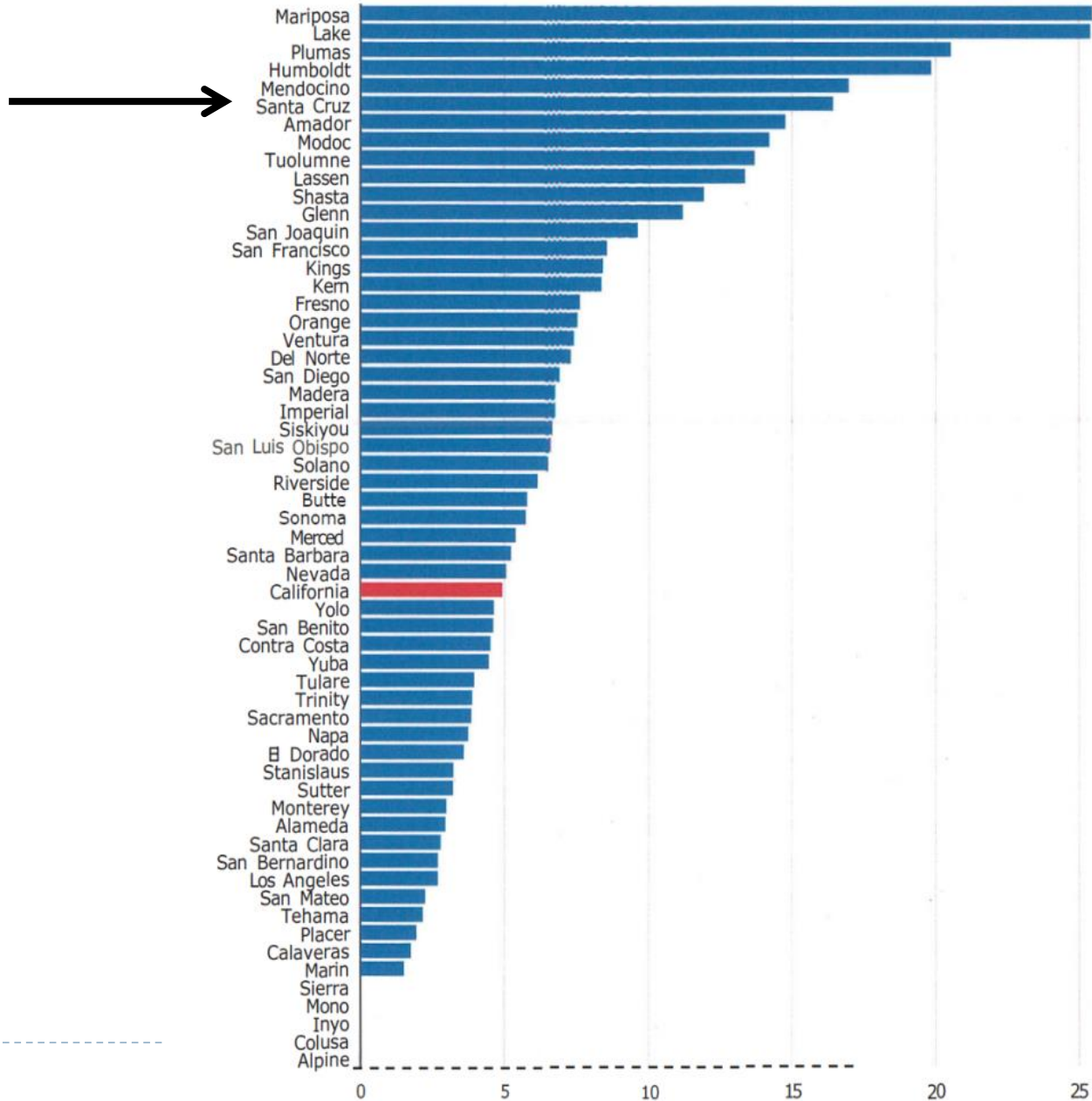
What's New This Year?

- ▶ **2016:**
 - ▶ Differences in drug use based on age and sex
- ▶ **2017:**
 - ▶ Better demographic profiles of users
 - ▶ New illicit drug trends in our community
 - ▶ Better definition of “prescribed” drugs
 - ▶ Better geography of drug use in our county
- ▶ **2018:**
 - ▶ Drug use trends from 2011 to 2017
- ▶ **2019:**
 - ▶ Drug use trends from 2008-2018

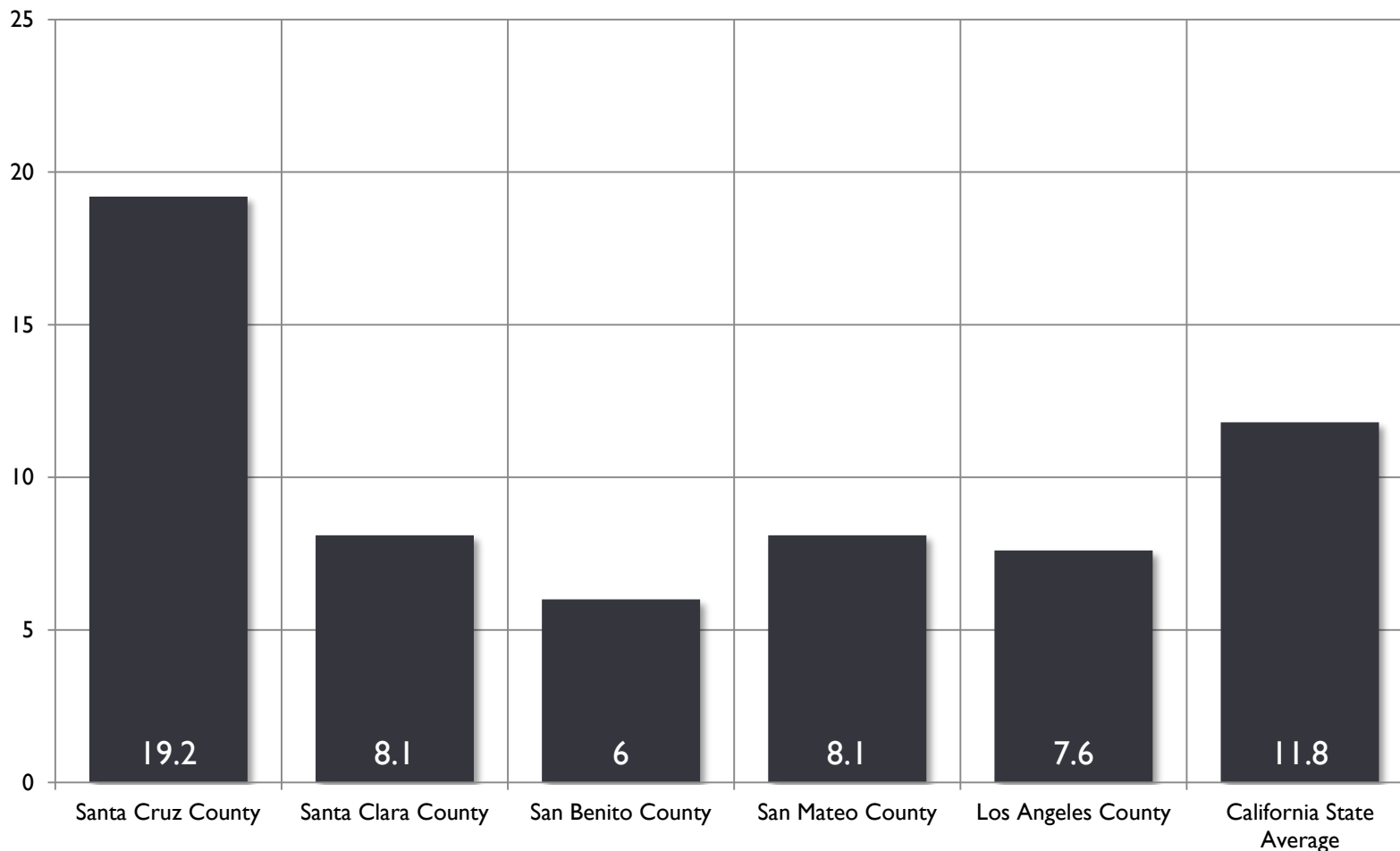


California Deaths - 2014

All Opioid Overdose: Age-Adjusted Rate per 100,000 Residents



Drug-Induced Death Rate per 100,000 Population, Santa Cruz ranked 41/58 by 3-year ave. 2012-2014



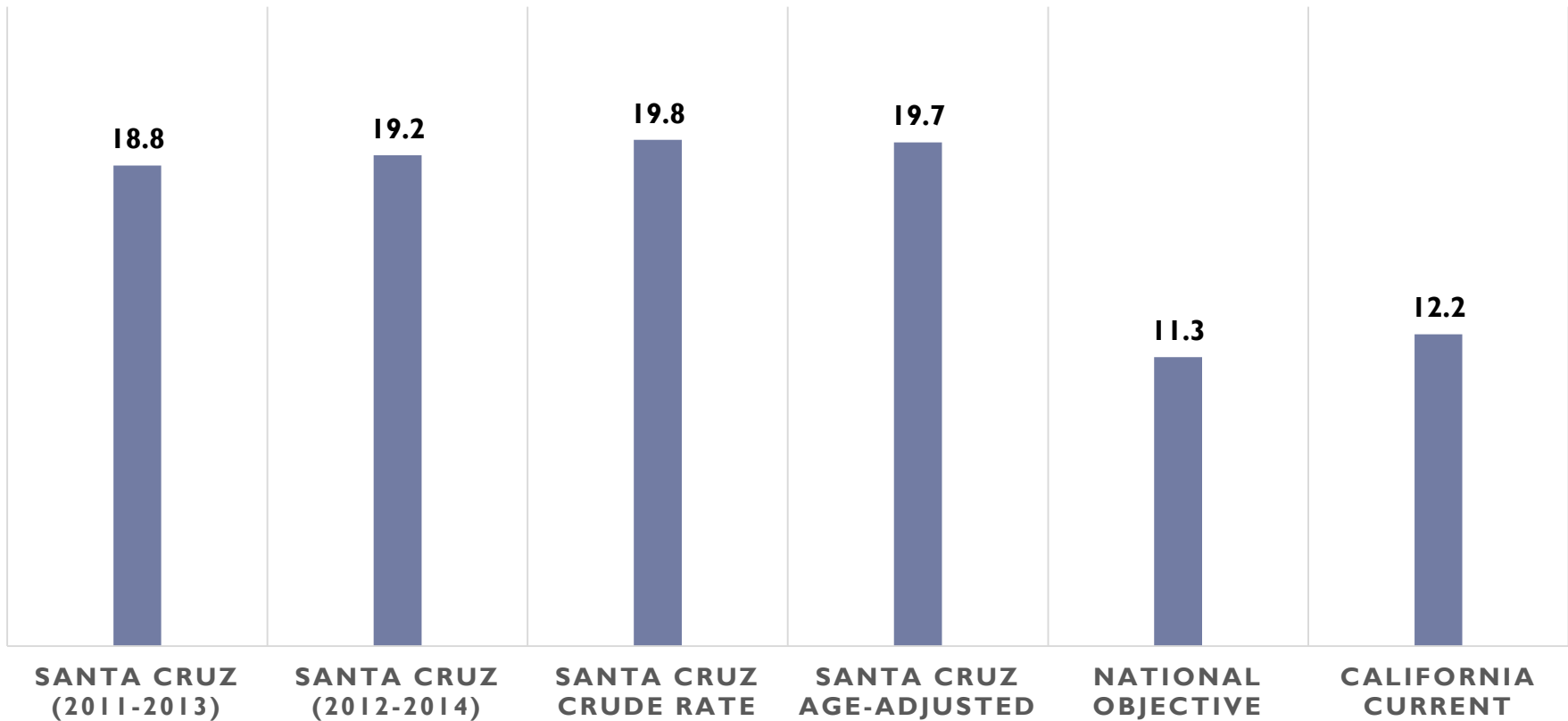
County Health Status Profile 2016, California Dept of Public Health



Santa Cruz County's Health Profile 2018:

California Department of Public Health data from 2014-2016

DRUG-INDUCED DEATH RATES STILL RANKED 41/58

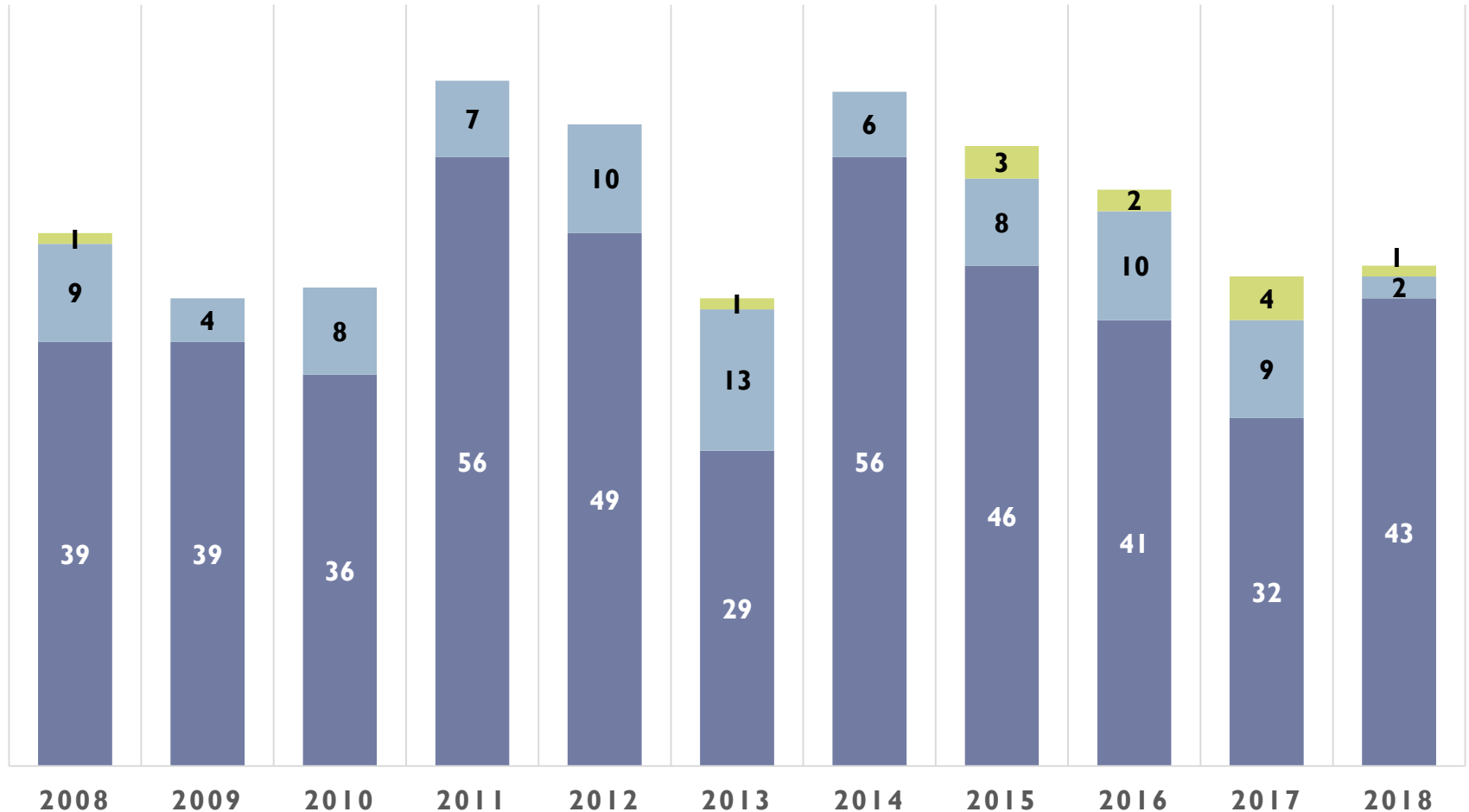


*Crude death rates and age-adjusted death rates per 100,000 population

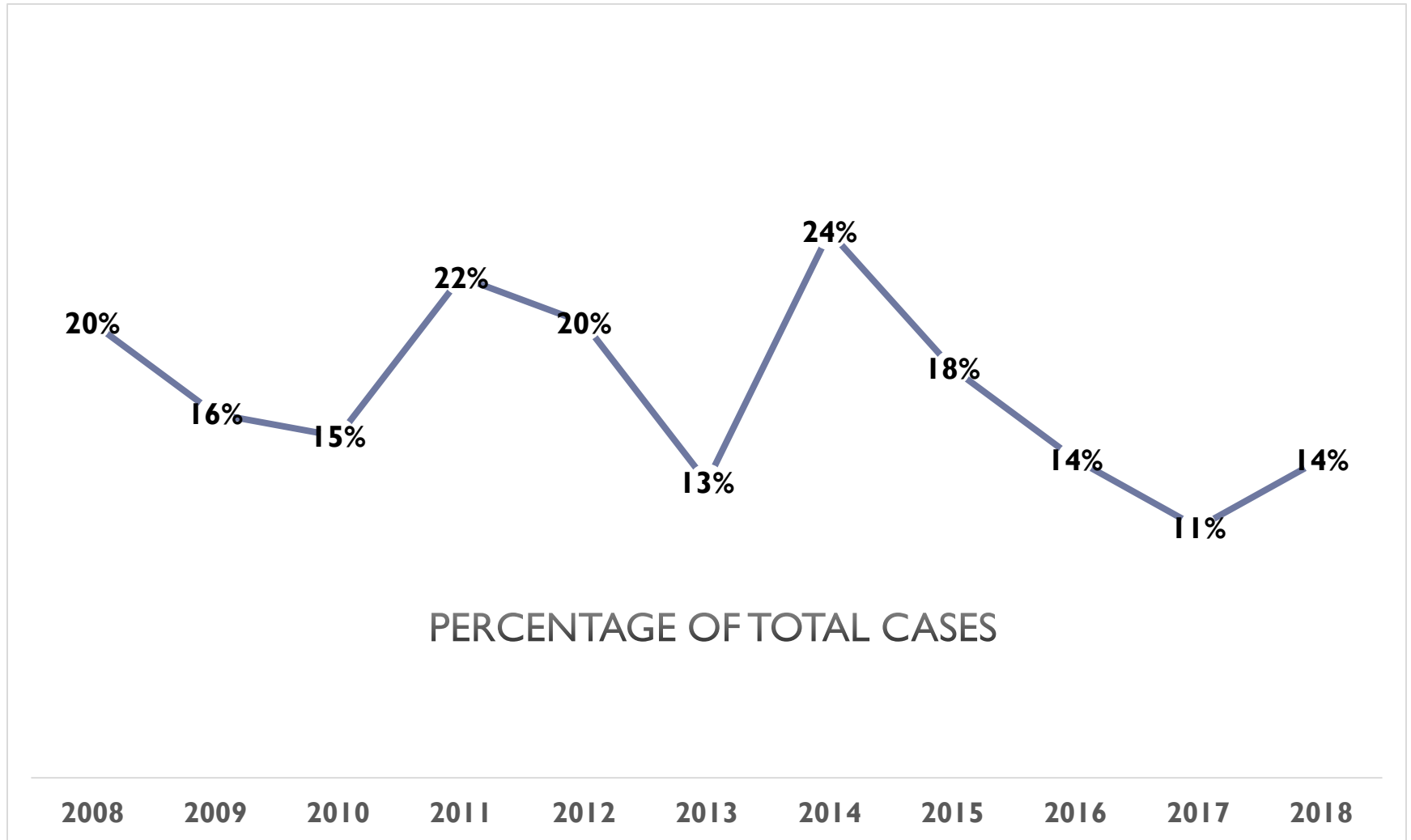


Acute Drug-Related Deaths per Year by Manner of Death

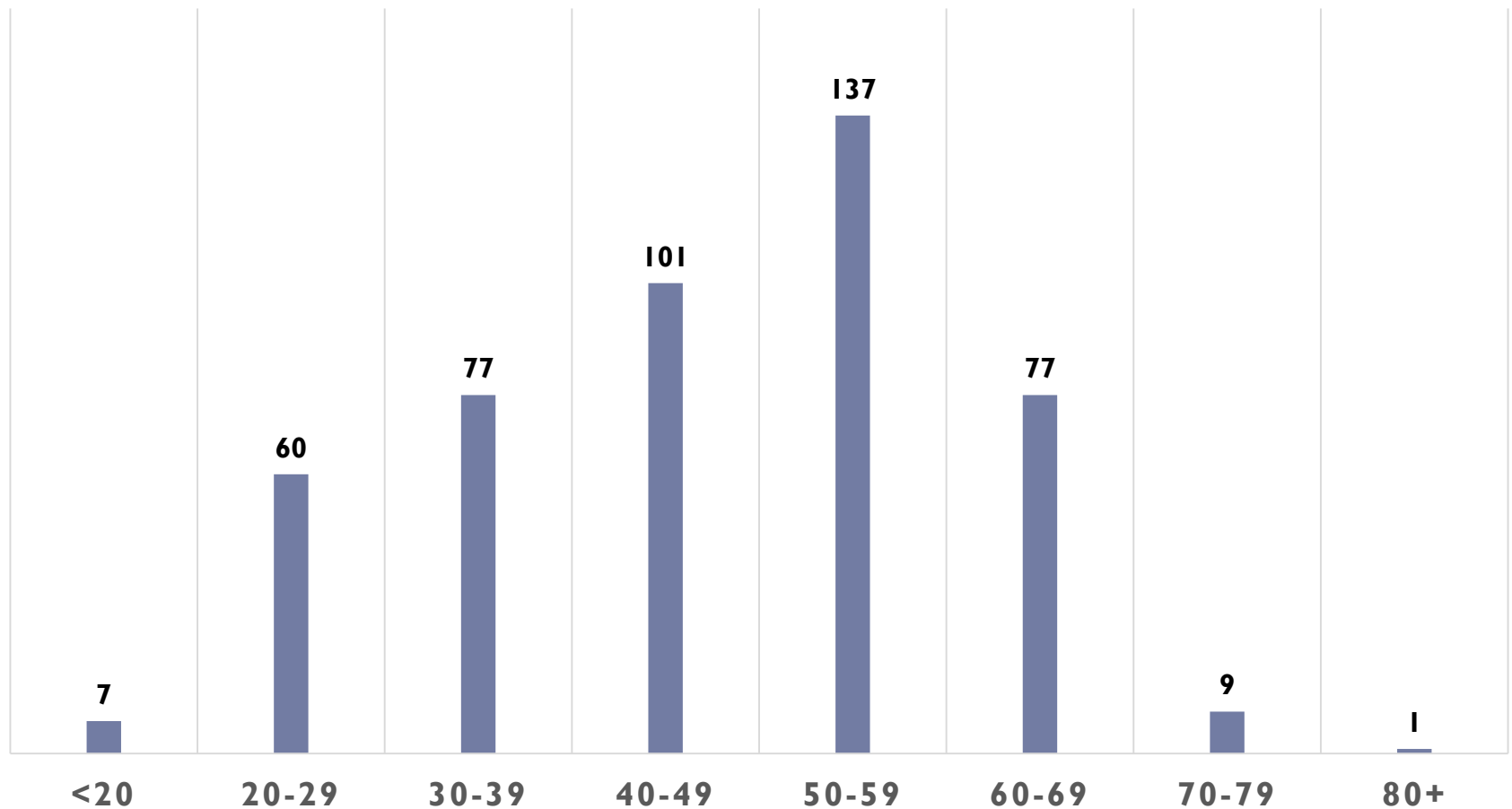
■ Accident ■ Suicide ■ Undetermined



Accidental Drug Deaths



Total Deaths by Age over 11 years



US National Trends in Pediatric Deaths from Rx and Illicit Opioids, 1999-2016

JAMA 12/28/18

- ▶ 8986 <20 years died from drug OD
 - ▶ 268.2% increase in death rate
- ▶ 73.1% males
- ▶ Age groups:
 - ▶ 88.1% 15-19 years
 - ▶ Heroin - 404.8% increased death rate
 - ▶ Rx opioids – 94.7% increased death rate
 - ▶ 4.1% 10-14 years
 - ▶ 1.1% 5-9 years
 - ▶ 6.7% 0-4 years



Santa Cruz Pediatric Deaths, 2008-2018

- ▶ 7 of 466 Accidental Drug OD in 11 year period – 1.5%.
 - ▶ 2008, 2012, 2014, 2015, 2016, & 2017
- ▶ All were male.
- ▶ Age: 4 = 18 years; 3 = 19 years.
- ▶ Drugs – all illicitly obtained:
 - ▶ 1 cocaine plus alcohol (obese w/ enlarged heart)
 - ▶ 2 = just heroin
 - ▶ 1 = heroin plus non-Rx Flexeril and OTC diphenhydramine, & pseudoephedrine
 - ▶ 1 – non-Rx morphine pills
 - ▶ 1 - non-Rx oxymorphone pills (had suboxone Rx, but not detected)
 - ▶ 1 - polypharmacy



Mr. Polypharmacy

- ▶ 18 yr lived with his parents.
- ▶ Hx of depression & anxiety, Rx Wellbutrin
 - ▶ Self-medicates with Xanax and alcohol
- ▶ Three prior ODs in past year with Rx alprazolam & alcohol.
 - ▶ Tried Rehab but is non-compliant
- ▶ Smokes marijuana
- ▶ Recent Utox by parents + for opiates
- ▶ Toxicology results:
 - ▶ Morphine, hydrocodone, and oxycodone
 - ▶ Alprazolam
 - ▶ Clorpheniramine and dextromethorphan
 - ▶ Low levels of cocaine metabolite, MDMA & cannabinoids
 - ▶ Sertaline

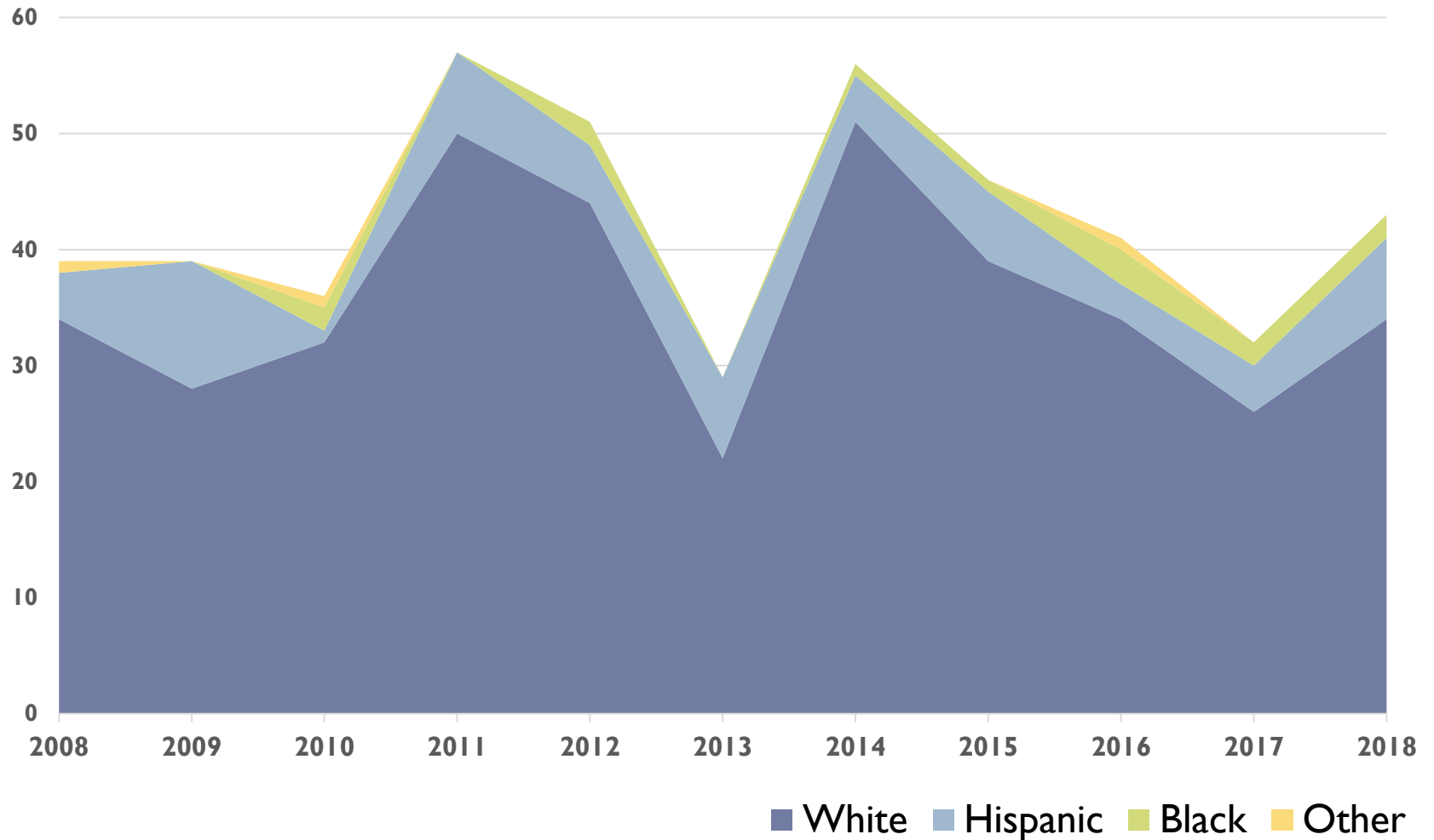


Santa Cruz Senior (70+ years) Drug Deaths, 2008-2018

- ▶ 10 of 466 Accidental Drug OD in 11 year period – 2.1%.
- ▶ Ages: 9 in their 70s; 1 in her 90s.
- ▶ Gender:
 - ▶ 6 females (2008-2015)
 - ▶ 1 with Methadone & Alprazolam (taking daughters Rx) .
 - ▶ 1 with Morphine (94 yo w/ C2 odontoid Fx from fall; Rx morphine with over-sedation noted by nursing staff).
 - ▶ 1 with Fentanyl (prescribed for neuropathy; found in bathtub.
 - ▶ 3 mixed drug intoxications
 - Chr pain w/ Rx medication abuse & psych illness
 - Rx narcotics, benzodiazepines, & muscle relaxants plus diphenhydramine
 - ▶ 4 males (2015-2018)
 - ▶ 3 with heroin (all homeless)
 - ▶ 1 with hydrocodone (Rx abuse) & diphenhydramine



Drug Deaths by Race



Drug Deaths by Gender



Drug OD Deaths in Women Aged 30-64 yrs – US, 1999-2017

MMWR 1/11/19

- ▶ 260% increase in death rates for women 30-64 years.
- ▶ Increase in both # and rate of deaths involving:
 - ▶ Antidepressants
 - ▶ Benzodiazepines
 - ▶ Synthetic opioids
 - ▶ Cocaine
 - ▶ Heroin.



Drug Deaths in Females – Polypharmacy

From 2016 Presentation

- ▶ 73% of women and 38% of men had taken prescription drugs
- ▶ Of the deaths where an Rx drug was identified ...
 - 29% had both benzodiazepines and opiates
 - 45% of women, 15% of men.
 - 33% were taking 3 or more prescription medications
 - 55% of women, 15% of men.
 - 25% were on antidepressants
 - 55% of women, 0% of men



Drug Deaths in Women - 2018

- ▶ 9 of 43 Accident Drug Deaths = 21%.
 - ▶ Age: 36-62 years.
- ▶ Drugs detected:
 - ▶ 5 = Illicit Drugs.
 - ▶ 36-62 years.
 - ▶ 3 were homeless.
 - ▶ 4 = stimulants (1 cocaine; 3 methamphetamine).
 - All had heart disease – CAD and/or Hypertension.
 - 1 with non-Rx buprenorphine
 - ▶ 1 = alcohol mixed with a presumed designer benzodiazepine; Rx buprenorphine for heroin abuse.

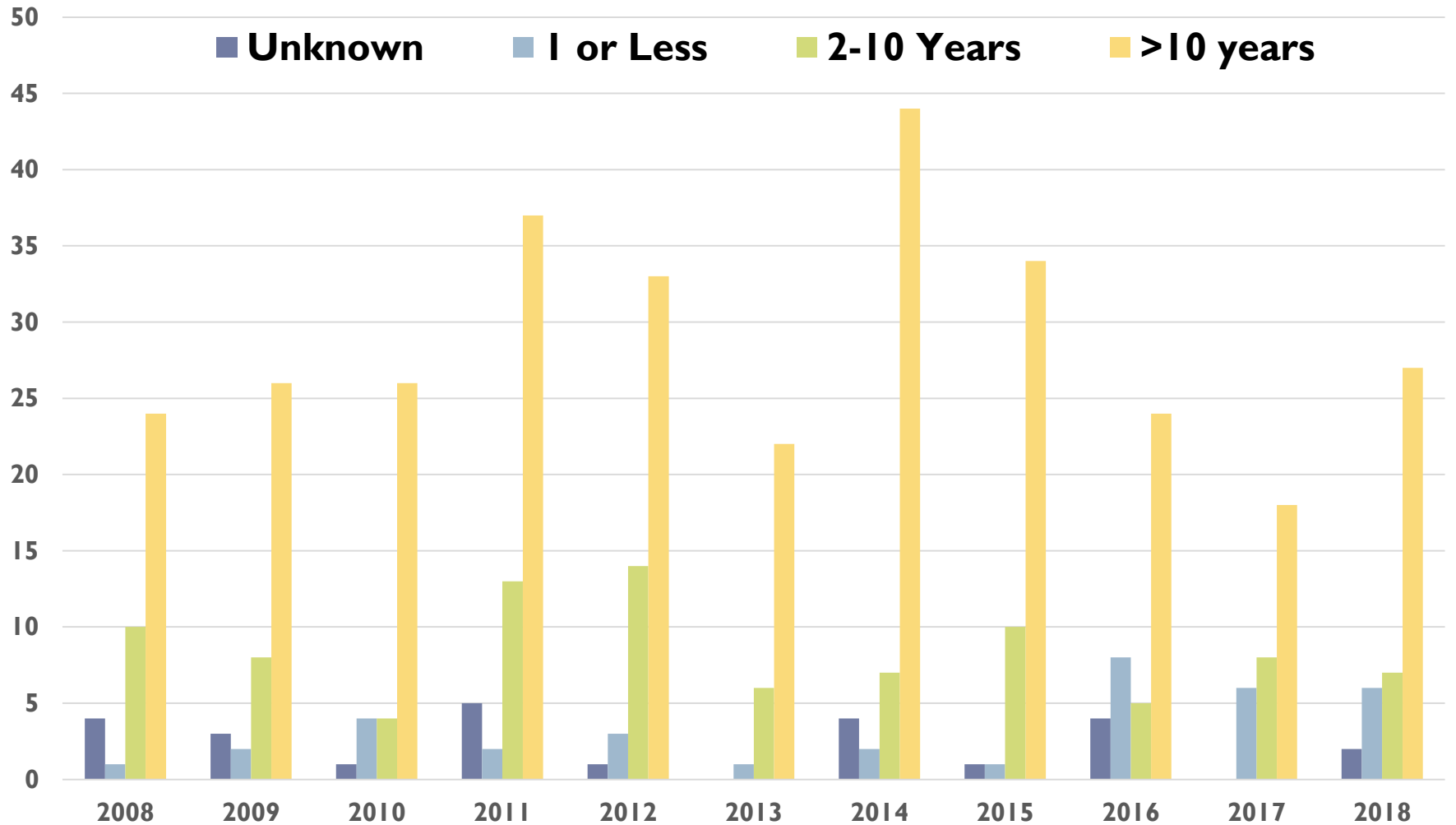


Drug Deaths in Women – 2018 (cont.)

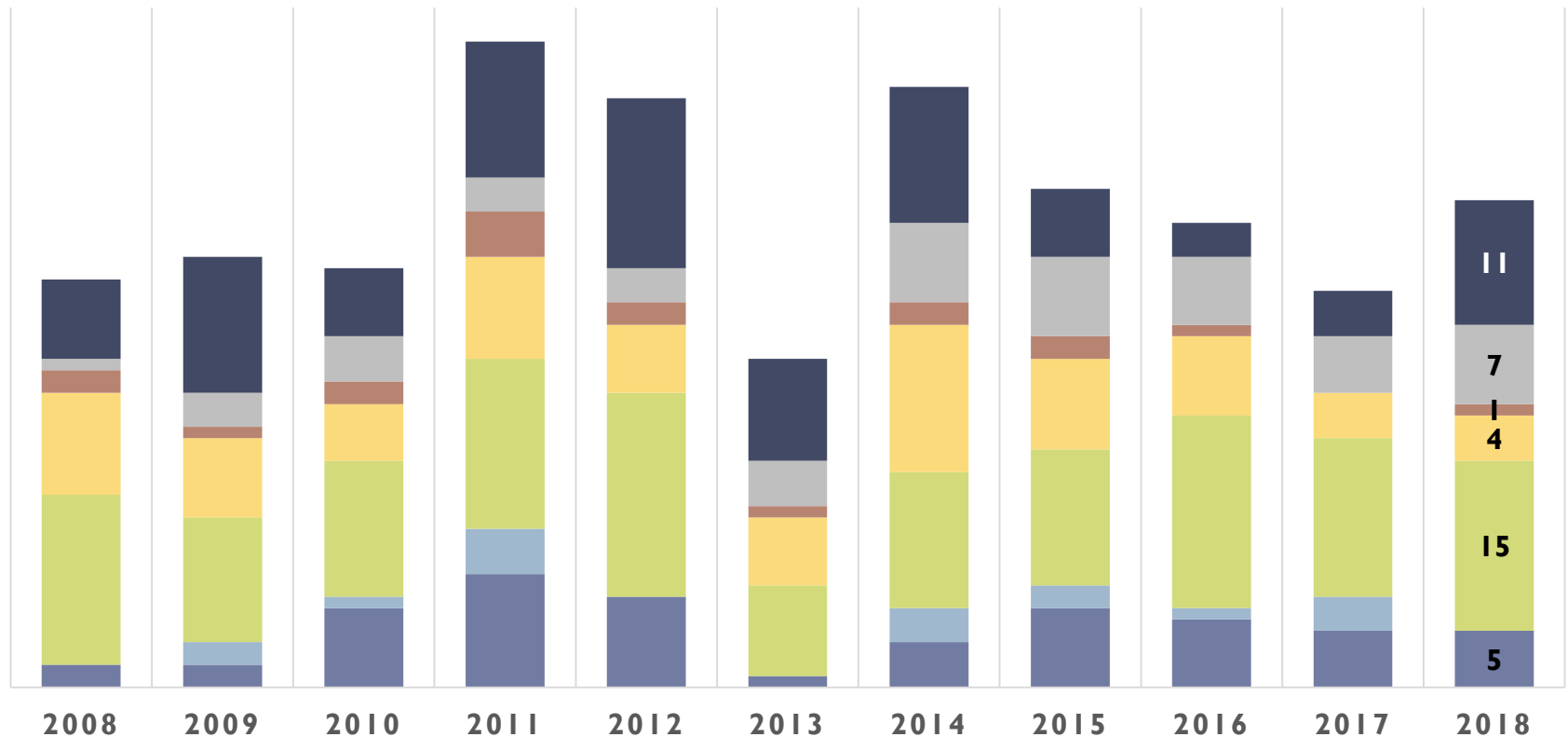
- ▶ 4 = Prescription Drugs.
 - ▶ 45-62 yrs
 - ▶ 3 abused Rx medications (other was a medication error).
 - All had chronic pain and psychiatric illness
 - Two were obese
 - ▶ Prescribed hydrocodone & zolpidem plus:
 - Alcohol abuse (BAC 0.10 gm%)
 - Non-prescribed Soma & diphenhydramine.
 - Low levels of Rx clonazepam metabolite & sertraline detected.
 - ▶ Prescribed high dose fentanyl, hydromorphone, oxycodone, and diazepam plus:
 - Nitrous oxide abuse (100+ empty Whiplt cannisters at scene).
 - ▶ Prescribed tramadol plus:
 - Non-Rx hydrocodone (recent documented drug seeking behavior).



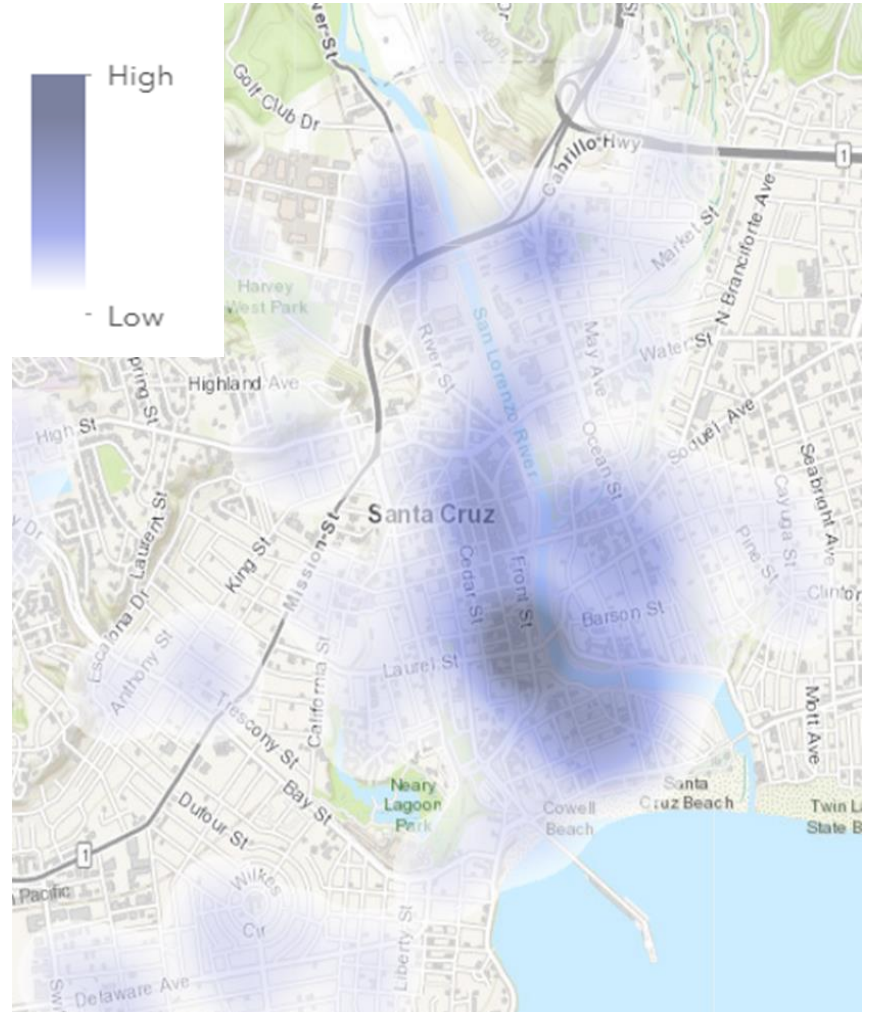
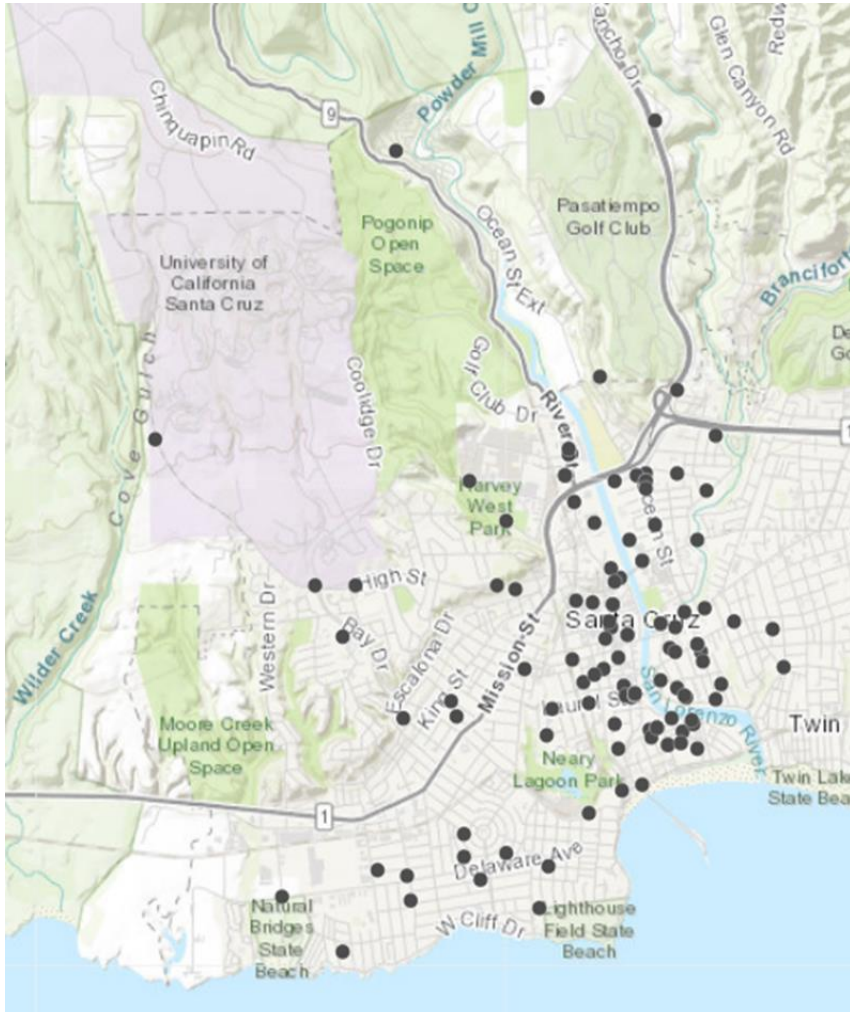
Drug Deaths by Years in County



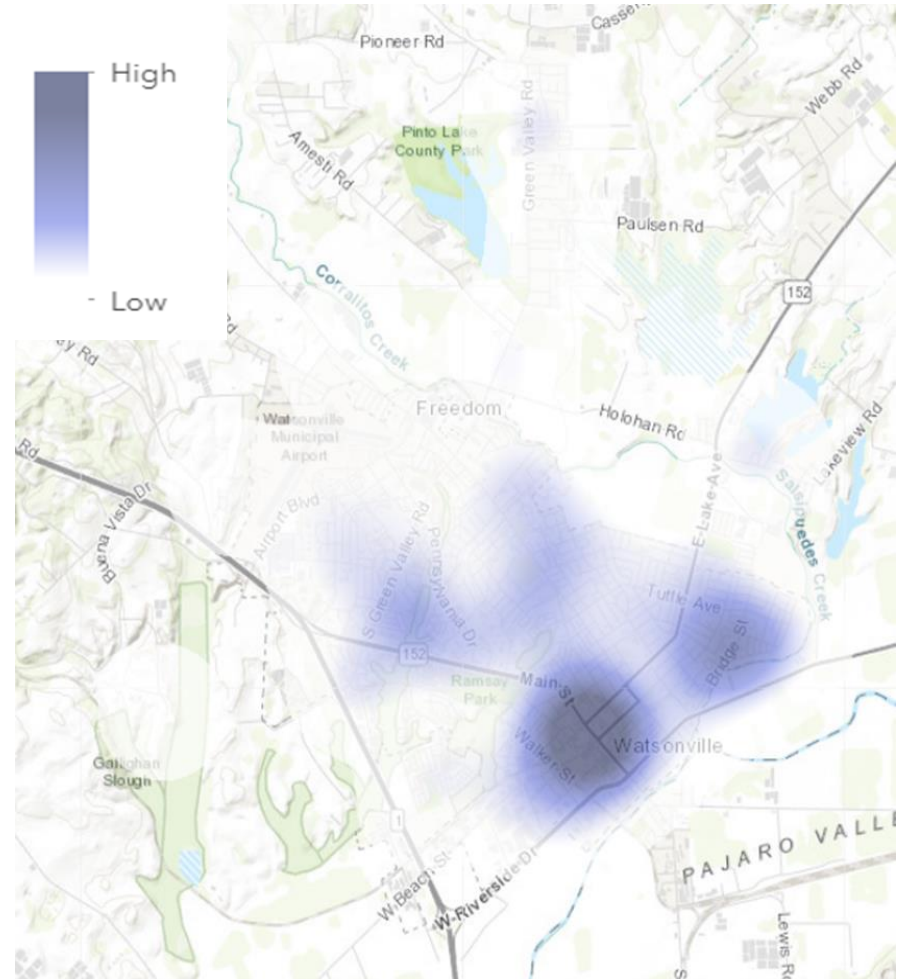
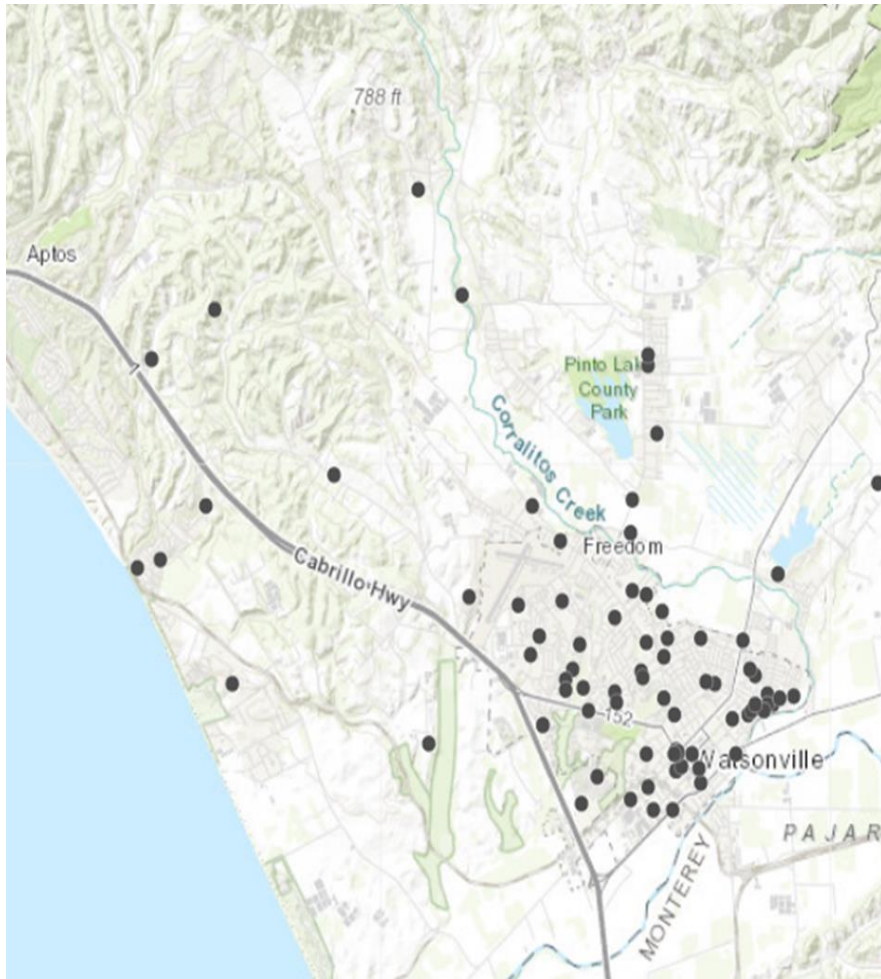
Deaths by Region in County



Opioid Decedent Locations – 95060 2008-2018



Opioid Decedent Locations – 95076 2008-2018



Drug Deaths in Watsonville, 2018

- ▶ 11 of 43 Accidental Drug Deaths – 25.6%
- ▶ Gender: 9 males; 2 females
- ▶ Age: 35-62 years
- ▶ Race: 7 Caucasian; 4 Hispanic
- ▶ Drugs detected:
 - ▶ 1,1- difluoroethane (huffing canned air)
 - ▶ 5 with methamphetamine
 - ▶ 2 plain
 - ▶ 3 mixed with heroin plus alcohol or cocaine
 - ▶ 4 with heroin
 - ▶ 1 with street methadone
 - ▶ 3 with Rx drugs

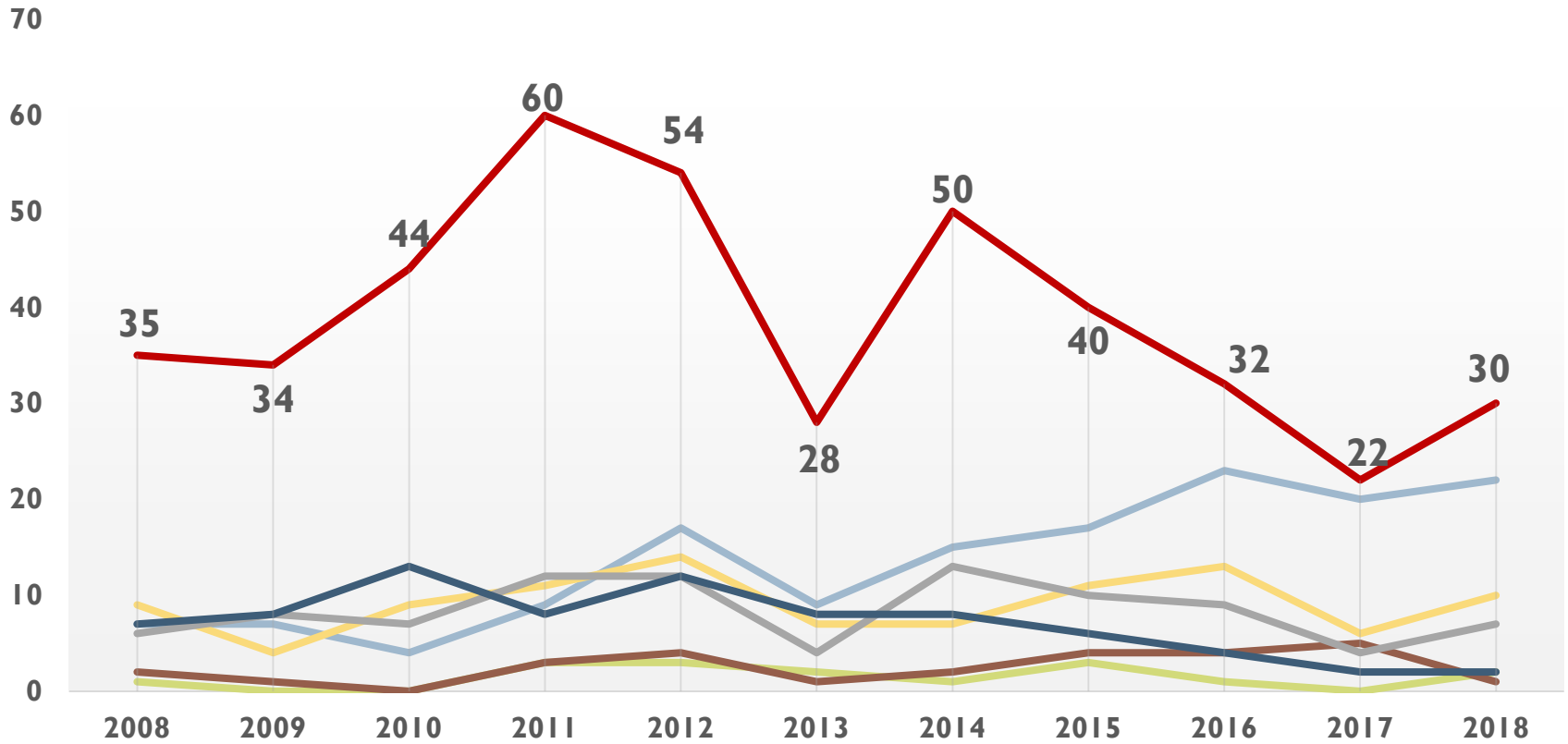


Watsonville Rx Drug Deaths, 2018

- ▶ **Female, morbid obesity, chronic pain, depression, anxiety, insomnia**
 - ▶ Prescribed hydrocodone & zolpidem plus:
 - ▶ Alcohol abuse (BAC 0.10 gm%)
 - ▶ Non-prescribed Soma & diphenhydramine.
 - ▶ Low levels of Rx clonazepam metabolite & sertraline detected.
- ▶ **Male, morbid obesity, chronic pain, depression, insomnia**
 - ▶ Non-Rx hydrocodone & Rx zolpidem
- ▶ **Male, chronic pain, schizoaffective disorder, insomnia**
 - ▶ Rx Methadone, gabapentin, and citalopram
 - ▶ Recently started on methadone for opioid dependence with observed somnolence



Accidental Deaths by Drug Class



— Opioid

— Stimulant

— Muscle Relax

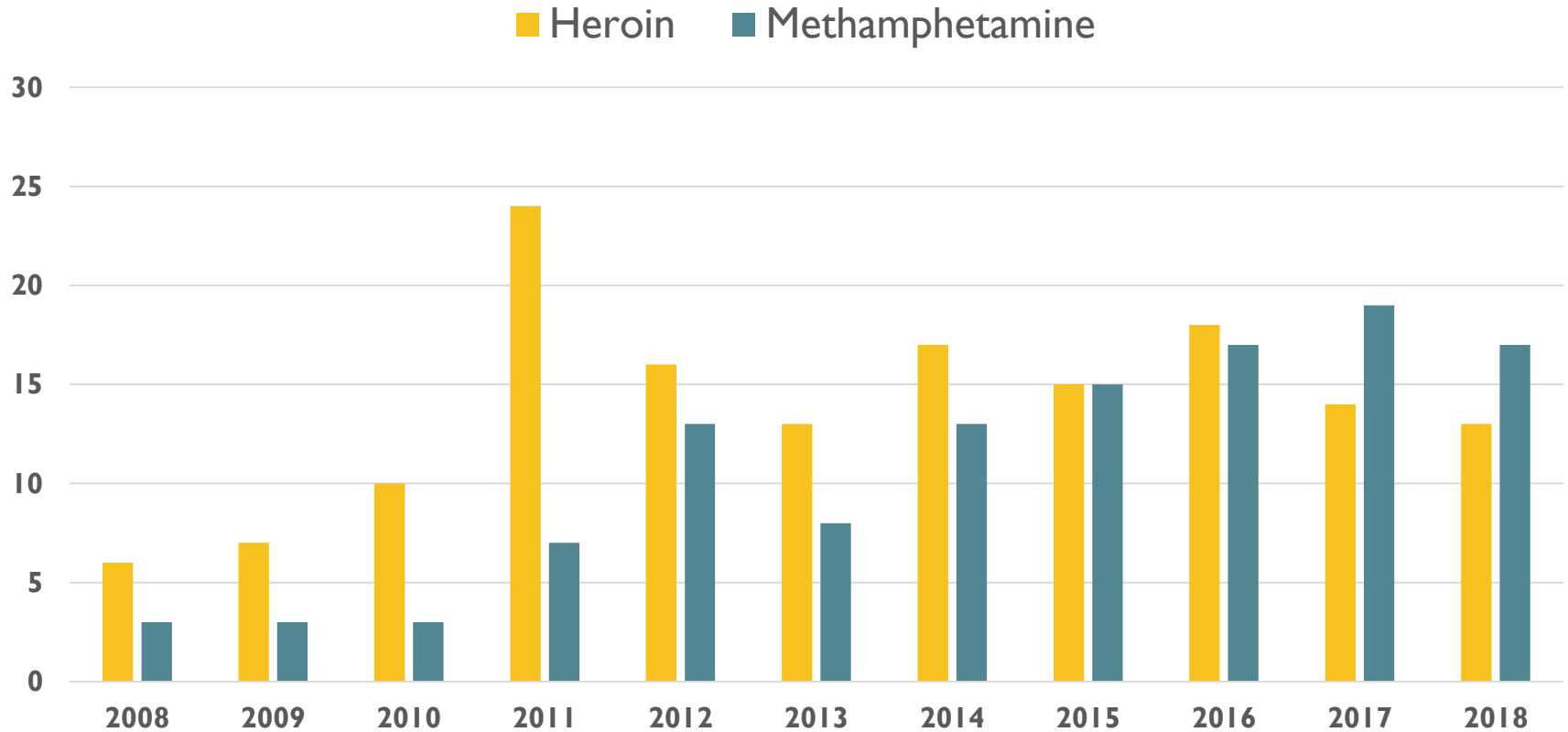
— Sedative/Hypnotic

— Antihistamine

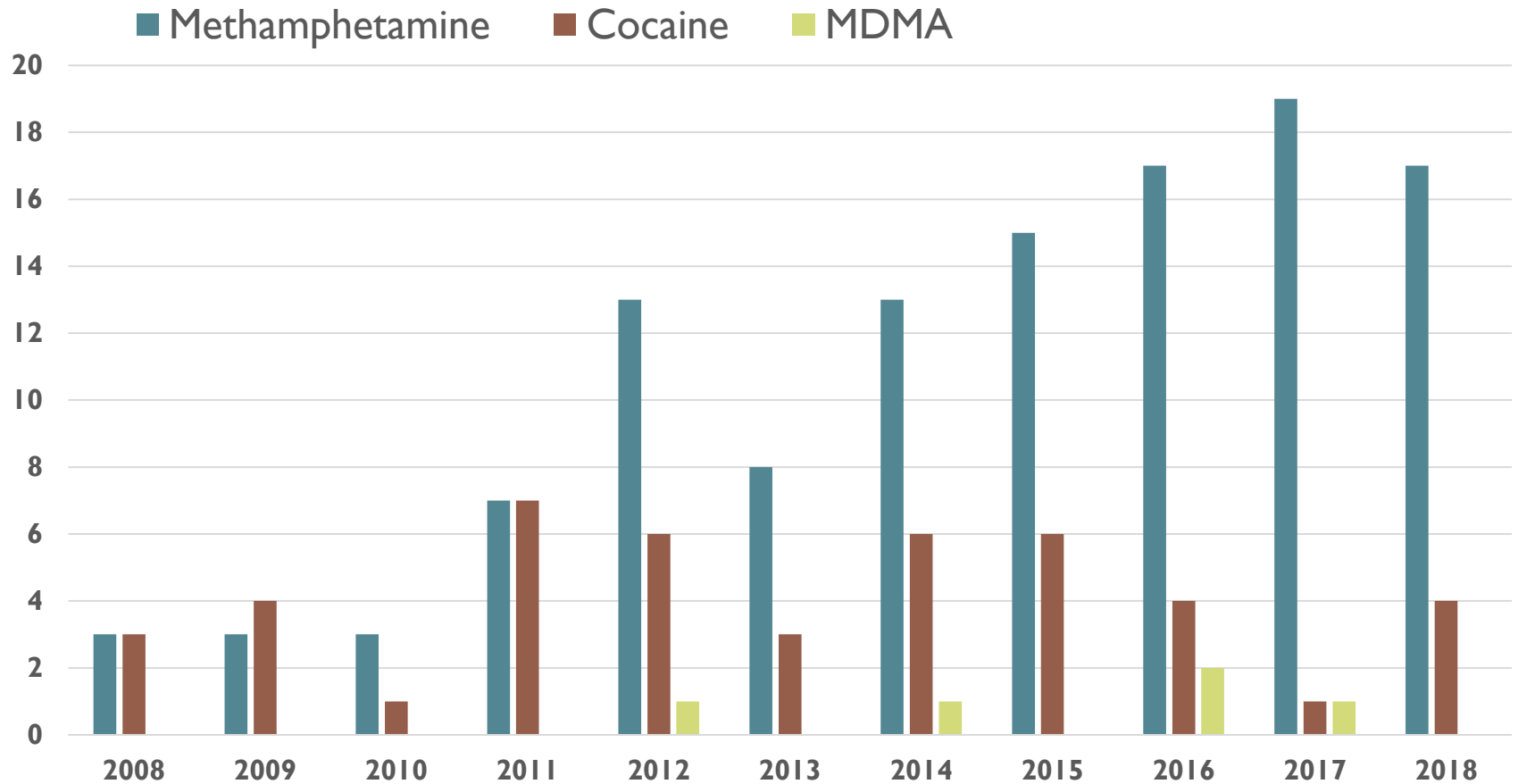
— Alcohol



Heroin vs. Methamphetamine

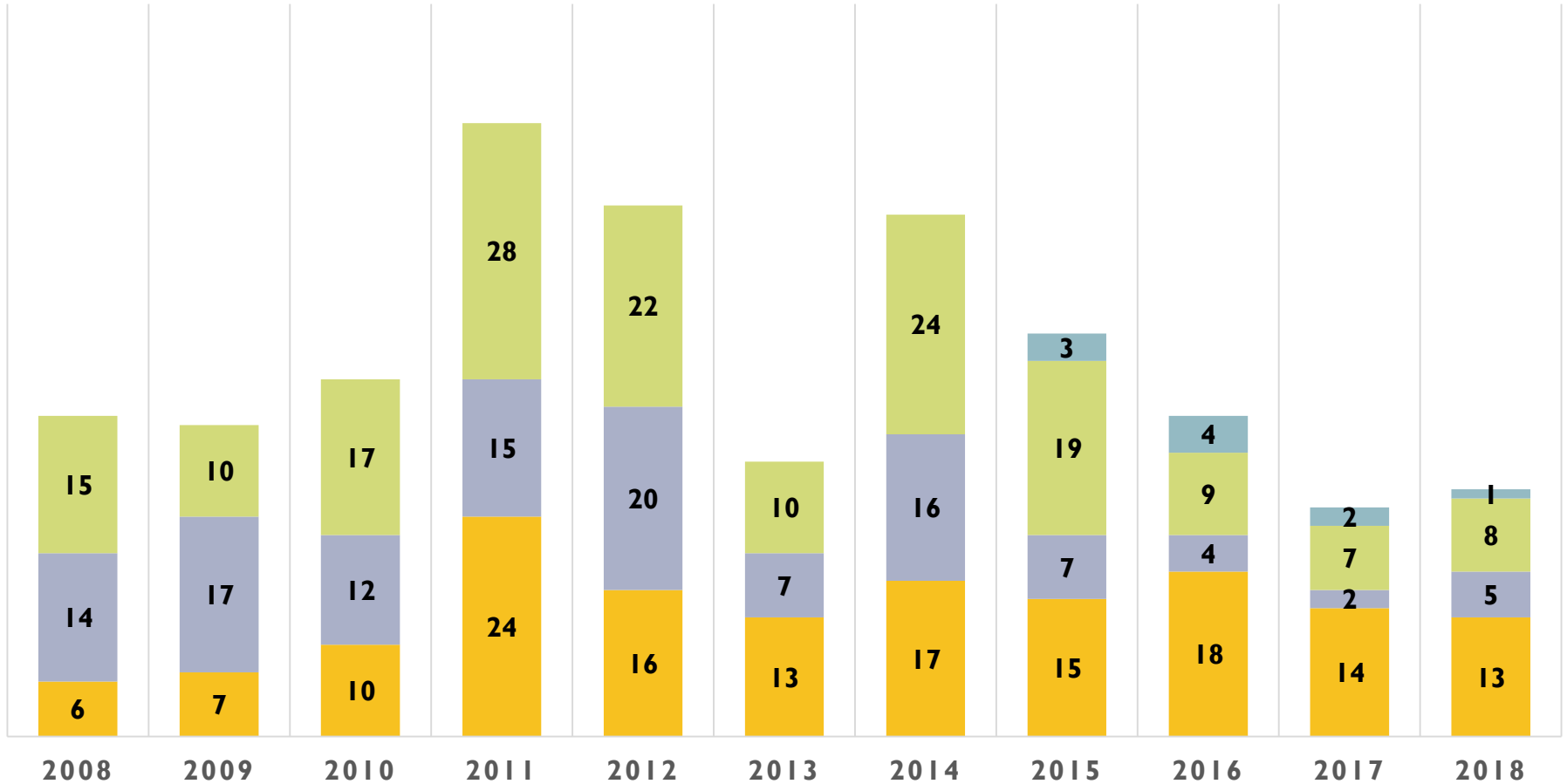


Stimulant Trends Over Time



Opioid Trends Over Time

Heroin Methadone Rx Opioids Designer/Novel



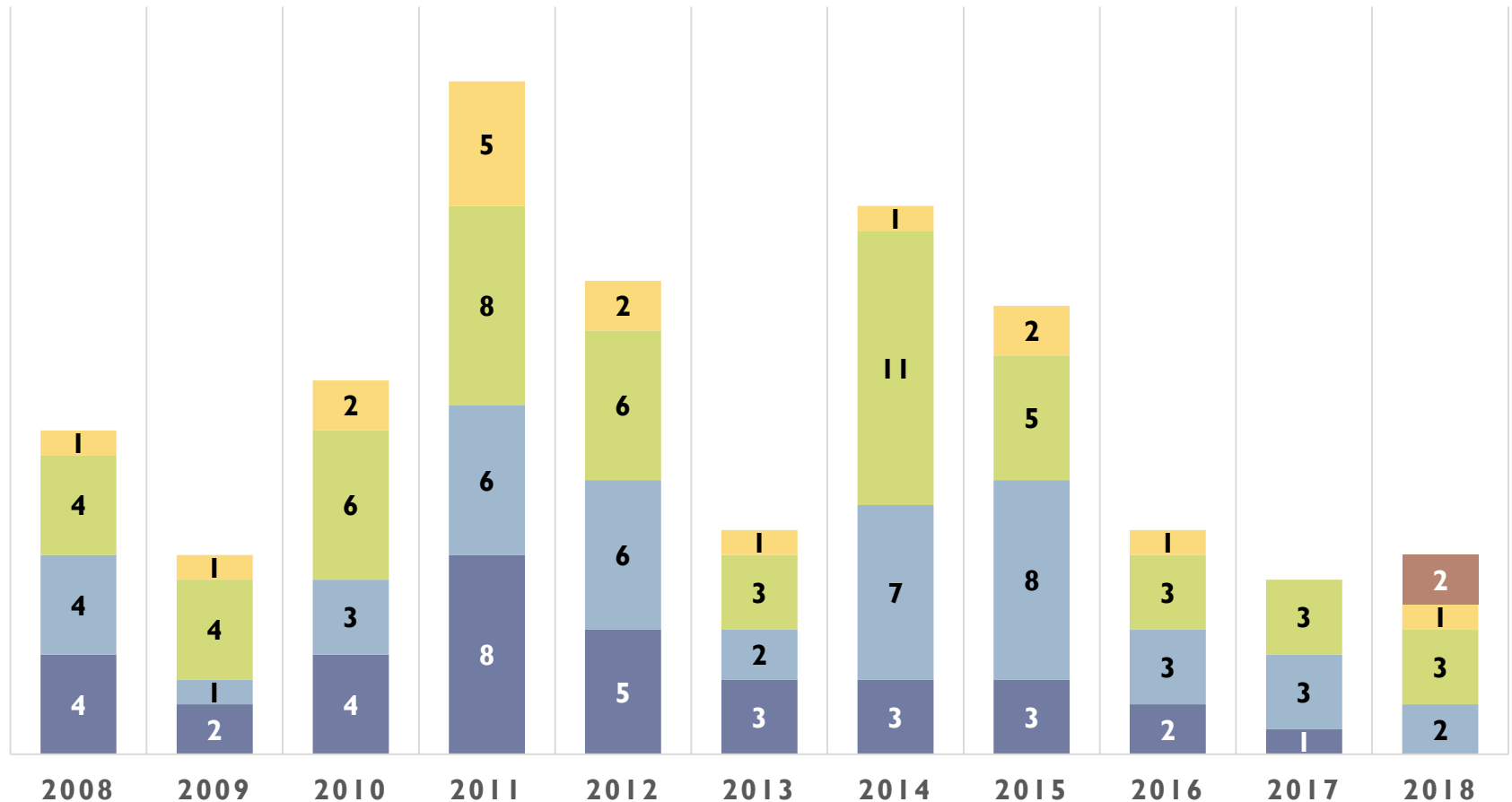
Methadone Deaths, 2018

- ▶ **Male, chronic pain, schizoaffective disorder, insomnia**
 - ▶ Rx methadone, gabapentin, and citalopram
 - ▶ Recently started on methadone for opioid dependence with observed somnolence
- ▶ **Male, Rx methadone for opiate dependence**
 - ▶ Rx methadone & diazepam
 - ▶ Off methadone for two weeks while trying Valium; reportedly turned in the Valium.
- ▶ **Male, Rx methadone for opioid dependence**
 - ▶ Rx methadone & diazepam plus heroin
- ▶ **Two males with illicit methadone & methamphetamine**



Prescription Opioids Over Time

■ Morphine ■ Oxycodone ■ Hydrocodone ■ Fentanyl ■ Buprenorphine



Prescription Drug Deaths, 2018

- ▶ **Age: 28-62 years**
- ▶ **Gender**
 - ▶ 5 females (already discussed)
 - ▶ 3 males (already discussed 2)
- ▶ **28 yr male with illicitly-obtained Rx-type drug abuse**
 - ▶ Lived with mother who had terminal cancer.
 - ▶ History of depression and anxiety
 - ▶ Girlfriend was a recovering addict
 - ▶ Oxycodone & Alprazolam intoxication



THANK YOU!!!!!!

- ▶ Lewis Farris – Sheriff-Coroner Intern
- ▶ Lindsey Westjohn – Sherriff-Coroner Intern
- ▶ Josh Pastor – Sheriff Dept. Crime Analyst

