



# *Scope of the Problem*

Opioid and Other Substance Use Disorders

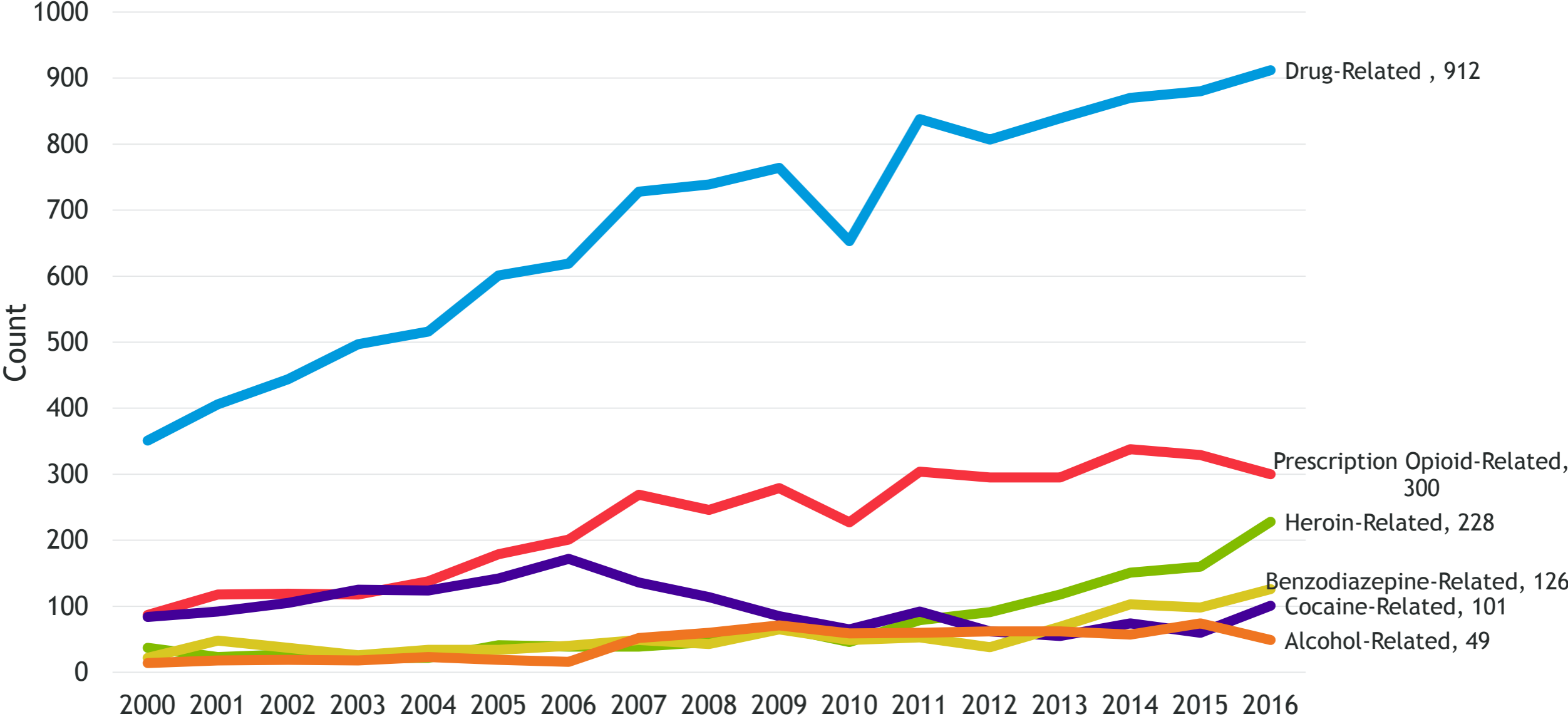
Interim Study Committee

Lindsey Myers, MPH

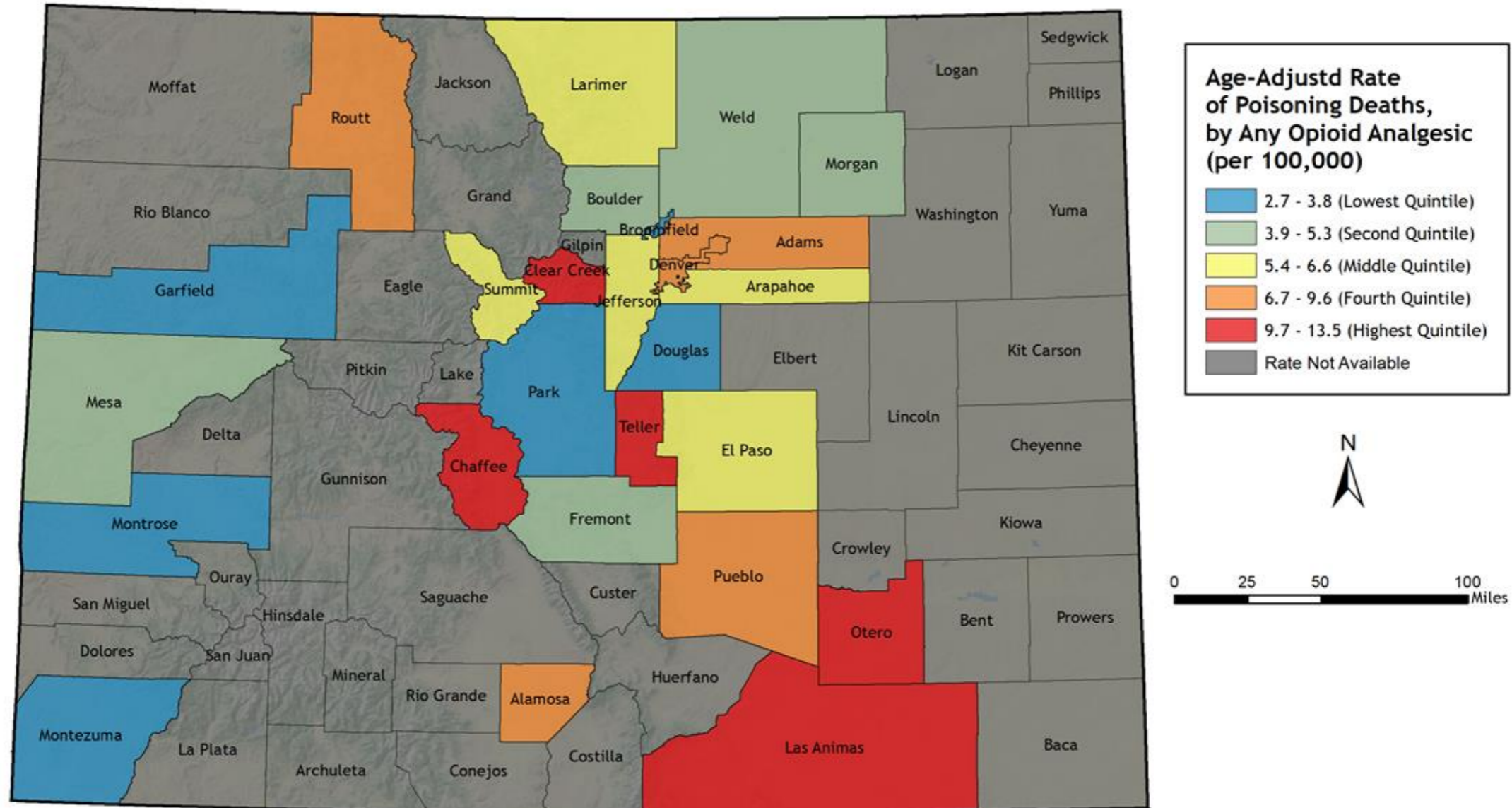
Violence and Injury Prevention-Mental Health Promotion Branch



# Age-Adjusted Rates of Alcohol and Drug Overdoses Deaths in Colorado, 2000-2016



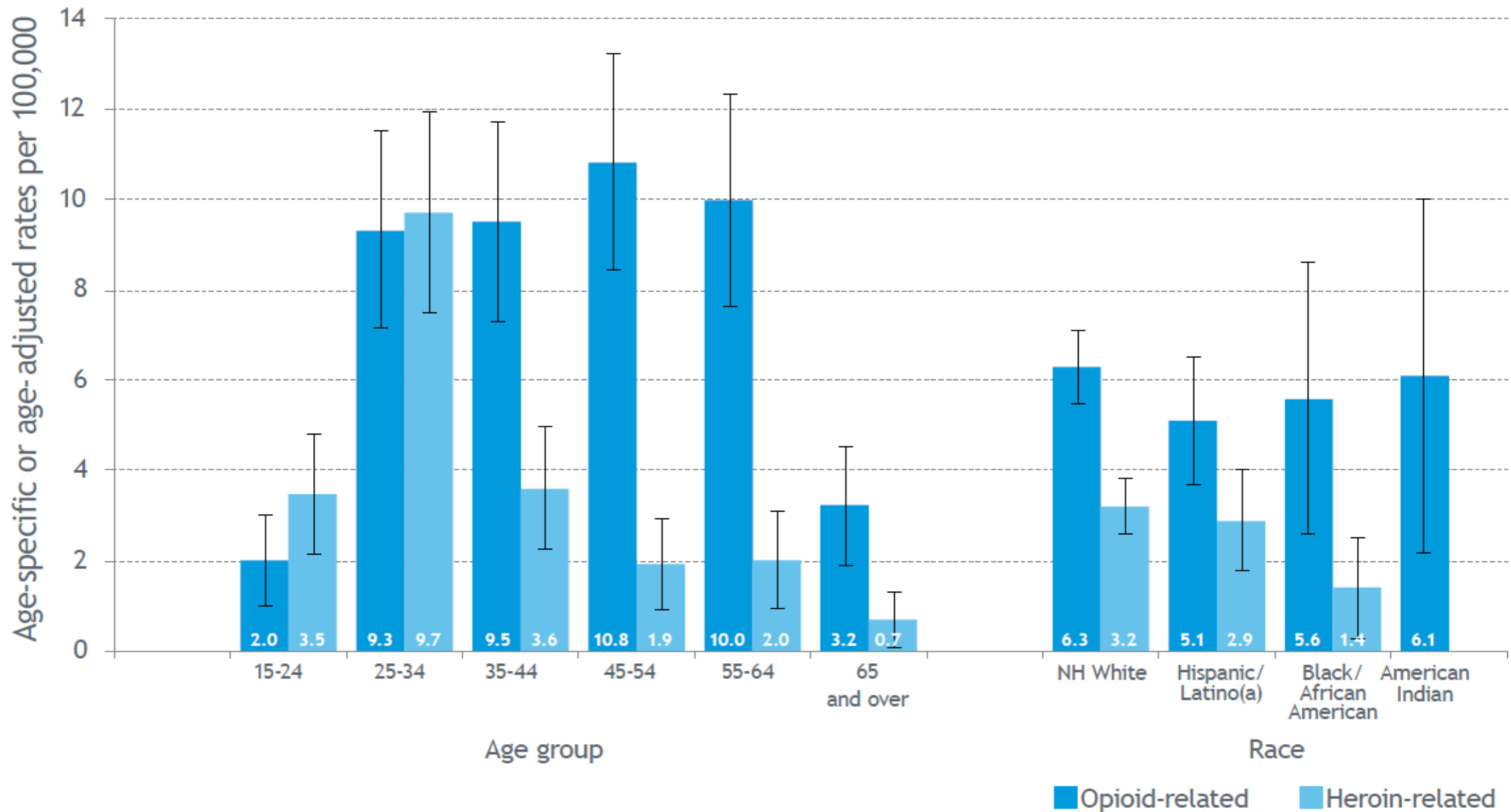
# Age-Adjusted Rate of Poisoning Deaths by Any Opioid Analgesic\* Among Colorado Residents, by County, Colorado, 2013-2015



\*Cause of death: Any opioid analgesic (T40.2-T40.4)  
 Rates are per 100,000 population in year and sex category. Age-adjusted rates are standardized using the 2000 US Population Standard.  
 Categories within POISONING INTENT family mutually exclusive;  
 Categories within GENERAL DRUG CATEGORIES family are also mutually exclusive.  
 Categories within SPECIFIC OPIOID TYPE are not mutually exclusive.  
 Deaths involving more than one opioid analgesic category shown in this figure are counted multiple times.  
 Opioid analgesics include natural and semi-synthetic opioid analgesics (for example, morphine, hydrocodone, and oxycodone) and synthetic opioid analgesics (for example, methadone and fentanyl).  
 Some deaths in which the drug was poorly specified or unspecified may involve opioid analgesics.  
 Definitions used based on NCHS Data Brief, No. 81, December 2011, "Drug Poisoning Deaths in the United States, 1980-2008".  
 Sources: Vital Statistics Program, Colorado Department of Public Health and Environment, Drug Enforcement Administration (DEA), Denver Field Division



Figure 2: Age-adjusted rates per 100,000 of opioid-related and heroin-related overdose deaths by age & race, 2015.



Data Source: Vital Statistics Program, CDPHE.

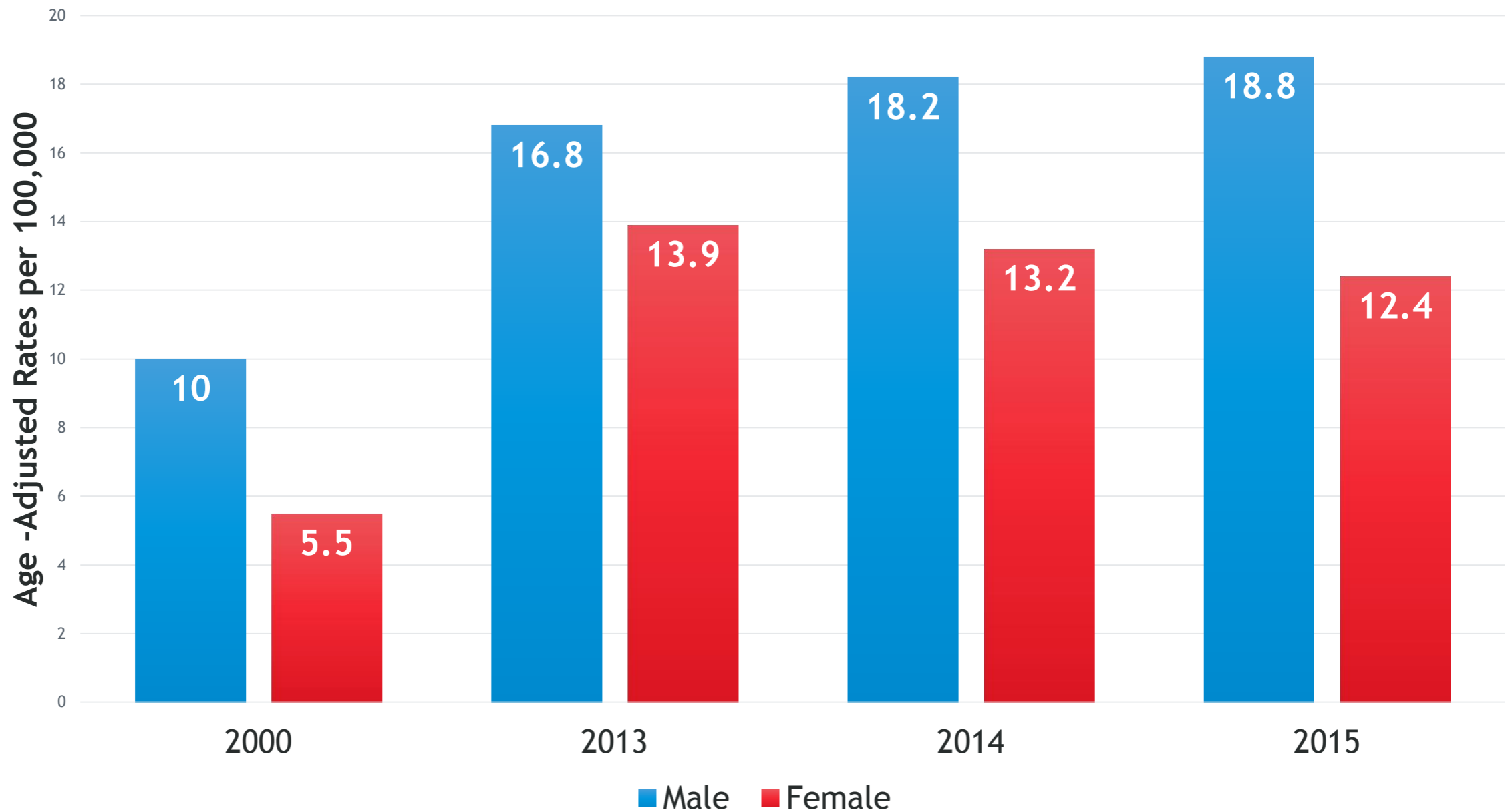
Error bars represent the 95% confidence interval of the age-specific or age-adjusted rate.

Drug-type categories are not mutually exclusive; cases are counted more than once if they were positive for multiple substances.

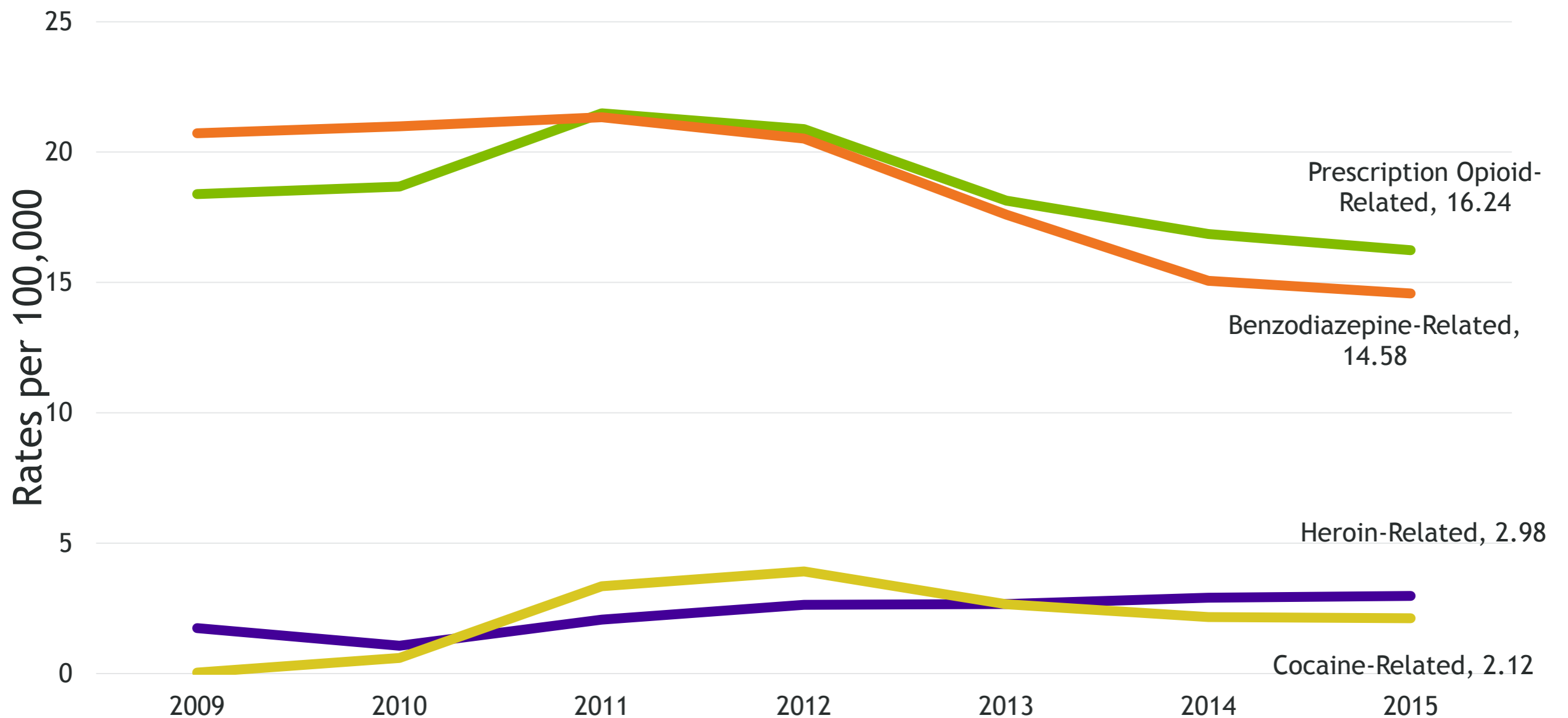
Rates for Asian/Pacific Islander, and heroin-related rates for American Indian, are not displayed due to small numbers of events (fewer than three).



# Age Adjusted Drug Overdose Rates by Gender, 2000 and 2013-2015



# Age-Adjusted Drug-Related Hospitalization Rates per 100,000, Colorado, 2009-2015\*

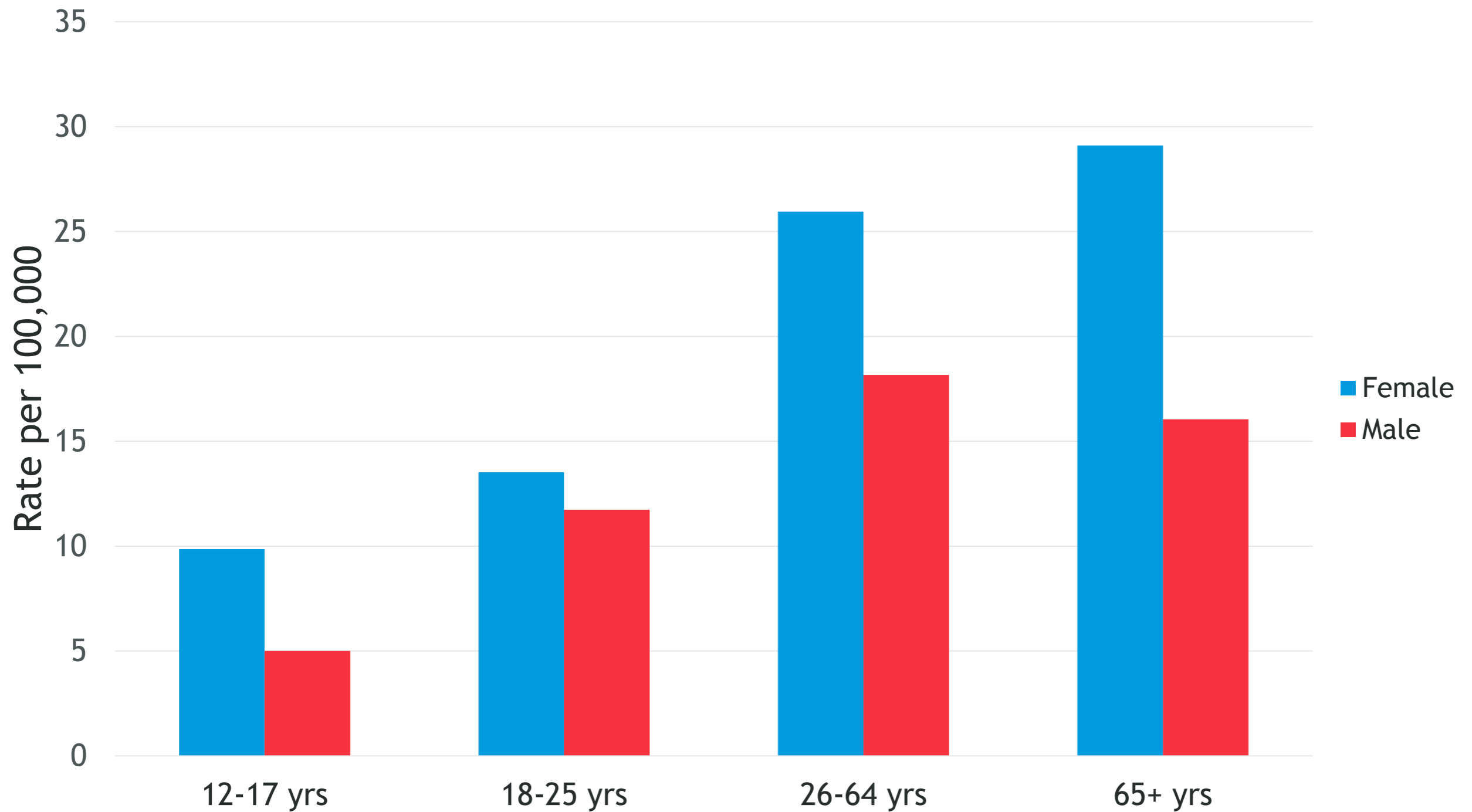


Source: Hospitalization Visit Dataset, Colorado Hospital Association  
 Analysis Completed by Colorado Department of Public Health and Environment

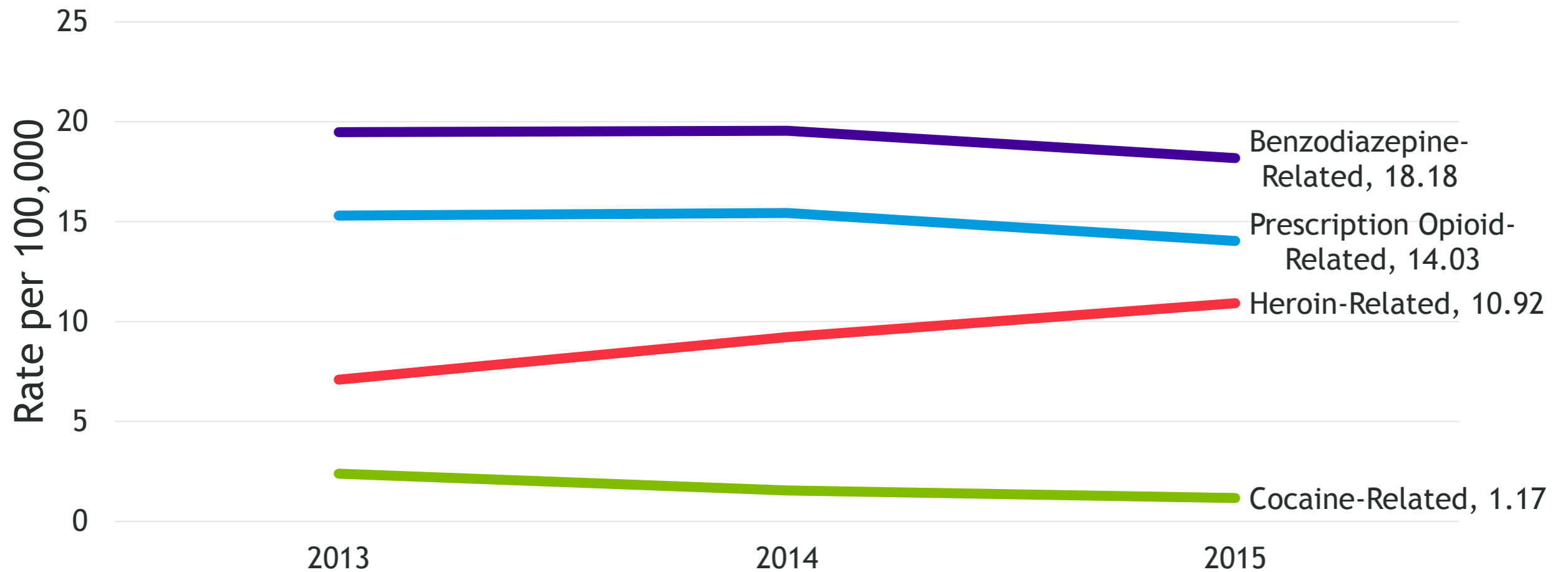
\* 2015 year is defined as October 2014-September 2015 due to change in hospital coding, which took place on October 1, 2015.



# Prescription Opioid-Related Hospitalizations, Colorado, October 2014-September 2015



# Drug-Related Emergency Department Visit Rate per 100,000, Colorado, 2013-2015\*

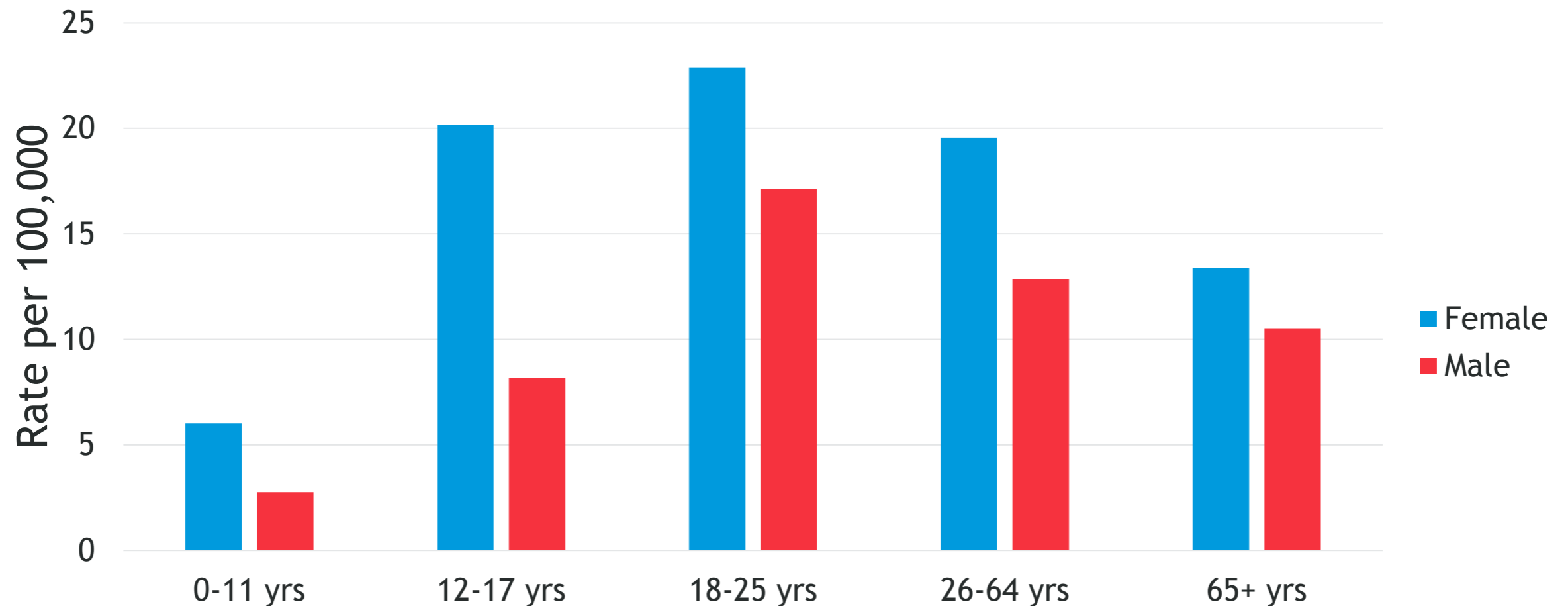


Source: Emergency Department Visit Dataset, Colorado Hospital Association  
Analysis Completed by Colorado Department of Public Health and Environment  
\* 2015 year is defined as October 2014-September 2015 due to change in hospital coding, which took place on October 1, 2015.





# Prescription Opioid-Related Emergency Department Visit Rates, 2014-2015



Source: Emergency Department Visit Dataset, Colorado Hospital Association  
Analysis Completed by Colorado Department of Public Health and Environment  
\* 2015 year is defined as October 2014-September 2015 due to change in hospital coding, which took place on October 1, 2015.



# *Colorado Prescription Drug Monitoring Program (PDMP) Data*



# Colorado PDMP

Board of Pharmacy in the Colorado Department of Regulatory Agencies runs the PDMP.

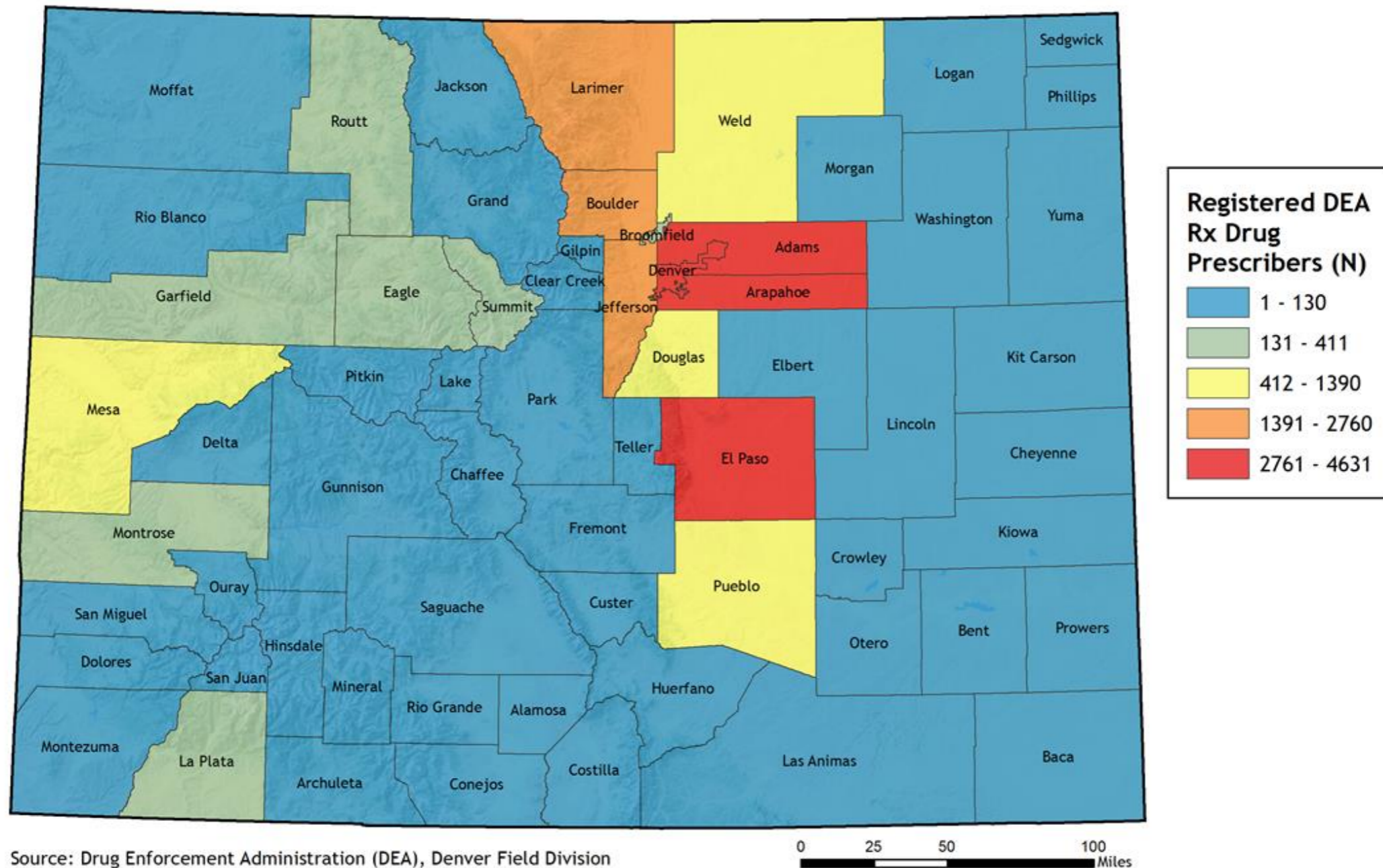
- DEA schedules II-V
- Data from 2013-2017
- Each record represents a single prescription that includes data on drug prescribed, patient, pharmacy, and prescriber

Legislation passed in 2014 to enhance monitoring:

- Added CDPHE as authorized user
- Mandatory registration
- Daily uploads
- Delegates



# Registered Drug Enforcement Administration (DEA) Prescription Drug Prescribers, by County, Colorado, 2014



# Number of Prescriptions by Year

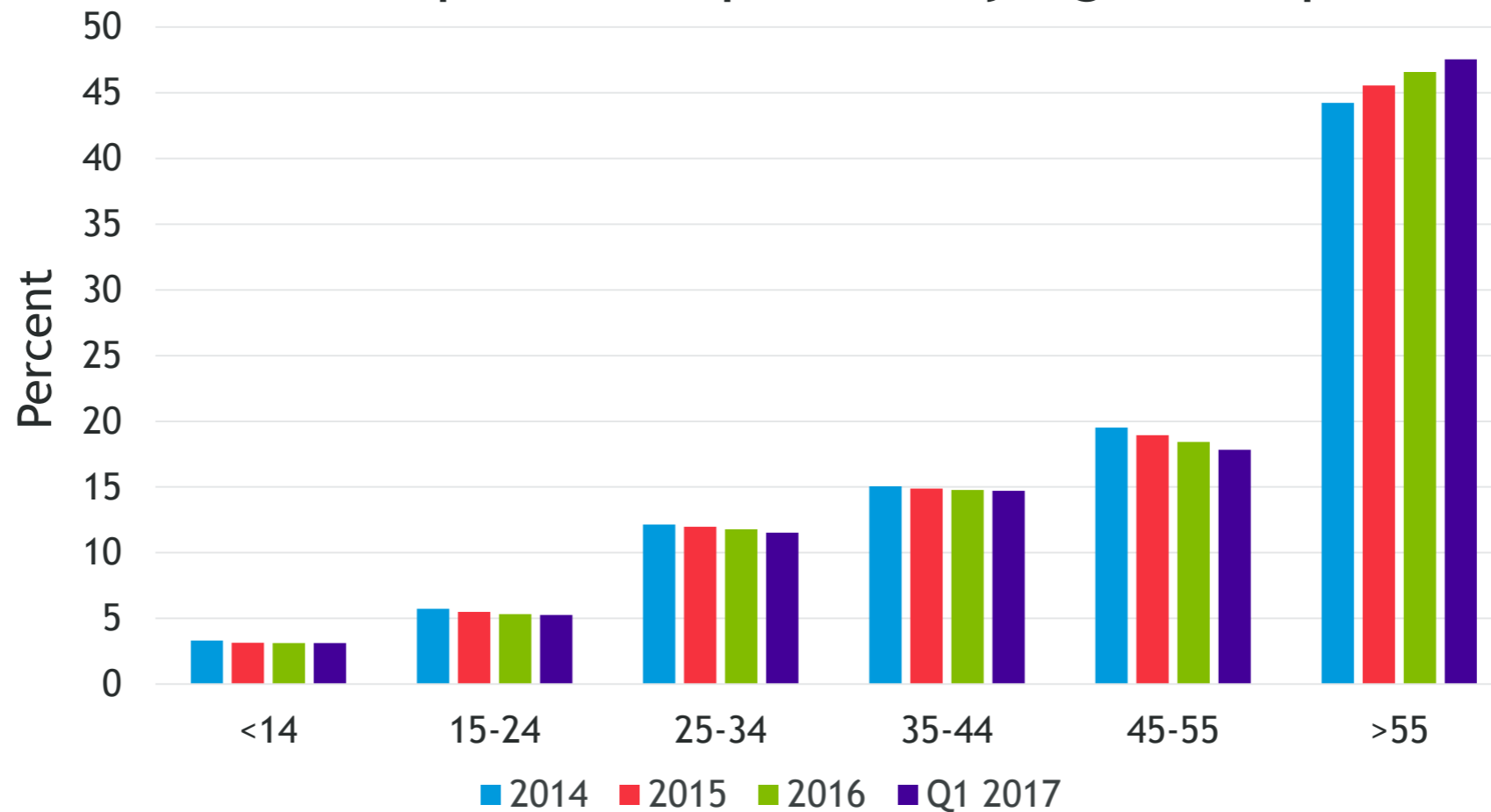
	2013	2014	2015	2016	Q1-2017
All (human) Rx	8,439,156	8,659,426	8,920,152	8,740,098	2,089,782
CO residents Rx	8,250,613 (98%)	8,480,555 (98%)	8,743,076 (98%)	8,558,207 (98%)	2,047,449 (98%)
Opioids	54%	55%	57%	57%	56%
Benzos	25%	25%	23%	23%	23%
Stimulants	10%	10%	10%	12%	12%



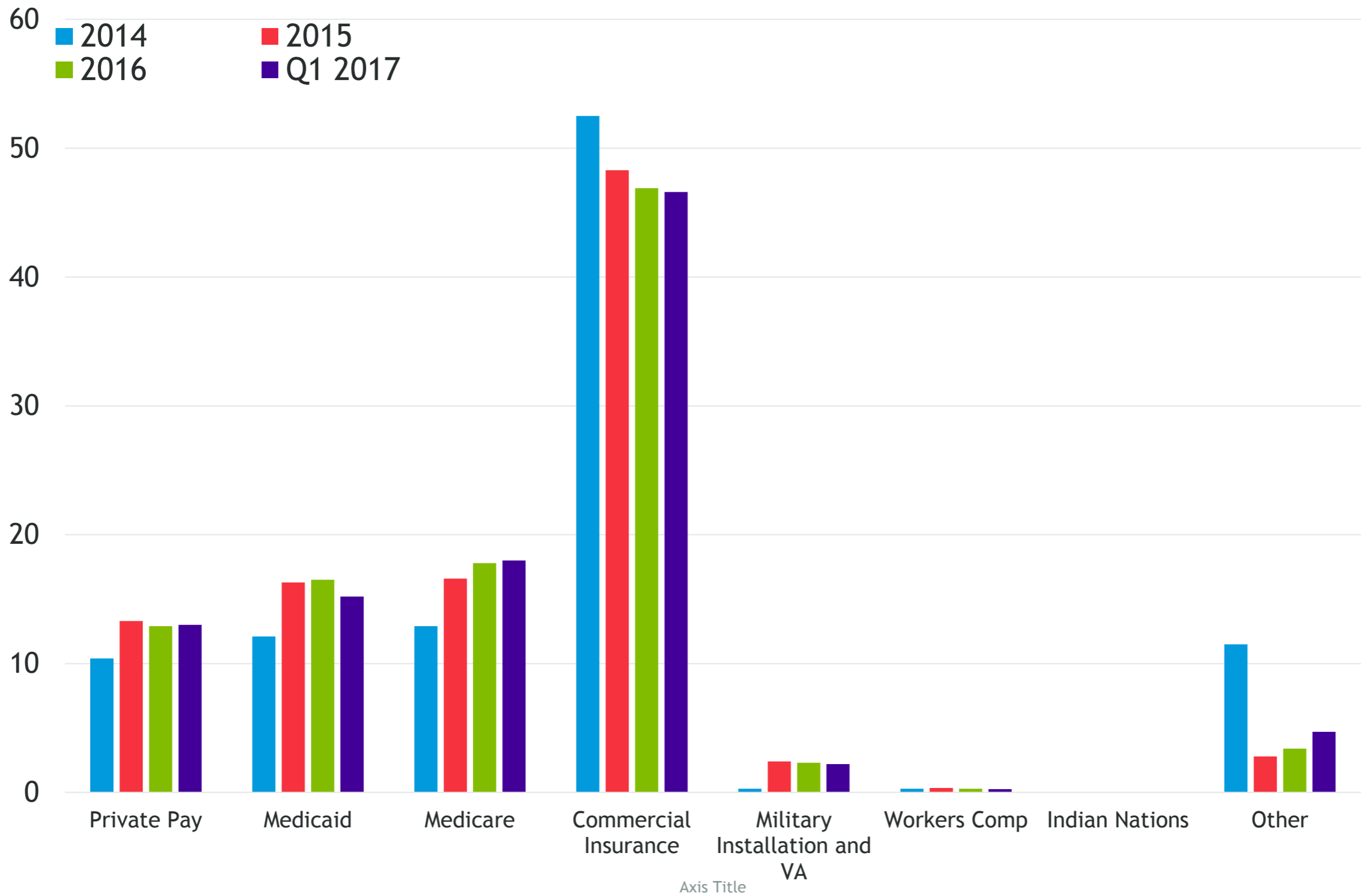
# Patient Demographics

	2014	2015	2016	Q1 2017
Gender	%	%	%	%
Male	41	42	42	43
Female	59	58	58	57

## Prescriptions Dispensed by Age Group



# Prescriptions Dispensed by Payment Type



# *County Level Data Profiles*

Comprehensive data report comprised of information from the PDMP, hospitalization and ED data, and mortality data

- Prescription rates
- CDC high risk indicators
- Characteristics of prescriptions dispensed
- Prescription opioid hospitalization and ED visit rates
- Prescription opioid/heroin fatal overdose rates





# County Level Data Profiles

Figure 1: Prescriptions Dispensed by Drug Class, Adams County, 2014-2016

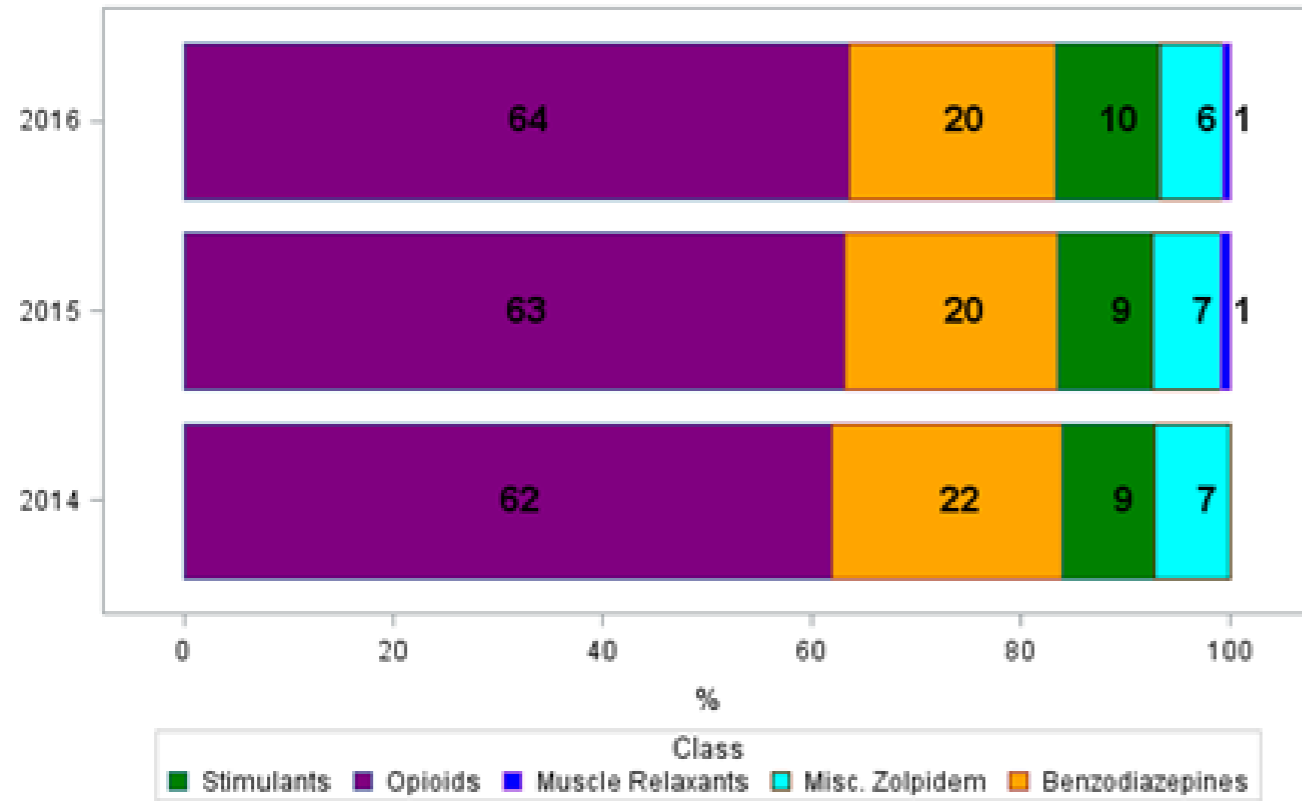


Figure 3: Prescription Rates by Major Drug Class, Adams County, 2014-2016

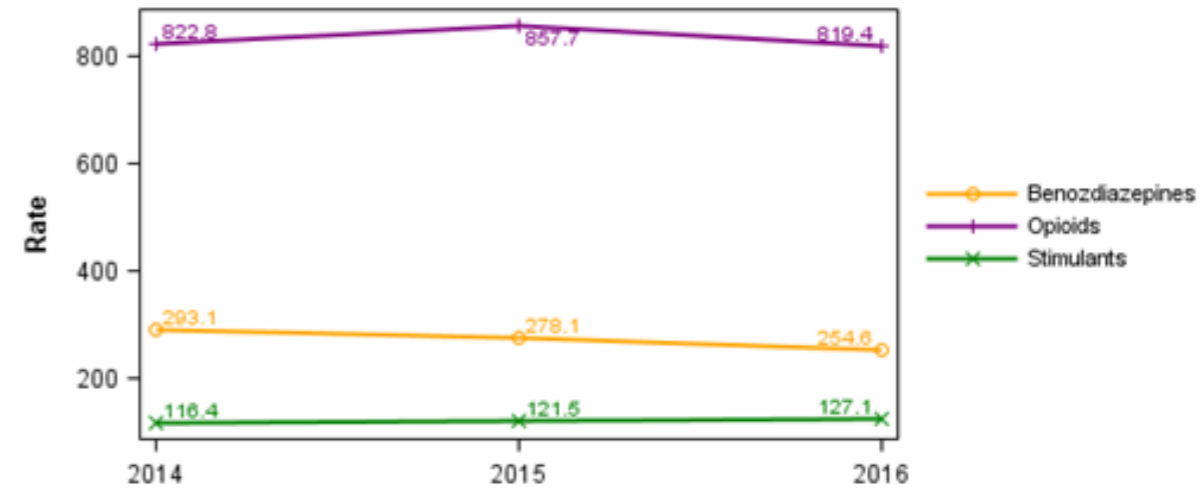


Table 2: High Risk Prescribing Practices and Patient Behaviors, 2014-2016

PDMP Indicator	2014		2015		2016	
	Adams	CO	Adams	CO	Adams	CO
Percent of patients receiving more than 90 morphine milligram equivalents	10.5%	10.3%	8.9%	8.9%	8.8%	8.7%
Percent of patients receiving more than 120 morphine milligram equivalents	6.4%	6.3%	5.6%	5.5%	5.4%	5.2%
*Rate of multiple provider episodes per 100,000 residents	65.2	60.6	45.4	64.2	34.8	49.3
Percent of patients prescribed long duration opioids who were opioid-naïve	15.6%	16.0%	14.5%	15.3%	13.4%	13.5%
Percent of patient prescription days with overlapping opioid prescriptions	22.5%	22.3%	21.7%	21.6%	21.8%	21.2%
Percent of patient prescriptions days with overlapping opioid and benzodiazepine prescriptions	12.3%	12.1%	11.7%	11.9%	10.9%	11.3%

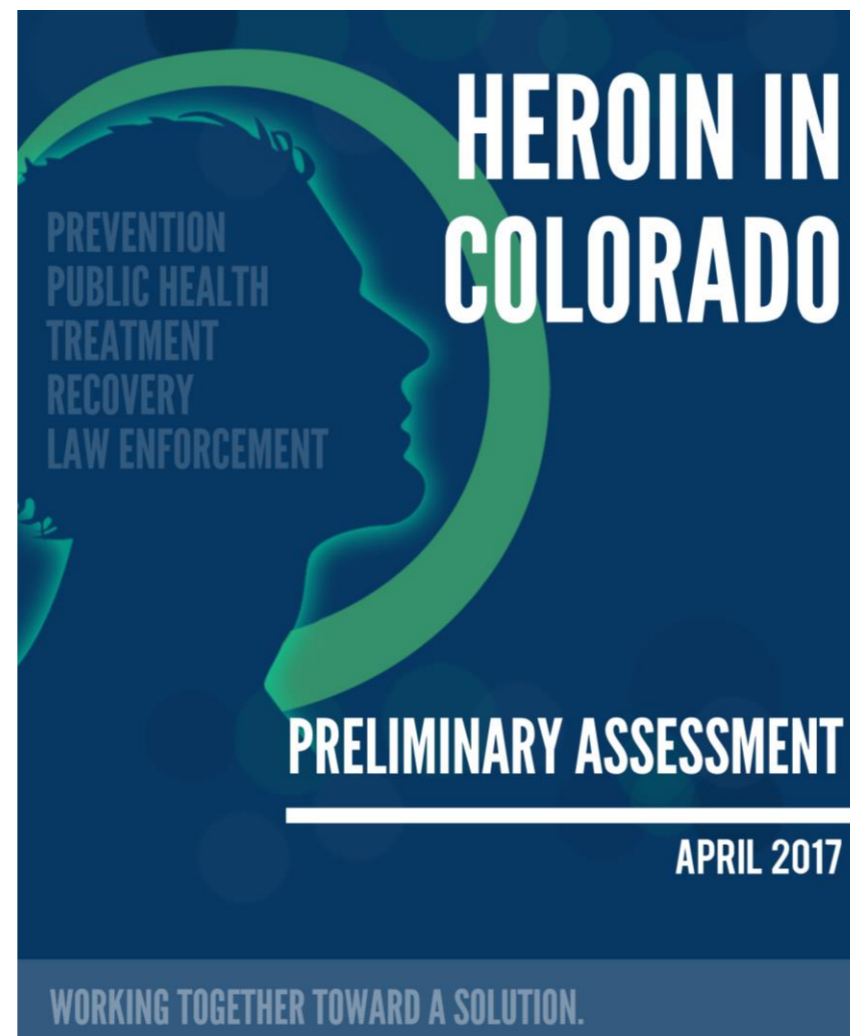
Table 1: Characteristics of Controlled Substance Prescriptions Dispensed, Adams County, Colorado, 2014-2016

Characteristics	2014	2015	2016
Number of Prescriptions Dispensed	638,414	666,277	632,869
Number of Unique Patients	131,746	135,947	131,068
Number of Unique Prescribers	12,397	13,487	13,625
Number of Unique Pharmacies	971	850	877
Estimated Median Distance Traveled by the Patient to the Prescriber (in miles)	8.0	8.4	8.2
Estimated Median Distance Traveled by the Patient to the Pharmacy (in miles)	3.1	3.1	3.1

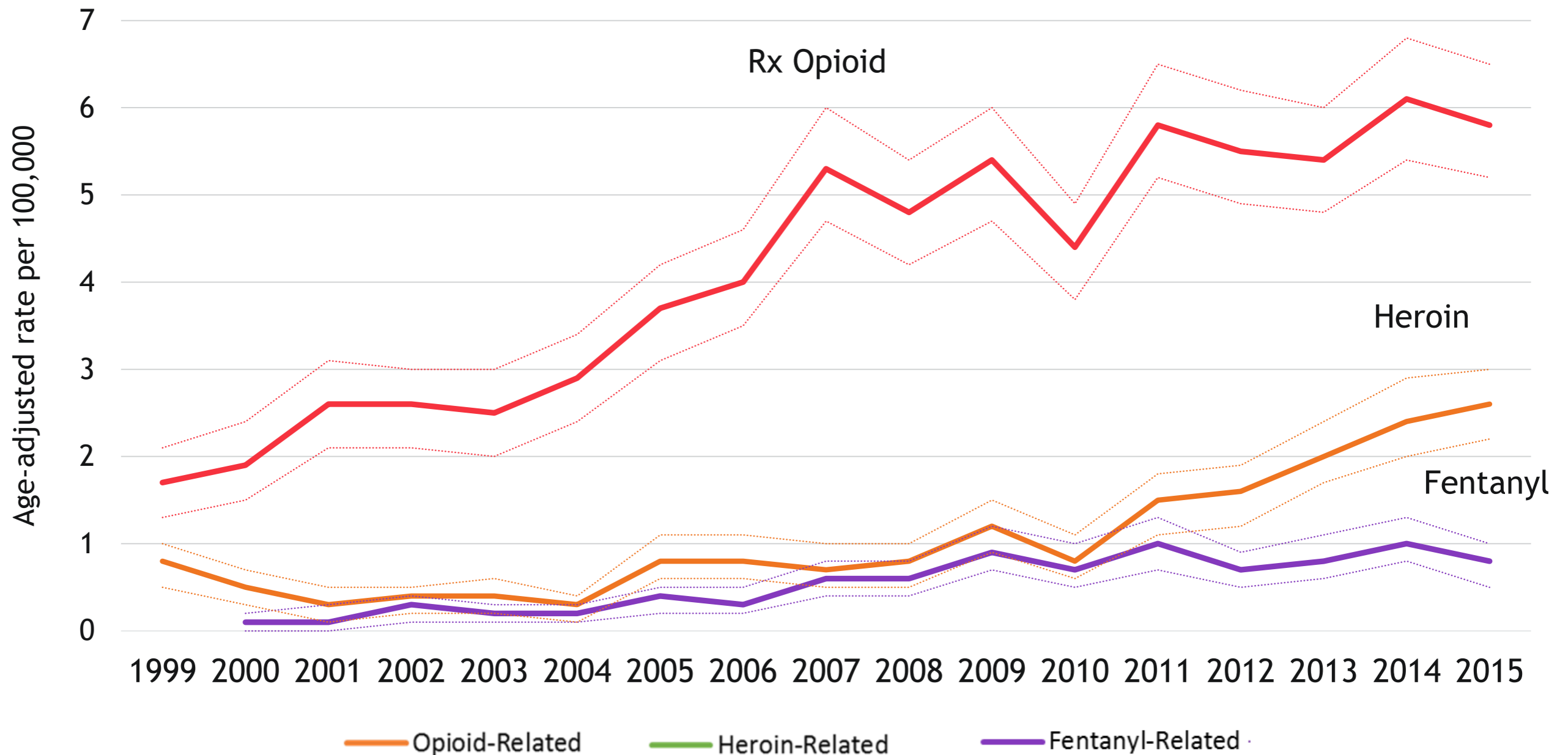


# Preliminary Assessment

## *Public Health*



- Increasing rate of Rx opioid and heroin related deaths
- Low steady trend of fentanyl related deaths

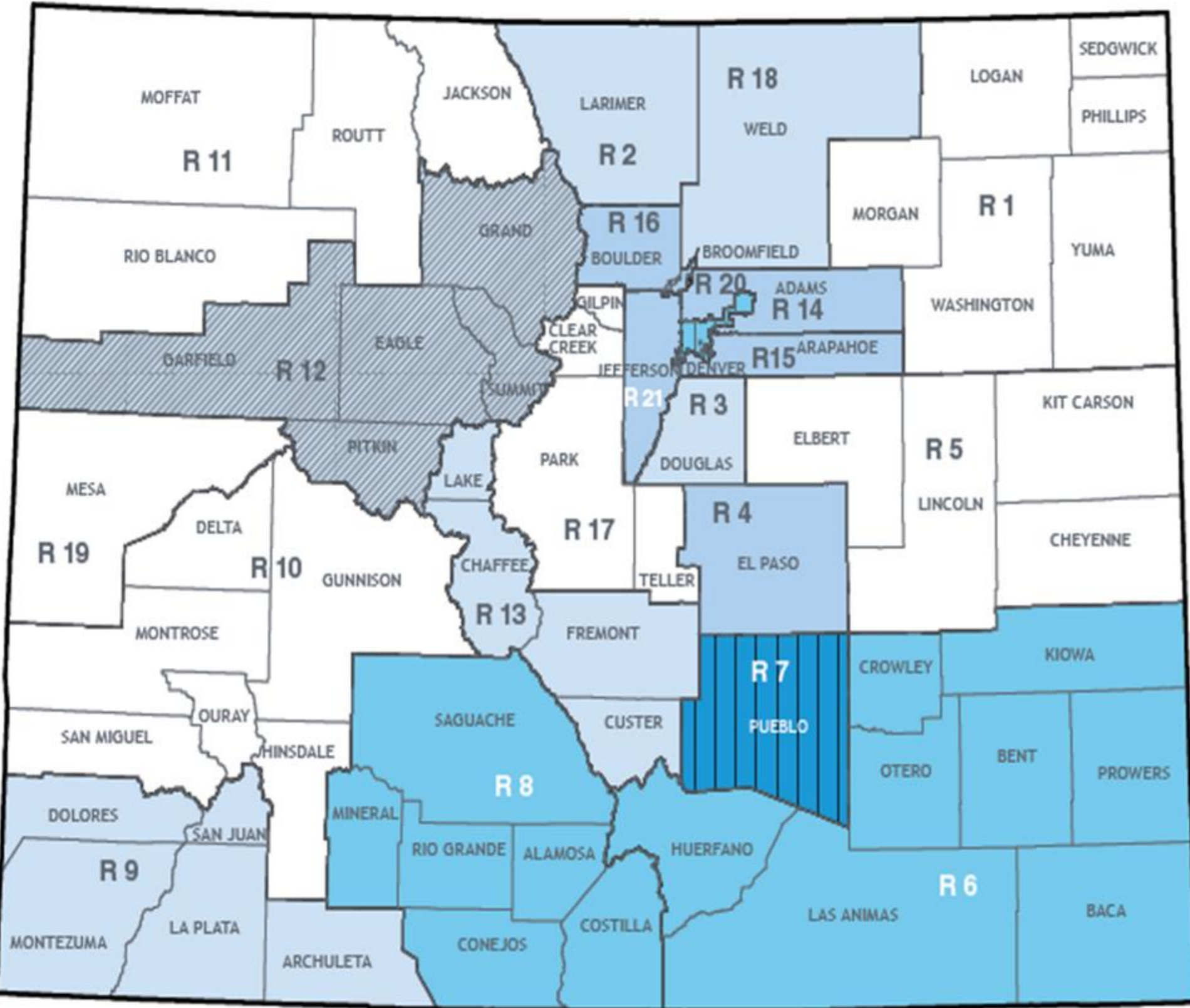


# Overdose Death

93% increase in the number of heroin-related overdose deaths.



# Age-Adjusted Heroin Related Overdose Death Rates by Health Statistics Region, Colorado, 2013-2015



Age-adjusted rates, poisoning deaths (per 100,000 population) cause of death: Heroin (T40.1)

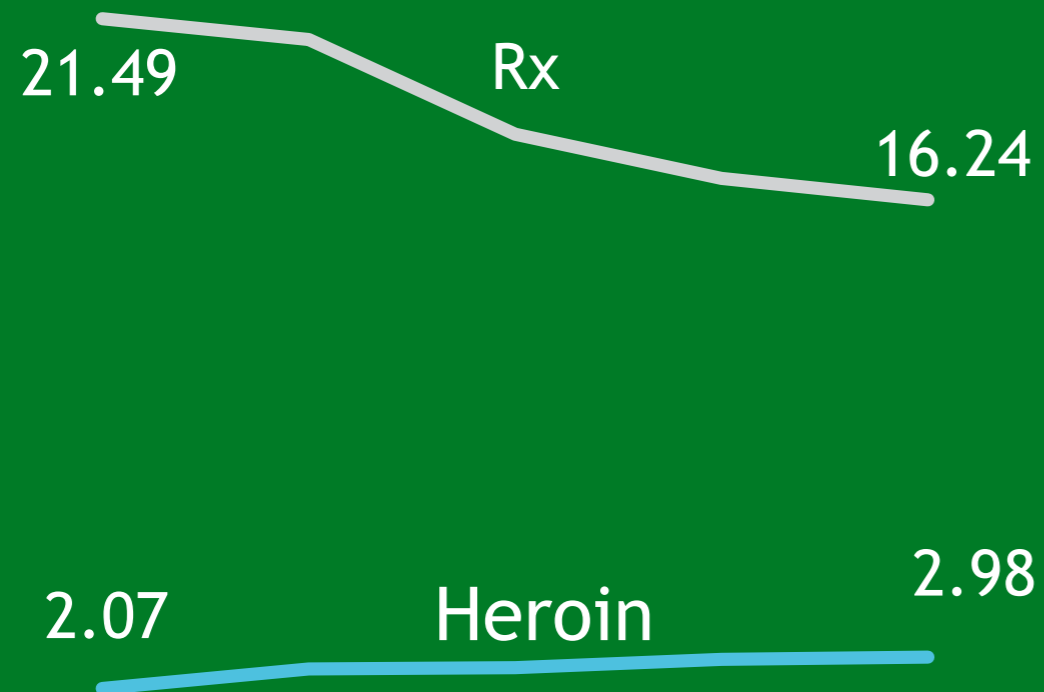
by Health statistics region:

- Lowest quartile (0.90-1.70)
- Second quartile (1.71-3.40)
- Third quartile (3.41-4.40)
- Highest quartile (4.41-8.70)
- Regional prevalence suppressed
- Statistically lower than average
- Statistically higher than average

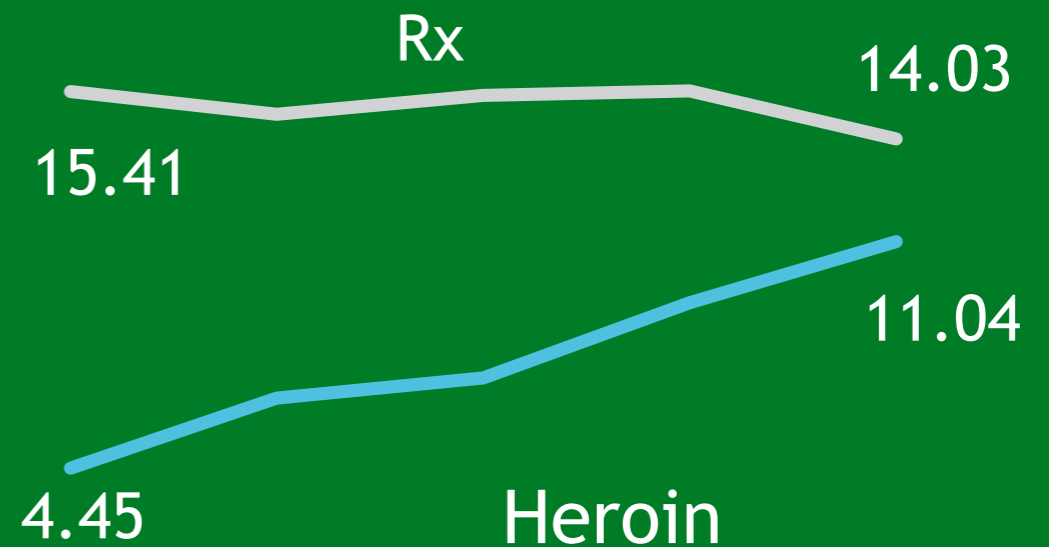


# Non-Fatal Overdose

## Rate of Hospitalizations

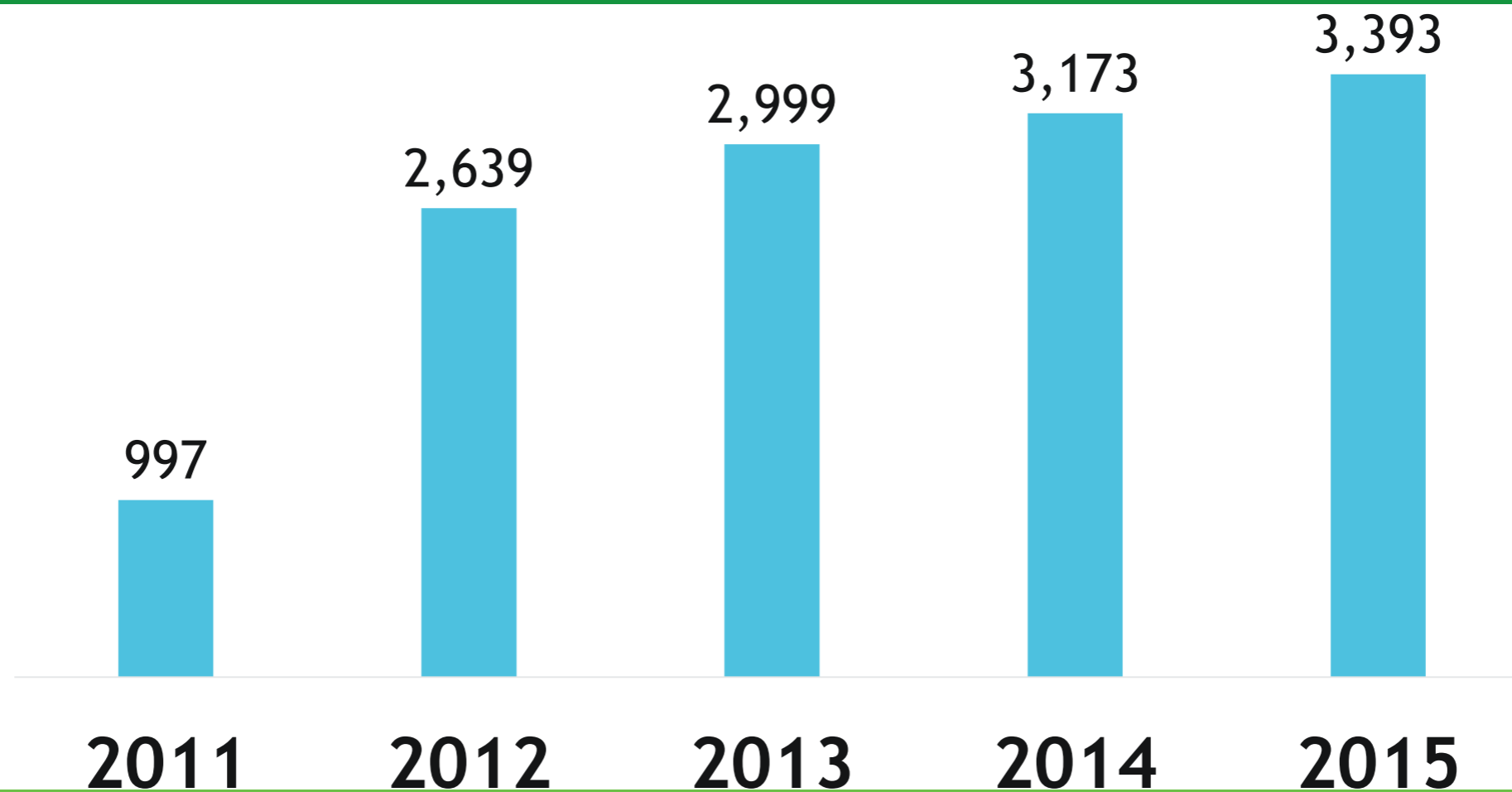


## Rate of Emergency Department Visits



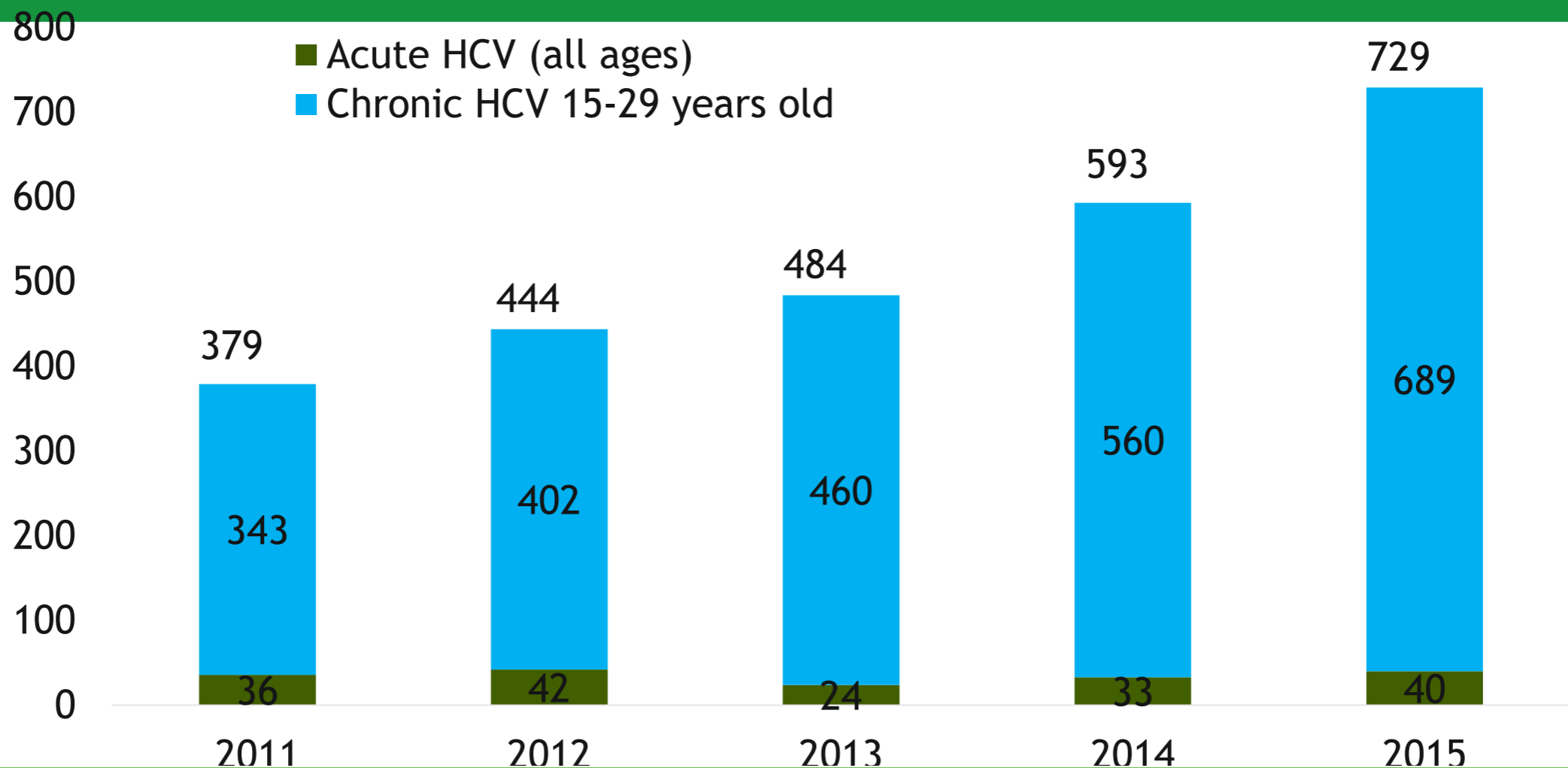
# EMS Naloxone Administration

240% increase in the number of naloxone administrations.



# Hepatitis C Virus

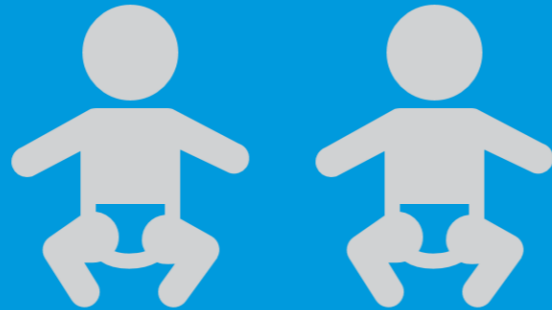
## HCV Cases in Colorado: Acute and Newly Reported Chronic Cases Among Persons 15-29 Years of Age





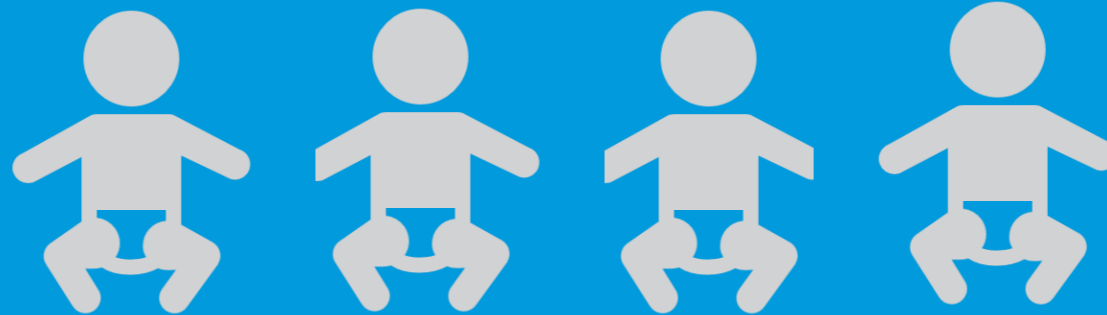
# Neonatal Abstinence Syndrome (NAS)

2011



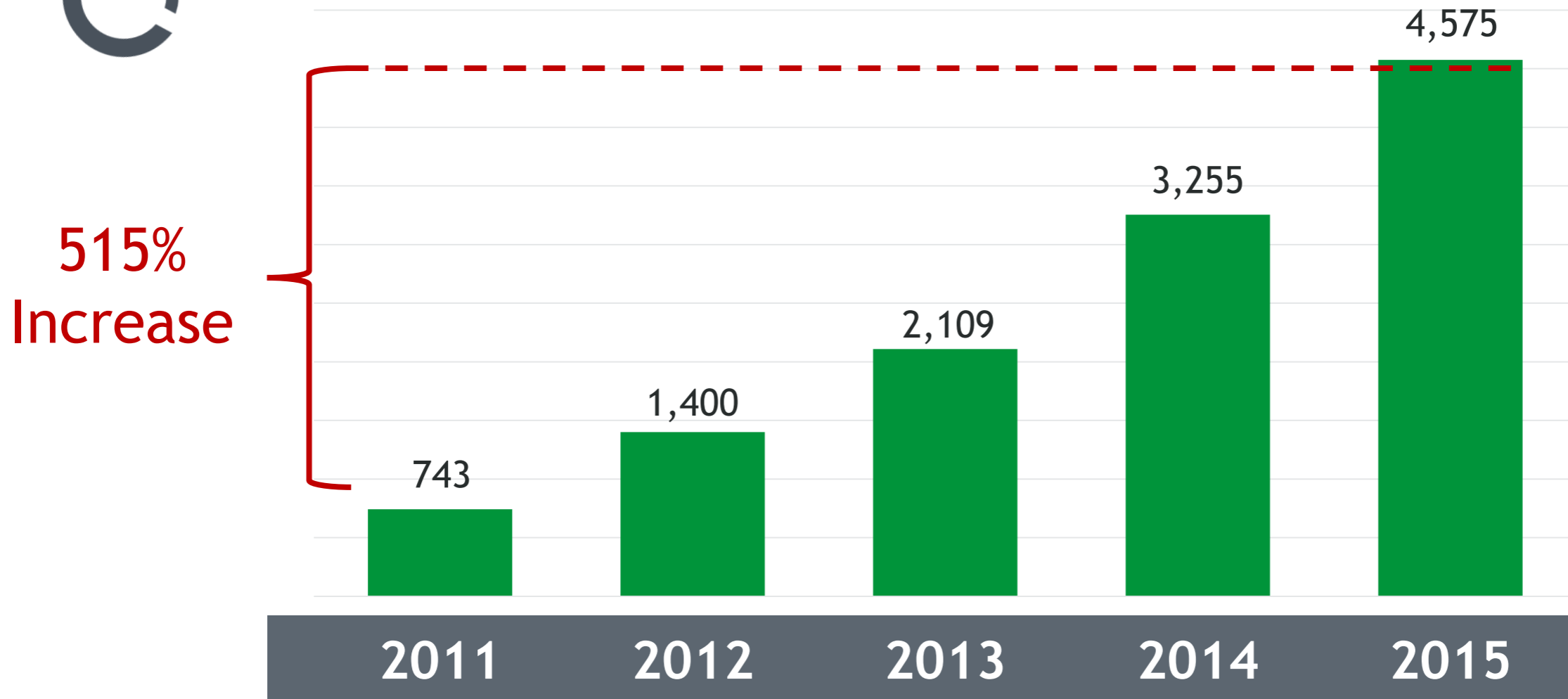
The rate of NAS has increased **83%**

2015



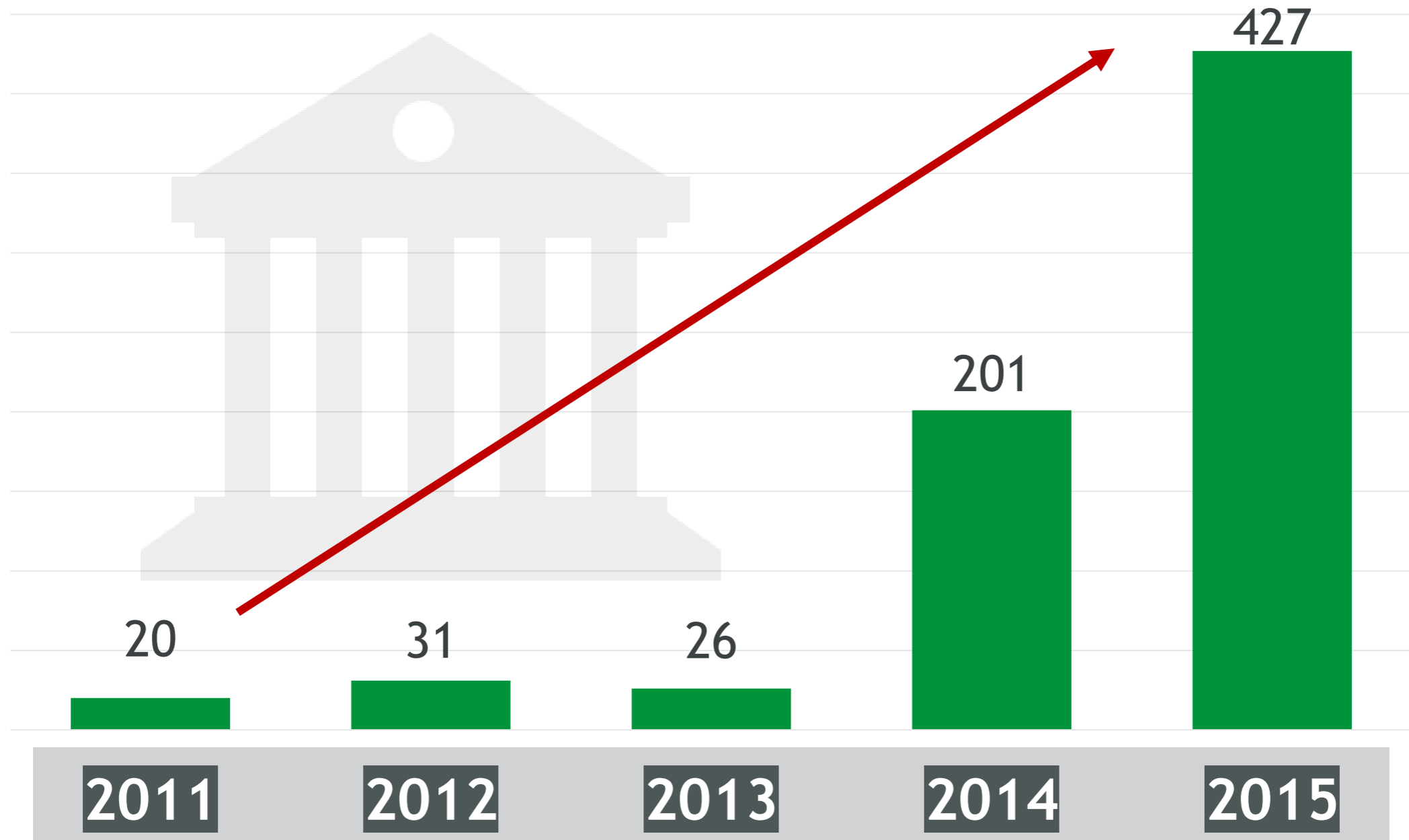
# Law Enforcement Arrests

Increase in heroin-related arrests in Colorado.



# Law Enforcement Seizures

2,035% increase in heroin-related seizures in Colorado.

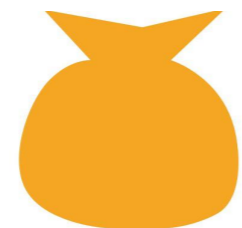


# Law Enforcement Seizures

1,581% increase in pounds of heroin seized in Colorado.

Potential Street Value  
of \$42.6 million

16 pounds



2011

269  
pounds



2015



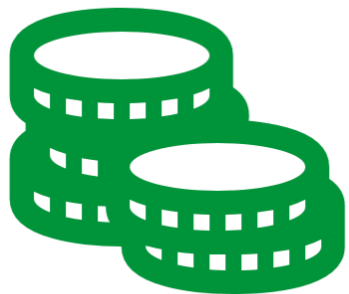
# Price & Purity

---



**Purity levels in Denver have decreased:**

- 2012 = 31.9 percent (high)
- 2015 = 17.1 percent (low)



**Heroin's average price per gram has dropped:**

- 2013 = \$308 / pure gram (high)
- 2015 = \$123 / pure gram (low)

# Heroin Use Survey



# Understanding Heroin Use

---

## *Results from the Denver-Metro Methadone Clinic Survey*

- Demographic information
- Heroin use behaviors
- Introduction and transition to heroin use
- Transition to injection drug use
- Perceived gaps and ways to improve prevention and treatment
- Awareness of Colorado's Good Samaritan Law
- Information on overdose experiences



# Survey Responses

**Total = 713**

---

**73 Current Heroin Users**  
**439 Former Heroin Users**  
**137 Rx Opioid Only Users**





# Respondent Demographics

**79%** Caucasian

**59%** Collegiate Experience

**43%** Rent/Own Residence

**39%** Never Married

**51%** Employed



# Survey Findings

Did prescription drugs play a role in your decision to use heroin? (N=506)



70%

**SAID YES.**

Rx drugs played a role in their decision to use heroin.

Median Age at First Rx Misuse =



18

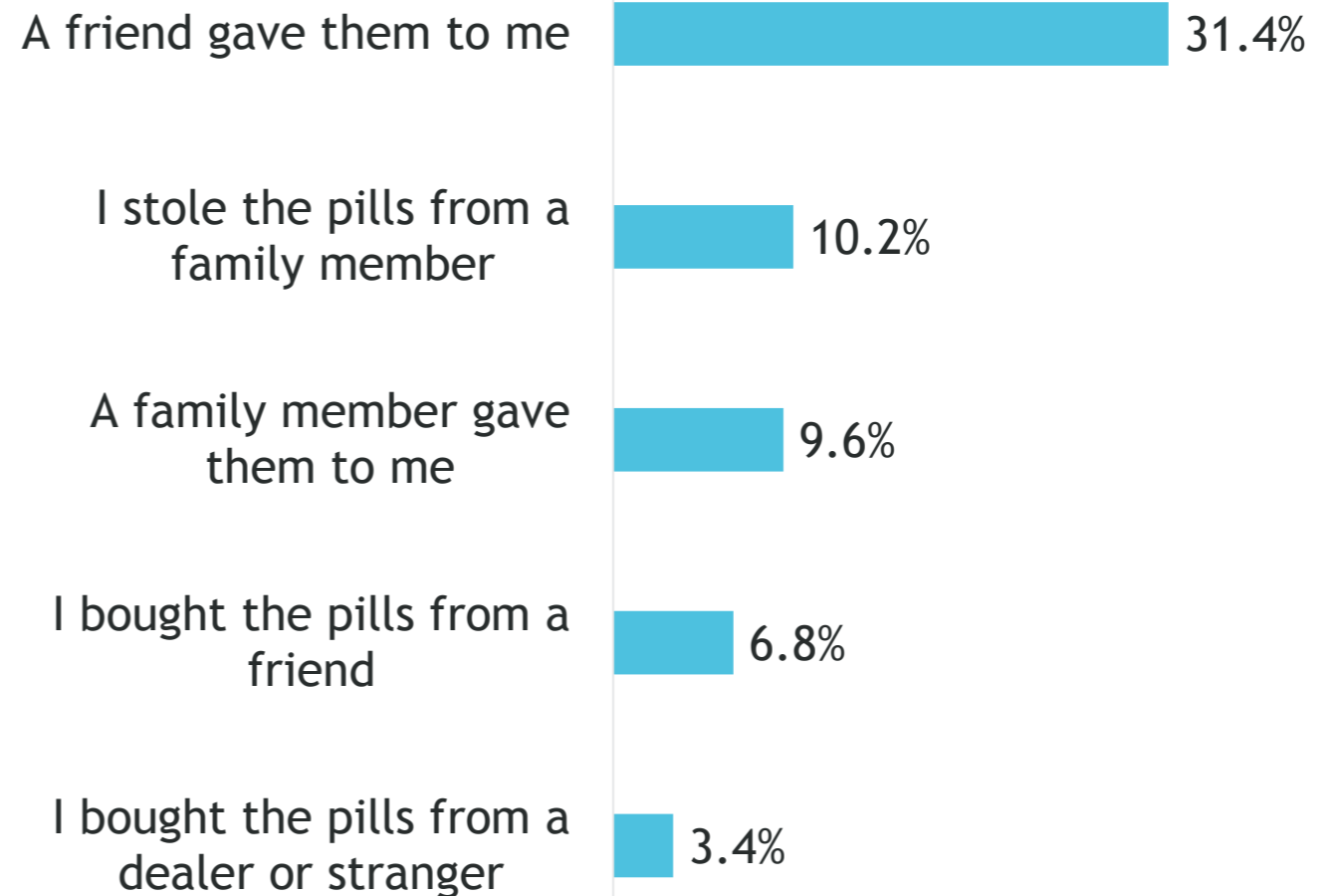
# Survey Findings

## How did you get the prescription the first time? (N=352)



**37%**

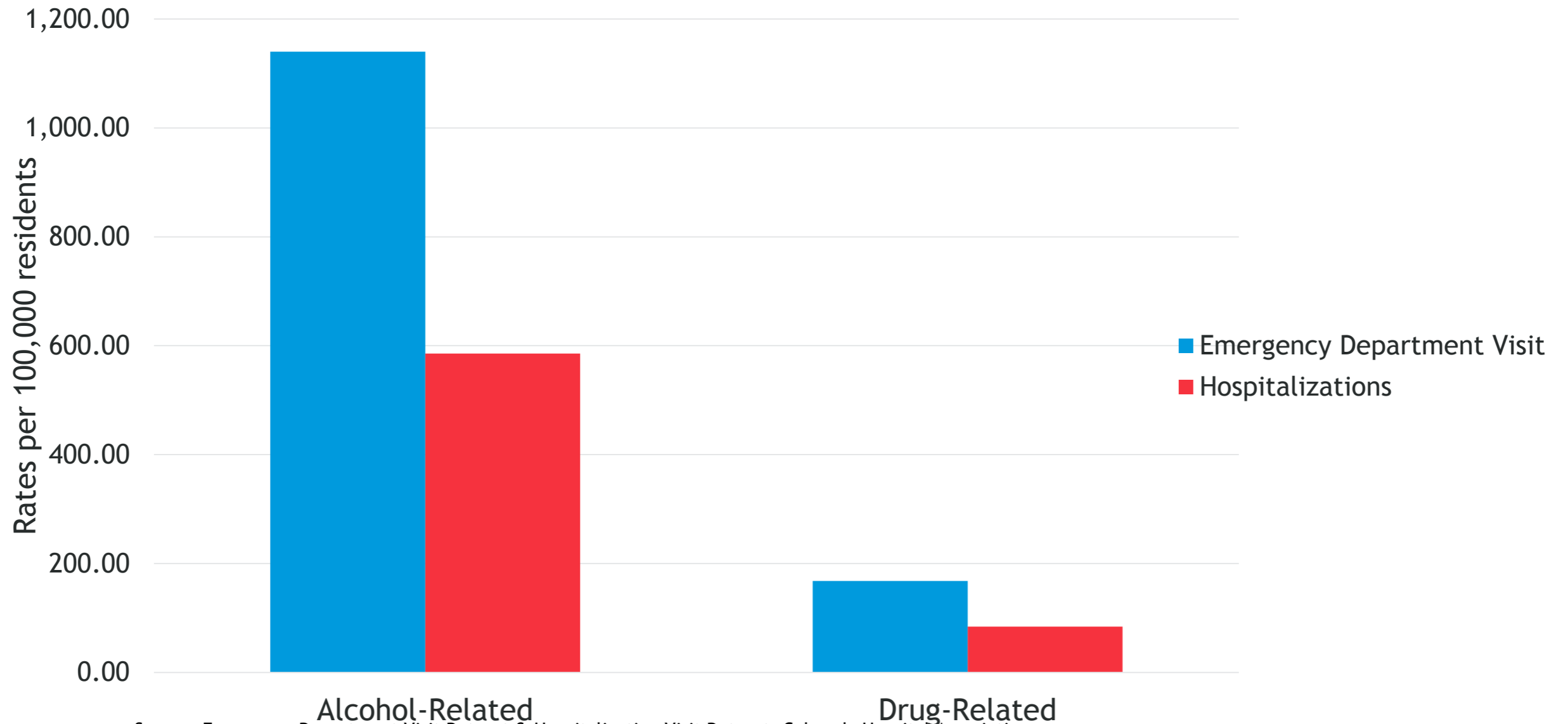
**Had a prescription from the doctor for a medical reason.**



# *Alcohol Use*



# Age-Adjusted Alcohol-Related vs. Drug-Related Emergency Department Visit and Hospitalization Rates per 100,000, Colorado, 2015\*



Source: Emergency Department Visit Dataset & Hospitalization Visit Dataset, Colorado Hospital Association.

Analysis Completed by Colorado Department of Public Health and Environment

\* 2015 year is defined as October 2014-September 2015 due to change in hospital coding, which took place on October 1, 2015.

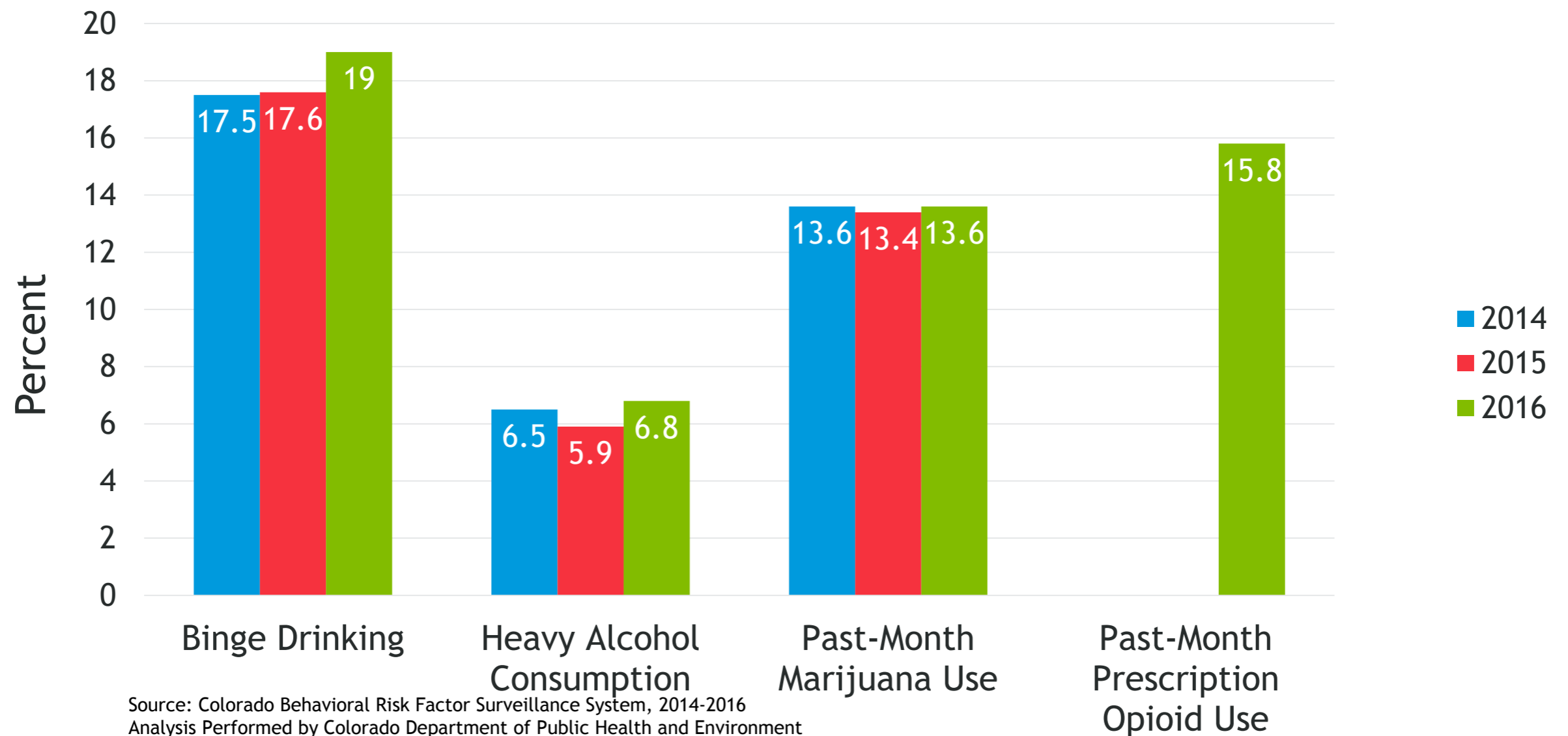




Source: <https://www.cdc.gov/alcohol/onlinemedia/infographics.html>



# Prevalence of Substance Use in Colorado, 2014-2016



# *Binge Drinking in Colorado, 2015/2016*

## Adults:

- **1 in 5 adults** in Colorado binge drinking
  - On average, **7 drinks per binge, 4 times per month**

## Youth:

- **1 in 6** high school students binge drink
- **1 in 3** high school students had at least one drink in the past 30 days
- **Over half** of youth say alcohol is easy/sort of easy to get

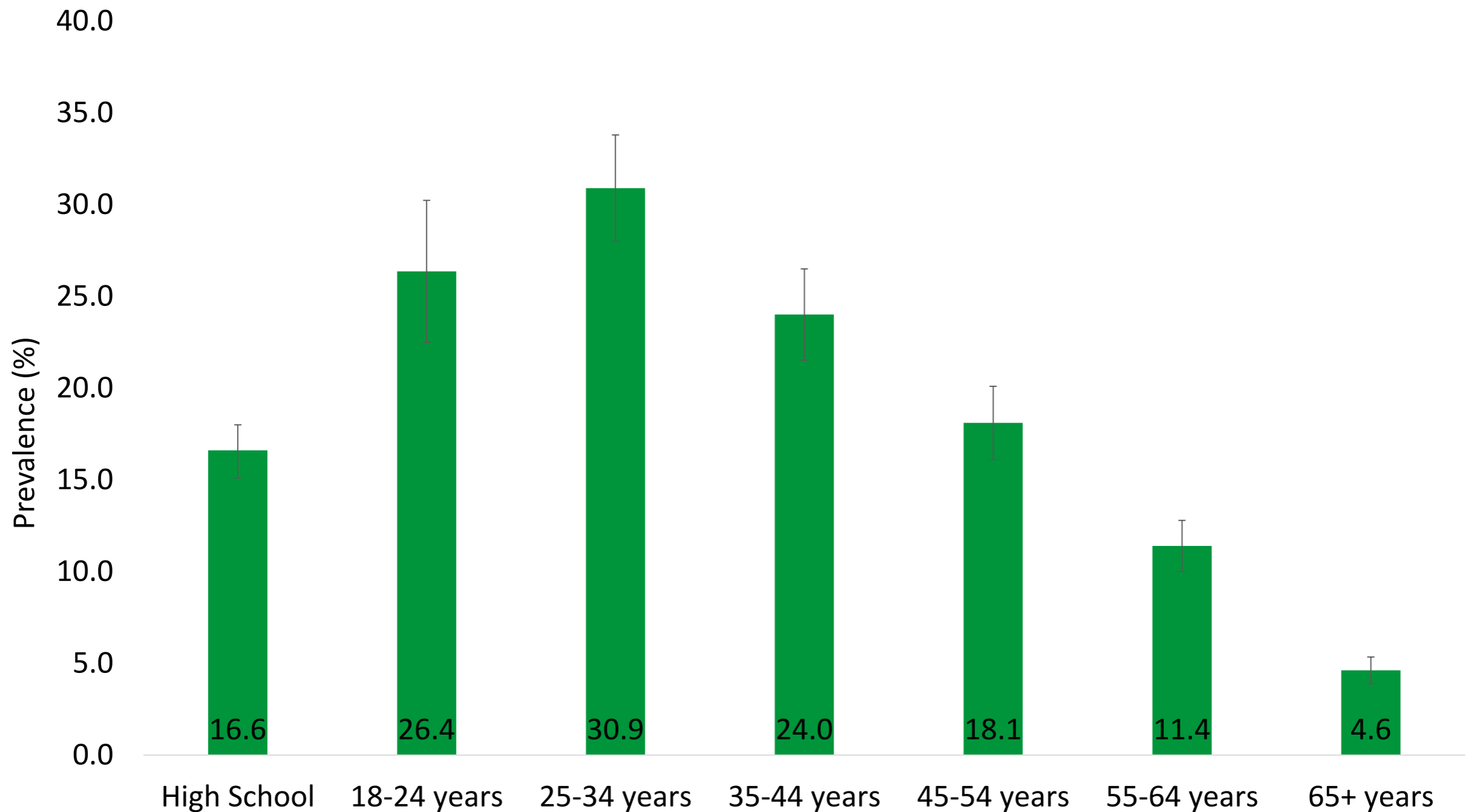
Sources: HKCS, High School (2015) & Colorado BRFSS (2016)



**COLORADO**  
Department of Public  
Health & Environment



# Colorado Binge Drinking Across the Lifespan, 2016

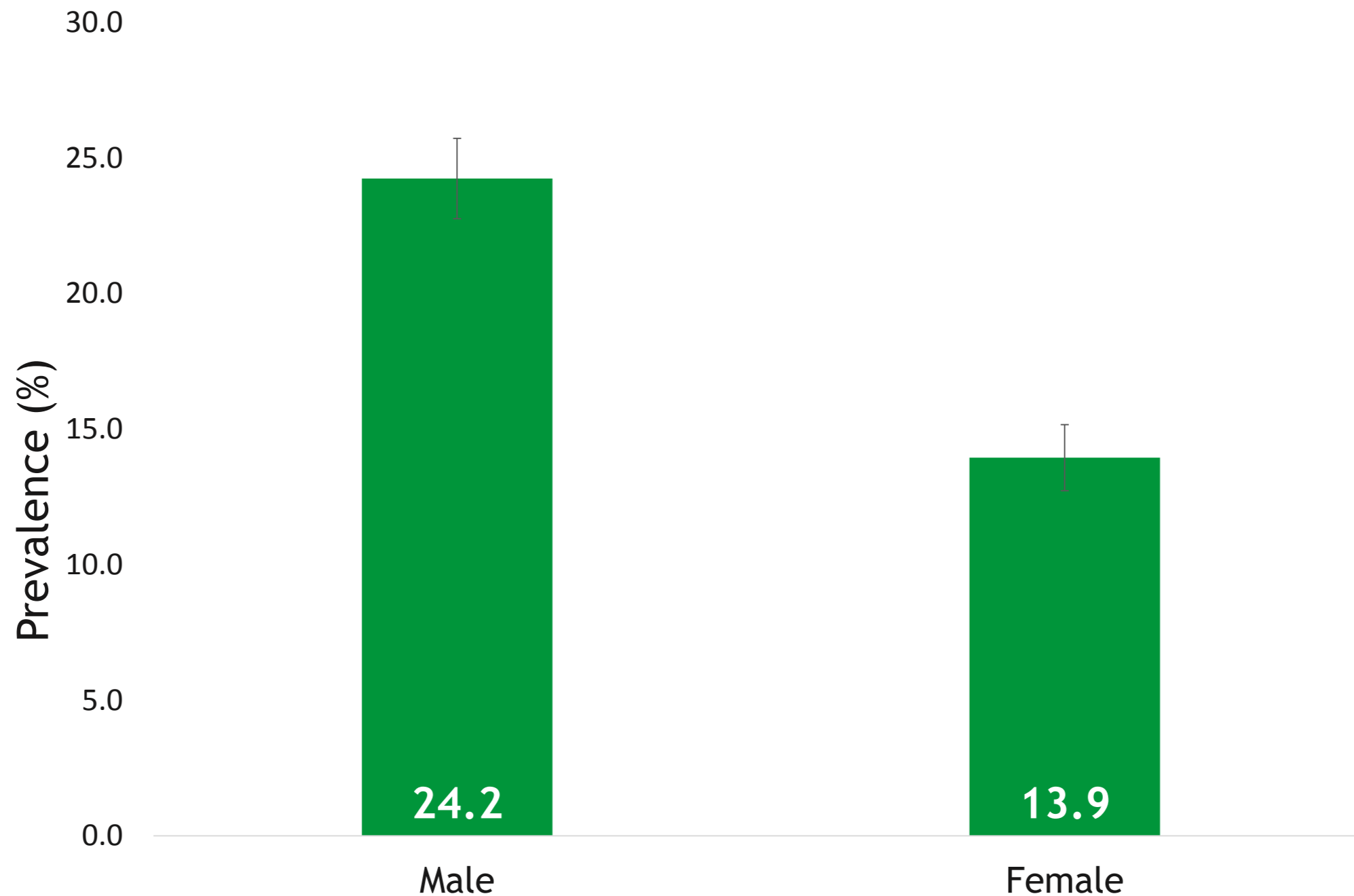


Sources: HKCS, High School (2015) & Colorado BRFSS (2016)



**COLORADO**  
Department of Public  
Health & Environment

# Colorado Binge Drinking by Gender, 2016

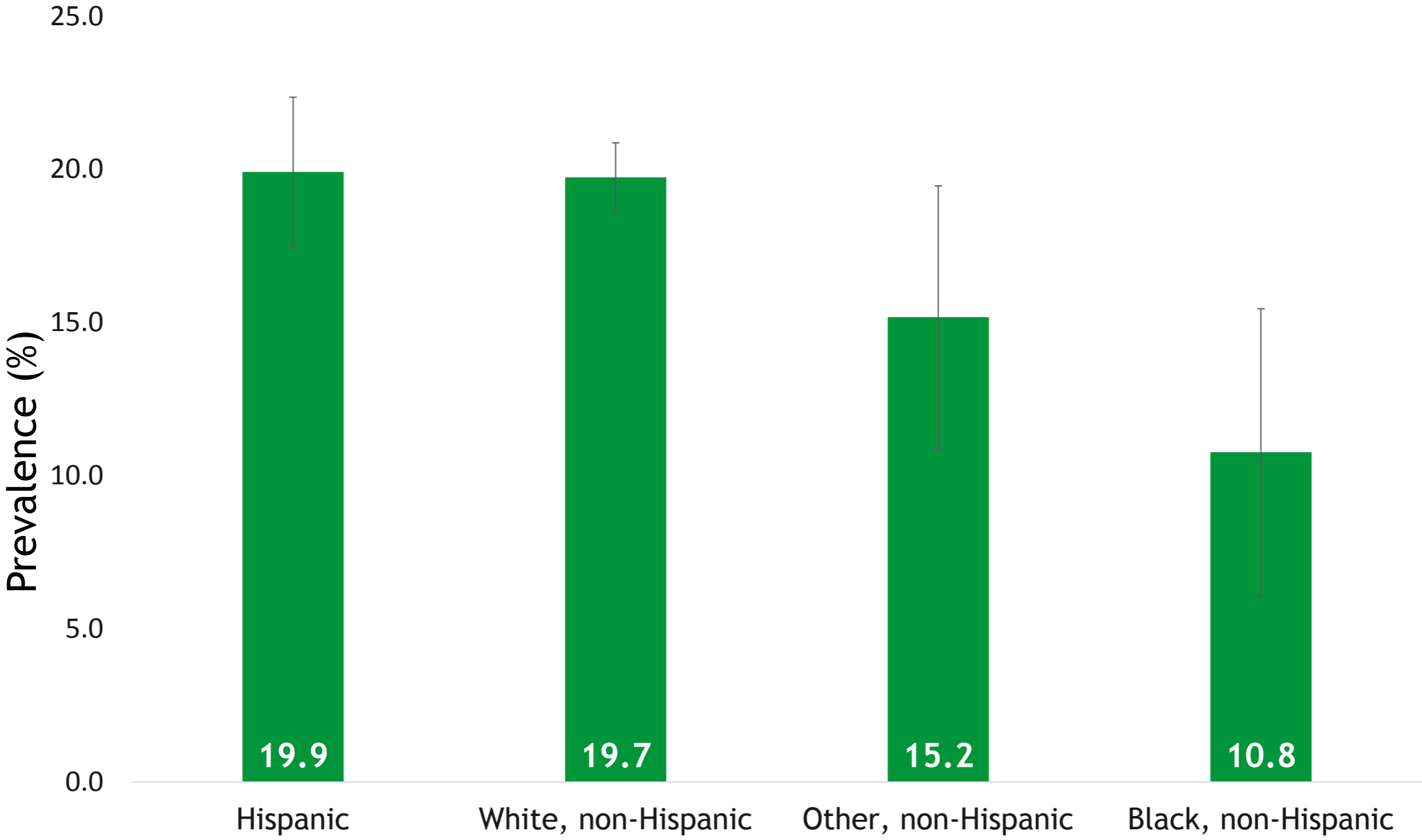


Source: Colorado BRFSS (2016)

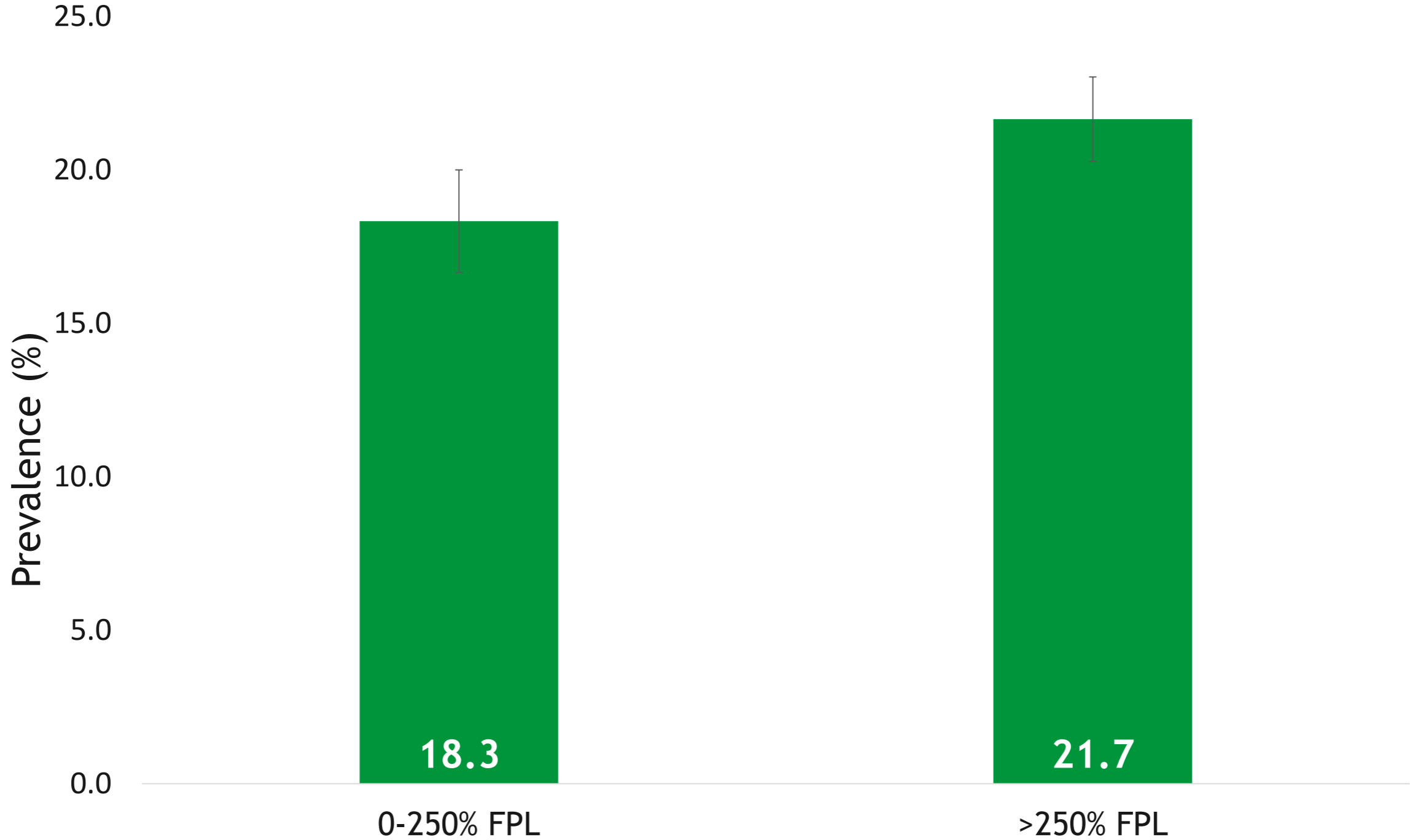


**COLORADO**  
Department of Public  
Health & Environment

# Colorado Binge Drinking by Race/Ethnicity, 2016



# Colorado Binge Drinking by Income Level, 2016

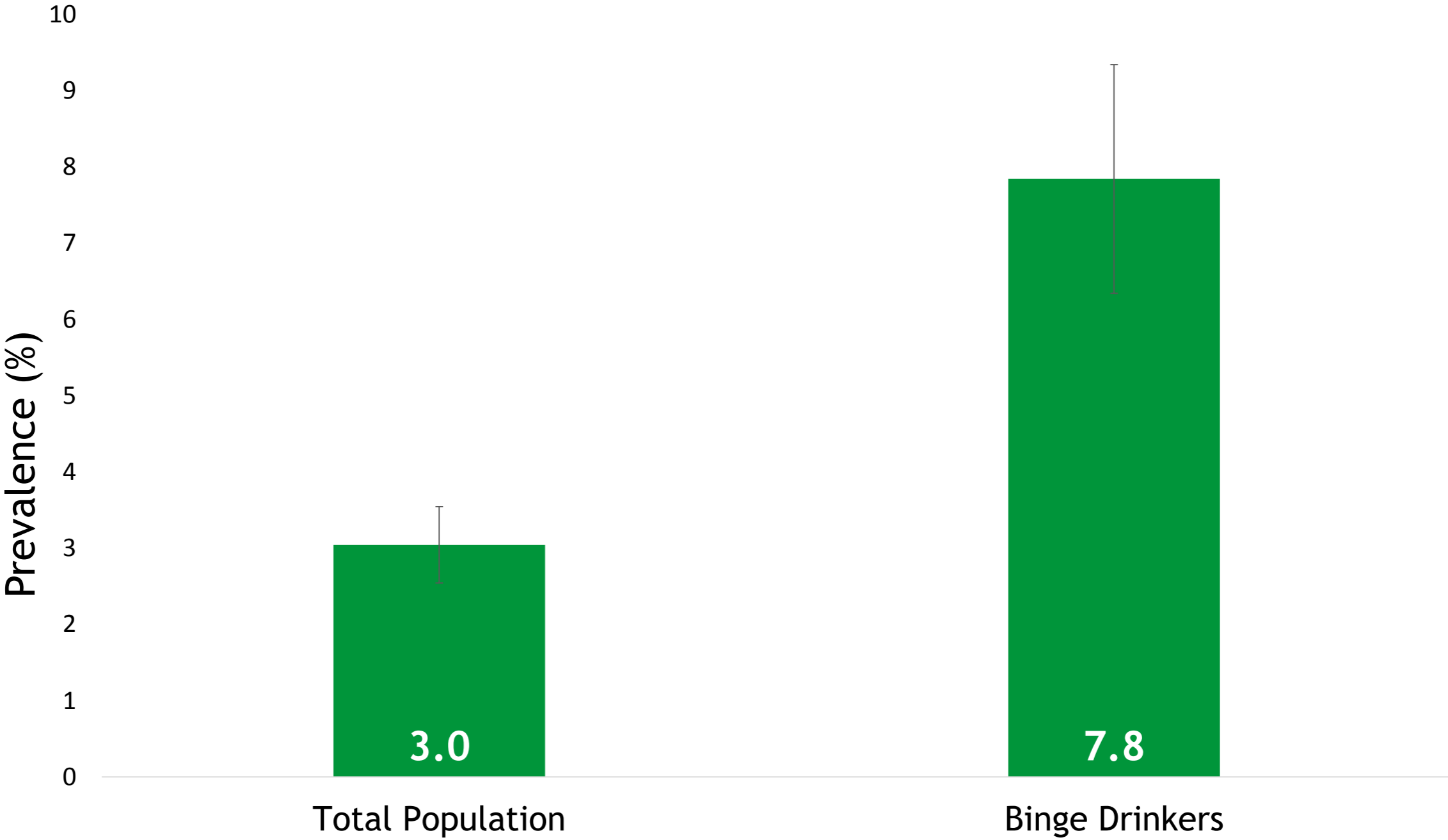


Source: Colorado BRFSS (2016)



**COLORADO**  
Department of Public  
Health & Environment

# Colorado Adults who Drank and Drove, 2016

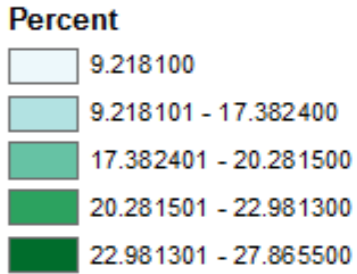
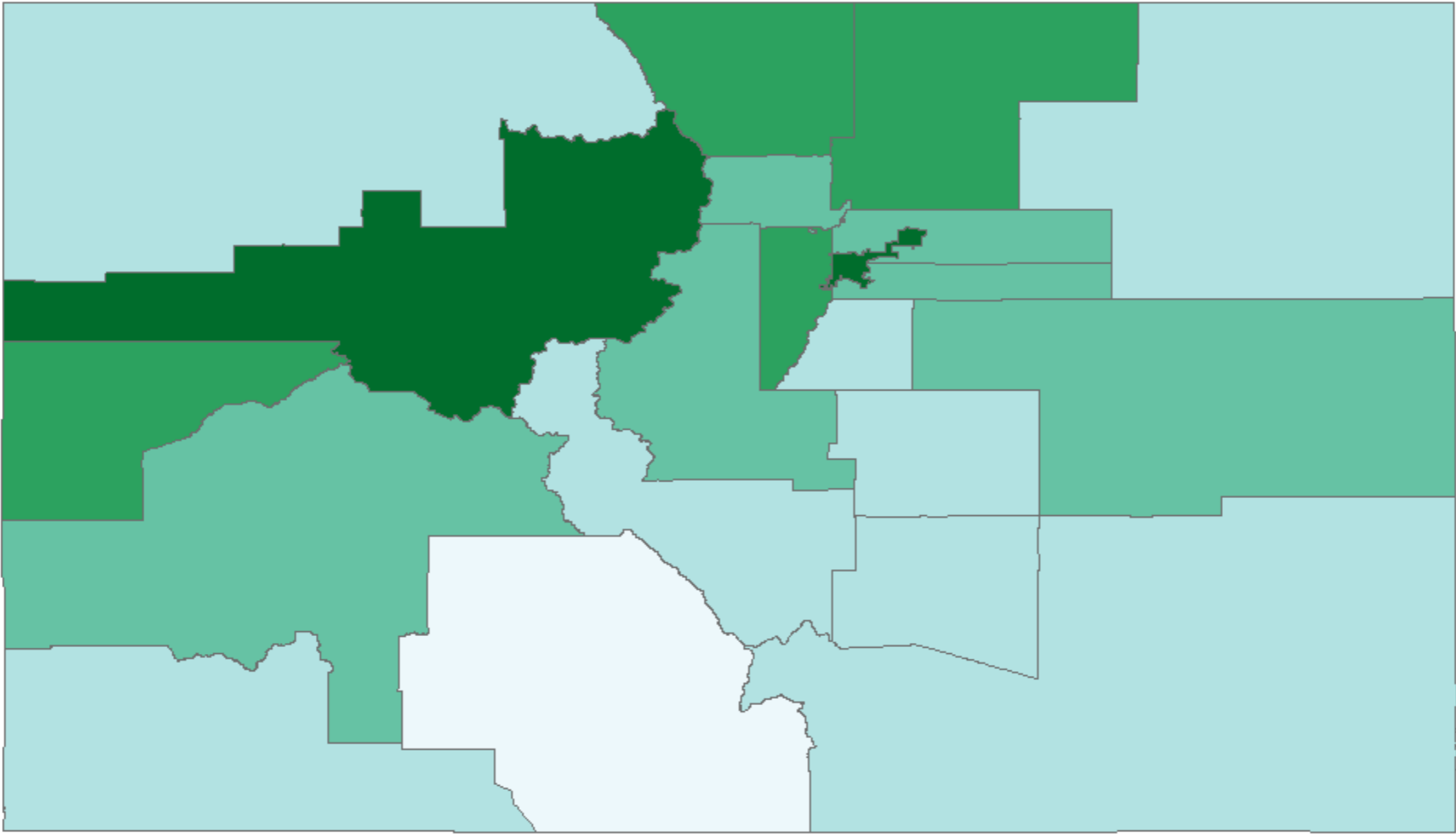


Source: Colorado BRFSS (2016)



**COLORADO**  
Department of Public  
Health & Environment

# Binge and/or Heavy Drinking by Health Statistics Region



Source: Colorado BRFSS (2016)



**COLORADO**  
Department of Public  
Health & Environment



*Thank you!*

Contact Information

[Lindsey.Myers@state.co.us](mailto:Lindsey.Myers@state.co.us)

303-692-2589

