2022/2023 PBCME Opiate OD Deaths

Partial year comparison 01/01-10/15

- PBC Medical Examiner –2022 - **no pending cases**
  - Total drug overdose cases 553
    - Total opioid OD deaths 421 (76% of total OD cases)
    - Total Fentanyl & Fentanyl analog cause or presence 391 (93%)**
    - **Decline in Opioid OD deaths - 2021/2022 (19%)**

- **PBC Medical Examiner –2023 (01/01-12/22) <u>snapshot</u>- 125 pending cases**
  - Total drug overdose cases 522
  - Total opioid OD deaths 363 (70% of total OD cases) – **projected total 450 > 6%**
    - Total fentanyl & fentanyl analog cause or presence 276 (93%)

***** Xylazine: "tranq" non-opioid animal tranquilizer – 2022- 34/ 2023-26

** New Fentanyl analogues:

- N-Pyrrolidino Etonitazene (NPE) – 20x more potent than Fentanyl – 2022-9/2023-0
- Fleurofentanyl – similar potency to Fentanyl – 2022-87/2023-58

PBCFR TRANSPORTS 2017-2023
January 1 – December 31

YEAR	#CALLS	# PATIENTS	%CHANGE/CALLS
2017	2675	2785	
2018	1509	1541	< 44 %
2019	1483	1510	< 2 %
2020	1771	1806	> 16 %
2021	1702	1743	< 4%
2022	1446	1471	< 15%
2023	1283	1309	< 11%

Net change 2017-2023 53% reduction in transports

OXFORD HOUSE, INC.

FLORIDA STATE OXFORD HOUSES

Total Houses	**164**
Total Beds	**1492**
Men Houses	**102**
Men Beds	**924**
Women Houses	**25**
Women Beds	**218**
Women with Children Houses	**34**
Women with Children Beds	**321**
Men with Children Houses	**3**
Men with Children Beds	**29**

Cities that currently have Oxford Houses

West Palm Beach	Vero Beach	Lakeland	Bradenton
Lantana	Port St. Lucie	St. Petersburg	Ft. Myers
Riviera Beach	Ft. Lauderdale	Temple Terrace	Cape Coral
Lake Park	Lauderhill	Largo	Pensacola
Fort Pierce	Tampa	Clearwater	Panama City
Seminole	Winter Haven	Land O' Lakes	Panama City Beach
Tallahassee	Altamonte Springs	Apopka	Orlando
Winter Park	Jacksonville	Orange Park	St. Augustine
Palm Coast	Daytona	Port Orange	Ocala

Gainesville	Miami Gardens	Miami	Kissimmee	Deltona
New Port Richie	Jacksonville Beach	Ft. Walton	Sarasota	Deland
Palm Bay	Sanford	Crestview	Naples	Spring Hill
Maitland				

Cities we are looking to expand to in the near future

Destin
New Smyrna
Clermont
Punta Gorda
Port Charlotte

Overdoses since the last meeting: 1 (non-fatal)

The Oxford House initiative in Florida is continuing to gain momentum, with various chapters actively engaged in community-building and recovery efforts. Across the chapters, there is a clear emphasis placed on education, with initiatives like newcomer orientations and workshops geared towards deepening members' understanding of the Oxford House model. Alongside these educational endeavors, there's a strong focus on community and unity-building activities, ranging from fundraisers to holiday celebrations, creating an energetic and supportive atmosphere within the network of homes.

The commitment to outreach is a standout feature of the Oxford House network in Florida. Members and staff actively participate in local recovery events, have collaborated with law enforcement through presentations with different agencies, and contribute to community resources. This collective effort underscores a shared dedication to creating a sense of togetherness, evident in events like Thanksgiving & Christmas dinners as well as regional trainings. As the chapters look ahead, there's a proactive approach to sustaining this supportive environment, with future goals of continuing to open new houses in new areas, event hosting aimed at continual community building and ongoing training activities.

Some fast facts from our annual survey:
Average length of sobriety (days) - 333
Members who have reported opioid misuse - 60.8%
Members who reported use of Medically Assisted Treatment - 41.2%
Members who have reported stimulant misuse - 80.7%
Average Number of times members tried to get clean or sober - 7.2
Average number of times a member has been to detox without continuing to Treatment - 2.9
Average amount of 12-Step meetings attended per week - 4.5
Members attending Counseling AND 12-Step Meetings - 40.4%
Importance of Oxford House to members' recovery (1 Unimportant - 5 Important) - 4.7

Upcoming Events:
Oxford House Florida State Workshop 22nd - 24th March 2024 (Paisley, FL)
Oxford House World Convention Fall 2024 (Rosen Shingle Creek, Orlando)

All chapters in the state continue to do Narcan Administration trainings. All chapters are working with DCF to become Narcan providers for their areas.

National Website
www.oxfordhouse.org
Vacancy Website
www.oxfordvacancies.org
State Website
www.oxfordhousefl.org

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Southeast Florida
BEHAVIORAL HEALTH NETWORK

PALM BEACH COUNTY
2024 UPDATE ON THE CONTINUUM OF CARE

STATE ATTORNEY ADDICTION RECOVERY TASK FORCE

JANUARY 4, 2024

PROVIDER REIMBURSEMENTS JULY - NOVEMBER 2023

$28,058,722(5 YTD MONTHS)
$70,340,932 ANNUALIZED

COMMUNITY BASED TREATMENT	ACUTE CARE	RESIDENTIAL TREATMENT	COMMUNITY BASED NON-TREATMENT SERVICES
$7,845,740	$10,009,121	$5,504,040	$4,699,825
28%	36%	20%	16%

Covered Service / Project	Total Paid
Assessment Total	$409,886.94
BNET Total	$35,011.41
CAT Team Total	$662,323.14
Child Welfare FIT Team Total	$264,337.75
Day Treatment Total	$418,416.00
FACT Team Total	$659,358.93
First Episode Team Total	$80,486.02
Forensic Multidisciplinary Team Total	$161,644.30
In-Home and On-Site Services Total	$344,101.04
Intensive Case Management Total	$351,009.43
Medical Services Total	$1,367,008.57
Medication-Assisted Treatment Total	$426,295.83
Outpatient - Group Total	$521,769.79
Outpatient - Individual Total	$1,717,841.61
Provider Level Care Coordination Total	$426,247.63

PALM BEACH COUNTY COMMUNITY BASED TREATMENT

$7,845,738.39

28%

Covered Service / Project	Total Paid
Crisis Stabilization Total	$6,894,585.20
Crisis Support-Screening & Intake Total	$294,997.50
Short-term Residential TX Total	$610,500.00
South County's Mobile Response Teams Total	$1,677,023.67
Substance Abuse Detoxification Total	$532,015.00

PALM BEACH COUNTY

JULY– NOVEMBER 2023

ACUTE CARE

$10,009,121.37

36%

Covered Service / Project	Total Paid
Resdiential 2 Total	$37,100.00
Residental 2 Total	$48,251.14
Residential 2 Total	$2,929,621.92
Residential 3 Total	$1,003,663.50
Residential 4 Total	$585,741.89
Residential I Total	$288,400.00
Residentiual 4 Total	$240,498.21
Room & Board Level 2 Total	$99,534.42
Room & Board Level 3 Total	$271,225.82

PALM BEACH COUNTY

JULY– NOVEMBER 2023

RESIDENTIAL TREATMENT

$5,504,036

20%

Provider	City	Total Contracted Per Service	Program Area	Service	Bed Capacity	Funded Capacity
Mandala Healing Center	West Palm Beach	$ 535,200	Adult Mental Health	Residential Level I	40	3.5
Mandala Healing Center	West Palm Beach	$ 350,400	Adult Substance Abuse	Residential Level I	40	3.5
SP Behavioral LLC DBA SandyPine	Tequesta	$ 200,000	Childrens Mental Health	Residential Level I	149	1.0
Drug Abuse Foundation of Palm Beach County, Inc.	Delray Beach	$ 3,424,119	Adult Substance Abuse	Residential Level II	84	38.0
Drug Abuse Treatment Association	West Palm Beach	$ 1,049,038	Childrens Substance Abuse	Residential Level II	20	20.0
WaySide House	Delray Beach	$ 845,100	Adult Substance Abuse	Residential Level II	28	14.0
Mandala Healing Center	West Palm Beach	$ 2,175,600	Adult Mental Health	Residential Level III	16	16.0
Mandala Healing Center	West Palm Beach	$ 1,912,400	Adult Substance Abuse	Residential Level III	16	16.0
Drug Abuse Foundation of Palm Beach County, Inc.	Delray Beach	$ 176,400	Adult Substance Abuse	Residential Level IV	16	7.0
Jeff Industries, Inc.	Hypoluxo	$ 46,055	Adult Mental Health	Residential Level IV	4	4.0
Sunset House, Inc.	Palm Beach Gardens	$ 181,065	Adult Substance Abuse	Residential Level IV	34	6.0
The Lord's Place, Inc.	West Palm Beach	$ 108,513	Adult Mental Health	Residential Level IV	50	4.0
The Lord's Place, Inc.	West Palm Beach	$ 1,225,706	Adult Mental Health	Residential Level IV	24	24.0
South County Mental Health Center	Delray Beach	$ 979,200	Adult Mental Health	Room and Board with Supervision Level II	37	16.0
WaySide House	Delray Beach	$ 104,544	Adult Substance Abuse	Room and Board with Supervision Level II	28	2.0
Ebb Tide Treatment, LLC	Palm Beach Gardens	$ 135,460	Adult Substance Abuse	Room and Board with Supervision Level III	28	8.0
Transpire Help	Lake Worth	$ 173,996	Adult Substance Abuse	Room and Board with Supervision Level III	15	15.0
WaySide House	Delray Beach	$ 220,106	Adult Substance Abuse	Room and Board with Supervision Level III	28	8.0
		$ 13,842,902				

Residential treatment programs funded in FY 23-24

PUBLICLY FUNDED BEHAVIORAL HEALTH SERVICES

Southeast Florida BEHAVIORAL HEALTH NETWORK

PALM BEACH COUNTY

Numbers Served thru November, 2023		
Program	Service Category	Year To Date Unduplicated Serve
Adult Mental Health	Residential Care	191
	Outpatient Care	2,717
	Crisis Care	1,064
	State Hospital Discharges	76
	Peer Support Services	154
Adult Substance Abuse	Residential Care	370
	Outpatient Care	2,380
	Detoxification	569
	Women Specific Services	17
	Injecting Drug Users	503
	Peer Support Services	604
Children Mental Health	Residential Care	5
	Outpatient Care	988
	Crisis Care	44
Children Substance Abuse	Residential Care	48
	Outpatient Care	594

PERFORMANCE OUTCOME MEASURES

Southeast Florida BEHAVIORAL HEALTH NETWORK

PALM BEACH COUNTY

Performance Measures Outcomes

Measure	Description	Program	Program Type	Score	Target	Result
CSU	Percent of CSU Readmissions within 30 days	All	All	N/A	8.00%	
DETOX	Percent of DETOX Readmissions within 30 days	All	All	N/A	15.00%	
M0003	Average annual days worked for pay for adults with severe and persistent mental illness	Adult	Mental Health	82.65	40.00	
M0375	Percent of adults with severe and persistent mental illnesses who improve their level of functioning	Adult	Mental Health	84.00%	64.00%	
M0376	Percent of adults with serious mental illnesses who improve their level of functioning	Adult	Mental Health	100.00%	65.00%	
M0703	Percent of adults with serious mental illness who are competitively employed	Adult	Mental Health	40.00%	24.00%	
M0742	Percent of adults with severe and persistent mental illnesses who live in stable housing environment	Adult	Mental Health	92.00%	90.00%	
M0743	Percent of adults in forensic involvement who live in stable housing environment	Adult	Mental Health	98.00%	67.00%	
M0744	Percent of adults in mental health crisis who live in stable housing environment	Adult	Mental Health	83.00%	86.00%	
M0753	Percentage change in clients who are employed from admission to discharge	Adult	Substance Abuse	26.00%	10.00%	

SEFBHN EXPANDED CAPACITY

- Central Receiving System
- 988 / Mobile Response Teams
- System Care Coordination
- Service Addition/Expansion for Children, Youth, & Families:
  - Early Childhood Community Action Treatment (CAT) Team
  - Family Intensive Treatment (FIT) Expansion
  - Multisystemic Therapy Team (MST)
- Expanded Capacity for the Adult Behavioral Health Continuum of Care:
  - Short-Term Residential Treatment
  - Conditional Release Residential Treatment
  - FACT Team Expansion
  - Expansion of Med Management/Medical Services
  - Transitional & Respite Care – Residential Services
  - Supported Employment – Clubhouses

Southeast Florida BEHAVIORAL HEALTH NETWORK

FLORIDA DEPARTMENT OF CHILDREN AND FAMILIES
MYFLFAMILIES.COM

EXPANDED CAPACITY FOR THE ADULT BEHAVIORAL HEALTH CONTINUUM OF CARE

Forensic Multi-Disciplinary Team	Provide services to individuals determined by the Court to be Incompetent to Proceed (ITP) or Not Guilty by Reason of Insanity (NGI).
FACT	Added a second FACT team to Palm Beach County to serve 100 individuals with serious mental illness successfully reside in the community. The goal is to reduce Baker Acts, divert from state hospitalization, eliminate incarceration, improve social connectedness.
Short Term Residential Treatment (SRT)	An acute 15-bed program serving adults who are high utilizers of acute care and/or are being diverted from the State Mental Health Facilities. Average length of stay 90-120 days
Conditional Release Beds	Expand residential conditional release placements for adults involved in the Criminal Justice System and help to divert individuals from placement in county jails
Respite & Transitional Residential Care	These services address persons experiencing an acute or immediately sub-acute crisis who, in the absence of a suitable alternative, would require hospitalization.
Clubhouse	An EBP that builds on people's strengths and provides mutual support, along with professional staff support for people to receive prevocational work training, educational opportunities, and social support. Locations: West Palm Beach and Belle Glade.

CENTRAL RECEIVING SYSTEM

- RECURRING FUNDS OF $2.97 MILLION
- EXPANSION OF THE NO WRONG DOOR POLICY
- DEVELOPED IN COLLABORATION WITH NEUROBEHAVIORAL HOSPITAL AT THE 45TH STREET FACILITY ADJACENT TO ST. MARY'S HOSPITAL
- ADDS FUNDING FOR 12 OF 20 CHAIRS FOR CRISIS RECEIVING, UP TO 23 HOURS OF PSYCHIATRIC ASSESSMENT, PLACEMENT IN THE APPROPRIATE LEVEL OF CARE, AND CONNECTION TO TREATMENT
- SOFT LAUNCH DECEMBER 1ST
- FINAL REMODELING TO BE COMPLETED ~APRIL 2024
- GOAL: 8 MINUTE DROP OFF TIME FOR LAW ENFORCEMENT

South County Mental Health CENTER, INC.

2-1-1 Palm Beach and Treasure Coast

LAUNCHED 988 WITH ENHANCED MOBILE RESPONSE TEAMS CAPACITY

FAMILY INTENSIVE TREATMENT (FIT) TEAM EXPANSION

Benefits . . .

- The model provides intensive, community-based services to families in the child welfare system with a parent who has relapse-prone substance misuse.

This funding created …

- A new FIT team to reduce the placement of children in out of home care, foster care, and residential treatment.

Why is this important?

- An important component of the model is family advocacy across systems - child welfare, judicial, and behavioral health systems.

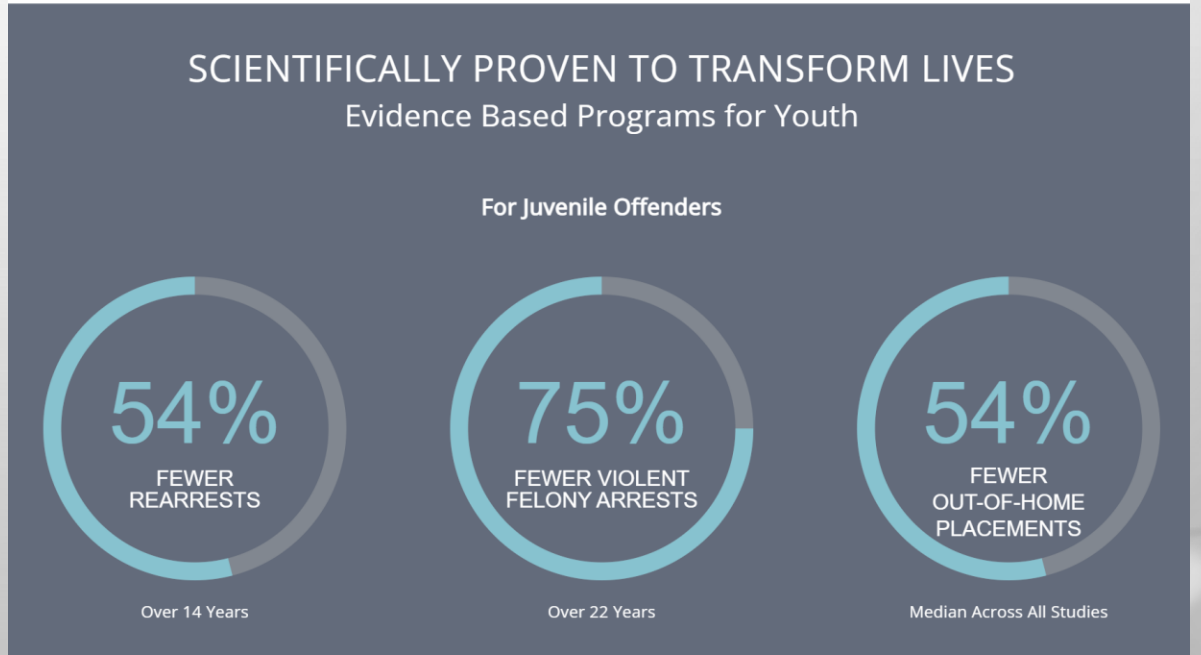
SEFBHN funds $1.2 million to serve:

- 120 adults and families ($10,000 per family)

MULTISYSTEMIC THERAPY (MST)

- MULTISYSTEMIC THERAPY (MST) IS AN INTENSIVE, EVIDENCE-BASED TREATMENT THAT EMPOWERS YOUTH (AGED 12-17) AND THEIR FAMILIES TO FUNCTION RESPONSIBLY OVER THE LONG-TERM WITHIN THE COMMUNITY.
- MST REDUCES DELINQUENT AND ANTISOCIAL BEHAVIOR BY ADDRESSING CORE CAUSES OF SUCH CONDUCT.
- CASELOADS ARE SMALL AND SERVICES ARE PROVIDED IN THE HOME AT TIMES CONVENIENT TO THE FAMILY.
- AVERAGE LENGTH OF TREATMENT IS 3-5 MONTHS.

MST IS THE ONLY INTERVENTION FOR HIGH RISK YOUTH WHERE RESULTS HAVE BEEN REPEATEDLY REPLICATED BY INDEPENDENT RESEARCH TEAMS



Southeast Florida
BEHAVIORAL HEALTH NETWORK

We support and generate innovative programs and solutions to address the behavioral health needs of our community.

Each year, over 13,000 individuals in Palm Beach County with mental health and substance use disorders are directly assisted by SEFBHN's diverse network of community providers.

They receive critical services like crisis intervention, outpatient counseling, medication assisted treatment (MAT), and much more. As a behavioral health managing entity, we work collaboratively with school systems, law enforcement, and more to effectively direct resources to support and help create programs which serve the unique needs of the communities. Here are just a few of the ways our services touch the lives of those in our community:

Behavioral Health Services for adults, children, and families treat mental health and substance use disorders.

Mobile Response Teams work with 211 helpline to provide support and hope to people experiencing crises.

Peer support specialists engage with victims of overdoses to provide recovery support and connections to treatment.

To learn more, visit us at sefbhn.org by scanning the QR code.

Southeast Florida Behavioral Health Network is a managing entity contracted with the Department of Children and Families. The Florida Department of Children Families is committed to its mission of protecting the vulnerable, promoting strong and economically self-sufficient families, and advancing personal and family recovery and resiliency.

Southeast Florida BEHAVIORAL HEALTH NETWORK

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561-484-5148 Direct Line
Ann_Berner@SEFBHN.ORG

QUESTIONS?

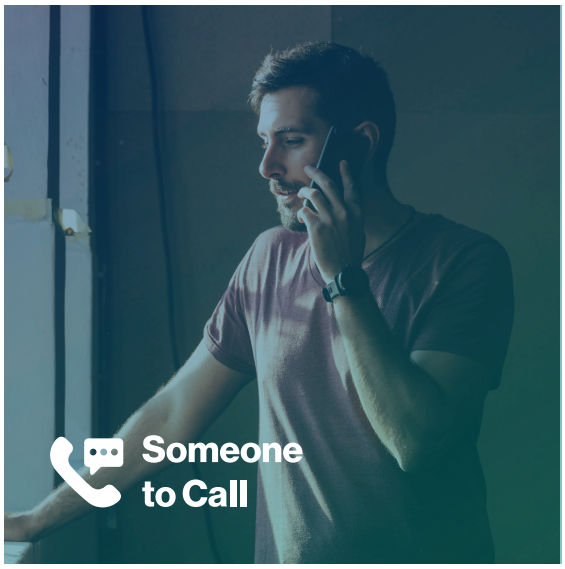
December 2023
Feasibility Study Executive Summary

Implementation of the Crisis Now Model in Palm Beach County

initium HEALTH

The residents of Palm Beach County deserve a high quality, high functioning behavioral health crisis system. The National Guidelines for Behavioral Health Crisis Care delineate best practices for crisis care systems. These guidelines ensure residents receive timely, effective, and compassionate care.

Spearheaded by the National Association of State Mental Health Program Directors, the Crisis Now Model serves as a framework for communities to implement the National Guidelines. The Crisis Now Model is best known for its three key programmatic components:



1. Someone to Call

Regional Crisis Call Centers provide 24/7 access to trained professionals for risk assessment and support through the 988 Suicide & Crisis Lifeline. Best practice guidelines include implementing GPS-enabled technology to dispatch mobile crisis teams to those in need. In the Crisis Now Model, crisis call centers utilize real-time bed registries and have the ability to schedule outpatient appointments and efficiently link people to needed resources. As the hub for services, the crisis call center functions as “air traffic control” for people in crisis, which means call center staff always know where a person is in the continuum of care and facilitate hand-offs and ensure follow-up occurs.

Georgia is widely recognized as a national leader for developing the first statewide crisis line capable of real-time tracking of available crisis beds and utilizing GPS data to dispatch mobile teams. The Georgia Crisis Access Line (GCAL) developed specialized software to support its comprehensive system, which is now made available to other communities in partnership with Behavioral Health Link.

2. Someone to Respond

Mobile Crisis Teams provide community-based intervention services to individuals experiencing a crisis, and offer support wherever the person is. According to the National Guidelines, teams should be staffed by licensed/credentialed clinicians and peers, and should respond within one hour.

Teams should be deployed by the crisis call center on a 24/7 basis. Mobile teams can respond without law enforcement accompaniment unless inclusion is warranted. This approach can lessen the burden of behavioral health crisis response for law enforcement.
The Crisis Now Resource Calculator identifies that Palm Beach County requires 20 mobile teams (each working 40 hours per week) to meet the needs of residents. Today, there are only 3 mobile teams in Palm Beach County.

In Oregon, the Crisis Assistance Helping Out On the Streets (CAHOOTS) program has been widely recognized as a model for mobile crisis and law enforcement collaboration. Appropriate behavioral health calls that come in through 911 are channeled to CAHOOTS teams for response. In 2019, out of nearly 18,000 calls, the CAHOOTS team requested police back up from the City of Eugene just 311 times (2%).

3. Somewhere to Go

Crisis Receiving and Stabilization Facilities provide 24/7 intensive, short-term stabilization in a warm and welcoming environment. As outlined by the National Guidelines, these facilities accept both walk-ins and individuals brought in by first responders.

Crisis receiving facilities provide individual stays of up to 23 hours and 59 minutes, so are often referred to as 23-hour observation units. Short-term stabilization beds for individuals who are not sufficiently stabilized within 24 hours are often co-located with crisis receiving facilities. The Crisis Resource Need Calculator identifies that 82 receiving chairs and 69 short-term beds are needed in Palm Beach County, while currently there are just 20 chairs and 35 short-term beds.

Connections Health Solutions is a nationally-recognized leader in transforming crisis care. Its Crisis Response Center (CRC) in Tucson, Arizona, is distinguished by its unique combination of medical and recovery-focused treatments. The CRC implements best practices, including offering a dedicated first responder drop-off area with a drop-off process of less than 10 minutes and a no rejection policy for first responders. Connections reports that 60-70% of clients achieve stabilization and are successfully discharged back into the community through the 23-hour stabilization service at the CRC.

The Business Case for Evidence-Based Crisis Care

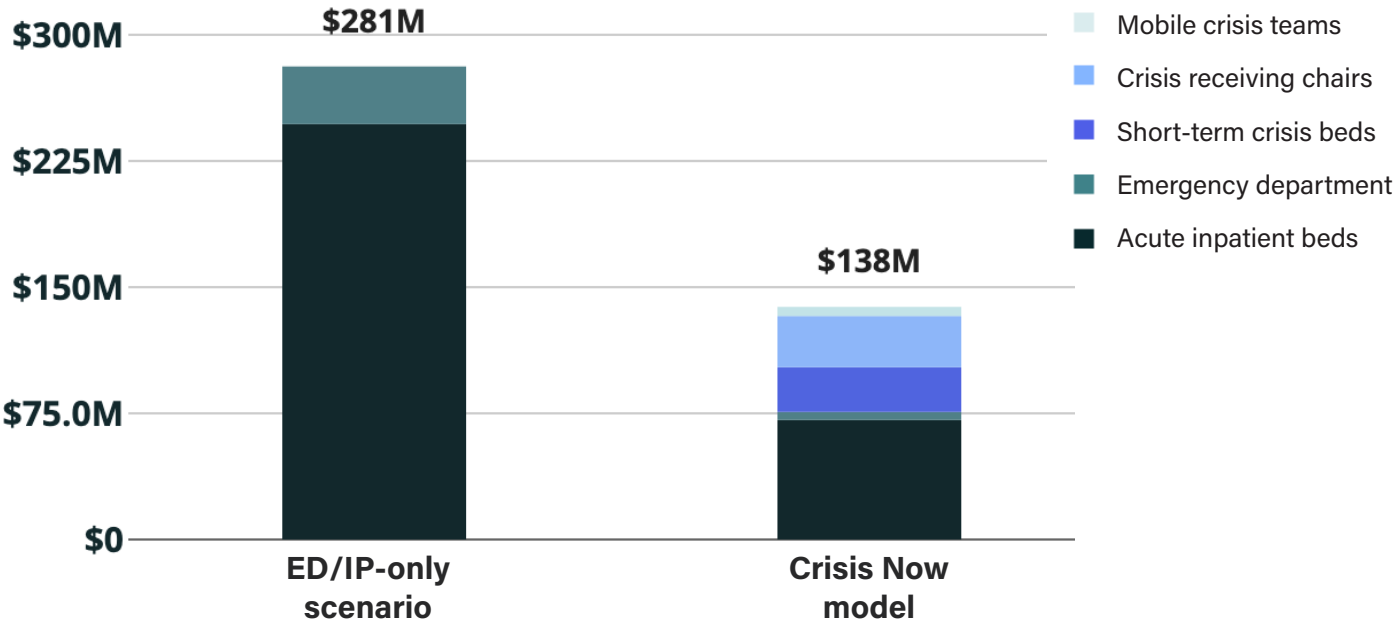
The business case for implementation of the Crisis Now Model is clear. By investing in lower-cost alternatives to care through the expansion and upgrade of crisis call centers, deployment of mobile response teams, and the centralization of specialized facility-based crisis care, communities will save money.

The costly interventions of incarceration and hospitalization will be reduced, and the upstream investments in evidence-based approaches to behavioral health crises will better optimize limited financial resources across the community.

The purpose of this feasibility study is to present recommendations on the crisis care approach best suited for Palm Beach County. While the Crisis Now Model has specific elements that are required for success, there are a variety of ways to implement and operationalize these components. The cost estimates provided below are based on health care costs for Palm Beach County specific needs and service gaps according to the National Guidelines. Projected costs of implementation of the Crisis Now model are based on estimates derived from nationally-recognized services and facilities. Costs are projected without assigning responsibility to a particular community partner for implementation. This report is the starting point for the discussions with stakeholders and community partners on the optimal way to implement the Crisis Now Model in Palm Beach County.

The Crisis Resource Need Calculator provides an overview of the estimated cost reduction associated with transforming the existing crisis care system in Palm Beach County from a starting point focused solely on ED and inpatient psychiatric services (Figure 1).

Figure 1. Crisis Resource Need Calculator for Palm Beach County



The ED and inpatient psychiatric services only scenario is a starting point for communities to estimate their cost reduction potential. By implementing the full continuum of Crisis Now services, Palm Beach County can build on its existing crisis services and realize significant savings.

We collected data on the current state of crisis services and compared it to the recommended level of services in the Crisis Now model. By doing so, we identified the gap that needs to be addressed in order to provide a crisis system aligned with the National Guidelines (Table 1).

As shown below, the implementation of a fully equipped crisis system is anticipated to reduce the demand for acute inpatient beds to less than the number available today. This occurs as more crisis care is delivered in alternative settings, and crises are resolved earlier in their progression.

Table 1: Current and Recommended Crisis Service Levels

Site	Current State: Palm Beach County	Crisis Now Model Projections	Gap
Mobile Crisis Teams	3	20	17
Crisis Receiving Chairs	20	82	62
Short-term Crisis Beds	35	69	34
Acute Inpatient Beds	279	186	N/A

A pioneering study cited in the National Guidelines and conducted by the National Action Alliance for Suicide Prevention found that crisis services were the preferred and most efficient care for people in distress, not hospital-based care. An analysis of crisis data in Tucson, Arizona, found that the vast majority of people (80%) had their crisis resolved over the phone when calling a crisis call center, and 70% of those who needed mobile response had their crisis resolved in the community, without the need to visit a crisis facility. Of those who visited a crisis facility, 65% were discharged to levels of care other than inpatient, ED, or jail. Further, 85% of individuals with a mobile crisis team or crisis facility encounter did not have a subsequent ED visit or hospitalization within 45 days. A person-centered crisis system delivers services in the most effective, least restrictive settings, minimizing the use of locked facilities, restraint, force, and seclusion.

Adapted from Balfour, et al.

As an existing medical provider and a taxpayer funded entity, the Health Care District is well positioned to leverage its resources to facilitate the implementation of the Crisis Now Model in Palm Beach County.

Successful implementation will require the coordination and cooperation of all parties involved in the delivery of behavioral health care in Palm Beach County. The Health Care District is equipped to leverage its electronic health record system to enhance care coordination across various sites of care. The Health Care District can serve as a convener to support accountability and data transparency and ensure sustainability.

Health Care District
PALM BEACH COUNTY

Best Practices for a Care Continuum

The National Guidelines for Behavioral Health Crisis Care establish minimum expectations and best practices for each programmatic component of the care continuum.

Crisis Call Center: Minimum Expectations

Minimum Expectations
Operate every moment of every day (24/7/365)
Answer every call or coordinate overflow coverage with a resource that also meets all of the minimum crisis call center expectations
Assess risk of suicide in a manner that meets NSPL standards and danger to others within each call
Coordinate connections to crisis mobile team services in the region
Be staffed with clinicians overseeing clinical triage and other trained team members to respond to all calls received
Connect individuals to facility-based care through warm hand-offs and coordination of transportation as needed

Crisis Call Center: Best Practices

Best Practices (must meet minimum expectations AND):
Incorporate Caller ID functioning
Implement GPS-enabled technology in collaboration with partner crisis mobile teams to more efficiently dispatch care to those in need
Utilize real-time regional bed registry technology to support efficient connection to needed resources
Schedule outpatient follow-up appointments in a manner synonymous with a warm handoff to support connection to ongoing care following a crisis episode

Mobile Crisis Teams: Minimum Expectations

Minimum Expectations
Include a licensed and/or credentialed clinician capable of assessing the needs of individuals within the region of operation
Respond where the person is (home, work, park, etc.) and not restrict services to select locations within the region or particular days/times
Connect individuals to facility-based care as needed through warm hand-offs and coordinating transportation when and only if situations warrant transition to other locations

Mobile Crisis Teams: Best Practices

Best Practices (must meet minimum expectations AND):
Incorporate peers within the mobile crisis team
Respond without law enforcement accompaniment unless special circumstances warrant inclusion in order to support true justice system diversion
Implement real-time GPS technology in partnership with the region's crisis call center hub to support efficient connection to needed resources and tracking of engagement
Schedule outpatient follow-up appointments in a manner synonymous with a warm handoff in order to support connection to ongoing care

Crisis Receiving Facility: Minimum Expectations

Minimum Expectations
Accept all referrals
Not require medical clearance prior to admission but rather assessment and support for medical stability while in the program
Design their services to address mental health and substance use crisis issues
Employ the capacity to assess physical health needs and deliver care for most minor physical health challenges with an identified pathway in order to transfer the individual to more medically staffed services if needed
Be staffed at all times with a multidisciplinary team capable of meeting the needs of individuals experiencing all levels of crisis in the community
Offer walk-in and first responder drop-off options
Be structured in a manner that offers capacity to accept all referrals at least 90% of the time with a no rejection policy for first responders
Screen for suicide risk and complete comprehensive suicide risk assessments and planning when clinically indicated
Screen for violence risk and complete more comprehensive violence risk assessments and planning when clinically indicated

Crisis Receiving Facility: Best Practices

Best Practices (must meet minimum expectations AND):
Function as a 24 hour or less crisis receiving and stabilization facility
Offer a dedicated first responder drop-off area
Incorporate some form of intensive support beds into a partner program to support flow for individuals who need additional support
Include beds within the real-time regional bed registry system operated by the crisis call center hub to support efficient connection to needed resources
Coordinate connection to ongoing care

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Health Care District of Palm Beach County

Dedicated to the health of our community

Update from HCD

Courtney Phillips, MD
VP of Behavioral Health

1/4/2023

Sober Homes Task Force

Outline

- Current service update
  - SUD services
  - BH Integrated services
  - BH/Psych Services
- Future plans/collaboration for Crisis Now

SUD services

- Added Delray Beach site October 1 to offer same services as Mangonia Park
  - SUD care anytime with a lot of walk in capacity
  - Primary care
  - Psychiatry
  - Group therapy
- Have a lot of capacity
- New 24-7 Mangonia Park clinic
- SEFBHEN collaboration
- Fully using injectable buprenorphine through insurance and grant.

Primary Care Behavioral Health Integration Update

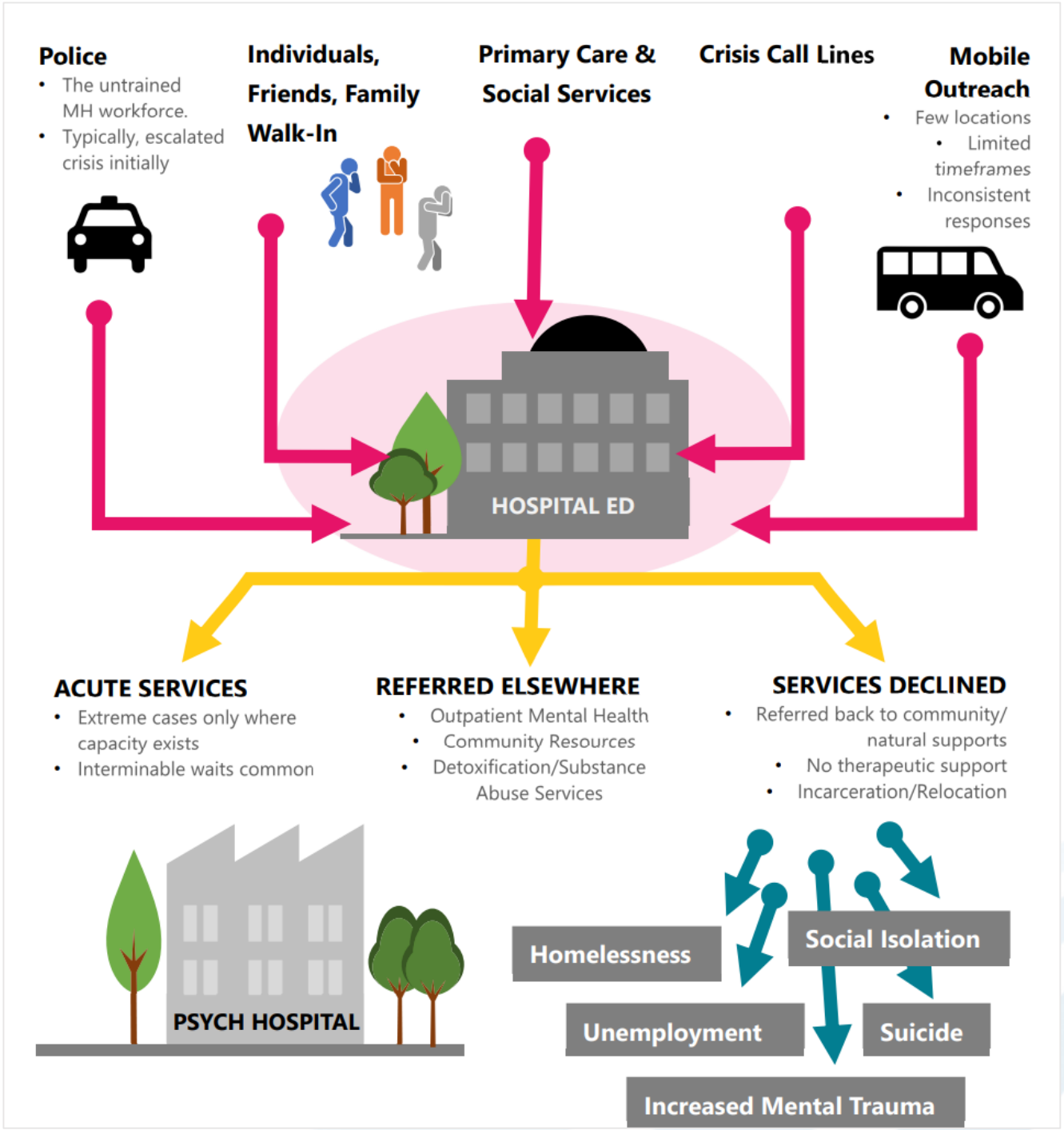
- Working on developing pediatric integration in 1 pediatric clinic
- Added Integrated BHC in primary care in Belle Glade to assess behavioral health…All clinics except Boca and Jupiter have bhc in adult primary care
- Working on adding more individual and group therapy

Psychiatry update

- FAU psychiatry residency is with the District at Delray and Mangonia 4 days per week
- We have a Psychiatric APRN at Lantana full time and West Palm Beach clinic full time seeing teens to adults (both trained in substance use as well)
- We have a LOT of capacity to see more psychiatric patients, please send by calling 561-642-1000. Many patients can get appointments within a week right now.
- Working on getting injectable antipsychotics as a regular practice

Future plan collaborating and assisting in coordinating a “Crisis Now” Model for Palm Beach County

Traditional Crisis Flow



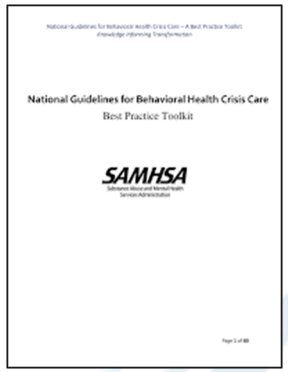
HCD BEHAVIORAL HEALTH INITIATIVE

- Emerged from discussions with Palm Beach County Administration that started pre-COVID, paused during the COVID response, and restarted with greater urgency upon COVID stabilization.
- Need for evidence based, real-world-tested best practices guidance to the BH field (same as physical health)

SAMHSA National Guidelines for Behavioral Health Crisis Care

U.S Department of Health and Human Services agency that leads public health efforts to advance BH;

The mission is to reduce the impact of Substance Abuse and Mental Illness on American communities.



Initium Health – Public Benefit Corp (Denver, CO)

- Assess and provide potential ownership and governance models for a new system of care based on SAMHSA guidelines

Health Care District
PALM BEACH COUNTY

CRISIS NOW MODEL

Four Core Elements For Transforming Crisis Services

High-Tech Crisis Call Centers

These programs use technology for real-time coordination across a system of care and leverage big data for performance improvement and accountability across systems. At the time, they provide high-touch support to individuals and families in crisis.

24/7 Mobile Crisis

Mobile crisis offers outreach and support where people in crisis are. Programs should include contractually required response times and medical backup.

Crisis Stabilization Programs

These programs offer short-term “sub-acute” care for individuals who need support and observation, but not ED holds or medical inpatient stay, at lower costs and without the overhead of hospital-based acute care.

Essential Principles and Practices

These must include a recovery orientation, trauma-informed care, significant use of peer staff, a commitment to Zero Suicide/ Suicide Safer Care, strong commitments to safety for consumers ans staff, and collaboration with lay enforcement.

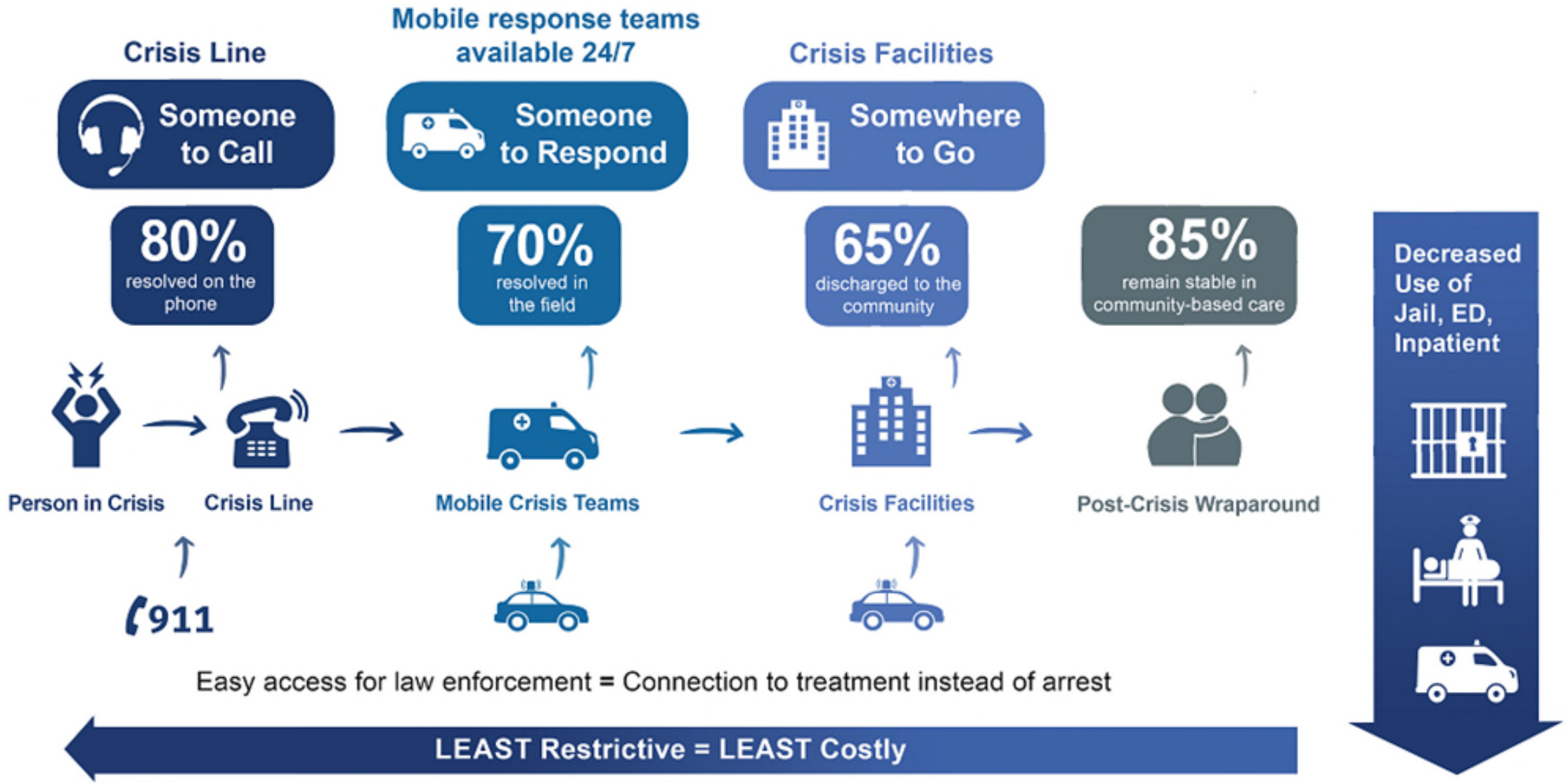
Crisis Care Continuum

988 is the preferred, no-wrong-door place to access crisis care

Mobile response teams available 24/7

Crisis receiving and stabilization facilities

Crisis Care Continuum



Health Care District
PALM BEACH COUNTY

Proposed Mental Health Model for Palm Beach County

ACUTE CARE

Person in Crisis
(child or adult)

Crisis Call Center

EMS
Law Enforcement

MOBILE CRISIS TEAM
Nurse, Social Worker, Peer Support

CENTRAL RECEIVING FACILITY (CRF)
Single Point of Entry 24/7
- Psychiatric ER, ASU
- Jail Diversion, Law Enforcement Drop Off under 10 min
- Triage, Extended Observation Unit (23 hr)
- Crisis Stabilization Unit (1-10 days), Baker Act
- Warm Hand Off

OUTPATIENT COMMUNITY BEHAVIORAL HEALTH CENTER (CBHC)
- Outpatient Psychiatric Care
- Individual and Group Counseling
- First Psychotic Episode Program
- Intensive Case Management
- Primary Care (to ensure normal life expectancy)

INPATIENT HOSPITALS
- Inpatient psychiatric treatment
- Inpatient detox
- Step-down unit

Centralized EHR
Epic
Entire Continuum of Care in Single System
Centralized Case Management and Care Coordination

REHABILITATIVE CARE

PLACE

HOUSING
- Congregate or Individual
- Family-based
- Support that provides in-home care
- Transitional Housing

PEOPLE

SOCIAL CONNECTION
- Peer support
- Clubhouses
- Online community
- Recovery Centers

PURPOSE

EDUCATIONAL AND EMPLOYMENT SUPPORT
(Restoring a sense of purpose and relevance)

Inpatient/ED versus Crisis Now Model

Projected costs of ED/IP system vs Crisis Now Model by Site of Service

Site	ED/IP	Crisis Now
Mobile Crisis Teams	$0	$5.5M
Crisis Receiving Chairs	$0	$30.4M
Short-term Crisis Beds	$0	$26.6M
Emergency Department	$34.2M	$4.8M
Acute Inpatient Beds	$247M	$71.0M
TOTAL	**$281M**	**$138M**

Crisis Now reduces costs through better allocation of resources, resolving more crises in the community without the need for emergency department or acute inpatient care. (Keep in mind that we have some of these services already in PBC that might need to be coordinated or aligned with SAMHSA model)

Where are we now with execution?

- Initium completed feasibility study, has full draft that will be finalized based on the community meeting from December 19 as well as the follow up from the meeting. (Executive summary is out).
- HCD has committed to make Mangonia Park a 24-7 designated clinic in its current site for substance use crisis and mental health crisis after conversations with West Palm Beach Police Department. Aiming for q2/q3 implementation. This will help hold patients diverted/cleared from ASU as well as give crisis MAT to do a 24-7 warm handoff and attempt to prevent baker act.
- HCD is exploring collaboration with many county partners currently as well as taking a lead to helping elevate standards to SAMHSA guidelines for different aspects of this system.
  - Currently in conversation with PBSO to collaborate on Mobile Crisis Units

Questions?

Thank you☺

Health Care District
PALM BEACH COUNTY

Homelessness, Addiction & Mental Illness

presented by Detective Jennifer Jones
Rivera Beach Police Department

Partners in Care Program (Police Department)

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The Partners in Care program strives to improve access to care for individuals experiencing a behavioral health crisis, divert consumers from the criminal justice system and into the health care system, all while improving the communication and coordination across all systems of care, and increasing the safety of all involved in these crisis interactions.

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https://www.nashville.gov/departments/police/investigative-services/alternative-policing-strategies/partners-care


Dash10Media
SLOW DOWN
KIDS PLAYING
DEVELOPING | NEWS
OFFICER-INVOLVED SHOOTING
LIBERTY BELL LANE / CLARKSVILLE
5

MNPD Crisis Intervention Team Weekly Report
Week Ending 03/11/2023
South Precinct

	Prior Week	Last Week	% Change	Prior 4 Weeks	Last 4 Weeks	% Change	Prior YTD	YTD	% Change	Since Inception
CIT Incidents										
All CIT Incidents	41	58	41.5%	171	212	24.0%	0	491	-	855
Meeting Criteria for CIT Response	11	17	54.5%	55	59	7.3%	0	138	-	234
How Officer was Notified										
DEC Dispatched	9	14	55.6%	41	46	12.2%	0	104	-	172
CIT Requested by Other Officer	2	3	50.0%	12	12	0.0%	0	31	-	48
CIT Initiated	0	0	-	2	1	-50.0%	0	3	-	11
Follow-up	0	0	-	0	0	-	0	0	-	3
Time Spent on CIT Responses										
Total Duration in Hours	10	17	70.0%	215	135	-37.2%	0	435	-	756
Officer Activites										
Subject Could be Charged w Crime	2	2	0.0%	10	9	-10.0%	0	24	-	35
Subject Arrested	0	0	-	3	1	-66.7%	0	6	-	8
Force Used	0	0	-	3	0	-100.0%	0	5	-	6
Subject Armed	0	0	-	5	0	-100.0%	0	6	-	10
Subject Injured	0	0	-	4	4	0.0%	0	9	-	18
Subject Injured Prior to Contact	0	0	-	4	3	-25.0%	0	8	-	17
Officer Injured	0	0	-	0	0	-	0	0	-	0
Officer Injured Prior to Contact	0	0	-	0	0	-	0	0	-	0
Other Party Injured	0	0	-	0	1	-	0	1	-	1
Other Party Injured Prior to Contact	0	0	-	0	1	-	0	1	-	1
Responses by Officer Assignment										
Central	0	0	-	0	0	-	0	0	-	0
East	0	0	-	0	0	-	0	0	-	0
Hermitage	0	0	-	0	0	-	0	0	-	0
Madison	0	0	-	0	0	-	0	0	-	0
Midtown Hills	0	0	-	0	0	-	0	0	-	0
North	0	0	-	0	0	-	0	0	-	0
South	11	17	54.5%	55	59	7.3%	0	138	-	234
West	0	0	-	0	0	-	0	0	-	0
Other Division	0	0	-	0	0	-	0	0	-	0

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In 1999, MHC recognized the need to support the whole family and expanded services to include children and youth.

https://www.mhc-tn.org

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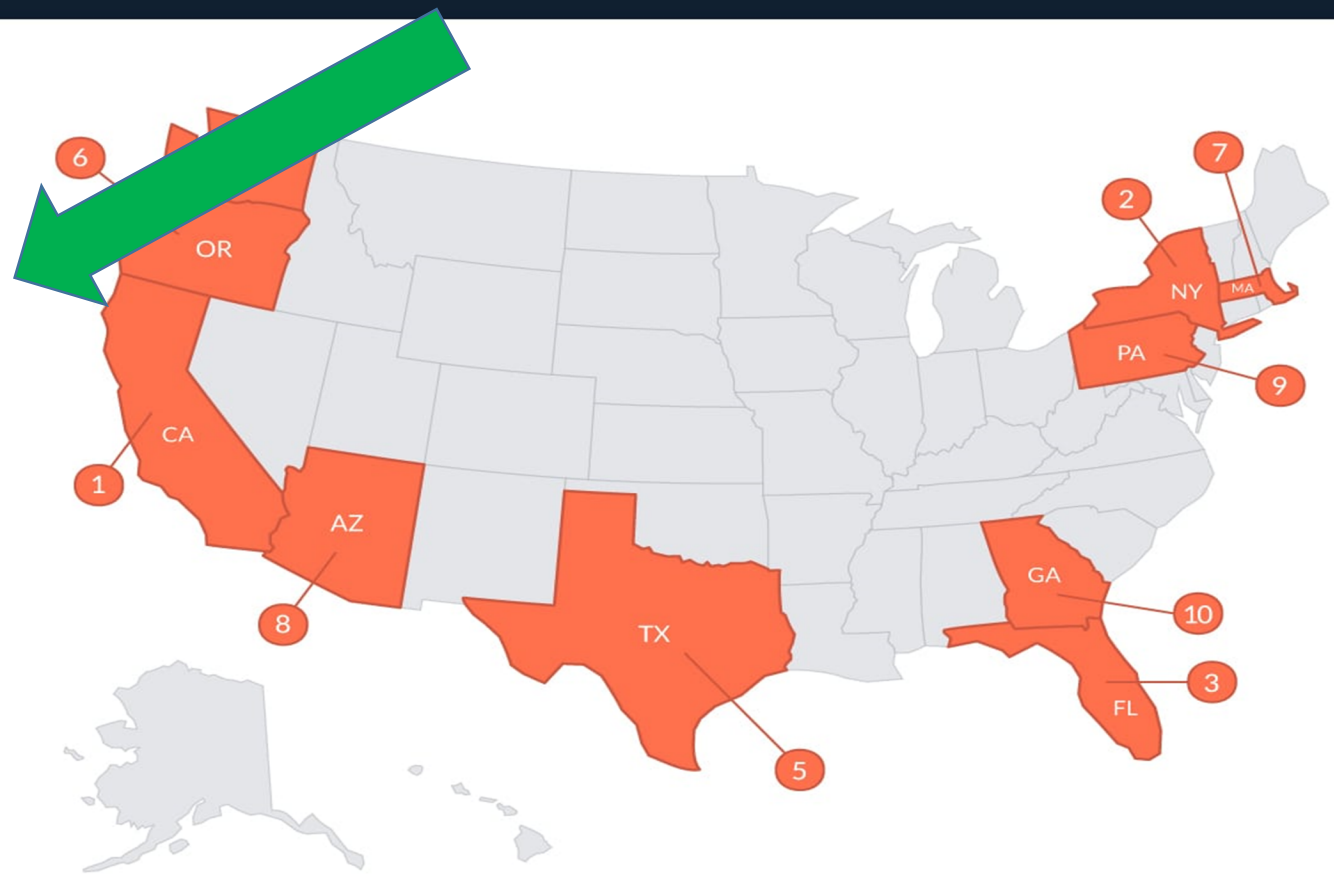

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Risk vs Protective Factors

RISK FACTORS

- Aggressive behavior in childhood
- Lack of parental supervision
- Low peer refusal skills
- Drug experimentation
- Availability of drugs
- Community poverty

PROTECTIVE FACTORS

- Belief in self control (self esteem)
- Parental support
- Positive relationships
- Goals
- Healthy coping skills
- Neighborhood resources

Engage – establish a trusting relationship

Focus- narrow the focus of the conversation around what the client wishes to change

Evoke- eliciting client motivation for change and confidence that change can occur

Planning- develop practical steps the client can use to implement change

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Case Presentation

Then

- 39yo female with hx of heroin use
- Started using opioids at 16
- DOC was Lortabs, however heroin was more accessible and cheaper
- Several attempts to get clean by going to inpatient treatment facilities. Longest period of abstinence being 2 years prior to relapse
- Arrested, lost custody of children, and now on probation

Now

- Enrolled in MAT program- inducted with suboxone as part of MAT program
- Participates in weekly group therapy
- Works as a manager at a service station
- Petitioned the courts for custody of her children

Discussion

- What are the challenges we are facing with housing in Palm Beach County?
- What challenges have you or someone you know faced in finding housing for yourself?
- How might these challenges impact those who are unhoused?
- What success have you had with serving individuals who are unhoused?
- What failures have you seen?
- What are the frustrations you have in responding to calls for service with this population?
- What is the prevalence of severe mental illness/substance abuse? Why do you think that is?
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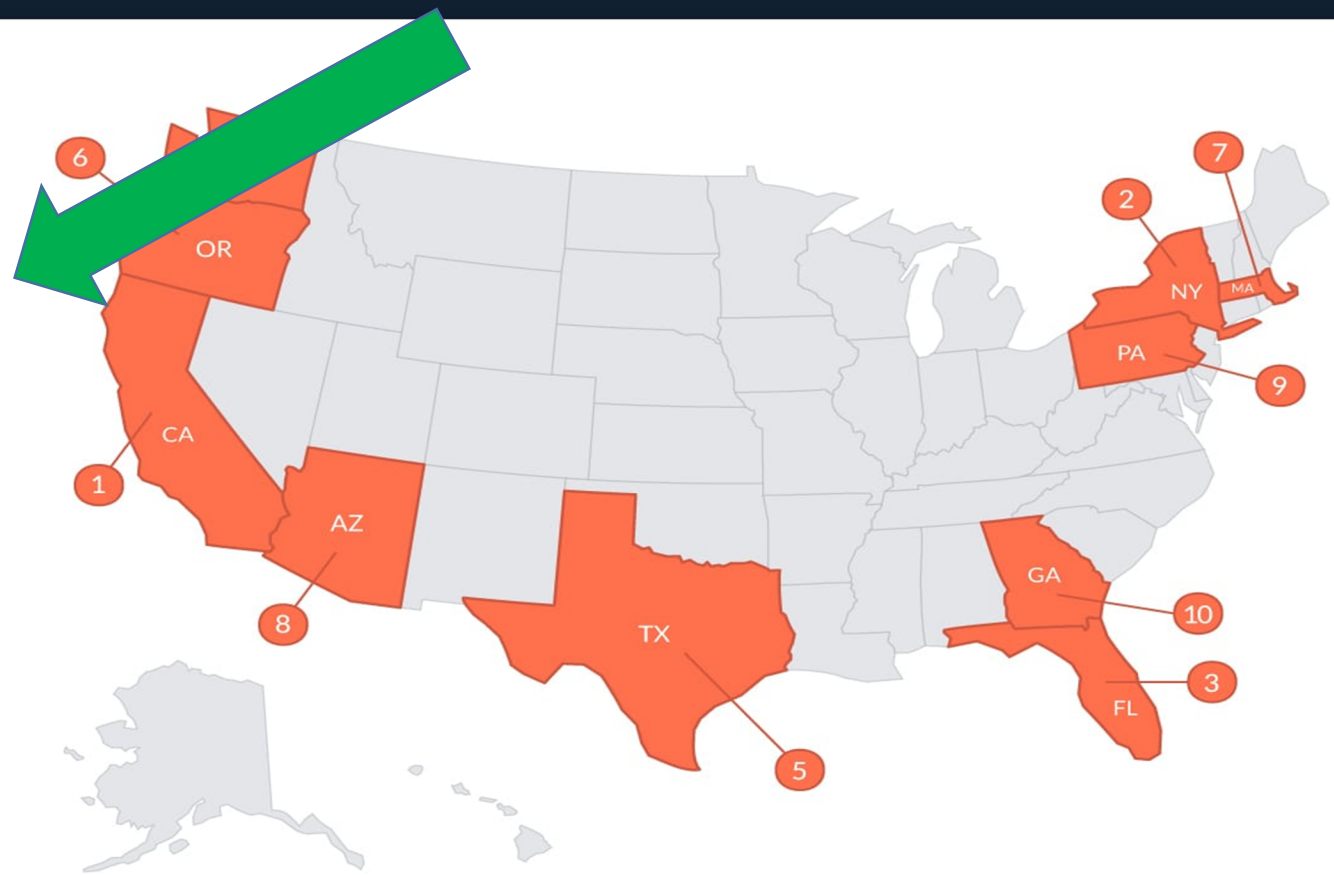

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Questions

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397.321 Duties of the department.- The department shall:

(20) Prominently display and make available on its website ~~No~~ no later than January 1, 2025, all information, including but not limited to information contained in the department's Provider Licensure and designations System, pertaining to the following:

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~~An act relating to substance abuse services…~~

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Search

Search Page > **Provider Results**

Click 'Select' to display a document.

Export Results
Understanding Inspection Reports
Inspection Details for This Provider
(Inspection Data from January 1, 2008 to present)
FloridaHealthFinder Profile

Search Criteria Selected:
Provider Name: ABBEY DELRAY
Provider Type: Nursing Home

This website utilizes popup windows that may not open correctly if blocked.
Please check your browser popup blocker settings if you have trouble viewing documents.

The Statement of Deficiencies Public Record Search displays a complete list of inspections. Documents on this page are redacted per 45 Code of Federal Regulations (CFR) 164.514 through the use of an automated redaction software, which may over-redact to protect from the potential release of confidential information. Manually redacted documents can be obtained by contacting the Public Records Office at PublicRecordsReq@ahca.myflorida.com.

Users will be directed to the federal Nursing Home Compare website at www.medicare.gov/care-compare for nursing home standard and complaint inspections with deficiencies cited that were conducted within the last three years.

1 2 3 4 5 6 7 8

	Inspection Type	Document Type	Visit Date	Pages	Inspection Status

Select	Complaint	Statement of Deficiencies	12/06/2023	2	No Deficiencies
Select	Complaint	Statement of Deficiencies	08/02/2023	2	No Deficiencies
Select	Complaint	Statement of Deficiencies	08/02/2023	2	Deficiencies Corrected
Select	Complaint	Statement of Deficiencies	06/21/2023	15	Deficiencies Cited
Select	Standard	Statement of Deficiencies	04/21/2023	2	Deficiencies Corrected
Select	Fire/Life/Safety	Statement of Deficiencies	04/21/2023	2	Deficiencies Corrected
Select	Complaint	Statement of Deficiencies	04/21/2023	2	No Deficiencies
Select	Standard	Statement of Deficiencies	03/17/2023	54	Deficiencies Cited
Select	Fire/Life/Safety	Statement of Deficiencies	03/14/2023	13	Deficiencies Cited
Select	Complaint	Statement of Deficiencies	02/08/2023	2	No Deficiencies
1 2 3 4 5 6 7 8					

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Florida Agency for Health Care Administration

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Inspection Details for This Provider
(Inspection Data from January 1, 2008 to present)
FloridaHealthFinder Profile

Search Criteria Selected:
Provider Name: ABBEY DELRAY
Provider Type: Nursing Home

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The Statement of Deficiencies Public Record Search displays a complete list of inspections. Documents on this page are redacted per 45 Code of Federal Regulations (CFR) 164.514 through the use of an automated redaction software, which may over-redact to protect from the potential release of confidential information. Manually redacted documents can be obtained by contacting the Public Records Office at PublicRecordsReq@ahca.myflorida.com.

Users will be directed to the federal Nursing Home Compare website at www.medicare.gov/care-compare for nursing home standard and complaint inspections with deficiencies cited that were conducted within the last three years.

1 2 3 4 5 6 7 8

	Inspection Type	Document Type	Visit Date	Pages	Inspection Status
Select	Complaint	Statement of Deficiencies	12/06/2023	2	No Deficiencies
Select	Complaint	Statement of Deficiencies	08/02/2023	2	No Deficiencies
Select	Complaint	Statement of Deficiencies	08/02/2023	2	Deficiencies Corrected
Select	Complaint	Statement of Deficiencies	06/21/2023	15	Deficiencies Cited
Select	Standard	Statement of Deficiencies	04/21/2023	2	Deficiencies Corrected
Select	Fire/Life/Safety	Statement of Deficiencies	04/21/2023	2	Deficiencies Corrected
Select	Complaint	Statement of Deficiencies	04/21/2023	2	No Deficiencies
Select	Standard	Statement of Deficiencies	03/17/2023	54	Deficiencies Cited
Select	Fire/Life/Safety	Statement of Deficiencies	03/14/2023	13	Deficiencies Cited
Select	Complaint	Statement of Deficiencies	02/08/2023	2	No Deficiencies

1 2 3 4 5 6 7 8

Return to Provider Results

Agency for Health Care Administration

STATEMENT OF DEFICIENCIES AND PLAN OF CORRECTION	(X1) PROVIDER/SUPPLIER/CLIA IDENTIFICATION NUMBER:	(X2) MULTIPLE CONSTRUCTION	(X3) DATE SURVEY COMPLETED
	95051	A. BUILDING: _____ B. WING _____	C 12/06/2023

NAME OF PROVIDER OR SUPPLIER	STREET ADDRESS, CITY, STATE, ZIP CODE
ABBEY DELRAY	2105 SW 11TH COURT DELRAY BEACH, FL 33445

(X4) ID PREFIX TAG	SUMMARY STATEMENT OF DEFICIENCIES (EACH DEFICIENCY MUST BE PRECEDED BY FULL REGULATORY OR LSC IDENTIFYING INFORMATION)	ID PREFIX TAG	PROVIDER'S PLAN OF CORRECTION (EACH CORRECTIVE ACTION SHOULD BE CROSS-REFERENCED TO THE APPROPRIATE DEFICIENCY)	(X5) COMPLETE DATE
N 000	INITIAL COMMENTS An unannounced Licensure Complaint survey, Complaint #2023011781, Complaint #2023013264, Complaint #2023013484, Complaint #2023014604 was conducted on 12/06/23 at Abbey Delray. The facility had no deficiencies at the time of the survey.	N 000		

AHCA Form 3020-0001

LABORATORY DIRECTOR'S OR PROVIDER/SUPPLIER REPRESENTATIVE'S SIGNATURE	TITLE	(X6) DATE
Electronically Signed		12/11/23

STATEMENT OF DEFICIENCIES AND PLAN OF CORRECTION	(X1) PROVIDER/SUPPLIER/CLIA IDENTIFICATION NUMBER:	(X2) MULTIPLE CONSTRUCTION	(X3) DATE SURVEY COMPLETED
	105335	A. BUILDING _____ B. WING _____	C 12/06/2023

NAME OF PROVIDER OR SUPPLIER	STREET ADDRESS, CITY, STATE, ZIP CODE
ABBEY DELRAY	2105 SW 11TH COURT DELRAY BEACH, FL 33445

(X4) ID PREFIX TAG	SUMMARY STATEMENT OF DEFICIENCIES (EACH DEFICIENCY MUST BE PRECEDED BY FULL REGULATORY OR LSC IDENTIFYING INFORMATION)	ID PREFIX TAG	PROVIDER'S PLAN OF CORRECTION (EACH CORRECTIVE ACTION SHOULD BE CROSS-REFERENCED TO THE APPROPRIATE DEFICIENCY)	(X5) COMPLETION DATE
F 000	INITIAL COMMENTS An unannounced Complaint survey, Complaint #2023011781, Complaint #2023013264, Complaint #2023013484, Complaint #2023014604 was conducted on 12/06/23 at Abbey Delray. The facility is in compliance with 42 CFR Part 483, Requirements for Long Term Care Facilities.	F 000		

LABORATORY DIRECTOR'S OR PROVIDER/SUPPLIER REPRESENTATIVE'S SIGNATURE	TITLE	(X6) DATE
Electronically Signed		12/11/2023

Any deficiency statement ending with an asterisk (*) denotes a deficiency which the institution may be excused from correcting providing it is determined that other safeguards provide sufficient protection to the patients. (See instructions.) Except for nursing homes, the findings stated above are disclosable 90 days following the date of survey whether or not a plan of correction is provided. For nursing homes, the above findings and plans of correction are disclosable 14 days following the date these documents are made available to the facility. If deficiencies are cited, an approved plan of correction is requisite to continued program participation.

A bill to be entitled

An act relating to substance abuse treatment; amending s. 212.02, F.S.; eliminating certain tax liabilities imposed on certified recovery residences; amending s. 397.311, F.S.; providing the levels of care at certified recovery residences and their respective levels of care for residents; amending s. 397.321, F.S.; requiring the Department of Children and Families to display and make available on its website certain information pertaining to service providers and recovery residences by a specified date; requiring the department to display on its website certain documents pertaining to service providers; amending s. 397.335, F.S.; revising the membership of the Statewide Council on Opioid Abatement to include additional members; amending s. 397.487, F.S.; extending the deadline for certified recovery residences to retain a replacement for a certified recovery residence administrator who has been removed from his or her position; authorizing, rather than requiring, the credentialing entity to revoke the certificate of compliance if a certified recovery residence fails to meet specified standards; requiring certified recovery residences to remove certain individuals from their positions if they are arrested

and awaiting disposition for, are found guilty of, or enter a plea of guilty or nolo contendere to certain offenses, regardless if adjudication is withheld; requiring the certified recovery residence to retain a certified recovery residence administrator if the previous certified recovery residence administrator has been removed due to any reason; prohibiting certified recovery residences, on or after a specified date, from denying an individual access to housing solely for being prescribed federally approved medications from licensed health care professionals; prohibiting local laws, ordinances, or regulations adopted on or after a specified date from regulating the duration or frequency of a resident's stay in a certified recovery residence in certain zoning districts; providing applicability; amending s. 397.4871, F.S.; authorizing, rather than requiring, credentialing entities to revoke a certificate of compliance if a recovery residence fails to meet specified standards; authorizing certain Level IV certified recovery residences owned or controlled by a licensed service provider and managed by a certified recovery residence administrator approved for a specified number of residents to manage a specified greater number of residents, provided that certain

criteria are met; prohibiting a certified recovery residence administrator who has been removed by a certified recovery residence from taking on certain other management positions without approval from a credentialing entity; defines the term "community housing"; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

Section 1. Paragraph (k) is added to subsection (10) of section 212.02, Florida Statutes, to read:

212.02 Definitions.—The following terms and phrases when used in this chapter have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

(10) "Lease," "let," or "rental" means leasing or renting of living quarters or sleeping or housekeeping accommodations in hotels, apartment houses, roominghouses, tourist or trailer camps and real property, the same being defined as follows:

(k) For purposes of this chapter, recovery residences certified pursuant to s. 397.487 which rent properties are not subject to any taxes imposed on transient accommodations, including taxes imposed under s. 212.03; any locally imposed discretionary sales surtax or any convention development tax imposed under s. 212.0305; any tourist development tax imposed

under s. 125.0104; or any tourist impact tax imposed under s. 125.0108.

Section 2. Subsection (5) of section 397.311, Florida Statutes, is amended to read:

397.311 Definitions.—As used in this chapter, except part VIII, the term:

(5) "Certified recovery residence" means a recovery residence that holds a valid certificate of compliance and is actively managed by a certified recovery residence administrator. The levels of care within a certified recovery residence are as follows:

(a) Level I recovery residences that house individuals in recovery who are post-treatment, with a minimum of 9 months of sobriety. Level I certified homes are democratically run by the members who reside in the home.

(b) Level II recovery residences encompass the traditional perspectives of sober living homes. There is oversight from a house manager with lived experience, typically a senior resident. Residents are expected to follow rules outlined in a resident handbook, pay dues, if applicable, and work toward achieving milestones within a chosen recovery path.

(c) Level III recovery residences offer higher supervision by staff with formal training to ensure resident accountability. These homes offer peer-support services and are staffed 24 hours a day. Clinical services are not performed at the residence. The

services offered may include, but are not limited to, life skill mentoring, recovery planning, and meal preparation. This support structure is most appropriate for residents who require a more structured environment during early recovery from addiction.

(d) A Level IV certified recovery residence are dwellings offered, referred to, or provided by, a licensed service provider to its patients who are required to reside at the residence while receiving intensive outpatient and higher levels of outpatient care. Level IV recovery residences are staffed 24 hours a day and combine outpatient licensable services with recovery residential living. Residents are required to follow a treatment plan, attend group and individual sessions, in addition to developing a recovery plan within the social model of recovery spectrum. No clinical services are provided at the residence and all licensable services are provided off-site.

Section 3. Subsection (20) is added to section 397.321, Florida Statutes, to read:

397.321 Duties of the department.—The department shall:

(20) Prominently display and make available on its website no later than January 1, 2025, all documents in the department's Provider Licensure and Designations System pertaining to the following:

(a) Service provider applications for licensure and license renewal.

(b) Policies and procedures provided by the department to

an applicant for service provider licensure or license renewal.

(c) The name and location of each recovery residence engaged in a referral relationship with a licensed service provider or service provider applicant, as required under ss. 397.4104 and 397.403(1)(j).

(d) All complaints pertaining to service providers received by the department, and all investigative reports and findings, whether founded or unfounded. Complainant names and other identifying information shall be redacted.

(e) Fines assessed for violations pursuant to ss. 397.411(7), 397.4104(2), and 397.4873(7).

(f) All reports or other documentation pertaining to service provider license suspension or revocation.

(g) All inspection reports for service provider licenses and recovery residences.

Section 4. Paragraph (a) of subsection (2) of section 397.335, Florida Statutes, is amended to read:

397.335 Statewide Council on Opioid Abatement.—

(2) MEMBERSHIP.—

(a) Notwithstanding s. 20.052, the council shall be composed of the following members:

1. The Attorney General, or his or her designee, who shall serve as chair.

2. The secretary of the department, or his or her designee, who shall serve as vice chair.

3. One member appointed by the Governor.

4. One member appointed by the President of the Senate.

5. One member appointed by the Speaker of the House of Representatives.

6. Two members appointed by the Florida League of Cities who are commissioners or mayors of municipalities. One member shall be from a municipality with a population of fewer than 50,000 people.

7. Two members appointed by or through the Florida Association of Counties who are county commissioners or mayors. One member shall be appointed from a county with a population of fewer than 200,000, and one member shall be appointed from a county with a population of more than 200,000.

8. One member who is either a county commissioner or county mayor appointed by the Florida Association of Counties or who is a commissioner or mayor of a municipality appointed by the Florida League of Cities. The Florida Association of Counties shall appoint such member for the initial term, and future appointments must alternate between a member appointed by the Florida League of Cities and a member appointed by the Florida Association of Counties.

9. Two members appointed by or through the State Surgeon General. One shall be a staff member from the department who has experience coordinating state and local efforts to abate the opioid epidemic, and one shall be a licensed physician who is

board certified in both addiction medicine and psychiatry.

10. One member appointed by the Florida Association of Recovery Residences.

11. One member appointed by the Florida Association of EMS Medical Directors.

12. One member appointed by the Florida Society of Addiction Medicine who is a medical doctor board certified in addiction medicine.

13. One member appointed by the Florida Behavioral Health Association.

14. One member appointed by Floridians for Recovery.

15. One member appointed by the Florida Certification Board.

Section 5. Present paragraphs (c), (d), and (e) of subsection (8) of section 397.487, Florida Statutes, are redesignated as subsections (d), (e), and (f), respectively, and amended, a new paragraph (c) is added to that subsection, subsections (13) and (14) are added to that section, and paragraph (b) of subsection (8) of that section is amended, to read:

397.487 Voluntary certification of recovery residences.—

(8) Onsite followup monitoring of a certified recovery residence may be conducted by the credentialing entity to determine continuing compliance with certification requirements. The credentialing entity shall inspect each certified recovery

residence at least annually to ensure compliance.

(b) A certified recovery residence must notify the credentialing entity within 3 business days after the removal of the recovery residence's certified recovery residence administrator due to termination, resignation, or any other reason. The certified recovery residence has 90 ~~30~~ days to retain a certified recovery residence administrator. The credentialing entity shall revoke the certificate of compliance of any certified recovery residence that fails to comply with this paragraph.

(c) If a certified recovery residence's administrator has been removed due to termination, resignation, or any other reason and had been previously approved to actively manage more than 50 residents pursuant to s. 397.4871(8)(b), the certified recovery residence has 90 days to retain another certified recovery residence administrator pursuant to that section. The credentialing entity shall revoke the certificate of compliance of any certified recovery residence that fails to comply with this paragraph.

(d) ~~(c)~~ If any owner, director, or chief financial officer of a certified recovery residence is arrested and awaiting disposition for or found guilty of, or enters a plea of guilty or nolo contendere to, regardless of whether adjudication is withheld, any offense listed in s. 435.04(2) while acting in that capacity, the certified recovery residence must ~~shall~~

immediately remove the person from that position and ~~shall~~ notify the credentialing entity within 3 business days after such removal. The credentialing entity shall revoke the certificate of compliance of a certified recovery residence that fails to meet these requirements.

(e)~~(d)~~ A credentialing entity shall revoke a certified recovery residence's certificate of compliance if the certified recovery residence provides false or misleading information to the credentialing entity at any time.

(f)~~(e)~~ Any decision by a department-recognized credentialing entity to deny, revoke, or suspend a certification, or otherwise impose sanctions on a certified recovery residence, is reviewable by the department. Upon receiving an adverse determination, the certified recovery residence may request an administrative hearing pursuant to ss. 120.569 and 120.57(1) within 30 days after completing any appeals process offered by the credentialing entity or the department, as applicable.

(13) Effective January 1, 2025, a recovery residence may not deny an individual access to housing solely on the basis that he or she has been prescribed federally approved medication that assists with treatment for substance use disorders by a licensed physician, a physician's assistant, or an advanced practice registered nurse registered under s. 464.0123.

(14) A local law, ordinance, or regulation may not

regulate the duration or frequency of a resident's stay in a certified recovery residence located within a multifamily zoning district. This subsection does not apply to any local law, ordinance, or regulation adopted on or before February 1, 2024.

Section 6. Paragraphs (b) and (c) of subsection (6) of section 397.4871, Florida Statutes, are amended, and paragraph (c) is added to subsection (8) of that section, to read:

397.4871 Recovery residence administrator certification.—

(6) The credentialing entity shall issue a certificate of compliance upon approval of a person's application. The certification shall automatically terminate 1 year after issuance if not renewed.

(b) If a certified recovery residence administrator of a recovery residence is arrested and awaiting disposition for or found guilty of, or enters a plea of guilty or nolo contendere to, regardless of whether adjudication is withheld, any offense listed in s. 435.04(2) while acting in that capacity, the certified recovery residence must ~~shall~~ immediately remove the person from that position and ~~shall~~ notify the credentialing entity within 3 business days after such removal. The certified recovery residence shall ~~have 30 days to~~ retain a certified recovery residence administrator within 90 days after such removal. The credentialing entity shall revoke the certificate of compliance of any recovery residence that fails to meet these requirements.

(c) A credentialing entity may ~~shall~~ revoke a certified recovery residence administrator's certificate of compliance if the recovery residence administrator provides false or misleading information to the credentialing entity at any time.

(8)

(c) Notwithstanding paragraph (b), a Level IV certified recovery residence with a community housing component, which residence is actively managed by a certified recovery residence administrator approved for 100 residents under this section and is wholly owned or controlled by a licensed service provider, may actively manage up to 150 residents so long as the licensed service provider maintains a service provider personnel-to-patient ratio of 1 to 8 and maintains onsite supervision at the residences 24 hours a day, 7 days a week, with a personnel-to-resident ratio of 1 to 10. A certified recovery residence administrator who has been removed by a certified recovery residence due to termination, resignation, or any other reason may not continue to actively manage more than 50 residents for another service provider or certified recovery residence without being approved by the credentialing entity. For purposes of this paragraph, the term "community housing" means a certified recovery residence offered, referred to, or provided by, a licensed service provider that provides housing to its patients who are required to reside at the residence while receiving intensive outpatient and higher levels of outpatient care. A

certified recovery residence as defined in s. 397.311(5) used by a licensed service provider that meets the definition of community housing shall be classified as a Level IV level of support,.

Section 7. This act shall take effect July 1, 2024.

By Senator Harrell

31-00370C-24 20241180__

A bill to be entitled

An act relating to substance abuse treatment; amending s. 212.02, F.S.; eliminating certain tax liabilities imposed on certified recovery residences; amending s. 397.311, F.S.; providing the levels of care at certified recovery residences and their respective levels of care for residents; defining the term "community housing"; amending s. 397.321, F.S.; requiring the Department of Children and Families to display and make available on its website certain information pertaining to service providers and recovery residences by a specified date; requiring the department to display on its website certain documents pertaining to service providers; amending s. 397.335, F.S.; revising the membership of the Statewide Council on Opioid Abatement to include additional members; amending s. 397.487, F.S.; extending the deadline for certified recovery residences to retain a replacement for a certified recovery residence administrator who has been removed from his or her position; requiring certified recovery residences to remove certain individuals from their positions if they are arrested and awaiting disposition for, are found guilty of, or enter a plea of guilty or nolo contendere to certain offenses, regardless if adjudication is withheld; requiring the certified recovery residence to retain a certified recovery residence administrator if the previous certified recovery residence administrator has been removed due to any reason; conforming

provisions to changes made by the act; prohibiting certified recovery residences, on or after a specified date, from denying an individual access to housing solely for being prescribed federally approved medications from licensed health care professionals; prohibiting local laws, ordinances, or regulations adopted on or after a specified date from regulating the duration or frequency of a resident's stay in a certified recovery residence in certain zoning districts; providing applicability; amending s. 397.4871, F.S.; conforming provisions to changes made by the act; authorizing certain Level IV certified recovery residences owned or controlled by a licensed service provider and managed by a certified recovery residence administrator approved for a specified number of residents to manage a specified greater number of residents, provided that certain criteria are met; prohibiting a certified recovery residence administrator who has been removed by a certified recovery residence from taking on certain other management positions without approval from a credentialing entity; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

Section 1. Paragraph (k) is added to subsection (10) of section 212.02, Florida Statutes, to read:

212.02 Definitions.—The following terms and phrases when used in this chapter have the meanings ascribed to them in this

section, except where the context clearly indicates a different meaning:

(10) "Lease," "let," or "rental" means leasing or renting of living quarters or sleeping or housekeeping accommodations in hotels, apartment houses, roominghouses, tourist or trailer camps and real property, the same being defined as follows:

(k) For purposes of this chapter, recovery residences certified pursuant to s. 397.487 which rent properties are not subject to any taxes imposed on transient accommodations, including taxes imposed under s. 212.03; any locally imposed discretionary sales surtax or any convention development tax imposed under s. 212.0305; any tourist development tax imposed under s. 125.0104; or any tourist impact tax imposed under s. 125.0108.

Section 2. Present subsections (9) through (50) of section 397.311, Florida Statutes, are redesignated as subsections (10) through (51), respectively, a new subsection (9) is added to that section, and subsection (5) of that section is amended, to read:

397.311 Definitions.—As used in this chapter, except part VIII, the term:

(5) "Certified recovery residence" means a recovery residence that holds a valid certificate of compliance and is actively managed by a certified recovery residence administrator.

(a) A Level I certified recovery residence houses individuals in recovery who have completed treatment, with a minimum of 9 months of sobriety. A Level I certified recovery residence is democratically run by the members who reside in the

home.

(b) A Level II certified recovery residence encompasses the traditional perspectives of sober living homes. There is oversight from a house manager who has experience with living in recovery. Residents are expected to follow rules outlined in a resident handbook, which is provided by the certified recovery residence administrator. Residents must pay dues, if applicable, and work toward achieving realistic and defined milestones within a chosen recovery path.

(c) A Level III certified recovery residence offers higher supervision by staff with formal training to ensure resident accountability. Such residences are staffed 24 hours a day, 7 days a week, and offer residents peer-support services, which may include, but are not limited to, life skill mentoring, recovery planning, and meal preparation. No clinical services are performed at the residence. Such residences are most appropriate for persons who require a more structured environment during early recovery from addiction.

(d) A Level IV certified recovery residence is a residence offered, referred to, or provided by, a licensed service provider to its patients who are required to reside at the residence while receiving intensive outpatient and higher levels of outpatient care. Such residences are staffed 24 hours a day and combine outpatient licensable services with recovery residential living. Residents are required to follow a treatment plan and attend group and individual sessions, in addition to developing a recovery plan within the social model of living a sober lifestyle. No clinical services are provided at the residence, and all licensable services are provided off-site.

(9) "Community housing" means a certified recovery residence offered, referred to, or provided by a licensed service provider that provides housing to its patients who are required to reside at the residence while receiving intensive outpatient and higher levels of outpatient care. A certified recovery residence used by a licensed service provider that meets the definition of community housing shall be classified as a Level IV level of support, as described in subsection (5).

Section 3. Subsection (20) is added to section 397.321, Florida Statutes, to read:

397.321 Duties of the department.—The department shall:

(20) Prominently display and make available on its website no later than January 1, 2025, all documents in the department's Provider Licensure and Designations System pertaining to the following:

(a) Service provider applications for licensure and license renewal.

(b) Policies and procedures provided to the department by an applicant for service provider licensure or license renewal.

(c) The name and location of each recovery residence engaged in a referral relationship with a licensed service provider or service provider applicant, as required under ss. 397.4104 and 397.403(1)(j).

(d) All complaints pertaining to service providers received by the department, and all investigative reports and findings, whether founded or unfounded. Complainant names and other identifying information shall be redacted.

(e) Fines assessed for violations pursuant to ss. 397.411(7), 397.4104(2), and 397.4873(7).

(f) All reports or other documentation pertaining to service provider license suspension or revocation.

(g) All inspection reports for service provider licenses and recovery residences.

Section 4. Paragraph (a) of subsection (2) of section 397.335, Florida Statutes, is amended to read:

397.335 Statewide Council on Opioid Abatement.—

(2) MEMBERSHIP.—

(a) Notwithstanding s. 20.052, the council shall be composed of the following members:

1. The Attorney General, or his or her designee, who shall serve as chair.

2. The secretary of the department, or his or her designee, who shall serve as vice chair.

3. One member appointed by the Governor.

4. One member appointed by the President of the Senate.

5. One member appointed by the Speaker of the House of Representatives.

6. Two members appointed by the Florida League of Cities who are commissioners or mayors of municipalities. One member shall be from a municipality with a population of fewer than 50,000 people.

7. Two members appointed by or through the Florida Association of Counties who are county commissioners or mayors. One member shall be appointed from a county with a population of fewer than 200,000, and one member shall be appointed from a county with a population of more than 200,000.

8. One member who is either a county commissioner or county mayor appointed by the Florida Association of Counties or who is

a commissioner or mayor of a municipality appointed by the Florida League of Cities. The Florida Association of Counties shall appoint such member for the initial term, and future appointments must alternate between a member appointed by the Florida League of Cities and a member appointed by the Florida Association of Counties.

9. Two members appointed by or through the State Surgeon General. One shall be a staff member from the department who has experience coordinating state and local efforts to abate the opioid epidemic, and one shall be a licensed physician who is board certified in both addiction medicine and psychiatry.

10. One member appointed by the Florida Association of Recovery Residences.

11. One member appointed by the Florida Association of EMS Medical Directors.

12. One member appointed by the Florida Society of Addiction Medicine who is a medical doctor board certified in addiction medicine.

13. One member appointed by the Florida Behavioral Health Association.

14. One member appointed by Floridians for Recovery.

Section 5. Present paragraphs (c), (d), and (e) of subsection (8) of section 397.487, Florida Statutes, are redesignated as paragraphs (d), (e), and (f), respectively, a new paragraph (c) is added to that subsection, subsections (13) and (14) are added to that section, and paragraphs (b) and present paragraphs (c), (d), and (e) of subsection (8) of that section are amended, to read:

397.487 Voluntary certification of recovery residences.—

(8) Onsite followup monitoring of a certified recovery residence may be conducted by the credentialing entity to determine continuing compliance with certification requirements. The credentialing entity shall inspect each certified recovery residence at least annually to ensure compliance.

(b) A certified recovery residence must notify the credentialing entity within 3 business days after the removal of the recovery residence's certified recovery residence administrator due to termination, resignation, or any other reason. The certified recovery residence has 90 ~~30~~ days to retain a certified recovery residence administrator. The credentialing entity shall revoke the certificate of compliance of any certified recovery residence that fails to comply with this paragraph.

(c) If a certified recovery residence's administrator has been removed due to termination, resignation, or any other reason and had been previously approved to actively manage more than 50 residents pursuant to s. 397.4871(8)(b), the certified recovery residence has 90 days to retain another certified recovery residence administrator pursuant to that section. The credentialing entity shall revoke the certificate of compliance of any certified recovery residence that fails to comply with this paragraph.

(d) ~~(c)~~ If any owner, director, or chief financial officer of a certified recovery residence is arrested and awaiting disposition for or found guilty of, or enters a plea of guilty or nolo contendere to, regardless of whether adjudication is withheld, any offense listed in s. 435.04(2) while acting in that capacity, the certified recovery residence must ~~shall~~

immediately remove the person from that position and ~~shall~~ notify the credentialing entity within 3 business days after such removal. The credentialing entity may ~~shall~~ revoke the certificate of compliance of a certified recovery residence that fails to meet these requirements.

(e)~~(d)~~ A credentialing entity shall revoke a certified recovery residence's certificate of compliance if the certified recovery residence provides false or misleading information to the credentialing entity at any time.

(f)~~(e)~~ Any decision by a department-recognized credentialing entity to deny, revoke, or suspend a certification, or otherwise impose sanctions on a certified recovery residence, is reviewable by the department. Upon receiving an adverse determination, the certified recovery residence may request an administrative hearing pursuant to ss. 120.569 and 120.57(1) within 30 days after completing any appeals process offered by the credentialing entity or the department, as applicable.

(13) On or after January 1, 2025, a recovery residence may not deny an individual access to housing solely on the basis that he or she has been prescribed federally approved medication that assists with treatment for substance use disorders by a licensed physician, a physician's assistant, or an advanced practice registered nurse registered under s. 464.0123.

(14) A local law, ordinance, or regulation may not regulate the duration or frequency of a resident's stay in a certified recovery residence located within a multifamily zoning district. This subsection does not apply to any local law, ordinance, or regulation adopted on or before February 1, 2025.

Section 6. Paragraphs (b) and (c) of subsection (6) of section 397.4871, Florida Statutes, are amended, and paragraph (c) is added to subsection (8) of that section, to read:

397.4871 Recovery residence administrator certification.—

(6) The credentialing entity shall issue a certificate of compliance upon approval of a person's application. The certification shall automatically terminate 1 year after issuance if not renewed.

(b) If a certified recovery residence administrator of a recovery residence is arrested and awaiting disposition for or found guilty of, or enters a plea of guilty or nolo contendere to, regardless of whether adjudication is withheld, any offense listed in s. 435.04(2) while acting in that capacity, the certified recovery residence must ~~shall~~ immediately remove the person from that position and ~~shall~~ notify the credentialing entity within 3 business days after such removal. The certified recovery residence shall ~~have 30 days to~~ retain a certified recovery residence administrator within 90 days after such removal. The credentialing entity shall revoke the certificate of compliance of any recovery residence that fails to meet these requirements.

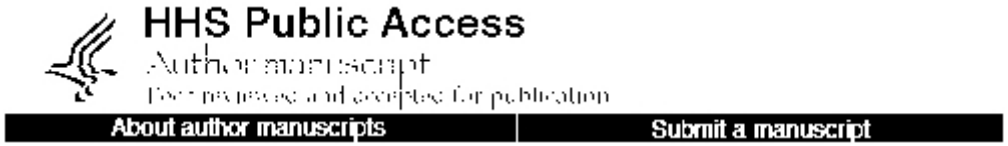
(c) A credentialing entity shall revoke a certified recovery residence administrator's certificate of compliance if the recovery residence administrator provides false or misleading information to the credentialing entity at any time.

(8)

(c) Notwithstanding paragraph (b), a Level IV certified recovery residence with a community housing component, which residence is actively managed by a certified recovery residence

administrator approved for 100 residents under this section and is wholly owned or controlled by a licensed service provider, may actively manage up to 150 residents so long as the licensed service provider maintains a service provider personnel-to-patient ratio of 1 to 8 and maintains onsite supervision at the residences 24 hours a day, 7 days a week, with a personnel-to-resident ratio of 1 to 10. A certified recovery residence administrator who has been removed by a certified recovery residence due to termination, resignation, or any other reason may not continue to actively manage more than 50 residents for another service provider or certified recovery residence without being approved by the credentialing entity.

Section 7. This act shall take effect July 1, 2024.



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Clinical Trial Design Challenges and Opportunities for Emerging Treatments for Opioid Use Disorder A Review

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Abstract

IMPORTANCE

Novel treatments for opioid use disorder (OUD) are needed to address both the ongoing opioid epidemic and long-standing barriers to existing OUD treatments that target the endogenous μ-opioid receptor (MOR) system. The goal of this review is to highlight unique clinical trial design considerations for the study of emerging treatments for OUD that address targets beyond the MOR system. In November 2019, the Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks

(ACTTION) public-private partnership with the US Food and Drug Administration sponsored a meeting to discuss the current evidence regarding potential treatments for OUD, including cannabinoids, psychedelics, sedative-hypnotics, and immunotherapeutics, such as vaccines.

OBSERVATIONS

Consensus recommendations are presented regarding the most critical elements of trial design for the evaluation of novel OUD treatments, such as: (1) stage of treatment that will be targeted (eg, seeking treatment, early abstinence/detoxification, long-term recovery); (2) role of treatment (adjunctive with or independent of existing OUD treatments); (3) primary outcomes informed by patient preferences that assess opioid use (including changes in patterns of use), treatment retention, and/or global functioning and quality of life; and (4) adverse events, including the potential for opioid-related relapse or overdose, especially if the patient is not simultaneously taking maintenance MOR agonist or antagonist medications.

CONCLUSIONS AND RELEVANCE

Applying the recommendations provided here as well as considering input from people with lived experience in the design phase will accelerate the development, translation, and uptake of effective and safe therapeutics for individuals struggling with OUD.

Opioid use disorder (OUD) is a major cause of disease burden, leading to increased pregnancy or birth complications, viral infections, and fatal overdoses.[1–3] The 3 effective and safe medications for treating OUD (MOUD) act through the μ-opioid receptor (MOR), the primary target for opioids misused for their rewarding effects.[4] The MOR agonists methadone or buprenorphine and the MOR antagonist naltrexone are the standard of care for OUD because they reduce risk of relapse, overdose deaths, infections, and criminal behavior,[5] but discontinuation and relapse still exceed 50% within 6 months.[6–8] Furthermore, each of these MOUDs have different induction and dosing procedures as well as regulatory, policy, and patient-level barriers that have hindered patient access and retention.[9] Thus, OUD treatment options need expansion through development of novel stand-alone therapies or adjuncts to existing MOR-based MOUDs.[10–12]

A critical step in developing novel treatments for OUD is the completion of randomized clinical trials (RCTs). However, the inherent features of OUD, including a pronounced physical dependence and a high risk of overdose, suggest the design of these trials will likely need to differ from designs used to evaluate existing treatments for OUD. There is not a strong consensus in the OUD field concerning standardized key trial design decisions or outcome measures. Given the importance of this topic and the need for new and novel OUD treatments, a meeting sponsored by the Analgesic, Anesthetic, and Addiction ClinicalTrialTranslations, Innovations, Opportunities, and

Networks (ACTTION) public-private partnership with the US Food and Drug Administration (FDA) was convened in November 2019 to discuss study design considerations unique to 4 candidate medication categories for OUD that do not directly target the MOR system: cannabinoids, psychedelics, sedative-hypnotics, and immunotherapeutics;a summary of highlights from the meeting has been previously published.[13] This article reviews the key trial considerations derived from that meeting and provides consensus considerations and recommendations for studies of non-MOR–based treatments for OUD.

Methods

The ACTTION Consortium for Addiction Research on Efficacy and Safety (CARES) meeting included participants from academia, government, and nonprofit organizations selected on the basis of their research, clinical, or administrative expertise relevant to the candidate medication categories or clinical trials of OUD treatments. There was no direct participation from any pharmaceutical company. Meeting details, including agenda, goals, list of attendees, presentations, and transcripts of discussion, are available on the CARES website.[14] The following considerations and recommendations were informed by the meeting presentations and discussions, literature reviews, and coauthors' feedback on iterative revisions of drafts of this article.

Discussion

Study Planning

Study planning should begin by specifying the stage in OUD treatment targeted by the intervention(s), as this decision will influence all subsequent design decisions. The core stages in the OUD treatment and recovery trajectory can be conceptualized as (1) current active use of opioids; (2) acute abstinence, nonmedically supervised withdrawal, and/or supervised medical withdrawal; (3) early recovery (eg, less than 6 months of abstinence with or without opioid agonist or antagonist treatment); and (4) sustained recovery (eg, abstinence from illicit opioid use for at least 6 months). Each stage has unique treatment needs, and study planning should consider whether the novel treatment will be adjunctive to existing regulatory agency-approved MOUD, which may be essential for those with physical dependence and withdrawal symptoms. The need for adjunctive treatment, including harm reduction strategies, such as naloxone training to prevent fatal overdose, would be essential for clinically unstable patients.

Historically, few OUD trials have incorporated the preferences of patients, and per patient-focused drug development,[15] we recommend using input from people with lived experience to guide the choice of primary and secondary outcomes. For instance, although treatment retention was found as the most reported outcome across 60 OUD trials, many patients report an eagerness to complete

therapy and end agonist treatment as a main goal.[16] Strategies for incorporating patient perspectives into study planning include focus groups, interviews, online surveys, workshops, social media listening, and community-based participatory research strategies.[17,18] Guidance on methods for engaging patients and other relevant stakeholders are described elsewhere.[19]

Study Design

Intervention (Including Randomization, Blinding, and Dosing) Trial designs will be dictated to a large extent by the stage of treatment that the intervention is targeting as well as the unique properties of the intervention under evaluation. The Table gives an overview of specific considerations for the 4 types of emerging medication treatments reviewed here.[20–54] The National Institute on Drug Abuse has identified additional emerging areas of interest for OUD treatment development that target a range of novel pharmacological mechanisms of action, such as respiratory stimulants, γ-aminobutyric acid metabotropic receptor family B agonists, and ghrelin antagonists.[11] Discussing all emerging treatments, including nonmedication interventions (eg, repetitive transcranial magneticstimulation[55]), was beyond the scope of this meeting, yet many of the considerations and recommendations described here also apply to these other approaches. Each of these emerging treatments has specific characteristics that influence study design choices, including dosing, mode of administration, and timing of intervention relative to treatment stage.

Table.

Unique Considerations Associated With 4 Emerging Treatments for Opioid Use Disorder

Consideration	Cannabis and cannabinoids	Psychedelics	Sedative-hypnotics	Immunotherapeutics (vaccines and monoclonal antibodies)
Rationale	The endocannabinoid and opioid systems interact with some subtypes of cannabinoid receptors that influence the rewarding effects of opioids. Some uncontrolled observational research has suggested that cannabis and cannabinoids can have a substitution effect on opioid use behavior.[20-27]	Classic psychedelics (serotonin 2A receptor agonists) have been associated with reduced substance use in naturalistic and clinical settings, with the strongest evidence for LSD as a treatment of alcoholism. Candidate psychological mechanisms of action include awe, cognitive flexibility, and insight; candidate biological mechanisms include inflammation and brain network functioning.[28-34]	Sleep is a basic biological system that can be affected by opioid use and can also affect the trajectory of opioid use. Sleep dysfunction is a common issue across all substance use disorders. Sleep disturbance can have profound effects on a patient's life, including ability to cope with craving, and can affect the cognitive effort associated with opioid abstinence.[35-41]	Active (vaccination) and passive (transfer of premade antibodies) immunization strategies rely on the presence of drug-specific antibodies to selectively bind to target opioids in plasma and prevent drugs from crossing the blood-brain barrier and reaching the brain. By reducing the concentration of free (unbound) opioids in the brain, vaccines and monoclonal antibodies reduce opioids' pharmacological effects.[42-50]
Types	Cannabis is a complex chemical entity that contains >100 botanically derived phytocannabinoids, each of which can be synthesized or isolated.	LSD, psilocybin (found in *Psilocybe* mushrooms), mescaline (found in peyote and other cacti), and dimethyltryptamine (found in ayahuasca).	Orexin-1 or 1/2 antagonists; tricyclics (Doxepin); antipsychotics (Quetiapine); melatonin; mirtazapine; or ramelteon. Benzodiazepines or benzodiazepinelike drugs (eg, Zolpidem) are often not used due to risk for misuse.	Individual and multivalent vaccines targeting specific types of opioids, including oxycodone, heroin, and fentanyl. Individual and multivalent monoclonal antibodies formulations against various opioids.

Abbreviations: LSD, lysergic acid diethylamide; OUD, opioid use disorder; PSQI, Pittsburgh Sleep Quality Index.

For drug development, the criterion-standard efficacy and safety studies are double-blind, placebo-controlled RCT designs. However, for OUD, these designs face ethical concerns of a placeboonly condition and challenges in blinding treatment groups. Additional research designs that could be considered include adaptive or pragmatic trials and the use of real-world data as primary or secondary outcomes.[56,57] Regardless of the specifics of blinding and ran-domization, we recommend that efforts to examine novel compounds be paired with some form of standardized and efficacious psychosocial support, including in-person or digital treatment modules, to mitigate the risk that patients are left with no treatment if a compound fails.[58]

Comparators

The severe nature of the opioid physical dependence syndrome means that a placebo-controlled trial in the absence of an agonist MOUD might be unsafe or unfeasible for patients who are in early abstinence and at risk of opioid withdrawal symptoms, relapse, or overdose. Relevant alternative types of comparators include (1) low or subtherapeutic doses of study medication, (2) ascending doses of study medication, (3) standard-of-care pharmacologic or nonpharmacologic treatments in a comparative effectiveness trial design, or (4) a combination of different comparators.

The type of comparator will also influence whether the objective of the clinical trial is to test superiority or noninferiority between different treatment conditions. Investigators may choose to provide an MOUD as a plat form therapy for all participants while comparing an active vs placebo adjunctive medication using a superiority trial design (eg, a sleep agent compared with placebo for those stabilized with methadone). Ethical concerns related to place bodosing could also increase the appeal of noninferiority trials, although these are more complex in design and analysis than superiority trials, with challenges described elsewhere.[59]

Study Setting

RCTs of MOR-based MOUDs have been traditionally completed on an outpatient basis in settings, such as opioid treatment programs or medical offices, because of inherent restrictions on MOUD prescribing and dispensing. Some emerging treatments, such as sedative-hypnotics or vaccines, may have fewer regulatory or medical requirements compared with MOR-based treatments and therefore may afford more flexibility in the study designs and open opportunities for novel approaches.[60,61] Methods for remote data collection have advanced considerably during the SARS-CoV-2 pandemic, expanding possible approaches to collecting substance use outcomes (eg, remotely collected breathalyzer data for alcohol or tobacco use).[62–64] Recent parallel efforts to leverage nonspecialized care professionals to expand the OUD treatment infrastructure, including health care professionals,[65,66] may further bolster innova-

tion. However, these approaches may not be useful in all cases; the study of some agents may require even more intensive in-person designs compared with traditional OUD clinical trials. The in-person interactions and monitoring required for safe delivery and evaluation of some novel treatments present challenges to conducting clinical trials on a larger scale, an issue the field has acknowledged and begun to address with more scalable intervention paradigms.[67,68]

Participant Characteristics

Participant selection in the form of inclusion and exclusion criteria are essential for ensuring that a trial targets the population of interest, minimizes variance in outcomes because of factors other than the intervention, and supports future meta-analyses. At minimum, we recommend that the following categories be addressed in the study inclusion and exclusion criteria and/or baseline data collection associated with the study: (1) opioid use variables, including historical (lifetime) and current (past year) opioid use behavior, including type, timing, amount, and route of administration of opioid(s), previous experience with opioid overdose, including hospitalization, OUD treatment history, and degree of OUD severity; (2) historical or current alcohol and other substance use disorders, including prior use of target medication; (3) medical history, including prescribed medications in past 90 days and concomitant medical and psychiatric conditions; and (4) psychosocial variables (eg, problems resulting from opioid use, including incarceration). In addition, basic patient demographic characteristics (eg, age, sex, gender, race and ethnicity, and socioeconomic status) should be collected with awareness of specific populations that are at risk of developing OUD or those who experience disparate consequences, including individuals with mental health disorders,[69] youth and young adults,[70] military veterans,[71] pregnant women,[72] racial and ethnic minority populations,[73,74] and individuals from particular geographic regions (eg, US Appalachian and Southern states).[75,76] Limitations should be considered when selecting eligibility criteria depending on specific safety considerations associated with the intervention under study.

Outcome Measures

The type of efficacy outcomes chosen for a trial depends on the goal of the trial (eg, targeted phase of OUD treatment, key comparators). Literature reviews have noted that primary and secondary outcomes and their associated measures vary widely across clinical trials for OUD.[16,77] Opioid abstinence and treatment retention have been the most common primary end points in clinical trials for OUD and other substance use disorders.[78] However, there is an evolving understanding of the importance of continuous measures of opioiduse, including changes in use patterns, such as the frequency, duration, and amount of use.

The degree to which these different, but important, outcomes are clinically meaningful is still being debated.[1,16,79,80] Currently there are no criterion-standard outcomes in OUD trials. Thus, the below recommendations are meant to functionas guide posts when choosing outcomes.

Primary Outcomes

The dichotomous outcome of opioid abstinence, defined as no detected or self-reported use within an assessment window, has been the most common measure of opioid use behavior in clinical trials.[78] According to the FDA Guidance for Industry regarding end points for demonstrating effectiveness of drugs for treatment of OUD,[78] drug use patterns other than abstinence can be used as thresholds to define treatment response. Measurement of such response-defining thresholds must be specified, and evidence from clinical trials, longitudinal observation studies, or other sources are needed to support the clinical benefit of a given drug use pattern (ie, reduction).[78] We recommend that both abstinence and patterns of opioid use be measured and that clear responder criteria be specified for each, with the potential for a grace period. For trials that identify opioid abstinence as the primary outcome, we recommend opioid use be assessed using objective (eg, urinalysis) and subjective (eg, patient, clinician, and/or observer) measures.[77] The field is currently moving to less frequent objective testing of these outcomes for practical reasons and to reduce the burden on participants. We recommend that decisions regarding frequency of testing be based on the clinical stability of the patient population, the pharmacological properties of treatment, and participation burden.

Trials of MOR-based treatments demonstrate that retention in treatment longer than 6 months is associated with better treatment outcomes compared with shorter durations of treatment or no treatment.[81] However, neither we northe FDA[78] recommend that treatment retention be a stand-alone clinical end point, as retention can be easily influenced or driven by factors external to the intervention being examined. We recommend that at least 1 outcome consider general patient functioning as assessed through pre-post changes in *DSM* OUD diagnostic status or symptom criteria,[82,83] quality of life assessment tools, or other patient-centered outcomes that can better capture how a treatment is affecting a patient's life beyond acute opioid exposure.[79]

Secondary Outcomes

Key secondary outcomes, which could be primary outcomes depending on the aims of the study, include: (1) opioid withdrawal signs and symptoms; (2) opioidcraving; (3) treatment adherence; (4) treatment satisfaction; (5) physical health (eg, comorbid diagnoses, including chronicpain); (6) mental health (eg, anxiety, depression, and other substance use); (7) cognitive and physical functioning (eg, memory, attention, sleep duration and quality, and pain severity); (8) personal and social functioning (eg, family and social relations, criminal behavior, employment, schooling, relationships, and housing and food stability); (9) health risk behavior (eg, hospitalizations, overdoses), and (10) risk of medication misuse (eg, rewarding or reinforcing effects of medication).

Risk and Adverse Events

A critical outcome in OUD trials includes opioid-related overdose or death, which is at increased risk during treatment initiation and the first several weeks after initiating abstinence or attempting opioid withdrawal.[84,85] We recommend that trials, especially early treatment trials, include frequent assessment of these opioid-related adverse events, which include hospitalization, naloxone administration, and emergency department visits. Trials should also include counseling on opioid overdose risk knowledge at the onset of enrollment (eg, Brief Opioid Overdose Knowledge tutorial[86] or the Overdose Education and Naloxone Distribution training) and provide naloxone.

Additional opioid-specific risks that might be monitored include infectious disease exposure and seroconversion rates (eg, HIV and hepatitis C). Emerging treatments may have unique adverse effects and events that should be monitored. For example, immunotherapeutics, such as vaccines and monoclonal antibodies specific for opioids, should be carefully evaluated for immune-related adverse effects in immunocompromised patients.[42] In contrast, some sedative-hypnotic medications and cannabinoids have risks, including acute psychiatric and/or physical health consequences, misuse risk, drug-drug interactions, and diversion that should be monitored.[87,88] Examples of potential risks of emerging treatments covered in the present review are included in the Table.

Challenges and Opportunities

Regulatory requirements and quality control issues, including variations in regulation at the regional and national levels in the US and other countries, can make large-scale clinical trials challenging. For example, cannabis (and other cannabinoids) and psilocybin (and other psychedelics) are all classified as schedule I drugs according to the Federal US Controlled Substances Act (ie, drugs with no currently accepted medical use and a high potential for misuse), making it more challenging and administratively burdensome to conduct clinical trials. Relatedly, both classes of drugs have a controversial history, including issues with social acceptance and legality.[89] Meanwhile, state-level regulation of cannabinoids has led to variable (if any) manufacturing standards across states, resulting in intervariations and intravariations in potency and dosing across cannabinoid products. This makes it difficult to generalize research findings across some marketed consumer products.

These challenges and perspectives are slowly changing, as evidenced by the recent FDA breakthrough therapy designation for psilocybin in the treatment of depression, and 3,4-methylenedioxy-methamphetamine (MDMA) in the treatment of posttraumatic stress disorder.[90] In contrast, opioid vaccines are not designated as controlled substances by the US Drug Enforcement Administration (DEA), and therefore, DEA regulations would not complicate treatment per se. However, opioid conjugate vaccines consist of multiple components, including an opioid-based small molecule hapten, which could be regulated by the DEA as either a schedule I or II drug, thereby affecting research and manufacturing.[91] Manufacturing challenges related to DEA drug scheduling apply to a broad range of compounds currently in development, including synthetic cannabinoids, psychedelics, and nontraditional opioid receptor agonists and antagonists.

Another challenge is that the types of opioids being used has expanded from commercially produced opioids and heroin to also include fentanyl and/or its structural analogs, resulting in a dynamic opioid marketplace for which research may lag street-level use, type of drug, and availability. Recent data suggest increased exposure to fentanyl and its structural analogs across the US.[92,93] Opioids produce diverse effects on the development and nature of opioid physical dependence and withdrawal, and fentanyl appears to be engendering a unique and particularly severe withdrawal syndrome. Establishing a treatment's efficacy becomes especially challenging when the type of substance being targeted has such wide variability in terms of potency, route of administration, detectability, and potential for adverse outcomes.

A third challenge is that the complexity of OUD and its different stages of development are likely to have different (albeit over-lapping) underlying mechanisms that require different types of or combinations of treatments.[11] For example, early sporadic use is a different stage in the life cycle from years of chronic, daily use. Furthermore, medication alone is often not a sufficient treatment for OUD, and it is important to include psychosocial and behavioral interventions and to tailor these nonpharmacological interventions to the stage of opioid use. There remain gaps in our understanding of how best to combine pharmacological and behavioral treatments.[58]

Despite these and other challenges, there are valuable opportunities for clinical trials with emerging treatments. Research methods are developing quickly, especially in sleep measurement, wearable devices for drug detection, remote data collection (eg, telehealth and wearable technology), and the development of genetic bio-markers for selection of phenotypes and endophenotypes that may better reflect underlying neurobiological mechanisms. The present review focused on study design considerations for clinical trials and did not discuss other relevant types of research, including pre-clinical studies, laboratory-based within-subject human studies, and observational/epidemiological studies.

Conclusions

The Box provides a summary of the key considerations and recommendations for clinical trials evaluating emerging non-MOR treatments for OUD. Promoting a unifying structure of best research practices as described in the present review will help the field build consensus as to the appropriate methodological strategies and prevent otherwise promising targets from languishing or being abandoned because of problematic study designs rather than true lack of efficacy or lack of uptake. In the context of a continually evolving and escalating opioid crisis, research must prioritize both innovation and efficiency. The field and the patients with whom we work will be best served by maintaining an open dialogue to develop a consistent methodological framework for the assessment and treatment of OUD.

Box.

Key Recommendations and Considerations

Study Objectives

- Prospective trial registration prior to the start data collection in publicly accessible database, including primary and secondary outcomes, hypotheses, and study objectives.
- Priority should be given to specifying the stage in OUD treatment that will be targeted with the intervention (eg, current active use of opioids, acute abstinence, nonmedically supervised withdrawal, and/or supervised withdrawal, early recovery, or long-term recovery) and determining whether the emerging treatment will be adjunctive to or independent of existing OUD treatments.

Clinical Trial Design

- Study design will ideally be double-blind randomized clinical trial.
- Comparators should include a placebo group (when ethically appropriate) and/or an active control comparison(s).
- If the novel treatment is a stand-alone intervention, then comparison should include an existing, evidence-based OUD treatment (eg, methadone, buprenorphine, naltrexone, or behavioral/psychosocial support).

Sample

- Participants should be a representative, diverse population of patients (ie, age, sex, sexual orientation, race and ethnicity, socioeconomic status, and history of substance use).
- Exclusion criteria that are too restrictive and may negatively affect the generalizability of the study should be carefully evaluated and included on the basis of safety or another enhanced rationale considered (eg, exclusion of participants with concurrent medical, physical, or mental health issues).

Primary End Point

- Primary outcomes should be chosen to align with the study objectives and the phase of treatment that is to be targeted (eg, symptoms of opioid withdrawal or craving will be more important to measure in early recovery rather than during long-term recovery). In addition, primary outcomes will need to be tailored to the expected treatment indication (eg, sleep measures for a sleep intervention).
- At minimum, we recommend that primary outcomes for trials beyond phase I include opioid use behavior, treatment retention, and at least 1 outcome that addresses global functioning (eg, change in *DSM* criteria, quality of life).
- A dichotomous measure to define responder (based on opioid abstinence or reduction in opioid use) should be a primary outcome, but also consider continuous measures of opioid use (ie, quantity, frequency).
- Selection of end points should be informed by input from patients and family members to determine the most salient OUD symptoms/experiences and outcomes.

Secondary Outcomes

- Potential secondary outcomes should include opioid withdrawal and/or craving, treatment adherence and satisfaction, physical and mental health, risk of misuse of study intervention, patient-focused outcomes, such as psychosocial functioning (including employment and legal issues), sleep, pain, and cognitive functioning, and health outcomes (eg, viral load if positive for HIV or hepatitis C virus).

Assessment of Harms

- Adverse events, including opioid-related adverse events (eg, hospitalization, naloxone administration, visits to emergency department), and reasons for premature terminations from trial should be collected and carefully reviewed with sensitivity to relapse risk and overdose.

Abbreviation: OUD, opioid use disorder.

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Footnotes

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Cannabis Use Disorder and Subsequent Risk of Psychotic and Nonpsychotic Unipolar Depression and Bipolar Disorder

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IMPORTANCE Cannabis use is increasing worldwide and is suspected to be associated with increased risk of psychiatric disorders; however, the association with affective disorders has been insufficiently studied.

OBJECTIVE To examine whether cannabis use disorder (CUD) is associated with an increased risk of psychotic and nonpsychotic unipolar depression and bipolar disorder and to compare associations of CUD with psychotic and nonpsychotic subtypes of these diagnoses.

DESIGN, SETTING, AND PARTICIPANTS This prospective, population-based cohort study using Danish nationwide registers included all individuals born in Denmark before December 31, 2005, who were alive, aged at least 16 years, and living in Denmark between January 1, 1995, and December 31, 2021.

EXPOSURE Register-based diagnosis of CUD.

MAIN OUTCOME AND MEASURES The main outcome was register-based diagnosis of psychotic or nonpsychotic unipolar depression or bipolar disorder. Associations between CUD and subsequent affective disorders were estimated as hazard ratios (HRs) using Cox proportional hazards regression with time-varying information on CUD, adjusting for sex; alcohol use disorder; substance use disorder; having been born in Denmark; calendar year; parental educational level (highest attained); parental cannabis, alcohol, or substance use disorders; and parental affective disorders.

RESULTS A total of 6 651 765 individuals (50.3% female) were followed up for 119 526 786 person-years. Cannabis use disorder was associated with an increased risk of unipolar depression (HR, 1.84; 95% CI, 1.78-1.90), psychotic unipolar depression (HR, 1.97; 95% CI, 1.73-2.25), and nonpsychotic unipolar depression (HR, 1.83; 95% CI, 1.77-1.89). Cannabis use was associated with an increased risk of bipolar disorder in men (HR, 2.96; 95% CI, 2.73-3.21) and women (HR, 2.54; 95% CI, 2.31-2.80), psychotic bipolar disorder (HR, 4.05; 95% CI, 3.52-4.65), and nonpsychotic bipolar disorder in men (HR, 2.96; 95% CI, 2.73-3.21) and women (HR, 2.60; 95% CI, 2.36-2.85). Cannabis use disorder was associated with higher risk for psychotic than nonpsychotic subtypes of bipolar disorder (relative HR, 1.48; 95% CI, 1.21-1.81) but not unipolar depression (relative HR, 1.08; 95% CI, 0.92-1.27).

CONCLUSIONS AND RELEVANCE This population-based cohort study found that CUD was associated with an increased risk of psychotic and nonpsychotic bipolar disorder and unipolar depression. These findings may inform policies regarding the legal status and control of cannabis use.

Multimedia

Supplemental content

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Cannabis is one of the most widely used psychoactive drugs in the world,[1] and an increasing number of countries are legalizing its production and sale for medicinal and recreational use.[2] Over the past decades, both the use and the average potency of cannabis have increased.[3,4] Use of cannabis may, however, lead to addiction (ie, cannabis use disorder [CUD]).[5] Cannabis use disorder is frequent among individuals with affective disorders[6] and, in this group, is associated with increased symptom severity,[7,8] suicidality,[9] and mortality.[10] Although disputed, evidence suggests that use of cannabis may be associated with increased risk of developing psychiatric disorders[11]; however, the association could also be reversed (ie, premorbid illness leading to cannabis use) or attributable to confounding (ie, common genetic liability for cannabis use and psychiatric disorders[12]). Mendelian randomization studies, which use genetic variants as instrumental variables to infer causal relationships, suggest a causal effect of cannabis use on schizophrenia[13] but not on bipolar disorder[14] or major depressive disorder, although this may be due to lack of statistical power.[15,16] The accumulating epidemiologic evidence, which supports an association between cannabis use and psychosis,[17,18] includes dose-response relationships[19] and a positive association between cannabis potency (Δ9-tetrahydrocannabinol concentration) and risk of psychosis.[20] When taking the increased use and potency of cannabis into consideration, an increased incidence of schizophrenia may be expected. The incidence of schizophrenia[21] and the population-attributable risk fraction (PARF) of CUD for schizophrenia[22] have increased over recent years. Based on the existing evidence, it is possible that cannabis use may be associated with risks of other mental disorders, such as affective disorders.

Evidence regarding the association between use of cannabis and affective disorders is limited. Self-reported cannabis use was not found to be associated with unipolar depression or bipolar disorder after adjustment for confounders in a sample of Swedish military conscripts aged 18 to 20 years,[23] although a dose-dependent association with the risk of schizophrenia was identified.[24] Similarly, no association was found between cannabis use and subsequent risk of affective disorders in a nationally representative sample of US adults.[5] However, a positive association between cannabis use and subsequent depression,[25] bipolar disorder,[26] and manic symptoms[27] has been demonstrated in other longitudinal studies. Risk estimates may be smaller for the association between cannabis use and affective disorders than estimates for the association between cannabis use and schizophrenia.[23,24,28-30] It is possible that the effects of cannabis might primarily be psychotogenic, in which case, higher risk of psychotic (vs nonpsychotic) subtypes of affective disorders would be expected. Still, this hypothesis remains to be tested.

The aim of the current study was to analyze whether CUD was associated with a subsequent diagnosis of unipolar depression or bipolar disorder. To assess whether an association was primarily psychotogenic, we conducted separate analyses with respect to psychotic and nonpsychotic subtypes of these affective disorders. These questions were studied using longitudinal data from nationwide Danish health registers.

Key Points

Question Is cannabis use disorder associated with an increased risk of psychotic and nonpsychotic unipolar depression and bipolar disorder?

Findings In this cohort study of 6 651 765 individuals in Demark, cannabis use disorder was associated with an increased risk of both psychotic and nonpsychotic unipolar depression and bipolar disorder.

Meaning The findings suggest that cannabis use disorder is independently associated with bipolar disorder and unipolar depression.

Methods

Study Design, Data Sources, and Study Population

We conducted a register-based prospective cohort study by linking nationwide Danish register data. Since 1968, the Danish Civil Registration System[31] has provided all permanent residents in Denmark with a unique identification number, which allows for individual-level linkage of data from different registers. The Civil Registration System[31] also contains information on date of birth, birthplace, and vital status. Data on contacts with psychiatric and somatic hospitals, including information on diagnoses, were obtained from the Psychiatric Central Research Register since 1969[32] and the National Patient Register since 1977,[33] respectively. Finally, we obtained data on treatments provided for substance use from the municipal Register of Substance Abusers in Treatment.[34] Information on redeemed prescriptions was derived from the National Prescription Registry[35] since 1995. We included all individuals born no later than December 31, 2005, who were alive, aged at least 16 years, and living in Denmark at some point between January 1, 1995, and December 31, 2021. The study was approved by the Danish Data Protection Agency. Register-based studies do not require informed consent according to Danish law. The present analyses were conducted using encrypted personal identification numbers on servers at Statistics Denmark. The study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.

Exposures

Cannabis use disorder was defined as a recorded diagnosis during a hospital contact in either the Psychiatric Central Research Register or the National Patient Register or a record of treatment for CUD provided by a municipality. Diagnoses of CUD were recorded using *International Classification of Diseases, Eighth Revision (ICD-8)* code 304.5 and *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10)* code F12.X. The *ICD-8* was used in Denmark until 1994, when it was replaced by the *ICD-10*. The *International Classification of Diseases, Ninth Revision* was never implemented in Denmark. Information on CUD was also obtained from the municipal register of substance users seeking treatment, with information as to whether cannabis was the person's primary misused substance.

Covariates

We obtained information on alcohol use disorder (AUD) and substance use disorders (SUDs) using psychiatric diagnostic codes

(eTable 1 in Supplement 1) and registered treatment in the municipal register of substance users seeking treatment. Finally, redeeming a prescription of naltrexone counted toward AUD, while buprenorphine or methadone counted toward SUD.

In addition to the aforementioned data, we obtained information on sex; date of birth; country of birth; parental CUD, AUD, and SUD; parental affective disorders; and highest level of parental education. In addition, history of other psychiatric disorders (*ICD-8*: 290-309; *ICD-10*: any code in the F chapter except for those already part of other variables) was included.

Outcomes

Information on affective disorders was obtained from the Psychiatric Central Research Register[32] and the psychiatric segment of the National Patient Registry.[36] To distinguish affective disorders with and without psychotic features, we restricted the study period to the years when *ICD-10* codes were used. The following *ICD-10* codes were used for the outcome categories: unipolar depression (F32.X or F33.X), unipolar depression with psychotic features (F32.3 or F33.3), unipolar depression without psychotic features (F32 and F33, excluding F32.3 and F33.3), bipolar disorder (F31.X), bipolar disorder with psychotic features (F31.2 or F31.5), and bipolar disorder without psychotic features (F31, excluding F31.2 and F31.5).

Statistical Analysis

We plotted cumulative probabilities for affective disorders using Kaplan-Meier curves and applied Cox proportional hazards regression to estimate hazard ratios (HRs) to compare the risk of affective disorders depending on the exposure (CUD vs no CUD). Individuals were entered into the analysis on their 16th birthday or January 1, 1995, whichever came last. Individuals were followed up until development of an affective disorder; censoring due to development of schizophrenia, death, or emigration; or the end of data collection on May 3, 2022. We included CUD, AUD, and SUD as time-varying covariates in all models. Men and women were examined separately if an interaction between sex and CUD was detected in crude preliminary analyses. In the adjusted analyses, we included sex (if not stratified by sex); AUD and SUD; born in Denmark (yes, no); calendar year; parental educational level (highest attained); parental CUD, AUD, and SUD; and parental affective disorders. Age was used as the underlying time scale in all analyses. When calculating risk of unipolar depression, individuals were censored at the date of diagnosis of bipolar disorder as this diagnosis would preclude a later unipolar depression diagnosis. Individuals who had been diagnosed with an affective disorder (*ICD-8*: 296.X) prior to 1995 were not considered to have incident cases of unipolar depression or bipolar disorder and were thus censored before inclusion in the analyses. We estimated relative HRs for associations between CUD and the psychotic and nonpsychotic subtypes by dividing the 2 HRs. The SE for this metric was estimated by summing the nonexponentially transformed SEs of the 2 estimated HRs, and this was then used to estimate a 95% CI around the relative HR. We conducted 2 sensitivity analyses to address potential confounding by other psychiatric disorders; we adjusted for the presence of other psychiatric disorders (1) prior to CUD diagnosis and (2) over the entire follow-up period. We estimated PARFs from the adjusted HRs as previously reported.[22]

Table 1. Characteristics of the Population

Characteristic	Individuals, No. (%) (N = 6 651 765)
Sex	
Female	3 347 142 (50.3)
Male	3 304 623 (49.7)
Born in Denmark	521 840 (7.9)
Parental CUD, AUD, and/or SUD	666 427 (10.0)
Parental affective disorder	313 305 (4.7)
Parental educational level	
Primary or lower secondary	1 145 564 (17.2)
Upper secondary	1 095 498 (16.5)
Short-cycle tertiary	75 650 (1.1)
Bachelor's degree	297 728 (4.5)
Master's degree or higher	107 305 (1.6)
Not registered	3 930 020 (59.1)
CUD	55 968 (0.8)
AUD	399 086 (6.0)
SUD	214 110 (3.2)

Abbreviations: AUD, alcohol use disorder; CUD, cannabis use disorder; SUD, substance use disorder.

All analyses were conducted using STATA/MP, version 17.0 (StataCorp LLC). Two-sided $P < .05$ was considered significant.

Results

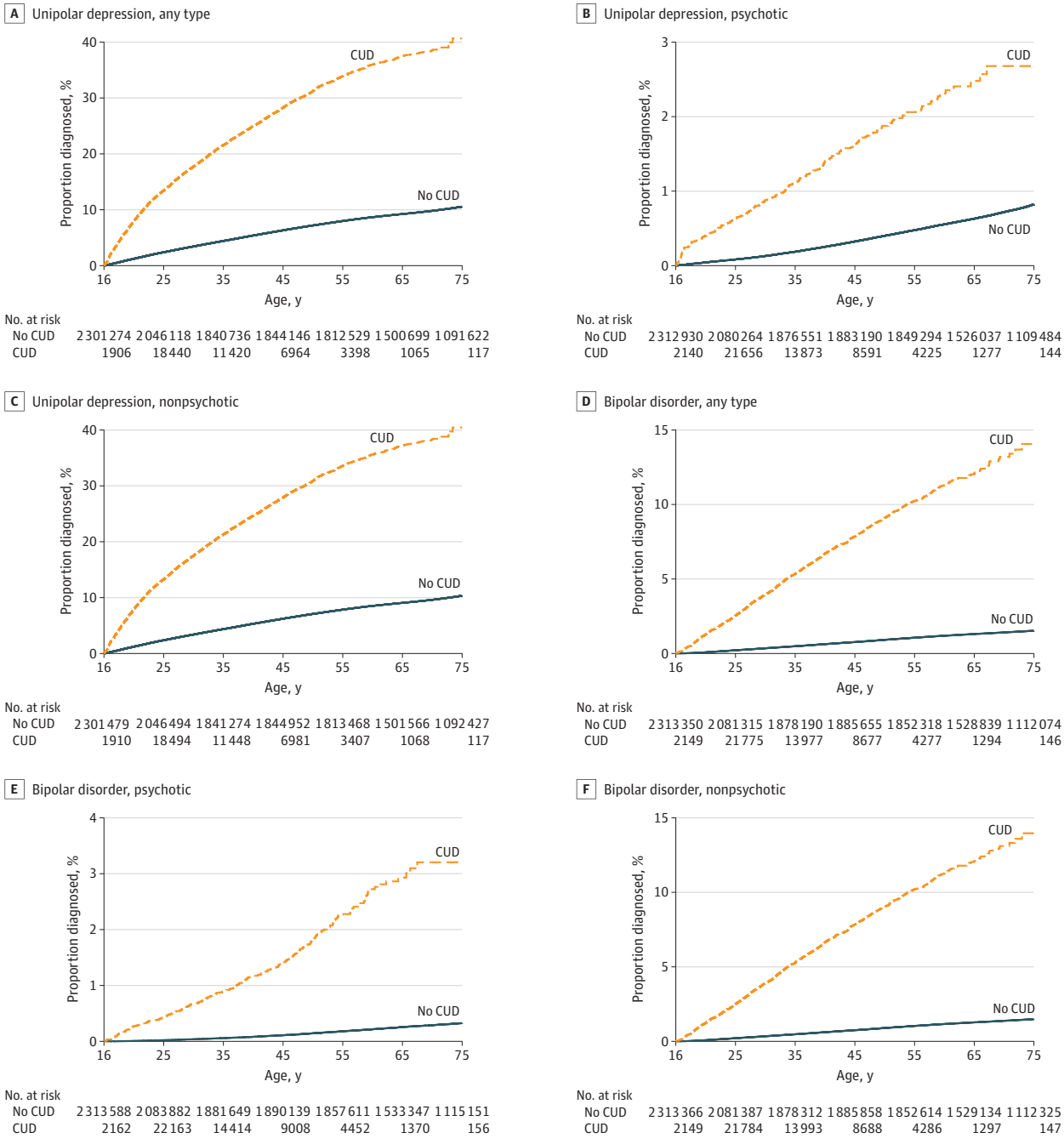
A total of 6 651 765 individuals were included and followed up over 119 526 786 person-years (50.3% female; 49.7% male). **Table 1** presents study population characteristics, all of which were significantly associated with the outcomes. The study population had a broad age distribution, as shown in the eFigure in Supplement 1. In all, 60 696 individuals (0.9% of the study population) received a diagnosis of CUD during follow-up, and 260 746 (3.9%) developed an affective disorder.

CUD and Unipolar Depression

All analyses regarding unipolar depression were conducted jointly for men and women as no interaction between sex and CUD was observed (any type of unipolar depression: χ^2_1, 1.01; $P = .03$; psychotic unipolar depression: χ^2_1, 0.43; $P = .51$; nonpsychotic unipolar depression: χ^2_1, 1.37; $P = .24$). Altogether, 40.7% of individuals with CUD received a diagnosis of unipolar depression, as shown in the Kaplan-Meier plot (**Figure 1**). The majority of these individuals (96.1%) were diagnosed with nonpsychotic unipolar depression, while 3.9% were diagnosed with psychotic unipolar depression.

When adjusting for sex; AUD and SUD; having been born in Denmark; calendar year; parental CUD, AUD, and SUD; and parental affective disorders, individuals with CUD had a higher risk of any type of unipolar depression (HR, 1.84; 95% CI, 1.78-1.90) compared with individuals with no records of a CUD (**Table 2**). Elevated risks were also found with respect to psychotic depression (HR, 1.97; 95% CI, 1.73-2.25) and nonpsychotic depression (HR, 1.83; 95% CI, 1.77-1.89). We found no statistically significant difference in the associations between CUD and the psychotic vs nonpsychotic type of unipolar depression (relative HR, 1.08; 95%

Figure 1. Kaplan-Meier Plots for Exposure to Cannabis Use Disorder (CUD) and the Outcomes of Unipolar Depression and Bipolar Disorder



CI, 0.92-1.27). The PARFs for unipolar depression associated with CUD ranged from 0.71% (95% CI, 0.69%-0.73%) to 0.85% (95% CI, 0.84%-0.87%). The HRs for the associations between AUD or SUD and any type of unipolar depression were found to be nominally greater than those for the association between CUD and any type of unipolar depression (eTable 2 in Supplement 1).

When assessing risks with respect to the time between the first diagnosis of CUD and subsequent unipolar depression, the highest risk was found within the first 6 months of being diagnosed (HR, 6.84; 95% CI, 6.34-7.38) compared with no diagnosis of CUD (**Figure 2**). However, the excess risk of unipolar depression among those with CUD remained significant up to 10 years after the initial diagnosis.

In the sensitivity analyses adjusting for other psychiatric disorders prior to CUD, associations remained between CUD and unipolar depression (HR, 1.72; 95% CI, 1.67-1.77) and the psychotic (HR, 1.87; 95% CI, 1.65-2.13) and nonpsychotic (HR, 1.71; 95% CI, 1.65-1.76) subtypes, but the HRs were smaller than in the main analysis. After adjusting for other psychiatric disorders over the entire follow-up period (both before and after

Table 2. Associations of CUD With Unipolar Depression and Bipolar Disorder and PARFs

Outcome	Incident cases, No.	HR (95% CI)		PARF, % (95% CI)[b]
		Unadjusted	Adjusted[a]	
Unipolar depression				
Any type	240 347	4.89 (4.75-5.04)	1.84 (1.78-1.90)	0.85 (0.84-0.86)
Psychotic	17 906	4.72 (4.05-5.51)	1.97 (1.73-2.25)	0.71 (0.69-0.73)
Nonpsychotic	235 157	4.91 (4.77-5.06)	1.83 (1.77-1.89)	0.85 (0.84-0.87)
Bipolar disorder				
Any type[c]				
Males	12 545	11.36 (10.60-12.17)	2.96 (2.73-3.21)	4.72 (4.58-4.86)
Females	19 330	11.94 (10.96-13.02)	2.54 (2.31-2.80)	1.68 (1.63-1.73)
Psychotic	6567	12.26 (10.86-13.84)	4.05 (3.52-4.65)	3.22 (3.03-3.41)
Nonpsychotic[c]				
Males	12 198	11.51 (10.74-12.35)	2.96 (2.73-3.21)	4.79 (4.64-4.93)
Females	18 907	12.32 (11.30-13.43)	2.60 (2.36-2.85)	1.76 (1.71-1.82)

Abbreviations: CUD, cannabis use disorder; HR, hazard ratio; PARF, population-attributable risk fraction.

[a] Adjusted for sex (if not stratified by sex); alcohol use disorder; substance use disorder; born in Denmark (yes, no); calendar year; parental educational level (highest attained); parental CUD, alcohol use disorder, and substance use disorder; and parental affective disorders. The associations were conditioned on age since age was used as the underlying time scale in all analyses.

[b] Calculated from the estimates of the adjusted HRs.

[c] Estimates for the associations are reported for males and females separately as there was a significant interaction between CUD and sex for these outcomes. There was no interaction between sex and CUD for psychotic bipolar disorder or for any of the outcomes under unipolar depression.

CUD), HRs were even smaller for associations with unipolar depression (HR, 1.08; 95% CI, 1.04-1.11) and the nonpsychotic subtype (HR, 1.07; 95% CI, 1.04-1.10), and there was no association with the psychotic subtype (HR, 1.05; 95% CI, 0.92-1.19).

Cannabis Use Disorder and Bipolar Disorder

We found an interaction between sex and CUD for any type of bipolar disorder (χ^2_1, 5.02; P = .03) and nonpsychotic bipolar disorder (χ^2_1, 6.62; P = .01) but not for psychotic bipolar disorder (χ^2_1, 0.43; P = .51). Analyses for the first 2 outcomes were thus stratified by sex.

The Kaplan-Meier curves revealed that 14.1% of individuals with CUD eventually received a diagnosis of bipolar disorder (Figure 1). The majority of these individuals (90.2%) were diagnosed with nonpsychotic bipolar disorder, while 9.8% were diagnosed with psychotic bipolar disorder.

Cannabis use disorder was associated with a higher risk of any type of bipolar disorder among both men (HR, 2.96; 95% CI, 2.73-3.21) and women (HR, 2.54; 95% CI, 2.31-2.80) compared with nonexposed individuals in the adjusted analysis (Table 2). Likewise, CUD was associated with psychotic bipolar disorder (HR, 4.05; 95% CI, 3.52-4.65) and with nonpsychotic bipolar disorder in both men (HR, 2.96; 95% CI, 2.73-3.21) and women (HR, 2.60; 95% CI, 2.36-2.85). Cannabis use disorder was associated with a higher risk for the psychotic type than the nonpsychotic type of bipolar disorder (relative HR, 1.48; 95% CI, 1.21-1.81). The PARF for bipolar disorder varied from 1.68% (95% CI, 1.63%-1.73%) for any type of bipolar disorder in women to 4.79% (95% CI, 4.64-4.93) for nonpsychotic bipolar disorder in men (Table 2). Alcohol use disorder was associated with a nominally greater risk of bipolar disorder compared with CUD (eTable 3 in Supplement 1).

When assessing risks with respect to the time between first diagnosis of CUD and subsequent bipolar disorder, the highest risk was found within the first 6 months of diagnosis (HR, 16.45; 95% CI, 13.97-19.38) compared with no diagnosis of CUD (Figure 2). However, the risk of bipolar disorder among those with CUD remained elevated even after 10 or more years (Figure 2).

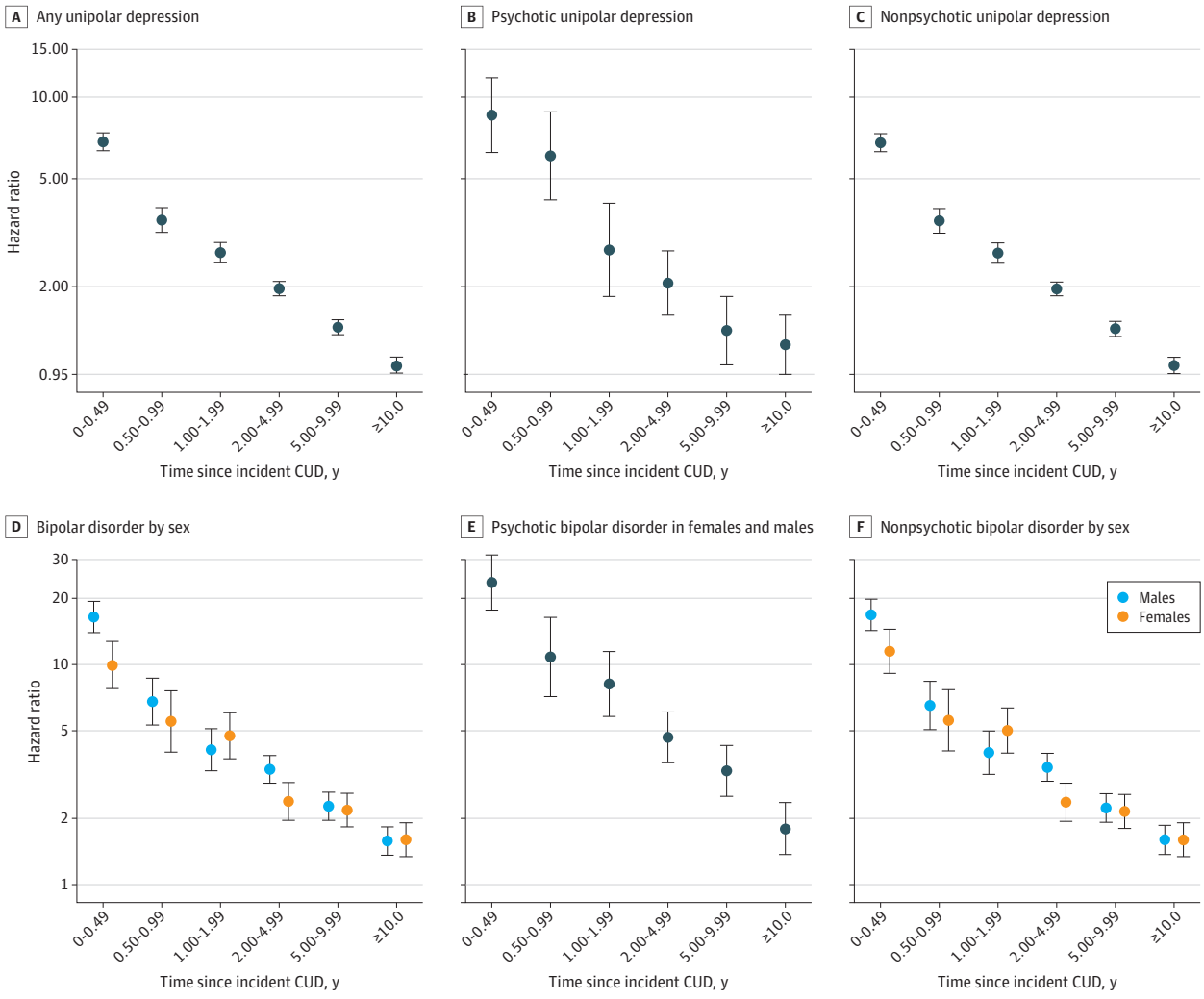
In the sensitivity analyses, after adjustment for other psychiatric disorders prior to CUD, associations remained between CUD and bipolar disorder in both men (HR, 2.79; 95% CI, 2.59-3.02) and women (HR, 2.46; 95% CI, 2.24-2.69), but HRs were smaller. The HR was similar for the association between CUD and psychotic bipolar disorder (HR, 4.04; 95% CI, 3.54-4.60). For nonpsychotic bipolar disorder, after adjustment for other psychiatric disorders prior to CUD, the associations remained for both men (HR, 2.79; 95% CI, 2.58-3.01) and women (HR, 2.50; 95% CI, 2.28-2.40), but the HRs were smaller. After adjusting for other psychiatric disorders over the entire follow-up period (both before and after CUD), HRs were even smaller for the associations between CUD and bipolar disorder in men (HR, 1.49; 95% CI, 1.38-1.61) and women (HR, 1.53; 95% CI, 1.39-1.67), between CUD and psychotic bipolar disorder (HR, 2.07, 95% CI, 1.82-2.36), and between CUD and nonpsychotic bipolar disorder in men (HR, 1.48; 95% CI, 1.37-1.60) and women (HR, 1.55; 95% CI, 1.41-1.69).

Discussion

In this nationwide cohort study of 6 651 765 individuals, CUD was found to be associated with an increased risk of unipolar depression and bipolar disorder when adjusting for relevant confounders. Although excess risks of unipolar depression and bipolar disorder were highest immediately after diagnosis of CUD, they remained significantly elevated up to 5 to 10 years after CUD.

Our findings add support to previous large-scale studies showing an association between CUD and affective disorders.[23,26,27] Two previous studies found significant associations between cannabis use and unipolar depression but not bipolar disorder.[23,26] We found significant associations between CUD and both bipolar disorder and unipolar depression, but

Figure 2. Risk of Unipolar Depression and Bipolar Disorder Among Individuals With vs Without Cannabis Use Disorder (CUD)



Whiskers indicate 95% CIs. D and F, Due to a significant interaction between sex and CUD for any type of bipolar disorder and psychotic bipolar disorder, these analyses were performed for males and females separately.

the risk of bipolar disorder was nominally higher. Importantly, differences in the information on cannabis use (self-reported use vs nationwide health records) and analytical strategies may explain some of these discrepancies. Specifically, some studies adjusted for baseline depressive or manic symptoms[27] or baseline psychiatric disorders.[23,26] When we adjusted for other psychiatric disorders prior to CUD, the associations with mood disorders remained. After adjustment for other psychiatric disorders over the entire follow-up period to reduce potential residual confounding, associations remained with the exception of the association between CUD and psychotic unipolar depression. Adjustment for psychiatric disorders diagnosed after CUD may, however, induce collider stratification bias by conditioning on mediators between the exposure and the outcome; thus, the latter analysis may be overadjusted.[37]

Implications

Our findings lend support to the notion that cannabis use may represent an independent factor associated with unipolar depression and bipolar disorder. The risk of psychiatric disorders appears to be higher for schizophrenia[18,22] than for affective disorders[38] and higher for psychotic bipolar disorder than for nonpsychotic bipolar disorder, potentially pointing to a primarily psychotogenic effect of cannabis. Δ9-Tetrahydrocannabinol, the main psychoactive constituent of cannabis, acts on cannabinoid (CB1) receptors and is suggested to increase the risk of psychosis by altering striatal dopaminergic function[39,40] or by disrupting normal endocannabinoid modulation of cortical development and function.[41,42] In addition to its links with psychosis, the dopaminergic system is intricately linked with neurocognitive processes relevant for affective disorders, such as reward processing.[43-45] However, a coherent model for how cannabis may influence the development of affective disorders is lacking. Future studies may further elucidate these effects in a transdiagnostic framework.

Based on our findings and the evidence regarding cannabis and schizophrenia, interventions to reduce cannabis use through both public education and more targeted interventions may be advisable. Direct evidence that cannabis cessation can reduce

the risk of affective disorders is, however, lacking, and although several interventions appear to be associated with reducing cannabis use in adolescents[46] and healthy adults,[47] they may be less effective in individuals with mental disorders.[48] Although some trials have demonstrated significant improvements in depressive symptoms after a psychosocial intervention to reduce cannabis use,[49] these improvements may be mediated by broader effects of the psychosocial interventions, providing little evidence for the beneficial effects of cannabis cessation itself.[50] Targeted interventions for at-risk individuals are currently hindered by sparse knowledge on factors associated with transition from cannabis use (disorder) to psychiatric disorders,[51,52] calling for further studies.

Strengths and Limitations

A strength of this study is the large sample size, which makes it, to our knowledge, the largest investigation of the association between CUD and affective disorders to date. Data were collected prospectively and uniformly for all studied groups, eliminating recall bias and reducing selection bias. The availability of sociodemographic and historic psychiatric information on individuals and their parents enabled us to adjust for relevant confounders.

Important limitations should be mentioned. First, while individuals registered with a CUD diagnosis are likely to have CUD (ie, high positive predictive value), individuals without a register-based diagnosis of CUD may still have CUD (ie, suboptimal negative predictive value). This misclassification could bias our findings toward the null if the misclassification was random or could confound our findings if individuals with a diagnosis of CUD were not representative of (heavy) cannabis users.[52,53] Second, the validity of the register-based diagnosis of affective disorders is evaluated as good in Denmark,[54] but individuals with mild to moderate depression might be seen only in primary care and thus were not detected in our study.[55] Third, detection bias is possible. Receiving a diagnosis and clinical care for CUD may imply that clinicians divert more attention to these individuals and, hence, are more likely to detect psychiatric disorders that might otherwise go undetected among nonexposed individuals. This could be an explanatory factor for the increased risk during the first year(s) after diagnosis of CUD. However, the sustained increased risk observed up to 10 years after the initial CUD diagnosis supports the notion of an association beyond the putative detection bias.

Conclusions

The results of this cohort study suggest that cannabis use is associated with an increased risk of psychotic and nonpsychotic bipolar disorder and unipolar depression. These findings have implications regarding the legalization and control of cannabis use. Importantly, there appears to be a need for improved knowledge on the dose-dependent effects of cannabis use on brain, cognition, and behavior; identification of risk factors for transition from cannabis use (disorder) to psychiatric disorders; and the effects of cannabis cessation on long-term psychiatric risk.

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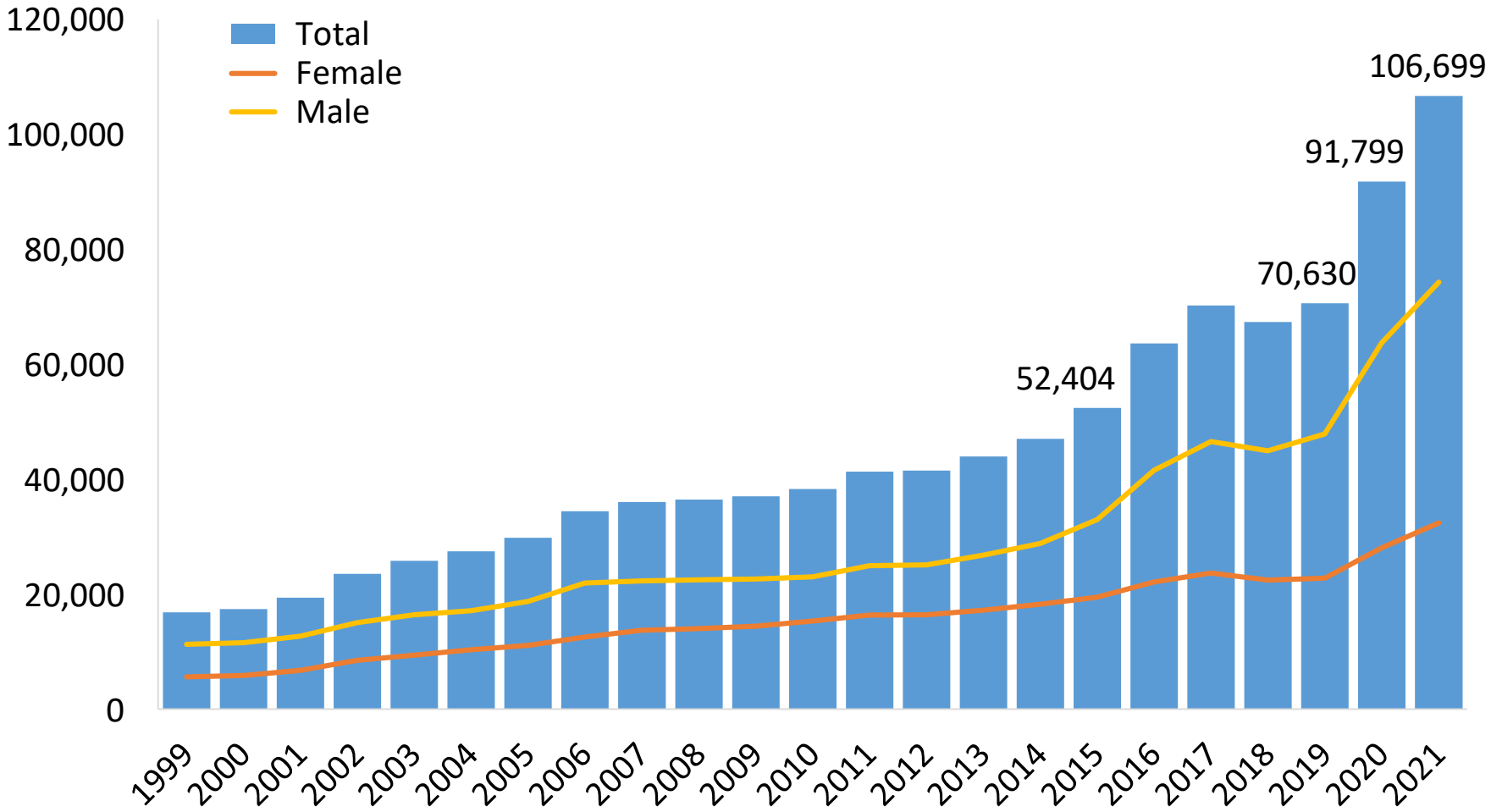
Drug Overdose Death Rate 1999-2021

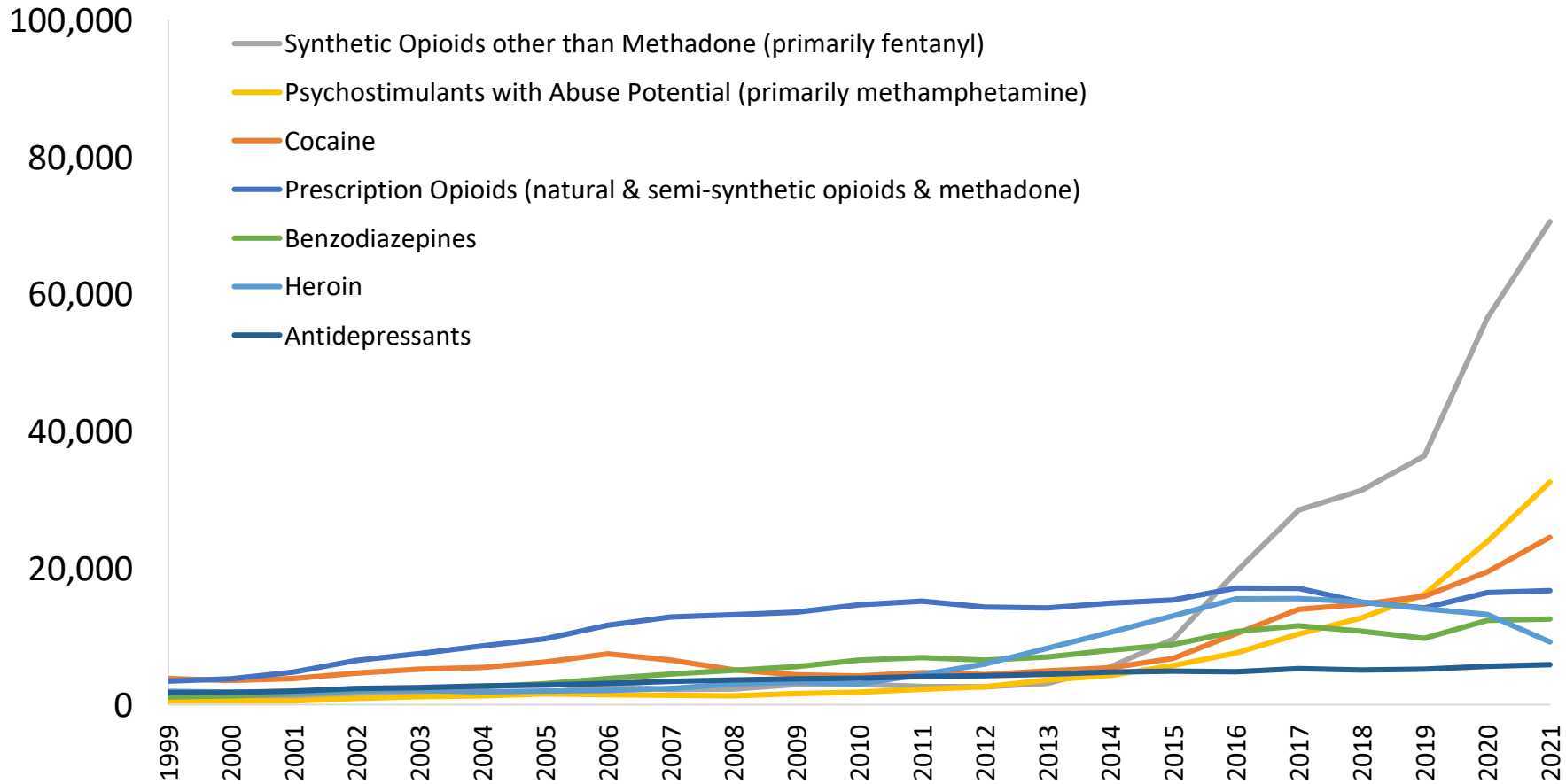
National Center for Health Statistics (NCHS)

Figure 1. National Drug-Involved Overdose Deaths*, Number Among All Ages, by Gender, 1999-2021



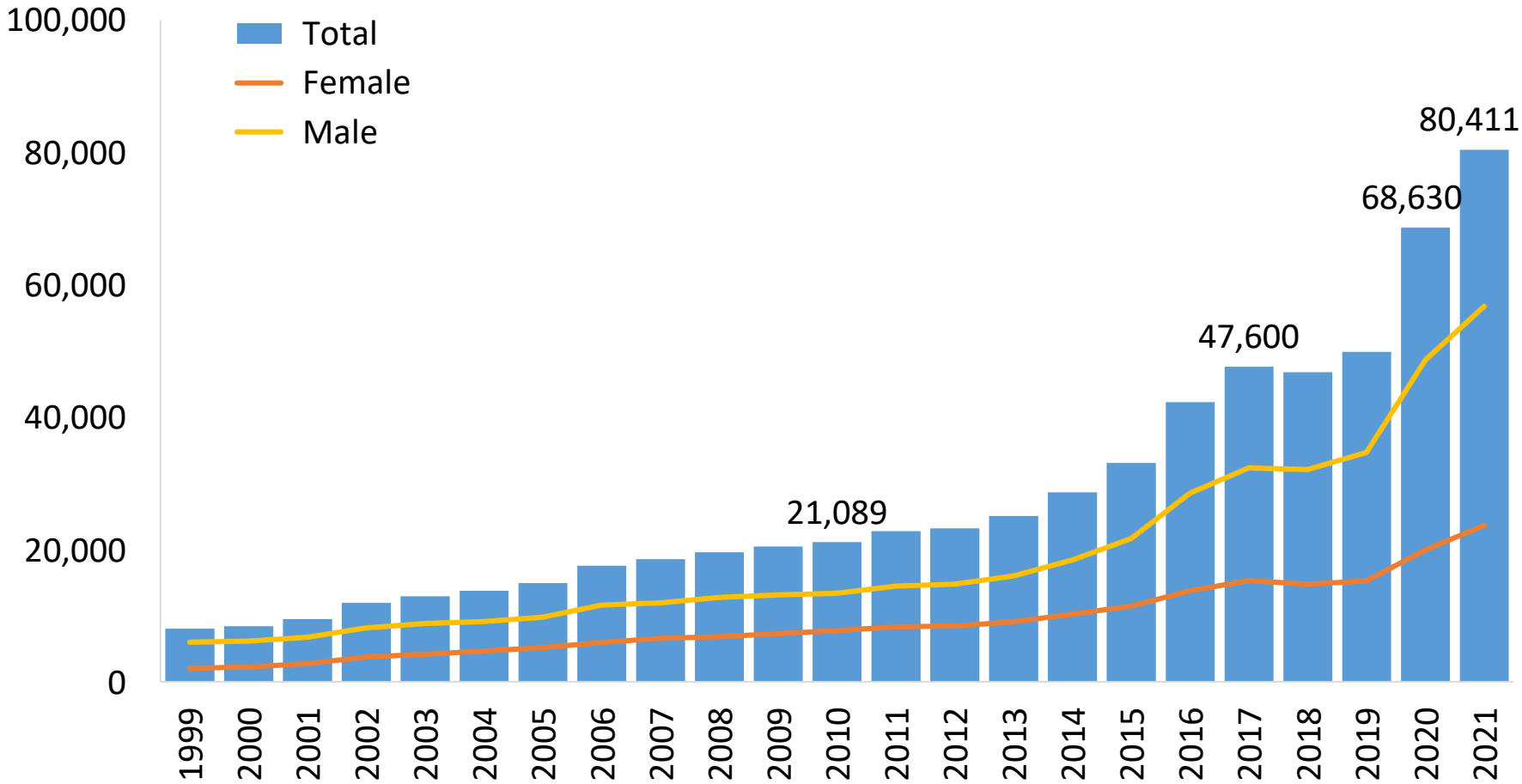
*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 2. National Drug-Involved Overdose Deaths*, Number Among All Ages, 1999-2021



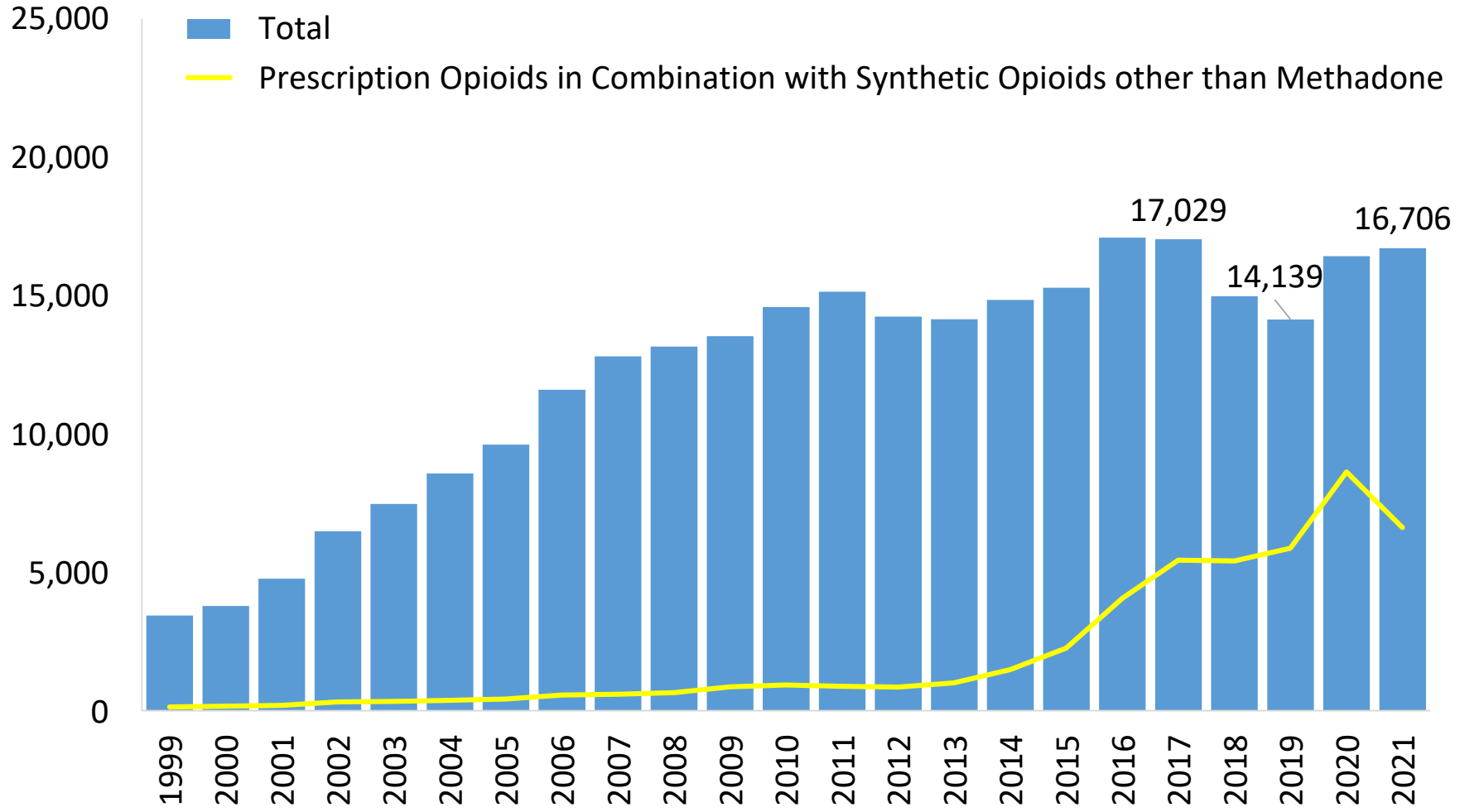
*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 3. National Overdose Deaths Involving Any Opioid*, Number Among All Ages, by Gender, 1999-2021



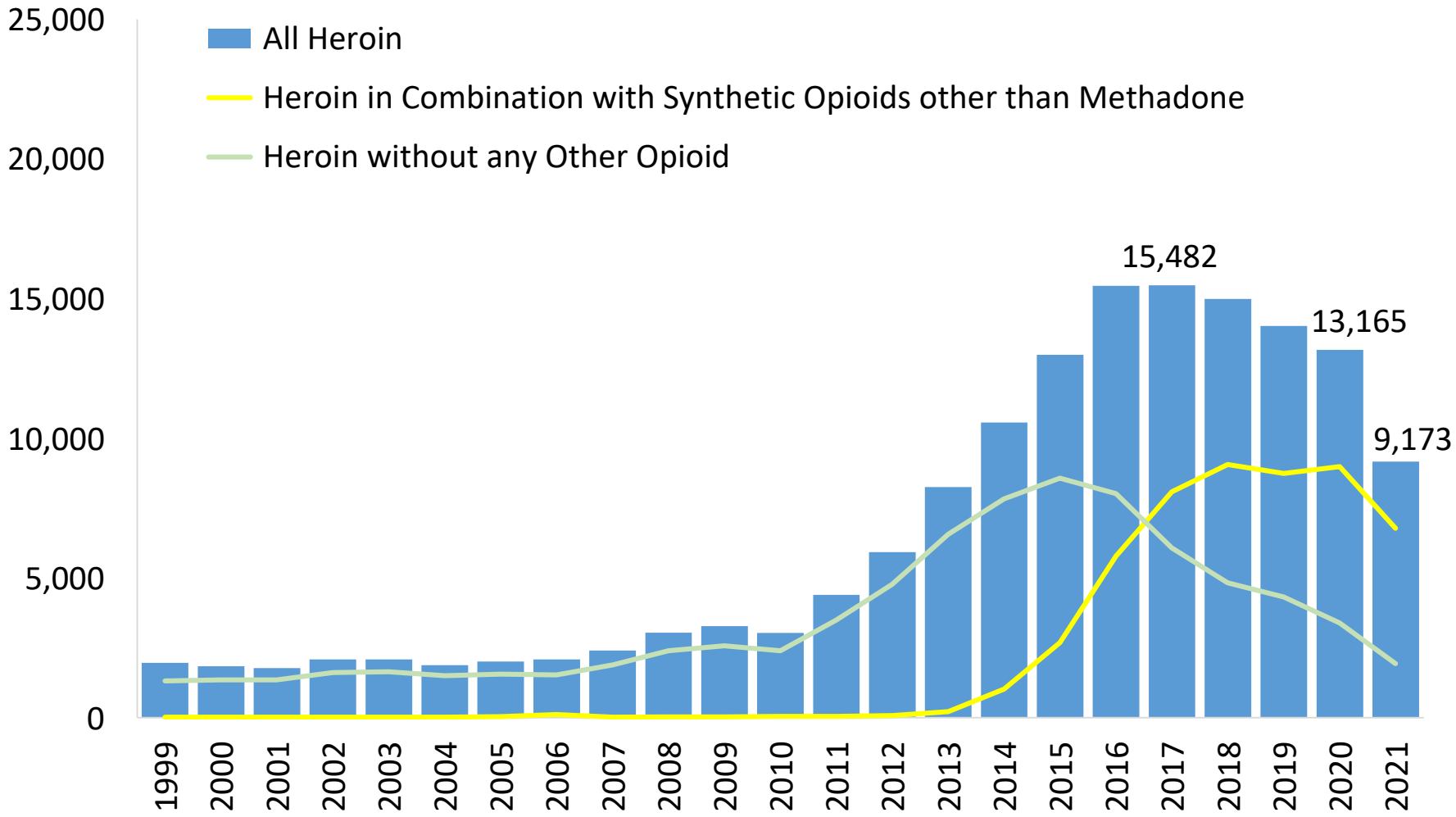
*Among deaths with drug overdose as the underlying cause, the "any opioid" subcategory was determined by the following ICD-10 multiple cause-of-death codes: natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids (other than methadone) (T40.4), or heroin (T40.1). Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 4. National Overdose Deaths Involving Prescription Opioids*, Number Among All Ages, 1999-2021



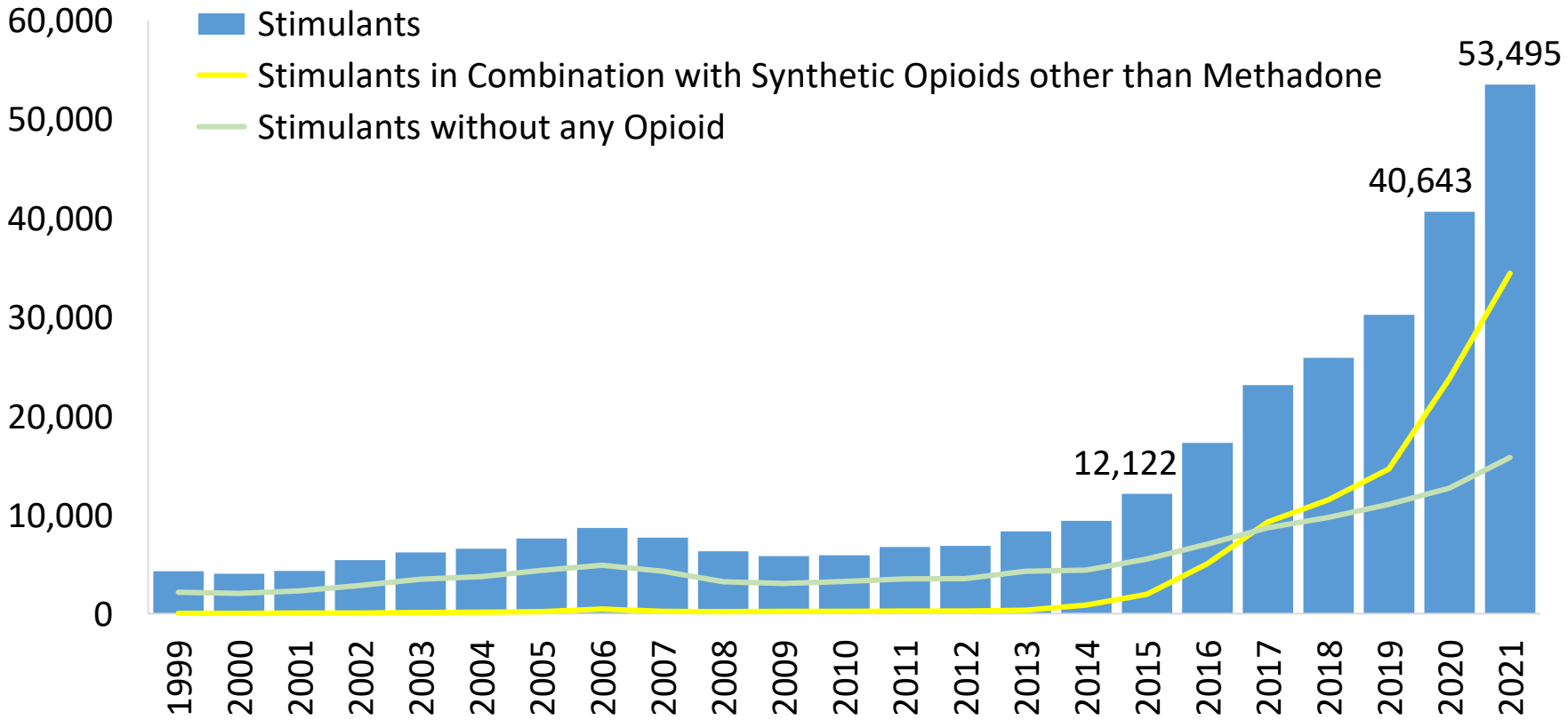
*Among deaths with drug overdose as the underlying cause, the prescription opioid subcategory was determined by the following ICD-10 multiple cause-of-death codes: natural and semi-synthetic opioids (T40.2) or methadone (T40.3). Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 5. National Overdose Deaths Involving Heroin*, by other Opioid Involvement, Number Among All Ages, 1999-2021



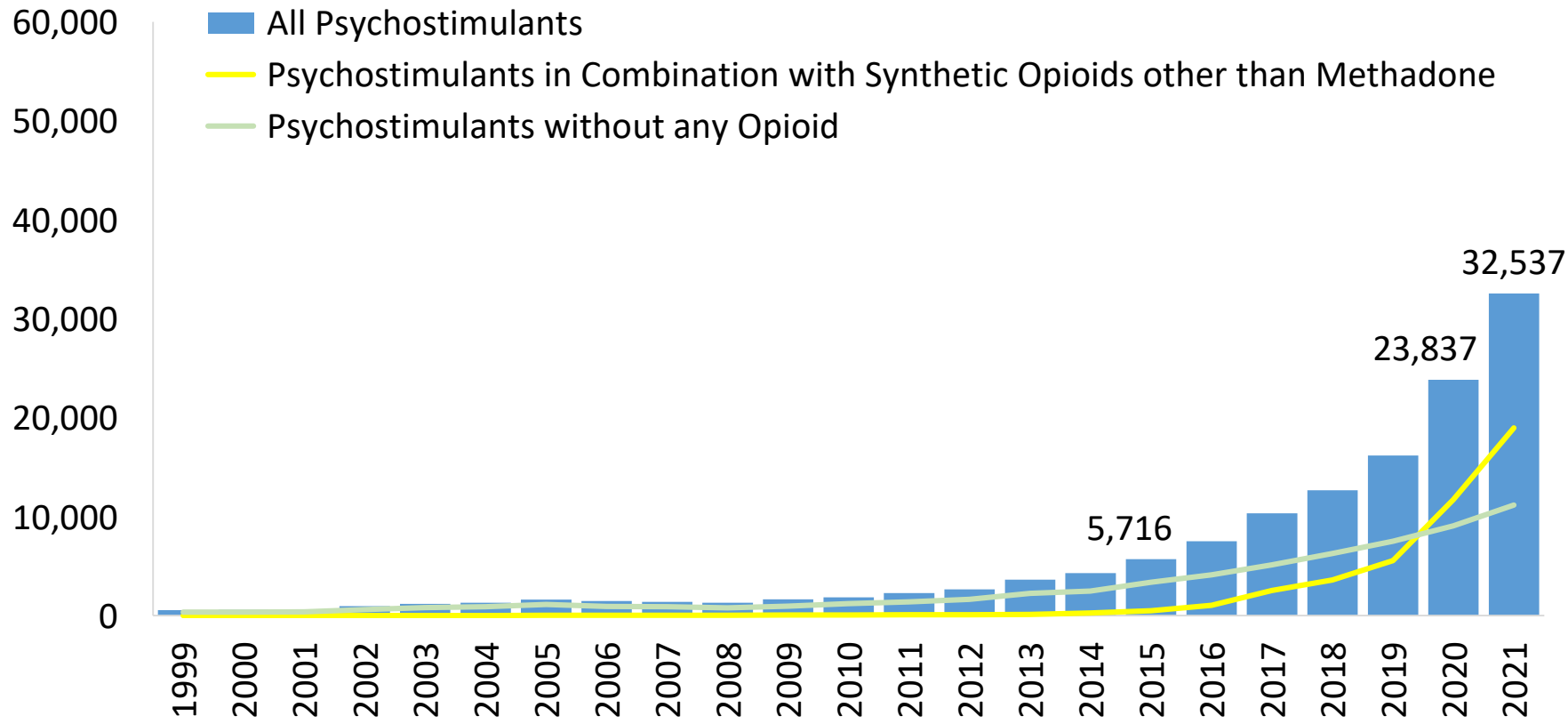
*Among deaths with drug overdose as the underlying cause, the heroin category was determined by the T40.1 ICD-10 multiple cause-of-death code. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 6. National Overdose Deaths Involving Stimulants (Cocaine and Psychostimulants*), by Opioid Involvement, Number Among All Ages, 1999-2021



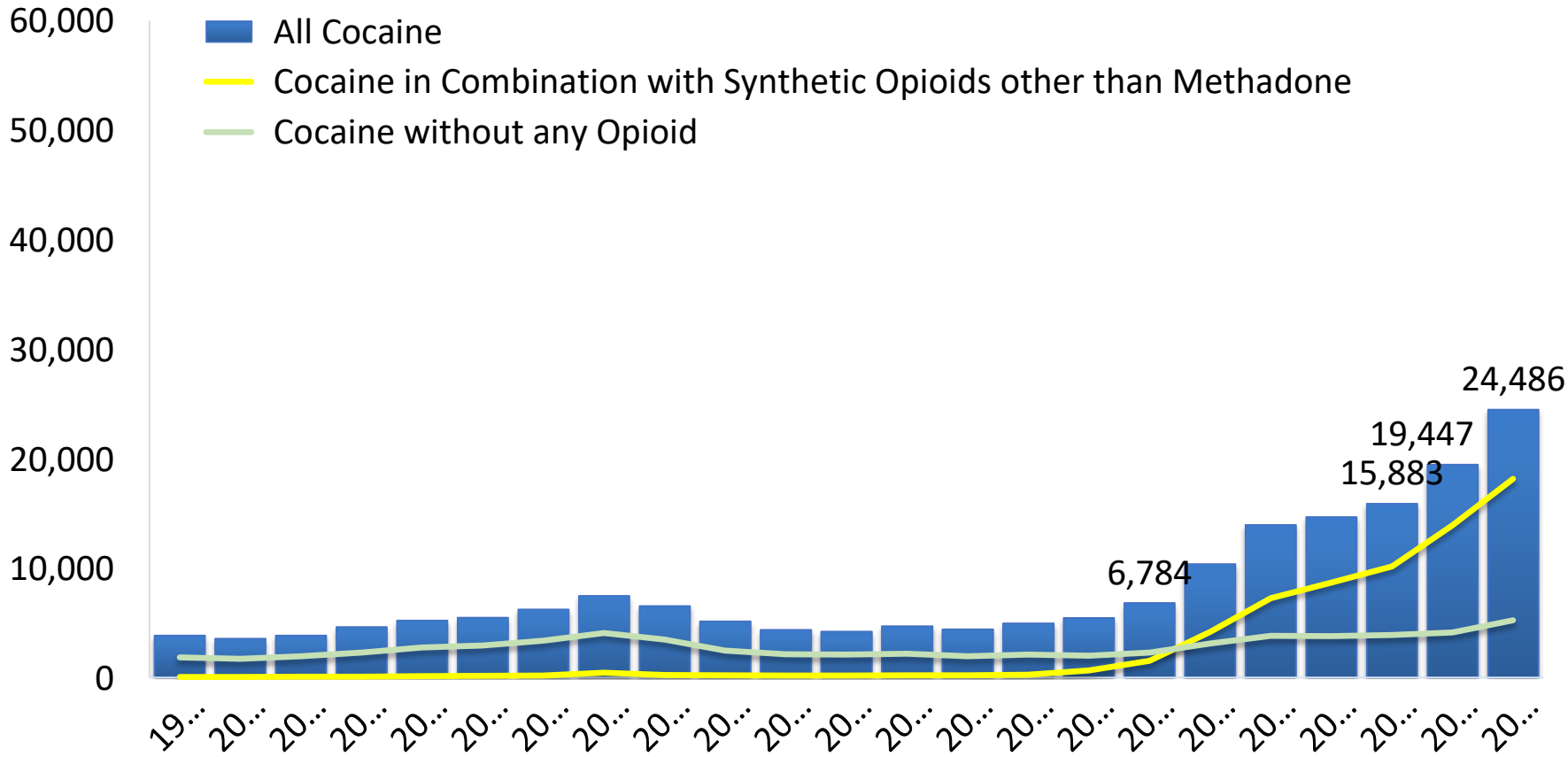
*Among deaths with drug overdose as the underlying cause, the psychostimulants with abuse potential (primarily methamphetamine) category was determined by the T43.6 ICD-10 multiple cause-of-death code. Abbreviated to *psychostimulants* in the bar chart above.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 7. National Overdose Deaths Involving Psychostimulants with Abuse Potential (Primarily Methamphetamine)*, by Opioid Involvement, Number Among All Ages, 1999-2021



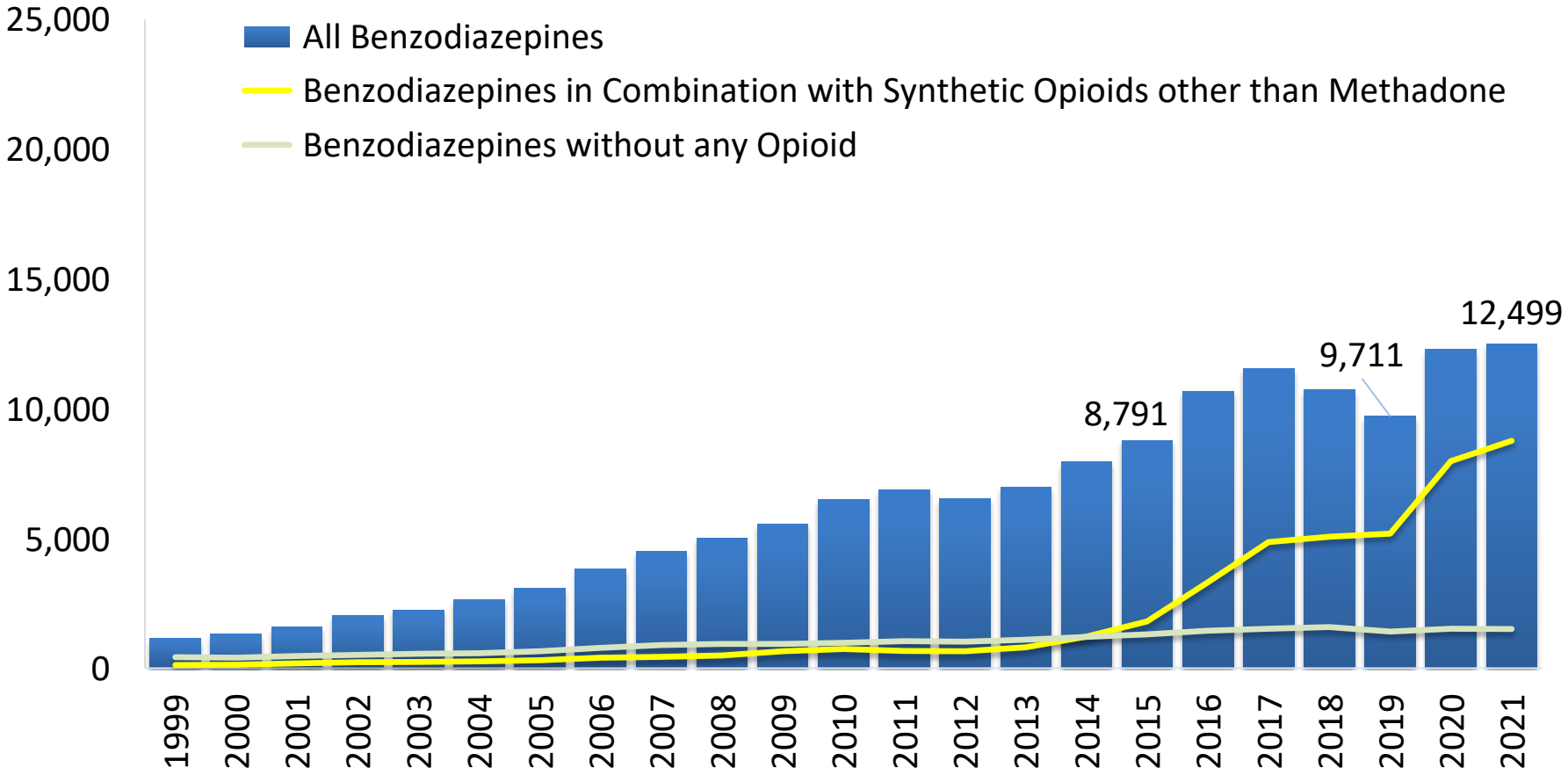
*Among deaths with drug overdose as the underlying cause, the psychostimulants with abuse potential (primarily methamphetamine) category was determined by the T43.6 ICD-10 multiple cause-of-death code. Abbreviated to *psychostimulants* in the bar chart above.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 8. National Drug Overdose Deaths Involving Cocaine*, by Opioid Involvement, Number Among All Ages, 1999-2021



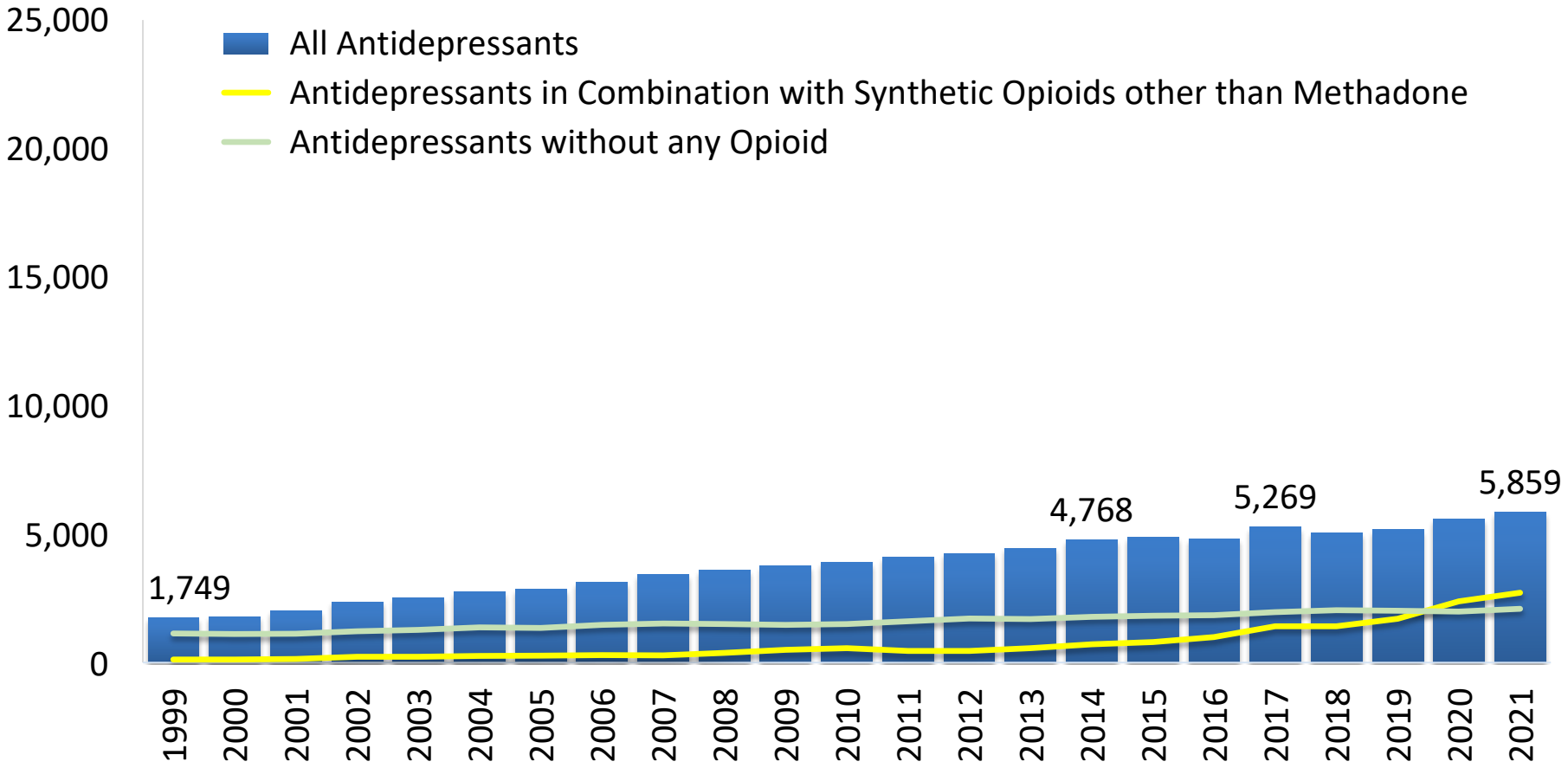
*Among deaths with drug overdose as the underlying cause, the cocaine category was determined by the T40.5 ICD-10 multiple cause-of-death code. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 9. National Drug Overdose Deaths Involving Benzodiazepines*, by Opioid Involvement, Number Among All Ages, 1999-2021



*Among deaths with drug overdose as the underlying cause, the benzodiazepine category was determined by the T42.4 ICD-10 multiple cause-of-death code. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 10. National Drug Overdose Deaths Involving Antidepressants*, by Opioid Involvement, Number Among All Ages, 1999-2021



*Among deaths with drug overdose as the underlying cause, the antidepressant subcategory was determined by the following ICD-10 multiple cause-of-death codes: Tricyclic and tetracyclic antidepressants (T43.0), monoamine-oxidase-inhibitor antidepressants (T43.1), and other unspecified antidepressants (T43.2). Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Descriptions of Figures

- The figures above are bar charts showing the number of U.S. overdose deaths involving select illicit or prescription drugs from 1999 through 2021. The bars are overlaid by lines representing gender or concurrent opioid involvement. Please note the y-axis scale varies by bar chart and caution should be applied when comparing graphs side-by-side.
- There were 106,699 drug-involved overdose deaths reported in the U.S. in 2021 (Figure 1); 69% of cases occurred among males (yellow line). Synthetic opioids other than methadone (primarily fentanyl) were the main driver of drug overdose deaths with a nearly 7.5-fold increase from 2015 to 2021 (Figure 2).
- Drug overdose deaths involving any opioid—prescription opioids (including natural and semi-synthetic opioids and methadone), other synthetic opioids other than methadone (primarily fentanyl), and heroin—continued to rise through 2021 with 80,411 deaths. More than 70% of deaths occurred among males (Figure 3). From 2020 to 2021, the number of deaths involving prescription opioids remained steady (Figure 4).
- Overdose deaths involving heroin have trended down since 2016 with 9,173 deaths reported in 2021 (Figure 5). Nearly 75% of overdose deaths in 2021 involving heroin also involved synthetic opioids other than methadone (primarily fentanyl).
- Drug overdose deaths involving stimulants, cocaine, or psychostimulants with abuse potential (primarily methamphetamine) have significantly increased since 2015 from 12,122 to 53,495 in 2021 (Figure 6).
- Since 2015, the number of deaths involving psychostimulants with abuse potential (primarily methamphetamine) has risen significantly each year—with 32,537 deaths in 2021 (Figure 7). The number of deaths involving cocaine has also increased steadily since 2015 with 24,486 deaths reported in 2021 (Figure 8).
- The final two charts show the number of overdose deaths involving benzodiazepines (Figure 8) or antidepressants (Figure 9). Benzodiazepines were involved in 12,499 deaths in 2021—steadily increasing since 2015. The proportion of deaths involving synthetic opioids other than methadone (primarily fentanyl) has increased significantly since 2015. Of the 8,791 deaths involving benzodiazepines in 2015, 20% also involved fentanyl. In 2021, this proportion increased to 70% of all deaths involving benzodiazepines. Antidepressant-involved deaths have also risen steadily, driven by fentanyl, with 5,859 deaths reported in 2021.

National Drug Overdos

Source: CDC WONDER, Multiple

For information about this data go to

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se (OD) Deaths, 1999-2021

Cause of Death (Detailed Mortality)

https://wonder.cdc.gov/mcd.html

Number of National Drug Overdose Deaths Involving Select Prescription and Illicit Drugs
Rate of National Overdose Deaths Involving Select Prescription and Illicit Drugs, Rates are Age-Adjusted per 100,0
Number of National Drug Overdose Deaths Involving Select Prescription and Illicit Drugs, Ages 15-24 Years Old
Rate of National Drug Overdose Deaths Involving Select Prescription and Illicit Drugs, Ages 15-24 Years Old, Rates are per 100,000 population
Rate of National Drug Overdose Deaths, by Demographic, Rates are Age-Adjusted per 100,000 population

00 population

National Institute on Drug Abuse

Number of National Drug Overdose Deaths* Involving Select Prescription and Illicit Drugs

Source: National Center on Health Statistics, CDC WONDER

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2015-2021 Fold Change
Total Overdose Deaths	**16,849**	**17,415**	**19,394**	**23,518**	**25,785**	**27,424**	**29,813**	**34,425**	**36,010**	**36,450**	**37,004**	**38,329**	**41,340**	**41,502**	**43,982**	**47,055**	**52,404**	**63,632**	**70,237**	**67,367**	**70,630**	**91,799**	**106,699**	**2.0**
Female	5,591	5,852	6,736	8,490	9,386	10,304	11,089	12,532	13,712	13,982	14,411	15,323	16,352	16,390	17,183	18,243	19,447	22,074	23,685	22,426	22,749	28,071	32,398	1.7
Male	11,258	11,563	12,658	15,028	16,399	17,120	18,724	21,893	22,298	22,468	22,593	23,006	24,988	25,112	26,799	28,812	32,957	41,558	46,552	44,941	47,881	63,728	74,301	2.3
Any Opioid[1]	**8,050**	**8,407**	**9,496**	**11,920**	**12,940**	**13,756**	**14,918**	**17,545**	**18,516**	**19,582**	**20,422**	**21,089**	**22,784**	**23,166**	**25,052**	**28,647**	**33,091**	**42,249**	**47,600**	**46,802**	**49,860**	**68,630**	**80,411**	**2.4**
Female	2,057	2,264	2,767	3,760	4,138	4,643	5,161	5,945	6,581	6,819	7,287	7,734	8,325	8,432	9,055	10,227	11,420	13,751	15,263	14,724	15,225	19,970	23,654	2.1
Male	5,993	6,143	6,729	8,160	8,802	9,113	9,757	11,600	11,935	12,763	13,135	13,355	14,459	14,734	15,997	18,420	21,671	28,498	32,337	32,078	34,635	48,660	56,757	2.6
Select Opioids[1a] AND Synthetic Opioids other than Methadone	**167**	**205**	**220**	**258**	**383**	**428**	**485**	**781**	**642**	**703**	**923**	**1,002**	**961**	**944**	**1,219**	**2,493**	**4,806**	**9,299**	**12,556**	**13,491**	**13,596**	**16,465**	**15,444**	**3.2**
Prescription Opioids[2]	**3,442**	**3,785**	**4,770**	**6,483**	**7,461**	**8,577**	**9,612**	**11,589**	**12,796**	**13,149**	**13,523**	**14,583**	**15,140**	**14,240**	**14,145**	**14,838**	**15,281**	**17,087**	**17,029**	**14,979**	**14,139**	**16,416**	**16,706**	**1.1**
Female	1,022	1,236	1,608	2,304	2,681	3,144	3,572	4,274	4,863	4,959	5,212	5,644	6,082	5,995	6,049	6,506	6,664	7,109	7,156	6,252	5,755	6,441	6,623	1.0
Male	2,420	2,549	3,162	4,179	4,780	5,433	6,040	7,315	7,933	8,190	8,311	8,939	9,058	8,245	8,096	8,332	8,617	9,978	9,873	8,723	8,384	9,975	10,083	1.2
Prescription Opioids AND Synthetic Opioids other than Methadone	**142**	**167**	**199**	**322**	**344**	**394**	**426**	**573**	**601**	**655**	**872**	**939**	**889**	**861**	**1,015**	**1,489**	**2,263**	**4,055**	**5,444**	**5,417**	**5,876**	**8,626**	**9,644**	**4.3**
Female	65	76	86	157	151	184	207	246	286	309	444	453	426	445	488	661	898	1,394	1,859	1,872	1,949	2,798	3,393	3.8
Male	77	91	113	165	193	200	219	327	315	346	428	486	463	416	527	828	1,365	2,661	3,585	3,545	3,927	5,828	6,251	4.6
Prescription Opioids WITHOUT Synthetic Opioids other than Methadone	**3,300**	**3,618**	**4,571**	**6,161**	**7,117**	**8,193**	**9,186**	**11,016**	**12,195**	**12,494**	**12,651**	**13,644**	**14,251**	**13,379**	**13,130**	**13,349**	**13,018**	**13,032**	**11,585**	**9,558**	**8,263**	**7,790**	**7,062**	**0.5**
Female	957	1,160	1,522	2,147	2,530	2,960	3,365	4,028	4,577	4,650	4,768	5,191	5,656	5,550	5,561	5,845	5,766	5,715	5,297	4,380	3,806	3,643	3,230	0.6
Male	2,343	2,458	3,049	4,014	4,587	5,233	5,821	6,988	7,618	7,844	7,883	8,453	8,595	7,829	7,569	7,504	7,252	7,317	6,288	5,178	4,457	4,147	3,832	0.9
Synthetic Opioids other than Methadone (primarily fentanyl)[3]	**730**	**782**	**957**	**1,295**	**1,400**	**1,664**	**1,742**	**2,707**	**2,213**	**2,306**	**2,946**	**3,007**	**2,666**	**2,628**	**3,105**	**5,544**	**9,580**	**19,413**	**28,466**	**31,335**	**36,359**	**56,516**	**70,601**	**7.4**
Female	330	374	447	614	643	798	823	1,030	1,053	1,083	1,445	1,440	1,247	1,195	1,431	2,079	3,020	5,578	7,942	8,807	10,076	15,250	19,571	6.5
Male	400	408	510	681	757	866	919	1,677	1,160	1,223	1,501	1,567	1,419	1,433	1,674	3,465	6,560	13,835	20,524	22,528	26,283	41,266	51,030	7.8
Heroin[4]	**1,960**	**1,842**	**1,779**	**2,089**	**2,080**	**1,878**	**2,009**	**2,088**	**2,399**	**3,041**	**3,278**	**3,036**	**4,397**	**5,925**	**8,257**	**10,574**	**12,989**	**15,469**	**15,482**	**14,996**	**14,019**	**13,165**	**9,173**	**0.7**
Female	306	279	313	359	358	341	389	344	399	551	577	584	878	1,213	1,732	2,414	3,108	3,717	3,886	3,705	3,520	3,284	2,372	0.8
Male	1,654	1,563	1,466	1,730	1,722	1,537	1,620	1,744	2,000	2,490	2,701	2,452	3,519	4,712	6,525	8,160	9,881	11,752	11,596	11,291	10,499	9,881	6,801	0.7
Heroin AND Synthetic Opioids other than Methadone	**15**	**18**	**15**	**15**	**16**	**13**	**34**	**113**	**13**	**28**	**29**	**45**	**44**	**69**	**209**	**1,027**	**2,685**	**5,781**	**8,091**	**9,068**	**8,746**	**8,990**	**6,783**	**2.5**
Female	4	7	4	5	3	6	9	25	3	13	10	8	11	19	58	275	670	1,430	2,035	2,267	2,256	2,294	1,791	2.7
Male	11	11	11	10	13	7	25	88	10	15	19	37	33	50	151	752	2,015	4,351	6,056	6,801	6,490	6,696	4,992	2.5
Heroin WITHOUT Synthetic Opioids other than Methadone	**1,945**	**1,824**	**1,764**	**2,074**	**2,064**	**1,865**	**1,975**	**1,975**	**2,386**	**3,013**	**3,249**	**2,991**	**4,353**	**5,856**	**8,048**	**9,547**	**10,304**	**9,688**	**7,391**	**5,928**	**5,273**	**4,175**	**2,390**	**0.2**
Female	302	272	309	354	355	335	380	319	396	538	567	576	867	1,194	1,674	2,139	2,438	2,287	1,851	1,438	1,264	990	581	0.2
Male	1,643	1,552	1,455	1,720	1,709	1,530	1,595	1,656	1,990	2,475	2,682	2,415	3,486	4,662	6,374	7,408	7,866	7,401	5,540	4,490	4,009	3,185	1,809	0.2
Stimulants[5a]	**4,271**	**4,017**	**4,308**	**5,423**	**6,219**	**6,591**	**7,606**	**8,668**	**7,697**	**6,320**	**5,824**	**5,914**	**6,765**	**6,879**	**8,338**	**9,395**	**12,122**	**17,258**	**23,139**	**25,877**	**30,231**	**40,643**	**53,495**	**4.4**
Female	980	980	1,083	1,400	1,626	1,767	2,001	2,214	2,028	1,667	1,586	1,683	1,955	2,026	2,412	2,720	3,527	4,895	6,645	7,529	8,532	11,338	15,087	4.3
Male	3,291	3,037	3,225	4,023	4,589	4,824	5,605	6,454	5,669	4,653	4,238	4,231	4,810	4,853	5,926	6,675	8,595	12,363	16,494	18,348	21,699	29,305	38,408	4.5
Stimulants AND Any Opioid	**2,101**	**1,972**	**1,996**	**2,578**	**2,732**	**2,850**	**3,215**	**3,764**	**3,394**	**3,085**	**2,766**	**2,662**	**3,255**	**3,340**	**4,037**	**4,999**	**6,594**	**10,222**	**14,455**	**16,165**	**19,192**	**27,966**	**37,682**	**5.7**
Female	433	422	480	658	692	743	853	979	902	829	752	803	1,024	1,057	1,240	1,519	2,000	2,987	4,292	4,870	5,561	7,919	10,898	5.4
Male	1,668	1,550	1,516	1,920	2,040	2,107	2,362	2,785	2,492	2,256	2,014	1,859	2,231	2,283	2,797	3,480	4,594	7,235	10,163	11,295	13,631	20,047	26,784	5.8
Stimulants WITHOUT Any Opioid	**2,170**	**2,045**	**2,312**	**2,845**	**3,483**	**3,741**	**4,391**	**4,904**	**4,303**	**3,235**	**3,058**	**3,252**	**3,510**	**3,539**	**4,301**	**4,396**	**5,528**	**7,036**	**8,684**	**9,712**	**11,039**	**12,677**	**15,813**	**2.9**
Female	547	558	603	742	934	1,024	1,148	1,235	1,126	838	834	880	931	969	1,172	1,201	1,527	1,908	2,353	2,659	2,971	3,419	4,189	2.7
Male	1,623	1,487	1,709	2,103	2,549	2,717	3,243	3,669	3,177	2,397	2,224	2,372	2,579	2,570	3,129	3,195	4,001	5,128	6,331	7,053	8,068	9,258	11,624	2.9
Stimulants AND Synthetic Opioids other than Methadone	**58**	**51**	**80**	**83**	**135**	**157**	**203**	**463**	**246**	**227**	**240**	**235**	**274**	**261**	**373**	**869**	**1,969**	**5,029**	**9,262**	**11,516**	**14,627**	**23,782**	**34,429**	**17.5**
Female	16	15	28	30	57	52	75	120	76	78	83	99	122	91	149	283	577	1,428	2,612	3,405	4,123	6,631	9,799	17.0
Male	42	36	52	53	78	105	128	343	170	149	157	136	152	170	224	586	1,392	3,601	6,650	8,111	10,504	17,151	24,630	17.7
Stimulants WITHOUT Synthetic Opioids other than Methadone	**4,213**	**3,966**	**4,228**	**5,340**	**6,080**	**6,434**	**7,403**	**8,205**	**7,451**	**6,093**	**5,584**	**5,679**	**6,491**	**6,618**	**7,965**	**8,526**	**10,153**	**12,229**	**13,877**	**14,361**	**15,604**	**16,861**	**19,066**	**1.9**
Female	964	965	1,055	1,370	1,569	1,715	1,926	2,094	1,952	1,589	1,503	1,584	1,833	1,935	2,263	2,437	2,950	3,467	4,033	4,124	4,409	4,707	5,288	1.8
Male	3,249	3,001	3,173	3,970	4,511	4,719	5,477	6,111	5,499	4,504	4,081	4,095	4,658	4,683	5,702	6,089	7,203	8,762	9,844	10,237	11,195	12,154	13,778	1.9
Cocaine[5]	**3,822**	**3,544**	**3,833**	**4,599**	**5,199**	**5,443**	**6,208**	**7,448**	**6,512**	**5,129**	**4,350**	**4,183**	**4,681**	**4,404**	**4,944**	**5,415**	**6,784**	**10,375**	**13,942**	**14,666**	**15,883**	**19,447**	**24,486**	**3.6**
Female	850	843	957	1,143	1,322	1,405	1,620	1,860	1,665	1,322	1,141	1,132	1,314	1,262	1,376	1,535	1,899	2,882	3,921	4,228	4,336	5,245	6,858	3.6
Male	2,972	2,701	2,876	3,456	3,877	4,038	4,588	5,588	4,847	3,807	3,209	3,051	3,367	3,142	3,568	3,880	4,885	7,493	10,021	10,438	11,547	14,202	17,628	3.6
Cocaine AND Any Opioid	**1,964**	**1,834**	**1,886**	**2,318**	**2,456**	**2,522**	**2,842**	**3,372**	**3,027**	**2,656**	**2,210**	**2,086**	**2,505**	**2,448**	**2,831**	**3,414**	**4,506**	**7,263**	**10,131**	**10,887**	**11,998**	**15,338**	**19,250**	**4.3**
Female	399	387	453	560	603	634	737	845	784	695	574	572	746	720	803	973	1,261	2,048	2,898	3,189	3,308	4,193	5,418	4.3
Male	1,565	1,447	1,433	1,758	1,853	1,888	2,105	2,527	2,243	1,961	1,636	1,514	1,759	1,728	2,028	2,441	3,245	5,215	7,233	7,698	8,690	11,145	13,832	4.3
Cocaine WITHOUT Any Opioid	**1,858**	**1,710**	**1,947**	**2,281**	**2,743**	**2,921**	**3,366**	**4,076**	**3,485**	**2,473**	**2,140**	**2,097**	**2,176**	**1,956**	**2,113**	**2,001**	**2,278**	**3,112**	**3,811**	**3,779**	**3,885**	**4,109**	**5,236**	**2.3**
Female	451	456	504	583	719	771	883	1,015	881	627	567	560	568	542	573	562	638	834	1,023	1,039	1,028	1,052	1,440	2.3
Male	1,407	1,254	1,443	1,698	2,024	2,150	2,483	3,061	2,604	1,846	1,573	1,537	1,608	1,414	1,540	1,439	1,640	2,278	2,788	2,740	2,857	3,057	3,796	2.3
Cocaine AND Synthetic Opioids other than Methadone	**47**	**46**	**75**	**65**	**109**	**130**	**174**	**432**	**219**	**182**	**176**	**167**	**189**	**182**	**245**	**628**	**1,542**	**4,184**	**7,241**	**8,659**	**10,139**	**13,903**	**18,153**	**11.8**
Female	13	13	25	19	44	41	62	109	63	59	61	63	87	59	87	187	425	1,171	2,023	2,496	2,738	3,752	5,071	11.9
Male	34	33	50	46	65	89	112	323	156	123	115	104	102	123	158	441	1,117	3,013	5,218	6,163	7,401	10,151	13,082	11.7
Cocaine WITHOUT Synthetic Opioids other than Methadone	**3,775**	**3,498**	**3,758**	**4,534**	**5,090**	**5,313**	**6,034**	**7,016**	**6,293**	**4,947**	**4,174**	**4,016**	**4,492**	**4,222**	**4,699**	**4,787**	**5,242**	**6,191**	**6,701**	**6,007**	**5,744**	**5,544**	**6,333**	**1.2**
Female	837	830	932	1,124	1,278	1,364	1,558	1,751	1,602	1,263	1,080	1,069	1,227	1,203	1,289	1,348	1,474	1,711	1,898	1,732	1,598	1,493	1,787	1.2
Male	2,938	2,668	2,826	3,410	3,812	3,949	4,476	5,265	4,691	3,684	3,094	2,947	3,265	3,019	3,410	3,439	3,768	4,480	4,803	4,275	4,146	4,051	4,546	1.2
Psychostimulants With Abuse Potential (primarily methamphetamine)[6]	**547**	**578**	**563**	**941**	**1,179**	**1,305**	**1,608**	**1,462**	**1,378**	**1,302**	**1,632**	**1,854**	**2,266**	**2,635**	**3,627**	**4,298**	**5,716**	**7,542**	**10,333**	**12,676**	**16,167**	**23,837**	**32,537**	**5.7**
Female	158	164	152	285	353	393	438	411	409	375	480	592	693	816	1,106	1,278	1,745	2,194	3,093	3,775	4,713	6,890	9,218	5.3
Male	389	414	411	656	826	912	1,170	1,051	969	927	1,143	1,262	1,573	1,819	2,521	3,020	3,971	5,348	7,240	8,901	11,434	16,947	23,319	5.9
Psychostimulants With Abuse Potential AND Any Opioid	**187**	**202**	**164**	**325**	**359**	**407**	**476**	**526**	**473**	**495**	**654**	**640**	**876**	**993**	**1,354**	**1,806**	**2,345**	**3,416**	**5,203**	**6,405**	**8,642**	**14,777**	**21,371**	**9.1**
Female	46	49	42	114	119	128	145	170	150	151	207	255	316	378	491	610	819	1,072	1,683	2,058	2,696	4,402	6,317	7.7
Male	141	153	122	211	240	279	331	356	323	344	447	385	560	615	863	1,196	1,526	2,344	3,520	4,347	5,946	10,375	15,054	9.9
Psychostimulants With Abuse Potential WITHOUT Any Opioid	**360**	**376**	**399**	**616**	**820**	**898**	**1,132**	**936**	**905**	**807**	**978**	**1,214**	**1,390**	**1,642**	**2,273**	**2,492**	**3,371**	**4,126**	**5,130**	**6,271**	**7,525**	**9,060**	**11,166**	**3.3**
Female	112	115	110	171	234	265	293	241	259	224	282	337	377	438	615	668	926	1,122	1,410	1,717	2,037	2,488	2,901	3.1
Male	248	261	289	445	586	633	839	695	646	583	696	877	1,013	1,204	1,658	1,824	2,445	3,004	3,720	4,554	5,488	6,572	8,265	3.4
Psychostimulants With Abuse Potential AND Synthetic Opioids other than Methadone	**11**	**7**	**6**	**19**	**28**	**29**	**33**	**37**	**35**	**47**	**69**	**73**	**93**	**91**	**142**	**276**	**494**	**1,042**	**2,546**	**3,613**	**5,564**	**11,717**	**18,986**	**38.4**
Female	3	3	3	12	14	12	13	16	17	19	25	37	40	40	67	106	174	322	766	1,163	1,711	3,461	5,498	31.6
Male	8	4	3	7	14	17	20	21	18	28	44	36	53	51	75	170	320	720	1,780	2,450	3,853	8,256	13,488	42.2
Psychostimulants With Abuse Potential WITHOUT Synthetic Opioids other than Methadone	**536**	**571**	**557**	**922**	**1,151**	**1,276**	**1,575**	**1,425**	**1,343**	**1,255**	**1,563**	**1,781**	**2,173**	**2,544**	**3,485**	**4,022**	**5,222**	**6,500**	**7,787**	**9,063**	**10,603**	**12,120**	**13,551**	**2.6**
Female	155	161	149	273	339	381	425	395	392	356	464	555	653	776	1,039	1,172	1,571	1,872	2,327	2,612	3,022	3,429	3,720	2.4
Male	381	410	408	649	812	895	1,150	1,030	951	899	1,099	1,226	1,520	1,768	2,446	2,850	3,651	4,628	5,460	6,451	7,581	8,691	9,831	2.7
Benzodiazepines[7]	**1,135**	**1,298**	**1,594**	**2,022**	**2,248**	**2,627**	**3,084**	**3,835**	**4,500**	**5,010**	**5,567**	**6,497**	**6,872**	**6,524**	**6,973**	**7,945**	**8,791**	**10,684**	**11,537**	**10,724**	**9,711**	**12,290**	**12,499**	**1.4**
Female	420	480	614	763	885	1,079	1,209	1,472	1,834	2,046	2,281	2,579	2,902	2,789	3,026	3,487	3,779	4,359	4,772	4,481	3,986	4,810	5,056	1.3
Male	715	818	980	1,259	1,363	1,548	1,875	2,363	2,606	2,964	3,286	3,918	3,970	3,735	3,947	4,458	5,012	6,325	6,765	6,243	5,725	7,480	7,443	1.5
Benzodiazepines AND Any Opioid	**701**	**892**	**1,121**	**1,511**	**1,692**	**2,049**	**2,430**	**3,045**	**3,605**	**4,070**	**4,633**	**5,517**	**5,826**	**5,500**	**5,869**	**6,733**	**7,485**	**9,233**	**10,010**	**9,140**	**8,301**	**10,771**	**10,992**	**1.5**
Female	233	310	411	553	620	797	922	1,137	1,473	1,618	1,853	2,125	2,408	2,283	2,485	2,876	3,137	3,723	4,031	3,689	3,303	4,108	4,267	1.4
Male	468	582	710	958	1,072	1,252	1,508	1,908	2,132	2,452	2,780	3,392	3,418	3,217	3,384	3,857	4,348	5,510	5,979	5,441	4,998	6,663	6,685	1.5
Benzodiazepines WITHOUT Any Opioid	**434**	**406**	**473**	**511**	**556**	**578**	**654**	**790**	**895**	**940**	**934**	**980**	**1,046**	**1,024**	**1,104**	**1,212**	**1,306**	**1,451**	**1,527**	**1,584**	**1,410**	**1,519**	**1,507**	**1.2**
Female	187	170	203	210	265	282	287	335	421	428	428	454	494	506	541	611	642	636	741	782	683	702	749	1.2
Male	247	236	270	301	291	296	367	455	474	512	506	526	552	518	563	601	664	815	786	802	727	817	758	1.1
Benzodiazepines AND Synthetic Opioids other than Methadone	**122**	**136**	**186**	**230**	**242**	**270**	**312**	**407**	**436**	**491**	**658**	**746**	**665**	**655**	**804**	**1,222**	**1,801**	**3,308**	**4,869**	**5,066**	**5,187**	**7,983**	**8,759**	**4.9**
Female	51	55	83	107	105	128	150	165	224	250	330	355	324	304	388	534	738	1,188	1,696	1,808	1,834	2,733	3,180	4.3
Male	71	81	103	123	137	142	162	242	212	241	328	391	341	351	416	688	1,063	2,120	3,173	3,258	3,353	5,250	5,579	5.2
Benzodiazepines WITHOUT Synthetic Opioids other than Methadone	**1,013**	**1,162**	**1,408**	**1,792**	**2,006**	**2,357**	**2,772**	**3,428**	**4,064**	**4,519**	**4,909**	**5,751**	**6,207**	**5,869**	**6,169**	**6,723**	**6,990**	**7,376**	**6,668**	**5,658**	**4,524**	**4,307**	**3,740**	**0.5**
Female	369	425	531	656	780	951	1,059	1,307	1,670	1,796	1,951	2,224	2,578	2,485	2,638	2,953	3,041	3,171	3,076	2,673	2,152	2,077	1,876	0.6
Male	644	737	877	1,136	1,226	1,406	1,713	2,121	2,394	2,723	2,958	3,527	3,629	3,384	3,531	3,770	3,949	4,205	3,592	2,985	2,372	2,230	1,864	0.5
Antidepressants[8]	**1,749**	**1,798**	**2,017**	**2,370**	**2,512**	**2,758**	**2,861**	**3,133**	**3,425**	**3,610**	**3,768**	**3,889**	**4,113**	**4,259**	**4,458**	**4,768**	**4,894**	**4,812**	**5,269**	**5,064**	**5,175**	**5,597**	**5,859**	**1.2**
Female	926	984	1,009	1,318	1,384	1,549	1,575	1,819	1,958	2,047	2,133	2,204	2,422	2,469	2,673	2,857	2,909	2,835	3,112	2,993	3,048	3,122	3,343	1.1
Male	823	814	1,008	1,052	1,128	1,209	1,286	1,314	1,467	1,563	1,635	1,685	1,691	1,790	1,785	1,911	1,985	1,977	2,157	2,071	2,127	2,475	2,516	1.3
Antidepressants AND Any Opioid	**611**	**679**	**890**	**1,148**	**1,234**	**1,379**	**1,508**	**1,662**	**1,901**	**2,111**	**2,292**	**2,389**	**2,501**	**2,536**	**2,763**	**2,983**	**3,062**	**2,960**	**3,301**	**3,019**	**3,151**	**3,611**	**3,767**	**1.2**
Female	312	387	426	634	692	762	806	946	1,094	1,199	1,308	1,364	1,468	1,470	1,664	1,767	1,758	1,719	1,871	1,715	1,773	1,931	2,022	1.2
Male	299	292	464	514	542	617	702	716	807	912	984	1,025	1,031	1,066	1,099	1,216	1,304	1,241	1,430	1,304	1,378	1,680	1,745	1.3
Antidepressants WITHOUT Any Opioid	**1,138**	**1,119**	**1,127**	**1,222**	**1,278**	**1,379**	**1,353**	**1,471**	**1,524**	**1,499**	**1,476**	**1,500**	**1,612**	**1,723**	**1,695**	**1,785**	**1,832**	**1,852**	**1,968**	**2,045**	**2,024**	**1,986**	**2,092**	**1.1**
Female	614	597	583	684	692	787	769	873	864	848	825	840	954	999	1,009	1,090	1,151	1,116	1,241	1,278	1,275	1,191	1,321	1.1
Male	524	522	544	538	586	592	584	598	660	651	651	660	658	724	686	695	681	736	727	767	749	795	771	1.1
Antidepressants AND Synthetic Opioids other than Methadone	**122**	**123**	**147**	**238**	**230**	**264**	**278**	**300**	**292**	**384**	**505**	**568**	**463**	**464**	**571**	**723**	**808**	**1,002**	**1,414**	**1,423**	**1,710**	**2,387**	**2,721**	**3.4**
Female	61	77	79	154	139	164	159	176	203	248	337	358	283	273	348	437	463	529	692	704	887	1,149	1,347	2.9
Male	61	46	68	84	91	100	119	124	89	136	168	210	180	191	223	286	345	473	722	719	823	1,238	1,374	4.0
Antidepressants WITHOUT Synthetic Opioids other than Methadone	**1,627**	**1,675**	**1,870**	**2,132**	**2,282**	**2,494**	**2,583**	**2,833**	**3,133**	**3,226**	**3,263**	**3,321**	**3,650**	**3,795**	**3,887**	**4,045**	**4,086**	**3,810**	**3,855**	**3,641**	**3,465**	**3,210**	**3,138**	**0.8**
Female	865	907	930	1,164	1,245	1,385	1,416	1,643	1,755	1,799	1,796	1,846	2,139	2,196	2,325	2,420	2,446	2,306	2,420	2,289	2,161	1,973	1,996	0.8
Male	762	768	940	968	1,037	1,109	1,167	1,190	1,378	1,427	1,467	1,475	1,511	1,599	1,562	1,625	1,640	1,504	1,435	1,352	1,304	1,237	1,142	0.7

*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision.

^See https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm for technical information.

[1] Any Opioid ICD-10 codes (T40.0-T40.4, T40.6)

[1a] Opioids include ICD-10 codes (T40.0-T40.3 and T40.6)

[2] Prescription Opioids ICD-10 codes (T40.2-T40.3)

[3]Synthetic Opioids other than Methadone (primarily fentanyl) ICD-10 code (T40.4) This category is dominated by fentanyl related overdoses.

[4]Heroin ICD-10 codes (T40.1)

[5a]Stimulants ICD-10 codes (T40.5 & T43.6)

[5]Cocaine ICD-10 codes (T40.5)

[6]Psychostimulants With Abuse Potential ICD-10 code (T43.6) This category is dominated by methamphetamine related overdoses.

[7]Benzodiazepines ICD-10 code(T42.4)

[8]Antidepressants ICD-10 code(T43.0-T43.2)

National Institute on Drug Abuse

Rate of National Drug Overdose Deaths* Involving Select Pres

Rates are Age-Adjusted per 100,000 population

Source: National Center on Health Statistics, CDC WONDER

	1999	2000
Total Overdose Deaths	**6.1**	**6.2**
Female	3.9	4.1
Male	8.2	8.3
Any Opioid[1]	**2.9**	**3.0**
Female	1.4	1.6
Male	4.3	4.4
Prescription Opioids[2]	**1.2**	**1.3**
Female	0.7	0.9
Male	1.7	1.8
Prescription Opioids AND Synthetic Opioids other than Methadone	**0.0**	**0.0**
Female		
Male	0.1	0.1
Prescription Opioids WITHOUT Synthetic Opioids other than Methadone	**1.2**	**1.3**
Female		
Male	1.6	1.7
Synthetic Opioids other than Methadone (primarily fentanyl)[3]	**0.3**	**0.3**
Female	0.2	0.3
Male	0.3	0.3
Heroin[4]	**0.7**	**0.7**
Female	0.2	0.2
Male	1.2	1.1
Heroin AND Synthetic Opioids other than Methadone		
Female		
Male		
Heroin WITHOUT Synthetic Opioids other than Methadone		
Female		
Male		
Stimulants[5a]	**1.5**	**1.4**
Female	0.7	0.7
Male	2.3	2.2
Stimulants AND Any Opioid	**0.7**	**0.7**
Female	0.3	0.3
Male	1.2	1.1
Stimulants WITHOUT Any Opioid	**0.8**	**0.7**
Female	0.4	0.4
Male	1.1	1.1
Stimulants AND Synthetic Opioids other than Methadone	**0.0**	**0.0**
Female		
Male	0.0	0.0
Stimulants WITHOUT Synthetic Opioids other than Methadone	**1.5**	**1.4**
Female		
Male	2.3	2.2

Cocaine[5]	**1.4**	**1.3**
Female	0.6	0.6
Male	2.1	1.9
Cocaine AND Any Opioid	**0.7**	**0.6**
Female	0.3	0.3
Male	1.1	1.0
Cocaine WITHOUT Any Opioid	**0.7**	**0.7**
Female	0.3	0.3
Male	1.0	0.9
Cocaine AND Synthetic Opioids other than Methadone		
Female		
Male		
Cocaine WITHOUT Synthetic Opioids other than Methadone		
Female		
Male		
Psychostimulants With Abuse Potential (primarily methamphetamine)[6]	**0.2**	**0.2**
Female	0.1	0.1
Male	0.3	0.3
Psychostimulants With Abuse Potential AND Any Opioid	**0.1**	**0.1**
Female		
Male	0.1	0.1
Psychostimulants With Abuse Potential WITHOUT Any Opioid	**0.1**	**0.1**
Female	0.1	0.1
Male	0.2	0.2
Psychostimulants With Abuse Potential AND Synthetic Opioids other than Methadone		
Female		
Male		
Psychostimulants With Abuse Potential WITHOUT Synthetic Opioids other than Methadone		
Female		
Male		
Benzodiazepines[7]	**0.4**	**0.5**
Female	0.3	0.3
Male	0.5	0.6
Benzodiazepines AND Any Opioid	**0.2**	**0.3**
Female	0.2	0.2
Male	0.3	0.4
Benzodiazepines WITHOUT Any Opioid	**0.2**	**0.2**
Female	0.1	0.1
Male	0.2	0.2
Benzodiazepines AND Synthetic Opioids other than Methadone		
Female		
Male		
Benzodiazepines WITHOUT Synthetic Opioids other than Methadone		
Female		
Male		
Antidepressants[8]	**0.6**	**0.6**
Female	0.6	0.7
Male	0.6	0.6
Antidepressants AND Any Opioid	**0.2**	**0.3**
Female	0.2	0.3
Male	0.2	0.2
Antidepressants WITHOUT Any Opioid	**0.4**	**0.3**
Female	0.4	0.4

Male	0.4	0.4
Antidepressants AND Synthetic Opioids other than Methadone		
Female		0.1
Male		0.0
Antidepressants WITHOUT Synthetic Opioids other than Methadone		
Female		0.6
Male		0.6

*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poison

Blank fields designated by unreliable or suppressed data. For more information visit CDC WONDER.

[1] Any Opioid ICD-10 codes (T40.0-T40.4, T40.6)

[2] Prescription Opioids ICD-10 codes (T40.2-T40.3)

[3]Other Synthetic Narcotics (other than methadone) ICD-10 code (T40.4) This category is dominated by f

[4]Heroin ICD-10 codes (T40.1)

[5a]Stimulants ICD-10 codes (T40.5 & T43.6)

[5]Cocaine ICD-10 codes (T40.5)

[6]Psychostimulants With Abuse Potential ICD-10 code (T43.6) This category is dominated by methamphe

[7]Benzodiazepines ICD-10 code(T42.4)

[8]Antidepressants ICD-10 code(T43.0-T43.2)

cription and Illicit Drugs

2001	2002	2003	2004	2005	2006	2007
6.8	**8.2**	**8.9**	**9.4**	**10.1**	**11.5**	**11.9**
4.6	5.8	6.4	6.9	7.3	8.2	8.8
9.0	10.6	11.5	11.8	12.8	14.8	14.9
3.3	**4.1**	**4.5**	**4.7**	**5.1**	**5.9**	**6.1**
1.9	2.6	2.8	3.1	3.4	3.9	4.3
4.8	5.7	6.1	6.3	6.6	7.8	8.0
1.7	**2.3**	**2.6**	**2.9**	**3.2**	**3.9**	**4.2**
1.1	1.6	1.8	2.1	2.4	2.8	3.2
2.2	2.9	3.3	3.7	4.1	4.9	5.3
0.1	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
	0.1	0.1	0.1	0.1	0.2	0.2
0.1	0.1	0.1	0.1	0.1	0.2	0.2
1.6	**2.2**	**2.5**	**2.8**	**3.0**	**3.7**	**4.0**
	1.5	1.7	2.0	2.3	2.6	3.0
2.1	2.8	3.2	3.6	4.0	4.7	5.1
0.3	**0.4**	**0.5**	**0.6**	**0.6**	**0.9**	**0.7**
0.3	0.4	0.4	0.5	0.5	0.7	0.7
0.4	0.5	0.5	0.6	0.6	1.1	0.8
0.6	**0.7**	**0.7**	**0.6**	**0.7**	**0.7**	**0.8**
0.2	0.2	0.2	0.2	0.3	0.2	0.3
1.0	1.2	1.2	1.1	1.1	1.2	1.3

1.5	**1.9**	**2.1**	**2.3**	**2.6**	**2.9**	**2.6**
0.8	1.0	1.1	1.2	1.4	1.5	1.4
2.3	2.8	3.2	3.3	3.8	4.4	3.8
0.7	**0.9**	**0.9**	**1.0**	**1.1**	**1.3**	**1.2**
0.3	0.4	0.5	0.5	0.6	0.6	0.6
1.1	1.4	1.4	1.4	1.6	1.9	1.7
0.8	**1.0**	**1.2**	**1.3**	**1.5**	**1.6**	**1.4**
0.5	0.6	0.6	0.7	0.8	0.9	0.8
1.2	1.4	1.8	1.9	2.2	2.5	2.1
0.0	**0.0**	**0.0**	**0.0**	**0.1**	**0.2**	**0.1**
0.0	0.0	0.0	0.0	0.0	0.1	0.0
0.0	0.0	0.1	0.1	0.1	0.2	0.1
1.5	**1.9**	**2.1**	**2.3**	**2.5**	**2.7**	**2.5**
1.5	1.9	2.1	2.3	2.6	1.4	1.4
2.3	2.8	3.1	3.2	3.7	4.2	3.7

1.3	1.6	1.8	1.9	2.1	2.5	2.2
0.7	0.8	0.9	1.0	1.1	1.3	1.1
2.0	2.4	2.7	2.8	3.1	3.8	3.2
0.6	**0.8**	**0.8**	**0.9**	**1.0**	**1.1**	**1.0**
0.3	0.4	0.4	0.4	0.5	0.6	0.5
1.0	1.2	1.3	1.3	1.4	1.7	1.5
0.7	**0.8**	**1.0**	**1.0**	**1.1**	**1.4**	**1.2**
0.4	0.4	0.5	0.6	0.6	0.7	0.6
1.0	1.2	1.4	1.5	1.7	2.1	1.7
					0.2	**0.1**
					0.1	
		0.1	0.1	0.1	0.2	0.1
					2.3	**2.1**
					1.2	1.1
		2.6	2.7	3.0	3.6	3.1
0.2	**0.3**	**0.4**	**0.4**	**0.5**	**0.5**	**0.4**
0.1	0.2	0.2	0.3	0.3	0.3	0.3
0.3	0.5	0.6	0.6	0.8	0.7	0.7
0.1	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
	0.1	0.1	0.1	0.1	0.1	0.1
0.1	0.1	0.2	0.2	0.2	0.2	0.2
0.1	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**
0.1	0.1	0.1	0.2	0.2	0.2	0.2
0.2	0.4	0.4	0.4	0.6	0.5	0.5

0.6	0.7	0.8	0.9	1.1	1.3	1.5
0.4	0.5	0.6	0.7	0.8	1.0	1.2
0.7	0.9	0.9	1.1	1.3	1.6	1.7
0.4	**0.5**	**0.6**	**0.7**	**0.8**	**1.0**	**1.2**
0.3	0.4	0.4	0.5	0.6	0.7	1.0
0.5	0.7	0.7	0.9	1.0	1.3	1.4
0.2	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**
0.1	0.1	0.2	0.2	0.2	0.3	0.2
0.2	0.2	0.2	0.2	0.3	0.3	0.3
0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
	0.1	0.1	0.1	0.1	0.1	0.2
0.1	0.1	0.1	0.1	0.1	0.2	0.1
0.5	**0.6**	**0.7**	**0.8**	**1.0**	**1.2**	**1.4**
	0.4	0.5	0.6	0.7	0.9	1.0
0.6	0.8	0.8	1.0	1.2	1.4	1.6
0.7	**0.8**	**0.9**	**0.9**	**0.9**	**1.0**	**1.1**
0.7	0.9	0.9	1.0	1.0	1.2	1.2
0.7	0.7	0.8	0.8	0.9	0.9	1.0
0.3	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.6**
0.3	0.4	0.5	0.5	0.5	0.6	0.7
0.3	0.4	0.4	0.4	0.5	0.5	0.5
0.4	**0.4**	**0.5**	**0.4**	**0.4**	**0.5**	**0.5**
0.4	0.5	0.4	0.5	0.5	0.6	0.5

0.4	0.3	0.4	0.4	0.4	0.4	0.5
0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.0	0.1	0.1	0.1	0.1	0.1	0.1
0.6	**0.7**	**0.8**	**0.8**	**0.8**	**0.9**	**1.0**
0.6	0.8	0.8	0.9	0.9	1.1	1.1
0.7	0.6	0.7	0.7	0.8	0.8	0.9

ing (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in

fentanyl related overdoses.

etamine related overdoses.

2008	2009	2010	2011	2012	2013	2014
11.9	**11.9**	**12.3**	**13.2**	**13.1**	**13.8**	**14.7**
8.9	9.1	9.6	10.2	10.2	10.6	11.1
14.9	14.8	15.0	16.1	16.1	17.0	18.3
6.4	**6.6**	**6.8**	**7.3**	**7.4**	**7.9**	**9.0**
4.4	4.6	4.9	5.2	5.3	5.6	6.3
8.4	8.7	8.7	9.4	9.5	10.2	11.7
4.3	**4.4**	**4.7**	**4.9**	**4.5**	**4.4**	**4.6**
3.2	3.3	3.6	3.8	3.7	3.7	3.9
5.4	5.5	5.8	5.9	5.3	5.1	5.2
0.2	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.5**
0.2	0.3	0.3	0.3	0.3	0.3	0.4
0.2	0.3	0.3	0.3	0.3	0.3	0.5
4.1	**4.1**	**4.4**	**4.6**	**4.2**	**4.1**	**4.1**
3.0	3.0	3.3	3.5	3.4	3.4	3.5
5.2	5.2	5.5	5.6	5.0	4.8	4.7
0.8	**1.0**	**1.0**	**0.8**	**0.8**	**1.0**	**1.8**
0.7	0.9	0.9	0.8	0.7	0.9	1.3
0.8	1.0	1.0	0.9	0.9	1.1	2.2
1.0	**1.1**	**1.0**	**1.4**	**1.9**	**2.7**	**3.4**
0.4	0.4	0.4	0.6	0.8	1.2	1.6
1.6	1.8	1.6	2.3	3.1	4.2	5.2
					0.1	**0.3**
						0.2
					0.1	0.5
					2.6	**3.1**
					1.2	1.4
					4.1	4.7
2.1	**1.9**	**1.9**	**2.2**	**2.2**	**2.6**	**3.0**
1.1	1.0	1.1	1.3	1.3	1.5	1.7
3.1	2.8	2.8	3.1	3.1	3.7	4.2
1.0	**0.9**	**0.9**	**1.1**	**1.1**	**1.3**	**1.6**
0.5	0.5	0.5	0.7	0.7	0.8	1.0
1.5	1.3	1.2	1.5	1.5	1.8	2.3
1.1	**1.0**	**1.0**	**1.1**	**1.1**	**1.3**	**1.4**
0.6	0.5	0.6	0.6	0.6	0.7	0.7
1.6	1.5	1.6	1.6	1.6	1.9	1.9
0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.3**
0.0	0.1	0.1	0.1	0.1	0.1	0.2
0.1	0.1	0.1	0.1	0.1	0.2	0.4
2.0	**1.8**	**1.8**	**2.1**	**2.1**	**2.5**	**2.7**
1.1	0.9	1.0	1.2	1.2	1.4	1.5
3.0	2.7	2.7	3.0	3.0	3.5	3.8

1.7	**1.4**	**1.3**	**1.5**	**1.4**	**1.6**	**1.7**
0.9	0.7	0.7	0.8	0.8	0.9	1.0
2.5	2.1	2.0	2.2	2.0	2.3	2.4
0.9	**0.7**	**0.7**	**0.8**	**0.8**	**0.9**	**1.1**
0.4	0.4	0.4	0.5	0.5	0.5	0.6
1.3	1.1	1.0	1.2	1.1	1.3	1.6
0.8	**0.7**	**0.6**	**0.7**	**0.6**	**0.7**	**0.6**
0.5	0.3	0.3	0.3	0.3	0.4	0.4
1.2	1.0	1.0	1.0	0.9	1.0	0.8
0.0	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
					0.1	0.1
0.1	0.1	0.1	0.1	0.1	0.1	0.3
1.7	**1.4**	**1.2**	**1.4**	**1.3**	**1.5**	**1.5**
0.9	0.7	0.7	0.8	0.8	0.8	0.9
2.4	2.0	1.9	2.1	1.9	2.2	2.1
0.4	**0.5**	**0.6**	**0.7**	**0.8**	**1.2**	**1.4**
0.2	0.3	0.4	0.4	0.5	0.7	0.8
0.6	0.8	0.8	1.0	1.2	1.6	1.9
0.2	**0.2**	**0.2**	**0.3**	**0.3**	**0.4**	**0.6**
0.1	0.1	0.2	0.2	0.2	0.3	0.4
0.2	0.3	0.2	0.4	0.4	0.6	0.8
0.2	**0.3**	**0.4**	**0.4**	**0.5**	**0.8**	**0.8**
0.1	0.2	0.2	0.2	0.3	0.4	0.4
0.4	0.5	0.6	0.6	0.8	1.0	1.1
					0.1	**0.1**
					0.0	0.1
					0.1	0.1
					1.1	**1.3**
					0.7	0.7
					1.5	1.8
1.6	**1.8**	**2.1**	**2.2**	**2.1**	**2.2**	**2.5**
1.3	1.5	1.6	1.8	1.7	1.9	2.1
2.0	2.2	2.6	2.6	2.4	2.5	2.8
1.3	**1.5**	**1.8**	**1.9**	**1.8**	**1.8**	**2.1**
1.0	1.2	1.3	1.5	1.4	1.5	1.8
1.6	1.8	2.2	2.2	2.1	2.2	2.5
0.3	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**
0.3	0.3	0.3	0.3	0.3	0.4	0.3
0.4	0.4	0.4	0.4	0.3	0.3	0.3
0.2	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.4**
0.2	0.2	0.2	0.2	0.2	0.2	0.3
0.2	0.2	0.3	0.2	0.2	0.3	0.4
1.4	**1.6**	**1.9**	**2.0**	**1.9**	**2.0**	**2.1**
1.1	1.3	1.4	1.6	1.5	1.7	1.8
1.8	2.0	2.3	2.4	2.2	2.2	2.4
1.1	**1.2**	**1.2**	**1.3**	**1.3**	**1.4**	**1.5**
1.3	1.3	1.4	1.5	1.5	1.6	1.7
1.0	1.1	1.1	1.1	1.1	1.1	1.2
0.7	**0.7**	**0.8**	**0.8**	**0.8**	**0.8**	**0.9**
0.8	0.8	0.8	0.9	0.9	1.0	1.1
0.6	0.6	0.6	0.7	0.7	0.7	0.8
0.4	**0.5**	**0.4**	**0.5**	**0.5**	**0.6**	**0.6**
0.5	0.5	0.6	0.6	0.6	0.6	0.6

0.4	0.5	0.5	0.4	0.4	0.4	0.4
0.1	**0.2**	**0.2**	**0.1**	**0.1**	**0.2**	**0.2**
0.2	0.2	0.2	0.2	0.2	0.2	0.3
0.1	0.1	0.1	0.1	0.1	0.2	0.2
1.0	**1.0**	**1.0**	**1.2**	**1.2**	**1.2**	**1.3**
1.1	1.1	1.2	1.3	1.3	1.4	1.4
0.9	1.0	1.0	1.0	1.0	0.9	1.0

the International Classification of Diseases, 10th Revision.

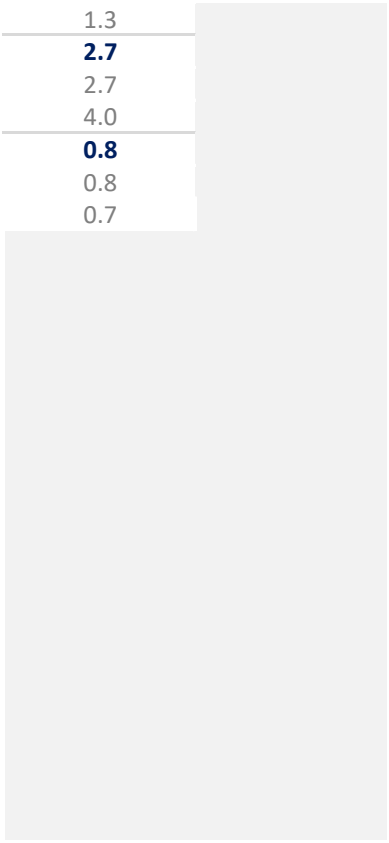
2015	2016	2017	2018	2019	2020	2021
16.3	**19.8**	**21.7**	**20.7**	**21.6**	**28.3**	**32.4**
11.8	13.4	14.4	13.6	13.7	17.1	19.6
20.8	26.2	29.1	27.9	29.6	39.5	45.1
10.4	**13.3**	**14.9**	**14.6**	**15.5**	**21.4**	**24.7**
7.1	8.5	9.4	9.0	9.3	12.3	14.5
13.7	18.1	20.4	20.1	21.7	30.4	34.8
4.7	**5.2**	**5.2**	**4.5**	**4.2**	**4.9**	**4.9**
4.0	4.3	4.2	3.7	3.4	3.8	3.8
5.4	6.2	6.1	5.3	5.1	6.1	6.0
0.7	**1.3**	**1.7**	**1.7**	**1.8**	**2.7**	**2.9**
0.6	0.9	1.2	1.2	1.2	1.7	2.0
0.8	1.7	2.3	2.2	2.4	3.6	3.8
4.0	**3.9**	**3.5**	**2.8**	**2.4**	**2.2**	**2.0**
3.4	3.4	3.0	2.5	2.2	2.1	1.8
4.6	4.5	3.8	3.1	2.7	2.5	2.2
3.1	**6.2**	**9.0**	**9.9**	**11.4**	**17.8**	**21.8**
1.9	3.5	5.0	5.5	6.3	9.6	12.2
4.2	8.9	13.0	14.2	16.6	25.9	31.4
4.1	**4.9**	**4.9**	**4.7**	**4.4**	**4.1**	**2.8**
2.0	2.4	2.5	2.3	2.2	2.0	1.5
6.3	7.5	7.3	7.1	6.6	6.1	4.1
0.9	**1.8**	**2.6**	**2.9**	**2.7**	**2.8**	**2.1**
0.4	0.9	1.3	1.4	1.4	1.5	1.1
1.3	2.8	3.8	4.3	4.1	4.1	3.0
3.2	**3.1**	**2.3**	**1.8**	**1.7**	**1.3**	**0.7**
1.6	1.5	1.2	0.9	0.8	0.5	0.4
5.0	4.7	3.5	2.8	2.5	2.0	1.1
3.8	**5.4**	**7.2**	**8.0**	**9.3**	**12.6**	**16.3**
2.2	3.1	4.2	4.7	5.3	7.1	9.3
5.4	7.8	10.3	11.4	13.4	18.1	23.2
2.1	**3.3**	**4.6**	**5.1**	**6.1**	**8.8**	**11.7**
1.3	1.9	2.7	3.1	3.5	5.0	6.8
2.9	4.7	6.5	7.2	8.6	12.6	16.5
1.7	**2.1**	**2.6**	**2.9**	**3.2**	**3.8**	**4.6**
0.9	1.2	1.5	1.6	1.8	2.1	2.5
2.5	3.1	3.8	4.2	4.8	5.5	6.7
0.6	**1.6**	**3.0**	**3.7**	**4.7**	**7.5**	**10.7**
0.4	0.9	1.7	2.2	2.6	4.2	6.2
0.9	2.3	4.3	5.2	6.7	10.9	15.2
3.2	**3.8**	**4.2**	**4.3**	**4.6**	**5.1**	**5.6**
1.8	2.2	2.5	2.5	2.7	2.9	3.1
4.5	5.5	6.0	6.2	6.7	7.2	8.0

2.1	**3.2**	**4.3**	**4.5**	**4.9**	**6.0**	**7.3**
1.2	1.8	2.5	2.6	2.7	3.2	4.2
3.1	4.7	6.2	6.4	7.1	8.7	10.5
1.4	**2.3**	**3.2**	**3.4**	**3.8**	**4.8**	**5.9**
0.8	1.3	1.8	2.0	2.1	2.6	3.4
2.1	3.3	4.5	4.8	5.5	7.0	8.4
0.7	**0.9**	**1.1**	**1.1**	**1.1**	**1.2**	**1.4**
0.4	0.5	0.7	0.6	0.6	0.6	0.8
1.0	1.4	1.7	1.6	1.6	1.7	2.1
0.5	**1.3**	**2.3**	**2.8**	**3.2**	**4.3**	**5.6**
0.3	0.8	1.3	1.6	1.7	2.4	3.2
0.7	2.0	3.3	3.9	4.7	6.3	7.9
1.6	**1.9**	**2.0**	**1.7**	**1.7**	**1.7**	**1.7**
0.9	1.0	1.2	1.0	1.0	0.8	1.0
2.4	2.7	2.9	2.5	2.4	2.4	2.6
1.8	**2.4**	**3.2**	**3.9**	**5.0**	**7.5**	**10.0**
1.1	1.4	1.9	2.4	2.9	4.3	5.8
2.5	3.4	4.5	5.5	7.1	10.6	14.3
0.7	**1.1**	**1.7**	**2.1**	**2.8**	**4.7**	**6.7**
0.5	0.7	1.1	1.3	1.7	2.8	4.0
1.0	1.5	2.2	2.8	3.8	6.6	9.4
1.1	**1.3**	**1.5**	**1.8**	**2.2**	**2.8**	**3.3**
0.6	0.7	0.8	1.1	1.2	1.5	1.8
1.5	1.9	2.3	2.7	3.3	4.0	4.9
0.2	**0.3**	**0.8**	**1.2**	**1.8**	**3.8**	**6.0**
0.1	0.2	0.5	0.8	1.1	2.2	3.5
0.2	0.5	1.2	1.6	2.5	5.3	8.5
1.6	**2.1**	**2.4**	**2.7**	**3.2**	**3.7**	**4.0**
1.0	1.2	1.4	1.6	1.8	2.1	2.3
2.3	2.9	3.3	3.9	4.6	5.3	5.8
2.7	**3.3**	**3.6**	**3.3**	**3.0**	**3.8**	**3.8**
2.3	2.7	2.9	2.7	2.4	2.9	3.0
3.2	4.0	4.2	3.9	3.6	4.7	4.6
2.3	**2.9**	**3.1**	**2.8**	**2.6**	**3.4**	**3.4**
1.9	2.3	2.4	2.2	2.0	2.5	2.6
2.7	3.5	3.7	3.4	3.1	4.2	4.1
0.4	**0.4**	**0.5**	**0.5**	**0.4**	**0.4**	**0.4**
0.4	0.4	0.5	0.5	0.4	0.4	0.4
0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.6	**1.1**	**1.5**	**1.6**	**1.6**	**2.5**	**2.7**
0.5	0.7	1.1	1.1	1.1	1.7	2.0
0.7	1.4	2.0	2.1	2.1	3.3	3.5
2.1	**2.2**	**2.1**	**1.7**	**1.4**	**1.3**	**1.1**
1.8	2.0	1.8	1.6	1.3	1.2	1.0
2.5	2.6	2.2	1.8	1.5	1.4	1.1
1.5	**1.4**	**1.6**	**1.5**	**1.5**	**1.7**	**1.7**
1.7	1.7	1.8	1.7	1.7	1.8	1.9
1.2	1.2	1.3	1.2	1.3	1.5	1.5
0.9	**0.9**	**1.0**	**0.9**	**0.9**	**1.1**	**1.1**
1.1	1.0	1.1	1.0	1.0	1.2	1.2
0.8	0.8	0.9	0.8	0.8	1.0	1.0
0.6	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
0.6	0.7	0.7	0.7	0.7	0.6	0.7

0.4	0.4	0.4	0.4	0.5	0.5	0.5
0.3	**0.3**	**0.4**	**0.4**	**0.5**	**0.7**	**0.8**
0.3	0.3	0.4	0.4	0.5	0.7	0.8
0.2	0.3	0.5	0.4	0.5	0.8	0.8
1.2	**1.1**	**1.2**	**1.1**	**1.0**	**1.0**	**0.9**
1.4	1.4	1.4	1.3	1.2	1.1	1.1
1.0	0.9	0.8	0.8	0.8	0.7	0.7

2015-2021 Fold Change
2.0
1.7
2.2
2.4
2.0
2.5
1.0
1.0
1.1
4.1
3.3
4.8
0.5
0.5
0.5
7.0
6.4
7.5
0.7
0.8
0.7
2.3
2.8
2.3
0.2
0.3
0.2
4.3
4.2
4.3
5.6
5.2
5.7
2.7
2.8
2.7
17.8
15.5
16.9
1.8
1.7
1.8

3.5
3.5
3.4
4.2
4.3
4.0
2.0
2.0
2.1
11.2
10.7
11.3
1.1
1.1
1.1
5.6
5.3
5.7
9.6
8.0
9.4
3.0
3.0
3.3
30.0
35.0
42.5
2.5
2.3
2.5
1.4
1.3
1.4
1.5
1.4
1.5
1.0
1.0
1.0
4.5
4.0
5.0
0.5
0.6
0.4
1.1
1.1
1.3
1.2
1.1
1.3
1.0
1.2


1.3
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4.0
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0.7

National Institute on Drug Abuse

Number of National Drug Overdose Deaths* Involving Select Pr

Source: National Center on Health Statistics, CDC WONDER

	1999	2000
Total Overdose Deaths	**1,240**	**1,435**
Female	346	369
Male	894	1,066
Any Opioid[1]	**621**	**728**
Female	141	140
Male	480	588
Prescription Opioids[2]	**228**	**288**
Female	61	69
Male	167	219
Prescription Opioids AND Synthetic Opioids other than Methadone (primarily fentanyl)		**11**
Female		
Male		
Synthetic Opioids other than Methadone (primarily fentanyl)[3]	**33**	**40**
Female		13
Male	28	27
Heroin[4]	**198**	**216**
Female	38	36
Male	160	180
Heroin AND Synthetic Opioids other than Methadone (primarily fentanyl)		
Female		
Male		
Stimulants[5a]	**322**	**352**
Female	83	94
Male	239	258
Stimulants AND Any Opioid	**160**	**181**
Female	40	43
Male	120	138
Stimulants AND Synthetic Opioids other than Methadone		
Female		
Male		
Cocaine[5]	**267**	**276**
Female	60	72
Male	207	204
Cocaine AND Any Opioid	**147**	**164**
Female	34	39

Male	113	125
Cocaine AND Synthetic Opioids other than Methadone (primarily fentanyl)		
Female		
Male		
Psychostimulants With Abuse Potential (primarily methamphetamine)[6]	**67**	**97**
Female	26	31
Male	41	66
Psychostimulants With Abuse Potential AND Any Opioid	**22**	**32**
Female		
Male		
Psychostimulants With Abuse Potential AND Synthetic Opioids other than Methadone (primarily fentanyl)		
Female		
Male		
Benzodiazepines[7]	**53**	**90**
Female	12	22
Male	41	68
Benzodiazepines AND Any Opioid	**37**	**74**
Female		17
Male	31	57
Benzodiazepines AND Synthetic Opioids other than Methadone (primarily fentanyl)		**10**
Female		
Male		
Antidepressants[8]	**59**	**68**
Female	27	36
Male	32	32
Antidepressants AND Any Opioid	**13**	**20**
Female		
Male		
Antidepressants AND Synthetic Opioids other than Methadone (primarily fentanyl)		
Female		
Male		

*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisonin
Years for which data are not provided include unreliable data

Blank fields designated by unreliable or suppressed data. For more information visit CDC WONDER.

[1] Any Opioid ICD-10 codes (T40.0-T40.4, T40.6)

[2] Prescription Opioids ICD-10 codes (T40.2-T40.3)

[3] Synthetic Opioids other than Methadone (primarily fentanyl) ICD-10 code (T40.4) This category is domi

[4]Heroin ICD-10 codes (T40.1)

[5a]Stimulants ICD-10 codes (T40.5 & T43.6)

[5]Cocaine ICD-10 codes (T40.5)

[6]Psychostimulants With Abuse Potential ICD-10 code (T43.6) This category is dominated by methamphet

[7]Benzodiazepines ICD-10 code(T42.4)

[8]Antidepressants ICD-10 code(T43.0-T43.2)

escription and Illicit Drugs, Ages 15-24 Years Old

2001	2002	2003	2004	2005	2006	2007
1,700	**2,095**	**2,491**	**2,751**	**2,918**	**3,460**	**3,550**
438	560	632	683	733	820	883
1,262	1,535	1,859	2,068	2,185	2,640	2,667
944	**1,179**	**1,399**	**1,596**	**1,685**	**2,096**	**2,176**
203	269	306	333	371	444	491
741	910	1,093	1,263	1,314	1,652	1,685
489	**641**	**833**	**1,031**	**1,058**	**1,388**	**1,536**
101	152	175	202	225	290	353
388	489	658	829	833	1,098	1,183
12	**21**	**31**	**28**	**31**	**52**	**41**
					14	12
10	12	23	19	27	38	29
54	**84**	**107**	**121**	**130**	**278**	**175**
15	22	34	26	25	66	47
39	62	73	95	105	212	128
212	**241**	**259**	**263**	**279**	**313**	**359**
42	56	55	57	65	57	61
170	185	204	206	214	256	298
					14	
364	**492**	**607**	**634**	**710**	**789**	**674**
96	139	162	161	171	202	161
268	353	445	473	539	587	513
189	**251**	**301**	**343**	**404**	**476**	**411**
47	68	65	83	103	108	93
142	183	236	260	301	368	318
		17	**15**	**23**	**61**	**24**
					17	
		14	13	20	44	17
280	**388**	**475**	**507**	**546**	**676**	**563**
68	109	118	121	132	168	119
212	279	357	386	414	508	444
167	**223**	**266**	**312**	**345**	**424**	**365**
42	56	57	76	91	94	81

125	167	209	236	254	330	284
		14	**12**	**19**	**54**	**23**
					37	
101	**124**	**165**	**142**	**196**	**153**	**142**
36	34	51	43	47	46	51
65	90	114	99	149	107	91
30	**39**	**52**	**39**	**77**	**72**	**67**

133	**178**	**212**	**271**	**322**	**442**	**515**
26	42	53	60	83	95	145
107	136	159	211	239	347	370
104	**146**	**170**	**237**	**281**	**387**	**452**
19	32	37	52	68	78	128
85	114	133	185	213	309	324
		22	**14**	**30**	**40**	**38**
				22	36	25
88	**102**	**115**	**147**	**152**	**126**	**150**
30	52	56	65	77	69	66
58	50	59	82	75	57	84
38	**44**	**57**	**69**	**79**	**52**	**88**
		28	28	33	24	33
26	29	29	41	46	28	55

ng (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in th

nated by fentanyl related overdoses.

amine related overdoses.

2008	2009	2010	2011	2012	2013	2014
3,487	**3,377**	**3,571**	**3,762**	**3,518**	**3,664**	**3,798**
848	862	988	990	945	1,028	1,075
2,639	2,515	2,583	2,772	2,573	2,636	2,723
2,294	**2,229**	**2,387**	**2,545**	**2,344**	**2,486**	**2,706**
482	521	603	624	574	640	711
1,812	1,708	1,784	1,921	1,769	1,846	1,995
1,449	**1,406**	**1,530**	**1,427**	**1,120**	**988**	**931**
299	338	389	363	289	241	252
1,150	1,068	1,141	1,064	831	747	679
55	**58**	**65**	**62**	**42**	**62**	**81**
11	21	26	23	10	19	27
44	37	39	39	32	43	54
190	**203**	**229**	**220**	**172**	**237**	**514**
48	53	77	60	35	68	138
142	150	152	160	137	169	376
497	**510**	**537**	**809**	**963**	**1,263**	**1,452**
96	115	118	183	241	322	373
401	395	419	626	722	941	1,079
					20	**131**
					7	42
					13	89
500	**395**	**429**	**486**	**452**	**549**	**635**
115	98	145	134	129	166	178
385	297	284	352	323	383	457
334	**271**	**288**	**346**	**310**	**349**	**457**
71	59	93	87	87	104	120
263	212	195	259	223	245	337
26	**26**	**15**	**22**	**13**	**24**	**65**
						19
20	18	16	10	18	46	106
384	**269**	**265**	**310**	**270**	**273**	**334**
89	58	80	82	70	78	84
295	211	185	228	200	195	250
280	**208**	**209**	**242**	**227**	**222**	**280**
62	42	63	63	56	64	69

218	166	146	179	171	158	211
18	**14**	**10**	**12**	**12**	**12**	**45**
						32
127	**147**	**179**	**199**	**197**	**303**	**340**
31	46	73	63	63	100	103
96	101	106	136	134	203	237
59	**79**	**91**	**123**	**94**	**148**	**204**
	21	36	32	34	48	57
	58	55	91	60	100	147
						24
550	**571**	**658**	**614**	**511**	**507**	**572**
133	147	172	158	137	133	167
417	424	486	456	374	374	405
486	**517**	**605**	**569**	**479**	**452**	**514**
114	130	157	149	128	117	147
372	387	448	420	351	335	367
40	**58**	**59**	**57**	**51**	**56**	**89**
						25
32	40	43	44	37	39	64
157	**177**	**198**	**183**	**159**	**173**	**206**
74	76	78	83	68	75	98
83	101	120	100	91	98	108
94	**103**	**126**	**114**	**90**	**101**	**121**
37	41	51	48	36	40	49
57	62	75	66	54	61	72
					23	**30**

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2015	2016	2017	2018	2019	2020	2021
4,235	**5,376**	**5,455**	**4,633**	**4,777**	**7,095**	**7,426**
1,258	1,483	1,663	1,481	1,459	1,990	2,311
2,977	3,893	3,792	3,152	3,318	5,105	5,115
3,082	**4,027**	**4,094**	**3,618**	**3,725**	**5,986**	**6,312**
871	1,041	1,209	1,091	1,058	1,584	1,866
2,211	2,986	2,885	2,527	2,667	4,402	4,446
886	**1,146**	**1,050**	**790**	**672**	**812**	**655**
267	294	322	242	198	220	206
619	852	728	548	474	592	449
171	**289**	**364**	**352**	**332**	**480**	**414**
58	88	122	117	100	139	136
113	201	242	235	232	341	278
999	**1,958**	**2,655**	**2,640**	**3,040**	**5,393**	**5,936**
281	524	778	799	865	1,428	1,755
718	1,434	1,877	1,841	2,175	3,965	4,181
1,649	**1,728**	**1,454**	**1,160**	**876**	**711**	**360**
477	453	423	339	280	230	126
1,172	1,275	1,031	821	596	481	234
305	**535**	**701**	**623**	**525**	**474**	**245**
96	160	199	178	179	160	88
209	375	502	445	346	314	157
826	**1,275**	**1,587**	**1,497**	**1,609**	**2,199**	**2,472**
281	375	529	517	501	679	852
545	900	1,058	980	1,108	1,520	1,620
589	**936**	**1,208**	**1,170**	**1,223**	**1,827**	**2,067**
198	265	419	400	373	568	709
391	671	789	770	850	1,259	1,358
158	**438**	**774**	**843**	**971**	**1,599**	**1,945**
52	135	262	284	295	496	660
303	512	559	676	1,103	650	1,285
442	**757**	**924**	**859**	**850**	**1,089**	**1,157**
139	204	291	265	236	299	384
303	553	633	594	614	790	773
385	**641**	**792**	**751**	**743**	**988**	**1,039**
122	171	259	223	203	277	345

263	470	533	528	540	711	694
121	**354**	**564**	**590**	**646**	**901**	**999**
40	114	188	182	179	251	330
81	240	376	408	467	650	669
416	**571**	**780**	**749**	**909**	**1,316**	**1,502**
157	183	281	294	313	444	541
259	388	499	455	596	872	961
227	**334**	**516**	**513**	**613**	**1,022**	**1,194**
85	98	198	215	210	351	428
142	236	318	298	403	671	766
46	**97**	**266**	**319**	**428**	**856**	**1,103**
	23	97	128	148	293	389
30	74	169	191	280	563	714
665	**1,046**	**1,031**	**899**	**727**	**1,267**	**1,118**
189	247	298	263	208	330	329
476	799	733	636	519	937	789
602	**931**	**942**	**812**	**662**	**1,156**	**1,020**
164	217	275	236	190	292	292
438	714	667	576	472	864	728
152	**377**	**509**	**522**	**486**	**1,007**	**932**
43	92	153	162	140	257	272
109	285	356	360	346	750	660
203	**200**	**231**	**237**	**239**	**263**	**333**
105	94	111	119	127	119	185
98	106	120	118	112	144	148
104	**102**	**125**	**123**	**128**	**149**	**172**
49	40	51	52	55	53	83
55	62	74	71	73	96	89
38	**35**	**71**	**81**	**86**	**122**	**145**
21		26	34	35	44	72
	20	45	47	51	78	73

Fold Change 2015 to 2021
1.8
1.8
1.7
2.0
2.1
2.0
0.7
0.8
0.7
2.4
2.3
2.5
5.9
6.2
5.8
0.2
0.3
0.2
0.8
0.9
0.8
3.0
3.0
3.0
3.5
3.6
3.5
12.3
12.7
4.2
2.6
2.8
2.6
2.7
2.8

2.6
8.3
8.3
8.3
3.6
3.4
3.7
5.3
5.0
5.4
24.0
23.8
1.7
1.7
1.7
1.7
1.8
1.7
6.1
6.3
6.1
1.6
1.8
1.5
1.7
1.7
1.6
3.8
3.4

National Institute on Drug Abuse

Rate of National Drug Overdose Deaths* Involving Select I

Source: National Center on Health Statistics, CDC WONDER

	1999	2000
Total Overdose Deaths	**3.2**	**3.7**
Female	1.8	1.9
Male	4.5	5.3
Any Opioid[1]	**1.6**	**1.9**
Female	0.7	0.7
Male	2.4	2.9
Prescription Opioids[2]	**0.6**	**0.7**
Female	0.3	0.4
Male	0.8	1.1
Prescription Opioids AND Synthetic Opioids other than Methadone		
Female		
Male		
Synthetic Opioids other than Methadone (primarily fentanyl)[3]	**0.1**	**0.1**
Female		
Male	0.1	0.1
Heroin[4]	**0.5**	**0.6**
Female	0.2	0.2
Male	0.8	0.9
Heroin AND Synthetic Opioids other than Methadone		
Female		
Male		
Stimulants[5a]	**0.8**	**0.9**
Female	0.4	0.5
Male	1.2	1.3
Stimulants AND Any Opioid	**0.4**	**0.5**
Female	0.2	0.2
Male	0.6	0.7
Stimulants AND Synthetic Opioids other than Methadone		
Female		
Male		
Cocaine[5]	**0.7**	**0.7**
Female	0.3	0.4
Male	1.0	1.0
Cocaine AND Any Opioid	**0.4**	**0.4**
Female	0.2	0.2
Male	0.6	0.6

Cocaine AND Synthetic Opioids other than Methadone		
Female		
Male		
Psychostimulants With Abuse Potential (primarily methamphetamine)[6]	**0.2**	**0.2**
Female	0.1	0.2
Male	0.2	0.3
Psychostimulants With Abuse Potential AND Any Opioid	**0.1**	**0.1**
Female		
Male		0.1
Psychostimulants With Abuse Potential AND Synthetic Opioids other than Methadone		
Female		
Male		
Benzodiazepines[7]	**0.1**	**0.2**
Female		0.1
Male	0.2	0.3
Benzodiazepines AND Any Opioid	**0.1**	**0.2**
Female		
Male	0.2	0.3
Benzodiazepines AND Synthetic Opioids other than Methadone		
Female		
Male		
Antidepressants[8]	**0.2**	**0.2**
Female	0.1	0.2
Male	0.2	0.2
Antidepressants AND Any Opioid		**0.1**
Female		
Male		
Antidepressants AND Synthetic Opioids other than Methadone		
Female		
Male		

*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug
Revision.
Years for which data are not provided include unreliable data
Blank fields designated by unreliable or suppressed data. For more information visit CDC WONDER.

[1] Any Opioid ICD-10 codes (T40.0-T40.4, T40.6)

[2] Prescription Opioids ICD-10 codes (T40.2-T40.3)

[3]Other Synthetic Narcotics (other than methadone) ICD-10 code (T40.4) This category is domina

[4]Heroin ICD-10 codes (T40.1)

[5a]Stimulants ICD-10 codes (T40.5 & T43.6)

[5]Cocaine ICD-10 codes (T40.5)

[6]Psychostimulants With Abuse Potential ICD-10 code (T43.6) This category is dominated by met

[7]Benzodiazepines ICD-10 code(T42.4)

[8]Antidepressants ICD-10 code(T43.0-T43.2)

Prescription and Illicit Drugs, Ages 15-24 Years Old

2001	2002	2003	2004	2005	2006	2007
4.2	**5.1**	**6.0**	**6.6**	**6.9**	**8.1**	**8.2**
2.2	2.8	3.1	3.3	3.5	3.9	4.2
6.1	7.3	8.8	9.6	10.0	12.0	12.0
2.3	**2.9**	**3.4**	**3.8**	**4.0**	**4.9**	**5.0**
1.0	1.4	1.5	1.6	1.8	2.1	2.3
3.6	4.3	5.2	5.9	6.0	7.5	7.6
1.2	**1.6**	**2.0**	**2.5**	**2.5**	**3.2**	**3.6**
0.5	0.8	0.9	1.0	1.1	1.4	1.7
1.9	2.3	3.1	3.9	3.8	5.0	5.3
	0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
		0.1		0.1	0.2	0.1
0.1	**0.2**	**0.3**	**0.3**	**0.3**	**0.6**	**0.4**
	0.1	0.2	0.1	0.1	0.3	0.2
0.2	0.3	0.3	0.4	0.5	1.0	0.6
0.5	**0.6**	**0.6**	**0.6**	**0.7**	**0.7**	**0.8**
0.2	0.3	0.3	0.3	0.3	0.3	0.3
0.8	0.9	1.0	1.0	1.0	1.2	1.3
0.9	**1.2**	**1.5**	**1.5**	**1.7**	**1.8**	**1.6**
0.5	0.7	0.8	0.8	0.8	1.0	0.8
1.3	1.7	2.1	2.2	2.5	2.7	2.3
0.5	**0.6**	**0.7**	**0.8**	**1.0**	**1.1**	**1.0**
0.2	0.3	0.3	0.4	0.5	0.5	0.4
0.7	0.9	1.1	1.2	1.4	1.7	1.4
				0.1	**0.1**	**0.1**
				0.1	0.2	
0.7	**0.9**	**1.1**	**1.2**	**1.3**	**1.6**	**1.3**
0.3	0.5	0.6	0.6	0.6	0.8	0.6
1.0	1.3	1.7	1.8	1.9	2.3	2.0
0.4	**0.5**	**0.6**	**0.7**	**0.8**	**1.0**	**0.8**
0.2	0.3	0.3	0.4	0.4	0.5	0.4
0.6	0.8	1.0	1.1	1.2	1.5	1.3

					0.1	**0.1**
					0.2	
0.3	**0.3**	**0.4**	**0.3**	**0.5**	**0.4**	**0.3**
0.2	0.2	0.3	0.2	0.2	0.2	0.2
0.3	0.4	0.5	0.5	0.7	0.5	0.4
0.1	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
0.1	0.1	0.2	0.1	0.3	0.2	0.2

0.3	**0.4**	**0.5**	**0.6**	**0.8**	**1.0**	**1.2**
0.1	0.2	0.3	0.3	0.4	0.5	0.7
0.5	0.6	0.7	1.0	1.1	1.6	1.7
0.3	**0.4**	**0.4**	**0.6**	**0.7**	**0.9**	**1.0**
	0.2	0.2	0.3	0.3	0.4	0.6
0.4	0.5	0.6	0.9	1.0	1.4	1.5
		0.1		**0.1**	**0.1**	**0.1**
				0.1	0.2	0.1
0.2	**0.2**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**
0.2	0.3	0.3	0.3	0.4	0.3	0.3
0.3	0.2	0.3	0.4	0.3	0.3	0.4
0.1	**0.1**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**
		0.1	0.1	0.2	0.1	0.2
0.1	0.1	0.1	0.2	0.2	0.1	0.2

poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as co

ted by fentanyl related overdoses.

amphetamine related overdoses.

2008	2009	2010	2011	2012	2013	2014
8.0	**7.7**	**8.2**	**8.6**	**8.0**	**8.3**	**8.6**
4.0	4.1	4.6	4.6	4.4	4.8	5.0
11.9	11.3	11.6	12.4	11.4	11.7	12.1
5.3	**5.1**	**5.5**	**5.8**	**5.3**	**5.7**	**6.2**
2.3	2.5	2.8	2.9	2.7	3.0	3.3
8.1	7.7	8.0	8.6	7.9	8.2	8.9
3.3	**3.2**	**3.5**	**3.3**	**2.5**	**2.2**	**2.1**
1.4	1.6	1.8	1.7	1.3	1.1	1.2
5.2	4.8	5.1	4.7	3.7	3.3	3.0
0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
	0.1	0.1	0.1			0.1
0.2	0.2	0.2	0.2	0.1	0.2	0.2
0.4	**0.5**	**0.5**	**0.5**	**0.4**	**0.5**	**1.2**
0.2	0.2	0.4	0.3	0.2	0.3	0.6
0.6	0.7	0.7	0.7	0.6	0.8	1.7
1.1	**1.2**	**1.2**	**1.8**	**2.2**	**2.9**	**3.3**
0.5	0.5	0.6	0.9	1.1	1.5	1.7
1.8	1.8	1.9	2.8	3.2	4.2	4.8
					0.0	**0.3**
						0.2
						0.4
1.2	**0.9**	**1.0**	**1.1**	**1.0**	**1.2**	**1.4**
0.5	0.5	0.7	0.6	0.6	0.8	0.8
1.7	1.3	1.3	1.6	1.4	1.7	2.0
0.8	**0.6**	**0.7**	**0.8**	**0.7**	**0.8**	**1.0**
0.3	0.3	0.4	0.4	0.4	0.5	0.6
1.2	1.0	0.9	1.2	1.0	1.1	1.5
0.1	**0.1**		**0.1**		**0.1**	**0.1**
0.1					0.2	0.5
0.9	**0.6**	**0.6**	**0.7**	**0.6**	**0.6**	**0.8**
0.4	0.3	0.4	0.4	0.3	0.4	0.4
1.3	0.9	0.8	1.0	0.9	0.9	1.1
0.6	**0.5**	**0.5**	**0.6**	**0.5**	**0.5**	**0.6**
0.3	0.2	0.3	0.3	0.3	0.3	0.3
1.0	0.7	0.7	0.8	0.8	0.7	0.9

						0.1
						0.1
0.3	**0.3**	**0.4**	**0.5**	**0.4**	**0.7**	**0.8**
0.1	0.2	0.3	0.3	0.3	0.5	0.5
0.4	0.5	0.5	0.6	0.6	0.9	1.1
0.1	**0.2**	**0.2**	**0.3**	**0.2**	**0.3**	**0.5**
	0.1	0.2	0.1	0.2	0.2	0.3
0.2	0.3	0.2	0.4	0.3	0.4	0.7
						0.1

1.3	**1.3**	**1.5**	**1.4**	**1.2**	**1.2**	**1.3**
0.6	0.7	0.8	0.7	0.6	0.6	0.8
1.9	1.9	2.2	2.0	1.7	1.7	1.8
1.1	**1.2**	**1.4**	**1.3**	**1.1**	**1.0**	**1.2**
0.5	0.6	0.7	0.7	0.6	0.5	0.7
1.7	1.7	2.0	1.9	1.6	1.5	1.6
0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
						0.1
0.1	0.2	0.2	0.2	0.2	0.2	0.3
0.4	**0.4**	**0.5**	**0.4**	**0.4**	**0.4**	**0.5**
0.3	0.4	0.4	0.4	0.3	0.3	0.5
0.4	0.5	0.5	0.4	0.4	0.4	0.5
0.2	**0.2**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**
0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.3	0.3	0.3	0.3	0.2	0.3	0.3
					0.1	**0.1**

ɔded in the International Classification of Diseases, 10th

2015	2016	2017	2018	2019	2020	2021
9.7	**12.4**	**12.6**	**10.8**	**11.2**	**16.7**	**17.2**
5.9	7.0	7.9	7.1	7.0	9.6	11.0
13.3	17.5	17.1	14.3	15.2	23.5	23.3
7.0	**9.3**	**9.5**	**8.4**	**8.7**	**14.1**	**14.6**
4.1	4.9	5.7	5.2	5.1	7.6	8.8
9.8	13.4	13.0	11.5	12.2	20.3	20.2
2.0	**2.6**	**2.4**	**1.8**	**1.6**	**1.9**	**1.5**
1.2	1.4	1.5	1.2	0.9	1.1	1.0
2.8	3.8	3.3	2.5	2.2	2.7	2.0
0.4	**0.7**	**0.8**	**0.8**	**0.8**	**1.1**	**1.0**
0.3	0.4	0.6	0.6	0.5	0.7	0.6
0.5	0.9	1.1	1.1	1.1	1.6	1.3
2.3	**4.5**	**6.1**	**6.1**	**7.1**	**12.7**	**13.8**
1.3	2.5	3.7	3.8	4.1	6.9	8.3
3.2	6.4	8.5	8.4	10.0	18.2	19.0
3.8	**4.0**	**3.4**	**2.7**	**2.1**	**1.7**	**0.8**
2.2	2.1	2.0	1.6	1.3	1.1	0.6
5.2	5.7	4.7	3.7	2.7	2.2	1.1
0.7	**1.2**	**1.6**	**1.4**	**1.2**	**1.1**	**0.6**
0.4	0.8	0.9	0.8	0.9	0.8	0.4
0.9	1.7	2.3	2.0	1.6	1.4	0.7
1.9	**2.9**	**3.7**	**3.5**	**3.8**	**5.2**	**5.7**
1.3	1.8	2.5	2.5	2.4	3.3	4.0
2.4	4.0	4.8	4.5	5.1	7.0	7.4
1.3	**2.2**	**2.8**	**2.7**	**2.9**	**4.3**	**4.8**
0.9	1.2	2.0	1.9	1.8	2.7	3.4
1.7	3.0	3.6	3.5	3.9	5.8	6.2
0.4	**1.0**	**1.8**	**2.0**	**2.3**	**3.8**	**4.5**
0.2	0.6	1.2	1.4	1.4	2.4	3.1
1.4	2.3	2.5	3.1	5.1	3.0	5.8
1.0	**1.7**	**2.1**	**2.0**	**2.0**	**2.6**	**2.7**
0.7	1.0	1.4	1.3	1.1	1.4	1.8
1.3	2.5	2.9	2.7	2.8	3.6	3.5
0.9	**1.5**	**1.8**	**1.7**	**1.7**	**2.3**	**2.4**
0.6	0.8	1.2	1.1	1.0	1.3	1.6
1.2	2.1	2.4	2.4	2.5	3.3	3.2

0.3	**0.8**	**1.3**	**1.4**	**1.5**	**2.1**	**2.3**
0.2	0.5	0.9	0.9	0.9	1.2	1.6
0.4	1.1	1.7	1.9	2.1	3.0	3.0
0.9	**1.3**	**1.8**	**1.7**	**2.1**	**3.1**	**3.5**
0.7	0.9	1.3	1.4	1.5	2.1	2.6
1.2	1.7	2.3	2.1	2.7	4.0	4.4
0.5	**0.8**	**1.2**	**1.2**	**1.4**	**2.4**	**2.8**
0.4	0.5	0.9	1.0	1.0	1.7	2.0
0.6	1.1	1.4	1.4	1.8	3.1	3.5
0.1	**0.2**	**0.6**	**0.7**	**1.0**	**2.0**	**2.6**
	0.1	0.5	0.6	0.7	1.4	1.8
0.1	0.3	0.8	0.9	1.3	2.6	3.2
1.5	**2.4**	**2.4**	**2.1**	**1.7**	**3.0**	**2.6**
0.9	1.2	1.4	1.3	1.0	1.6	1.6
2.1	3.6	3.3	2.9	2.4	4.3	3.6
1.4	**2.1**	**2.2**	**1.9**	**1.6**	**2.7**	**2.4**
0.8	1.0	1.3	1.1	0.9	1.4	1.4
1.9	3.2	3.0	2.6	2.2	4.0	3.3
0.3	**0.9**	**1.2**	**1.2**	**1.1**	**2.4**	**2.2**
0.2	0.4	0.7	0.8	0.7	1.2	1.3
0.5	1.3	1.6	1.6	1.6	3.5	3.0
0.5	**0.5**	**0.5**	**0.6**	**0.6**	**0.6**	**0.8**
0.5	0.4	0.5	0.6	0.6	0.6	0.9
0.4	0.5	0.5	0.5	0.5	0.7	0.7
0.2	**0.2**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**
0.2	0.2	0.2	0.2	0.3	0.3	0.4
0.2	0.3	0.3	0.3	0.3	0.4	0.4
0.1	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**
0.1		0.1	0.2	0.2	0.2	0.3
	0.1	0.2	0.2	0.2	0.4	0.3

Fold Change 2015 to 2021
1.8
1.9
1.8
2.1
2.1
2.1
0.8
0.8
0.7
2.5
2.0
2.6
6.0
6.4
5.9
0.2
0.3
0.2
0.9
1.0
0.8
3.0
3.1
3.1
3.7
3.8
3.6
11.3
15.5
4.1
2.7
2.6
2.7
2.7
2.7
2.7

7.7
8.0
7.5
3.9
3.7
3.7
5.6
5.0
5.8
26.0
32.0
1.7
1.8
1.7
1.7
1.8
1.7
7.3
6.5
6.0
1.6
1.8
1.8
2.0
2.0
2.0
3.0
3.0

National Institute on Drug Abuse

Rate of National Drug Overdose Deaths, by Demographic

Rates are Age-Adjusted per 100,000 population

Source: National Center on Health Statistics, CDC WONDER

	1999	2000	2001	2002	2003
Total Overdose Deaths	**6.1**	**6.2**	**6.8**	**8.2**	**8.9**
Female	3.9	4.1	4.6	5.8	6.4
Male	8.2	8.3	9.0	10.6	11.5
White (Non-Hispanic)	**6.2**	**6.6**	**7.4**	**9.2**	**10.2**
Female	4.3	4.5	5.3	6.8	7.5
Male	8.0	8.6	9.6	11.6	12.9
Black (Non-Hispanic)	**7.5**	**7.3**	**7.6**	**8.2**	**8.2**
Female	4.0	4.2	4.4	5.1	5.4
Male	11.5	10.9	11.2	11.7	11.6
Asian* (Non-Hispanic)					
Female					
Male					
Native Hawaiin or Other Pacific Islander* (Non-Hispanic)					
Female					
Male					
Hispanic	**5.4**	**4.6**	**4.5**	**5.4**	**5.6**
Female	2.2	2.0	2.2	2.7	2.9
Male	8.6	7.1	6.7	8.0	8.3
American Indian or Alaska Native (Non-Hispanic)	**6.0**	**5.5**	**6.9**	**8.5**	**10.8**
Female	5.2	4.3	6.5	7.1	9.4
Male	6.7	6.7	7.5	10.0	12.2
Any Opioid[1]	**2.9**	**3.0**	**3.3**	**4.1**	**4.5**
Female	1.4	1.6	1.9	2.6	2.8
Male	4.3	4.4	4.8	5.7	6.1
White (Non-Hispanic)	2.8	3.1	3.7	4.7	5.2
Black (Non-Hispanic)	3.5	3.5	3.3	3.6	3.5
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					
Hispanic	3.5	2.7	2.6	3.2	3.2
American Indian or Alaska Native (Non-Hispanic)	2.9	2.7	3.5	4.1	5.3
Prescription Opioids[2]	**1.2**	**1.3**	**1.7**	**2.3**	**2.6**
Female	0.7	0.9	1.1	1.6	1.8
Male	1.7	1.8	2.2	2.9	3.3
White (Non-Hispanic)	1.3	1.6	2.0	2.8	3.2
Black (Non-Hispanic)	0.8	0.8	0.9	1.2	1.1
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					

Hispanic	1.6	1.1	1.1	1.4	1.5
American Indian or Alaska Native (Non-Hispanic)	1.3	1.3	2.0	2.6	3.3
Synthetic Opioids other than Methadone (primarily fentany	**0.3**	**0.3**	**0.3**	**0.4**	**0.5**
Female	0.2	0.3	0.3	0.4	0.4
Male	0.3	0.3	0.4	0.5	0.5
White (Non-Hispanic)	0.3	0.3	0.4	0.6	0.6
Black (Non-Hispanic)	0.1	0.1	0.2	0.2	0.1
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					
Hispanic	0.1	0.1	0.1	0.2	0.1
American Indian or Alaska Native (Non-Hispanic)					
Heroin[4]	**0.7**	**0.7**	**0.6**	**0.7**	**0.7**
Female	0.2	0.2	0.2	0.2	0.2
Male	1.2	1.1	1.0	1.2	1.2
White (Non-Hispanic)	0.7	0.6	0.6	0.7	0.7
Black (Non-Hispanic)	0.8	0.9	0.8	0.9	0.8
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					
Hispanic	1.1	0.9	0.9	1.0	1.0
American Indian or Alaska Native (Non-Hispanic)					
Stimulants[5a]	**1.5**	**1.4**	**1.5**	**1.9**	**2.1**
Female	0.7	0.7	0.8	1.0	1.1
Male	2.3	2.2	2.3	2.8	3.2
White (Non-Hispanic)	1.2	1.2	1.3	1.7	2.0
Black (Non-Hispanic)	3.7	3.4	3.6	4.0	4.2
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					
Hispanic	1.8	1.4	1.5	1.8	1.9
American Indian or Alaska Native (Non-Hispanic)	1.1	1.2	1.4	1.6	2.4
Cocaine[5]	**1.4**	**1.3**	**1.3**	**1.6**	**1.8**
Female	0.6	0.6	0.7	0.8	0.9
Male	2.1	1.9	2.0	2.4	2.7
White (Non-Hispanic)	1.0	1.0	1.0	1.3	1.6
Black (Non-Hispanic)	3.7	3.3	3.6	4.0	4.1
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					
Hispanic	1.7	1.3	1.3	1.5	1.6
American Indian or Alaska Native (Non-Hispanic)	0.9	1.0	1.0	1.1	1.7
Psychostimulants With Abuse Potential (primarily methamphetamine)[6]	**0.2**	**0.2**	**0.2**	**0.3**	**0.4**
Female	0.1	0.1	0.1	0.2	0.2
Male	0.3	0.3	0.3	0.5	0.6
White (Non-Hispanic)	0.2	0.2	0.2	0.4	0.5
Black (Non-Hispanic)	0.1			0.1	0.1
Asian* (Non-Hispanic)					
Native Hawaiian or Other Pacific Islander* (Non-Hispanic)					

Hispanic	0.2	0.2	0.2	0.3	0.4
American Indian or Alaska Native (Non-Hispanic)					

[1] Any Opioid ICD-10 codes: T40.0-T40.4, T40.6

[2] Prescription Opioids ICD-10 codes: T40.2-T40.3

[3]Synthetic Opioids other than Methadone (Primarily Fentanyl) ICD-10 Code: T40.4

[4]Heroin ICD-10 codes: T40.1

[5a]Stimulants ICD-10 codes (T40.5 & T43.6)

[5]Cocaine ICD-10 codes (T40.5)

[6]Psychostimulants With Abuse Potential ICD-10 code (T43.6) This category is dominated by met

* Prior to 2018, mortlity data for Asian and Pacific Islander populations were combined. See http

Blank fields designated by unreliable or suppressed data. For more information visit CDC WONDER.

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
9.4	**10.1**	**11.5**	**11.9**	**11.9**	**11.9**	**12.3**	**13.2**	**13.1**	**13.8**	**14.7**	**16.3**	**19.8**	**21.7**
6.9	7.3	8.2	8.8	8.9	9.1	9.6	10.2	10.2	10.6	11.1	11.8	13.4	14.4
11.8	12.8	14.8	14.9	14.9	14.8	15.0	16.1	16.1	17.0	18.3	20.8	26.2	29.1
11.0	**11.8**	**13.6**	**14.5**	**14.8**	**15.0**	**15.7**	**16.9**	**16.8**	**17.6**	**19.0**	**21.1**	**25.3**	**27.5**
8.3	8.8	10.0	11.0	11.4	11.6	12.5	13.3	13.2	13.8	14.6	15.8	17.7	19.1
13.7	14.7	17.2	18.0	18.3	18.3	19.0	20.5	20.4	21.4	23.2	26.2	32.7	35.8
8.3	**9.3**	**10.8**	**9.7**	**8.4**	**8.3**	**8.0**	**8.5**	**8.7**	**9.7**	**10.5**	**12.2**	**17.1**	**20.6**
5.6	6.2	6.5	6.5	5.6	5.8	5.9	6.2	6.2	6.5	7.3	7.7	10.4	11.7
11.4	13.0	15.7	13.3	11.6	11.1	10.5	11.3	11.6	13.3	14.2	17.3	24.7	30.8
5.2	**5.8**	**6.3**	**5.9**	**5.8**	**5.8**	**5.6**	**6.1**	**6.3**	**6.7**	**6.7**	**7.7**	**9.5**	**10.6**
2.9	3.0	3.4	3.1	3.2	3.5	3.6	4.0	4.0	4.1	4.1	4.4	5.0	5.1
7.5	8.4	9.1	8.7	8.4	8.2	7.6	8.1	8.5	9.2	9.3	10.9	13.9	15.9
12.5	**13.1**	**14.1**	**14.2**	**15.8**	**17.7**	**16.8**	**18.2**	**18.9**	**18.7**	**20.9**	**21.2**	**24.2**	**25.7**
10.4	11.3	10.6	13.8	12.2	14.0	14.8	15.9	17.6	17.5	16.9	16.8	20.2	20.1
14.7	14.9	17.6	14.5	19.6	21.5	19.0	20.5	20.1	19.9	25.0	25.8	28.3	31.5
4.7	**5.1**	**5.9**	**6.1**	**6.4**	**6.6**	**6.8**	**7.3**	**7.4**	**7.9**	**9.0**	**10.4**	**13.3**	**14.9**
3.1	3.4	3.9	4.3	4.4	4.6	4.9	5.2	5.3	5.6	6.3	7.1	8.5	9.4
6.3	6.6	7.8	8.0	8.4	8.7	8.7	9.4	9.5	10.2	11.7	13.7	18.1	20.4
5.7	6.2	7.3	7.8	8.2	8.6	9.1	9.7	9.8	10.5	12.0	13.9	17.5	19.4
3.2	3.4	4.2	3.6	3.4	3.6	3.4	3.8	4.0	4.7	5.6	6.6	10.3	12.9
2.9	3.0	3.3	3.2	3.4	3.2	2.9	3.3	3.5	3.8	4.0	4.6	6.1	6.8
6.2	6.9	7.1	7.8	9.3	11.3	9.4	10.3	11.0	10.6	12.0	12.1	13.9	15.7
2.9	**3.2**	**3.9**	**4.2**	**4.3**	**4.4**	**4.7**	**4.9**	**4.5**	**4.4**	**4.6**	**4.7**	**5.2**	**5.2**
2.1	2.4	2.8	3.2	3.2	3.3	3.6	3.8	3.7	3.7	3.9	4.0	4.3	4.2
3.7	4.1	4.9	5.3	5.4	5.5	5.8	5.9	5.3	5.1	5.2	5.4	6.2	6.1
3.7	4.1	5.0	5.6	5.7	5.8	6.4	6.6	6.0	5.9	6.2	6.4	7.0	6.9
1.4	1.6	1.8	1.8	1.8	1.9	2.0	2.0	2.0	2.2	2.5	2.6	3.3	3.5

1.4	1.5	1.8	1.9	1.9	1.7	1.7	1.8	1.8	1.9	1.8	1.8	2.1	2.2
4.2	4.7	4.7	5.2	6.1	7.8	7.2	7.1	7.5	7.1	7.2	7.0	6.5	7.2
0.6	**0.6**	**0.9**	**0.7**	**0.8**	**1.0**	**1.0**	**0.8**	**0.8**	**1.0**	**1.8**	**3.1**	**6.2**	**9.0**
0.5	0.5	0.7	0.7	0.7	0.9	0.9	0.8	0.7	0.9	1.3	1.9	3.5	5.0
0.6	0.6	1.1	0.8	0.8	1.0	1.0	0.9	0.9	1.1	2.2	4.2	8.9	13.0
0.7	0.8	1.1	1.0	1.0	1.2	1.3	1.2	1.1	1.3	2.4	4.2	8.2	11.9
0.2	0.2	1.0	0.2	0.2	0.3	0.4	0.3	0.3	0.5	1.1	2.1	5.6	9.0
0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.6	0.9	2.7	3.7
0.9	1.1	1.2	0.9	1.8	2.4	1.2	1.4	1.6	1.2	1.7	2.0	4.1	6.5
0.6	**0.7**	**0.7**	**0.8**	**1.0**	**1.1**	**1.0**	**1.4**	**1.9**	**2.7**	**3.4**	**4.1**	**4.9**	**4.9**
0.2	0.3	0.2	0.3	0.4	0.4	0.4	0.6	0.8	1.2	1.6	2.0	2.4	2.5
1.1	1.1	1.2	1.3	1.6	1.8	1.6	2.3	3.1	4.2	5.2	6.3	7.5	7.3
0.7	0.7	0.8	0.9	1.2	1.3	1.2	1.8	2.5	3.4	4.4	5.4	6.3	6.1
0.6	0.8	0.7	0.8	0.8	0.9	0.8	1.0	1.3	2.0	2.5	3.1	4.5	4.9
0.7	0.8	0.8	0.8	1.0	1.0	0.8	1.0	1.3	1.6	1.9	2.3	2.8	2.9
			0.9		1.3	1.1	1.8	1.7	2.7	3.7	4.4	5.0	5.2
2.3	**2.6**	**2.9**	**2.6**	**2.1**	**1.9**	**1.9**	**2.2**	**2.2**	**2.6**	**3.0**	**3.8**	**5.4**	**7.2**
1.2	1.4	1.5	1.4	1.1	1.0	1.1	1.3	1.3	1.5	1.7	2.2	3.1	4.2
3.3	3.8	4.4	3.8	3.1	2.8	2.8	3.1	3.1	3.7	4.2	5.4	7.8	10.3
2.2	2.4	2.7	2.5	2.1	1.9	1.9	2.2	2.3	2.8	3.3	4.3	6.1	8.3
4.4	5.0	5.8	4.8	3.5	3.4	3.3	3.3	3.2	3.7	3.8	4.7	7.1	9.5
1.8	2.2	2.4	1.9	1.6	1.5	1.4	1.6	1.6	2.0	1.9	2.5	3.4	4.3
2.7	3.3	2.8	3	2.5	2.8	3.3	3.6	3.9	4.7	5.9	6.7	8.7	10.7
1.9	**2.1**	**2.5**	**2.2**	**1.7**	**1.4**	**1.3**	**1.5**	**1.4**	**1.6**	**1.7**	**2.1**	**3.2**	**4.3**
1.0	1.1	1.3	1.1	0.9	0.7	0.7	0.8	0.8	0.9	1.0	1.2	1.8	2.5
2.8	3.1	3.8	3.2	2.5	2.1	2.0	2.2	2.0	2.3	2.4	3.1	4.7	6.2
1.7	1.9	2.3	2.0	1.6	1.3	1.2	1.4	1.3	1.5	1.7	2.2	3.4	4.6
4.3	4.9	5.6	4.7	3.4	3.2	3.1	3.1	3.0	3.4	3.4	4.0	6.1	8.3
1.4	1.7	1.9	1.6	1.3	1.1	0.9	1.1	1.0	1.1	1.0	1.3	2.0	2.5
1.6	2.3	1.6	2.1	1.5	1.8	1.9	1.6	1.5	1.3	1.4	1.6	2.1	2.5
0.4	**0.5**	**0.5**	**0.4**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**1.2**	**1.4**	**1.8**	**2.4**	**3.2**
0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.4	0.5	0.7	0.8	1.1	1.4	1.9
0.6	0.8	0.7	0.7	0.6	0.8	0.8	1.0	1.2	1.6	1.9	2.5	3.4	4.5
0.5	0.6	0.6	0.6	0.5	0.6	0.7	0.9	1.0	1.4	1.7	2.2	3.0	4.2
0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.6

0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.6	0.9	1.0	1.4	1.5	2.0
1.3	1.5	1.2	0.9	1.1	1.2	1.5	2.4	2.6	3.5	4.5	5.4	6.9	8.5

:hamphetamine related overdoses.
ps://wonder.cdc.gov/mcd-icd10.html

2018	2019	2020	2021	Fold Change 2015 to 2021
20.7	**21.6**	**28.3**	**32.4**	**2.0**
13.6	13.7	17.1	19.6	1.7
27.9	29.6	39.5	45.1	2.2
25.9	**26.2**	**33.1**	**36.8**	**1.7**
18.0	17.6	21.5	23.8	1.5
33.8	34.5	44.5	49.4	1.9
21.3	**24.8**	**35.8**	**44.2**	**3.6**
11.6	13.4	18.9	23.5	3.1
32.4	37.7	54.8	67.3	3.9
3.0	**3.3**	**4.6**	**4.7**	
1.8	1.6	2.2	2.3	
4.4	5.2	7.2	7.2	
12.3	**9.5**	**13.7**	**20.1**	
		6.6	9.9	
17.7	13.4	20.8	30.0	
11.0	**12.7**	**17.6**	**21.1**	**2.7**
5.2	5.7	7.5	9.4	2.1
16.6	19.5	27.3	32.4	3.0
26.8	**30.5**	**42.5**	**56.5**	**2.7**
20.7	24.5	34.0	44.1	2.6
33.1	36.6	51.2	69.3	2.7
14.6	**15.5**	**21.4**	**24.7**	**2.4**
9.0	9.3	12.3	14.5	2.0
20.1	21.7	30.4	34.8	2.5
18.8	19.2	25.5	28.4	2.0
14.1	17.3	26.6	33.5	5.1
1.3	1.5	2.6	2.6	
4.0		6.0	9.7	
7.5	8.8	13.1	16.0	3.5
13.8	17.7	28.1	38.7	3.2
4.5	**4.2**	**4.9**	**4.9**	**1.0**
3.7	3.4	3.8	3.8	1.0
5.3	5.1	6.1	6.0	1.1
6.0	5.5	6.3	6.3	1.0
3.3	3.5	4.7	4.9	1.9
0.4	0.4	0.5	0.5	

2.0	2.0	2.5	2.5	1.4
4.7	5.4	6.5	7.4	1.1
9.9	**11.4**	**17.8**	**21.8**	**7.0**
5.5	6.3	9.6	12.2	6.4
14.2	16.6	25.9	31.4	7.5
12.7	14.0	20.9	24.8	5.9
11.2	14.4	24.1	31.4	15.0
0.9	1.1	2.2	2.2	
		4.5	8.9	
4.7	6.3	10.7	14.2	15.8
7.0	10.8	21.6	33.6	16.8
4.7	**4.4**	**4.1**	**1.0**	**0.2**
2.3	2.2	2.0	1.0	0.5
7.1	6.6	6.1	1.0	0.2
5.9	5.2	4.8	3.1	0.6
4.9	5.1	5.0	3.6	1.2
0.3	0.4	0.5	0.3	
3.1	3.1	3.0	2.3	1.0
4.8	5.3	5.4	4.6	1.0
8.0	**9.3**	**12.6**	**16.3**	**4.3**
4.7	5.3	7.1	9.3	4.2
11.4	13.4	18.1	23.2	4.3
9.1	10.5	13.9	17.6	4.1
10.8	13.0	18.1	25.0	5.3
1.3	1.6	2.2	2.3	
8.4	7.3	9.4	13.6	
5.2	6.2	8.6	11.2	4.5
13.6	16.3	22.7	33.1	4.9
4.5	**4.9**	**6.0**	**7.3**	**3.5**
2.6	2.7	3.2	4.2	3.5
6.4	7.1	8.7	10.5	3.4
4.7	4.7	5.4	6.2	2.8
9.1	10.8	14.3	19.6	4.9
0.5	0.7	1.0	0.9	
3.0	3.4	4.4	5.4	4.2
3.0	3.9	5.6	7.0	4.4
3.9	**5.0**	**7.5**	**10.0**	**5.6**
2.4	2.9	4.3	5.8	5.3
5.5	7.1	10.6	14.3	5.7
5.0	6.5	9.4	12.6	5.7
2.2	2.9	5.1	7.2	9.0
0.9	1.0	1.4	1.5	
7.4	6.6	9.0	11.8	

2.5	3.1	4.7	6.4	4.6
11.1	13.1	17.9	27.4	5.1

Data Brief 81: Drug Poisoning Deaths in the United States, 1980–2008

Data table for Figure 1. drug poisoning death rates: United States, 1980–2008

	Number	Deaths per 100,000 population
1980	6,094	2.7
1981	6,227	2.7
1982	6,299	2.7
1983	6,445	2.8
1984	6,723	2.8
1985	7,082	3.0
1986	7,969	3.3
1987	7,920	3.3
1988	9,031	3.7
1989	9,275	3.8
1990	8,413	3.4
1991	9,392	3.7
1992	10,604	4.1
1993	12,133	4.7
1994	12,714	4.8
1995	12,779	4.8
1996	13,227	4.9
1997	14,445	5.3
1998	15,315	5.5
1999	16,849	6.0
2000	17,415	6.2
2001	19,394	6.8
2002	23,518	8.2
2003	25,785	8.9
2004	27,424	9.3
2005	29,813	10.1
2006	34,425	11.5
2007	36,010	11.9
2008	36,450	12.0
2009	37,004	
2010	38,329	
2011	41,340	
2012	41,502	
2013	43,982	
2014	47,055	
2015	52,404	
2016	63,632	
2017	70,237	
2018	67,367	
2019	70,630	
	852,867	

NOTE: Deaths were classified using the International Classification of Diseases, Tenth Revision (ICD-10) in 1999–2008 and using the N
X49, X60-X69, X85-X90, Y10-Y19, Y35.2, or
*U01(.6-.7) and ICD-9 UCODs are: E850.0–E869.9, E950.0–E952.9, E962(.0–.9), E980.0–E982.9, E972. Drug poisoning ICD–10 UCODs
Motor vehicle traffic ICD–10 UCODs are: V30-V39 (.4-.9), V40-V49 (.4-.9), V50-V59 (.4-.9), V60-V69 (.4-.9), V70-V79 (.4-.9), V81.1 V8
V20-V28 (.3-.9),V29 (.4-.9),V12-V14 (.3-.9),V19 (.4-.6), V02-V04 (.1,.9),V09.2,V80 (.3-
.5),V87(.0-.8),V89.2 and ICD-9 UCODs are: E810.0–E819.9, E958.5, E988.5. When the ICD-10
replaced ICD-9 in 1999, approximately 5% fewer deaths were classified as motor vehicle deaths and 2% more deaths were classified

SOURCE: CDC/NCHS, National Vital Statistics System.

Data Brief 81: Drug Poisoning Deaths in the United States, 1980–2008
Data table for Figure 2. Age-adjusted poisoning death rates: Comparison of state and U.S. rates: United States, 2008

State	Poisoning deaths Leading cause of injury death
United States	Poisoning
Alabama	Motor Vehicle Traffic
Alaska	Poisoning
Arizona	Poisoning
Arkansas	Motor Vehicle Traffic
California	Poisoning
Colorado	Poisoning
Connecticut	Poisoning
Delaware	Poisoning
District of Columbia	Firearm
Florida	Poisoning
Georgia§	§
Hawaii	Poisoning
Idaho	Motor Vehicle Traffic
Illinois	Poisoning
Indiana	Poisoning
Iowa	Motor Vehicle Traffic
Kansas	Motor Vehicle Traffic
Kentucky	Poisoning
Louisiana	Motor Vehicle Traffic
Maine	Poisoning
Maryland	Poisoning
Massachusetts	Poisoning
Michigan	Poisoning
Minnesota	Poisoning
Mississippi	Motor Vehicle Traffic
Missouri	Motor Vehicle Traffic
Montana	Motor Vehicle Traffic
Nebraska	Motor Vehicle Traffic
Nevada	Poisoning
New Hampshire	Poisoning
New Jersey	Poisoning
New Mexico	Poisoning
New York	Poisoning
North Carolina	Motor Vehicle Traffic
North Dakota	Motor Vehicle Traffic
Ohio	Poisoning
Oklahoma	Motor Vehicle Traffic
Oregon	Poisoning
Pennsylvania	Poisoning

Rhode Island	Poisoning
South Carolina	Motor Vehicle Traffic
South Dakota	Motor Vehicle Traffic
Tennessee	Motor Vehicle Traffic
Texas	Motor Vehicle Traffic
Utah	Poisoning
Vermont	Poisoning
Virginia	Motor Vehicle Traffic
Washington	Poisoning
West Virginia	Poisoning
Wisconsin	Poisoning
Wyoming	Motor Vehicle Traffic

NOTE: § The cause of death was inconclusive for a high percentage of deaths in Georgia at the close of the 2008 final mortality file. The manner of death was p
investigations, including poisoning deaths, are among causes that remain pending at the close of the file. Thus, the poisoning death rate for Georgia may not b
X90, Y10-Y19, Y35.2, or *U01(.6-.7). Drug poisoning ICD–10 UCODs are: X40-X44, X60-X64, X85, Y10-Y14.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data Brief 81: Drug Poisoning Deaths in the United States, 1980–2008

Data table for Figure 3. Number of drug poisoning deaths involving opioid analgesics and other drugs: United States, 19

Drugs involved in drug poisoning deaths

Year	Any opioid analgesic	Specified dr other than c
		Number o
1999	4,030	
2000	4,400	
2001	5,528	
2002	7,456	
2003	8,517	
2004	9,857	
2005	10,928	
2006	13,723	
2007	14,408	
2008	14,800	

NOTE: Drug categories are mutually exclusiv

include natural and semi-synthetic opioid analgesics (e.g. morphine, oxycodone, hydrocodone) and synthetic opioid an
may involve opioid analgesics.
Drug poisoning ICD–10 underlying cause of death codes are: X40- X44, X60-X64, X85, Y10-Y14. Among deaths with dru
any opioid analgesic (any of the codes T40.2- T40.4); specified drug(s) other than opioid analgesic (any of the codes T3

SOURCE: CDC/NCHS, National Vital Statistics System.
Data Brief 81: Drug Poisoning Deaths in the United States, 1980–2008

Data table for Figure 4. Number of drug poisoning deaths involving opioid analgesic by opioid analgesic category: Unite

	Opioid analgesic involved in drug poisoning deaths	
Year	Natural and semi-synthetic opioid analgesic	
		Numbe
1999	2,749	
2000	2,917	
2001	3,479	
2002	4,416	
2003	4,867	
2004	5,231	
2005	5,774	
2006	7,017	
2007	8,158	
2008	9,119	

NOTE: Opioid analgesic categories are not mutually exclusive. Deaths involving more than one opioid analgesic categor
oxycodone and hydrocodone and synthetic opioid analgesics include fentanyl. Drug poisoning deaths ICD–10 underlyin
underlying cause, the following ICD-10 codes indicate the type of drug(s) involved: natural and semi-synthetic opioid ar

SOURCE: CDC/NCHS, National Vital Statistics System.
Data Brief 81: Drug Poisoning Deaths in the United States, 1980–2008

Data table for Figure 5. Drug poisoning death rates by age: United States, 1999–2008

	1999	2000

Age (years)			
	Under 15	0.1	0.1
	15-24	3.2	3.7
	25-34	8.1	7.9
	35-44	14.0	14.3
	45-54	11.1	11.6
	55-64	4.2	4.2
65 and	over	2.7	2.4

NOTE: Drug poisoning ICD–10 underlying cause of death codes are X40-X44, X60-X64, X85, Y10-Y14.
SOURCE: CDC/NCHS, National Vital Statistics System.

Ninth Revision of the ICD (ICD-9) in 1980–1998. Poisoning ICD–10 underlying cause of death codes (UCOD) are: X40-

are: X40-X44, X60-X64, X85, Y10-Y14 and ICD-9 UCODs are: E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5.
2.1,V83-V86 (.0-.3),

as poisoning deaths.

Number	Age-adjusted rate per 100,000 population	Comparison to US age-adjusted poisoning rate
41,080	13.4	
674	14.5	Similar
166	24.2	Higher
951	15.0	Higher
410	14.9	Similar
4,334	11.6	Lower
900	17.5	Higher
438	12.2	Similar
141	16.3	Similar
66	10.8	Similar
3,266	18.0	Higher
1,049	§ 10.7	Difference not tested[§]
159	12.1	Similar
184	12.3	Similar
1,526	11.8	Lower
951	15.1	Higher
279	9.5	Lower
259	9.4	Lower
860	20.2	Higher
695	16.1	Higher
199	14.9	Similar
748	12.8	Similar
867	12.9	Similar
1,399	13.7	Similar
518	9.6	Lower
347	12.2	Similar
867	14.8	Higher
164	17.3	Higher
132	7.6	Lower
556	21.0	Higher
153	11.2	Similar
829	9.4	Lower
590	30.8	Higher
1,910	9.5	Lower
1,296	14.0	Similar
57	9.5	Lower
1,924	16.7	Higher
644	18.1	Higher
538	13.8	Similar
2,031	16.4	Higher

212		19.9	Higher
618		13.8	Similar
	72	9.6	Lower
1,039		16.4	Higher
2,248		9.4	Lower
526		20.8	Higher
	83	12.3	Similar
802		10.1	Lower
1,122		16.4	Higher
492		27.6	Higher
691		12.0	Lower
	98	18.6	Higher

pending for 8.8% of deaths and was assigned an ill-defined cause in 3.5% of deaths for Georgia. Causes of death which require lengthy
be based on the final numbers of poisoning deaths. Poisoning ICD–10 underlying cause of death codes (UCOD) are: X40-X49, X60-X69, X85-

999-2008

ug(s)		
opioid	Only non- analgesic	specified drug(s)
f deaths		
	9,253	3,566
	9,073	3,942
	9,446	4,420
	10,774	5,288
	11,358	5,910
	11,314	6,253
	12,063	6,822
	12,738	7,964
	12,746	8,856
	12,408	9,242

e. Opioid analgesics

algesics (e.g. methadone, fentanyl). Some deaths in which the drug was poorly specified or unspecified

g poisoning as the underlying cause, the following ICD-10 codes indicate the type of drug(s) involved:
6–T50.8 other than T40.2–T40.4); only nonspecified drug(s) (only T50.9).

d States, 1999–2008

Methadone	Synthetic opioid analgesic, excluding methadone
r of deaths	
784	730
986	782
1,456	957
2,358	1,295
2,972	1,400
3,845	1,664
4,460	1,742
5,406	2,707
5,518	2,213
4,924	2,306

y are counted multiple times. Natural and semi-synthetic opioid analgesics include morphine,
g cause of death codes are: X40-X44, X60-X64, X85, Y10-Y14. Among deaths with drug poisoning as the
nalgesic (T40.2); methadone (T40.3); synthetic opioid analgesic, excluding methadone (T40.4).

2001	2002	2003	2004	2005	2006	2007	2008

Deaths per		100,00	0 population				
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
4.3	5.2	6.0	6.6	6.9	8.2	8.4	8.2
8.6	10.3	11.3	11.7	13.3	15.7	16.4	16.5
15.5	18.0	18.8	19.1	19.4	21.5	21.2	20.9
13.1	16.1	18.0	19.3	21.1	24.1	25.1	25.3
4.7	6.0	7.0	7.9	9.1	10.6	12.4	13.0
2.6	3.0	3.0	3.0	3.3	3.5	3.8	4.1