C I T Y O F P H I L A D E L P H I A

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Dear Healthcare Professional,

In 2021, more Philadelphians died from a drug overdose than ever before, and over half involved cocaine use. In the communities most impacted by cocaine-involved overdose, 70-97% of residents are non-White and 33-43% live in poverty. Between 2018 and 2021 the rate of cocaine-involved overdose fatalities among non-Hispanic (NH) White individuals remained relatively constant, while the rate among NH Black individuals increased from 32 to 55 deaths per 100,000. As NH Black individuals account for a growing proportion of fatal overdoses in Philadelphia, healthcare professionals are well positioned to address racial inequity in drug overdoses and improve the health of people who use cocaine.

The cocaine supply in Philadelphia is not safe. Three-quarters of cocaine-involved overdose deaths involved fentanyl, and recent drug checking surveillance detected xylazine, a veterinary tranquilizer, in cocaine samples. Overdose deaths involving cocaine and other substances, such as methamphetamines and alcohol, are also increasing. Cocaine use by itself is associated with health risks including cardiovascular disease, pulmonary disease, injury, tooth decay, and infectious diseases. While no medication is approved to treatment cocaine use disorder, behavioral therapies, such as contingency management and cognitive behavioral therapy, are effective in promoting abstinence and preventing return to use. However, cocaine use is rarely discussed in the clinic setting. You can improve the health of your patients and prevent overdoses by:

- Starting a conversation with your patients about cocaine and substance use using non-judgmental, person-centered language.
- Informing patients about adulterants in crack and powder cocaine and the risk of fatal overdose.
- Providing patients with harm reduction strategies such as testing substance for fentanyl, using naloxone to reverse an overdose, and safer cocaine use practices.
- Educating patients about the health risks associated with using cocaine and using these conversations to discuss steps that you and your patient can take to improve their health.

This cocaine use action kit includes a clinical tools and resources for you and your patients. Access the cocaine action kit here: phila.gov/documents/cocaine-action-kit

Thank you for your dedication to improving the health of Philadelphians.

Respectfully,

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Drug overdose deaths involving cocaine and psychostimulants with abuse potential among racial and ethnic groups – United States, 2004–2019

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ABSTRACT

Background: Drug overdose deaths involving stimulants, including cocaine and psychostimulants with abuse potential (e.g., methamphetamine), have been increasing, partly because of co-involvement with opioids. Stimulant-involved overdose deaths have disproportionately increased among non-Hispanic Black (Black) and non-Hispanic American Indian/Alaskan Native (AI/AN) persons; however, the role of opioids in exacerbating disproportionate stimulant-involved death rates is unclear.

Methods: Analysis of National Vital Statistics System multiple cause-of-death mortality files examined age-adjusted cocaine- and psychostimulant-involved death rates. Analyses of death rates stratified by racial and ethnic group and opioid co-involvement included: 1) Joinpoint regression of 2004–2019 trends, 2) changes in rates from 2018 to 2019, and 3) demographic and geographic characteristics of 2019 deaths.

Results: From 2004 to 2019, cocaine and psychostimulant-involved death rates were higher for Black and AI/AN persons, respectively. Among all groups, increases in cocaine-involved overdose rates were largely driven by opioid co-involvement, particularly after 2013. From 2004 to 2019, rates for psychostimulant-involved deaths increased with and without opioid co-involvement. Rates for overdoses co-involving cocaine and synthetic opioids increased from 2018 to 2019 for Hispanic, non-Hispanic White (White), and Black persons. Psychostimulant-involved overdose rates with and without synthetic opioid co-involvement increased among Hispanic, White, and Black persons. In 2019, Black and AI/AN persons continued to experience higher cocaine- and psychostimulant-involved death rates, respectively.

Conclusions: Stimulant-involved deaths continue to increase, and the role of opioids in driving these deaths varies by race and ethnicity. Ensuring equitable access to proven prevention and treatment interventions and incorporating social determinants of health into future research around effective pharmacotherapies may help reduce stimulant-involved overdose deaths.

1. Introduction

The drug overdose epidemic in the United States continues to worsen, accounting for 70,630 deaths in 2019 (Mattson et al., 2021). Synthetic opioids other than methadone (referred to as synthetic opioids), predominantly illicitly manufactured fentanyl (IMF) and fentanyl analogs, have driven these increases in deaths (Baldwin et al., 2021; Scholl et al., 2018). While overall drug overdose death rates and death rates involving any opioid decreased from 2017 to 2018, these rates were at their highest levels in 2019, and provisional data indicate an estimated 93,331 drug overdose deaths occurred in 2020 (Ahmad et al., 2021; Centers for Disease Control and Prevention, 2020a; Mattson et al., 2021; Wilson et al., 2020). The drug overdose epidemic in the United States has been characterized by three distinct but interconnected waves – initially marked by increases in deaths involving prescription opioids in the 1990s (Warner et al., 2011), followed by heroin in 2010 (Rudd et al., 2014), and then synthetic opioids, largely IMF, in 2013 (Gladden et al., 2016; O'Donnell et al., 2017). During the first wave, a four-fold increase in the availability of prescription opioids led a to a four-fold increase in the number of prescription opioid-involved deaths. In the

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second wave, increased supply of low cost, high purity heroin and increased demand for opioids resulted in increasing deaths involving heroin. The third wave was driven by an increase in IMF and fentanyl analogs in the illicit drug supply, leading to a corresponding increase in deaths involving synthetic opioids (Jones et al., 2020). Recent increases also have included overdoses involving cocaine and psychostimulants with abuse potential (e.g., methamphetamine) (referred to as psychostimulants), with and without opioid co-involvement (Hoots et al., 2020; Kariisa et al., 2019; Mattson et al., 2021). Factors such as lower costs, increased potency and higher availability have likely driven the increases in stimulant-involved deaths (Mattson et al., 2021). Additionally, opioids, primarily synthetic opioids have been a primary cause of increases in death rates involving cocaine and have also contributed to increased death rates involving psychostimulants (Jones et al., 2018; Kariisa et al., 2019; McCall Jones et al., 2017).

The evolving polysubstance drug overdose landscape adds to an already complex public health crisis and requires surveillance to inform prevention efforts tailored to groups at highest risk. The increasing presence of highly potent IMF and fentanyl analogs in the drug supply may be leading to a worsening of stimulant-involved deaths among certain racial and ethnic groups who typically have a lower prevalence of illicit opioid use (Jordan et al., 2021). However, it is less understood how the proliferation of certain opioids has impacted trends and recent death rates involving stimulants among racial and ethnic minority populations. Although overdoses involving opioids overall have disproportionately impacted non-Hispanic White persons, death rates for overdoses involving stimulants are significantly higher among minority populations (Cano, 2021; Kariisa et al., 2019). Historically, death rates for cocaine-involved overdoses have been markedly higher for non-Hispanic Black persons, and death rates for overdoses involving psychostimulants have been highest among non-Hispanic American Indians/Alaska Native persons, compared to other racial and ethnic groups (Cano, 2021; Kariisa et al., 2019).

As the opioid overdose crisis has evolved, analyses of racial and ethnic differences in deaths involving stimulants are important for understanding the impact of the broader overdose epidemic on diverse groups. These analyses are also necessary to inform culturally competent overdose prevention efforts that account for structural barriers and social determinants of health. Therefore, to identify differences that could inform prevention efforts, our analysis was designed to: 1) describe overall trends during 2004–2019 for stimulant-involved overdose rates by race and ethnicity and examine the influence of opioids on stimulant overdose rates; 2) examine the role of opioids and synthetic opioids in stimulant-involved overdose death rates by race and ethnicity from 2018 to 2019; and 3) examine differences in demographics and geography by race and ethnicity for stimulant-involved overdose deaths in 2019.

2. Methods

2.1. Data source

National Vital Statistics System multiple cause-of-death mortality files for 2004–2019, which include information reported on death certificates, were used to examine death rates of overdoses involving cocaine and psychostimulants with abuse potential. Drug overdose deaths were identified using the following International Classification of Diseases, Tenth Revision (ICD-10) underlying cause-of-death codes: X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), or Y10–Y14 (undetermined intent). Among deaths with drug overdose as the underlying cause, cocaine- and psychostimulant-involved overdose deaths were defined by a T40.5 and T43.6 ICD-10 multiple cause-of-death code, respectively. Deaths involving both cocaine and psychostimulants with abuse potential were included in the rates for each drug category; therefore, these are not mutually exclusive. Co-involvement of any opioid was defined as cocaine- or psychostimulant-involved deaths also having at least one of the following ICD-10 multiple cause-of-death codes: T40.0 (opium), T40.1 (heroin), T40.2 (natural and semi-synthetic opioids), T40.3 (methadone), T40.4 (synthetic opioids other than methadone), or T40.6 (other and unspecified narcotics). Co-involvement of synthetic opioids was defined as cocaine- or psychostimulant-involved deaths also having the following ICD-10 multiple cause-of-death code: T40.4 (synthetic opioids other than methadone).

2.2. Statistical analysis

Death rates (all per 100,000 population) were age-adjusted to the 2000 U.S. standard population using the direct method. Annual age-adjusted death rates from 2004 to 2019 were stratified by the following racial and ethnic groups using U.S. Census bridged-race population estimates: non-Hispanic White (White), non-Hispanic Black (Black), non-Hispanic Asian/Pacific Islander (A/PI), non-Hispanic American Indian/Alaska Native (AI/AN), and Hispanic persons. Persons categorized as Hispanic could be of any race. Rates based on <20 deaths and counts <10 were suppressed to avoid presentation of unstable rates and to meet confidentiality requirements, respectively.

Joinpoint regression (version 4.8.0.1; National Cancer Institute) was used to conduct trend analyses of stimulant-involved overdoses with and without opioid co-involvement between 2004 and 2019 (Kim et al., 2000). Joinpoint uses log-linear regression to calculate the annual percentage change of each segment with an identified significant change in trend; a minimum of 5 consecutive time points is required. Results reported from these analyses identify significant trend increases and decreases as well as periods when rates were stable. An increasing or decreasing trend was defined as having an annual percent change greater or less than zero, respectively, and a 2-sided $p < 0.05$; increases or decreases that were not statistically significant were defined as stable.

To assess changes in stimulant-involved overdose deaths between 2018 and 2019, the annual number and age-adjusted rate of drug overdose deaths involving cocaine and psychostimulants with abuse potential were calculated for both years, overall and by racial and ethnic group for the following stratifications: 1) any opioid co-involvement and 2) synthetic opioid co-involvement.

Differences in demographic and geographic characteristics of cocaine- and psychostimulant-involved drug overdose deaths that occurred in 2019 were assessed by racial and ethnic group. Region was categorized by the four U.S. Census Bureau regions (Northeast, Midwest, South, and West), and county urbanization level was determined by the 2013 National Center for Health Statistics urban-rural classification scheme for counties (Ingram and Franco, 2014; United States Census Bureau, 2020).

Analyses of age-adjusted death rate changes between 2018 and 2019, and analyses of between group differences in 2019 age-adjusted death rates, used z-tests when deaths were ≥100 and nonoverlapping confidence intervals based on a gamma distribution when deaths were <100 in either year; $p < 0.05$ was considered statistically significant (Murphy et al., 2013). Analyses were conducted in SAS (version 9.4; SAS Institute). Results reported represent statistically significant findings unless otherwise specified.

3. Results

3.1. Trend patterns in stimulant overdoses with and without opioid co-involvement

3.1.1. Cocaine

Joinpoint analysis of trends identified that rates of overall cocaine-involved overdose deaths (i.e., for all racial and ethnic groups combined) decreased from 2004 to 2012 (1.9–1.4 per 100,000 persons) and then rose sharply from 2012 through 2019 (1.4–4.9). This pattern was also observed among most racial and ethnic groups (i.e., decrease during

the initial period beginning in 2004, followed by an increase) (Fig. 1a). Among White persons, rates of cocaine-involved overdose deaths decreased from 2004 to 2013 (1.7–1.5) and then increased from 2013 to 2017 (1.5–4.6). Unlike other racial and ethnic groups, the rate of cocaine-involved overdose deaths among White persons remained stable from 2017 to 2019 (4.6 per 100,000 persons in each of these three years). Cocaine-involved overdose death rates were consistently highest for Black persons compared to other racial and ethnic groups. Rates among Black persons decreased from 2004 to 2012 (4.3–3.0) and then increased from 2012 to 2019 (3.0–10.7) (Fig. 1a).

When examining opioid and cocaine co-involvement trends, overall overdose rates and rates among White persons were stable from 2004 to 2013, increased from 2013 to 2017 (overall: 0.9–3.2; White persons: 1.1–3.8) and were stable from 2017 to 2019. Rates of overdoses co-involving opioids and cocaine were highest for Black persons from 2004 to 2006 and again from 2016 to 2019, with rates stable from 2004 to 2012 and increasing from 2012 to 2019 (1.0–7.0) (Fig. 1b).

In the absence of opioid co-involvement, there also were significant trends for rates of cocaine-involved overdoses. Overall overdose rates and rates among White persons were stable from 2004 to 2006, decreased from 2006 to 2010 (overall:1.4–0.6; White persons: 1.0–0.40), and increased from 2010 to 2019 (overall: 0.6–1.1; White persons: 0.4–0.8). Trends were consistently highest for Black persons, with rates stable from 2004 to 2006, decreasing from 2006 to 2012 (4.1–2.0), and increasing from 2012 to 2019 (2.0–3.7). Unlike other groups, among Black persons, cocaine-involved rates that did not co-involve opioids were higher than those co-involving opioids until 2016, when rates co-involving opioids (3.2) surpassed those not co-involving opioids (2.9) (Fig. 1b and c).

3.1.2. Psychostimulants

Joinpoint analysis of trends identified that psychostimulant-involved death rates were stable from 2004 to 2009 and increased from 2009 through 2019 (0.5–5.0 per 100,000). This pattern was also observed among most racial and ethnic groups (i.e., stable during the initial period beginning in 2004, followed by an increase). Examining trends by race and ethnicity identified that psychostimulant-involved rates among White persons were stable from 2004 to 2010 and increased from 2010 to 2019 (0.7–6.4). Psychostimulant-involved overdose rates were consistently highest for AI/AN persons compared to other racial and ethnic groups from 2004–2019. Among AI/AN persons, rates decreased from 2004 to 2007 (1.3–0.9) and increased from 2007 to 2019 (0.9–12.9) (Fig. 2a).

Trend analysis examining rates of overdoses co-involving opioids and psychostimulants identified that overall rates and those among White persons increased from 2004 to 2012 (overall: 0.1–0.3; White persons: 0.2–0.4), with a sharper increase from 2012 to 2019 (overall: 0.3–2.8; White persons: 0.4–3.7). Among AI/AN persons, these trends were not analyzed prior to 2012 because of unstable rates; however, from 2012 to 2019, rates increased (1.2–5.9) (Fig. 2b).

In the absence of opioid co-involvement, there also were significant trends for rates of psychostimulant-involved overdoses. Overall rates and those among White persons were stable from 2004 to 2009 before increasing from 2009 to 2019 (overall: 0.3–2.3; White persons: 0.4–2.6). Trends prior to 2010 were not examined for AI/AN persons because of unstable rates; however, from 2010 to 2019, rates involving psychostimulants that did not co-involve opioids increased (1.2–7.0) (Fig. 2c).

3.2. Changes in stimulant deaths and opioid and synthetic opioid co-involvement, 2018 to 2019

3.2.1. Cocaine

Between 2018 and 2019, overall cocaine-involved death rates increased by 8.9% (4.5–4.9 per 100,000), whereas death rates of overdoses co-involving cocaine and opioids increased by 11.8–3.8; rates of cocaine-involved overdoses that did not co-involve opioids did not change significantly. In addition, death rates of overdoses co-involving both cocaine and synthetic-opioids increased 14.3 % (2.8–3.2); rates

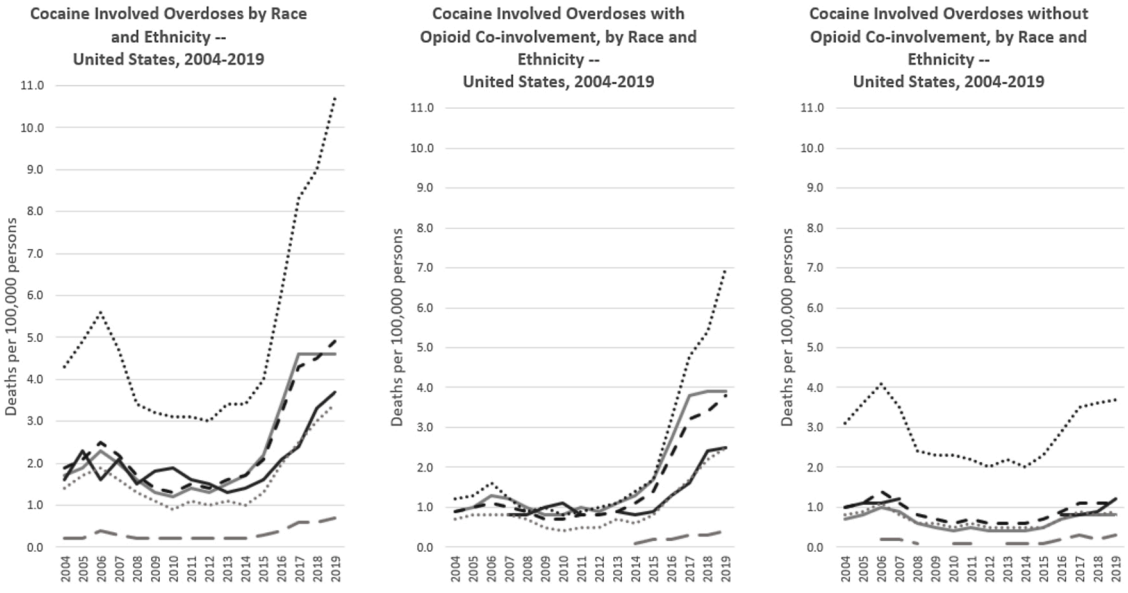

Fig. 1. a-c. Age-adjusted rates of drug overdose deaths involving cocaine overall and with or without opioid co-involvement by race and ethnicity – United States, 2004–2019.

NH- non-Hispanic.
AI/AN – American Indian/Alaska Native.
A/PI – Asian/Pacific Islander.

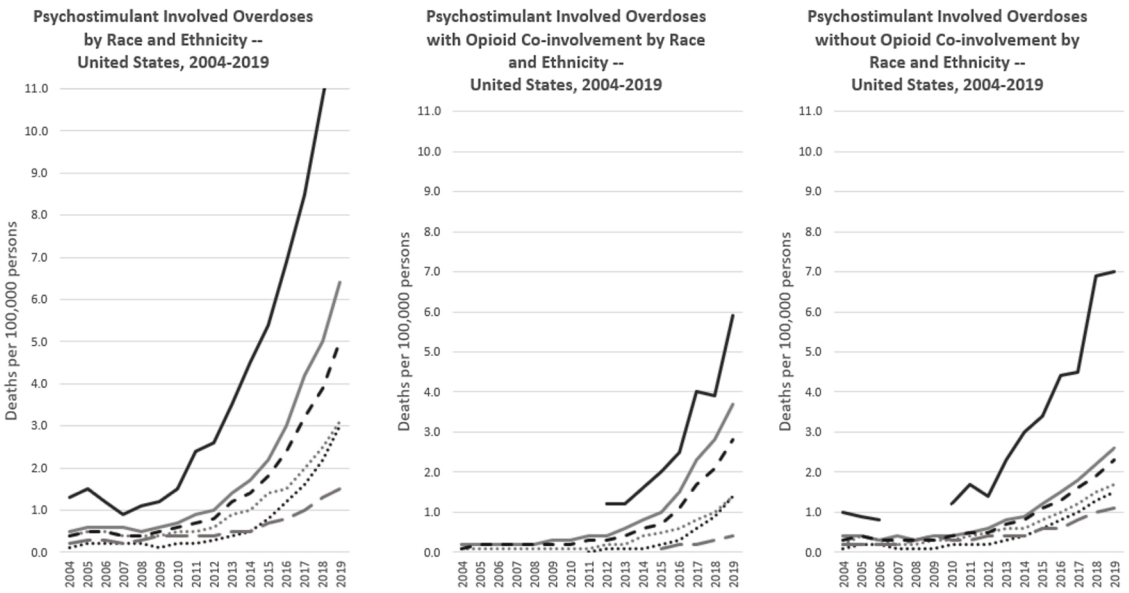

Fig. 2. a-c. Age-adjusted rates of drug overdose deaths involving psychostimulants with abuse potential overall and with and without any opioid co-involvement by race and ethnicity – United States, 2004-2019.

Legend

NH- non-Hispanic.
AI/AN – American Indian/Alaska Native.
A/PI – Asian/Pacific Islander.

of cocaine-involved overdoses that did not co-involve synthetic opioids decreased by 5.6 % (1.8–1.7) (Table 1). Among racial and ethnic groups, death rates of overdoses co-involving cocaine and opioids increased by 29.6 % for Black persons (5.4–7.0) and by 13.6 % for Hispanic persons (2.2–2.5) (Table 2). No racial and ethnic group experienced a significant change in cocaine-involved death rates in the absence of opioid co-involvement (Table 3). During 2018–2019, rates for overdoses co-involving cocaine and synthetic opioids increased by 6.5 % for White persons (3.1–3.3), 33.3 % for Black persons (4.5–6.0), and 31.3 % for Hispanic persons (1.6–2.1) (Table 4). In the absence of synthetic opioid co-involvement, cocaine-involved rates decreased for by 6.7 % White persons (1.5–1.4) but increased by 13.3 % for Hispanic persons (3.0–3.4) (Table 5).

3.2.2. *Psychostimulants*

During 2018–2019, psychostimulant-involved death rates increased by 28.2 % (3.9–5.0 per 100,000); rates also increased for psychostimulant-involved overdoses that did and did not co-involve opioids (33.3 % [2.1–2.8] and 21.1 % [1.9–2.3], respectively). In addition, rates co-involving psychostimulant and synthetic opioids rates increased by 50.0 % (1.2–1.8); rates that did not co-involve synthetic opioids increased by 14.3 % (2.8–3.2) (Table 1). Among racial and ethnic groups, death rates co-involving psychostimulant and opioids increased by 32.1 % for White persons (2.8–3.7), 55.6 % for Black persons (0.9–1.4), 51.3 % for AI/AN persons (3.9–5.9), and 40.0 % for Hispanic persons (1.0–1.4) (Table 2). In the absence of opioid co-involvement, psychostimulant-involved overdose rates increased by 18.2 % for White persons (2.2–2.6), 15.4 % for Black persons (1.3–1.5), and 13.3 % for Hispanic persons (1.5–1.7) (Table 3). Death rates co-involving psychostimulants and synthetic opioids from 2018 to 2019 increased by 47.1 % for White persons (1.7–2.5), 66.7 % for Black persons (0.6–1.0), and 133.3 % for Hispanic persons (0.3–0.7) (Table 4).

Table 1
Annual number and age-adjusted rate of drug overdose deaths involving cocaine and psychostimulants with abuse potential, by any opioid co-involvement – United States, 2018 and 2019.

Decedent characteristic	Cocaine						Psychostimulants with Abuse Potential					
	2018		2019		Change from 2018 to 2019		2018		2019		Change from 2018 to 2019	
	No.	Rate	No.	Rate	Absolute rate change	% change in rate	No.	Rate	No.	Rate	Absolute rate change	% change in rate
All	14,666	4.5	15,883	4.9	0.4*	8.9*	12,676	3.9	16,167	5.0	1.1*	28.2*
With Any Opioid Co-involvement	10,887	3.4	11,998	3.8	0.4*	11.8*	6,405	2.1	8,642	2.8	0.7*	33.3*
Without Any Opioid Co-involvement	3,779	1.1	3,885	1.1	0.0	0.0	6,271	1.9	7,525	2.3	0.4*	21.1*
With Synthetic Opioid Co-involvement	8,659	2.8	10,139	3.2	0.4*	14.3*	3,613	1.2	5,564	1.8	0.6*	50.0*
Without Synthetic Opioid Co-involvement	6,007	1.8	5,744	1.7	−0.1*	−5.6*	9,063	2.8	10,603	3.2	0.4*	14.3*

* p-value<0.05.

Table 2
Annual number and age-adjusted rate of drug overdose deaths involving cocaine and psychostimulants with abuse potential with any opioid co-involvement by race and ethnicity – United States, 2018 and 2019.

Race and Hispanic origin	Cocaine with Any Opioid Co-involvement						Psychostimulants with Abuse Potential with Any Opioid Co-involvement					
	2018		2019		Change from 2018 to 2019		2018		2019		Change from 2018 to 2019	
	No.	Rate	No.	Rate	Absolute rate change	% change in rate	No.	Rate	No.	Rate	Absolute rate change	% change in rate
White, non-Hispanic	7070	3.9	7160	3.9	0.0	0.0	5239	2.8	6895	3.7	0.9*	32.1*
Black, non-Hispanic	2337	5.4	3045	7.0	1.6*	29.6*	362	0.9	604	1.4	0.5*	55.6*
American Indian/Alaska Native, non-Hispanic	61	2.4	67	2.5	0.1	4.2	100	3.9	152	5.9	2.0*	51.3*
Asian/Pacific Islander, non-Hispanic	74	0.3	100	0.4	0.1	33.3	72	0.3	89	0.4	0.1	33.3
Hispanic	1271	2.2	1515	2.5	0.3*	13.6*	593	1.0	827	1.4	0.4*	40.0*

* p-value<0.05.

Table 3
Annual number and age-adjusted rate of drug overdose deaths involving cocaine and psychostimulants with abuse potential without opioid co-involvement by race and ethnicity – United States, 2018 and 2019.

Race and Hispanic origin	Cocaine without Opioid Co-involvement						Psychostimulants with Abuse Potential without Opioid Co-involvement					
	2018		2019		Change from 2018 to 2019		2018		2019		Change from 2018 to 2019	
	No.	Rate	No.	Rate	Absolute rate change	% change in rate	No.	Rate	No.	Rate	Absolute rate change	% change in rate
White, non-Hispanic	1596	0.8	1597	0.8	0.0	0.0	4425	2.2	5387	2.6	0.4*	18.2*
Black, non-Hispanic	1624	3.6	1663	3.7	0.1	2.8	553	1.3	647	1.5	0.2*	15.4*
American Indian/Alaska Native, non-Hispanic	27	0.9	33	1.2	0.3	33.3	178	6.9	185	7.0	0.1	1.4
Asian/Pacific Islander, non-Hispanic	52	0.2	64	0.3	0.1	50.0	216	1.0	249	1.1	0.1	10.0
Hispanic	441	0.8	491	0.9	0.1	12.5	825	1.5	969	1.7	0.2*	13.3*

* p-value<0.05.

Table 4
Annual number and age-adjusted rate of drug overdose deaths involving cocaine and psychostimulants with abuse potential with synthetic opioid co-involvement by race and ethnicity – United States, 2018 and 2019.

Race and Hispanic origin	Cocaine with Synthetic Opioid Co-involvement						Psychostimulants with Abuse Potential with Synthetic Opioid Co-involvement					
	2018		2019		Change from 2018 to 2019		2018		2019		Change from 2018 to 2019	
	No.	Rate	No.	Rate	Absolute rate change	% change in rate	No.	Rate	No.	Rate	Absolute rate change	% change in rate
White, non-Hispanic	5623	3.1	6064	3.3	0.2*	6.5*	3079	1.7	4573	2.5	0.8*	47.1*
Black, non-Hispanic	1935	4.5	2608	6.0	1.5*	33.3*	233	0.6	424	1.0	0.4*	66.7*
American Indian/Alaska Native, non-Hispanic	40	1.5	57	2.1	0.6	40.0	45	1.8	76	3.0	1.2	66.7
Asian/Pacific Islander, non-Hispanic	54	0.2	79	0.3	0.1	50.0	30	0.1	44	0.2	0.1	100.0
Hispanic	958	1.6	1243	2.1	0.5*	31.3*	210	0.3	402	0.7	0.4*	133.3*

* p-value<0.05.

In the absence of synthetic opioid co-involvement, psychostimulant-involved death rates increased by 18.2 % for White persons (3.3–3.9), 18.8 % for Black persons (1.6–1.9), and 14.3 % for Hispanic persons (2.1–2.4) (Table 5).

3.3. Differences in stimulant-involved death rates by demographics and opioid involvement by race/ethnicity, 2019

3.3.1. Cocaine

In 2019, cocaine-involved overdose deaths accounted for 15,883 or 22.5 % of drug overdose deaths; higher death rates occurred among Black persons (10.7 per 100,000; 95 % Confidence Interval (CI): 10.4, 11.0) and lower rates among A/PI (0.7; 95 % CI: 0.6, 0.8), AI/AN (3.7; 95 % CI: 3.0, 4.4), and Hispanic persons (3.4; 95 % CI: 3.2, 3.5) when compared to White persons (4.6; 95 % CI: 4.5, 4.7). Specifically, death rates co-involving cocaine and opioids were nearly twice as high among Black persons (7.0; 95 % CI: 6.8, 7.3) when compared to White persons (3.9; 95 % CI: 3.8, 4.0). In the absence of opioid co-involvement, cocaine-involved death rates were more than four times as high among Black persons (3.7; 95 % CI: 3.5, 3.9) as those among White persons (0.8; 95 % CI: 0.76, 0.8). When examining cocaine and synthetic opioid co-involvement, Black persons experienced death rates that were nearly twice as high (6.0; 95 % CI: 5.8, 6.3) as those of White persons (3.3; 95 % CI: 3.2, 3.4). In the absence of synthetic opioid co-involvement, cocaine-involved death rates among Black persons were more than 3 times as high (4.7; 95 % CI: 4.5, 4.9) when compared to White persons (1.4; 95 % CI: 1.3, 1.5). Among Black persons, rates of overdoses involving cocaine were higher for males (16.4; 95 % CI: 15.8,

Table 5
Annual number and age-adjusted rate of drug overdose deaths involving cocaine and psychostimulants with abuse potential without synthetic opioid co-involvement by race and ethnicity – United States, 2018 and 2019.

Race and Hispanic origin	Cocaine without Synthetic Opioid Co-involvement						Psychostimulants with Abuse Potential without Synthetic Opioid Co-involvement					
	2018		2019		Change from 2018 to 2019		2018		2019		Change from 2018 to 2019	
	No.	Rate	No.	Rate	Absolute rate change	% change in rate	No.	Rate	No.	Rate	Absolute rate change	% change in rate
White, non-Hispanic	3043	1.5	2693	1.4	−0.1*	−6.7*	6585	3.3	7709	3.9	0.6*	18.2*
Black, non-Hispanic	2026	4.5	2100	4.7	0.2	4.4	682	1.6	827	1.9	0.3*	18.8*
American Indian/Alaska Native, non-Hispanic	48	1.8	43	1.6	−0.2	−11.1	233	9.0	261	9.9	0.9	10.0
Asian/Pacific Islander, non-Hispanic	72	0.3	85	0.4	0.1	33.3	258	1.2	294	1.3	0.1	8.3
Hispanic	1712	3.0	2006	3.4	0.4*	13.3*	1208	2.1	1394	2.4	0.3*	14.3*

* p-value<0.05.

16.9) compared with females (5.8, 95 % CI 5.5, 6.2), persons aged 55−64 (27.7, 95 % CI 26.3,29.2), persons living in the Midwest (17.2, 95 % CI: 16.2, 18.1) and Northeast (15.7, 95 % CI:14.8,16.6) and for persons living in large central metro counties (15.2, 95 % CI:14.6, 15.7) (Table 6).

3.3.2. Psychostimulants

In 2019, psychostimulant-involved overdose deaths accounted for 16,167 or 22.9 % of drug overdose deaths; higher death rates occurred among AI/AN persons (12.9; 95 % CI:11.5, 14.3) and lower rates among A/PI (1.5; 95 % CI: 1.4,1.7), Black (3.0; 95 % CI: 2.8, 3.1), and Hispanic persons (3.1; 95 % CI: 3.0, 3.3) when compared to White persons (6.4; 95 % CI: 6.3,6.5). Particularly, death rates co-involving

Table 6
Number and age-adjusted rate of drug overdose deaths involving cocaine by opioid involvement, sex, age, race and ethnicity, U.S. Census region, and county urbanization levels – United States, 2019.

Variable	White, non-Hispanic		Black, non-Hispanic		American Indian Alaska Native, non-Hispanic		Asian Pacific Islander, non-Hispanic		Hispanic	
	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval
Overall	8,757 (4.6) r	(4.5,4.7)	4,708 (10.7*)	(10.4,11.0)	100 (3.7*)	(3.0,4.4)	164 (0.7*)	(0.6,0.8)	2,006 (3.4*)	(3.2,3.5)
With Any Opioid Co-involvement	7,160 (3.9) r	(3.8,4.0)	3,045 (7.0*)	(6.8,7.3)	67 (2.5*)	(1.9,3.2)	100 (0.4*)	(0.4,0.5)	1,515 (2.5*)	(2.4,2.7)
Without Any Opioid Co-involvement	1,597 (0.8) r	(0.76,0.8)	1,663 (3.7*)	(3.5,3.9)	33 (1.2)	(0.8,1.7)	64 (0.3*)	(0.2,0.4)	491 (0.9*)	(0.8,1.0)
With Synthetic Opioid Co-involvement	6,064 (3.3) r	(3.2,3.4)	2,608 (6.0*)	(5.8,6.3)	57 (2.1*)	(1.6,2.8)	79 (0.3*)	(0.3,0.4)	1,243 (2.1*)	(2.0,2.2)
Without Synthetic Opioid Co-involvement	2,693 (1.4) r	(1.3,1.5)	2,100 (4.7*)	(4.5,4.9)	43 (1.6)	(1.2,2.2)	85 (0.4*)	(0.3,0.5)	763 (1.3)	(1.2,1.4)
Female	2,542 (2.8)	(2.7,2.9)	1,340 (5.8)	(5.5,6.2)	44 (3.2)	(2.3,4.3)	25 (0.2)	(0.1,0.3)	347 (1.2)	(1.1,1.3)
Male	6,215 (6.5)	(6.4,6.7)	3,368 (16.4)	(15.8,16.9)	56 (4.3)	(3.2,5.6)	139 (1.3)	(1.1,1.5)	1,659 (5.5)	(5.3,5.8)
0-14	–	–	–	–	–	–	–	–	–	–
15-24	516 (2.2)	(2.0,2.4)	121 (1.9)	(1.5,2.2)	13 (–)	–	20 (0.7)	(0.5,1.2)	180 (1.8)	(1.6,2.1)
25-34	2,320 (9.0)	(8.7,9.4)	636 (9.3)	(8.6,10.1)	23 (5.4)	(3.4,8.1)	54 (1.5)	(1.1,2.0)	582 (6.1)	(5.6,6.6)
35-44	2,346 (9.8)	(9.4,10.2)	874 (15.9)	(14.9,17.0)	26 (7.7)	(5.0,11.3)	51 (1.6)	(1.2,2.0)	562 (6.5)	(6.0,7.0)
45-54	2,024 (8.0)	(7.6,8.3)	1,229 (23.6)	(22.3,24.9)	18 (–)	–	26 (0.9)	(0.6,1.4)	395 (5.5)	(5.0,6.1)
55-64	1,348 (4.5)	(4.3,4.8)	1,396 (27.7)	(26.3,29.2)	18 (–)	–	10 (–)	–	244 (4.8)	(4.2,5.4)
65+	200 (0.5)	(0.4,0.6)	447 (8.8)	(8.0,9.7)	–	–	–	–	42 (0.9)	(0.7,1.2)
Midwest	2,048 (4.3)	(4.1,4.5)	1,270 (17.2)	(16.2,18.1)	21 (4.8)	(2.9,7.3)	20 (0.7)	(0.4,1.1)	231 (4.4)	(3.8,4.9)
Northeast	2,905 (8.6)	(8.3,8.9)	1,102 (15.7)	(14.8,16.6)	18 (–)	–	45 (1.1)	(0.8,1.4)	805 (9.9)	(9.2,10.6)
South	3,128 (4.6)	(4.4,4.8)	1,988 (7.9)	(7.5,8.2)	44 (4.9)	(3.6,6.7)	40 (0.8)	(0.5,1.0)	565 (2.5)	(2.3,2.7)
West	676 (1.7)	(1.6,1.9)	348 (8.1)	(7.2,9.0)	17 (–)	–	59 (0.6)	(0.5,0.8)	405 (1.7)	(1.5,1.9)
Large central metro	2,698 (6.0)	(5.8,6.3)	2,802 (15.2)	(14.6,15.7)	29 (6.3)	(4.2,9.1)	85 (0.7)	(0.6,0.9)	1,091 (3.9)	(3.7,4.1)
Large fringe metro	2,799 (5.7)	(5.5,5.9)	820 (7.5)	(7.0,8.0)	–	–	47 (0.8)	(0.6,1.1)	407 (3.3)	(3.0,3.7)
Medium Metro	1,930 (4.6)	(4.4,4.8)	712 (9.3)	(8.6,10.0)	17 (–)	–	24 (0.8)	(0.5,1.1)	371 (3.1)	(2.8,3.4)
Small metro	598 (3.1)	(2.8,3.3)	203 (7.1)	(6.1,8.1)	–	–	–	–	75 (2.4)	(1.9,3.0)
Micropolitan	506 (2.7)	(2.5,2.9)	122 (5.7)	(4.7,6.8)	31 (5.9)	(4.0,8.4)	–	–	51 (2.1)	(1.5,2.7)
Noncore	226 (1.8)	(1.5,2.0)	49 (3.0)	(2.2,4.0)	–	–	–	–	11 (–)	–

r- Referent group; counts less than 10 are suppressed. Rates and 95 % confidence intervals are suppressed for counts less than 20. *p-value<0.05.
Between group analyses were limited to overall rates of cocaine-involved deaths, rates of cocaine and opioid co-involved deaths, rates of cocaine-involved deaths that did not co-involve opioids, rates of cocaine and synthetic opioid co-involved deaths, and rates of cocaine-involved deaths that did not co-involve synthetic opioids.

psychostimulants and opioids were more than one and a half times as high among AI/AN persons (5.9; 95 % CI: 4.9,6.8) when compared to White persons (3.7; 95 % CI: 3.6,3.8). Also, in the absence of opioid co-involvement, psychostimulant-involved death rates were more than twice as high among AI/AN persons (7.0; 95 % CI: 6.0,8.0) as rates among White persons (2.6; 95 % CI: 2.5,2.7). There was no significant difference between the rates for AI/AN and White persons when examining psychostimulant and synthetic opioid co-involvement. In the absence of synthetic opioid co-involvement, psychostimulant-involved death rates among AI/AN persons were more than two and a half times as high (9.9; 95 % CI: 8.7,11.1) compared to death rates among White persons (3.9; 95 % CI: 3.8,4.0). Among AI/AN persons, psychostimulant-involved overdose death rates were highest for males (16.4, 95 % CI: 14.1, 18.7) and persons in the West and Midwest regions (16.7, 95 % CI: 14.3, 19.1 and 16.0, 95 % CI: 12.5, 20.2, respectively) (Table 7).

4. Discussion

Overdose deaths involving stimulants have increased significantly in recent years, with racial and ethnic minority groups disproportionately affected. Our study aimed to better understand differences between racial and ethnic groups that could inform prevention efforts. During 2004–2019, death rates for overdoses involving cocaine and psychostimulants were consistently higher among Black and AI/AN persons, respectively. Between 2013 and 2019, most racial and ethnic groups had increases in rates of overdoses co-involving cocaine and opioids as well as psychostimulants and opioids. Unlike cocaine, psychostimulant-involved rates also increased in the absence of opioid co-involvement, likely because of increasing methamphetamine availability (Drug Enforcement Administration, 2021). However, overdoses during 2004–2019 also reveal a disproportionate impact on certain racial and ethnic minority groups, as cocaine- and opioid co-involved rates plateaued in 2019 among White persons but continued to increase among Black and Hispanic persons. Among Black persons, from 2016 to 2019, the death rates co-involving cocaine and opioids surpassed cocaine-involved death rates that did not co-involve opioids. Between 2018 and 2019, deaths co-involving cocaine and synthetic opioids increased slightly for White persons but increased by over 30 % for Black and Hispanic persons. Furthermore, White persons were the only group to experience decreases in cocaine-involved overdoses in the absence of synthetic opioid co-involvement. Lastly, from 2018 to 2019, increases in rates co-involving psychostimulants and opioids were greater than those without opioid co-involvement for White, Black, AI/AN, and Hispanic persons, suggesting that opioids, specifically synthetic opioids, may play a larger role in driving recent increases in deaths among these populations.

These analyses support findings from previous studies indicating a disproportionate impact of cocaine-involved overdoses among Black persons and psychostimulant-involved overdoses among AI/AN persons (Cano, 2021; Kariisa et al., 2019; Mustaquim et al., 2021). Additionally,

Table 7
Number and age-adjusted rate of drug overdose deaths involving psychostimulants with abuse potential by opioid co-involvement, sex, age, race and ethnicity, U.S. Census region, and county urbanization levels – United States, 2019.

Variable	White, non-Hispanic		Black, non-Hispanic		American Indian Alaska Native, non-Hispanic		Asian Pacific Islander, non-Hispanic		Hispanic	
	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval	Number (Rate)	95 % Confidence Interval
Overall	12,282 (6.4) [r]	(6.3,6.5)	1,251 (3.0*)	(2.8,3.1)	337 (12.9*)	(11.5,14.3)	338 (1.5*)	(1.4,1.7)	1,796 (3.1*)	(3.0,3.3)
With Any Opioid Co-involvement	6,895 (3.7) [r]	(3.6,3.8)	604 (1.4*)	(1.3,1.5)	152 (5.9*)	(4.9,6.8)	89 (0.4*)	(0.3,0.5)	827 (1.4*)	(1.3,1.5)
Without Any Opioid Co-involvement	5,387 (2.6) [r]	(2.5,2.7)	647 (1.5*)	(1.4,1.6)	185 (7.0*)	(6.0,8.0)	249 (1.1*)	(1.0,1.2)	969 (1.7*)	(1.6,1.8)
With Synthetic Opioid Co-involvement	4,573 (2.5) [r]	(2.5,2.6)	424 (1.0*)	(0.9,1.1)	76 (3.0)	(2.3,3.7)	44 (0.2*)	(0.1,0.3)	402 (0.7*)	(0.6,0.7)
Without Synthetic Opioid Co-involvement	7,709 (3.9) [r]	(3.8,4.0)	827 (1.9*)	(1.8,2.0)	261 (9.9*)	(8.7,11.1)	294 (1.3*)	(1.1,1.5)	1,394 (2.4*)	(2.3,2.5)
Female	3,815 (4.1)	(3.9,4.2)	288 (1.3)	(1.2,1.5)	130 (9.5)	(7.8,11.2)	78 (0.7)	(0.5,0.8)	388 (1.3)	(1.2,1.5)
Male	8,467 (8.8)	(8.6,8.9)	963 (4.8)	(4.5,5.1)	207 (16.4)	(14.1,18.7)	260 (2.4)	(2.1,2.7)	1,408 (4.8)	(4.6,5.1)
0-14	17 (–)	–	–	–	–	–	–	–	–	–
15-24	656 (2.8)	(2.6,3.0)	62 (1.0)	(0.7,1.2)	23 (5.5)	(3.5,8.3)	24 (0.9)	(0.6,1.3)	142 (1.4)	(1.2,1.7)
25-34	2,825 (11.0)	(10.6,11.4)	291 (4.3)	(3.8,4.8)	84 (19.7)	(15.8,24.4)	73 (2.1)	(1.6,2.6)	407 (4.3)	(3.9,4.7)
35-44	3,263 (13.7)	(13.2,14.1)	364 (6.6)	(6.0,7.3)	93 (27.5)	(22.2,33.7)	84 (2.6)	(2.0,3.2)	497 (5.7)	(5.2,6.2)
45-54	2,849 (11.2)	(10.8,11.6)	243 (4.7)	(4.1,5.2)	79 (24.7)	(19.6,30.8)	84 (3.0)	(2.4,3.7)	403 (5.7)	(5.1,6.2)
55-64	2,219 (7.5)	(7.2,7.8)	220 (4.4)	(3.8,4.9)	44 (13.3)	(9.7,17.8)	62 (2.7)	(2.1,3.5)	293 (5.8)	(5.1,6.4)
65+	453 (1.1)	(1.0,1.2)	68 (1.3)	(1.0,1.7)	13 (–)	–	11 (–)	–	50 (1.1)	(0.8,1.4)
Midwest	2,737 (5.7)	(5.5,5.9)	223 (3.2)	(2.7,3.6)	70 (16.0)	(12.4,20.3)	25 (0.9)	(0.6,1.3)	61 (1.1)	(0.9,1.4)
Northeast	1,043 (3.1)	(2.9,3.3)	85 (1.4)	(1.1,1.7)	–	–	15 (–)	–	72 (0.9)	(0.7,1.1)
South	4,924 (7.4)	(7.2,7.6)	441 (1.8)	(1.7,2.0)	69 (8.0)	(6.2,10.2)	43 (0.8)	(0.6,1.1)	352 (1.6)	(1.4,1.8)
West	3,578 (8.5)	(8.2,8.8)	502 (12.0)	(11.0,13.1)	194 (16.7)	(14.3,19.1)	255 (2.5)	(2.2,2.8)	1,311 (5.9)	(5.6,6.2)
Large central metro	3,086 (6.7)	(6.5,7.0)	643 (3.7)	(3.4,4.0)	64 (13.6)	(10.4,17.5)	148 (1.3)	(1.1,1.5)	905 (3.3)	(3.0,3.5)
Large fringe metro	2,426 (4.9)	(4.7,5.1)	185 (1.7)	(1.5,2.0)	22 (6.3)	(3.9,9.6)	38 (0.6)	(0.5,0.9)	188 (1.6)	(1.3,1.8)
Medium metro	3,022 (7.2)	(7.0,7.5)	231 (3.0)	(2.6,3.4)	85 (15.5)	(12.3,19.3)	121 (3.6)	(3.0,4.3)	446 (3.9)	(3.6,4.3)
Small metro	1,380 (6.8)	(6.5,7.2)	86 (3.0)	(2.4,3.8)	45 (14.3)	(10.3,19.3)	20 (2.6)	(1.6,3.9)	100 (3.3)	(2.6,3.9)
Micropolitan	1,459 (7.6)	(7.2,8.0)	64 (3.0)	(2.3,3.9)	60 (12.4)	(9.4,16.1)	–	–	122 (4.8)	(4.0,5.7)
Noncore	909 (6.9)	(6.4,7.4)	42 (2.8)	(2.0,3.8)	61 (13.4)	(10.2,17.3)	–	–	35 (2.9)	(2.0,4.0)

r- Referent group; counts less than 10 are suppressed. Rates and 95 % confidence intervals are suppressed for counts less than 20. *p-value<0.05.
Between group analyses were limited to overall rates of psychostimulant-involved deaths, rates of psychostimulant and opioid co-involved deaths, rates of psychostimulant-involved deaths that did not co-involve opioids, rates of psychostimulant and synthetic opioid co-involved deaths, and rates of psychostimulant-involved deaths that did not co-involve synthetic opioids.

the impact of opioids on these observed increases overall and among specific racial and ethnic groups converges with prior analyses (Hoots et al., 2020; Kariisa et al., 2019; McCall Jones et al., 2017). The observed disparities in stimulant-involved overdose mortality among Black and AI/AN persons are not wholly explained by substances use patterns. Recent data have shown that rates of past-year cocaine use among Black and White persons are not significantly different (Cano et al., 2020); however, cocaine-involved overdose death rates among Black persons were more than twice as high as those among White persons in 2019. During 2016–2018, reported use of methamphetamine was more than three times as high as the national average for AI/AN persons aged 26 years old and older (2.6 % vs 0.7 %) (Center for Behavioral Health Statistics and Quality, 2019). However, despite a decline in reported methamphetamine use in 2019, increases continued in psychostimulant-involved mortality among AI/AN persons (Center for Behavioral Health Statistics and Quality, 2020). These increases in disproportionate stimulant-involved mortality rates among Black and AI/AN persons may partly result from unequal access to substance use treatment, and treatment biases that may result in disparities in healthcare quality and services (Lagisetty et al., 2019).

In addition to some of the potential inequities faced by minority populations, there are other factors that are likely worsening the surge in stimulant-involved death rates. These include increases in supply of methamphetamine as well as an eastward expansion, increasing co-involvement between stimulants and opioids (i.e., polysubstance), and the proliferation of fentanyl in the illicit drug market (Drug Enforcement Administration, 2021; Kariisa et al., 2019; Liu et al., 2020; O'Donnell et al., 2020). Deaths involving synthetic opioids have also been increasing among minority populations (Centers for Disease Control and Prevention, 2020b; Wilson et al., 2020). Therefore, the continued rise and availability of IMF in the stimulant drug supply likely has contributed to the increases in deaths among groups with historically lower prevalence of opioid use (Drug Enforcement Administration, 2021; Jordan et al., 2021). Unlike naloxone administration for overdoses involving opioids, those involving stimulants alone have no known overdose reversal agents (Hadland and Marshall, 2021).

The lack of approved pharmacotherapies and limited cognitive behavioral therapies for treatment of stimulant use disorder and overdose adds to the complexity of this epidemic (Ronsley et al., 2020). Although the efficacy of treatments and therapies for stimulant use disorder in the context of opioid use has not been consistently evaluated (Hedegaard et al., 2021), several treatments have shown promise for treating stimulant use disorder. A recent trial showed that the combination of naltrexone and bupropion was an effective treatment for persons with moderate or severe methamphetamine disorder (Trivedi et al., 2020). A combination of amphetamine and topiramate was also shown to be effective in reducing cocaine use among frequent cocaine users (Levin et al., 2020). While promising, these treatment combinations have not been approved by the Food and Drug Administration, and data are limited on different treatment responses among disproportionately affected groups (Ronsley et al., 2020). Among psychosocial approaches for treatment of substance use, contingency management (CM) has been found to be the most reliable and effective treatment for stimulant use disorder (Shoptaw et al., 2006; Ronsley et al., 2020). CM, a behavioral therapy that uses rewards or incentives to change behavior (e.g., drug abstinence), has been implemented in various treatment settings with diverse populations and has worked well alone or in combination with other psychosocial supports (De Crescenzo et al., 2018; Higgins et al., 2019) and pharmacotherapies (e.g., methadone) (Petry et al., 2015). However, several barriers have limited its widespread implementation. Barriers include a perceived incompatibility with 12-step treatment programs, concerns that CM may not translate to lasting behavior change, and limited funding for program costs (e.g., incentives offered to participants to change behavior, toxicology screens) (Higgins et al., 2019; Murphy et al., 2015; Petry et al., 2017).

There were limitations to these analyses. First, at autopsy, substances tested for and circumstances under which tests are performed vary by time and jurisdiction; therefore, improvements in toxicological testing might account for some reported stimulant increases. Second, 8 % (2018) and 6.3 % (2019) of death certificates did not include the specific drug(s) involved; although most death certificates specified drugs involved in overdoses, rates reported and analyzed likely reflect some degree of underreporting. Third, potential racial misclassification might lead to underestimates for certain groups, primarily for Hispanic, AI/AN and A/PI persons (Arias et al., 2008). Racial misclassification for AI/AN persons varies significantly by region and may result in underreporting by approximately 40 % (Joshi et al., 2018). Fourth, analyses of between group differences in 2019 age-adjusted rates were limited to overall rates of stimulant-involved deaths, rates of stimulant-involved deaths that did and did not co-involve opioids, and rates of stimulant-involved deaths that did and did not co-involve synthetic opioids. Additional stimulant-involved between group analyses by sex, age, and geographic characteristics were not examined because of multiple comparisons concerns. Finally, given the small numbers of deaths and the inability to calculate stable rates among some racial and ethnic groups prior to 2015, identifying increasing trends among stimulant-involved death rates across earlier years was limited.

Overdose deaths involving stimulants are disproportionately affecting racial and ethnic minority populations. This disproportionate impact is coupled with barriers to accessing healthcare and being underserved in the medical community. Social determinants of health, such as socioeconomic inequities, further compound challenges faced by certain racial and ethnic minority populations and may be contributing to negative health outcomes, including increased overdose deaths. Overdose prevention and intervention efforts at the federal, state, and local level can incorporate culturally tailored strategies to effectively address the overdose epidemic among racial and ethnic minority populations, such as including religion and spirituality in the development of substance use disorder treatments to improve participation and retention among minority groups (James and Jordan, 2018). However, structural and policy-level interventions (e.g., equitable access to buprenorphine) are also pertinent to address the systemic challenges that may contribute to initiation of substance use and misuse and substance use disorder as well as barriers to accessing treatment and other risk reduction services (Lagisetty et al., 2019). Although evidenced-based overdose prevention and treatment efforts exist, these approaches are not accessible equitably, placing certain populations at even greater risk for experiencing a repeat overdose or a fatal overdose (Dayton et al., 2020; Kunins, 2020; Lagisetty et al., 2019). Greater attention from clinicians, public health professionals, policy makers, and other stakeholders is needed to address these issues around structural inequities. Additionally, investments in researching and implementing cognitive behavioral therapies and treatments for substances, other than opioids, are strongly warranted given the evolving nature of substances involved in drug overdoses. Naloxone distribution and accessibility, medication for opioid use disorder, and other opioid therapies remain pertinent for persons using stimulants, particularly cocaine, given the large proportion of opioid co-involvement in associated deaths. However, additional evidence-based therapies and treatment approaches are needed for psychostimulant-involved overdoses, specifically methamphetamine. For most racial and ethnic minority groups, opioid co-involvement in psychostimulant overdoses was observed in less than half of deaths, reinforcing the need for this investment, particularly among populations at high risk of overdose.

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Contributors

MK conceived the study, conducted data analyses, interpretated the

data, and wrote the manuscript. PS interpreted the data, wrote and revised the manuscript. LS conducted data analyses, interpreted the data and revised the manuscript. NW conducted data analyses, interpreted the data and revised the manuscript. ND reviewed and interpreted the data, wrote and revised the manuscript. All authors have approved the final article.

CDC disclaimer

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Declaration of Competing Interest

The authors report no declarations of interest.

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VIEWPOINT

Increases in Disparities in US Drug Overdose Deaths by Race and Ethnicity

Opportunities for Clinicians and Health Systems

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For more than a decade, drug overdose deaths have been the leading cause of injury death in the US. During the COVID-19 pandemic and its related stressors and disruptions in access to care, the number of overdose deaths increased substantially and are predicted to account for more than 107 000 deaths in the US in 2021.[1] The unprecedented increase in overdose deaths has been fueled by the continued proliferation of highly lethal synthetic opioids, such as illicitly manufactured fentanyl and fentanyl analogues, and a resurgence of stimulants, particularly methamphetamine, into the illicit drug supply.[2] Importantly, as overdose deaths have increased, the demographic profile of those dying has shifted and disproportionately affects certain racial and ethnic minority populations.[3] A multisectoral approach that includes structural and policy-level changes and clinician- and health-system–based approaches, with an intentional focus on racial and ethnic disparities and the long-standing inequities that contribute to increased risk for overdose, is essential to respond to this urgent public health crisis.

A recent report by the Centers for Disease Control and Prevention (CDC), using data from the State Unintentional Drug Overdose Reporting System (SUDORS), found that in 25 states and the District of Columbia, non-Hispanic American Indian/Alaska Native (American Indian/Alaska Native) and non-Hispanic Black (Black) persons experienced the highest increases in drug overdose death rates during 2019-2020: 39% (26.2 to 36.4 per 100 000 persons) and 44% (27.0 to 38.9 per 100 000 persons), respectively. Further, during the first year of the COVID-19 pandemic, overdose disparities widened between Black persons and non-Hispanic White (White) persons. For example, in 2020, overdose rates among Black men 65 years or older (52.6 per 100 000) were nearly 7 times those of White men of the same age (7.7 per 100 000). Significant disparities were also found when sex, age, and racial and ethnic subgroups were examined. Among women, during 2019-2020, the largest relative rate increase (88%) occurred among American Indian/Alaska Native women aged 25-44 years (33.6 to 63.1 per 100 000). Among men, the largest relative rate increase (92%) occurred among young Black men aged 15-24 years (10.7 to 20.5 per 100 000). Furthermore, evidence of prior treatment for substance use disorders among persons dying of an overdose was low across most racial and ethnic groups, particularly among Black persons, with approximately 8.3% having evidence of prior treatment.[3]

> [D]isparities in overdose deaths are exacerbated by underlying social determinants of health, structural racism, and historical trauma.

The CDC report also identified inequities across several social determinants of health that appear to further exacerbate overdose-related health disparities among certain racial and ethnic minority populations. For example, overdose death rates increased across most racial and ethnic groups as county-level income inequality (defined as the ratio of household income at the 80th percentile to income at the 20th percentile) increased. However, this disparity was most pronounced among Black persons and Hispanic persons. In 2020, among Black persons, overdose rates were more than 2 times as high in counties with greater income inequality compared with counties with lower income inequality (46.5 vs 19.3 per 100 000). Also, opioid-involved overdose rates in 2020 were higher in counties with at least 1 opioid treatment program compared with those with no opioid treatment programs, especially among American Indian/Alaska Native (33.4 per 100 000 persons in high-availability counties vs 16.2 per 100 000 in low-availability counties) and Black (34.3 vs 16.6 per 100 000) persons. Further, increases in overdose death rates from 2019-2020 were more pronounced among American Indian/Alaska Native (20.7 vs 32.1 per 100 000) and Black (23.7 to 35.4 per 100 000) persons compared with White (24.0 vs 28.6 per 100 000) persons in counties with higher potential buprenorphine capacity from Drug Addiction Treatment Act–waived clinicians (ie, qualified practitioners granted waivers to prescribe buprenorphine for opioid use disorder treatment in office-based settings), highlighting long-standing inequities in access to care, which may be due to systemic barriers, stigma, and mistrust in the health care system.[3]

Raising awareness about worsening disparities in overdose deaths among racial and ethnic minority populations and inequities (eg, economic disadvantage) contributing to these disparities is critical to informing an equity-driven response to the overdose crisis. Along with raising awareness, actions to remedy the long-standing disparities in access to medications for opioid use disorder (MOUD), harm reduction services, and other overdose prevention strategies among racial and ethnic minority persons are urgently needed. Clinicians and health care systems can serve as key touch points for treatment and prevention strategies. They can play an

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essential role in responding to the escalating crisis by addressing clinician and systems-level barriers to initiating or linking to MOUD, facilitating continuity of care for co-occurring physical and behavioral health conditions, making culturally competent care universal across clinical settings, and building connections with public health, public safety, and community-based organizations.

Given the substantial protective effects of MOUD on opioid-related morbidity and mortality,[4] improving access to treatment is paramount. However, prior research demonstrates that many racial and ethnic minority populations cannot access MOUD in hospital or community settings at rates comparable to those for White populations. In addition, these populations have experienced stigma by health care practitioners related to drug use and hold misperceptions around MOUD, sometimes viewing this approach as "replacing one drug with another" instead of treatment.[5,6] Culturally competent care, awareness of biases, and nonjudgmental communication can help address treatment access barriers, such as stigma and mistrust in health care systems. Systems-level interventions that can improve culturally competent care include hiring diverse staff that reflect the community they serve and universal clinician training and education to recognize and address biases.

Integrating substance use disorder and harm reduction services into routine clinical care is an important approach to countering rising overdose deaths. Emergency department encounters may be the only interface some patients have with the health system and could serve as an opportunity to provide harm reduction resources, such as naloxone for overdose reversal, fentanyl test strips, and linkage to community harm reduction programs as well as substance use disorder and mental health care services. Studies have shown that hospital-based harm reduction interventions can reduce stigma, engage populations who are underserved and harder to reach, and strengthen patient-clinician relationships.[7] Additionally, comprehensive, multisectoral health system approaches, such as the model from Massachusetts General Hospital, have shown positive benefits in MOUD initiation and retention and in reaching populations who are underserved and disproportionately affected.[7] This approach included establishing an inpatient addiction consult team, a low-threshold bridge clinic (ie, transitional outpatient clinic for patients leaving the emergency department who are not yet connected to care), and integrating treatment within primary care using recovery coaches and office-based addiction treatment nurses.

Other actions clinicians and health-systems can implement include using innovative service delivery models, such as telehealth and remote initiation of MOUD, co-locating health and harm reduction services, and linking and retaining persons with opioid and other substance use disorders to care. Remote health care delivery, such as through telehealth, also has the potential to reach populations who are underserved and experience barriers to accessing treatment (eg, transportation, childcare, lack of access to addiction medicine specialists).

Opportunities also exist to strengthen collaboration between health care systems, public safety, and public health to implement a holistic community response to overdose prevention. For instance, policy makers can work to remove coverage and reimbursement barriers for prescribing MOUD; build linkages between criminal justice and health systems to support reentry and access to care; expand comprehensive syringe service programs; and expand provision of naloxone and fentanyl test strips in communities disproportionately affected by overdose.

Last, it is essential to acknowledge that disparities in overdose deaths are exacerbated by underlying social determinants of health, structural racism, and historical trauma that contribute to increased risk for multiple health-related outcomes, including substance use and overdose, and can serve as substantial barriers to life-saving care.[3] Progress in current efforts to respond to the overdose crisis will be difficult to fully realize until these deep-rooted systemic challenges and their associated adverse childhood experiences and trauma are addressed. The clinical community is well positioned to be leaders in this effort.

ARTICLE INFORMATION

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CHART

Unintentional Drug Overdose Fatalities in Philadelphia, 2021

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In Philadelphia, PA, unintentional drug overdoses[1] contribute to significant premature mortality. In 2021, Philadelphia reported the highest number of unintentional overdose deaths on record, with 1,276 fatalities, a 5% increase from 2020. Eighty-two percent of 2021 overdose fatalities involved opioids, a class of drugs that include pharmaceutical opioids, heroin, and fentanyl, a strong synthetic opioid that is a significant driver of fatal overdoses. Trends in 2021 overdose fatalities also demonstrated a rise in deaths associated with stimulant use, with 67% of deaths containing stimulants, including cocaine and methamphetamine. While most stimulant-involved deaths also involved opioids, unintentional overdose fatalities where only stimulants were involved also increased.

Unintentional overdose deaths in Philadelphia have historically been highest among Non-Hispanic White (NH) individuals. However, in 2021 overdose fatalities were highest among NH Black individuals. Most deaths among NH Black individuals occurred in males but deaths among NH Black females increased 29% from 2020. While opioid-only deaths decreased across all race/ethnicity groups from 2020 to 2021, previously from 2019 to 2020, opioid-only deaths increased among NH Black individuals and decreased among NH White individuals. From 2019 to 2021, opioid and stimulant-involved deaths also increased at a higher rate among NH Black individuals. Stimulant-only deaths have historically been highest among NH Black individuals, a trend which has continued in 2021. Thus, racial disparities in overdose fatalities, particularly among stimulant-involved deaths, are driving the observed increase in overall unintentional overdose deaths in Philadelphia.

This CHART examines unintentional overdose trends through 2021. In addition to Philadelphia's changing drug supply, the lasting effects of the COVID-19 pandemic should be considered when examining these trends, specifically the impact on mental health, social isolation, and access to healthcare, treatment, and harm reduction services.

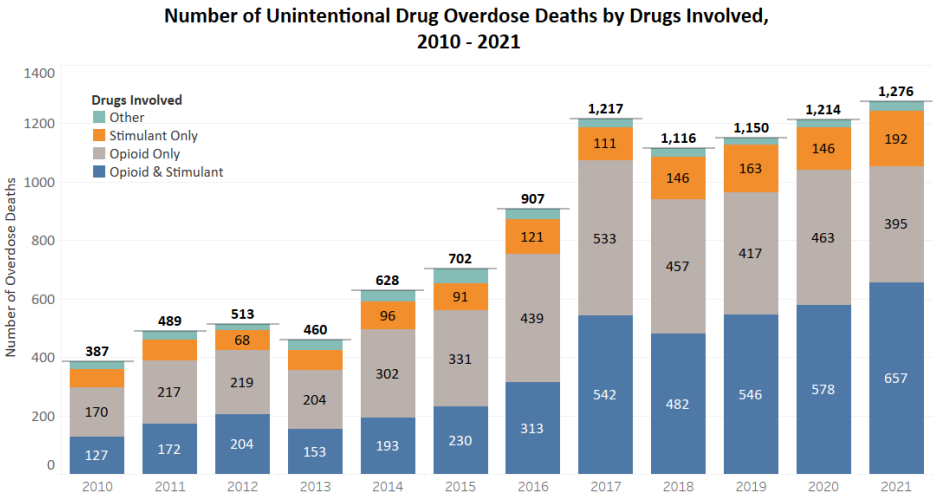
KEY TAKEAWAYS

In 2021, there were 1,276 unintentional drug overdose deaths, the highest ever reported in Philadelphia.

While most unintentional overdose deaths involved opioids, deaths involving stimulants (both with and without the presence of opioids) also increased.

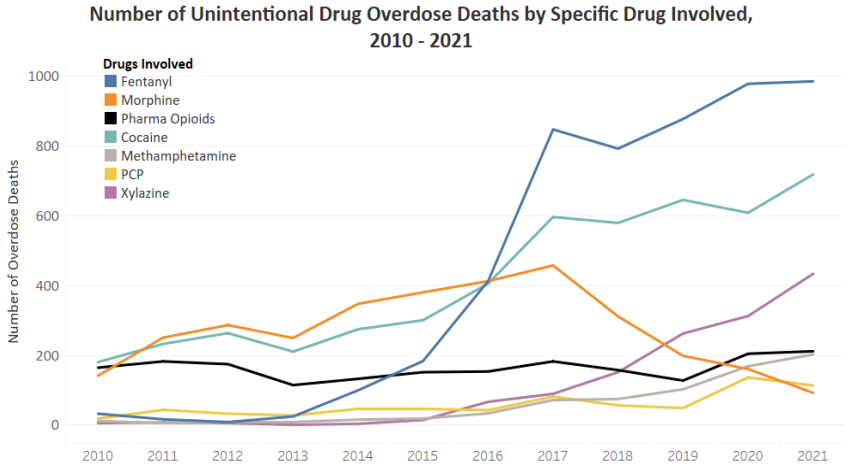
In 2021, the number of unintentional overdose deaths among Non-Hispanic Black individuals surpassed the number of unintentional overdose deaths among Non-Hispanic White individuals.

Unintentional drug overdose deaths increased 5% from 2020 to 2021.



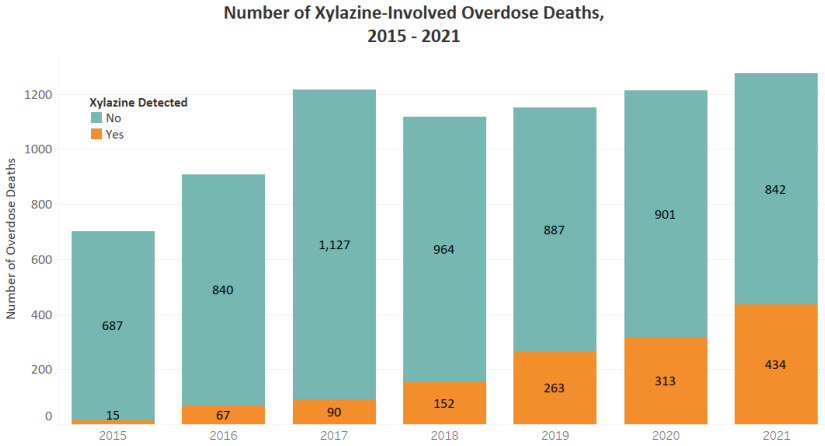
- In 2021, 1,276 people died of an unintentional drug overdose. This represents a 5% increase from 2020, and the highest number of overdose fatalities ever reported in Philadelphia.
- Opioids, both with and without the presence of stimulants, were detected in 82% of overdose deaths in 2021. In deaths where opioids were involved, fentanyl was detected in 94% of fatalities (data not shown).
- Stimulants were detected in 67% of overdose deaths, an increase of 17% from 2020. Deaths involving only stimulants and deaths involving stimulants and opioids together increased 32% and 14% from 2020 to 2021, respectively.

While 77% of unintentional overdose deaths involved fentanyl in 2021, deaths involving stimulants are also on the rise.



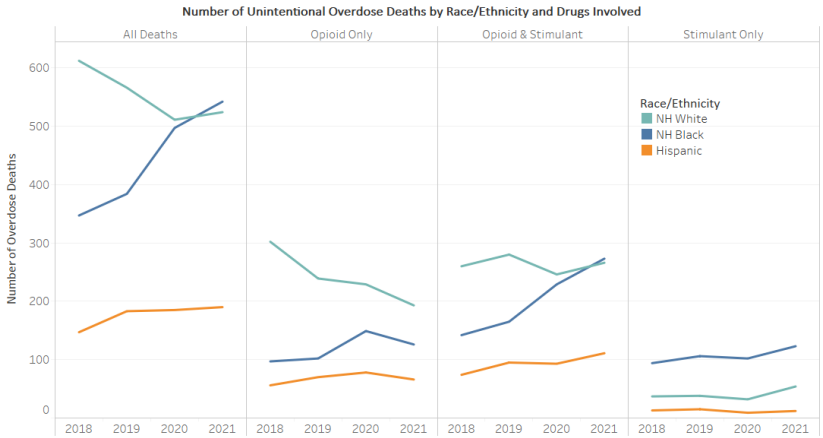
- Fentanyl continues to be the most common drug involved in unintentional overdose deaths. In 2021, 77% of all overdose fatalities contained fentanyl.
- From 2020 to 2021, the number of overdose fatalities involving cocaine and methamphetamine increased 17% and 36%, respectively.
- From 2020 to 2021, the number and proportion of overdose fatalities involving prescription opioids remained relatively consistent.

The prevalence of xylazine in unintentional overdose deaths is increasing, and almost exclusively limited to deaths where opioids are involved.



- Xylazine, a veterinary anesthetic and analgesic commonly added to street opioids, was detected in 34% of all overdose deaths in 2021. This is a 39% increase from 2020.
- Xylazine is commonly associated with opioids, particularly fentanyl. In 2021, 41% of all opioid-involved unintentional overdose deaths, and 44% of all fentanyl-involved unintentional overdose deaths also involved xylazine.
- In the last 5 years, less than 1% of xylazine-involved overdose fatalities occurred in the absence of opioid-involvement

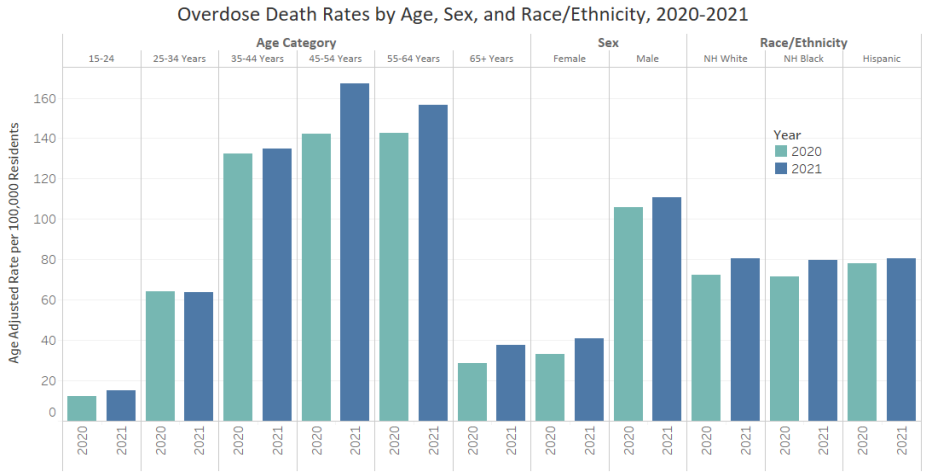
Racial and ethnic disparities exist, as overdose decedents have differing drug classes detected in toxicology.



- In 2021, unintentional overdose fatalities were highest among NH Black individuals. This is primarily being driven by deaths involving stimulants (both with and without the presence of opioids), which accounted for 73% of all deaths among this race/ethnicity group.
- While decreasing, deaths involving only opioids were highest among NH White individuals. Opioid-involved deaths (both with and without the presence of stimulants) accounted for 88% of all deaths among this race/ethnicity group.
- From 2020 to 2021, across all race and ethnicity groups[2], deaths involving opioids-only have decreased while deaths involving opioids and stimulants, and stimulants-only have increased.

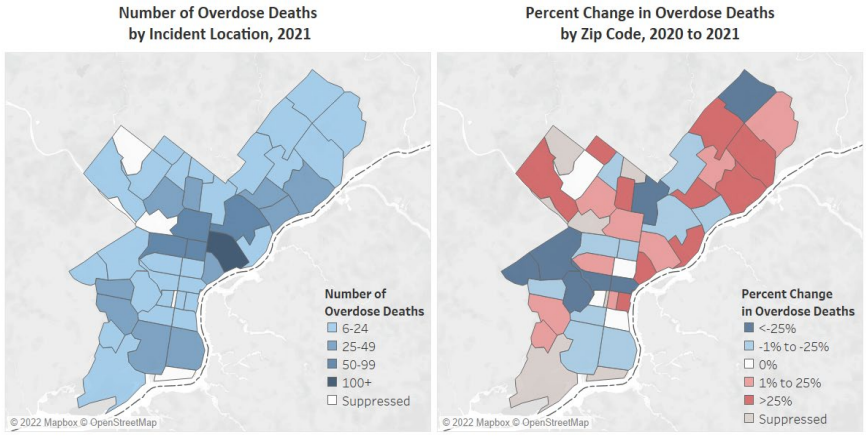
CHART

From 2020 to 2021, unintentional overdose fatality rates increased among almost all demographic groups.



- In 2021, unintentional overdose fatality rates among Philadelphians[3,4] were highest among those aged 45-54 years old and male. Age-adjusted rates among different race/ethnicity groups were similar[5].
- From 2020 to 2021, overdose fatality rates increased across almost all age, sex, and race/ethnicity groups. The largest percent increases were seen among those who were aged 45-54 years old and those who were female.
- From 2020 to 2021, overdose fatality rates increased 24% among females. This increase is primarily being driven by deaths among NH Black females (data not shown).

Unintentional overdose deaths occurred throughout the city, but were concentrated in North, Northeast, South, and Southwest regions of Philadelphia.



- The highest number of unintentional overdose deaths occurred in the 19134-zip code with 169 deaths. In 2021, deaths in this zip code increased by 23% after declining 22% in the previous year
- Other Philadelphia zip codes with the highest number of overdose fatalities in 2021 included 19140 (n=84), 19124 (n=80), 19133 (n=59), and 19132 (n=55)
- Zip codes with the highest percent change in unintentional overdose deaths from 2020 to 2021 included 19141, 19124, 19149, and 19136. Of note, these zip codes also had more than 25 overdose deaths in 2021.

WHAT CAN BE DONE

The Health Department is:

- Continuing to support a city-wide overdose fatality review to better understand the circumstances surrounding unintentional overdose fatalities and make recommendations for system and policy level changes to better ensure the health and safety of Philadelphians who use substances.
- Addressing rising stimulant involved and stimulant-only overdoses by:
    - performing outreach in neighborhoods specifically impacted by stimulant use targeting populations who may not identify as people who use drugs,
    - developing resources for providers to discuss stimulant use, related risks, and strategies for safer use, and
    - launching campaigns about risks associated with stimulant and polysubstance use.
- Increasing harm reduction approaches by:
    - distributing naloxone, the opioid overdose reversal drug, to organizations serving at-risk populations,
    - educating the public on opioid overdose recognition and naloxone use,
    - installing naloxone towers at Lucien E. Blackwell Library
    - implementing an overdose awareness campaign that considers the diversity of people who use drugs and the potential harms associated with Philadelphia's rapidly changing drug supply,
    - distributing fentanyl test strips and providing training on how to test drugs before using, and
    - partnering with Next Distro to provide mail-based naloxone and fentanyl test strips to people who use drugs and their friends and family in Philadelphia. Visit nextdistro.org/philly for more information and to order supplies.
- Supporting 'warm handoffs' to substance use treatment from hospitals, jails, and the community.
- Increasing the availability of medications for opioid use disorder through primary care practices, specialized substance use treatment programs, and the Philadelphia jails.
- Providing health care providers, including pharmacists, with training, mentorship, and technical assistance.

Health care providers should:

- Practice non-stigmatizing language when discussing substance use with patients.
- Offer naloxone prescriptions to all patients, even those without a SUD, and explain that naloxone is also available at pharmacies without a prescription under the Standing Order.
- Co-prescribe naloxone with prescription opioids and buprenorphine, as well as to patients receiving methadone and extended-release naltrexone.
- Prescribe buprenorphine to opioid dependent patients or make referrals to substance use treatment providers.
- Ensure continuity of medications for opioid use disorder in inpatient hospitalization settings, and post-discharge. CareConnect can assist with bridge prescriptions and can be reached at (484) 278-1679.
- Familiarize themselves with xylazine, wound care treatment, and the importance of providing xylazine withdrawal management in conjunction with OUD withdrawal management.

- Educate patients who use any street drugs to test their drugs for the presence of fentanyl using fentanyl test strips.
- Display materials about the presence of fentanyl in the Philadelphia drug supply and the proper use of fentanyl test strips.
- Provide sterile syringes to patients who inject drugs to reduce the spread of HIV and hepatitis.

Philadelphians can:

- Obtain and get trained on how to use naloxone to prevent opioid overdose fatalities. Naloxone is available at pharmacies in Pennsylvania without a prescription under a standing order signed by the Pennsylvania Physician General.
- The Philadelphia Department of Public Health regularly offers free, virtual naloxone trainings. Visit www.phillynaloxone.com to learn more and to register for a training.
- For those who use drugs, utilize universal precautions. Universal precautions for people who use drugs include carrying naloxone, starting with a small amount and going slowly, testing your drugs for fentanyl with fentanyl test strips, and using with others.
    - If you don't want to or can't use with others, let someone know you're using or use an app like Brave App or call a hotline like Never Use Alone (English: 800-484-3731 Spanish: 800-928-5330).
    - Avoid taking medications that are not prescribed for you and ask medical providers who prescribe opioids for pain about alternative, safer forms of pain control.
        - If you are taking prescription medications that that were not prescribed to you and/or were purchased on the street, use fentanyl test strips to test them for fentanyl.
- Seek buprenorphine or methadone treatment if dependent on opioids.
    - If you are unsure of what service you require and do not have medical insurance, please contact the Behavioral Health Special Initiative (BHSI) at 215-546-1200, Monday through Friday, between the hours of 8:30 a.m. and 5 p.m.
    - If you want treatment for a substance use challenge and do not have medical assistance or Medicaid, please contact Community Behavioral Health (CBH) at 888-545-2600

REFERENCES & TECHNICAL NOTES

1. The term unintentional overdose death is defined as an overdose death as a result of using drugs, prescription or illicit, when no harm was intended. US Centers for Disease Control and Prevention. Unintentional drug poisoning in the United States. Accessed October 20, 2022. https://www.cdc.gov/medicationsafety/pdfs/cdc_5538_ds1.pdf
2. Individuals of other race/ethnicity groups are excluded due to low counts.
3. Rates are age-adjusted to the U.S. 2000 Standard population, except those for specific age groups, where age-specific rates are calculated.
4. Rates are calculated for Philadelphia residents only, resulting in an exclusion of 15% of deaths among NH White individuals, 3% of deaths among NH Black individuals, and 7% of deaths among Hispanic individuals from rate calculations.
5. In 2021, the median age of unintentional overdose death among NH White individuals was 40 [IQR 31-51], the median age of unintentional overdose death among NH Black individuals was 51 [IQR 40-58], and the median age of unintentional overdose death among Hispanic individuals was 41 [IQR 33-50]. Since age is a significant predictor of death, when its distribution is held constant across racial/ethnic groups, the age-adjusted unintentional overdose fatality rates among NH White, NH Black, and Hispanic individuals were similar.

RESOURCES

For resources for safer substance use during COVID-19:
https://www.phila.gov/2020-04-16-resources-for-safer-substance-use-during-covid-19/

For help on how to obtain and use naloxone:
phillynaloxone.com

For Citywide data related to the opioid and substance use epidemic, visit
https://www.substanceusephilly.com/

For information on how to access treatment:
https://dbhids.org/addiction-services/

For harm reduction resources including syringe exchange:
https://ppponline.org/

Suggested citation:
Philadelphia Department of Public Health. Unintentional Drug Overdose Fatalities in Philadelphia, 2021. CHART 2022; 7(3): 1-7

CHART

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http://www.phila.gov/health

Department of Public Health
CITY OF PHILADELPHIA

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Substance Use Prevention and Harm Reduction

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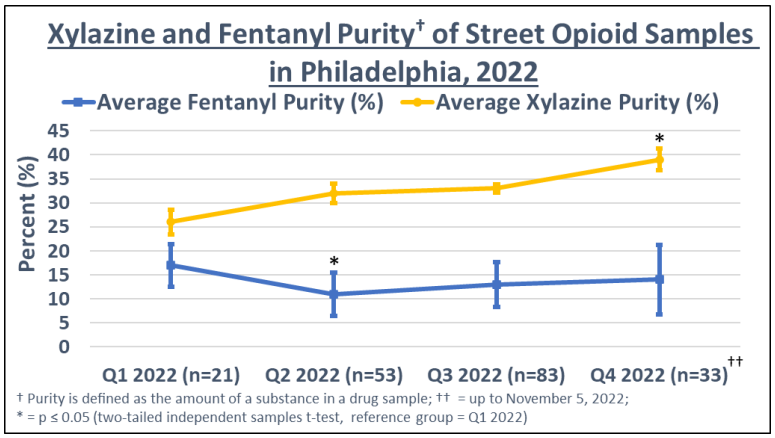
Health Update

Xylazine (tranq) exposure among people who use substances in Philadelphia

December 8th, 2022



On November 8th, 2022, the U.S. Food and Drug Administration issued an alert, warning health professionals about the presence of xylazine in the illicit drug supply. Xylazine is a non-opioid veterinary tranquilizer not approved for human use that is often added to street fentanyl to prolong its effects. First detected in Philadelphia in 2006, xylazine has been associated with increasing fatal overdoses and chronic wounds.[1] From 2015 to 2021, the number of fatal overdoses involving xylazine per year increased from 15 to 434.[2] Point of care testing for xylazine is not yet available, so people who use substances may not be aware that they have been exposed to xylazine.

Xylazine is an unscheduled drug and easily accessed. In 2021, 90% of street opioid samples contained xylazine. As fentanyl has overtaken heroin in Philadelphia, fentanyl is no longer considered an adulterant but is a primary composite, meaning that drugs sold as street opioids or "dope" are accepted to be fentanyl. Xylazine is now the most common adulterant in the drug supply. Drug checking of street opioids in 2022 revealed increasing xylazine, suggesting that xylazine is becoming more well established in the local illicit drug supply. (See graph) Thus, people who use illicit opioids in Philadelphia are almost certainly being exposed to xylazine. In March, 2022, the Philadelphia Department of Public Health released a Health Alert on the risks of xylazine use. Below is an update to guide xylazine-related clinical management.

Xylazine Withdrawal Management

When xylazine is abruptly stopped, severe withdrawal symptoms may develop that clinicians need to diagnose and manage. Opioid withdrawal symptoms not responsive to medications for opioid use disorder with associated hypertension, tachycardia, and/or anxiety should increase suspicion of co-occurring xylazine withdrawal. Laboratory testing is becoming available, but xylazine has a short half-life of 23-50 minutes and may not be present in urine samples even among routine users. Xylazine withdrawal can look like clonidine or dexmedetomidine "rebound", characterized by sympathetic overactivity such as hypertension, anxiety, and jitteriness, and should be actively managed with high clinical suspicion even when laboratory tests are negative. Long-term symptoms may include insomnia, anxiety, and dysphoria. Treatment of xylazine withdrawal may require inpatient monitoring for vital sign instability

SUMMARY POINTS

- People who use illicit opioids in Philadelphia are almost certainly being exposed to xylazine.
- Co-occurring xylazine and opioid withdrawal can be managed with alpha-2-adrenergic agonists and management of pain, insomnia, and anxiety.
- Xylazine increases risk of fatality associated with opioid overdoses and is not responsive to naloxone.
- Individuals who use xylazine may develop necrotic wounds that typically require debridement and may require medical management.
- Referrals to emergency departments and inpatient care for wound care should be accompanied with a plan to manage xylazine and opioid withdrawal.
- Harm reduction approaches can improve the health and well-being of people who use substances.

and benzodiazepine tapers. While no medication is FDA approved for xylazine withdrawal, the following approaches are being used:

Replacement therapy with alpha-2-adrenergic agonists:
- Clonidine
- Dexmedetomidine
- Tizanidine
- Guanfacine

Symptom management:
- Pain: short acting opioids, Ketamine, Gabapentin, Ketorolac, Acetaminophen, NSAIDs
- Insomnia: Trazadone, Quetiapine, Mirtazapine
- Anxiety: Hydroxyzine, Benzodiazepines (judiciously)

Treat opioid use disorder and opioid withdrawal:
- If a patient is on opioid agonist therapy, then split dosing can increase analgesic effect and improve pain control.
- If a patient is undergoing induction, then microdosing buprenorphine allows for concurrent use of short acting opioids that can improve pain control.

Increased Overdose Fatality Risk

Xylazine is an alpha-2-adrenergic agonist that acts centrally, producing profound sedation, bradycardia, and decreased perception of painful stimuli. Xylazine has synergistic toxic effects with opioids that increase risk of mental status depression and airway compromise. Naloxone should always be administered when there is suspicion for opioid overdose. Xylazine, however, is not reversed by naloxone, and there are no xylazine reversal agents that are safe for human use. Thus, individuals may remain heavily sedated due to xylazine after reversing respiratory depression due to fentanyl with naloxone. Overdose responders should continue to provide supportive care, such as airway management and supplemental oxygen, to patients with prolonged sedation in the presence of normal respirations.

Wound care

Xylazine use has been associated with necrotic skin wounds that can be progressive and extensive. Xylazine is thought to have partial alpha-1-adrenergic agonist activity that induces peripheral vasoconstriction leading to poor perfusion and necrosis. Wounds can occur at a site of injection as well as other locations, even when xylazine is smoked or snorted, which is not well understood. Wounds are associated with pain, which should be treated using with the multi-model symptom management approach described above. Care for xylazine-associated wounds typically requires debridement, long-term dressings [durable dressings], and an individualized follow-up plan based on access to clean water, housing status, access to medical supplies, comfort accessing healthcare, and comfort with self-care. Individuals may be declined from admission to inpatient behavioral health facilities due to xylazine-associated wounds, including those that are clinically evaluated to be self-manageable. The health department is working to increase the capacity of these settings for wound care.

Not all xylazine wounds require antibiotic treatment. If there is active purulence, surrounding erythema, or edema, antibiotics may be indicated. Antibiotic coverage should include methicillin-resistant *Staphylococcus aureus*, and there should also be a high suspicion for Group A Strep (*Strepococcus pyogenes*). Xylazine-associated wounds may also increase risk of systemic infections, such as bacteremia and endocarditis. Individuals with worsening wounds and/or signs of systemic infection, such as fevers, chills, rigors, nausea, and vomiting, should receive an evaluation for inpatient care. Referrals to emergency departments and inpatient care should be accompanied with a plan to manage xylazine and opioid withdrawal.

Harm Reduction

Individuals who are exposed to xylazine in Philadelphia are likely to be active substance users and providing care to manage complications of xylazine use requires not judging patients for engaging in substance

use. Stigma associated with substance use and shame associated with xylazine-associated wounds can lead to delays in care and worse health outcomes. It should be assumed that anyone injecting street purchased opioids is also using xylazine, however xylazine may also be smoked or snorted. Below are harm reduction approaches to improve the care of patients who use xylazine:

Wound care

- If someone is unable to regularly access hand washing, provide gloves and hand sanitizer for someone who will be caring for their own wounds.
- Provide individuals with the materials they need to take care of their wounds (individual saline, gauze, wraps, ointment).

Safer drug use

- Recommend avoiding injecting into wounds.
- Recommend swabbing skin with alcohol prior to injecting.
- If sniffing/snorting, recommend flushing nasal passages before and after using sterile water or saline.
- Provide sterile syringes using a needs-based model[3] to prevent infections related to re-using and sharing.
- Provide patients with naloxone and provide training on how to administer naloxone.
- Provide patients with fentanyl test strips and provide training on how to use and interpret results.
- Recommend patients try not to use alone, and provide resources if that is what they are doing, such as:
    - Never Use Alone: 800-484-3731 (English) | 800-928-5330 (Spanish)
    - The Brave App – free to download on app stores

Resources

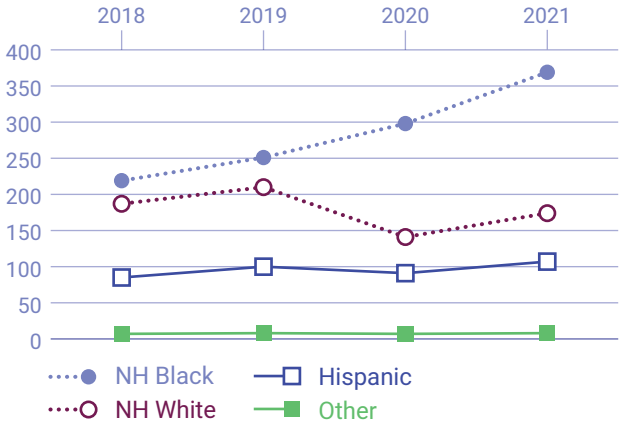
- Xylazine web-based training sponsored by the Pennsylvania Department of Drug & Alcohol Program and presented by Savage Sisters Recovery. Instructions to access the training – link.
- Learn how to get and use naloxone – www.phillynaloxone.com
- Get fentanyl test strips – https://nextdistro.org/philly
- Learn how to use fentanyl test strips
    - https://www.cdc.gov/stopoverdose/fentanyl/fentanyl-test-strips.html
    - https://www.youtube.com/watch?v=GmhE6UOZ9YY
- Substance Use Disorder Treatment
    - Behavioral Health Services Initiative (uninsured): 1-215-546-1200
    - Community Behavioral Health (Medicaid): 1-888-545-2600
    - Care Connect Warmline: 484-278-1679
    - National Helpline: 800-662-HELP (4357)

[1] Wong SC, Curtis JA, Wingert WE. Concurrent Detection of Heroin, Fentanyl, and Xylazine in Seven Drug-related Deaths Reported from the Philadelphia Medical Examiner's Office. Journal of forensic sciences. 2008 Mar;53(2):495-8.
[2] Philadelphia Department of Public Health. Unintentional Drug Overdose Fatalities in Philadelphia, 2021. CHART 2022; 7(3): 1-7
[3] Centers for Disease Control and Prevention. Needs-Based Distribution at Syringe Services Program. December 2020.

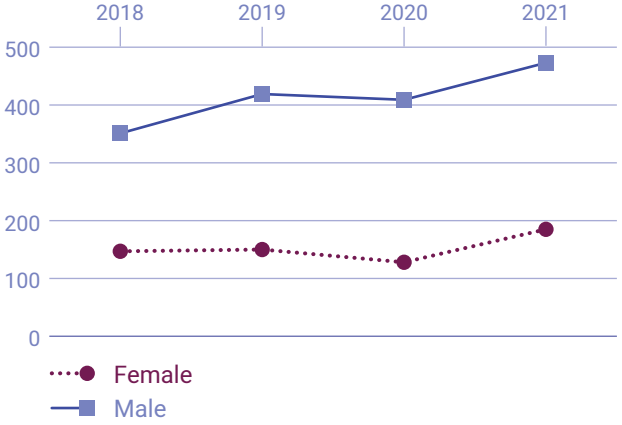
Cocaine Fatalities in Philadelphia

Unintentional cocaine-involved overdose fatalities among Philadelphia Residents, 2018-2021

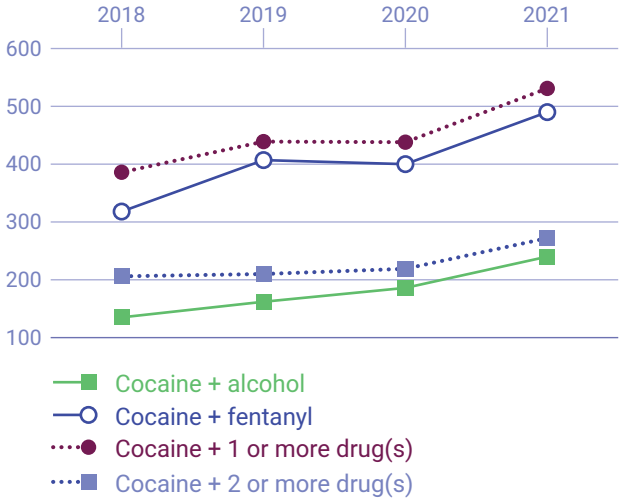
By race/ethnicity



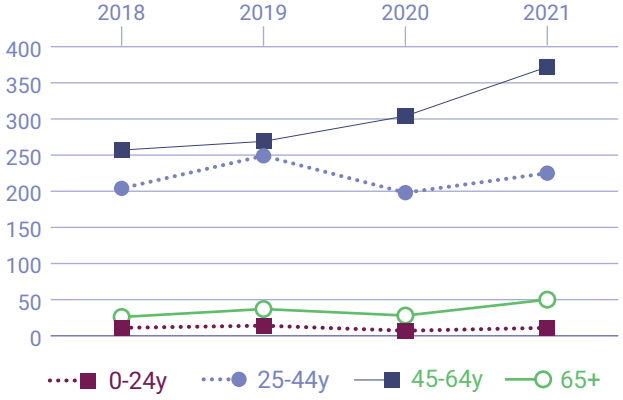
By sex*



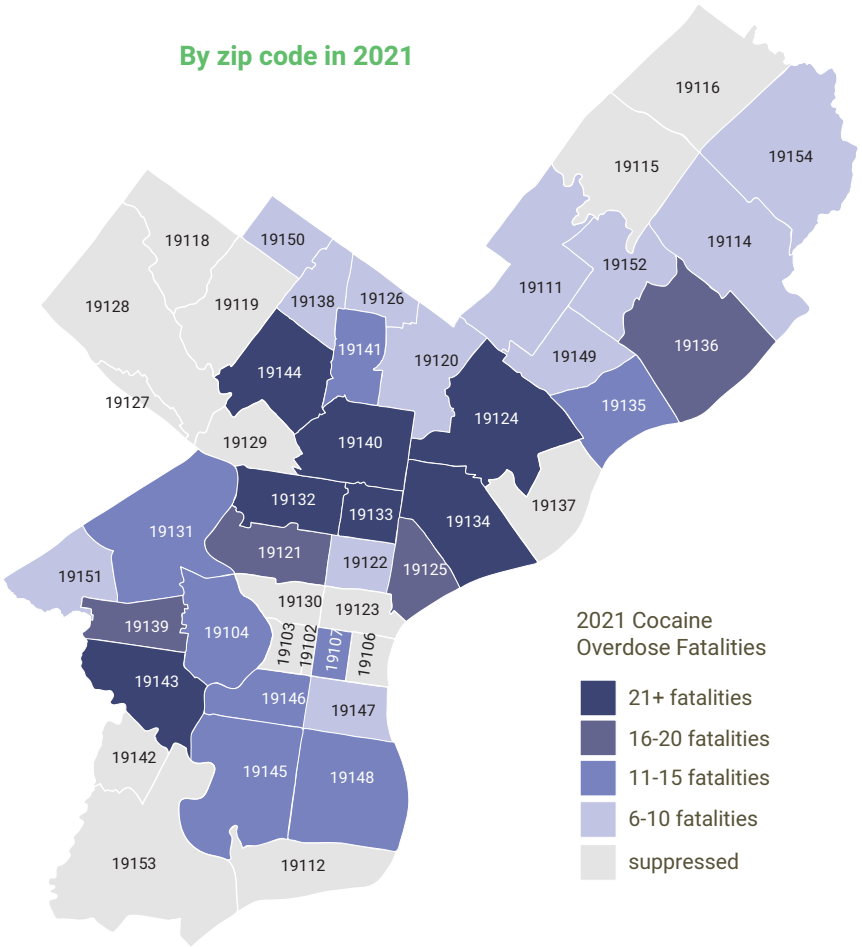
By drug type



By age



By zip code in 2021



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Cocaine Fatalities in Philadelphia

Unintentional cocaine-involved overdose fatalities among Philadelphia Residents, 2018-2021

	2018			2019			2020			2021		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total	498	100.0%	31.5	569	100.0%	35.1	537	100.0%	33.4	658	100.0%	41.6
Race												
NH White	187	37.6%	33.7	210	36.9%	35.8	141	26.3%	24.7	174	26.4%	31.7
NH Black	219	44.0%	32.1	251	44.1%	37	298	55.5%	44.6	369	56.1%	55
Hispanic	85	17.1%	40.7	100	17.6%	47.3	91	17.0%	40.8	107	16.3%	50
Other	7	1.4%	*	8	1.4%	*	7	1.3%	*	8	1.2%	*
Age												
<15y	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0
15-24y	11	2.2%	5.3	14	2.5%	6.9	7	1.3%	3.4	11	1.7%	5.5
25-34y	90	18.1%	29.7	120	21.1%	39.2	79	14.7%	25.9	78	11.9%	26.4
35-44y	114	22.9%	57.4	129	22.7%	63.9	119	22.2%	56.5	147	22.3%	69.1
45-54y	140	28.1%	77.3	125	22.0%	70.7	152	28.3%	85.9	177	26.9%	103
55-64y	117	23.5%	63.3	144	25.3%	78.3	152	28.3%	81.5	195	29.6%	106.8
65+	26	5.2%	12	37	6.5%	16.6	28	5.2%	12.5	50	7.6%	22
Sex*												
Female	147	29.5%	17.7	150	26.4%	18.1	128	23.8%	15.4	185	28.1%	22.3
Male	351	70.5%	47.4	419	73.6%	54.8	409	76.2%	53.7	473	71.9%	63.5
Drug type												
Cocaine only	112	22.5%	6.7	130	22.9%	7.6	99	18.4%	6.1	127	19.3%	7.3
Cocaine +												
• 1 or more drug(s)	386	77.5%	24.9	439	77.2%	27.5	438	81.6%	27.4	531	80.7%	34.2
• 2 or more drug(s)	206	41.4%	13.3	210	36.9%	13.1	219	40.8%	13.7	272	41.3%	17.5
• any opioids	371	74.5%	24	433	76.1%	27	416	77.5%	26	509	77.4%	32.7
• fentanyl	318	63.9%	20.6	407	71.5%	25.3	400	74.5%	25	490	74.5%	31.6
• alcohol	135	27.1%	8.5	162	28.5%	9.8	186	34.6%	11.9	240	36.5%	15.2
• benzos	129	25.9%	8.2	94	16.5%	6	96	17.9%	5.9	102	15.5%	6.4
• methamphetamine	28	5.6%	1.7	39	6.9%	2.5	51	9.5%	3.1	72	10.9%	4.8

Rates are per 100,000 and age-adjusted (except where age specific and by Zip Code).

Cocaine-involved overdoses were identified as any decedent with cocaine detected by toxicology testing completed by the Medical Examiner's Office or hospital testing for decedents who were hospitalized prior to death.

*Decedent's sex assigned at birth based upon the presence of specific sex organs at autopsy and the family reporting sex assigned at birth.

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Cocaine Fact Sheet for Providers

Cocaine is a stimulant that is used in two different forms: powder and crack (e.g., rock-like crystals). Cocaine can be snorted, injected, smoked, and taken orally. Depending on how it is used, the effects of cocaine can last minutes to hours. Some people use cocaine recreationally and it does not interfere with their ability to function, while others with a cocaine use disorder may have difficulty meeting their daily responsibilities.

RISKS

Cardiovascular and Cerebrovascular

Cocaine use can cause vasoconstriction, vasospasm, increased heart rate, and elevated blood pressure. As a result, people who use cocaine are at greater risk for acute myocardial infarction, stroke, heart failure, arrhythmias, and sudden cardiac death, even among people without a history of heart disease.

Starting a conversation about cocaine can be an opportunity discuss healthy heart behaviors.

Pulmonary

Acute complications such as alveolar hemorrhage, pneumothorax and pneumomediastinum have been associated with smoking cocaine and intranasal cocaine use. Chronic cocaine use has been associated with fibrotic lung disease and pulmonary vascular disease.

Discussing cocaine use can lead to tobacco counseling.

Oral

People who smoke crack cocaine are at risk of burn injury to their mouth and tooth decay.

Talking about cocaine with your patient could result in increased engagement in dental care.

Skin Wounds and Infections

Injecting cocaine can cause skin necrosis leading to chronic wounds and cellulitis, as well as bloodstream infections and endocarditis. Sharing of injection and smoking supplies is associated with the transmission of HIV and hepatitis C, and bacterial infections.

Bringing up cocaine in a clinic visit can increase interest in screening for hepatitis or HIV.

See reverse for harm-reduction strategies and treatment resources →

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HARM-REDUCTION STRATEGIES

Avoid mixing cocaine with alcohol or other substances:

Taken together, cocaine and alcohol produce cocaethylene, a metabolyte that is more toxic than either drug alone and increases risk of death. Taking cocaine with another stimulant can lead to overamping, which is associated with seizures and extreme anxiety. For more information on overamping, see nextdistro.org/resources-collection/overamping-stimulant-overdose

Never use alone:

If your patient has a medical emergency, someone should be nearby to get help and administer naloxone if needed. If nobody is around call Never Use Alone (for English: **800-484-3731**; for Spanish: **800-928-5330**) or download and use the Brave App on a smartphone before they use any drug.

Start with a small amount and go slowly:

Fentanyl is in most street drugs and a tiny amount of fentanyl can be fatal, especially after periods of abstinence during hospitalization, incarceration, or inpatient treatment.

Use Fentanyl test strips:

Cocaine and crack typically have other substances cut in, such as levamisole, ketamine, methamphetamine, xylazine, and fentanyl. Your patient should test all substances they buy off the streets, including pills that are said to be pharmaceutical-grade, before they use it. See https://nextdistro.org/philly for fentanyl test strips via mail.

Carry naloxone:

Can be used to reverse an overdose and safe a life. See https://nextdistro.org/philly for naloxone via mail. Insurance not required.

Get your own supplies:

Use rubber tips to prevent burns when smoking, sterile straws when snorting, and sterile syringes when injecting to prevent infection. Access sterile syringes at the Jefferson University Hospital Emergency Department at 132 South 10th St. See ppponline.org to learn their exchange hours and locations.

Learn more about harm reduction for clinicans:

TREATMENT

If your patient is interested and ready, behavioral health therapies can be effective for treating cocaine use disorder. These include contingency management, which provides motivation incentives using a reward system, and cognitive behavioral therapy (CBT). These therapies can be combined, for example providing rewards for completing CBT exercises or modules. There is no evidence-based medication to treat cocaine use disorder.

To connect to treatment options, call the Behavioral Health Special Initiative at **(215) 546-1200** if your patient is uninsured, and Community Behavioral Health at **(888) 546-1200** if your patient has insurance. The CareConnect Warmline is staffed by substance use navigators to link patients to substance use treatment, call **(484) 278-1679** from 9am-9pm Mon-Sun." Also **1-800-662-HELP (4357)** is a national helpline for individuals looking for treatment.

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Talking about Substance Use with Patients

A CONVERSATION GUIDE FOR PROVIDERS

Use neutral, person-centered language when speaking with patients about substance use. Avoid stigmatizing language.

Avoid Stigmatizing Language	Use Neutral, Person-Centered Language:
Addict, junkie, substance abuser, tecato/a	Person who uses (or injects) drugs
Substance abuse	Substance use
Replacement/substitution therapy, Medications for addiction treatment (MAT)	Medications for Opioid Use Disorder, Opioid Agonist Treatment (when referencing buprenorphine and methadone)
Clean or dirty urine	Negative or positive urine

Clinical training regarding substance use often focuses on motivational interviewing and informing patients of the dangers of substance use — in order to encourage abstinence. This approach can backfire and, instead of eliciting the desired behavior change, patients may feel alienated and leave regretting their decision to share. A harm reduction orientation asks providers to instead focus on building trust, developing the therapeutic relationship, and finding mutually beneficial goals. This means that conversations should be used as an opportunity to learn about your patient, their motivations for use, and their goals for their own health. This will help you to find common ground and create a non-judgmental foundation for discussing their substance use and strategies for safer drug use.

> An example of a mutually beneficial goal is that the provider and patient would both like to maintain the patient's oral health. The provider and patient can discuss how a mouthpiece can be used to prevent burns, sugar-free gum can encourage saliva production to prevent tooth decay, and lip balm can be used to prevent dry, cracked lips. Preventing burns and dry, cracked lips can reduce risk of hepatis C and HIV transmission. Similarly, the provider and patient may both like to improve sleep hygiene. A conversation about use patterns can identify strategies to decrease episodes of being awake for long durations of time.

Focus on using questions like:

- "What are your health concerns right now?"
- "How are you feeling about your cocaine use?"
- "What steps do you take to keep yourself safe when using?"
- "Do you have naloxone (Narcan) available in the case of an overdose?"
- "What do you like about smoking crack?"
- "Is there anything you don't like about injecting cocaine?"
- "Walk me through a typical day for you. When do you usually use?"
- "Have you noticed times when you use more or less than usual? What are those?"

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Contingency Management

What is contingency management?

Contingency management is an evidence-based behavioral therapy for the treatment of substance use disorders. This modality is particularly well-studied for the treatment of stimulant use disorder, including cocaine and methamphetamine. Contingency management involves using positive reinforcement, in the form of incentives, for negative drug toxicology results. Typically, clients will submit urine samples and will receive incentives, vouchers, or rewards, both monetary and non-monetary if they have tested negative for the targeted substance, which varies by program. This means that the patient's goal may not be total abstinence from all drugs, but instead is related to a specific substance they use, such as methamphetamine. To encourage consistent results, these incentives are often related to the client's goal of abstinence. Historically, goods and services have also included transportation assistance to treatment and bill repayments.

Why is it used?

There is currently no FDA-approved pharmacological treatment modality available for methamphetamine use disorder or cocaine use disorder, so contingency management may be a valuable tool in helping people abstain from illicit stimulant use. Contingency management is also a cost-effective method. In some studies patients have drawn prizes from a bowl, which included both monetary and non-monetary items, such as slips that contain words of encouragement. This method can decrease overall cost, while allowing access to high-value rewards that are better reinforcers. Another innovation has been leveraging digital platforms to deliver contingency management. In some studies, contingency management was integrated with Cognitive Behavioral Therapy and participants received rewards after completing lessons. Digital therapeutics companies have developed smart phone contingency management applications that have been effective in treating stimulant use disorder.[1, 2]

Why is it important for Philadelphia?

In Philadelphia, stimulant-involved fatalities are on the rise – stimulants were present in 67% of total overdose deaths in 2021.[3] Cocaine was the second most prevalent drug in 2021 overdose deaths, second only to fentanyl. Polysubstance use is also exceedingly common in Philadelphia with 51.5% of overdose deaths involving both a stimulant and opioid.[3] Non-opioid use was reported by 97% of 16,000 patients entering OUD treatment between 2011 and 2018 in the US.[4] Studies have shown that contingency management is effective for treating stimulant use, polysubstance use, illicit opioid use, and tobacco use.[5,6] While cocaine is seen more frequently than methamphetamine in the toxicology of fatal overdose decedents, the appearance of methamphetamine in Philadelphia overdose decedent toxicology grew from 14% to 16% between 2020 and 2021.[7]

What are the barriers to implementing contingency management?

The federal Anti-Kickback Statute is a legal barrier that deters many organizations from adopting contingency management. The statute prohibits organizations that receive funding from the federal government (e.g., Medicare and Medicaid) from providing incentives.[8] Government entities set limits for incentives: The Centers for Medicare and Medicaid Services (CMS) sets an annual monetary value limit of $75, with Washington State setting one of $100.[9] Contingency management programs cannot realistically adhere to this budget, especially knowing the treatment becomes most effective when incentives increase in value, requiring hundreds of dollars per client. This is one major legal barrier to widespread implementation of contingency management. This policy also has the potential to cause further inequality and bifurcation of services based on an individual's financial resources. People who are low-income and receive health benefits will be limited by the treatment options available to them, while those who can afford providers that do not receive Medicaid or Medicare funds will not be held to the same restrictions.

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Contingency Management

How are other jurisdictions implementing contingency management?

California recently became the first state to receive a CMS waiver allowing it to provide coverage for contingency management. The pilot program is offered to beneficiaries of Medi-Cal, California's state Medicaid, and will be funded by federal Medicaid and California's Department of Health Care Services (DHCS). Federal Medicaid money for contingency management is a novel source of funding for contingency management. Additionally, the pilot will be supported by California's Department of Health Care Services (DHCS). Incentives will be provided to those clients who test negative for stimulants such as cocaine, amphetamine, and methamphetamine. Clients who test positive for opioids will not be penalized as the program focuses on stimulants, but they will be directed to specific resources for opioid use disorder. The pilot runs began in Fall 2022 and will run until March 2024. This initiative is part of a larger Medi-Cal reform program called California Advancing and Innovating Medi-Cal initiative (CalAIM).[10]

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Department of Public Health
CITY OF PHILADELPHIA

Naloxone for All

Prescribe and discuss naloxone with all patients because:

Overdose deaths affect all Philadelphians, not just those with commonly identifiable risk factors such as an Opioid Use Disorder (OUD) diagnosis or reported drug use (prescription or illicit).

Many people may not realize they're at risk of an overdose. Fentanyl has been found in not just heroin, but also cocaine, crack, and counterfeit pills (sold as Xanax, Percocet, or other prescription drugs).

If naloxone is only prescribed to patients who ask for it, you might miss the opportunity to prevent the overdose of a patient who is unaware of their risk of overdose and uses prescription or illicit drugs infrequently.

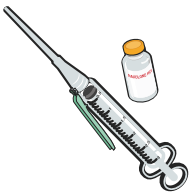
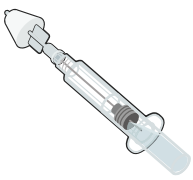
Messages for patients:

Naloxone is not just for people who use drugs. Overdoses can happen in a home, on the street, in the park, on a bus, at your workplace. Carrying naloxone and keeping it in your home means you're equipped to save a neighbor, friend, roommate, or loved one if needed.

If someone is not breathing and not responsive, they may be having an opioid overdose that can be reversed using naloxone. **There is no danger in administering naloxone** to someone who is not using opioids or is having another medical emergency.

Naloxone can expire but there is **no harm in using expired naloxone**. Ask your patients if they have expired naloxone and offer another prescription if it's needed.

Good Samaritan laws **protect anyone from liability for administering naloxone** if you believed the person was experiencing an opioid overdose and you called for medical help/911 after giving the medication.

	INTRAMUSCULAR	INTRANASAL	NARCAN® NASAL SPRAY
INFO	Naloxone HCl 0.4 mg/mL 2 x 1 mL single-dose vials (NDC 0409-1215-01 or 67457-292-02) Refills: PRN 2 x 23 g, 3mL, 1-inch syringe Refills: PRN	Naloxone HCl 1mg/mL 2 x 2 mL as pre-filled Luer-Lock syringe (NDC 76329-3369-1) Refills: PRN 2 x intranasal mucosal atomizing device (MAD 300) Refills: PRN	4 mg (NDC 69547-353-02) 1 x two-pack Refills: PRN
SIG	For suspected opioid overdose, call 911 and inject 1 mL intramuscularly in shoulder or thigh.	For suspected opioid overdose, call 911 and spray 1 mL in each nostril. If no response in 2 minutes, give second dose.	For suspected opioid overdose, call 911 and follow package instructions.
NOTES	**PROS:** Allows patients to titrate dosage and minimize withdrawal **CONS:** Some patients may be uncomfortable using a syringe.	**PROS:** Does not involve a needle. **CONS:** • Requires assembling the atomizer. • Atomizer typically not covered by insurance. **Note to pharmacist:** Call 866-246-6990 or 8009-723-3892 to order MAD 300.	**PROS:** • No assembly required. • Easy to use. **CONS:** Dosage cannot be controlled, meaning each use administers 4mg.
DEVICE			

Naloxone for All

How to provide your patients with Naloxone

Standing Order

In Pennsylvania there is a standing order for naloxone which means that anyone can go to a pharmacy and request the medication with or without a prescription.

Prescription

If you are sending a prescription for naloxone, you could use the following ICD-10 codes:

- F11.90 opioid use disorder
- Z81.4 family history of substance use disorder (helpful if you are prescribing for a family member to carry)

Pennsylvania Naloxone Copay Assistance Program

If someone has insurance (but is not on Medical Assistance) and is obtaining naloxone from a pharmacy, there may be a copay. The Pennsylvania Naloxone Copay Assistance Program will cover up to $75 of any out-of-pocket costs for naloxone purchased at a pharmacy.

Medical Insurance

Covered by Medical Assistance without need for prior authorization. No limit to number of fills for patients on Medical Assistance. Copay will not apply for patients on Medical Assistance.

Next Distro

Next Distro is a mail-based harm reduction program that mails naloxone to people who use drugs and their families. You do not need insurance to receive naloxone through this service. Learn more at nextdistro.org/philly

Naloxone Near Me Tower

Naloxone is available to the public 24 hours a day at the Naloxone Near Me Tower in front of the Lucien E. Blackwell West Philadelphia Regional Library (125 S. 52nd St, Philadelphia, PA, 19139). This service is completely anonymous and does not require health insurance.

Some patients may be concerned about using medical insurance to obtain naloxone because of the potential for stigma within the medical community or concerns around how a naloxone prescription could affect life insurance policies. (A prescription for naloxone may prompt additional questions and a deeper review of the request for life insurance coverage and reason for the prescription.)

You can:

- Talk to your colleagues about why it's important to offer naloxone to all patients regardless of substance use.
- Provide other avenues outside of insurance for people to obtain naloxone.

To learn more about naloxone and where to get it, check out **phillynaloxone.com**

Carrying naloxone is an act of caring for your friends, family, and community.

Department of Public Health
CITY OF PHILADELPHIA

Pennsylvania Naloxone Copay Assistance Program

$75 Off* Out-of-Pocket Cost of Naloxone

Naloxone is an opioid overdose reversal medication that is available at a local pharmacy without a doctor's prescription, under a statewide standing order. *Pennsylvania residents who purchase naloxone using their insurance may be eligible to receive up to $75, from the Pennsylvania Department of Aging, to assist with the reimbursement of naloxone.

BIN: 002286 **PCN:** 0000682201 **Group ID:** NALOXONE

Scan for Specifications

A claim for any patient may be submitted to the program.
Any remaining payment will be the patient's responsibility.
Patients are limited a quantity of 2 doses per claim.
Enrollment in PACE and this handout are not required for eligibility.

PDA pennsylvania DEPARTMENT OF AGING

Support from Emergent BioSolutions Inc. for this handout is gratefully acknowledged. NP-OE-US-00035. 01/2022

Responding to a non-emergency situation:

Anxiety and mental discomfort can happen. The below suggestions can help manage these uncomfortable feelings

- **Cool down** – take a shower if possible
- **Hydrate and eat**
- **Rest**
- **Change environment** – go somewhere you're more comfortable
- **Breathing exercises** – breathe in through the nose and out through the mouth

When to call 911:

- **Strokes** – numbness, inability to move one part of body, facial droop, inability to speak
- **Heart attack** – crushing chest pain or pressure, worse pain with movement, intense sweating, nausea
- **Overheating** – body temperature over 104 degrees Fahrenheit
- **Seizures**
- **Psychosis**

Resources

If you need naloxone:

See **phillynaloxone.com** for more information or go to **nextdistro.org/philly** to get naloxone in the mail.

If you are using alone:

Call **Never Use Alone** English: **(800)-484-3731** Spanish: **(800)-928-5330** or download **The Brave app**. These services monitor for potential overdose and call for help if one occurs.

If you are interested in treatment and uninsured:

The CareConnect Warmline is staffed by substance use navigators to link patients to substance use treatment, call **(484) 278-1679** from 9am-9p, Mon-Sun. The Behavioral Health Special Initiative can be reached at **(215) 546-1200**.

If you are interested in treatment and insured:

Call the CareConnect Warmline above, Community Behavioral Health at **(888) 546-1200**, or the national helpline for individuals looking for treatment at **1-800-662-HELP (4357)**.

Tips for

Safer Use: Crack and Cocaine

Department of Public Health
CITY OF PHILADELPHIA

What cocaine does:

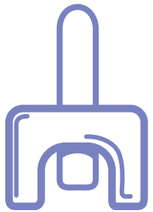
Cocaine speeds up the body's nervous and cardiovascular systems meaning it causes a sudden increase in heart rate, blood pressure, and body temperature.

DO's

- **Stay hydrated.**
- **Take breaks.** The use of cocaine, crack, and any stimulant can lead to insomnia and sleep deprivation.
- **Test your drugs.** Remember, the drug supply is often unreliable and potency can change from batch to batch, seller to seller, and city to city. The same dose can feel different.
- **Different ways of using cocaine are associated with different risks.** Generally, snorting has less risks than smoking or injecting, and injecting has most risks.

Reducing Risk of Overdose

- **Avoid mixing cocaine or crack with other drugs or alcohol.** If you do, use less of each drug.
- **Start with a small amount** and go slowly.
- **Avoid using when alone.** See the back of this pamphlet for resources.
- **Carry naloxone,** a medication that can reverse an overdose if an opioid, like fentanyl, is mixed in.
- **Talk with your doctor** about how to prevent serious health problems associated with overdose, such as heart attack, stroke, abnormal heart rhythm, very high blood pressure and death.



Reducing Risk When Smoking

- **Add a mouthpiece** to your pipe to reduce risks of burns to the lips, mouth, and throat.
- **Use a wire screen, Chore boy, or brillo as a filter** and let the pipe cool down between hits to prevent inhaling hot particles. See a doctor if you feel any pain when breathing after using.
- **Keep lips hydrated** with lip balm to reduce risk of cuts.
- **Avoid using homemade crack pipes.** Homemade crack pipes may get too hot, give off toxic fumes, or break while in use, which can lead to burns, cuts, or infections.
- **Avoid sharing your pipe** to prevent the spread of infectious diseases, including HIV and hepatitis C. If you do need to share, use different mouthpieces.
- If smoking with foil (chasing), **use real tinfoil** and not foil from packaged foods like candy bars. This type of foil can be contaminated.

Reducing Risk When Snorting

- **Grind cocaine** to remove clumps and hard pieces that can be painful while snorting and increase risk of injury to the nasal cavity.
- **Use your own sterile straw and scooping spoon** and avoid sharing to prevent the spread of infectious diseases, including HIV and hepatitis C.
- **Alternate snorting sessions** between both nostrils. This can help reduce risk of tissue damage in the nose.
- **Use a water or saline nasal spray** or sniff up water immediately after snorting to dissolve the remaining coke. This will significantly reduce the potential damage to your nose.

Reducing Risk When Injecting

- **Clean your injection site** with an alcohol pad before injecting.
- **Use a sharp, sterile syringe** each time you inject.
- **Use sterile water** when preparing your solution.
- **Pull up the solution by inserting the syringe into a filter** (such as a cotton ball —avoid cigarette filters).
- **Rotate where you inject** and make sure you're in a vein before you inject.
- **Do not inject over a skin ulceration or wound**.
- **Do not share equipment** (such as syringes and cookers) to avoid the spread of infectious diseases, including HIV and hepatitis C.
- **Dispose of your syringes** in a safe place after using.

Respuesta a una situación que no es de emergencia:

La ansiedad y el malestar mental pueden ocurrir. Las siguientes sugerencias pueden ayudar a manejar estos sentimientos incómodos.

- **Refrescarse** – tomar una ducha si es posible
- **Hidratar y comer**
- **Descansar**
- **Cambia tu ambiente** – ve a algún lugar donde te sientas más cómodo
- Ejercicios de respiración–inhala por la nariz y exhala por la boca

Cuando llamar al 911:

- **Accidentes cerebrovasculares** – entumecimiento o incapacidad para mover una parte del cuerpo, caída facial, incapacidad para hablar
- **Infarto** – dolor o presión opresivo en el pecho, peor dolor con el movimiento, sudoración intensa, náuseas
- **Calentamiento excesivo** – temperatura corporal superior a 104 grados Fahrenheit
- **Convulsiones**
- **Psicosis**

Recursos:

Si necesita nalaxona:

Visita **www.phillynaloxone.com** para recibir mas informacion o visita **www.nextdistro.org/philly** para pedir naloxona por correo.

Si esta usando drogas solo:

Llama a la linea de espanol de **Nunca Usar Solo: (800)-928-5330.** En ingles: (800)-484-3731. O puede bajar la aplicacion "**The Brave.**" Estos servicios supervisan por una posible sobredosis y pueden buscar ayuda si una sobredosis pasa.

Si esta interesado en tratamiento pero no tiene seguro:

La linea "CareConnect" esta atendida por navegadores de uso de sustancias para conectar a las personas con tratamiento para el uso de sostancias. Llama a **(484) 278-1679** de 9am-9pm, lunes a viernes. La iniciativa especial de salud conductual puede ser contactada al **(215) 546-1200.**

Si esta interesado en tratamiento y tiene seguro:

Llama la linea CareConnect **(484)-278-1679**, o a el sistema de Salud de Conducta de la Comunidad al (**888) 546-1200,** o la linea nacional para las personas buscando tratamiento al **1-800-662-4357.**

Consejos para

Uso mas seguro:

Crack y Cocaina

Department of Public Health
CITY OF PHILADELPHIA

Lo que hace la cocaína :

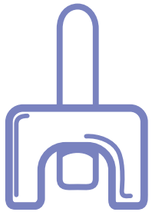
La cocaína acelera el sistema nervioso y el sistema cardiovascular del cuerpo, lo que significa que provoca una aceleración de la frecuencia cardíaca, la presión arterial y la temperatura corporal.

Que se debe hacer para estar más seguro:

- **Mantente hidratado.**
- **Tomar descansos.** El uso de cocaína, crack y cualquier estimulante puede provocar insomnio y privación del sueño.
- **Haga prueba de sus drogas.** Recuerde, el suministro de medicamentos a menudo no es confiable y la potencia puede cambiar de un lote a otro, de un vendedor a otro y de una ciudad a otra. La misma dosis puede sentirse diferente.
- **Diferentes formas de consumir cocaína están asociadas con diferentes riesgos.** Generalmente, inhalar tiene menos riesgos que fumar o inyectarse, y la inyección tiene el riesgo más alto.

CÓMO REDUCIR EL RIESGO DE UNA SOBREDOSIS

- **Evite mezclar cocaína o crack con otras drogas o con alcohol.** Si lo hace, consuma menos de cada sustancia.
- **Comience con una cantidad pequeña** y vaya despacio.
- **Evite consumir drogas sin estar con alguien más.** Consulte el reverso de este documento para aprender de mas recursos.
- **Lleve naloxona,** un medicamento que puede revertir una sobredosis si se mezcla un opioide, como el fentanilo.
- **Hable con su médico** sobre cómo evitar los problemas de salud graves asociados a la sobredosis, como un ataque cardíaco, un accidente cerebrovascular, un ritmo cardíaco anormal, una presión arterial muy alta y la muerte.



CÓMO REDUCIR EL RIESGO AL FUMAR

- **Agregue una boquilla** a la pipa de crack para reducir el riesgo de quemarse los labios, la boca y la garganta.
- **Use una rejilla de alambre,** Chore Boy o Brillo, como **filtro** y deje que la pipa se enfríe entre cada calada para evitar inhalar partículas calientes. Vea a un médico si siente dolor cuando respira después del consumo.
- **Mantenga los labios hidratados** con bálsamo para reducir el riesgo de cortes.
- **Evite usar pipas de crack caseras.** Las pipas de crack caseras pueden calentarse demasiado, desprender gases tóxicos o romperse mientras las usa, lo que puede provocar quemaduras, cortes o infecciones.
- **No comparta la pipa** para evitar el contagio de enfermedades infecciosas, como el VIH y la hepatitis C.
- Si fuma con papel de aluminio (chasing), u**se uno auténtico**, y no el de los envases de comidas, como las barras de chocolate. Este tipo de papel puede estar contaminado.

CÓMO REDUCIR EL RIESGO AL INHALAR

- **Triture la cocaína** para quitar los grumos y las partes duras que puedan causar dolor cuando la inhale y que pueden aumentar el riesgo de lesionar la cavidad nasal
- **Use su propia pajilla y cuchara esterilizadas** y evite compartirlas para prevenir el contagio de enfermedades infecciosas, como el VIH y la hepatitis C.
- **Alterne las sesiones de inhalación** entre ambas fosas nasales para permitir que sanen entre sesiones. Esto puede ayudar a reducir el riesgo de que se dañe el tejido de la nariz.
- **Use un atomizador nasal con agua** o aspire agua inmediatamente después de inhalar para disolver el resto de la coca. Esto reducirá de manera considerable el posible daño a la nariz.

CÓMO REDUCIR EL RIESGO AL INYECTAR

- **Limpie el lugar de la inyección** con una toallita con alcohol antes de inyectar.
- **Use una jeringa esterilizada** y afilada cada vez que se inyecte.
- **Use agua esterilizada** cuando prepare su solución
- **Extraiga la solución insertando la jeringa en un filtro** (como una bola de algodón, evite los filtros de cigarrillos).
- **Alterne el lugar donde se inyecta y** asegúrese de insertar la jeringa en una vena antes de inyectarse.
- **No inyecte sobre una herida o ulceración de la piel.**
- **No comparta equipos** (incluyendo jeringas y émbolos) para evitar el contagio de enfermedades infecciosas, como el VIH y la hepatitis C.
- **Deseche sus jeringas** en un lugar seguro después de usarlas.