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# Substance use related fatalities in Oregon

Vicky Buelow, Xun Shen

Alcohol & Drug Policy Commission Meeting

October 28<sup>th</sup>, 2021



Public Health Division

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# Outline

- 1 Alcohol
- 2 Overdose and poisoning
- 3 Where can I find the data?
- 4 Q & A



# It all starts with death certificates....

TYPE OR  
PRINT IN  
PERMANENT  
BLACK INK.



## CENTER FOR HEALTH STATISTICS REPORT OF DEATH

136-

STATE FILE NUMBER

I.D. TAG NO.:

<b>TO BE COMPLETED BY FUNERAL FACILITY</b>	1. Legal name: First Middle Last Suffix				2. Death date (MON DD YYYY):	
	3. Sex (MF):	4a. Age - Last birthday: Months Days		4b. Under 1 year: Hours Minutes		4c. Under 1 day:
	5. Social Security number:			6. County of death:		
	7. Birthdate (MON DD YYYY):		8a. Birthplace (city/town or county):		8b. (State or foreign country):	
	9. Decedent's education:			10. Was decedent of hispanic origin? (Yes or no. If yes, specify):		
	11. Decedent's race(s):			12. Was decedent ever in U.S. Armed Forces? <input type="checkbox"/> Yes <input type="checkbox"/> No		
	13. Residence: Number and street (e.g., 624 SE 5th Street, Apt. no. 8)				14. City/town:	
	15. Residence county:		16. State or foreign country:		17. ZIP code + 4:	
	18. Inside city limits? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			19. Marital status at time of death:		
	20. Spouse's name (if married or widowed, full name given at birth):			21. Usual occupation (indicate type of work done during most of working life. DO NOT USE "RETIRED"):		
22. Kind of business/industry (DO NOT USE COMPANY NAME):			23. Father/Parent B's full name given at birth:			
24. Mother/Parent A's full name given at birth:			25. Informant's name:			
26. Telephone number:		27. Relation to decedent:		28. Mailing Address (number & street, city/town, state, ZIP + 4):		
29. Place of death:			30. Facility name:			
31. Location of death (Give address):			32. City/town or location of death:		33. State:	
34. ZIP code + 4:		35. Method of disposition:		36. Place of disposition (Name of cemetery, crematory or other place):		
37. Location:		38. Name and complete address of funeral facility (number & street, city/town, state, ZIP + 4):				
39. Date of disposition (MON DD YYYY):		40. Funeral director's signature:		41. DR license number:		
42. Registrar's signature:		43. Date received (MON DD YYYY):		44. Local file number:		
45. Record amendment:						
46. Was case referred to medical examiner? <input type="checkbox"/> Yes <input type="checkbox"/> No		47. Autopsy? <input type="checkbox"/> Yes <input type="checkbox"/> No		48. Were autopsy findings available to complete the cause of death? <input type="checkbox"/> Yes <input type="checkbox"/> No		
49. Time of death:		CAUSE OF DEATH (See instructions and examples.)				
50. Enter the chain of events - diseases, injuries, or complications - that directly caused the death. DO NOT ENTER TERMINAL EVENTS such as cardiac arrest, respiratory arrest or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE.					Approximate interval: Onset to death	
Final disease or condition resulting in death →		IMMEDIATE CAUSE ↓				
Sequentially list conditions, if any, leading to the cause listed on line a. ENTER THE UNDERLYING CAUSE LAST (disease or injury that initiated the events resulting in death).		Due to (or as a consequence of) ↓				
		Due to (or as a consequence of) ↓				
		Due to (or as a consequence of) ↓				
		Due to (or as a consequence of) ↓				
51. Other significant conditions contributing to death, but not resulting in the underlying cause given above:						
52. Manner of death: <input type="checkbox"/> Natural <input type="checkbox"/> Homicide <input type="checkbox"/> Accident <input type="checkbox"/> Undetermined <input type="checkbox"/> Suicide <input type="checkbox"/> Poisoning		53. If female: <input type="checkbox"/> Not pregnant within past year <input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death <input type="checkbox"/> Pregnant at time of death <input type="checkbox"/> Unknown if pregnant within the past year <input type="checkbox"/> Not pregnant, but pregnant within 42 days before death		54. Did tobacco use contribute to death? <input type="checkbox"/> Yes <input type="checkbox"/> Probably <input type="checkbox"/> No <input type="checkbox"/> Unknown		
55. Date of injury (MON DD YYYY):		56. Time of injury:		57. Place of injury (e.g., decedent's home, construction site, restaurant, wooded area):		
58. Injury at work? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown						
59. Location of injury (number & street, city/town, state, ZIP + 4):						
60. Describe how injury occurred:				61. If transportation injury, specify: <input type="checkbox"/> Driver/operator <input type="checkbox"/> Passenger <input type="checkbox"/> Pedestrian <input type="checkbox"/> Other (specify):		
62. Name and address of certifier (number & street, city/town, state, ZIP + 4):						
63. Name and title of attending physician if other than certifier:						
64. Title of certifier:				65. License number:		
66. Date signed (MON DD YYYY):				67. Medical certifier - To the best of my knowledge, death occurred at the time, date and place, and due to the cause(s) and manner stated.		
68. Medical examiner - On the basis of examination, and/or investigation, in my opinion, death occurred at the time, date and place, and due to the cause(s) and manner stated.				69. Record amendment:		

# ....but doesn't always end there

STATE OF OHIO  
DEPARTMENT OF HEALTH  
CENTER FOR HEALTH STATISTICS  
REPORT OF DEATH 130-

1. Legal name: First Middle Last Suffix 2. Death date (MM/DD/YYYY)

3. Sex (M/F) 4a. Age (at death) 4b. Under 1 year 4c. Under 1 day 5. Social Security number 6. County of death

7. Birthdate (MM/DD/YYYY) 8a. Birthplace (country or state) 8b. Date of foreign birth 9. Decedent's education

10. Was decedent of Hispanic origin? (Check one, print words) 11. Decedent's race(s) 12. Was decedent ever in U.S. Armed Forces? ( ) Yes ( ) No

13. Residence: Number and street (e.g. 101 N. State, Apt. #12) 14. City/town 15. Residence county 16. State or foreign country 17. ZIP code + 4 18. Inside city limits? ( ) Yes ( ) No ( ) Unknown

19. Marital status at time of death: 20. Spouse's name (if married or widowed, last name given at birth) 21. Usual occupation (include year if work has been doing, last if voluntary, do not use "retired") 22. Kind of business/industry (include NAICS code if available)

23. Father's name (if full name given at birth) 24. Mother's name (if full name given at birth)

25. Informant's name 26. Telephone number 27. Relation to decedent 28. Making statement in person ( ) Yes ( ) No ( ) Unknown

29. Place of death 30. Facility name 31. Location of death 32. City/town or location of death 33. State 34. ZIP code + 4

35. Method of disposition 36. Place of disposition (include address, country or state, city/town, state, ZIP + 4) 37. Location

38. Name and complete address of funeral facility (owner & user, include state, ZIP + 4)

39. Date of disposition (MM/DD/YYYY) 40. Funeral director's signature 41. ORI license number

42. Registrar's signature 43. Date received (MM/DD/YYYY) 44. Local file number

45. Record amendment

46. Was case referred to medical examiner? ( ) Yes ( ) No 47. Admitted to hospital? ( ) Yes ( ) No 48. Were autopsy findings available to complete the cause of death? ( ) Yes ( ) No 49. Time of death ( ) Not known ( ) Not stated ( ) Not stated ( ) Not stated

50. Enter the chain of events - disease, injury, complication, etc. - which caused the death. DO NOT ENTER TERMINAL EVENTS such as cardiac arrest, respiratory arrest or unresponsive. Indicate without leaving the etiology. DO NOT ABBREVIATE. Approximate interval: Onset to death

51. Final disease or condition resulting in death: ( ) ICD-10 ( ) ICD-9 ( ) Other ( ) Unknown

52. Immediately list conditions, if any, which in the decedent's opinion were the CAUSE OF DEATH (trauma or injury not immediately apparent at death). Do not abbreviate.

53. Other significant conditions or events which occurred, but not resulting in the underlying disease given above:

54. Did tobacco use contribute to death? ( ) Yes ( ) No ( ) Unknown

55. Alcohol consumption ( ) None ( ) Minimal ( ) Moderate ( ) Significant ( ) Excessive ( ) Unknown

56. Date of injury (MM/DD/YYYY) 57. Place of injury (e.g., decedent's home, construction site, restaurant, wooded area) 58. Injury at work? ( ) Yes ( ) No ( ) Unknown

59. Location of injury (owner & user, include state, ZIP + 4) 60. If transportation injury, specify: ( ) Passenger ( ) Pedestrian ( ) Other (specify)

61. Decedent New injury occurred: ( ) Yes ( ) No ( ) Unknown

62. Name and address of certifier (include & state, city/town, state, ZIP + 4)

63. Name and title of attending physician (other than certifier)

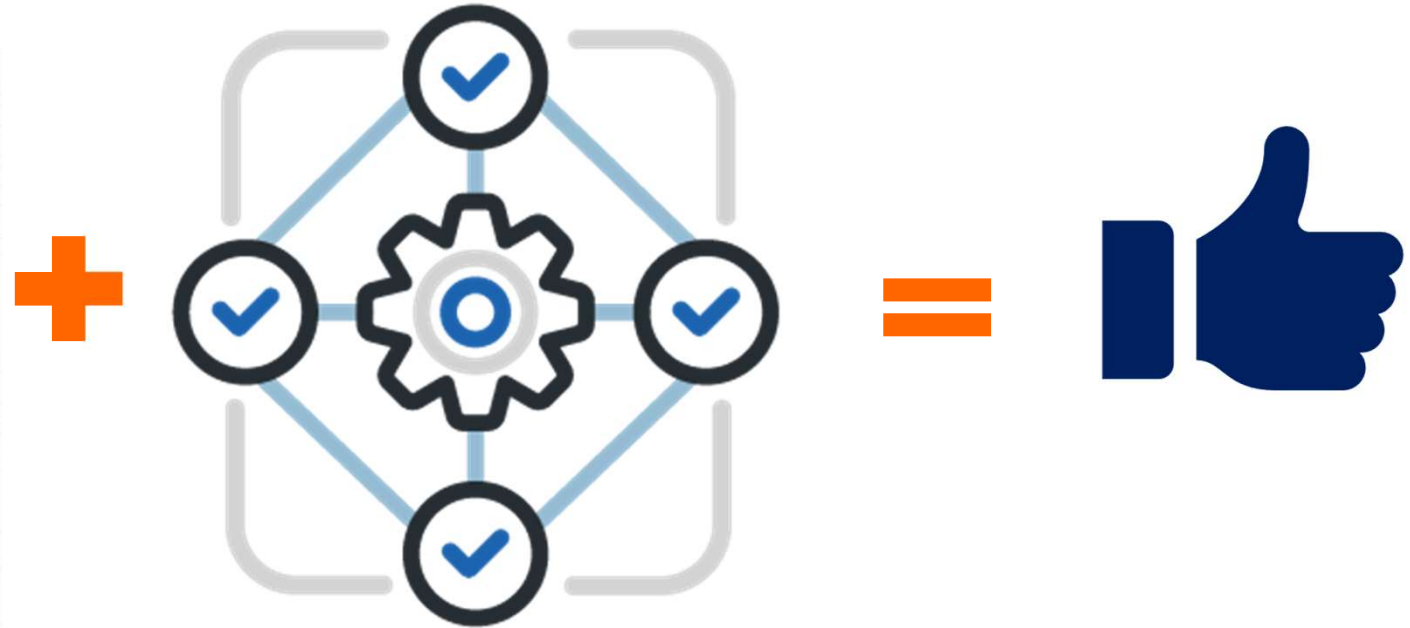
64. Title of certifier 65. License number 66. Date signed (MM/DD/YYYY)

67. Medical examiner - To the best of my knowledge, death occurred at the time, date, and place indicated by the certifier and manner stated.

68. Medical examiner - On the basis of examination, and/or investigation, in my opinion, death occurred at the time, date and place, and death by the disease and manner stated.

69. Record amendment

ORIGINAL - VITAL RECORDS COPY 45-2 (09/15)



- Death records
- More information
- Connections to other data systems
- Application of methodologies
- Better information
- Additional data systems
  - FARS
  - NVDRS,
  - SUDORS, etc.

A hand holding a magnifying glass over the word "Alcohol". The magnifying glass is held by a hand on the right side of the image, with the thumb and index finger gripping the handle. The lens of the magnifying glass is positioned over the word "Alcohol", which is written in a large, bold, black, sans-serif font. The background is plain white.

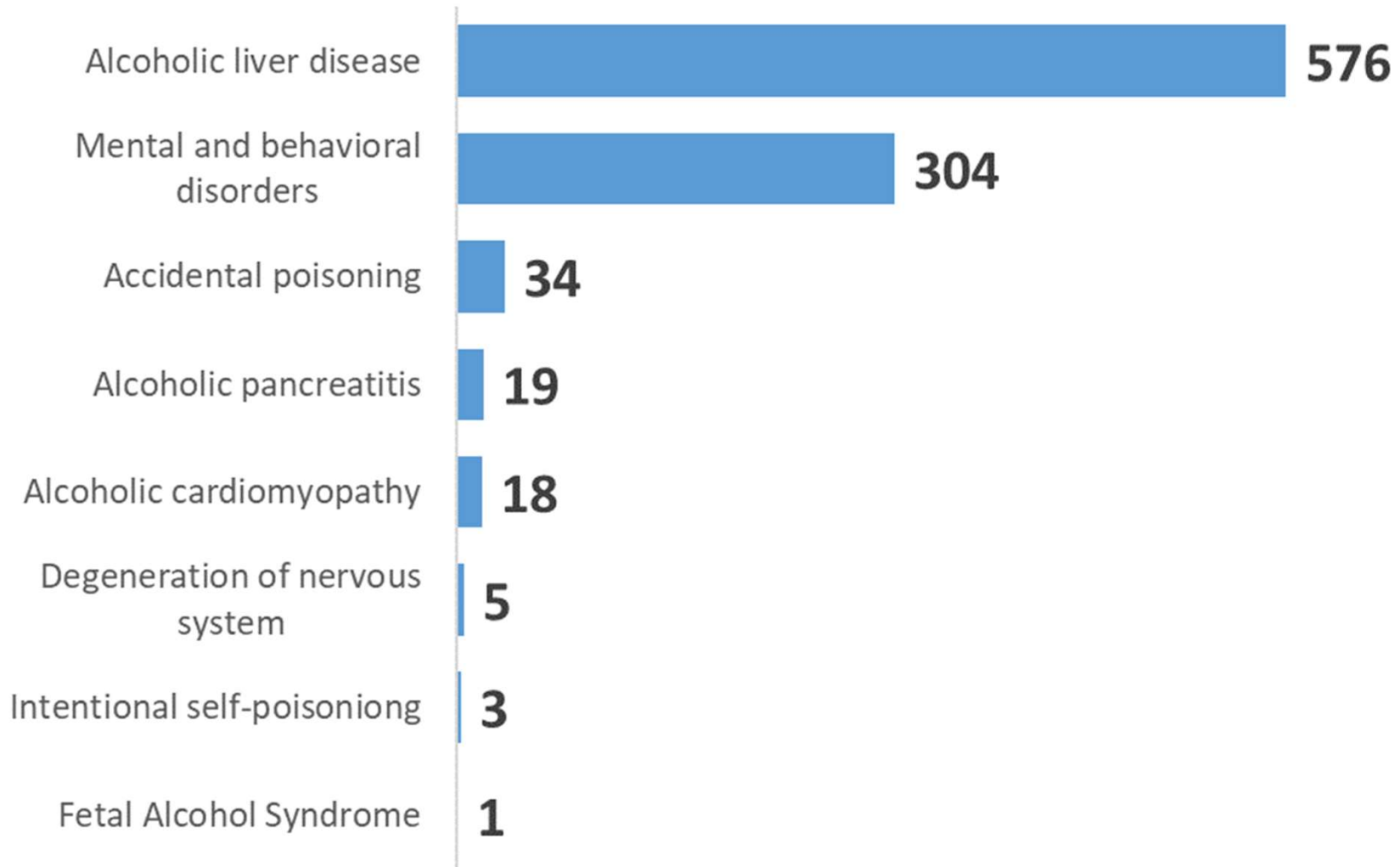
**Alcohol**

# 1. Alcohol-induced causes

(100% attributable)

E24.4	Alcohol-induced Cushing's disease
F10	Alcohol-related mental and behavioral disorders
G31.2	Degeneration of nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
G72.1	Alcoholic myopathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K70	Alcoholic liver disease
K85.2	Alcohol-induced acute pancreatitis
K86.0	Alcohol-induced chronic pancreatitis
R78.0	Alcohol in the blood
X45	Accidental poisoning by exposure to alcohol
X65	Intentional self-poisoning by exposure to alcohol
Y15	Poisoning by exposure to alcohol, undetermined

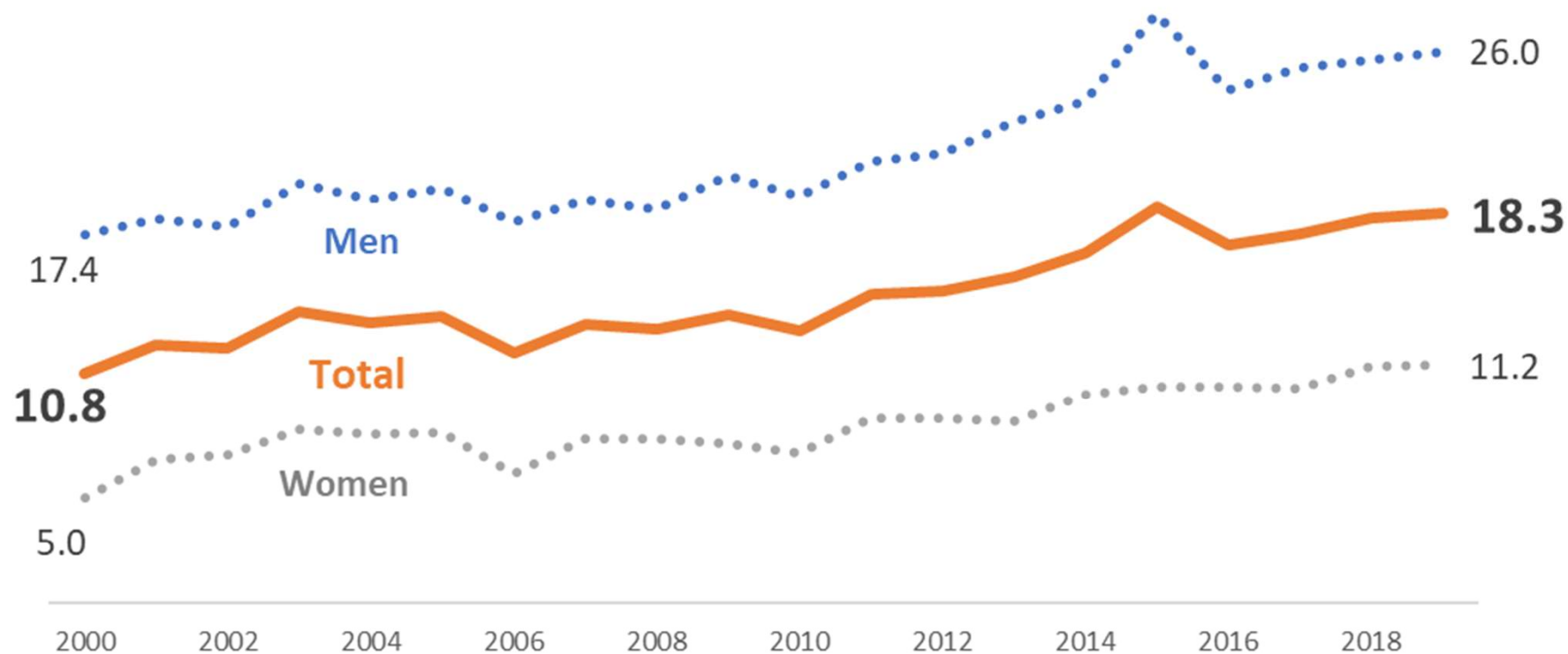
# Alcohol-induced deaths, Oregon, 2019



Source: Oregon Death Certificates

# Alcohol-induced death rate by sex, Oregon, 2000-2019

## Age-adjusted rate per 100,000 population

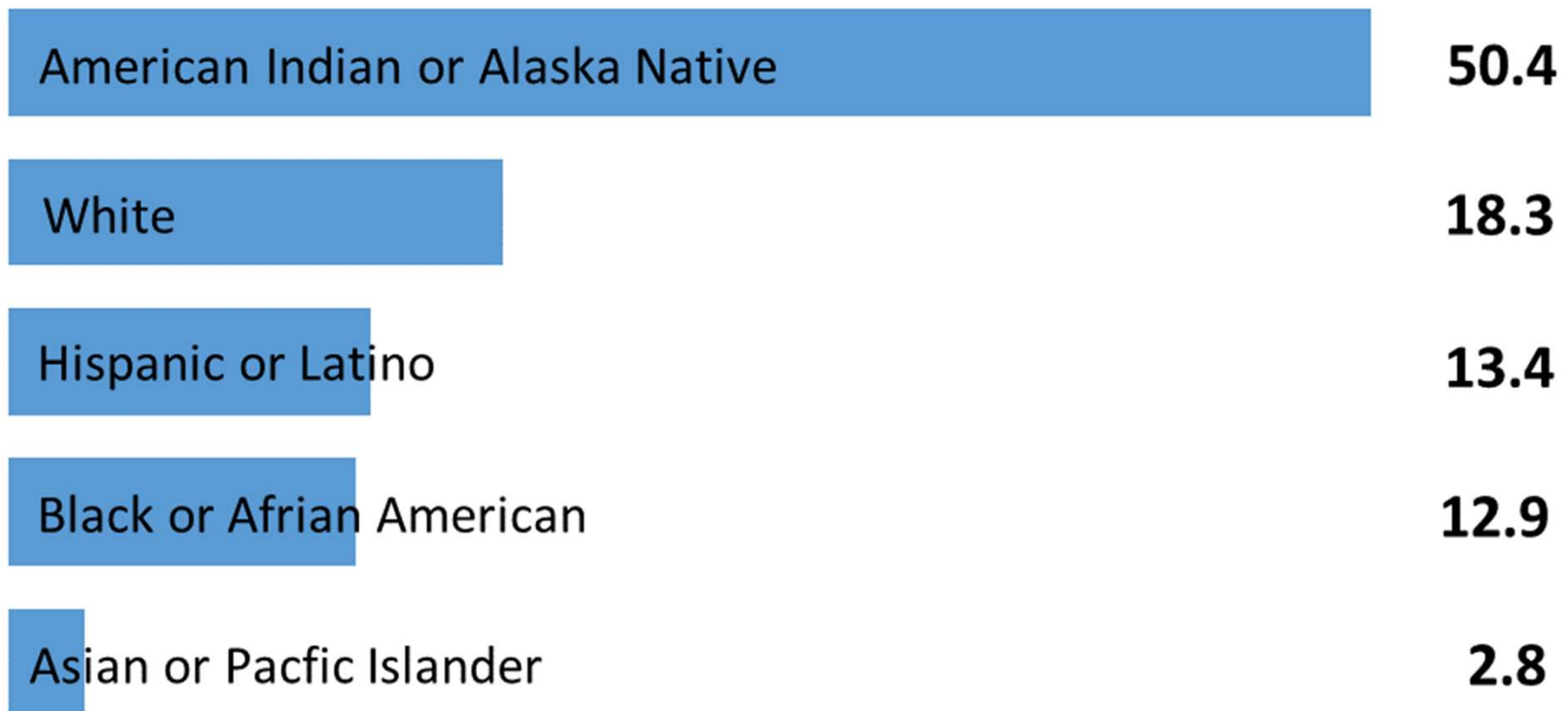


Source: Oregon Death Certificates



# Alcohol-induced deaths by race and ethnicity, Oregon, 2016-2019

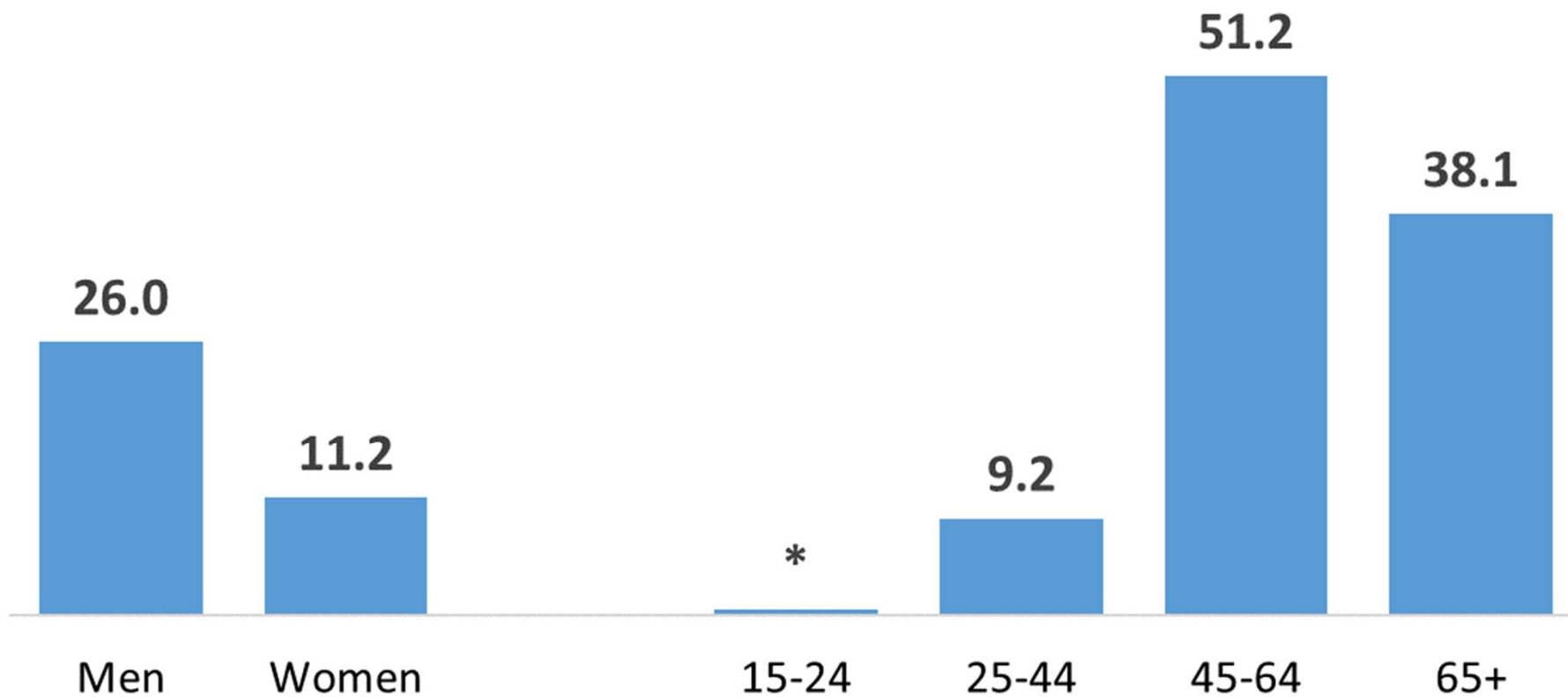
Age-adjusted rate per 100,000



Source: Oregon Death Certificates

# Alcohol-induced death rates by sex and age, Oregon, 2019

Rate per 100,000 population



Source: Oregon Death Certificates

## 2. Alcohol-related causes

(100% attributable) + (Alcohol Attributable Fractions)

### AAF Examples:

Cancer (breast, prostate, colorectal, liver, stomach, pancreas, esophageal, oral)

Coronary heart disease, hypertension, stroke

Liver cirrhosis, unspecified

Gallbladder disease, pancreatitis

Chronic hepatitis

Infant death (low birth weight)

Injuries – drowning, falls, firearm, occupational

Hypothermia

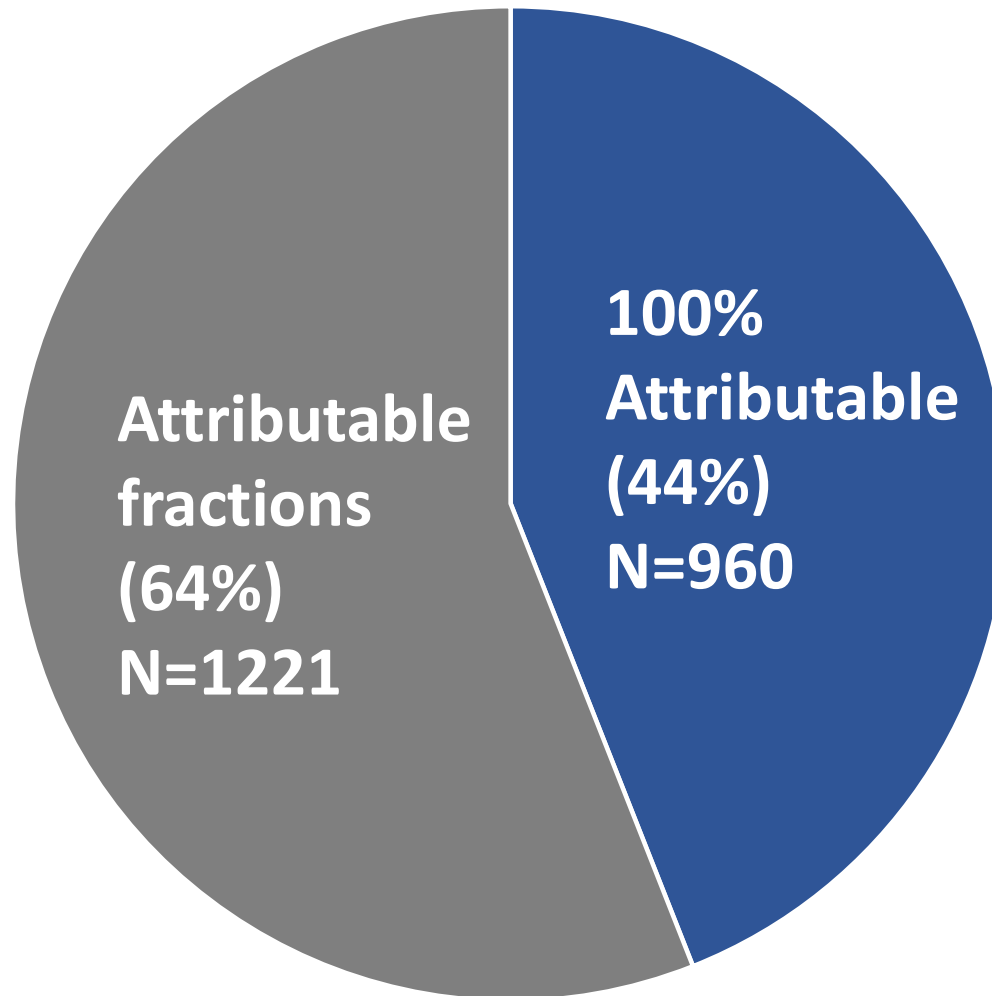
Aspiration

Homicide, Suicide

Motor vehicle and transportation crashes



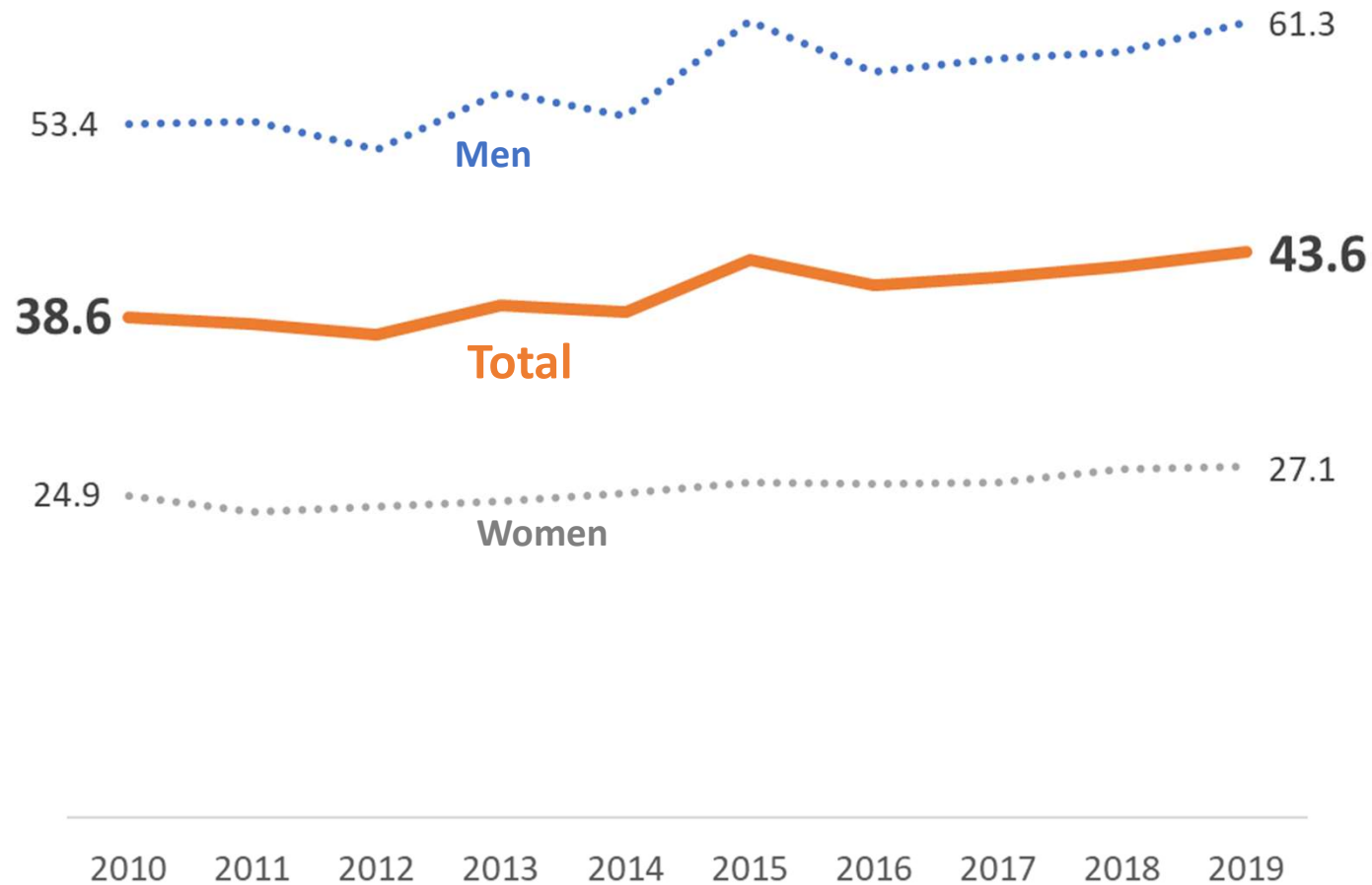
# In 2019, there were **2,181** alcohol-related deaths among Oregon residents



Source: Oregon Death Certificates using CDC ARDI Methodology

# Alcohol-related death rate, Oregon, 2010-2019

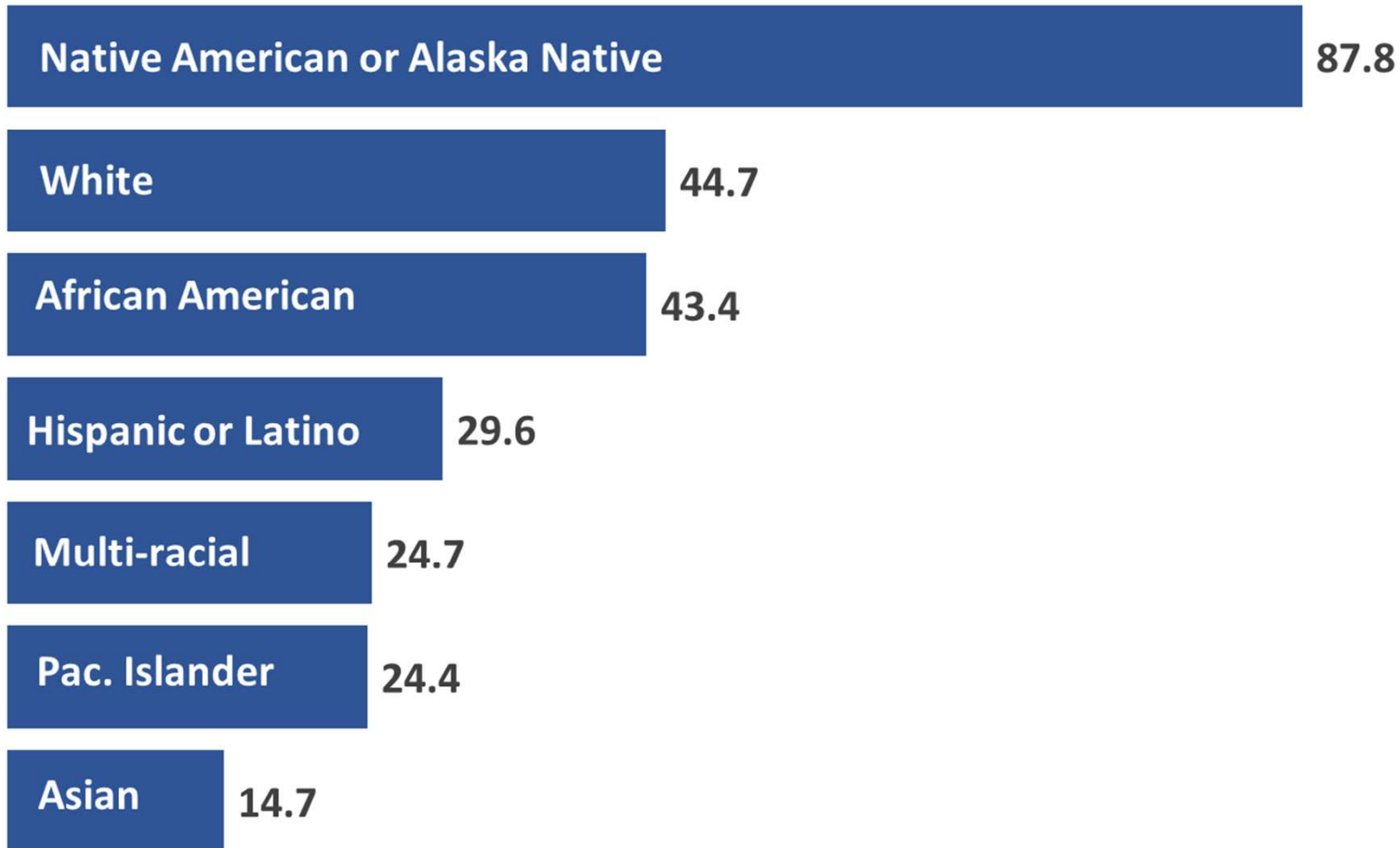
Age-adjusted rate per 100,000 population



Source: Oregon Death Certificates  
CDC ARDI Methodology

# Alcohol-related deaths by race and ethnicity, Oregon 2016-2019

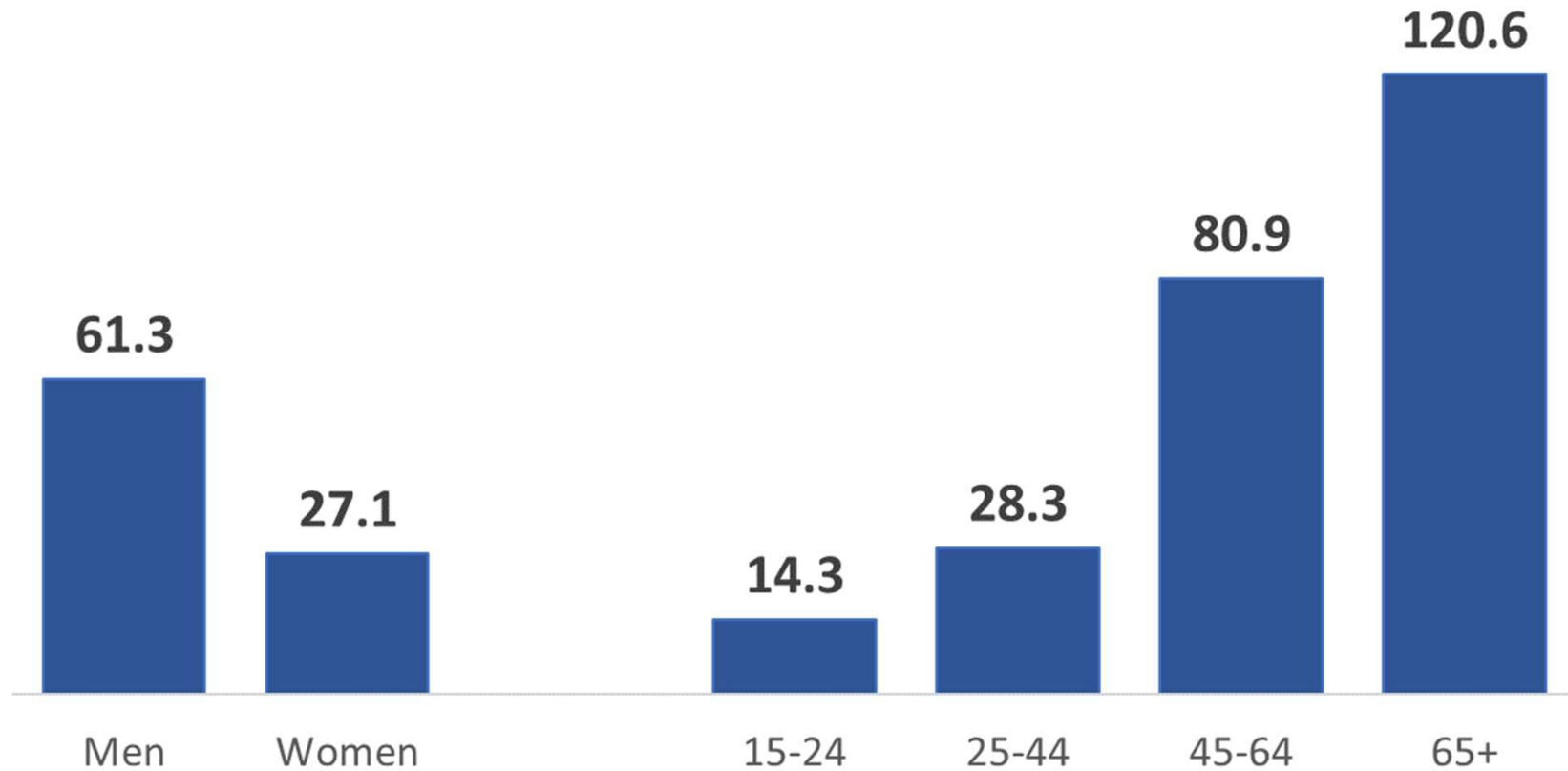
Age-adjusted rate per 100,000



Source: Oregon Death Certificates using CDC ARDI Methodology

# Alcohol-related death rates by sex and age, Oregon, 2019

Rate per 100,000 population



Source: Oregon Death Certificates using CDC ARDI Methodology

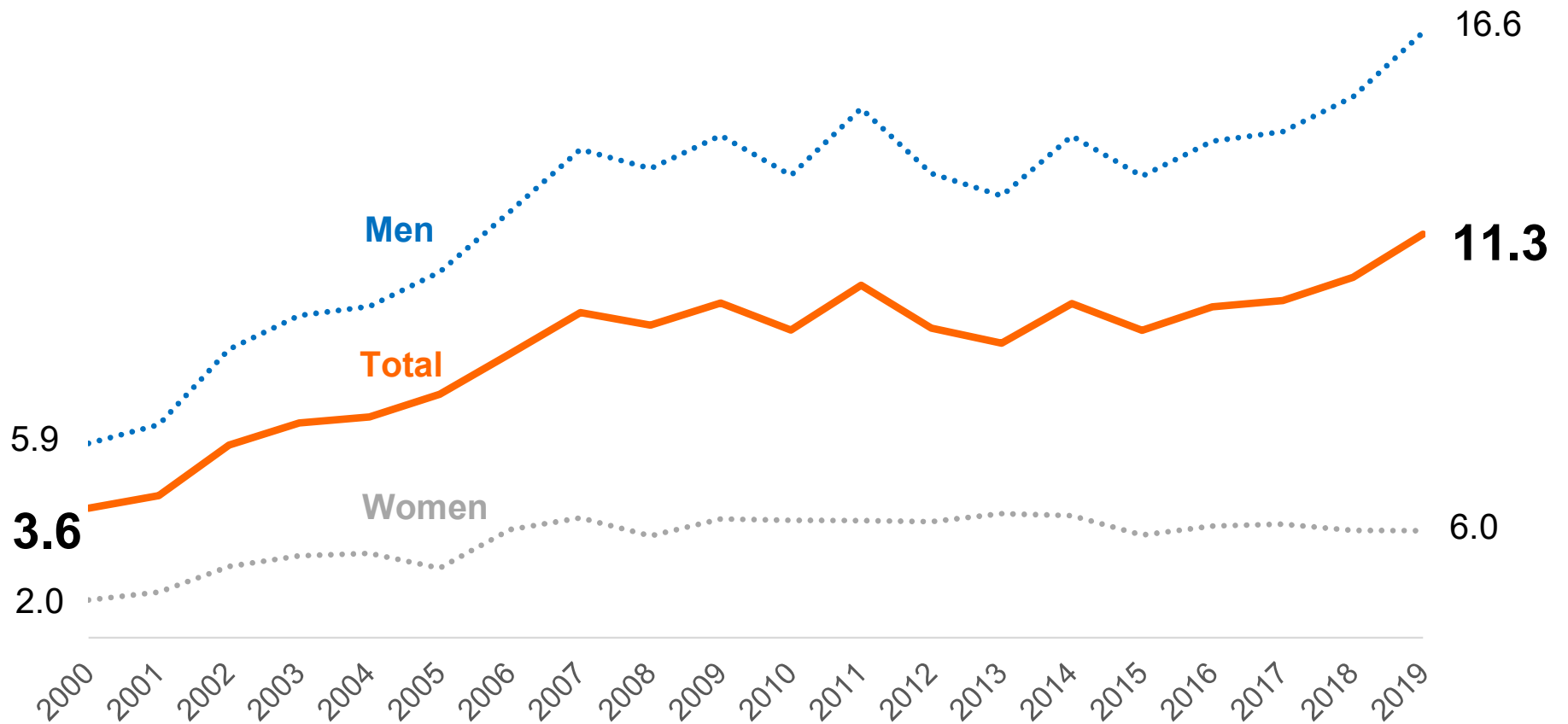
A hand holding a magnifying glass over the text "Overdose & Poisoning". The magnifying glass is dark blue with a black handle. The text is in a bold, black, sans-serif font. The background is white.

# **Overdose & Poisoning**



# Unintentional drug overdose death rate by sex, Oregon, 2000-2019

Age-adjusted rate per 100,000 population



Source: CDC WISQARS

# State Unintentional Drug Overdose Reporting System (SUDORS)

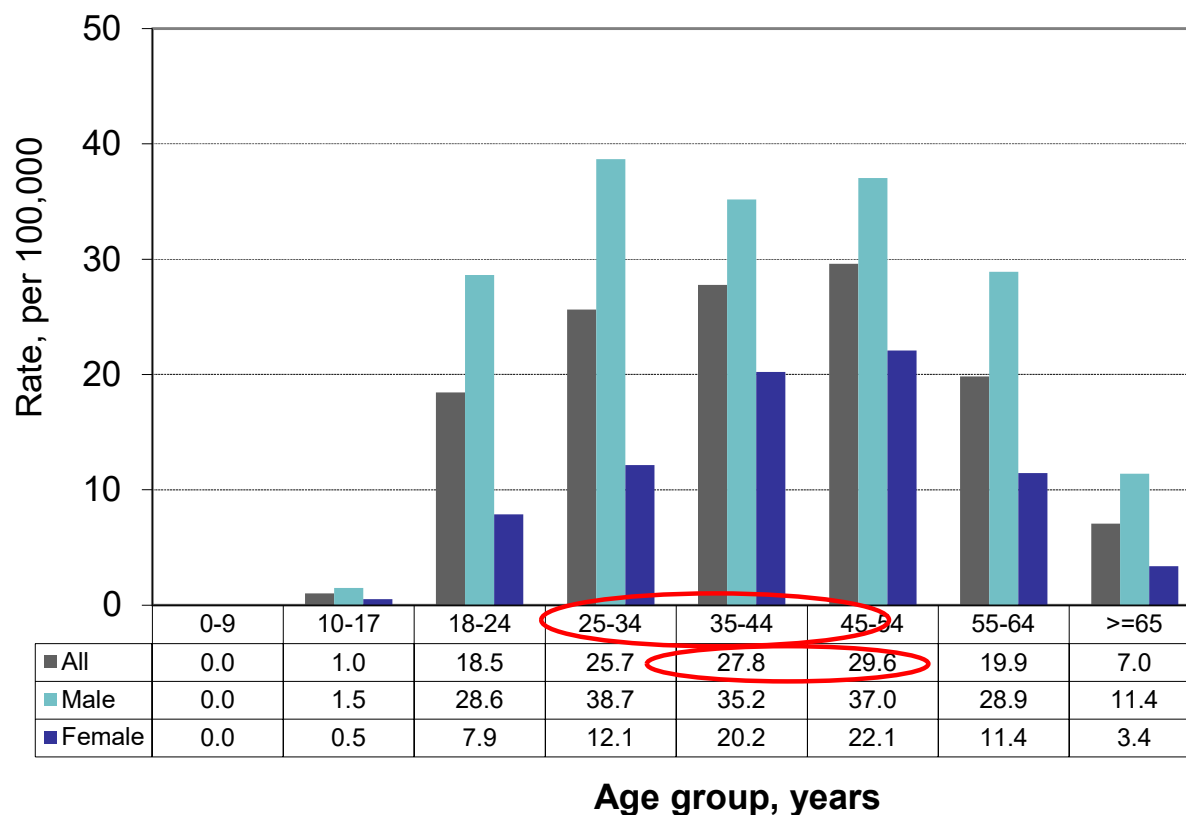
- **A new active, state-based surveillance system.** It is built on the National Violent Death Reporting System (NVDRS) and added an additional overdose module.
- Collects **detailed information** on unintentional and undetermined drug overdose deaths from death certificate records, and medical examiner reports.
- Five data components: decedents' demographics, injury and death, circumstances surrounding incident, toxicology test results, and substance use and overdoses.
- SUDORS abstracts both death certificate data and medical examiner data according to its own definition. Therefore, **be cautious** when comparing SUDORS data to death certificate records and medical examiner reports.

# Demographic of decedents of unintentional drug overdose

People at higher risk

- Middle-aged persons (42.8 ± 14.3 years)
- Males aged 25 to 54 had the highest rate.
- Among females, ages 35-54 had the highest rate.

Age-specific Rates of Unintentional Drug Overdose Death by Sex, Oregon, 2020



Source: SUDORS & NCHS

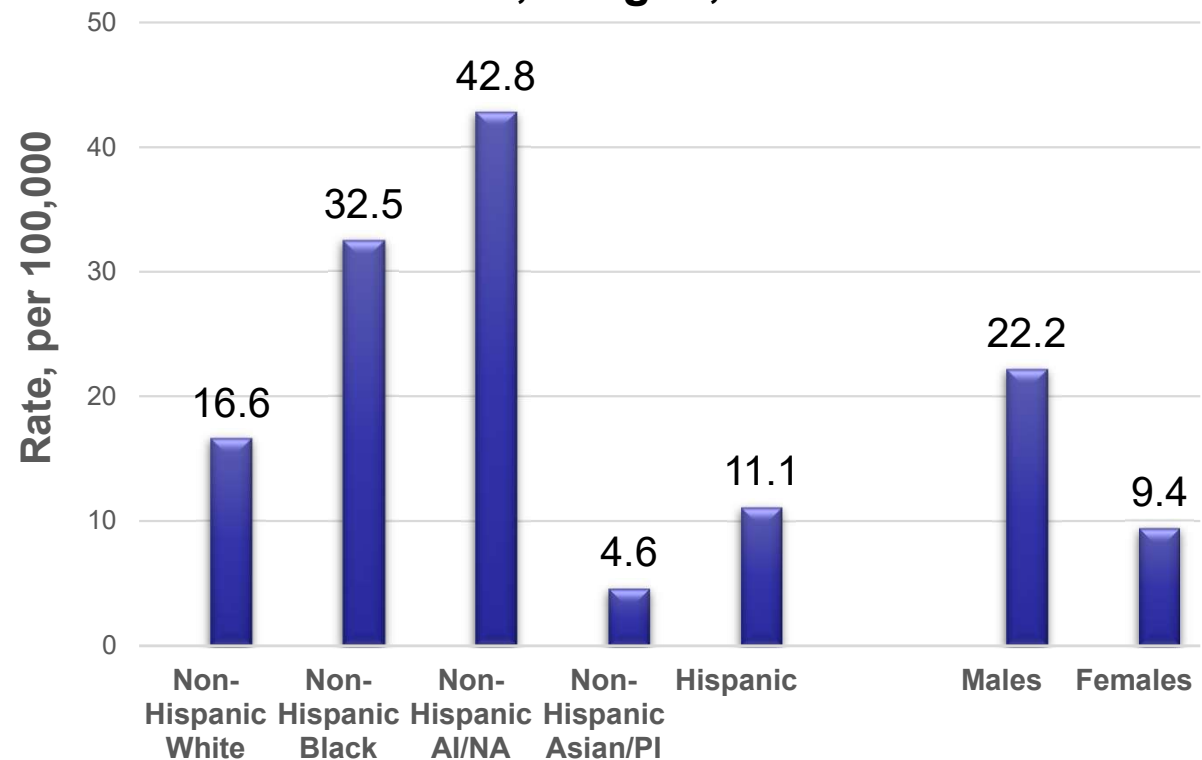
# Demographic of decedents of unintentional drug overdose

## People at higher risk

- Non-Hispanic American Indians/Native Alaskans
- Non-Hispanic African Americans
- Males were 2.4X than females likely to die of OD
- Experiencing homelessness (14% were homeless)

Source: SUDORS & NCHS

**Crude Rates of Unintentional Drug Overdose Death by Race / Ethnicity and Sex, Oregon, 2020**



# Mental illnesses and substance use problems are prevalent and not treated

## Mental health and Substance Use/Misuse among Unintentional Drug Overdose Deaths, Oregon, 2020

<b>Mental health, substance abuse history and treatment</b>	<b>Count</b>	<b>%, of total deaths</b>
<b>Type of drug poisoning</b>		
Overdose related to substance abuse	646	97.1
Wrong dosage/overmedication	13	2.0
Unknown	6	0.9
<b>Metal Health, Alcohol and Substance Use Problems</b>		
Diagnosed mental illness	205	30.8
Alcohol use problem	124	18.6
Non-alcohol related substance use problem	650	97.7
Current treatment for mental and substance use problems	58	8.7
<b>Treatment for substance abuse</b>		
No treatment	595	89.5
No current treatment, but treated in the past	52	7.8
Current treatment	18	2.7
<b>Naloxone administered among opioid involved deaths</b>		
Yes	54	11.9
No	326	71.6
Unknown	73	16.0

Source: SUDORS

# Drugs involved/caused deaths

Among **665** unintentional drug overdose deaths in 2020:

- **51.6%** (n=343) due to a **single** drug overdose
- **29.1%** (n=194) due to **two** drugs
- **19.2%** (n=128) due to **three or more** drugs
  
- **46.8%** (n=326) related to toxicity of **methamphetamine**
- **32.0%** (n=223) related to toxicity of **fentanyl**
- **27.9%** (n=194) related to toxicity of **heroin**
- **10.3%** (n=72) related to toxicity of **alcohol**
- **8.6%** (n=60) related to toxicity of **cocaine**

**Methamphetamine, heroin, and fentanyl** used alone (304 deaths, 43.7% of total deaths) or in combination with other drugs (281 deaths, 40.4% of total deaths) **claimed a total of 585 deaths (88% of total deaths)**

Common drugs that caused unintentional overdose deaths, Oregon, 2020

Drug Name	How to involve	Number of Deaths	%, among the drug involved	%, total overdose deaths
Fentanyl (N=223)	Alone	102	45.7	15.3
	In combination*	121	54.3	18.2
	Fentanyl + Cocaine	31	13.9	4.7
	Fentanyl + Methamphetamine	43	19.3	6.5
	Fentanyl + Alcohol	20	9.0	3.0
	Fentanyl + Heroin	17	7.6	2.6
Heroin (N=194)	Alone	53	27.3	8.0
	In combination*	141	72.7	21.2
	Heroin + Methamphetamine	107	55.2	16.1
Methamphetamine (N=326)	Alone	149	45.7	22.4
	In combination*	177	54.3	26.6
	Methamphetamine + Heroin	107	32.8	16.1
Fentanyl, Heroin, Methamphetamine (N=281)	In combination, involved at least one of fentanyl, heroin and methamphetamine	281	NA	22.4
Pharmaceutical Opioids including such as Hydrocodone, Methadone, Morphine, and Oxycodone (N=93)	Alone	19	20.4	2.9
	In combination*	74	79.6	11.1
	One of pharmaceutical opioids + one or more of fentanyl, heroin and methamphetamine	55	59.1	8.3

Source: SUDORS

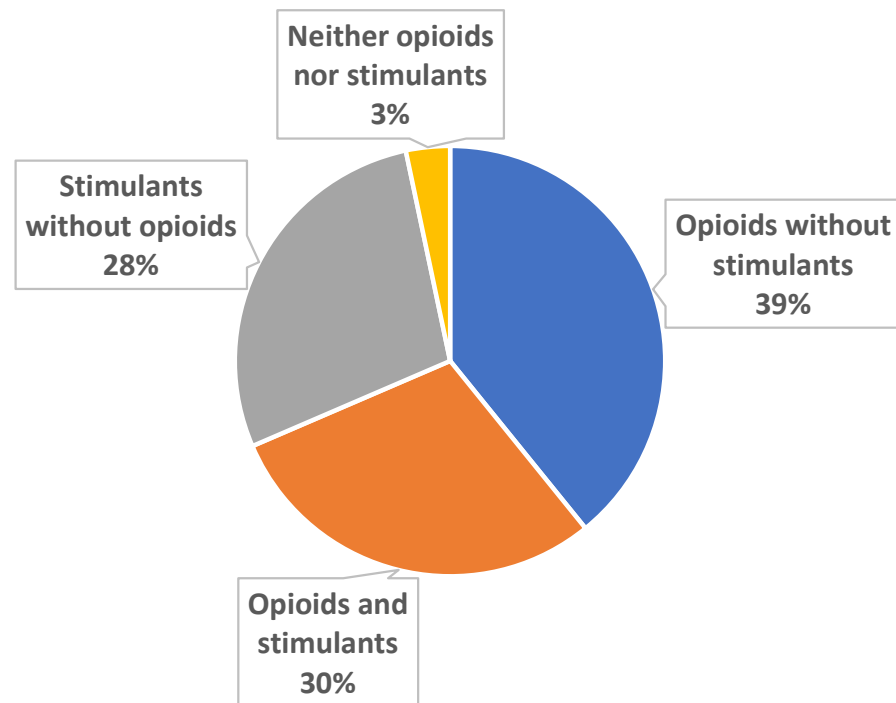
Note: \* When more than two drugs are attributed to a death, e.g. a death due to toxicity of fentanyl, heroin and methamphetamine, the combinations can be counted as in combination of fentanyl + heroin, and fentanyl + methamphetamine. Similarly, in combination of pharmaceutical opioids and non-pharmaceutical opioids or methamphetamine may duplicate under different drugs. Those will result in the total sum > 100% for some drugs. Be cautious when counting the specific drug overdose deaths involved multiple drugs based on the numbers in the table.

# Nearly 97 percent of unintentional drug overdose deaths were caused by opioids and/or stimulants

Opioids were related to **68.5%** of the deaths

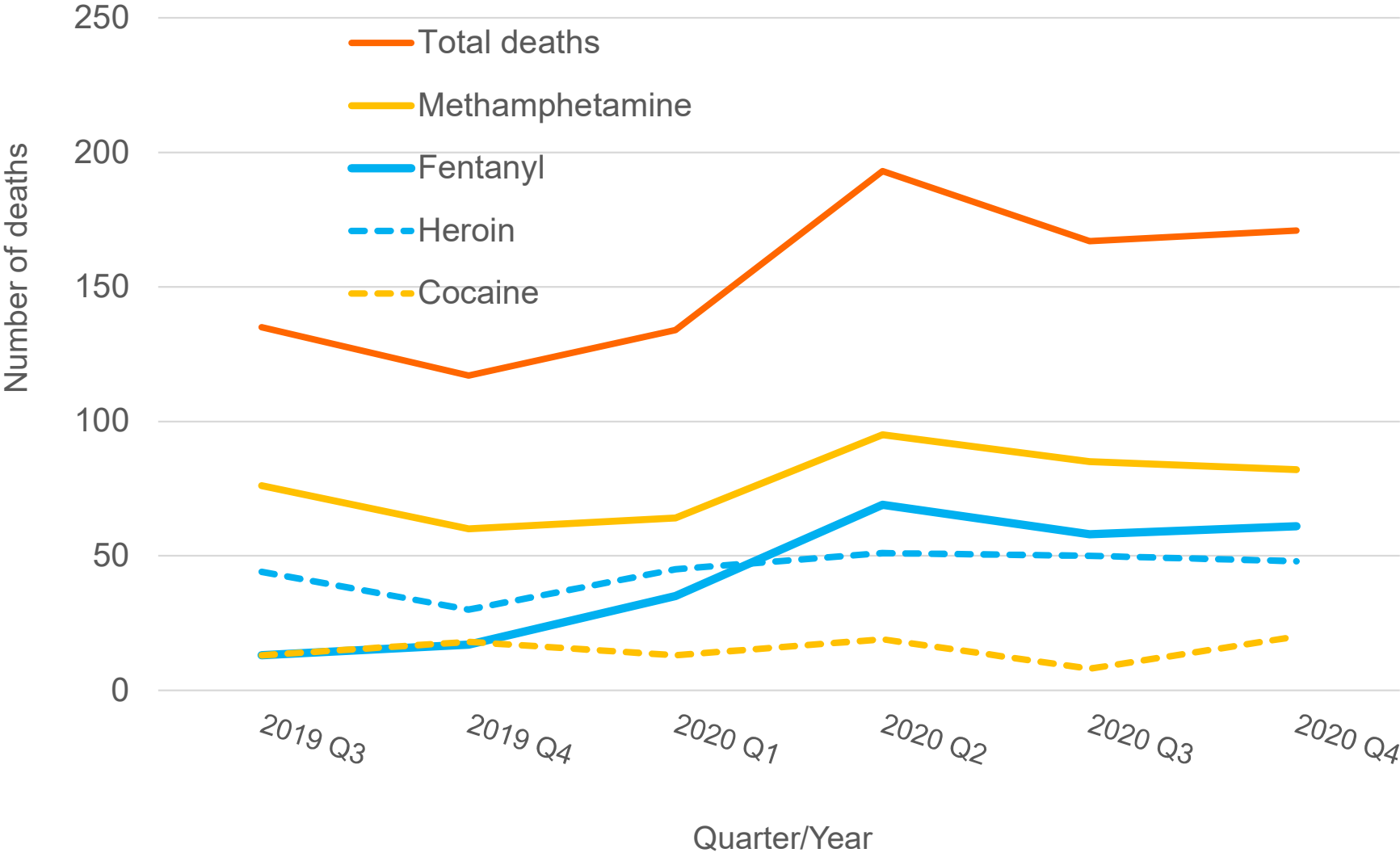
Stimulants (such as methamphetamine, amphetamine, cocaine, and MDMA) were related to **57.5%** of the deaths

Unintentional drug overdose deaths by drug category, Oregon, 2020





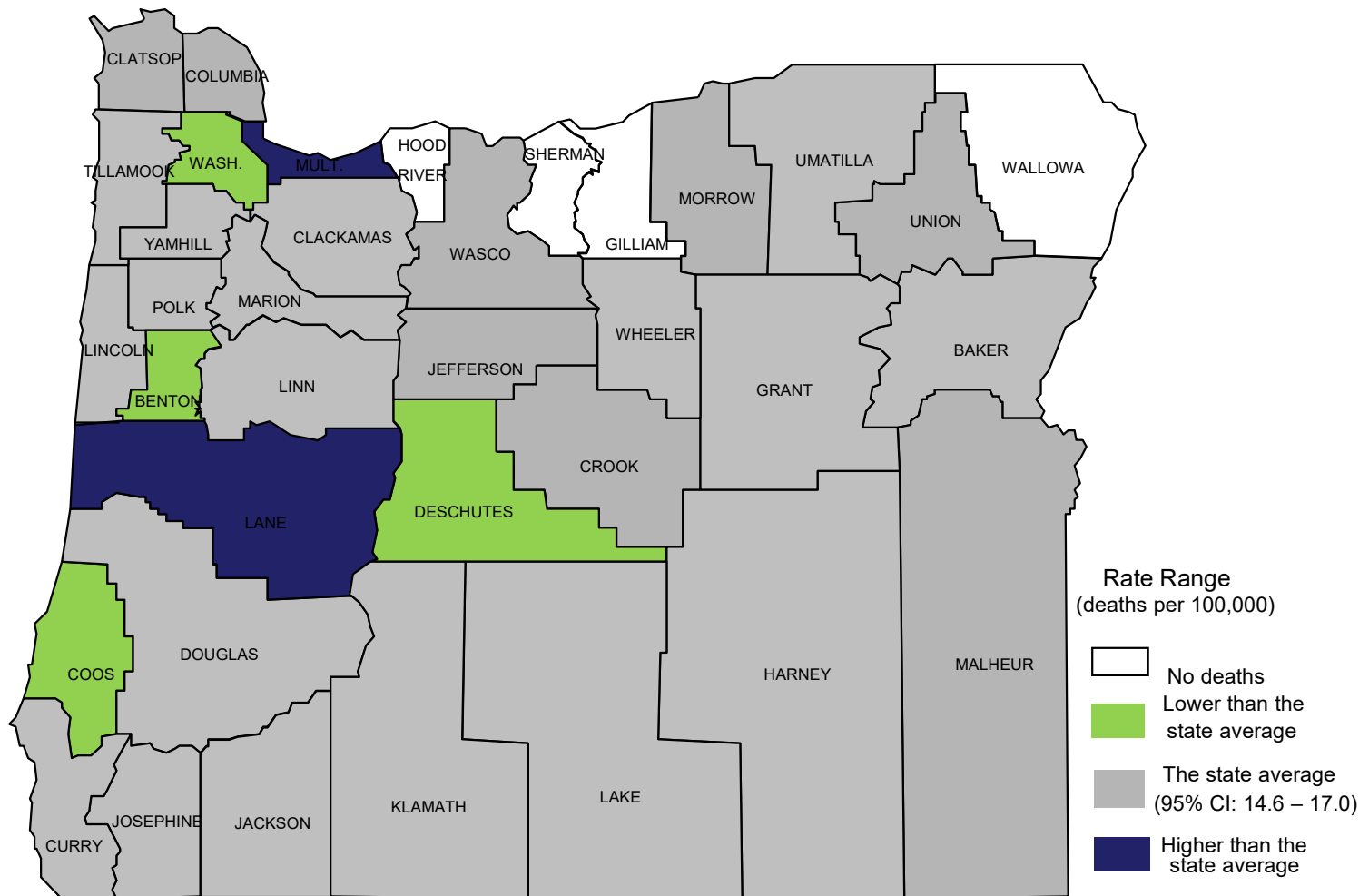
# Unintentional drug overdose deaths by drug and quarter, Oregon, July 2019 - Dec. 2020



Source: SUDORS

# Majority unintentional fatal overdose incidents (491 incidents, 74% of total deaths) occurred in **six counties**: Multnomah, Lane, Marion, Clackamas, Washington, and Jackson

## Unintentional Drug Overdose Death Rates by Injury County, Oregon, 2020



A hand holding a magnifying glass over the text "Where can I find the data?". The magnifying glass is held by a hand on the right side of the image, and the lens is focused on the text. The text is written in a bold, black, sans-serif font and is centered within the circular frame of the magnifying glass. The background is plain white.

**Where can I  
find the  
data?**



# Healthier Together Oregon



<https://healthiertogetheroregon.org/>

## Healthier Together Oregon Scorecard



The table below shows the most recent data for each indicator.

Click on the chart icon (📊) next to an indicator to see more data. Where available, data are presented by year, county, race/ethnicity, sex, age and other demographic breakdowns.

ACCESS TO EQUITABLE PREVENTIVE HEALTHCARE		Oregon	Click
Childhood Immunizations	Percentage of two-year-olds up-to-date on immunizations	71%	
Colorectal Cancer Screening	Percentage of 65 to 75 year olds who have received the recommended colorectal cancer screening	72.3%	
Dental Visits	Percentage of adults with a dental visit in the previous year	70.1%	
ADVERSITY, TRAUMA, AND TOXIC STRESS		Oregon	
Adverse Childhood Experiences (ACEs)	Percentage of children with high ACEs score	20.4%	
Chronic School Absenteeism	Percentage of students missing 10% or more of school days in a year	20.4%	
High Concentrated Disadvantage	Percentage of population living in census tracts with a high level of concentrated disadvantage	27.0%	
BEHAVIORAL HEALTH		Oregon	
Adults With Poor Mental Health In Past Month	Percentage of adults reporting 1 or more days of poor mental health in the past month	44.3%	
Alcohol related deaths	Alcohol related deaths per 100,000	43.6 per 100,000	
Drug overdose/poisoning deaths	Drug overdose/poisoning deaths per 100,000	14.2 per 100,000	
Substance use disorder	Percentage of the population age 12+ with a substance use disorder in the past year	9.5%	
Suicide	Suicide deaths per 100,000	20.4 per 100,000	
Tobacco related deaths	Tobacco related deaths per 100,000	142.8 per 100,000	
Unmet Mental Health Care Need Among Youth	Percentage of 11th graders who report unmet emotional/mental health care needs in the past 12 months	23.2%	
ECONOMIC DRIVERS		Oregon	
Child Care Cost Burden	Median price of child care as percentage of median family income	19.3%	
Food Insecurity	Percentage of population that is food insecure	11.5%	
Housing Cost Burden Among Renters	Percentage of renter households spending more than 30% of household income on rent	48.6%	
Opportunity Index: Economy Dimension	Composite, relative measure of the following: Jobs, Wages, Poverty, Income Inequality, Access to Banking Services, Affordable Housing, Broadband Internet Subscription	57.2%	
Third grade reading proficiency	Percentage of 3rd grade students receiving a level 3 or 4 on the Statewide English Language Arts assessment	46.6%	
INSTITUTIONAL BIAS		Oregon	
Premature Death	Years of potential life lost before age 75 per 100,000	6336 per 100,000	
School Disciplinary Action	Percentage of students receiving disciplinary actions	6.4%	

# Injury and Violence Prevention Program Data Dashboards

## Data Dashboards

**Violent Death Data Dashboard** - Includes firearm, suicide and homicide data

**Opioid Data Dashboard**

**Sexual Violence Prevention Resource Map**

**Suicide Map Tool**

**Note:**  
SUDORS data not  
yet published

[https://www.oregon.gov/oha/PH/DiseasesConditions/InjuryFatalityData/  
Pages/index.aspx](https://www.oregon.gov/oha/PH/DiseasesConditions/InjuryFatalityData/Pages/index.aspx)

# Thank you!

## **Vicky Buelow**

Lead Research Analyst

Alcohol & Other Drug Prevention Program

Health Promotion & Chronic Disease Prevention Section

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## **Xun Shen**

Epidemiologist

Oregon National Violent Death Reporting System

State Unintentional Drug Overdose Reporting System

Injury and Violence Prevention Program

[xun.shen@state.or.us](mailto:xun.shen@state.or.us)

