

Drug Overdose Quarterly Report Quarter 1: January–March 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.

Epidemiology and Immunization Services Branch

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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 a historic review of the opioid epidemic (Pages 9-11).

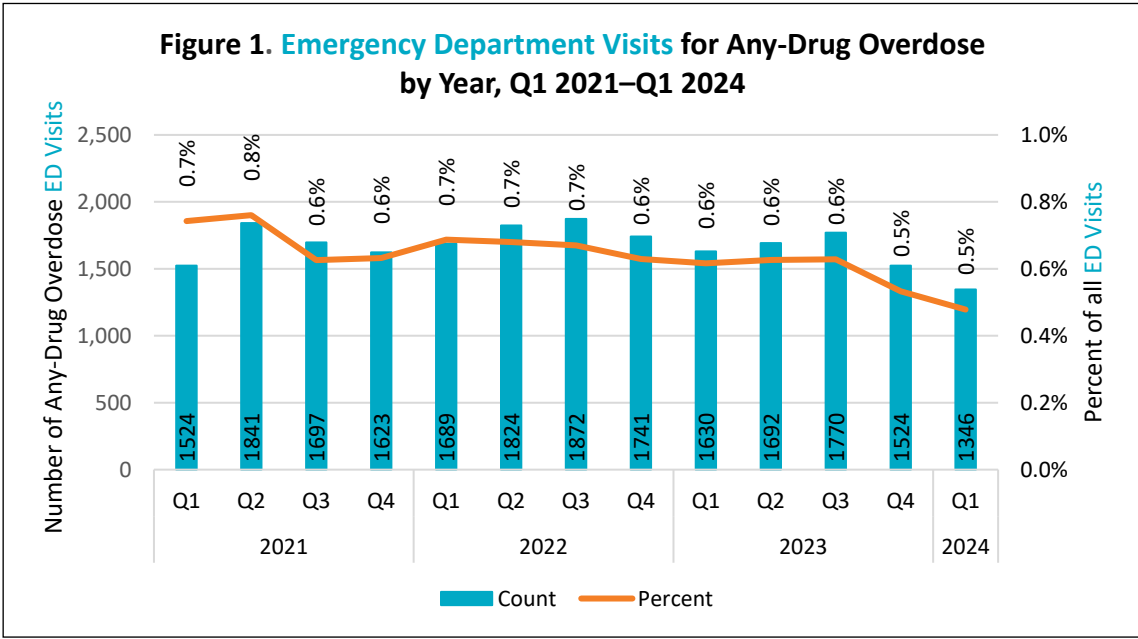
Primary data sources included in this report are:

- 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.

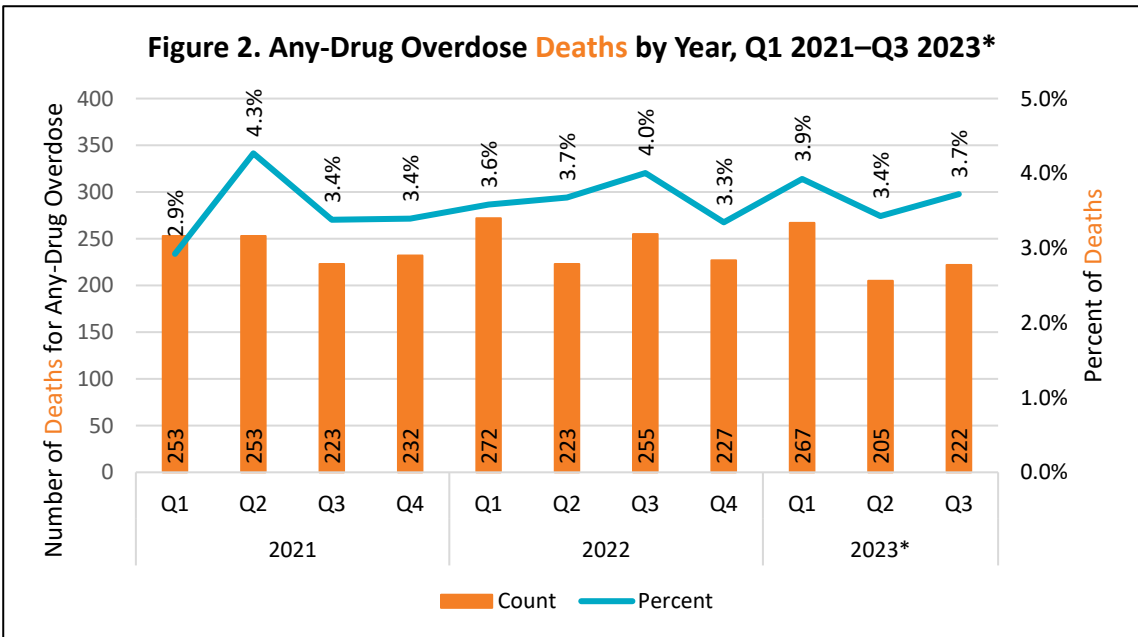
Overview

- The number any-drug overdose ED visits decreased by 12% from Q1 2021 to Q1 2024, while the proportion of opioid overdose visits increased 13% (Figure 3).
- In the first three quarters of 2023 preliminary data, 72% of overdose deaths were opioid-related (Figure 4).
- In Q1 2024, opioid overdose ED visits were 3.3 times higher among males compared to females (Figure 5); in Q3 2023, opioid overdose deaths were 3.5 times higher among males compared to females (Figure 6).
- The age-specific rates for opioid overdose ED visits and deaths are highest among those aged 25-34 and 35-44 (Figures 7 and 8).
- Opioid overdose ED visit rates were highest among residents in the Health and Human Services Agency (HHS) Central Region (52.9 AAR) in Q1 2024 (Figure 11). Opioid overdose death rates were highest among residents in the HHS Central Region (33.7 AAR) in Q3 2023 (Figure 12).

Drug Overdoses by Year and Quarter



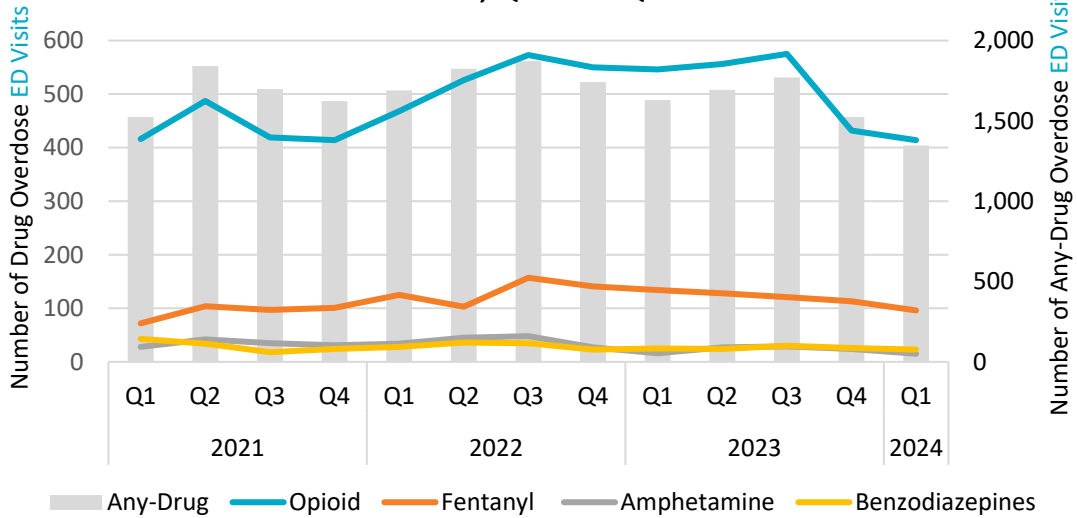
County of San Diego ED Syndromic Surveillance Data.



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 04/02/2024.

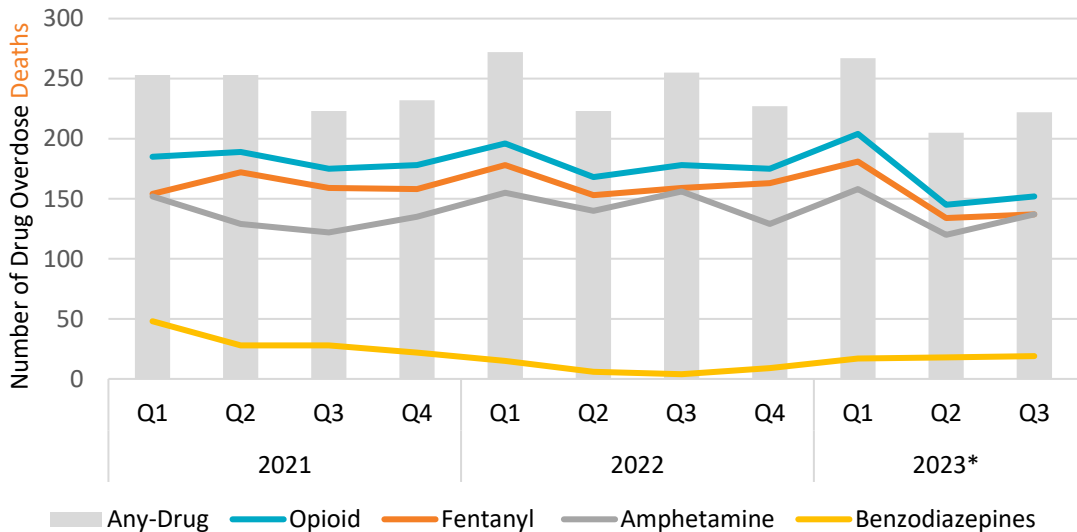
Drug Overdoses by Substance

Figure 3. Drug Overdose Emergency Department Visits by Substance, Q1 2021–Q1 2024



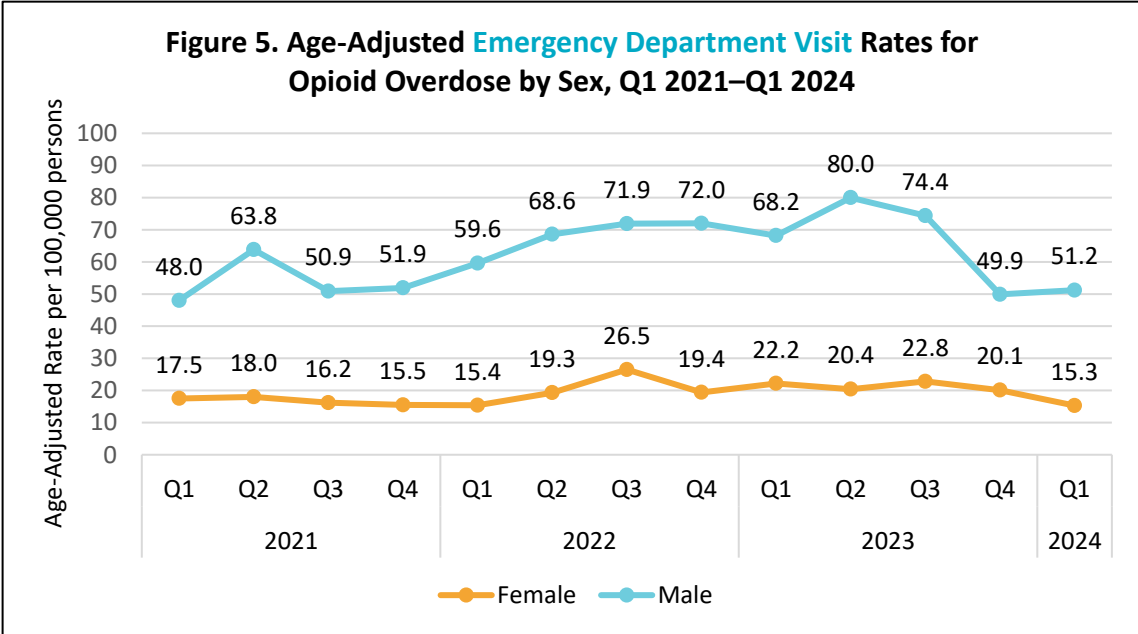
County of San Diego ED Syndromic Surveillance Data. Many chief complaints do not include a specific drug. Drug categories are not mutually exclusive. For example, both opioids and amphetamine may have contributed to the same ED visit and these data do not show relative contributions of each. Fentanyl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

Figure 4. Drug Overdose Deaths by Substance, Q1 2021–Q3 2023*

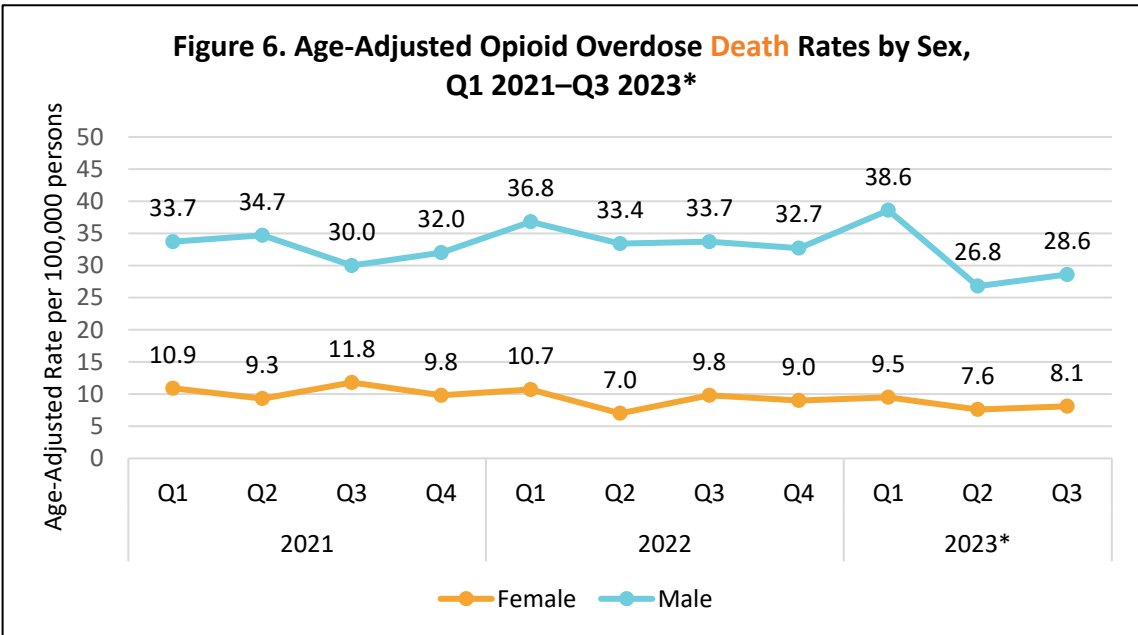


*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 04/02/2024. Drug categories are not mutually exclusive. For example, both opioids and amphetamine may have contributed to the same death and these data do not show relative contributions of each. Fentanyl is also included in the opioid category.

Opioid Overdoses by Sex

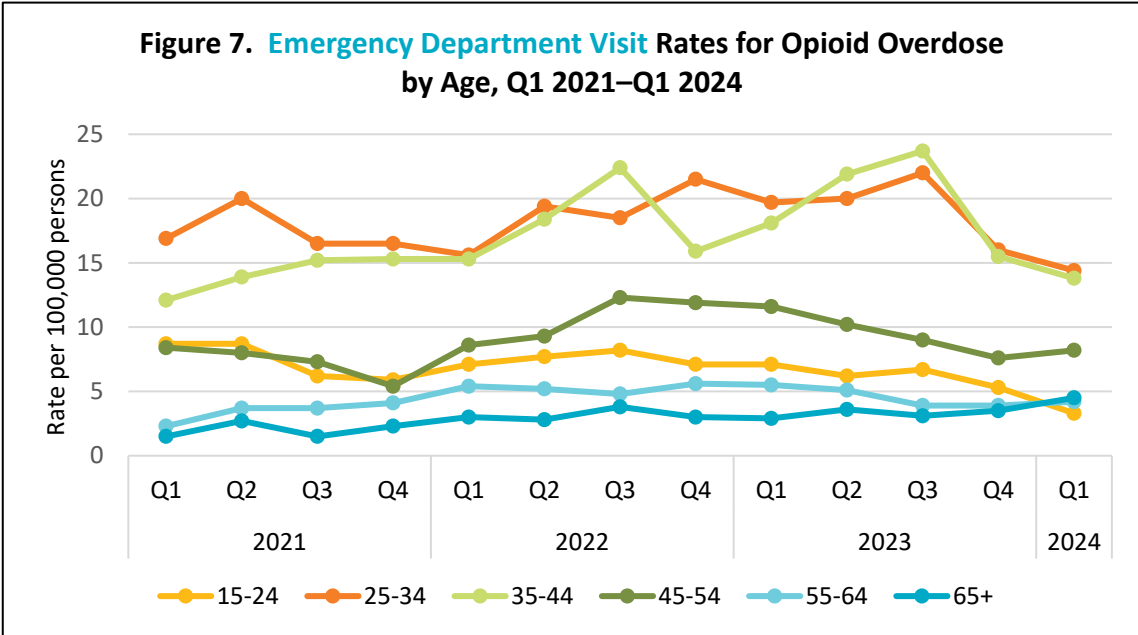


County of San Diego ED Syndromic Surveillance Data.

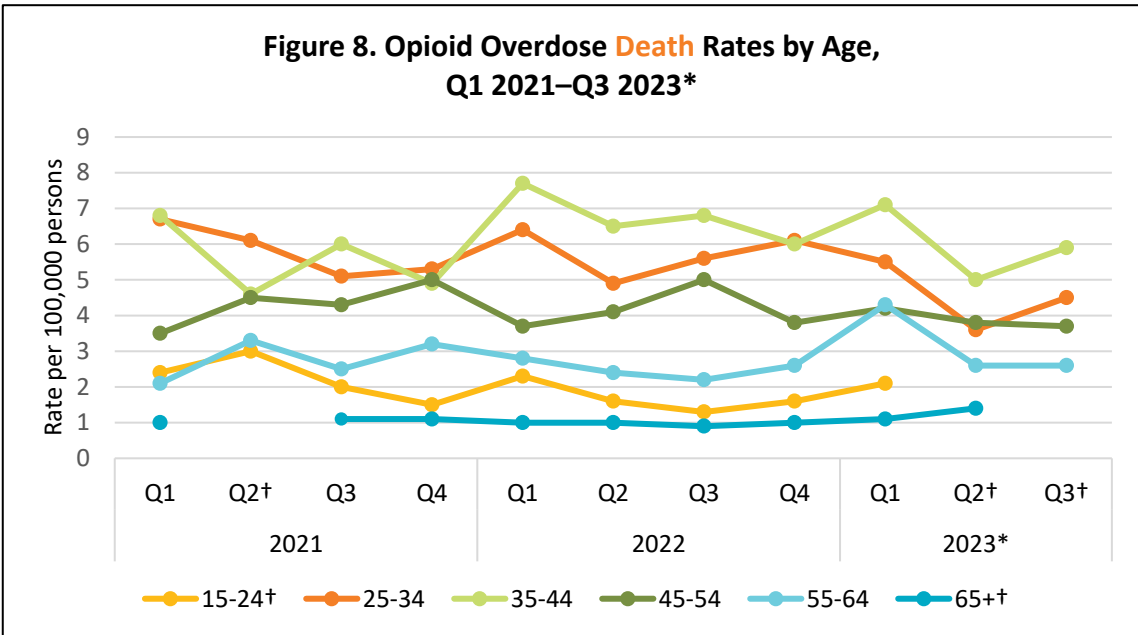


*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 04/02/2024.

Opioid Overdoses by Age



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

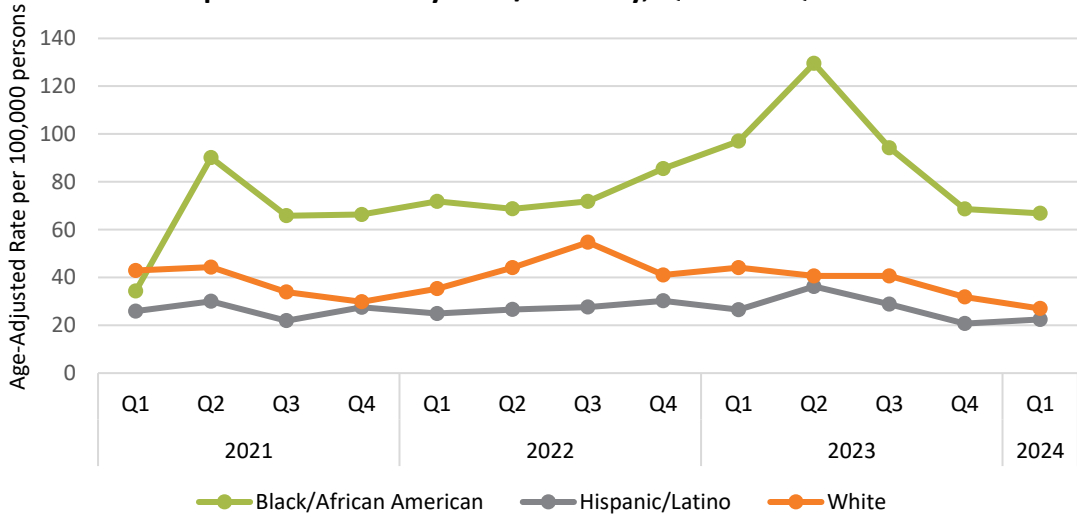


*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 04/02/2024.
†Data for 15-24 age group not presented for Q2 2023 and Q3 2023 due to counts <11. Data for 65+ age group not presented for Q1 2021 and Q3 2023 due to counts <11.

Notes: Data <15 age group cannot be presented due to small numbers (<11).

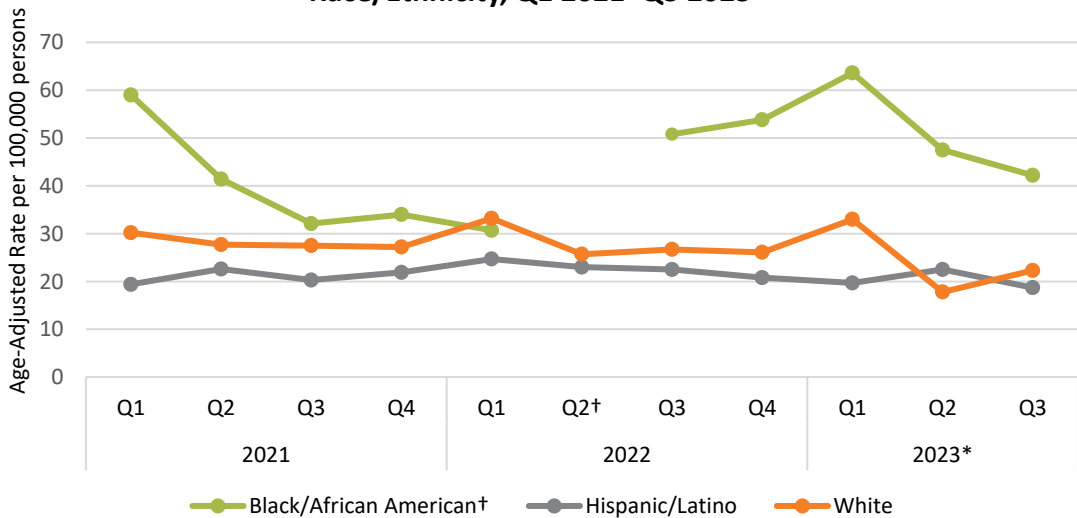
Opioid Overdoses by Race/Ethnicity

Figure 9. Age-Adjusted Emergency Department Visit Rates for Opioid Overdose by Race/Ethnicity, Q1 2021–Q1 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.

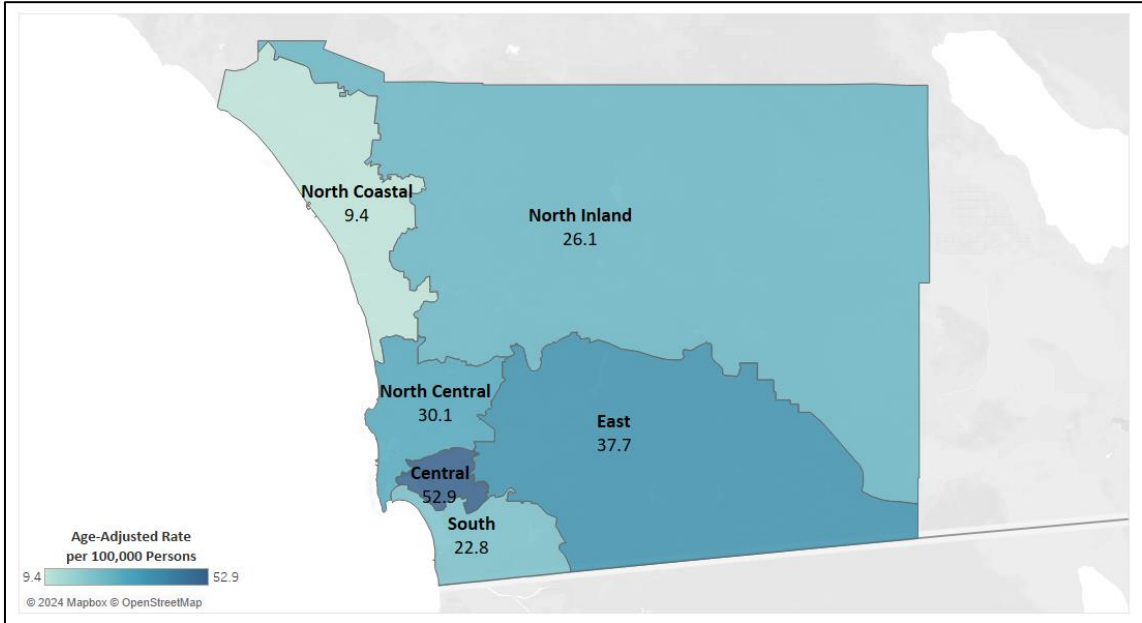
Figure 10. Age-Adjusted Opioid Overdose Death Rates by Race/Ethnicity, Q1 2021–Q3 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 04/02/2024. †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.

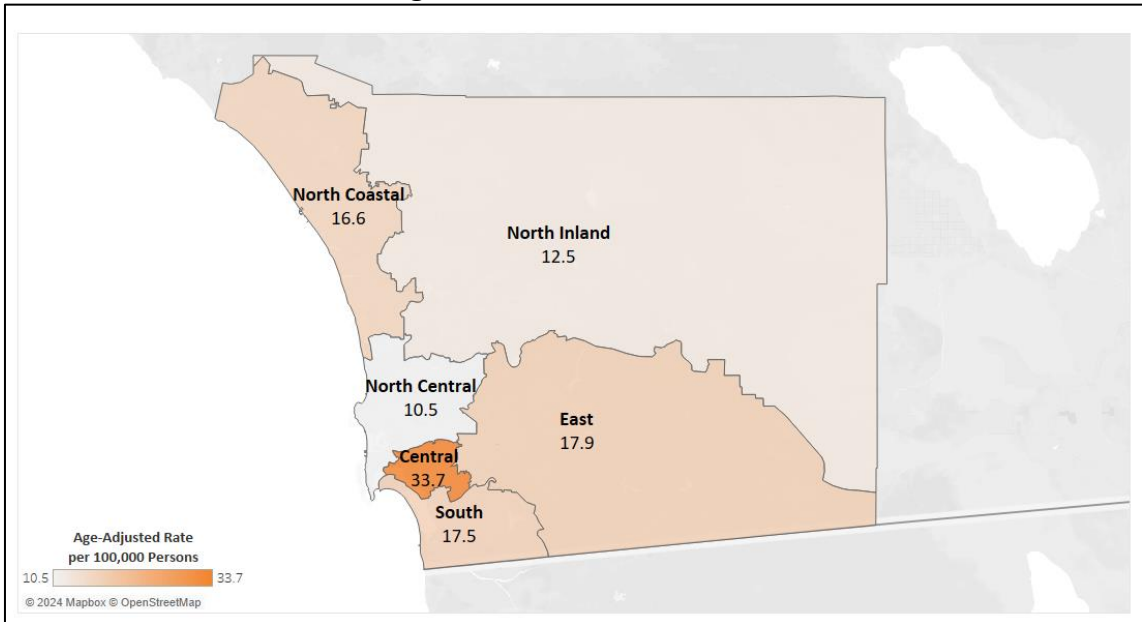
Opium Overdoses by Region of Residence

Figure 11. Age-Adjusted **Emergency Department Visit Rates** for Opioid Overdose by Region of Residence, Q1 2024



County of San Diego ED Syndromic Surveillance Data.

Figure 12. Age-Adjusted Opioid Overdose **Death Rates** by Region of Residence, Q3 2023*



*Data from 2023 are preliminary and may change as new/updated information is received. Data obtained on 04/02/2024.

Opioid Overdoses by Demographics

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

	2022 Q1	2023 Q1	2024 Q1	Percent Change 2023 to 2024
	N (%)	N (%)	N (%)	%
Total Opioid Overdose Visits	468 (100)	550 (100)	414 (100)	-24%
HHSA Region of Residence				
North Coastal	22 (7)	20 (6)	13 (5)	-35%
North Central	51 (17)	66 (20)	52 (21)	-21%
Central	83 (27)	98 (30)	69 (28)	-30%
South	52 (17)	45 (14)	29 (12)	-36%
East	61 (20)	56 (17)	44 (18)	-21%
North Inland	37 (12)	43 (13)	39 (16)	-9%
Unknown	162	218	168	
Sex				
Female	67 (21)	93 (24)	64 (23)	-31%
Male	258 (79)	291 (76)	220 (77)	-24%
Unknown	143	162	130	
Age Group				
<15	†	†	†	†
15-24	59 (13)	59 (11)	27 (7)	-54%
25-34	136 (30)	172 (32)	125 (31)	-27%
35-44	104 (23)	123 (23)	94 (23)	-24%
45-54	63 (14)	85 (16)	60 (15)	-29%
55-64	60 (13)	61 (12)	47 (12)	-23%
65+	32 (7)	30 (6)	48 (12)	+60%
Race/Ethnicity				
Black/African American	27 (12)	37 (14)	27 (14)	-27%
Hispanic**	70 (32)	75 (29)	63 (34)	-16%
White	125 (56)	146 (57)	96 (52)	-34%
Unknown	213	246	198	

*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: Historic Review of the Opioid Epidemic

The present opioid crisis mirrors history in numerous ways. The first wave of opioid addiction in America surfaced during the latter part of the nineteenth century. The origins of the epidemic were varied. Mothers administered opium tinctures to themselves and their teething babies. Civil war soldiers turned to opium and morphine for relief from injuries. Some used opioids to ease hangovers and diarrhea (1). Given the scarcity of viable treatment options, doctors frequently relied on morphine injections to alleviate the symptoms of chronic and painful conditions, especially with the introduction of the hypodermic needle during the years 1870 to 1895. Heroin was introduced in 1898 by The Bayer Co. as a cough and pain remedy. The addiction wave was stemmed by advances in bacteriology and public health; the creation of alternative pain relievers; more stringent prescription regulations; and warnings about morphine in both popular and professional literature. Throughout the remainder of the twentieth century, temporary rises in the prevalence of nonmedical heroin usage occurred in urban settings and notably impacted minority populations (1,2).

By the late 1980s, opioid industry proponents and a handful of doctors began to circulate weak scientific evidence supporting the safety of opioid pain relievers (1,2). Two limited retrospective studies were frequently cited: the first, published as a brief letter to the editor without providing scientific details, reported low addiction rates among hospitalized patients treated with opioids for acute pain; the second, a review of 38 patients' histories, found that only 2 of 38 patients with chronic pain had issues of misuse or abuse while on opioid therapy (3,4). The scientific justification for using opioids to manage chronic non-cancer pain lacked support from definitive outcomes or safety investigations. Additionally, several manuscripts detailed the under-treatment of pain in Europe and North America (5). In 1995, after a campaign spearheaded and financed by the opioid industry, the American Pain Society elevated pain to "the fifth vital sign". In 1996, Purdue Pharma launched OxyContin which is the brand-name for the extended-release formulation of oxycodone and often prescribed due to an assumed lower risk of abuse, yet in practice was widely misused. Between 1997 and 2002, the number of OxyContin prescriptions surged from 670,000 to 6.2 million (5). The cultural shift, aimed at securing widespread access to pain relief, ultimately triggered the first wave of the opioid crisis (6,7). As marketing efforts intensified and prescription rates expanded, so too did the issues of addiction. By 2007, with the opioid epidemic causing significant harm, Purdue Pharma admitted guilt to federal charges connected to the misrepresentation of OxyContin. Allegations suggest that Purdue Pharma intentionally downplayed the addiction risks linked to OxyContin and deceived physicians and the healthcare industry as a whole by overstating the advantages of opioids for chronic pain (1,5). In the United States in 2008, opioid pain relievers were involved in 14,800 (74%) of the 20,044 prescription overdose deaths (8).

The second wave of the opioid epidemic, spanning from 2010 to 2013, was marked by significant expansion in heroin usage and related deaths. The first two waves are frequently termed 'intertwined epidemics'. Many heroin users have described their shift to heroin

Feature Topic: Historic Review of the Opioid Epidemic

from prescription opioids as their dependence grew, necessitating larger and more consistent pill supplies than they could obtain. The increased availability of high-purity, low-cost heroin made the transition economically sensible (6,10,11). Data from drug treatment programs indicate that from the 1960s to the 2000s, individuals admitted for treatment of heroin use disorder increasingly reported initiating their opioid dependence with prescription opioid pills (11). However, this trend has begun to shift, with a rising number of patients entering treatment reporting heroin as their initial opioid experience. In late 2010, OxyContin was reformulated to be abuse-deterrent and may have inadvertently pushed a small fraction of the high-risk population towards heroin (10). By 2015, the number of heroin-related deaths surpassed the number of deaths due to opioid pills (8). From 1999 to 2017, the number of heroin-related overdose deaths rose from 1,960 to 15,482, respectively (12).

The onset of the third wave occurred in 2013, characterized by a substantial spike in overdose fatalities attributed to synthetic opioids, particularly those associated with illicitly manufactured fentanyl (13,14,15). Fentanyl, a highly potent synthetic opioid, is up to 50 times more potent than heroin and 100 times more potent than morphine (16). The overdose death rate involving synthetic opioids increased 80% from 2013 to 2014, reaching nearly 23 times the rate observed in 2013 by 2021 (17,18). By 2017, overdose deaths related to natural and semisynthetic opioids and heroin deaths plateaued (7). In 2021 alone, more than 70,000 Americans died from an overdose involving synthetic opioid, equating to approximately 192 deaths every day (18). As of 2022, synthetic opioids, primarily illicitly produced fentanyl, were implicated in 70% of drug overdose fatalities (19).

In recent years, experts argue a fourth wave of drug overdose fatalities, involving fentanyl and stimulants (like methamphetamine and/or cocaine), has emerged (20). In 2010, stimulants were co-implicated in less than 1% of fentanyl overdose deaths nationwide. However, by 2021, the co-occurrence of stimulants with fentanyl had risen markedly, constituting nearly one third (32.3%) of all fatal fentanyl overdoses (21). In 2023, methamphetamine was detected in 60% of urine drug screens that involved fentanyl, an increase of 875% since 2015. In 2023, for the first time, both methamphetamine and cocaine were found in fentanyl-positive urine drug test samples more frequently than heroin and prescription opioids across the nation and in nearly every state (22). A recent 2024 report showed overdose deaths with evidence of smoking increased 74%, while evidence of injection decreased 29% from 2020 to 2022. By 2022, smoking was the most frequently documented route of use. The increase in both the number and percentage of deaths with evidence of smoking, coupled with the simultaneous decrease in those indicating injection, may be partly due to the transition from injecting heroin to smoking illicit fentanyl, the rise in fatalities involving both fentanyl and smoked stimulants, and the growing use of counterfeit pills containing fentanyl that are often smoked (19). Between 2016 and preliminary data from 2023, there have been 3,590 opioid-related overdose fatalities among residents of San Diego County, with approximately 70% of these deaths



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Feature Topic: Historic Review of the Opioid Epidemic

attributed to fentanyl. Throughout this period, there have been roughly 10,000 emergency department visits related to opioid overdoses, with an average annual increase of 32%.

Understanding the history of the opioid epidemic is crucial for several reasons. Firstly, it provides valuable insights into how the crisis evolved and the factors that contributed to its escalation. By examining past trends and events, policymakers, healthcare professionals, and communities can make informed decisions on prevention strategies and interventions. Additionally, studying the history helps to shed light on the impact of pharmaceutical marketing practices, prescribing patterns, and the availability of opioids in various forms. This knowledge can guide efforts to implement effective regulations and policies to prevent future crises. Moreover, understanding the history allows us to recognize patterns of addiction, overdose trends, and populations most affected, enabling targeted interventions and resources where they are most needed. Ultimately, a comprehensive understanding of the opioid epidemic's history is essential for developing evidence-based solutions and improving public health outcomes.

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.

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