

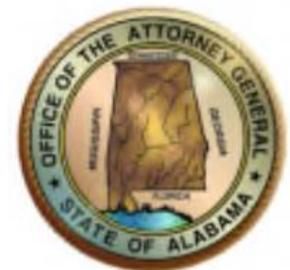
# Overdose Surveillance Summary

## Alabama Department of Public Health (ADPH)

Center for Health Statistics;  
Bureau of Communicable Disease;  
Office of Emergency Medical Services; and  
Bureau of Prevention, Promotion, and Support

July 2019



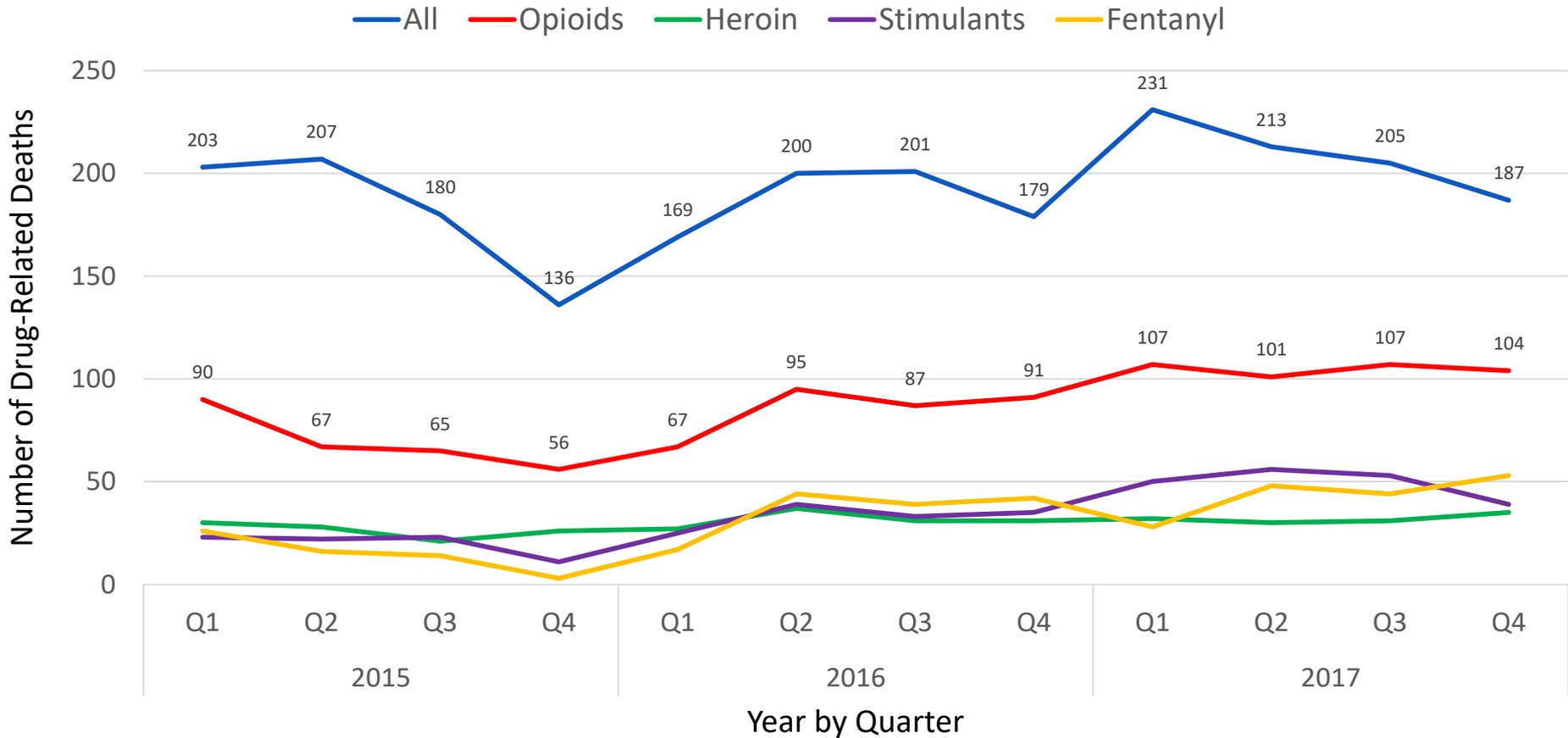


- ADPH is the lead agency for surveillance of fatal and nonfatal drug overdoses, 911 runs related to drug overdose, and naloxone administration by emergency medical services personnel. This surveillance summary is intended to provide information for overdose prevention efforts, resource allocation, policy decisions, and to assist in monitoring the impact of these activities.
- The Alabama Department of Mental Health and the Alabama Opioid Overdose and Addiction Council lead the comprehensive coordinated strategy to combat Alabama's opioid crisis and reduce the number of deaths and other adverse consequences in the state. Read more about opioids and how Alabama is addressing the crisis at:
  - <https://mh.alabama.gov/understanding-the-opioid-crisis/>
  - [https://cdn.ymaws.com/www.aparx.org/resource/resmgr/small\\_doses/Alabama\\_Opioid\\_Overdose\\_and\\_.pdf](https://cdn.ymaws.com/www.aparx.org/resource/resmgr/small_doses/Alabama_Opioid_Overdose_and_.pdf)



# Number of Drug-Related Overdose Deaths by Substance — Alabama, 2015–2017

The number of overdose deaths involving fentanyl doubled between the first quarter of 2015, and the fourth quarter of 2017, surpassing the number of deaths involving heroin and stimulants. The 2018 death data are not available at this time.



## Ranking of Top 10 Drugs Involved in Overdose Deaths — Alabama, 2013–2017

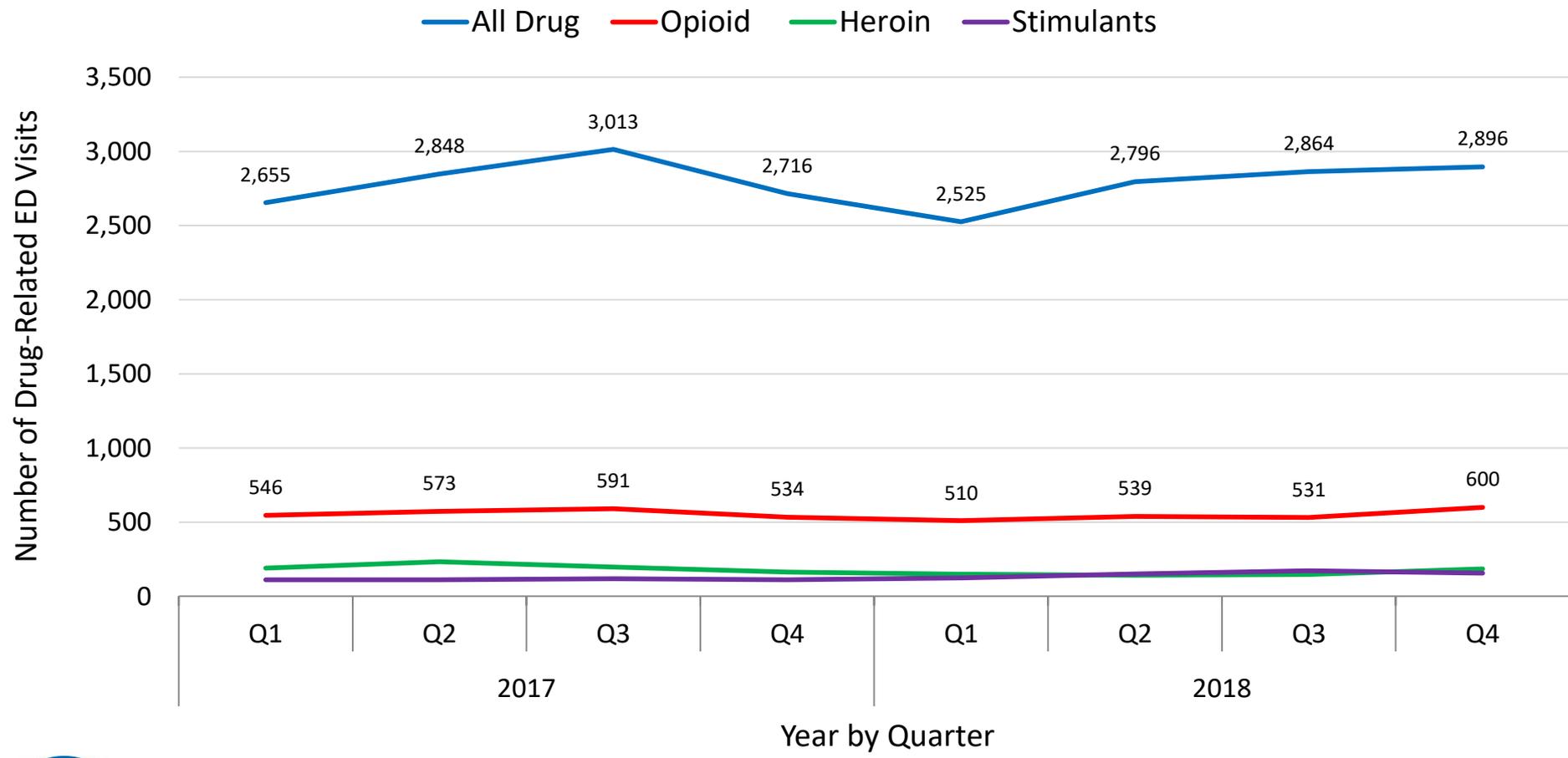
Overdose deaths involving fentanyl and methamphetamine are on the rise and prescribed opioids are on the decline. In 2016 and 2017, fentanyl was the top drug involved in overdose deaths followed by heroin. Rankings are based on information obtained from death certificates where known or suspected drug(s) were specifically provided. Therefore, rankings may not accurately reflect overdose deaths with incomplete or missing data on involved drugs.

Rank	2013	2014	2015	2016	2017
1	METHADONE (39)	HEROIN (123)	HEROIN (105)	FENTANYL (140)	FENTANYL (161)
2	HEROIN (37)	METHADONE (42)	FENTANYL (59)	HEROIN (126)	HEROIN (128)
3	COCAINE (28)	COCAINE (43)	METHADONE (41)	COCAINE (81)	METHAMPHETAMINE (110)
4	OXYCODONE (24)	HYDROCODONE (34)	COCAINE (39)	METHAMPHETAMINE (45)	COCAINE (98)
5	HYDROCODONE (16)	FENTANYL (32)	OXYCODONE (36)	METHADONE (34)	ALPRAZOLAM (78)
6	FENTANYL (15)	OXYCODONE (28)	METHAMPHETAMINE (28)	OXYCODONE (31)	OXYCODONE (68)
7	OPIATE (15)	ALPRAZOLAM (28)	HYDROCODONE (25)	ALPRAZOLAM (30)	HYDROCODONE (54)
8	MORPHINE (13)	METHAMPHETAMINE (19)	MORPHINE (19)	HYDROCODONE (30)	METHADONE (32)
9	ALPRAZOLAM (12)	OPIATE (15)	ALPRAZOLAM (18)	MORPHINE (21)	MORPHINE (24)
10	METHAMPHETAMINE (13)	MORPHINE (14)	OPIATE (17)	TRAMADOL (11)	TRAMADOL (23)
<b>Total Drug-Related Deaths</b>	<b>579</b>	<b>685</b>	<b>726</b>	<b>749</b>	<b>836</b>



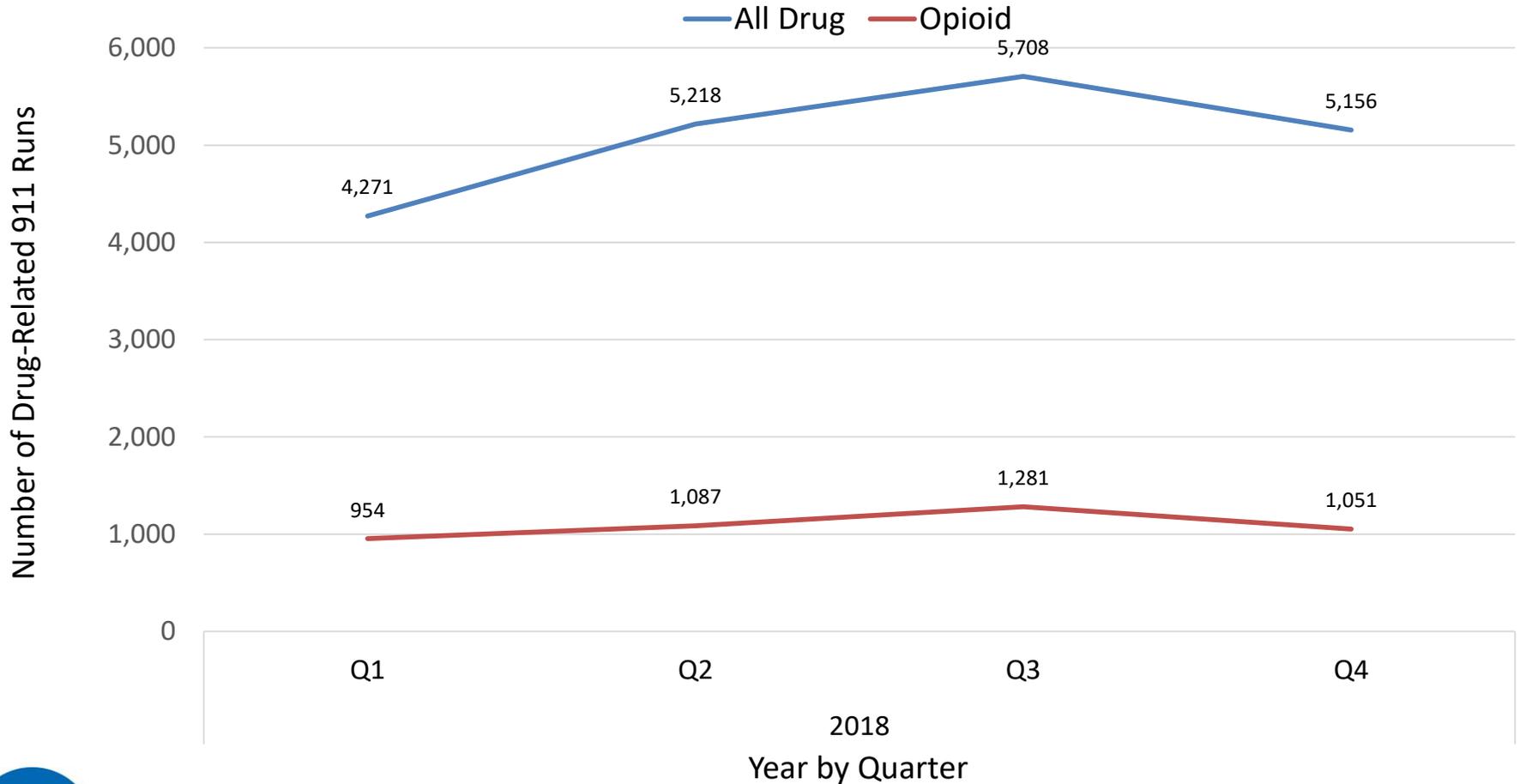
# Number of Drug Overdose-Related Emergency Department (ED) Visits by Substance — Alabama, 2017–2018

The number of all drug overdose-related ED visits is stable for all drug classes from 2017–2018. These data do not account for patient outcome.



# Number of Drug Overdose-Related 911 Runs by Substance — Alabama, 2018

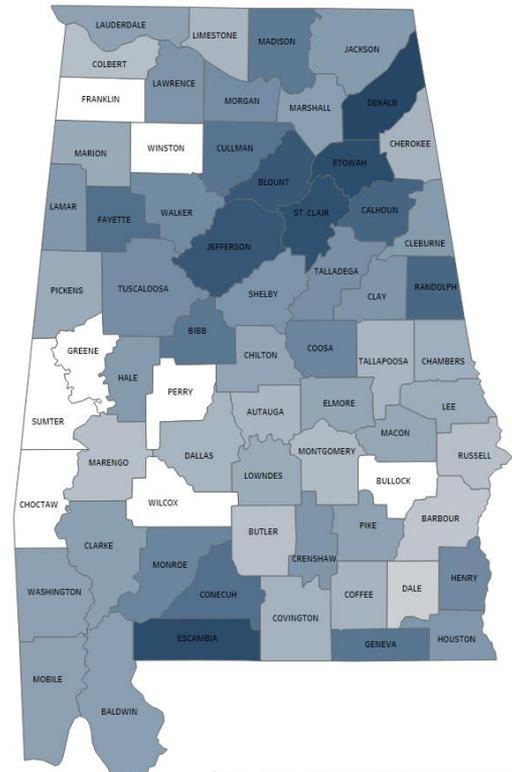
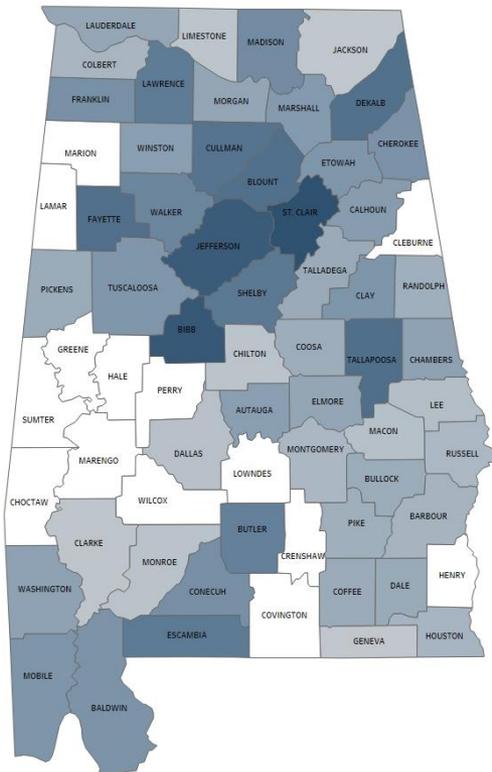
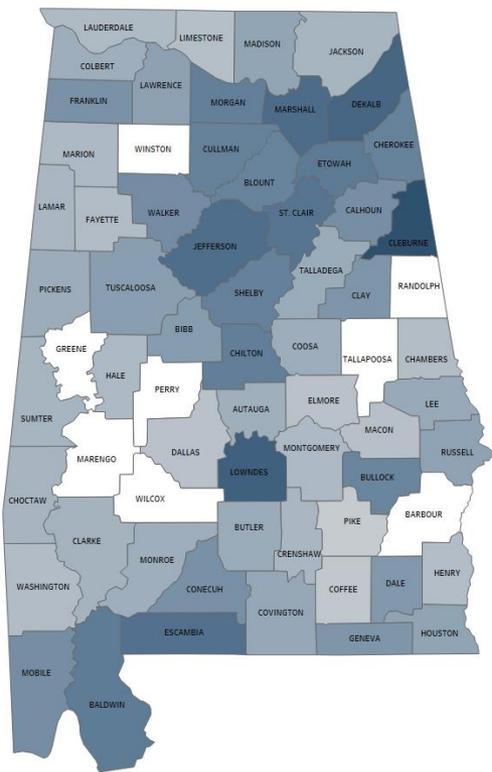
BioSpatial, the new 911 data visualization application, facilitates categorization of 911 runs by substance. The number of 911 runs for all drug overdose-related runs rose by almost 1,000 between the first and fourth quarters of 2018.



# Rates of **All Drug**-Related Overdose Deaths by County of Residence — Alabama, 2015–2017

Maps show the rates of all drug overdose deaths by county of residence and year. In 2017, the highest rates of all drug-related deaths occurred in the Northeastern district; Jefferson, Blount, St. Clair, Calhoun, Etowah, and DeKalb counties. Note: County of residence rates calculated with few deaths (numerator) and small populations (denominator) can be unreliable.

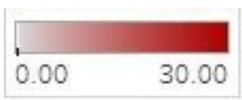
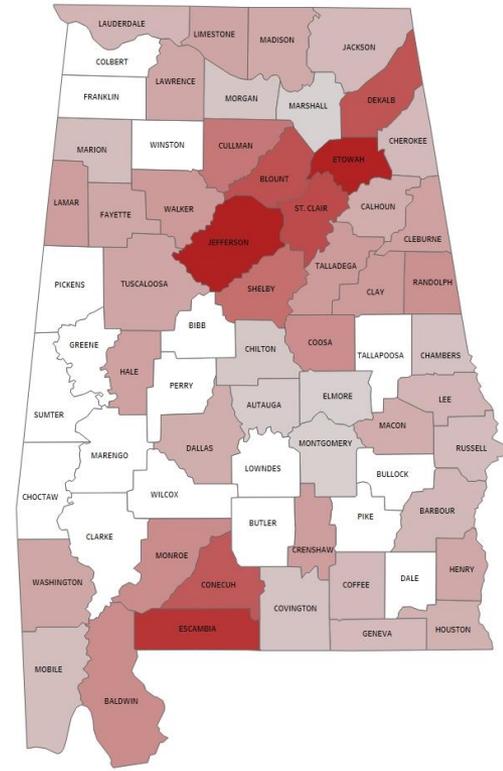
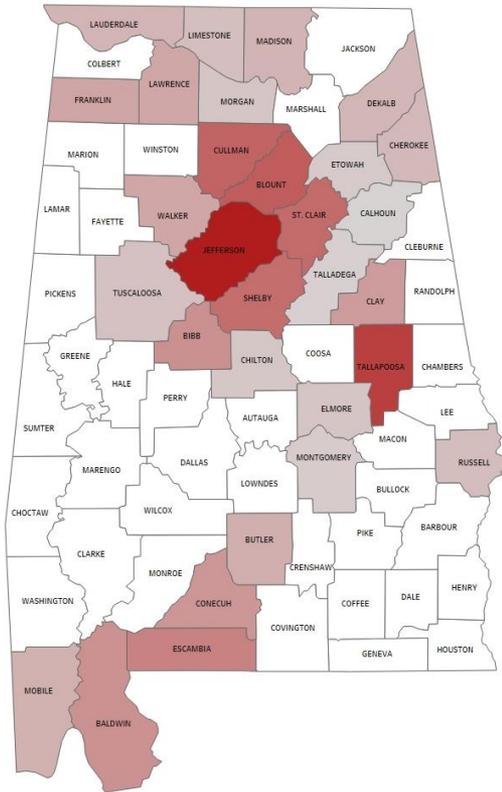
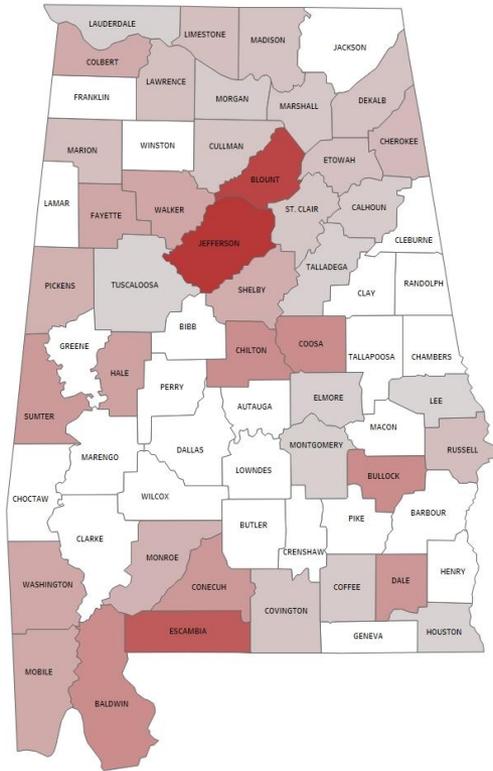
2015	2016	2017
Average 14.9 per 100,000 population	Average 15.4 per 100,000 population	Average 17.1 per 100,000 population



# Rates of Opioid-Related Deaths by County of Residence — Alabama, 2015–2017

Maps show the rates of opioid overdose deaths by county of residence and year. Over time, the rate of opioid-related deaths increases and extends along the I-59 corridor and northwest Florida border. Note: County of residence rates calculated with few deaths (numerator) and small populations (denominator) can be unreliable.

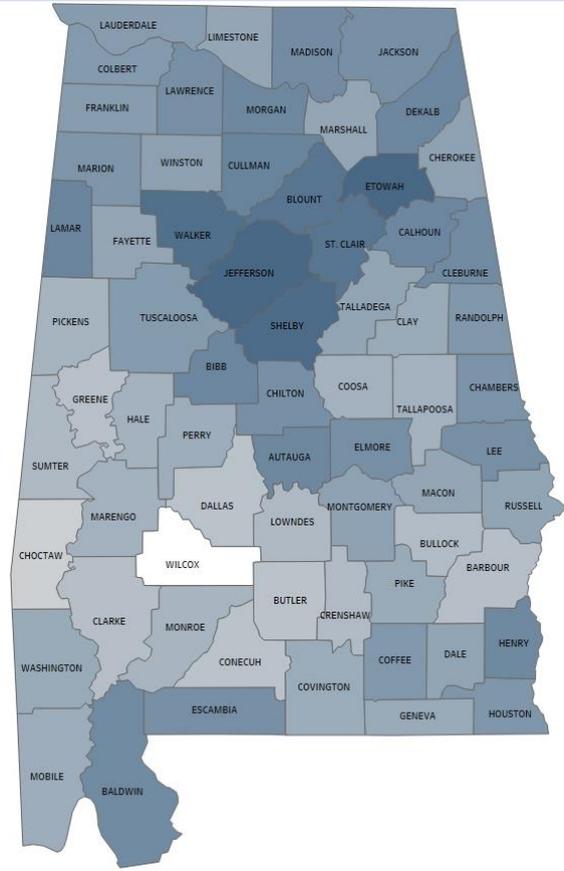
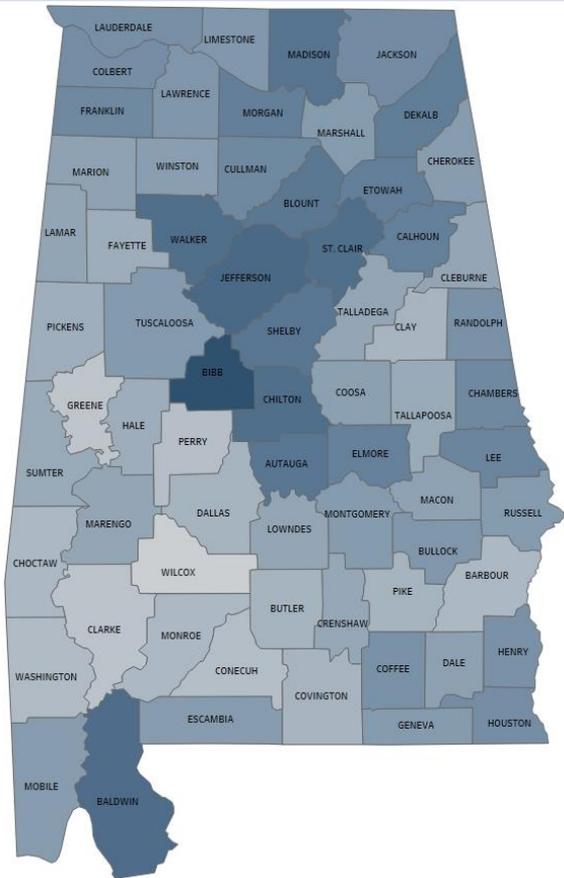
2015	2016	2017
Average 5.7 per 100,000 population	Average 7.0 per 100,000 population	Average 8.6 per 100,000 population



# Percentage of **All Drug** Overdose-Related ED Visits by County of Residence — Alabama, 2015–2017

In general, trends in nonfatal overdoses are geographically similar to fatal overdoses. Note: One ED visit does not necessarily translate to one person.

2017	2018
Average 0.57% of all ED visits	Average 0.51% of all ED visits

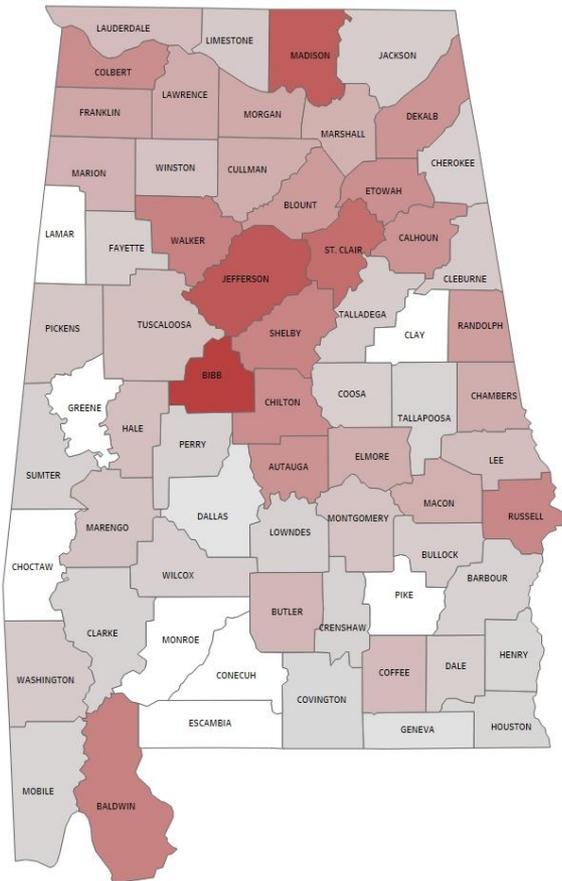


# Percentage of **Opioid** Overdose-Related ED Visits by County of Residence — Alabama, 2015–2017

In general, trends in nonfatal overdoses are geographically similar to fatal overdoses. Counties in the Northern, Northeastern, Jefferson, and West Central districts had the highest rates of opioid-related ED visits.

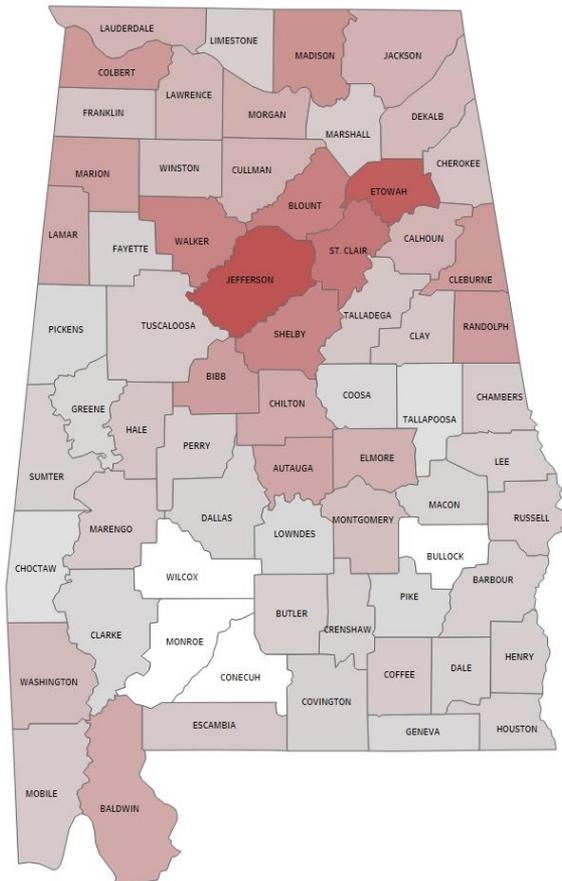
**2017**

Average 0.12% of all ED Visits



**2018**

Average 0.10% of all ED Visits



# Rates of **All Drug** Overdose-Related 911 Runs by County of Residence — Alabama

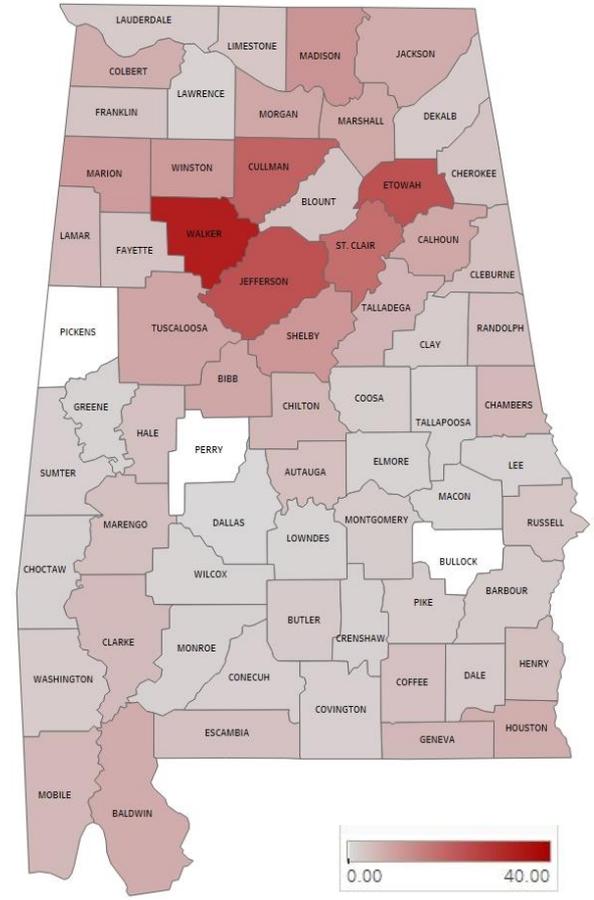
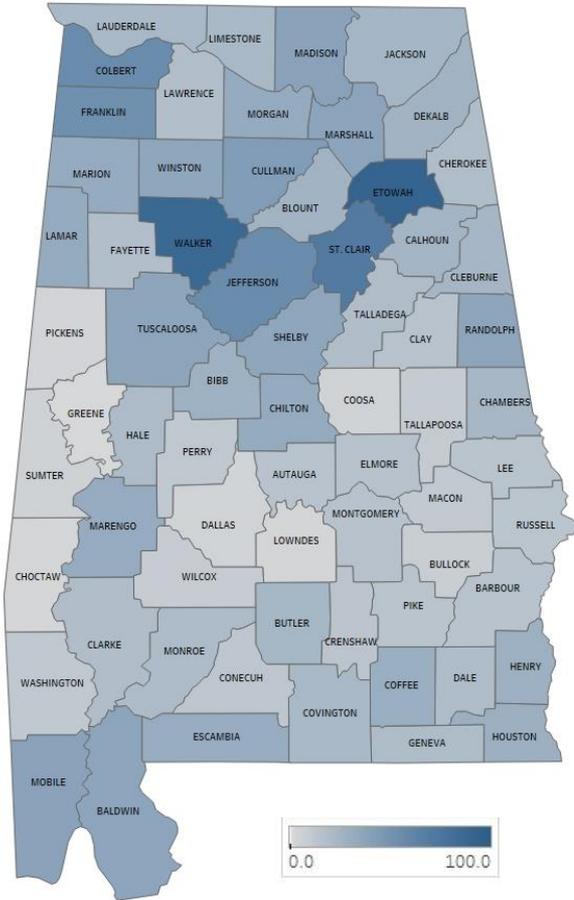
# Rates of **Opioid** Overdose-Related 911 Runs by County of Residence — Alabama

**2018**

**2018**

Average 37.8 per 10,000 population

Average 5.5 per 10,000 population



# Rates of Naloxone Administration by County of Residence — Alabama, 2015–2017

2015

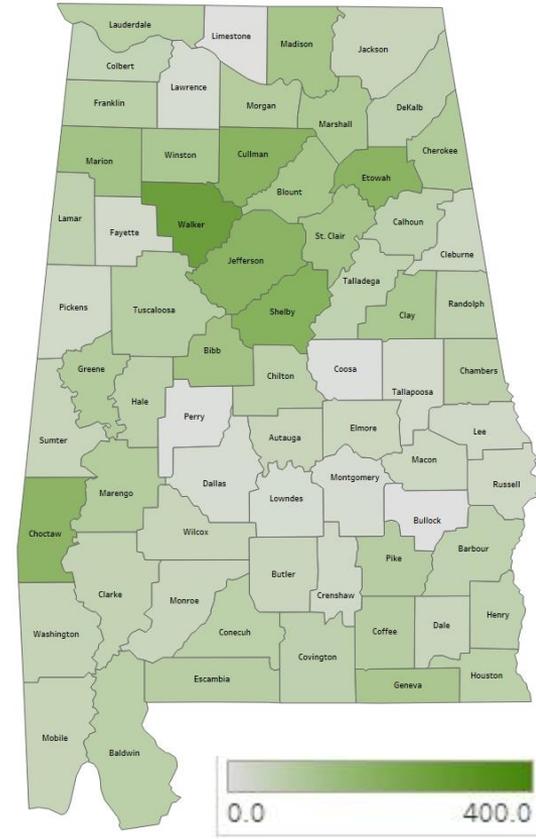
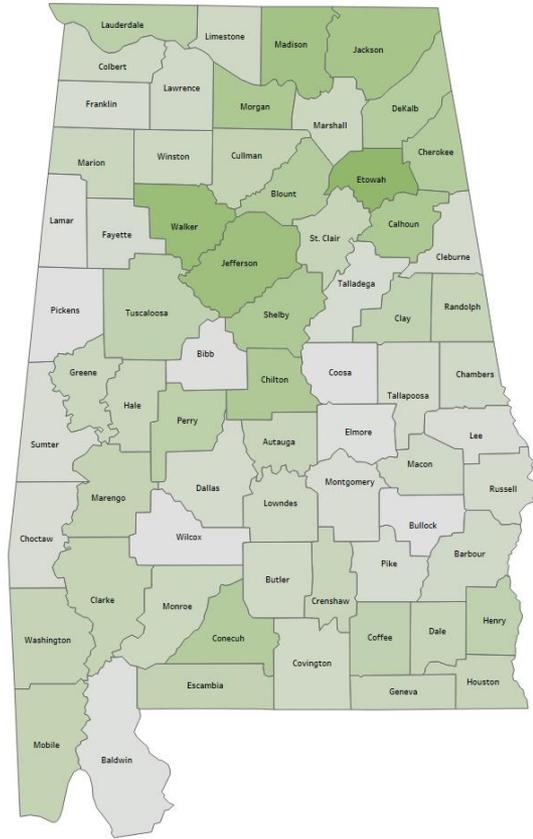
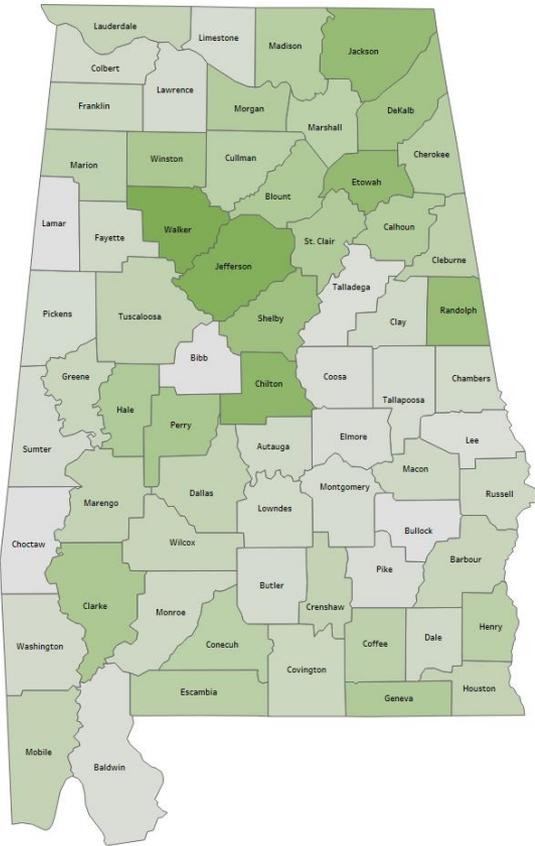
2016

2017

Average 111.6 per 100,000 population

Average 96.2 per 100,000 population

Average 129.6 per 100,000 population

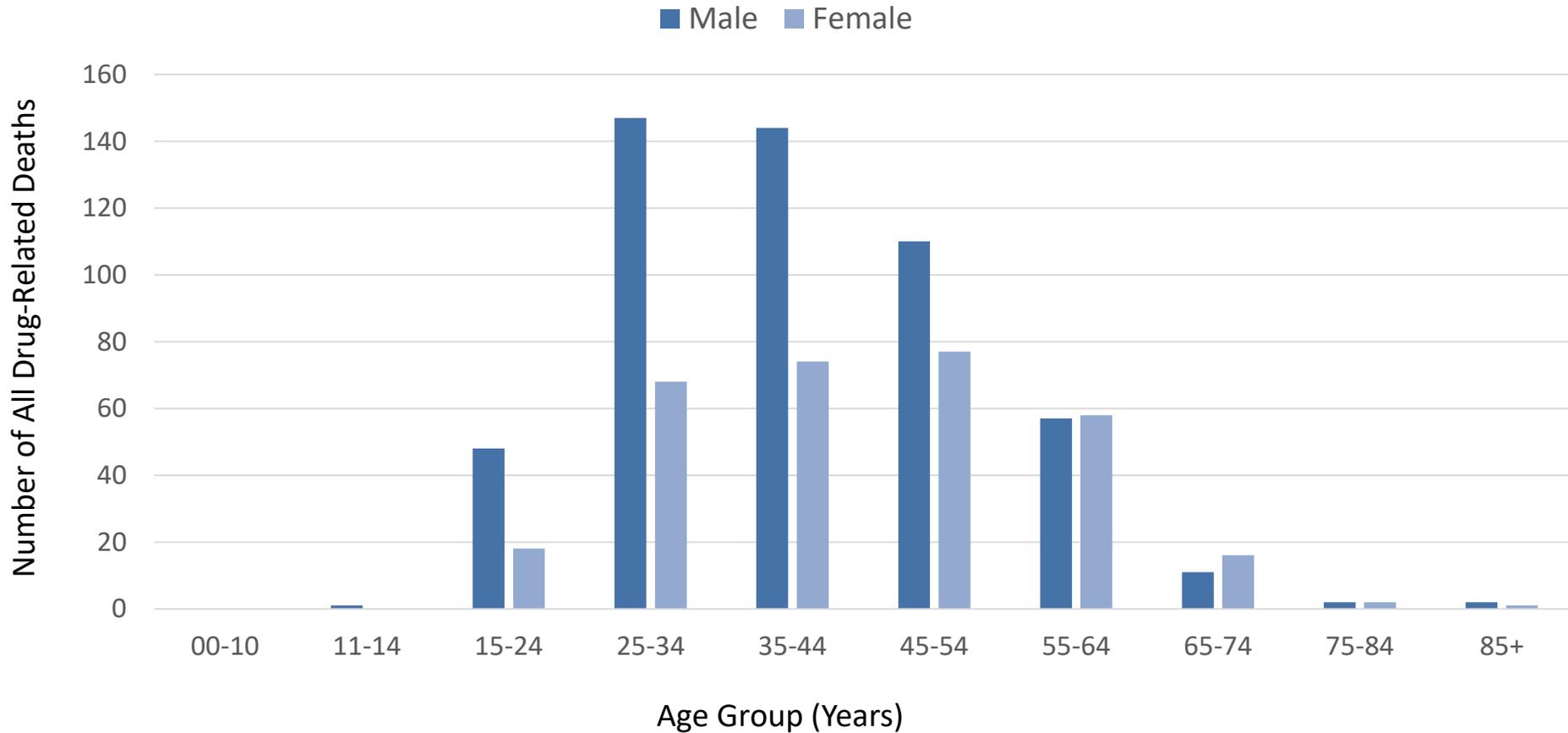


Note: One dose of naloxone counts as one administration. These data do not account for outcome after administration.



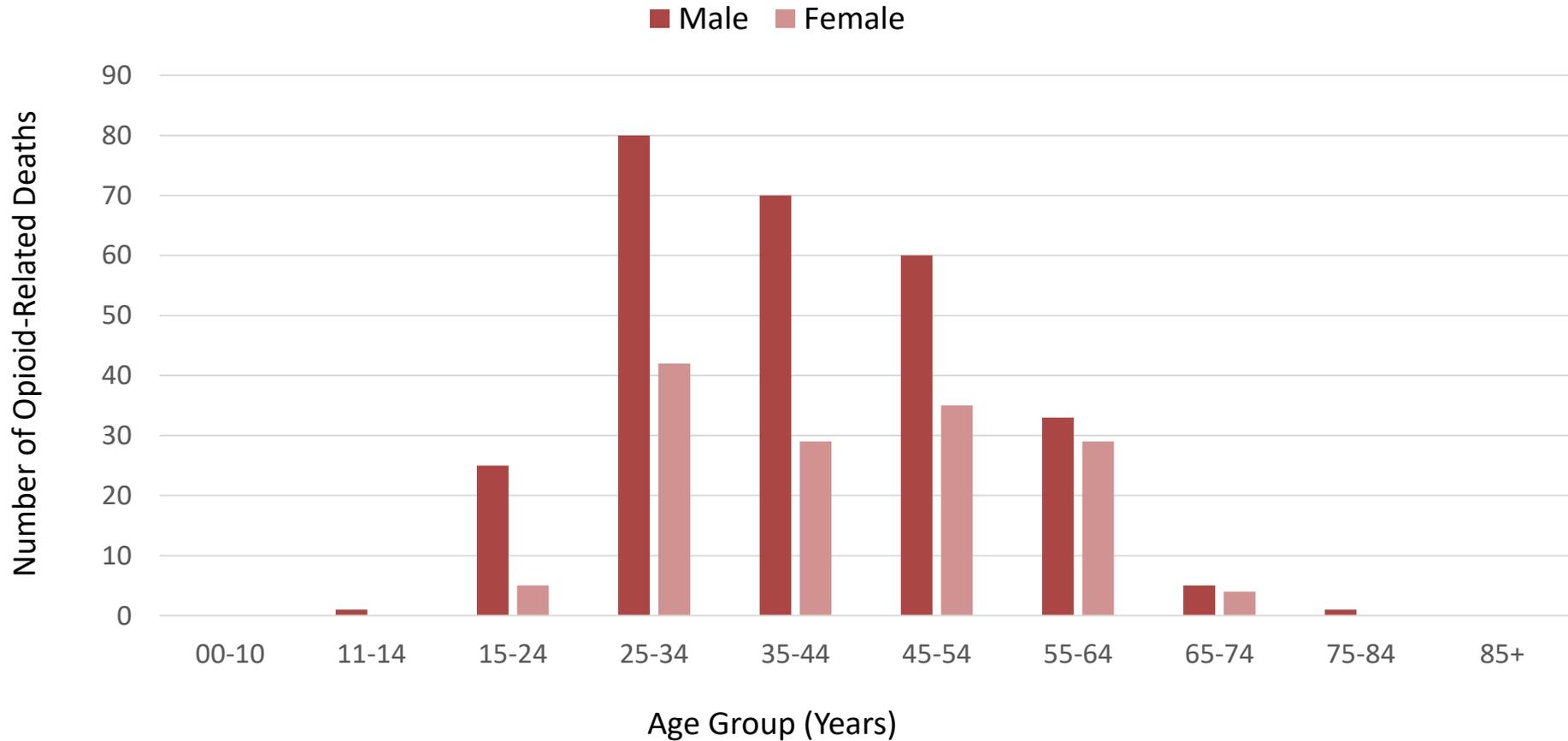
# Number of All Drug-Related Overdose Deaths by Age Group and Sex — Alabama, 2017

The number of all drug-related overdose deaths is higher among 15-54 year old males.



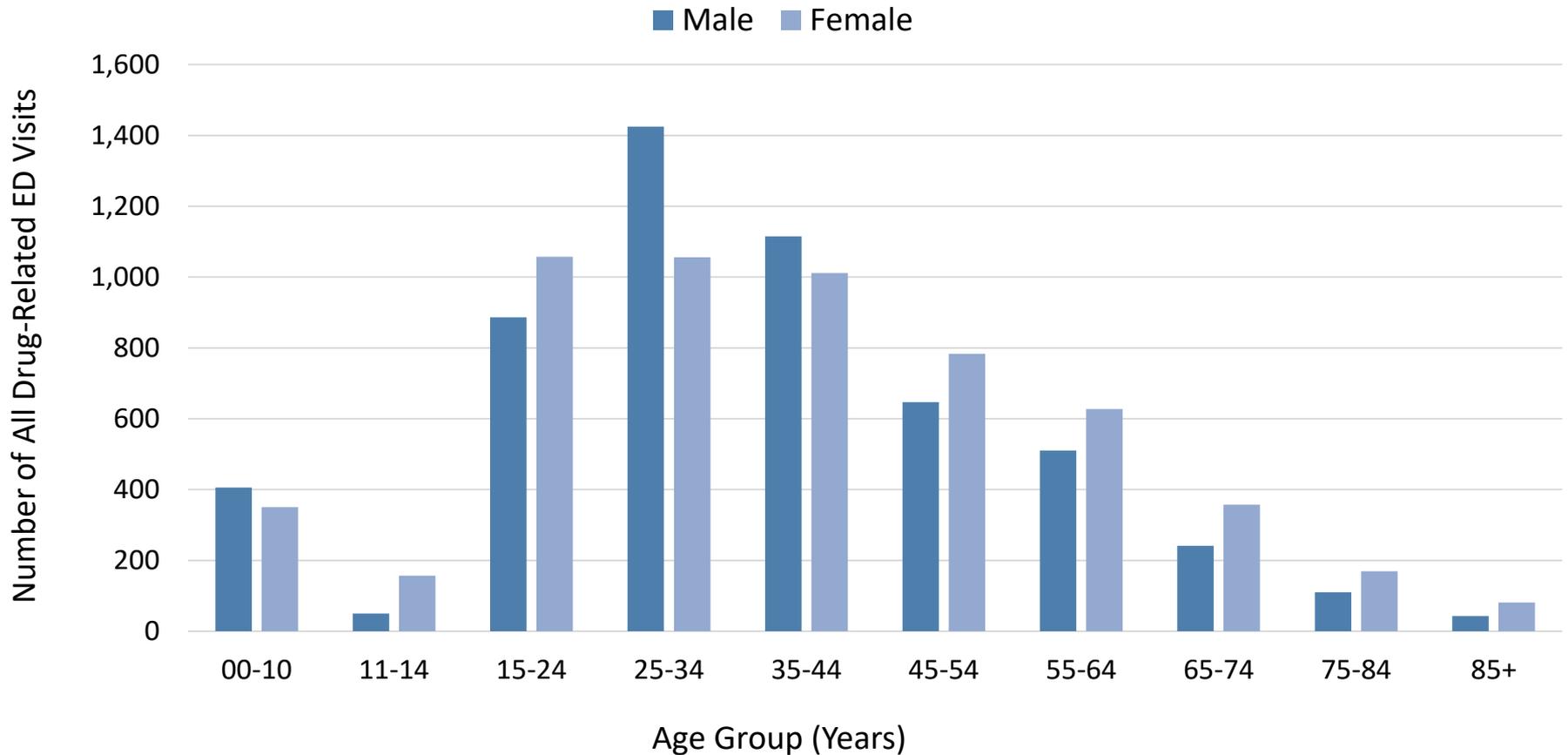
# Number of Opioid-Related Overdose Deaths by Age Group and Sex — Alabama, 2017

Like all drug-related deaths, the number of opioid-related overdose deaths is considerably higher among 15-54 year old males. In these age groups, twice as many males died from opioid-related overdose than females.



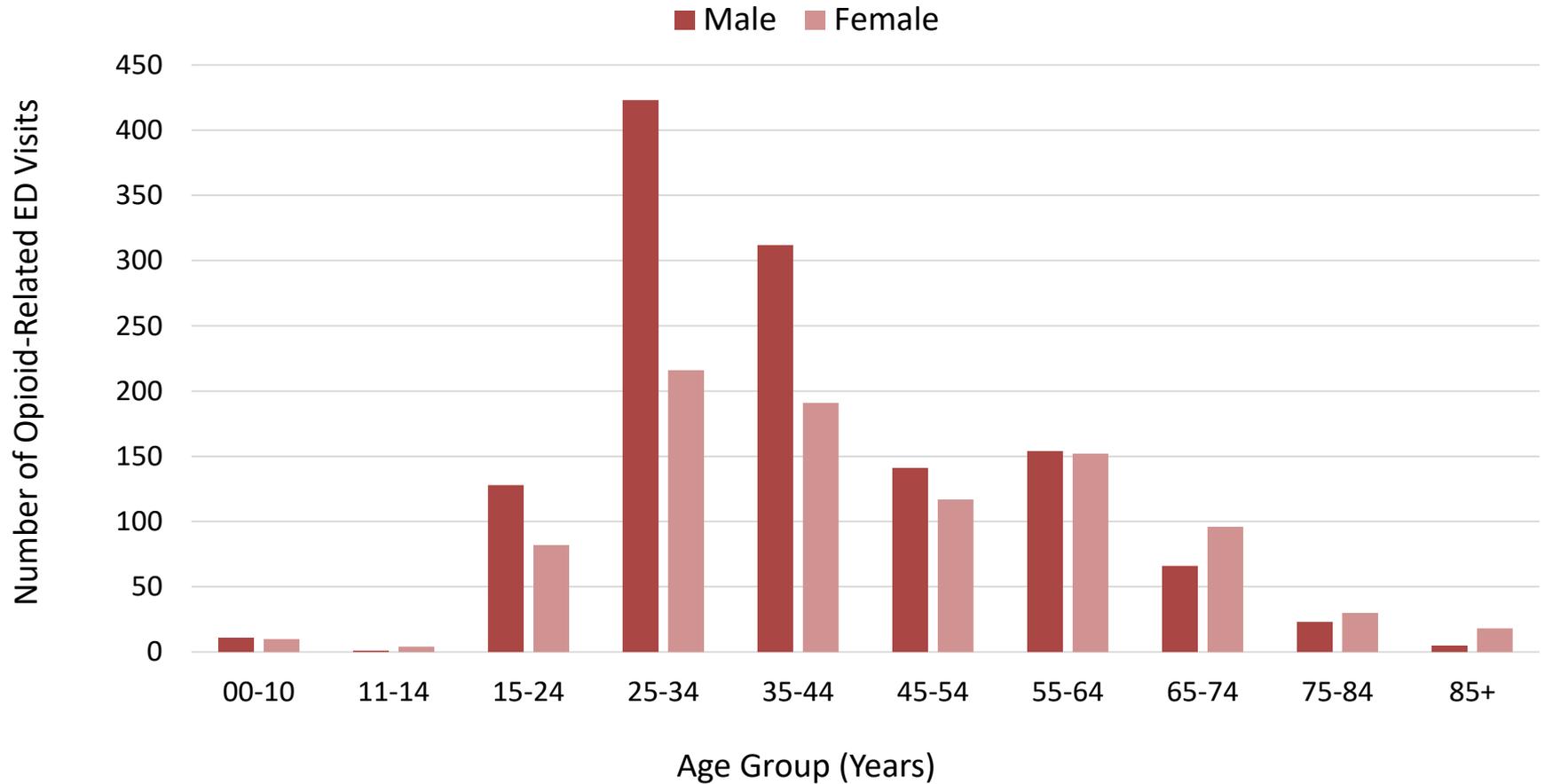
# Number of All Drug Overdose-Related ED Visits by Age Group and Sex — Alabama, 2018

In most age groups, more females than males have ED visits for all drug-related overdose.



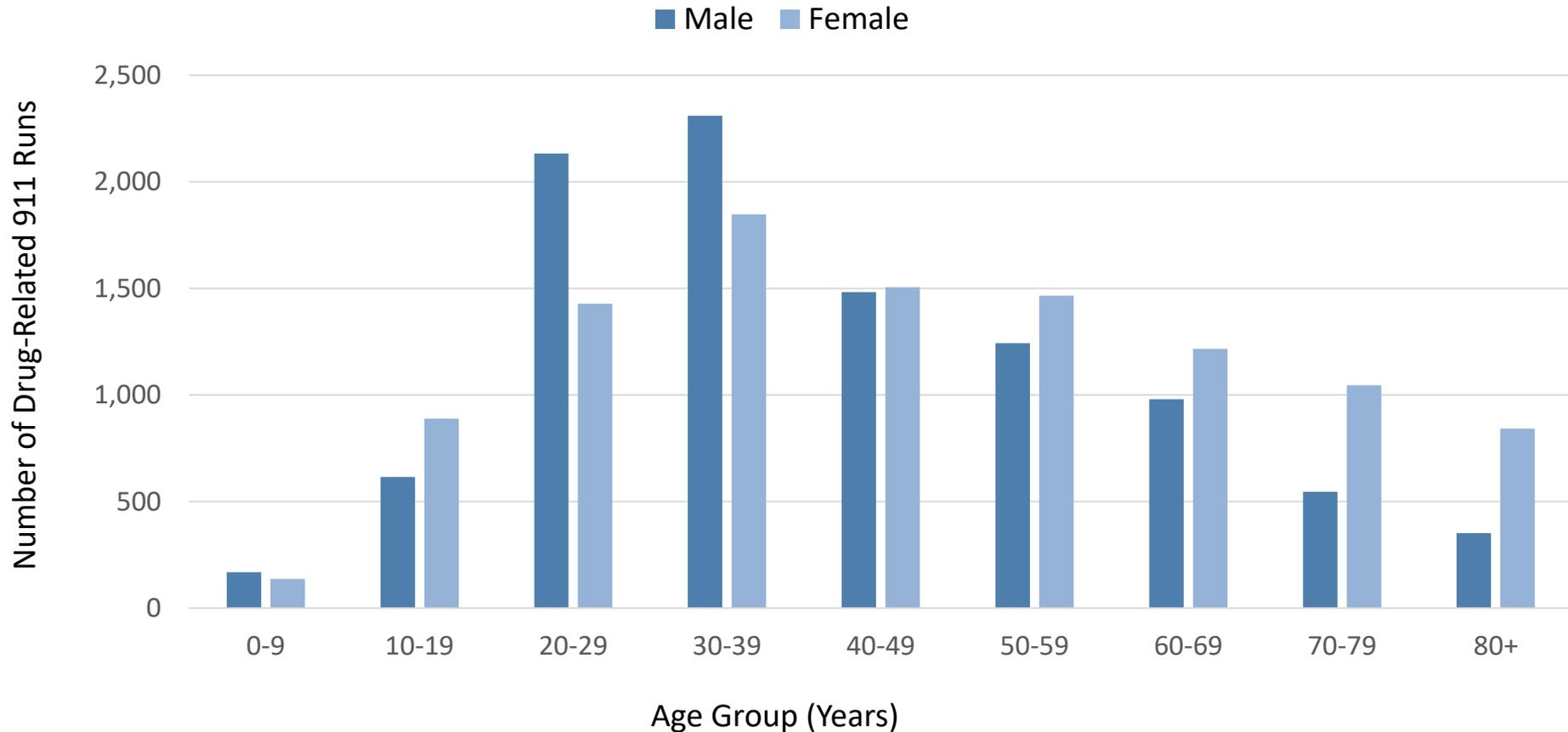
# Number of **Opioid** Overdose-Related ED Visits by Age Group and Sex — Alabama, 2018

In contrast to all drug-related overdoses, ED visits for opioid-related overdoses occur mostly among males. In the 25-44 age groups, twice as many males than females had ED visits for opioid-related overdoses.



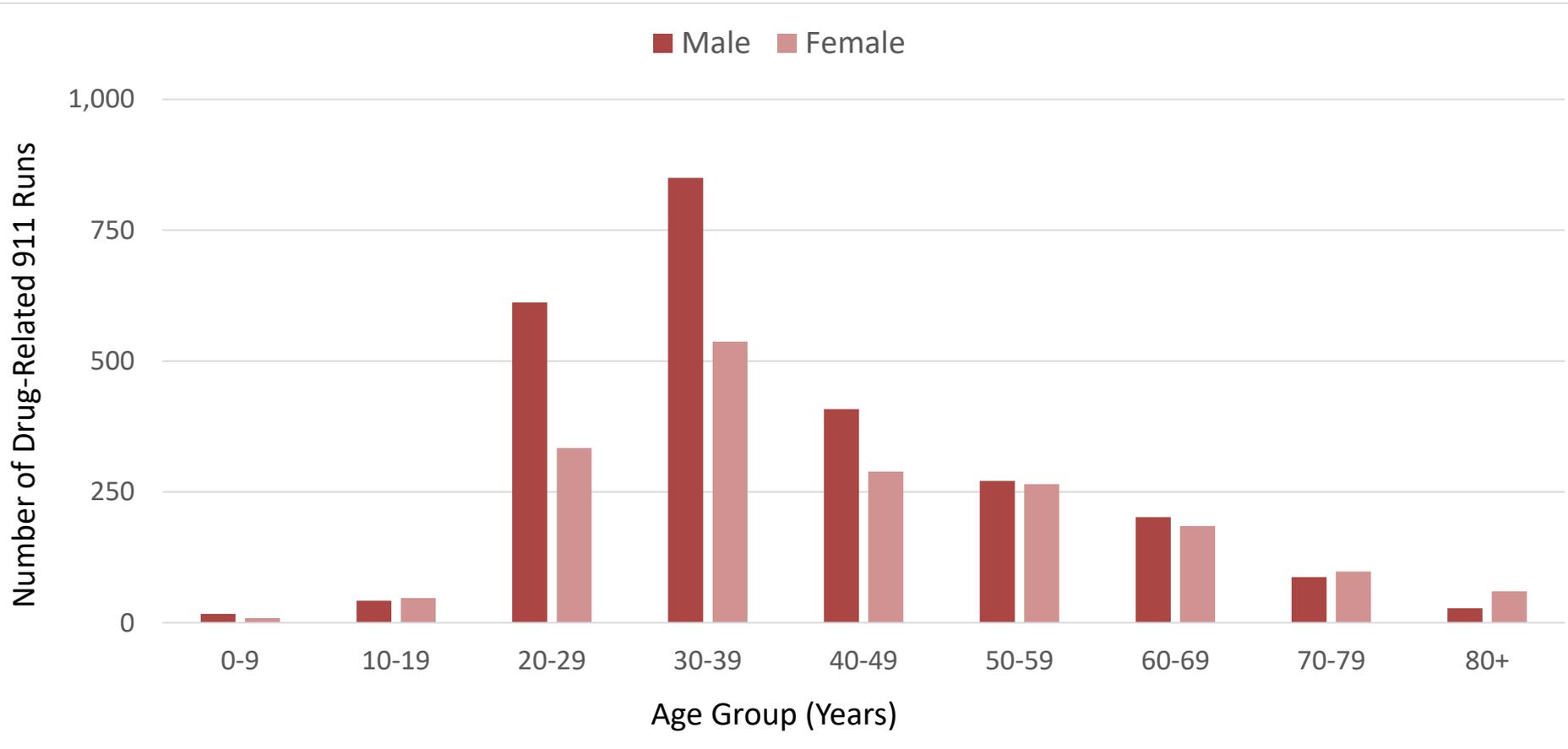
# Number of All Drug Overdose-Related 911 Runs by Age Group and Sex — Alabama, 2018

The number of all drug-related overdose 911 runs was higher among males aged 20-39 years and females aged 50 or older.



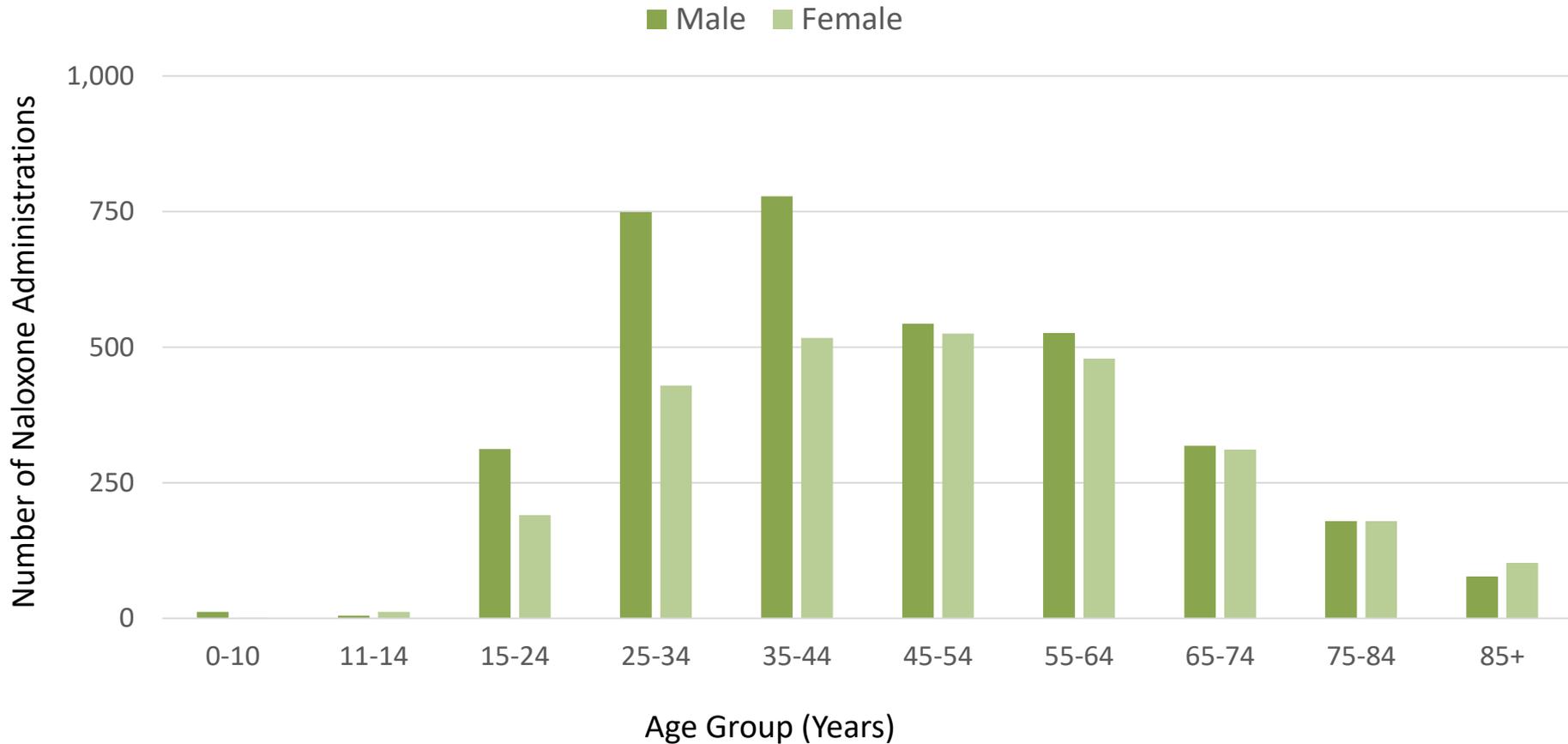
# Number of Opioid Overdose-Related 911 Runs by Age Group and Sex — Alabama, 2018

The number of all drug-related overdose 911 runs was higher among males 20-49 years old.



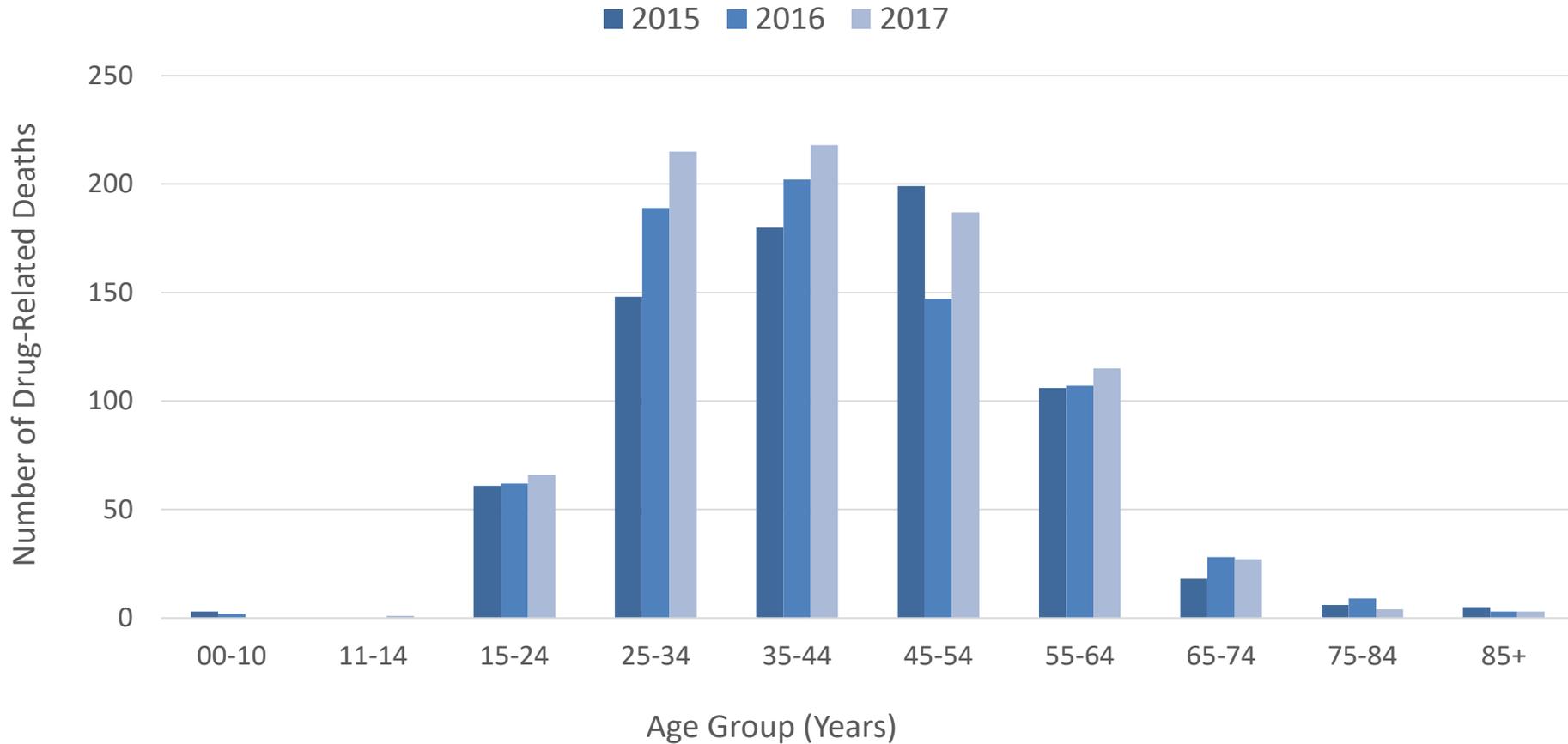
# Number of Naloxone Administrations by Age Group and Sex — Alabama, 2018

Naloxone administration occurs more frequently among males than females in most age groups.



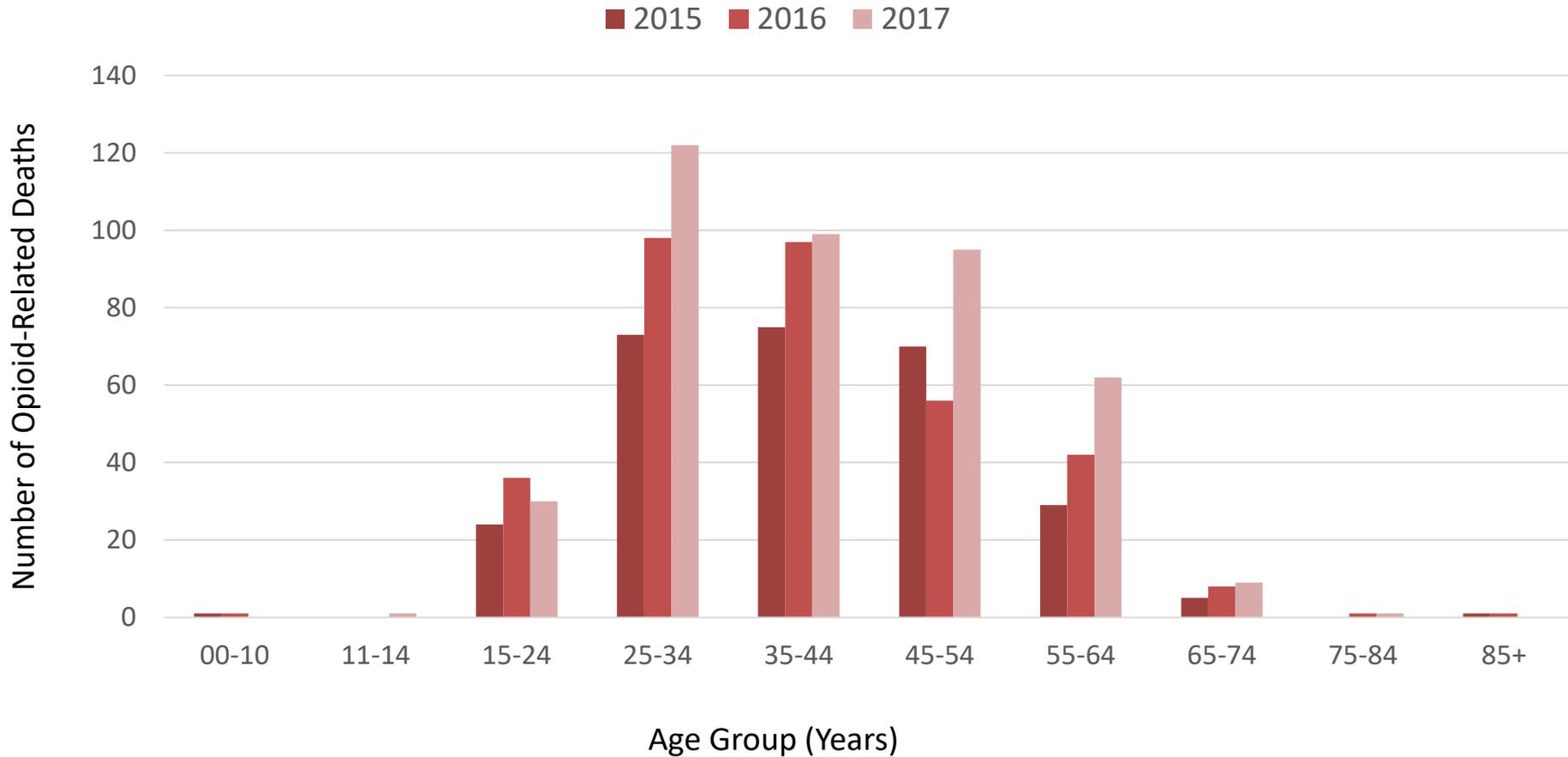
# Number of All Drug–Related Overdose Deaths by Age Group — Alabama, 2015–2017

The number of all drug-related overdose deaths continue to rise in the 25-44 age groups.

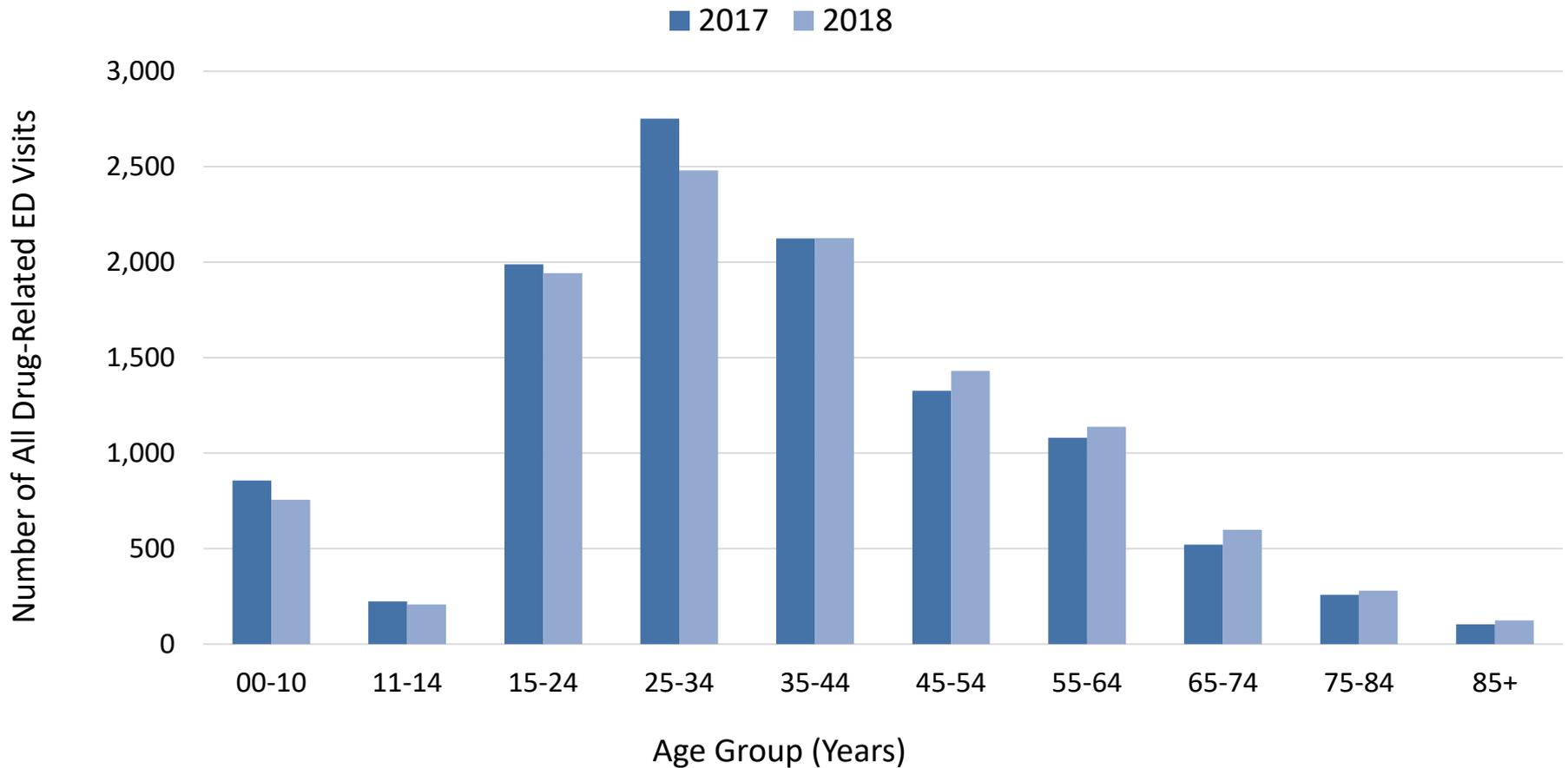


# Number of Opioid-Related Overdose Deaths by Age Group — Alabama, 2015–2017

In contrast to all drug-related overdose deaths, opioid-related overdose deaths have also risen in the 45-64 age groups. A substantial increase occurred between 2016 and 2017, in the 45-54 age group.

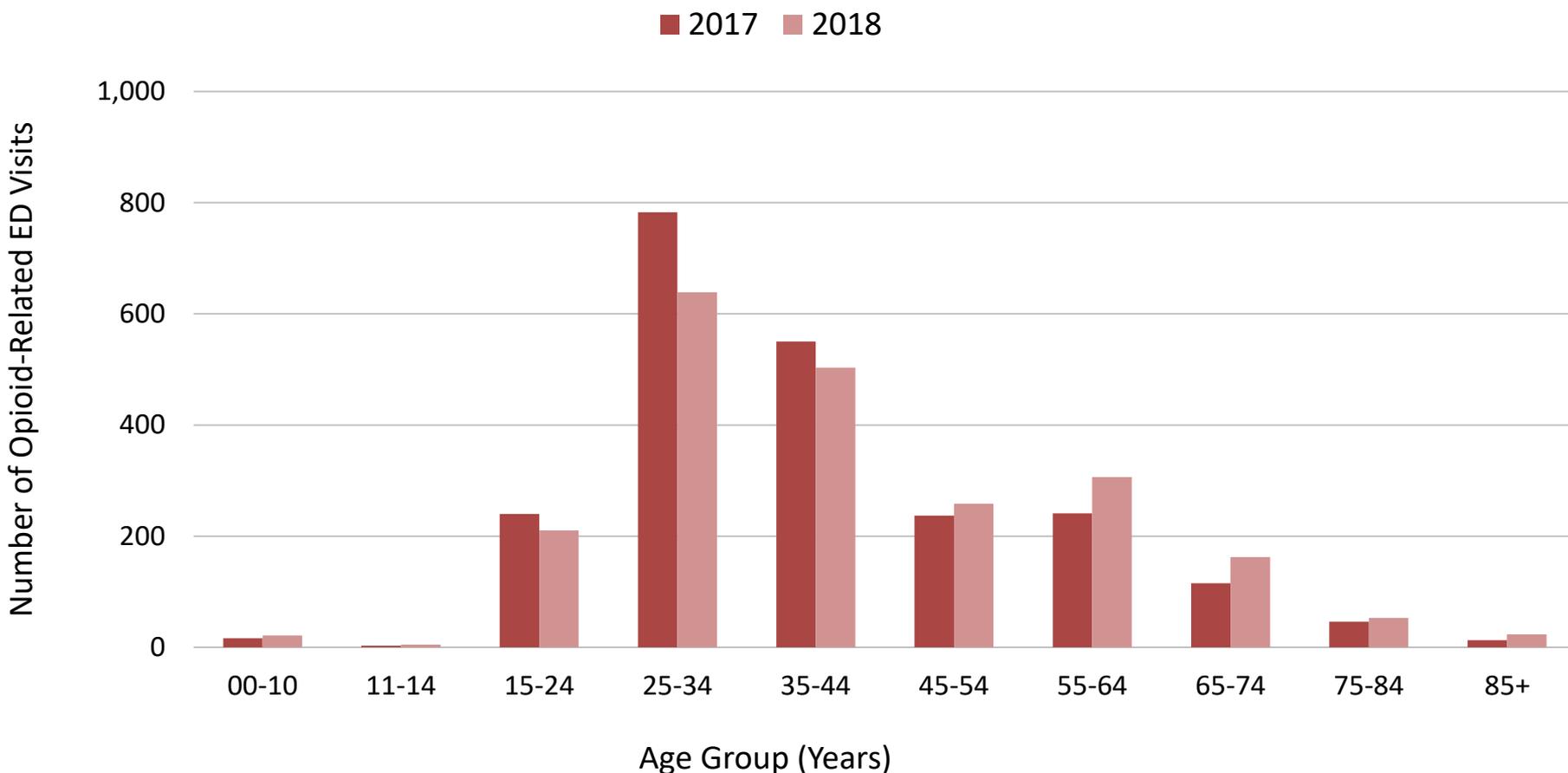


# Number of All Drug Overdose-Related ED Visits By Age Group — Alabama, 2017–2018



# Number of Opioid Overdose-Related ED Visits By Age Group — Alabama, 2017–2018

The number of opioid-related overdose ED visits dropped slightly in the 25-44 age groups, but increased slightly in the 45-64 age group from 2017 to 2018.



# Summary of Drug-Related Overdose Deaths

- In 2017, 836 drug overdose-related deaths were reported; 419 (50%) of those involved opioids.
- Number of fentanyl-related overdose deaths are increasing faster than any other illicit or prescribed drug.
- Rate of drug-related overdose deaths is intensifying and expanding in counties along the I-59 corridor and the northwest Florida border.
- Drug-related overdose deaths were higher in males aged 15-54; deaths involving opioids were twice that of females in the same age group.
- Surveillance is based on information obtained from death certificates; many do not contain information on specific drugs.
- Final death data for 2018 are not available at this time.



# Summary of Drug Overdose-Related ED Visits

- In 2018, 11,081 drug overdose-related ED visits were reported; 2,180 (19%) of those involved opioids.
- In general, the rate of drug overdose-related ED visits were highest in areas with the highest rates of overdose-related deaths, although rates of overdose-related ED visits are higher than deaths in the Northern and Northwestern districts.
- ED visits for all drug overdoses were more frequent among females in older age groups, but visits for opioid-related overdose are more frequent in younger males.
- Surveillance is based on clinical syndromes derived from information obtained from chief complaint and diagnosis codes of ED visits when available; ED utilization and reporting of diagnostic toxicology is unknown.



# Summary of Drug Overdose-Related 911 Runs and Naloxone Administrations

- In 2018, 20,353 drug overdose-related 911 runs were reported; 4,373 (21%) of those involved opioids.
- Rate of 911 runs for overdoses were highest in Jefferson and surrounding counties.
- Similar to the rate of overdose-related ED visits, 911 runs for all drug-related overdoses were higher in older females; 911 runs for opioid-related overdoses were higher in younger males.
- Surveillance is based on clinical impression, not diagnoses.
- In 2018, 6,287 doses of naloxone were administered and reported to the Office of Medical Services, a 35% increase from 2017 (4,666 doses administered).
- In 2018, the rate of naloxone administrations was highest in Jefferson and surrounding counties and males aged 15-44.
- Naloxone administration may be affected by availability.



# ADPH Contributors

- Center for Health Statistics
  - Dr. Xuejun Shen, Suzi Turner, Dr. Hua Xu, and Nicole Rushing
- Bureau of Communicable Disease
  - Dr. Rendi Murphree, MisChele Vickers, and Dr. Sherri Davidson
- Office of Emergency Medical Services
  - Dr. Augustine Amenyah, Gary Varner, and Stephen Wilson
- Bureau of Prevention, Promotion, and Support
  - Sarah Khalidi, Kortnei Scott, and Sondra Reese
  - Leigh Ann Hixon and Nancy Bishop



# Contact Information

Fatal overdoses: [xuejun.shen@adph.state.al.us](mailto:xuejun.shen@adph.state.al.us)

Nonfatal overdoses: [syndromic@adph.state.al.us](mailto:syndromic@adph.state.al.us)

911 and Naloxone: [gary.varner@adph.state.al.us](mailto:gary.varner@adph.state.al.us)

Information contained in this report are subject to limitations that may affect interpretation. Please consult the authors before use or redistribution.



The following slides contain information on data sources, definitions, and limitations.



# More on Overdose Death Surveillance

## Data Sources:

- Data in this report were generated on February 13, 2019, for January 1, 2015-December 31, 2017, death certificate data collected by the ADPH Center for Health Statistics, Vital Statistics Division. All data were generated using the National Center for Health Statistics definitions for drug overdose deaths which include natural opioids, semisynthetic opioids, and synthetic opioids. Drug overdose deaths were defined as having an International Classification of Diseases, 10th Revision (ICD-10) underlying cause of death code of X40-44 (unintentional), X60-X64 (suicide), X85 (homicide), or Y10-Y14 (undetermined intent).
- Among deaths with drug overdose as the underlying cause, the type of drug or drug category was determined by the following ICD-10 multiple cause-of-death codes: opioids (T40.0, T40.1, T40.2, T40.3, T40.4, or T40.6); natural/semisynthetic opioids (T40.2); methadone (T40.3); heroin (T40.1); synthetic opioids other than methadone (T40.4), and cocaine (T40.5).
- Consistent with the National Center for Health Statistics, ADPH defines an overdose drug death as a death resulting from unintentional or intentional overdose of a drug, being given the wrong drug, taking a drug in error, or taking a drug inadvertently.

## Limitations:

- Drug overdose deaths regularly involve multiple drugs. In these instances, a single death cannot be exclusively linked to a single drug, which presents a challenge when interpreting data.
- Many death certificates provide inadequate details in regard to the definite drugs involved in the death.
- Particular toxicology screenings (i.e., advanced fentanyl testing) may not be conducted depending on the nature of the death.
- There is a 6 to 9 month delay in retrieving the exact drug(s) associated with a death.
- Documentation of whether a drug is legal or illegal varies among coroners.



# More on ED Overdose Surveillance

## General limitations of ED data available in the syndromic surveillance system:

- The purpose of syndromic surveillance data are to provide estimates and trends rather than precise or exact counts. Like all surveillance data, syndromic surveillance data are not unbiased and are not a representative sample of the population. Therefore, descriptive statistics are best applied and the use of analytic or inferential statistics may not be appropriate. The chief complaint is not a diagnosis. It captures the patient's primary reason for seeking medical care and is commonly recorded as a free text field, which may include misspellings or abbreviations. It may also lack context that could assist public health with interpretation of the reason for visit. Variability in the chief complaint across healthcare facilities can sometimes make it difficult to measure the exact burden of illness or injury in a community. Final diagnosis may not be available; therefore, overdose-related visits are only suspected overdoses.
- The volume and quality of data transmitted has changed over time, leading to improved coverage of Alabama's population in more recent years. This increase in data volume and improvement in data quality should be taken into consideration when interpreting trends across years. It is also important to consider fluctuations in data reporting which may result in a decrease in data volume, such as if a healthcare facility were to stop sending data or to experience a change which would cause a delay in their reporting. Please keep these data reporting changes in mind when interpreting syndromic surveillance data.
- An individual could have more than one ED visit during the reporting period making per capita or population rate calculations tricky to interpret.
- No exposure, risk factor, or outcome data are available. County of residence is estimated from patient zip codes.
- Hospital participation is voluntary.
- Data in this report were downloaded on February 19, 2019, for January 1, 2017-December 31, 2018, from the Centers for Disease Control and Prevention (CDC) National Syndromic Surveillance Program (NSSP) Biosense Platform using the Essence program using CDC syndrome definitions.
- Surveillance classification of ED visits are based on clinical syndromes derived from information available in the visit chief complaint and diagnosis codes when available. These definitions (shown on the next slide) are too complex for presentation here. Please contact [syndromic@adph.state.al.us](mailto:syndromic@adph.state.al.us) for details.





# More on 911 Overdose Surveillance

## **Overdose Definition:**

Categorical syndrome definition based on Enhanced State Opioid Overdose Surveillance (ESOOS) criteria as defined by the state of Florida, intended to detect incidents involving any drug overdose. The criteria are defined for National Emergency Medical Services Information System (NEMSIS) v2 and v3 as follows:

- NEMSIS v2: Labeled as general drug overdose if one or more of the following are true:
  - Primary OR secondary impression is "Poisoning/Drug Ingestion" AND the patient is not dead at the scene.
  - (Naloxone [or brand names] listed as medication administered; OR chief complaint contains naloxone [or brand names]) AND the medication response indicates that the patient improved.
- NEMSIS v3: Labeled as general drug overdose if one or more of the following are true:
  - Primary or secondary impression starts with T36-T50, F11-F16, or F18-F19.
  - Narrative or chief complaint contains "overdose", "opioid", "opiate", "opium", "fentanyl", "heroin", "speedball", "speed ball", "spheroin", "hod", "OD", "O.D.", "O/D", "OD/", or "ODED".

This syndrome is not applicable to patients declared dead without resuscitation attempts or dead at the scene.

This syndrome is restricted to only those incidents with a patient disposition of "Treated Transported", "Treated Transported Law Enforcement", "Treated Transported Private Vehicle", "Treated Transferred", "Treated Released", or "Treated Released Against Medical Advice (AMA)".

## **Opioid Overdose Definition:**

Categorical syndrome definition based on ESOOS criteria as defined by the state of Florida, intended to detect incidents involving opioid-related overdoses. The criteria are defined for NEMSIS v2 and v3 as follows:

- NEMSIS v2: Labeled as opioid overdose if the following is true:
  - (Naloxone [or brand names] listed as Medication Administered; OR chief complaint contains naloxone [or brand names]).
- NEMSIS v3: Labeled as opioid overdose if one or more of the following are true:
  - Primary or secondary impression starts with T40.1-T40.4, T40.60, T40.69, or F11.
  - Narrative or chief complaint contains "opioid", "opiate", "opium", "fentanyl", "heroin", "speedball", "speed ball", "spheroin", or "hod".

This syndrome is not applicable to patients declared dead without resuscitation attempts or dead at the scene.

This syndrome is restricted to only those incidents with a patient disposition of "Treated Transported", "Treated Transported Law Enforcement", "Treated Transported Private Vehicle", "Treated Transferred", "Treated Released", or "Treated Released AMA".

