Overdose Surveillance and Response Program

Drug Overdose Quarterly Report

Quarter 2: April–June 2024

County of San Diego Health and Human Services Agency
Public Health Services
Epidemiology and Immunization Services Branch
www.sdepi.org

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Data is provisional and subject to change.

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Drug Overdose Surveillance Report

Introduction and Sources

This report provides an overview of statistics regarding fatal and non-fatal drug overdoses in San Diego County. Each quarterly report will include a standard set of figures, updated to the most recent calendar year quarter available (Pages 2-8). In addition, a different specific topic will be featured each quarter. The 'featured topic' for this report is on xylazine and xylazine-adulterated drugs (Pages 9-11).

Primary data sources included in this report are:

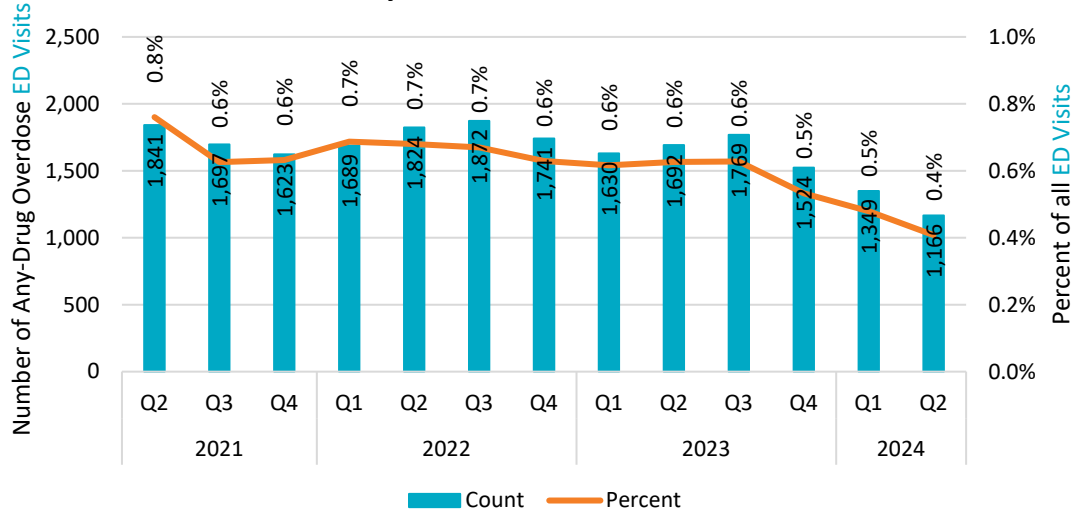
- County of San Diego (County) Emergency Department (ED) Syndromic Surveillance includes chief complaint and some discharge data received daily from 17 of 19 civilian EDs in San Diego County.
    - Unless otherwise noted, the ED data presented in the report are syndromic surveillance data.
    - ICD-10 codes for drug and/or overdose terms are not often available; therefore, word search queries are also used. Word search queries are reviewed and updated periodically; data may change to reflect these updates.
    - Syndromic data provide a more timely, though less complete, look at trends than the final ED data from California Department of Health Care Access and Information (HCAI).
- Mortality data are from the Vital Records Business Intelligence System (VRBIS), which is managed by the California Department of Public Health.
    - Deaths during the year 2023 are preliminary and subject to change. Data from the most recent quarters are too incomplete to present.
    - Unless otherwise noted, deaths are among San Diego County residents only.
- San Diego Association of Governments (SANDAG) 2022 population estimates, vintage 2023 are used for calculating rates.

Overview

- The number of any-drug overdose and opioid overdose ED visits each decreased by 37% from Q2 2021 to Q2 2024, while the proportion of opioid overdose visits remained stable (Figure 3).
- Preliminary data for 2023 preliminary data suggests 72% of overdose deaths were opioid-related (Figure 4).
- In Q2 2024, the rate of opioid overdose ED visits were 3.5 times higher among males compared to females (Figure 5); in Q4 2023, opioid overdose death rates were 3.5 times higher among males compared to females (Figure 6).
- The rates for opioid overdose ED visits and deaths are highest among those aged 35-44 in Q2 2024 (Figures 7 and 8). Of note, the rate of ED visits among the 25-34 age group decreased by 54.5% from Q2 2023 to Q2 2024.
- Opioid overdose ED visit rates were highest among residents in the Health and Human Services Agency (HHSA) Central Region (47.3 AAR) in Q2 2024 (Figure 11). Opioid overdose death rates were highest among residents in the HHSA Central Region (23.8 AAR) in Q4 2023 (Figure 12).

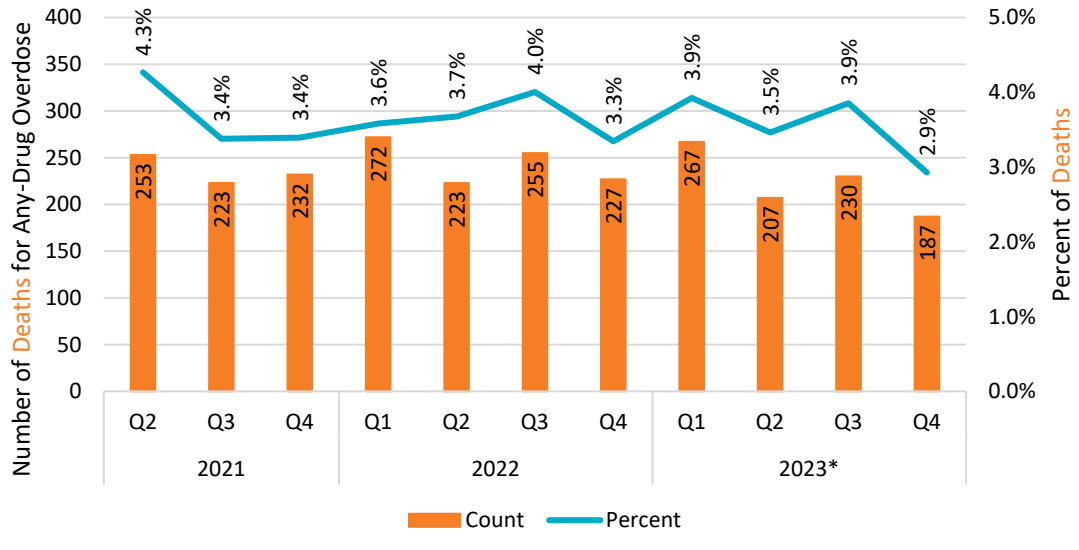
Drug Overdoses by Year and Quarter

Figure 1. Emergency Department Visits for Any-Drug Overdose by Year, Q2 2021–Q2 2024



County of San Diego ED Syndromic Surveillance Data.

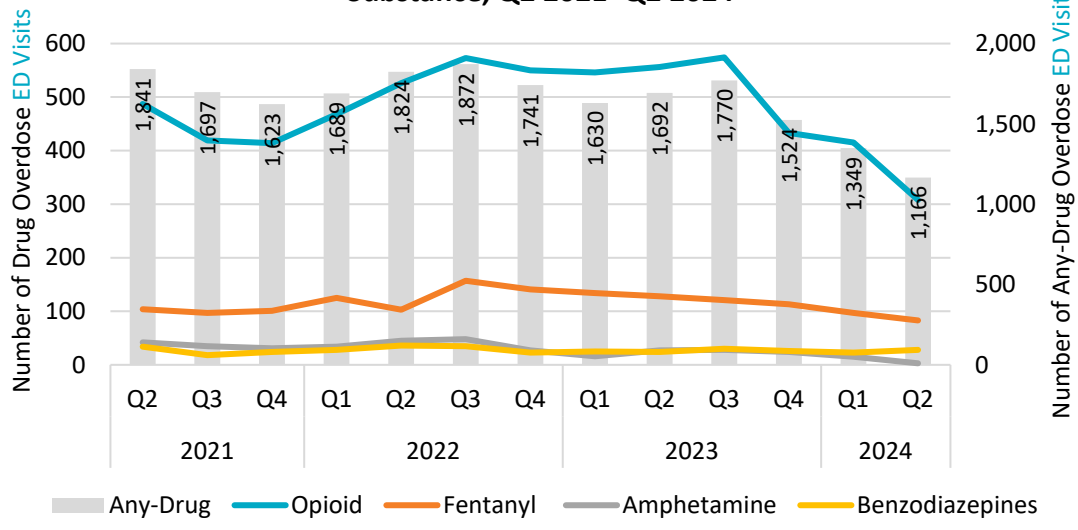
Figure 2. Any-Drug Overdose Deaths by Year, Q2 2021–Q4 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 07/01/2024.

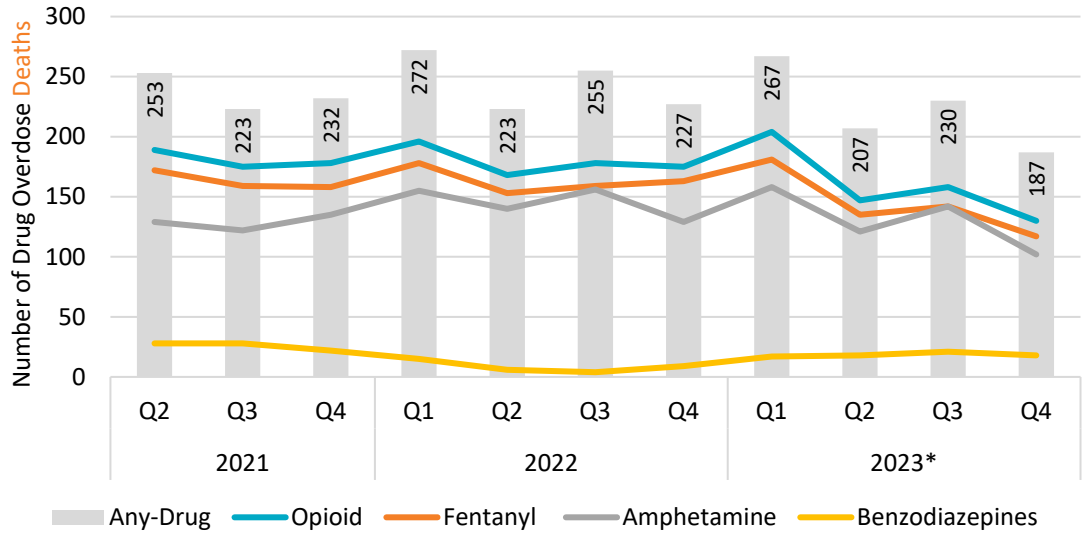
Drug Overdoses by Substance

Figure 3. Drug Overdose Emergency Department Visits by Substance, Q2 2021–Q2 2024



County of San Diego ED Syndromic Surveillance Data. Many chief complaints do not include a specific drug. Drug categories are not mutually exclusive. For example, both opioids and amphetamine may have contributed to the same ED visit and these data do not show relative contributions of each. Fentanyl is also included in the opioid category.

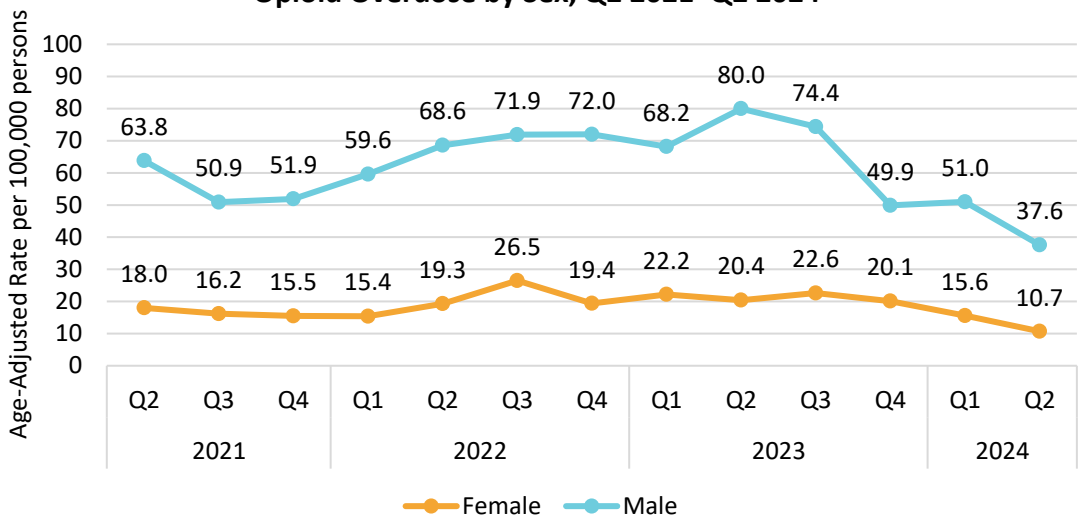
Figure 4. Drug Overdose Deaths by Substance, Q2 2021–Q4 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 07/01/2024. Drug categories are not mutually exclusive. For example, both opioids and amphetamine may have contributed to the same death and these data do not show relative contributions of each. Fentanyl is also included in the opioid category.

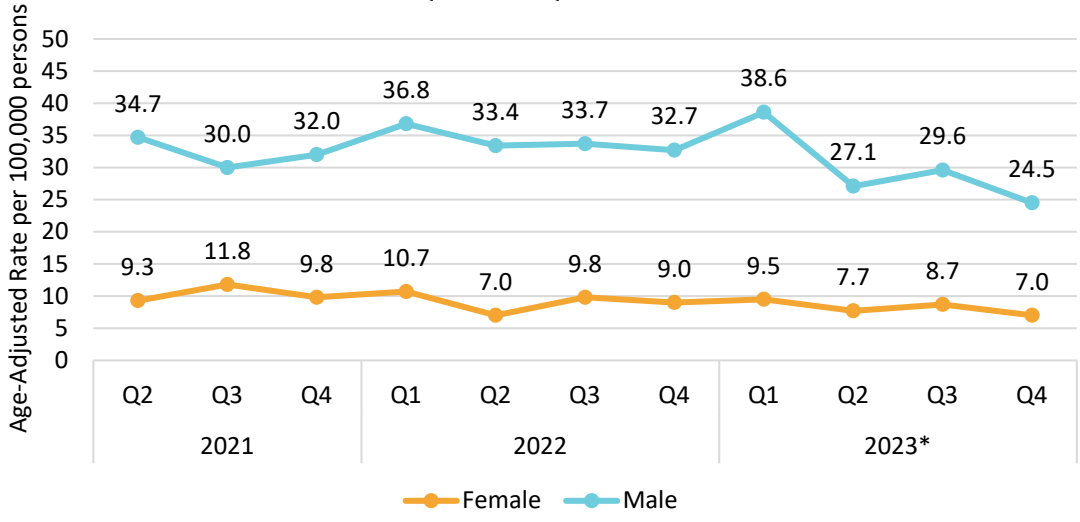
Opioid Overdoses by Sex

Figure 5. Age-Adjusted Emergency Department Visit Rates for Opioid Overdose by Sex, Q2 2021–Q2 2024



County of San Diego ED Syndromic Surveillance Data.

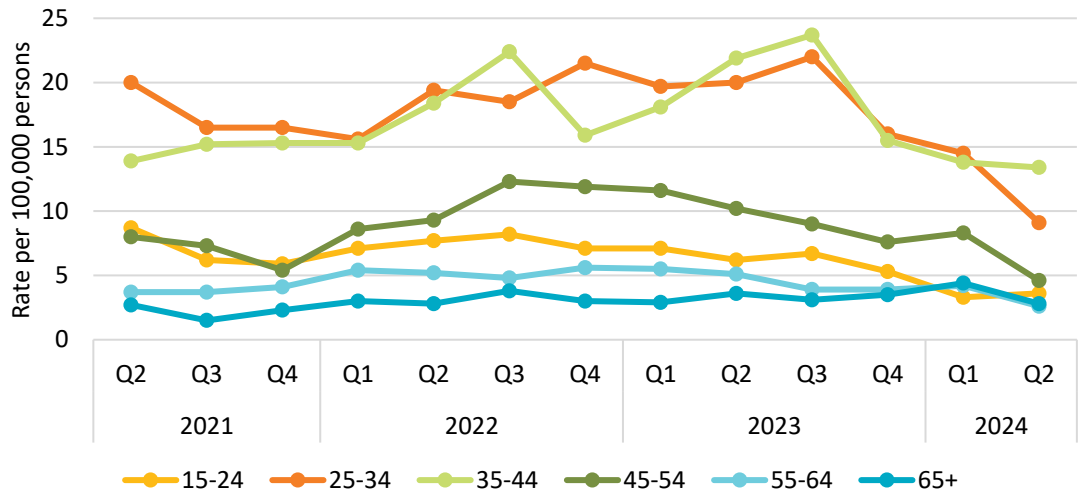
Figure 6. Age-Adjusted Opioid Overdose Death Rates by Sex, Q2 2021–Q4 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 07/01/2024.

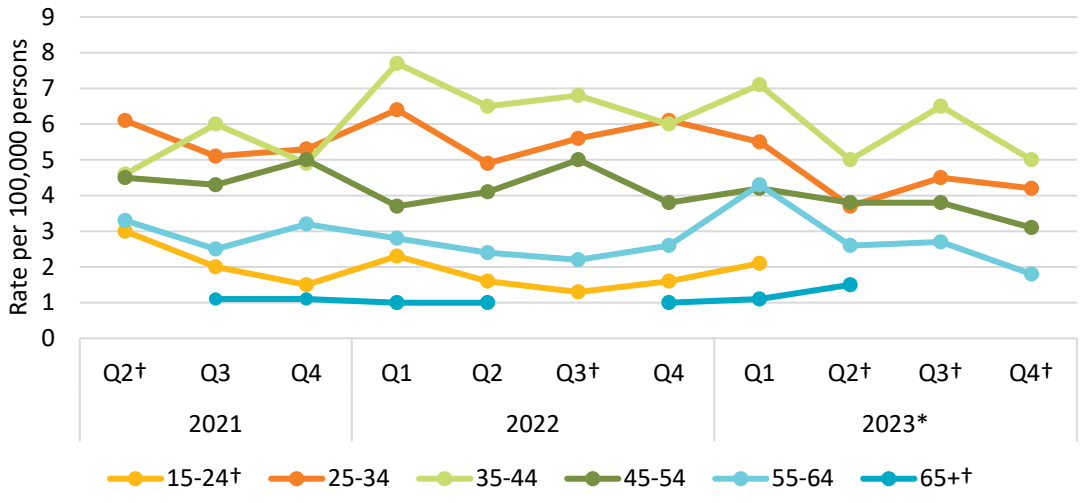
Opioid Overdoses by Age

Figure 7. Emergency Department Visit Rates for Opioid Overdose by Age, Q2 2021–Q2 2024



Notes: Data <15 age group cannot be presented due to small numbers (<11).
County of San Diego ED Syndromic Surveillance Data.

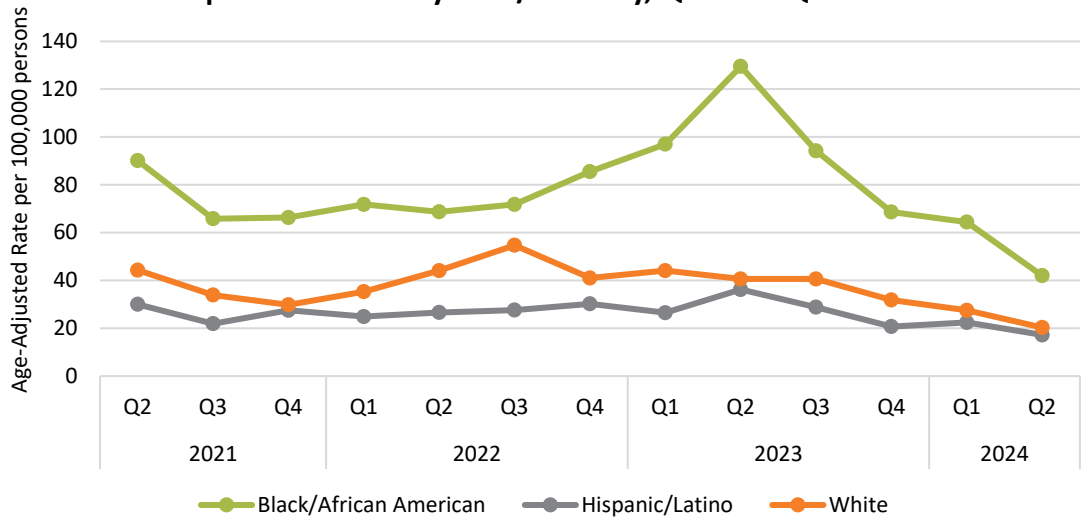
Figure 8. Opioid Overdose Death Rates by Age, Q2 2021–Q4 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 07/01/2024.
†Data for 15-24 age group not presented for Q2 2023, Q3 2023 and Q4 2023 due to counts <11. Data for 65+ age group not presented for Q2 2021, Q3 2022, Q3 2023, and Q4 2023 due to counts <11.
Notes: Data <15 age group cannot be presented due to small numbers (<11).

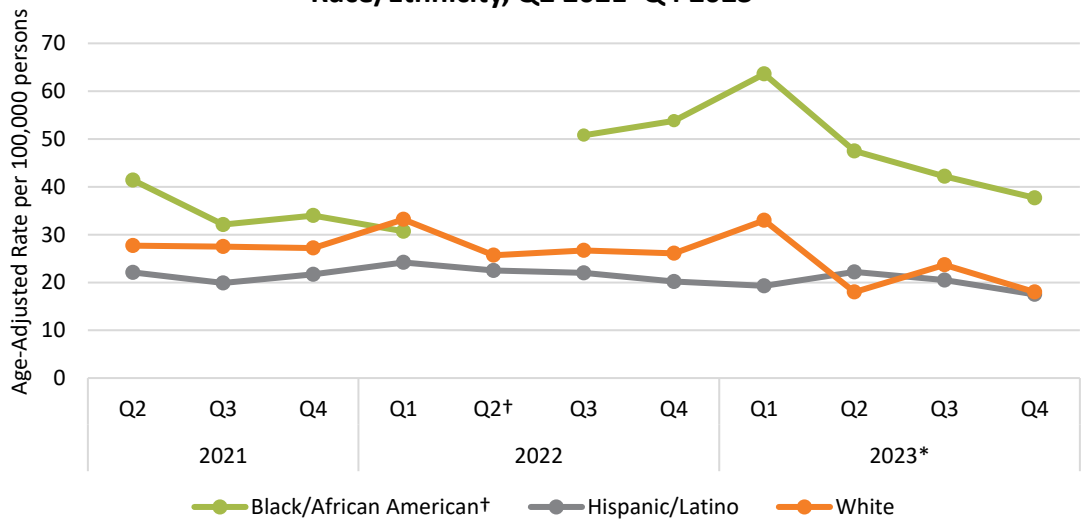
Opioid Overdoses by Race/Ethnicity

Figure 9. Age-Adjusted Emergency Department Visit Rates for Opioid Overdose by Race/Ethnicity, Q2 2021–Q2 2024



Notes: Data for other racial/ethnicity groups cannot be presented due to small numbers (<11).
Persons of Hispanic/Latino ethnicity may belong to any race group. All categories except Hispanic/Latino include persons who race is known but ethnicity is non-Hispanic or unknown.
County of San Diego ED Syndromic Surveillance Data.

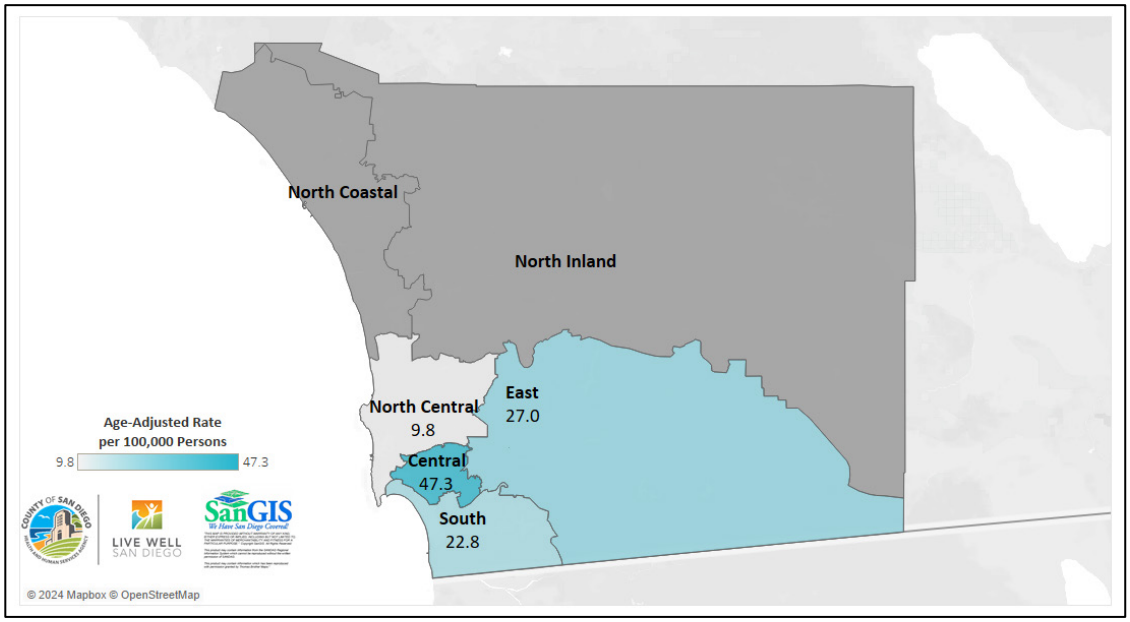
Figure 10. Age-Adjusted Opioid Overdose Death Rates by Race/Ethnicity, Q2 2021–Q4 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 07/01/2024.
†Data for Black/African American not presented for Q2 2022 due to counts <11.
Notes: Data for other racial/ethnicity groups cannot be presented due to small numbers (<11).
Persons of Hispanic/Latino ethnicity may belong to any race group. All categories except Hispanic/Latino include persons who race is known but ethnicity is non-Hispanic or unknown.

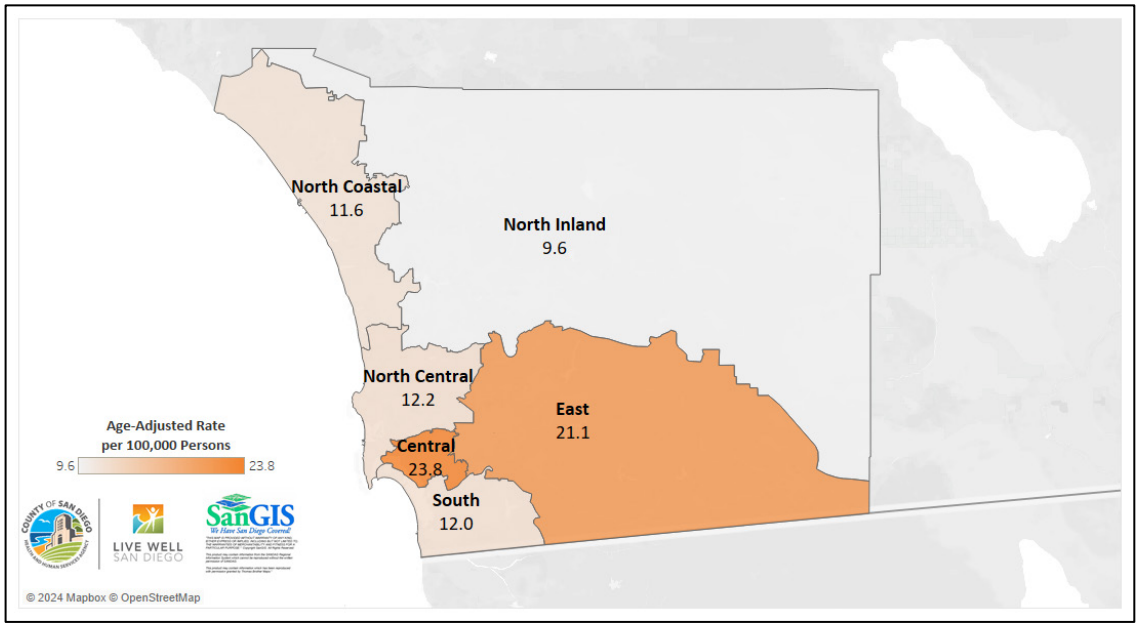
Opioid Overdoses by Region of Residence

Figure 11. Age-Adjusted Emergency Department Visit Rates for Opioid Overdose by Region of Residence, Q2 2024



County of San Diego ED Syndromic Surveillance Data.
Notes: Data North Coastal and North Inland groups cannot be presented due to small numbers (<11).

Figure 12. Age-Adjusted Opioid Overdose Death Rates by Region of Residence, Q4 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 07/01/2024.

Opioid Overdoses by Demographics

Table 1. Number of Emergency Department Visits* for Opioid Overdose, Trends and Change by Quarter

	2022 Q2	2023 Q2	2024 Q2	Percent Change 2023 to 2024
	N (%)	N (%)	N (%)	%
Total Opioid Overdose Visits	526 (100)	556 (100)	308 (100)	-45%
HHSA Region of Residence				
North Coastal	22 (7)	25 (7)	†	†
North Central	73 (21)	75 (20)	17 (11)	-77%
Central	101 (29)	107 (28)	59 (40)	-45%
South	48 (14)	50 (13)	28 (19)	-44%
East	55 (16)	76 (20)	34 (23)	-55%
North Inland	46 (13)	48 (12)	†	†
Unknown	181	175	159	
Sex				
Female	79 (21)	84 (20)	49 (23)	-42%
Male	292 (79)	338 (80)	163 (77)	-52%
Unknown	155	134	96	
Age Group				
<15	†	†	†	†
15-24	64 (13)	51 (9)	30 (10)	-41%
25-34	169 (33)	174 (32)	79 (27)	-55%
35-44	125 (24)	149 (27)	91 (31)	-39%
45-54	68 (13)	75 (14)	34 (12)	-55%
55-64	58 (11)	57 (11)	29 (10)	-49%
65+	30 (6)	39 (7)	29 (10)	-26%
Unknown	†	†	†	
Race/Ethnicity				
Black/African American	26 (10)	49 (17)	15 (11)	-69%
Hispanic**	74 (30)	102 (35)	49 (36)	-52%
White	149 (60)	143 (48)	71 (53)	-50%
Unknown	241	221	156	

*County of San Diego ED Syndromic Surveillance Data.

†Data for other demographic groups cannot be presented due to small numbers (<11).

**Notes: Persons of Hispanic/Latino ethnicity may belong to any race group. All categories except Hispanic/Latino include persons who race is known but ethnicity is non-Hispanic or unknown.

There was a larger than usual amount of zip code data missing in 2022 data, across hospitals in multiple regions; changes between 2022 and 2023 should be interpreted with caution.

Feature Topic: Xylazine and Xylazine-Adulterated Drugs

Xylazine is a non-opioid sedative commonly employed in veterinary medicine. First synthesized in Germany in 1962, xylazine was approved for use in animals by the United States Food and Drug Administration in 1972. Despite this drug not being approved for human use, cases of human intoxication have been reported since the 1980s. Xylazine's popularity grew among intravenous drug users in Puerto Rico in the early 2000s, where it is known as "anestesia de caballo" (horse anesthetic). Since then, the drug has spread throughout the illicit market due to its availability and low cost, often found in combination with other drugs such as cocaine, heroin, and fentanyl (1,2). Xylazine's journey from a veterinary drug to a substance of abuse highlights the complex challenges in managing and regulating pharmaceuticals that have legitimate uses but also potential for misuse.

Xylazine acts in the central and peripheral nervous systems, resulting in slowed heart rate, low blood pressure, muscle relaxation, and analgesia. Xylazine was tested in humans for therapeutic use but was rejected due to occurrences of severe hypotension (1,2). Other symptoms include profound sedation and respiratory depression. Illicit drugs are often laced with additional substances to replicate or boost their effects. Liquid xylazine can be dried into a powder which allows for easy adulteration of other drugs (3). It can be ingested orally, smoked, snorted, or injected intramuscularly, subcutaneously, or intravenously. Due to their similar pharmacologic properties, combining xylazine with opioids can produce synergistic effects, leading to an increased number of fatal cases. The effects of xylazine are reported to last longer than those of fentanyl, likely enhancing the euphoria and analgesia produced by fentanyl and reducing the need for frequent injections (2).

Around 2006, xylazine seemed to have entered the illicit drug market in the northeastern United States as an additive to fentanyl. Philadelphia and Connecticut were the initial hubs of xylazine use in the continental United States, but its use is now rapidly spreading nationwide. As of 2021, xylazine was detected in more than 90% of illicit drug samples tested in Philadelphia, where it is known as "tranq" or "tranq dope" when mixed with opioids (2). The extent of xylazine's spread across the United States is highlighted by forensic laboratory detections from the Drug Enforcement Administration (DEA), which showed increases in all four regions from 2020 to 2021, most notably by 193% in the South and 112% in the West (4). As of 2023, seizures of xylazine and fentanyl mixtures have occurred in 48 of 50 states. Locally, the San Diego Sheriff's Department Crime Lab incorporates xylazine testing in all drug seizure cases and has confirmed thirty-six samples containing xylazine in illicit drugs from 2021 through the first quarter of 2023 (5). The rise of xylazine in the drug supply is mirrored by its detection among overdose decedents.

In many overdose fatalities, adulterants have played a crucial role in the cause of death. The National Center for Health Statistics reported that the rate of drug overdose deaths involving xylazine was 35 times higher in 2021 compared to 2018. Notably, co-involvement

Feature Topic: Xylazine and Xylazine-Adulterated Drugs

of fentanyl was documented in more than 99% of xylazine-related deaths (6). Between 2020 and 2021, the detection of xylazine in postmortem toxicology of overdose cases increased by 1,127% in the South, 750% in the West, 500% in the Midwest, and 100% in the Northeast (4). The San Diego Medical Examiner's Office recorded one death involving xylazine in 2020 and none in 2021. Previously, xylazine was not routinely screened for unless expanded testing was necessary. In late April 2023, xylazine testing was temporarily implemented as part of standard post-mortem screenings. Out of over 1,000 deaths screened from November 2022 to May 2023, six tested positive for xylazine. All six cases also tested positive for other substances, such as fentanyl and methamphetamine (5). Postmortem testing and reporting varies across jurisdictions and may impact comparability.

Xylazine use and adulteration has complicated the opioid overdose crisis, as it is not detected by routine drug tests. Naloxone should be administered for any suspected drug overdose to counteract potential opioid effects. While naloxone does not reverse the effects of xylazine, it is still crucial to use it because xylazine is often combined with opioids such as fentanyl. It is essential to call 911 for further medical assistance, as the effects of xylazine may persist after naloxone administration (7). Chronic users may also require care for unhealing ulcers, regardless of how the xylazine was consumed. Xylazine-associated wounds pose a risk for serious infection, limb amputation, and death. Routine wound care involving proper disinfection and clean bandaging can be used to mitigate further problems. Withdrawal can be severe, including agitation, anxiety, insomnia, and has been noted to be unresponsive to traditional opioid withdrawal treatments. These factors complicate and challenge addiction treatment (3,5). Ultimately, successful recovery involves collaboration between healthcare, treatment centers, and community educators. National efforts to bring awareness to the impacts of xylazine aim to improve treatment options, reduce social stigma, and decrease fatalities (2,8).

Efforts to track xylazine's prevalence in the drug supply and to understand its effects on human health have intensified. Researchers are studying potential antidotes and treatment protocols for xylazine intoxication. As a consequence of xylazine's influence on the opioid crisis, the White House Office of National Drug Control Policy formally classified fentanyl adulterated with or linked to xylazine as an emerging threat to the United States in April 2023. The National Response Plan involves the "whole-of-society" with an emphasis on working relationships between health authorities, healthcare providers, law enforcement, government officials, and community-based programs to address this issue. Key priorities for action include testing, data collection, treatment, supply reduction, regulation, and research (8). Expanding and standardizing testing for xylazine in the drug supply and postmortem toxicology will support development of a comprehensive data surveillance system, enabling us to better understand the true prevalence and associated mortality rates. Harm reduction

Feature Topic: Xylazine and Xylazine-Adulterated Drugs

and treatment objectives focus on awareness of xylazine-specific symptoms, reversal of overdoses as there is currently no known antidote, the duality of xylazine and fentanyl addictions, and appropriate care for severe wounds (8). With the urgency surrounding the opioid crisis and the complications from xylazine adulterated drugs, the community must be educated and empowered to act as well.

Definitions

Quarters are based upon calendar year and are defined as followed:

- Quarter 1 (Q1): January 1–March 31
- Quarter 2 (Q2): April 1–June 30
- Quarter 3 (Q3): July 1–September 30
- Quarter 4 (Q4): October 1–December 31

Case definitions for syndromic surveillance data:

- *Any-Drug Overdose*: Encounters with ICD-10 diagnosis codes for poisoning by drugs (T36-T50). If the diagnosis field is blank, then any-drug overdoses are identified using a text search algorithm for words related to overdose, any-drug type, or naloxone.
- *Opioid Overdoses*: Encounters with ICD-10 diagnosis codes for poisoning by opioids (T40.0X, T40.1X, T40.2X, T40.3X, T40.4, T40.60, T40.69). If the diagnosis is blank, then opioid overdoses are identified using a text search algorithm for words related to general opioids, overdose, heroin, fentanyl, and naloxone.
- *Fentanyl Overdoses*: Encounters with ICD-10 diagnosis code for poisoning by fentanyl (T40.41). If the diagnosis is blank, then fentanyl overdoses are identified using a text search algorithm for words related to fentanyl and overdose.
- *Amphetamine Overdoses*: Encounters with ICD-10 diagnosis code for poisoning by amphetamines (T43.62). If the diagnosis is blank, then amphetamine overdoses are identified using a text search algorithm for words related to amphetamine and overdose.
- *Benzodiazepine Overdoses*: Encounters with ICD-10 diagnosis code for poisoning by benzodiazepine (T42.4X). If the diagnosis is blank, then benzodiazepine overdoses are identified using a text search algorithm for words related to benzodiazepine and overdose.

Case definitions for mortality data (per CDPH Overdose Surveillance Dashboard):

- *Any-Drug Overdoses*: All overdose deaths, regardless of intent (e.g., unintentional, suicide, assault, or undetermined). This indicator does not include: (1) deaths related to chronic use of drugs (e.g., damage to organs from long-term drug use), 2) deaths due to alcohol and tobacco, and 3) deaths that occur under the influence of drugs, but do not involve acute poisoning . Deaths with any of the following ICD-10 codes as the underlying cause of death: X40-X44: Accidental poisonings by drugs; X60-X64: Intentional self-poisoning by drugs; X85: Assault by drug poisoning; Y10-Y14: Drug poisoning of undetermined intent.
- *Opioid Overdoses*: Any opioid as a contributing cause of death, regardless of intent. Opioids include both prescription opioid pain relievers such as hydrocodone, oxycodone, and morphine, as well as heroin and opium. Deaths related to chronic use of drugs are excluded from this indicator. ICD-10 codes include: T40.0: Opium; T40.1: Heroin; T40.2: Natural and semisynthetic opioids; T40.3: Methadone; T40.4: Synthetic opioids, other than methadone; T40.6: Other and unspecified narcotics.
- *Fentanyl Overdoses*: Drug overdose deaths caused by acute poisonings that involve fentanyl or fentanyl analogs as a contributing cause of death, regardless of intent. Deaths related to chronic use of drugs are excluded from this indicator. Overdose deaths involving fentanyl and associated analogs were identified by using a text search algorithm.

Definitions (continued)

- *Amphetamine Overdoses*: Drug overdose deaths caused by acute poisonings that involve psychostimulants with abuse potential excluding cocaine (T40.5), regardless of intent. Psychostimulants with abuse potential include methamphetamine, MDMA, dextroamphetamine, and levoamphetamine. Deaths related to chronic use of drugs are excluded from this indicator. Overdose deaths involving amphetamine and associated analogs were identified by using a text search algorithm.
- *Benzodiazepine Overdoses*: Drug overdose deaths caused by acute poisonings that involve benzodiazepines as a contributing cause of death, regardless of intent. Benzodiazepines include anti-anxiety medications such as alprazolam (Xanax) and lorazepam (Ativan). Deaths related to chronic use of drugs are excluded from this indicator. Overdose deaths involving benzodiazepine and associated analogs were identified by using a text search algorithm.

Limitations

- Overdoses that result in ED visits, hospitalizations, or deaths represent only a portion of the overall burden of drug overdoses.
- The accuracy of indicators based on ICD-10-CM codes found in syndromic surveillance ED visit data is limited by the completeness and quality of reporting and coding.
- Syndromic surveillance chief complaint is recorded as a free text field and captures the patient's primary reason for seeking medical care in near real-time; this may lack content that could assist public health with interpretation of the reason for visit.

Sources

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7. Centers for Disease Control and Prevention. (2024). What You Should Know About Xylazine. https://www.cdc.gov/overdose-prevention/about/what-you-should-know-about-xylazine.html?CDC_AAref_Val=https://www.cdc.gov/drugoverdose/deaths/other-drugs/xylazine/faq.html

8. The White House Executive Office of the President Office of National Drug Control Policy. (2023). Fentanyl Adulterated or Associated with Xylazine Response Plan. https://www.whitehouse.gov/wp-content/uploads/2023/07/FENTANYL-ADULTERATED-OR-ASSOCIATED-WITH-XYLAZINE-EMERGING-THREAT-RESPONSE-PLAN-Report-July-2023.pdf