UPDATE
Data Report: Accidental Drug Overdose Deaths in Los Angeles County During the COVID-19 Pandemic

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SAPC | Substance Abuse Prevention and Control

County of Los Angeles Public Health

Los Angeles County Department of Public Health

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Executive Summary

In January 2021, the Department of Public Health's Division of Substance Abuse Prevention and Control (DPH-SAPC) released an analysis of local death data from the Los Angeles County Medical Examiner-Coroner to determine the impact of the COVID-19 pandemic on accidental drug overdose deaths up until July 2020.

This data report is an update to the initial analysis and includes findings from various analyses of accidental drug overdose deaths through December 2021. A detailed analysis was performed to assess the 22 months of the pandemic (March 2020 to December 2021) compared to the same 22-month period before the pandemic (March 2018 to December 2019), along with 12-year trends including a time series analysis, monthly trends from January 2018 to December 2021, and mapping data to further contextualize the findings.

In total, there has been an 89% increase in the accidental drug overdose death rate during the first 22 months of the COVID-19 pandemic compared to the same time period before the pandemic. The highest accidental drug overdose death rates were associated with methamphetamine and fentanyl. Nearly all data categories of gender, age, race/ethnicity, drug type, poverty level, and geographic region had significant increases in accidental drug overdose death rates.

More than three out of four (77%) drug overdose deaths occurred among males. Accidental drug overdose death rates per 100,000 population during the first 22 months of the pandemic increased by 116% among Latinxs, by 109% among Blacks/African Americans, by 67% among Whites, and by 62% among Asians. People aged 25-34 years had the highest accidental drug overdose death rate per 100,000 population, followed by those aged 35-44 years, 45-64 years, and 18-24 years. People aged 12-17 years had the largest percent increase (315%) in accidental drug overdose death rate per 100,000 population.

The findings of this data report suggest that pandemic-related increases in drug overdose deaths are one of the many tragic outcomes of the pandemic.

Introduction

The COVID-19 pandemic is one of the deadliest tragedies of our generation. In addition to deaths associated with this virus, there has been growing concern that the social isolation and stressors (e.g., lost loved ones and jobs) would result in increases in relapse and overdose among those in recovery or struggling with addiction.

To examine this concern locally, DPH-SAPC performed various analyses of accidental drug overdose deaths up until December 2021 from the Los Angeles County Medical Examiner-Coroner, based on data as of May 2022. Data beyond this period was not available due to the extensive lab analysis and data processing needed. The pandemic situation continues to evolve, and as a result, the full impact of the pandemic on drug overdoses in Los Angeles County is not captured in this data report.

This data report includes a review of 12-year trends of drug overdose deaths from 2010 to 2021 and a time series analysis (Figures 1 – 4); a review of monthly trends from the pre-pandemic and pandemic period from 2018 to 2021 (Figures 5 – 19); a detailed analysis by various data categories from the first 22 months of the pandemic (March 2020 to December 2021) compared to the same 22-month period before the pandemic (March 2018 to December 2019) (Table 1); and density maps by communities to identify concentrated areas of drug overdose deaths and changes in overdose death density from the pre-pandemic to pandemic period across Los Angeles County (Figure 20).

Increases in drug overdoses starting in January 2018 were further analyzed via an interrupted time series analysis to better understand potential associations between this increase in overdose deaths and the pandemic as opposed to variables that existed prior to the pandemic. This analysis suggested that drug overdose deaths during the pandemic were significantly higher than anticipated without COVID-19, suggesting a positive association between COVID-19 and the rising drug overdose deaths, in particular during the first few months of the pandemic after Stay-at-Home Orders.

Text-based analyses of coroner reports were performed to identify accidental drug overdose deaths and the types of drugs that contributed to those deaths. Detected drugs were classified as contributing to overdose deaths if they were listed in one of the causes of death. Drugs involved in overdose deaths are not mutually exclusive, as overdose deaths can involve more than one drug. As a result, the sum of deaths of each drug type can be more than the total number of overdose deaths.

This varied and comprehensive data analyses provides context to inform how the pandemic has impacted accidental drug overdose deaths, in particular by examining trends in drug types, gender, age groups, race and ethnicity, poverty level, and geographic regions in Los Angeles County.

Findings

The findings in this data report are presented as follows:

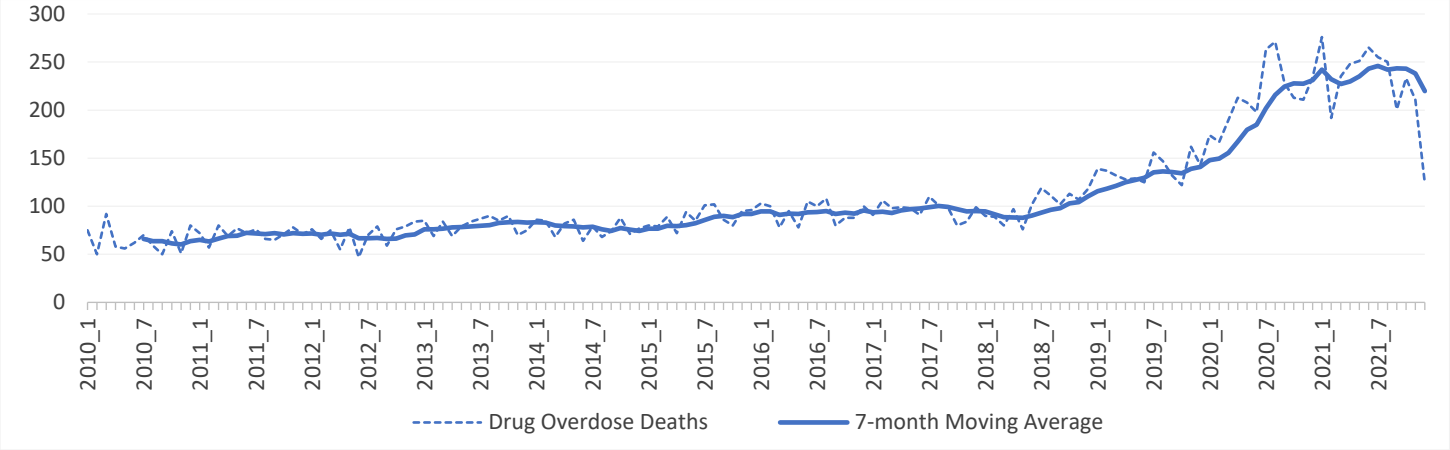
- 12-year drug overdose death trends and time series analysis in Los Angeles County (Figures 1 – 4).
- Overview of drug overdose deaths during the pandemic (March 2020 to December 2021) compared to the same 22-month period before the pandemic (March 2018 to December 2019) (Table 1).
- Detailed analysis of monthly trends for each data category from the pre-pandemic period through the pandemic period (2018 to 2021) for: Gender, Age Group, Race and Ethnicity, Drug Category, Area Poverty, and Geography by Supervisorial District and Service Planning Area in Los Angeles County (Figures 5 – 19).
- Geographic Information Systems (GIS) mapping data of drug overdose death locations across Los Angeles County during the pre-pandemic and pandemic period (Figure 20).

Long-Term Trends

To offer longitudinal insight into local drug overdose death trends, data from the past 12 years from 2010 to 2021 was reviewed to better assess the true impact of COVID-19 on overdose deaths.

As shows in Figure 1, seven month moving averages from January 2010 to December 2021 indicate a slight upward trend of accidental drug overdose deaths from 2010 to 2018, followed by a more notable increase in drug overdose deaths through 2021.

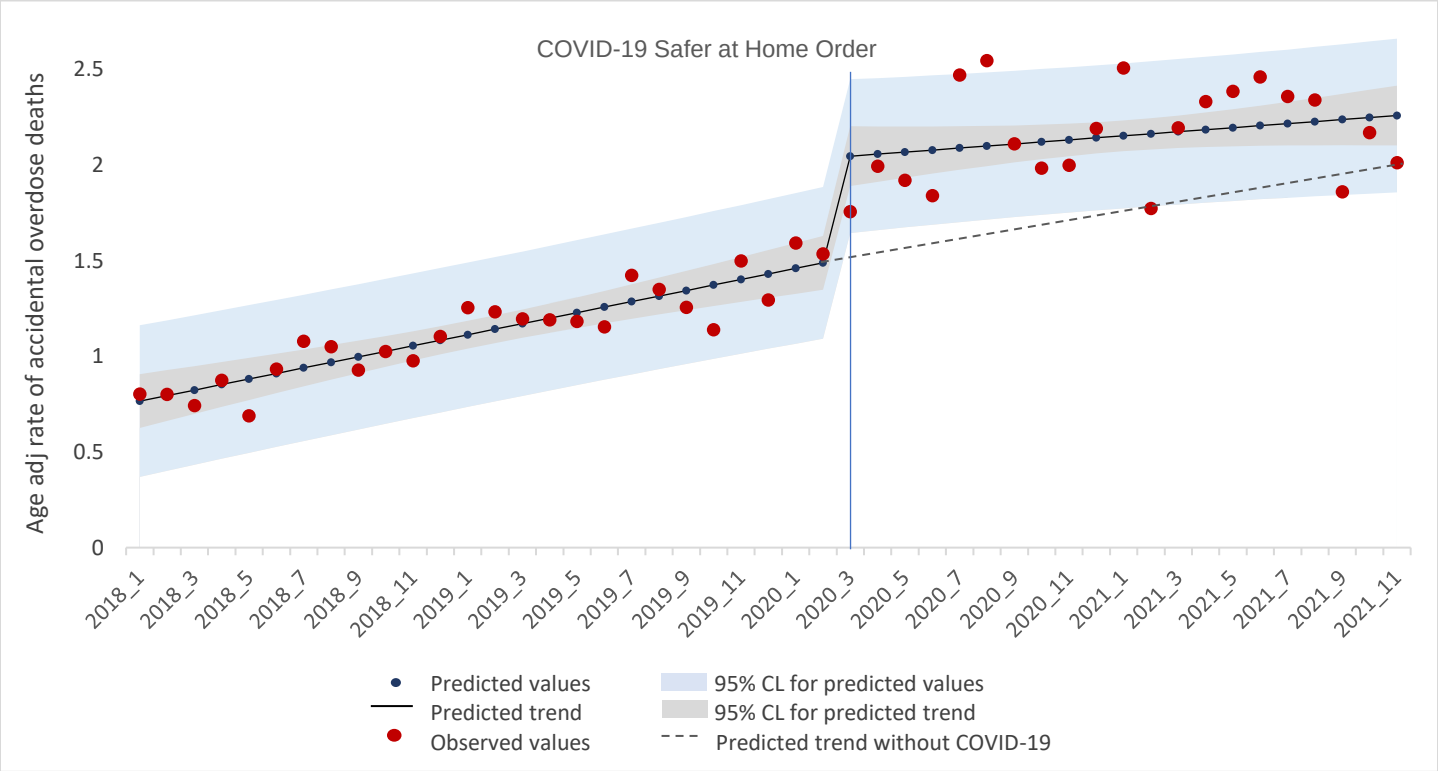
Figure 1. Number of Accidental Drug Overdose Deaths (7 Month Moving Average) by Year and Month, Los Angeles County, 2010 – 2021



***Note:** Moving averages are used to track and identify trends by reducing normal month-to-month fluctuations and minimizing the amount of "noise" in the monthly data. In this case, moving averages provide a visual representation of the long-term accidental drug overdose death trends. Based on data as of May 2022. December 2021 data may be incomplete.*

An interrupted time series analysis was subsequently conducted using data from January 2018 to December 2021 to further assess this increase in drug overdose deaths. Interrupted time series analyses involve tracking a long-term period before and after an event or point of intervention to assess associations with the event or intervention. In this case, this interrupted time series analysis was used to analyze the substantive increase in accidental drug overdose deaths from the pre-pandemic to pandemic phase. Figure 2 illustrates a significant shift and rise in the time series of accidental drug overdose deaths at the onset of the pandemic and immediately prior to local COVID-19 Stay-at-Home Orders in March 2020. Comparing the projected numbers of drug overdose deaths without the COVID-19 pandemic (see dotted line) with the actual death numbers, there is a clear and significant association between COVID-19 and the substantial uptick in drug overdose deaths during this specific time period.

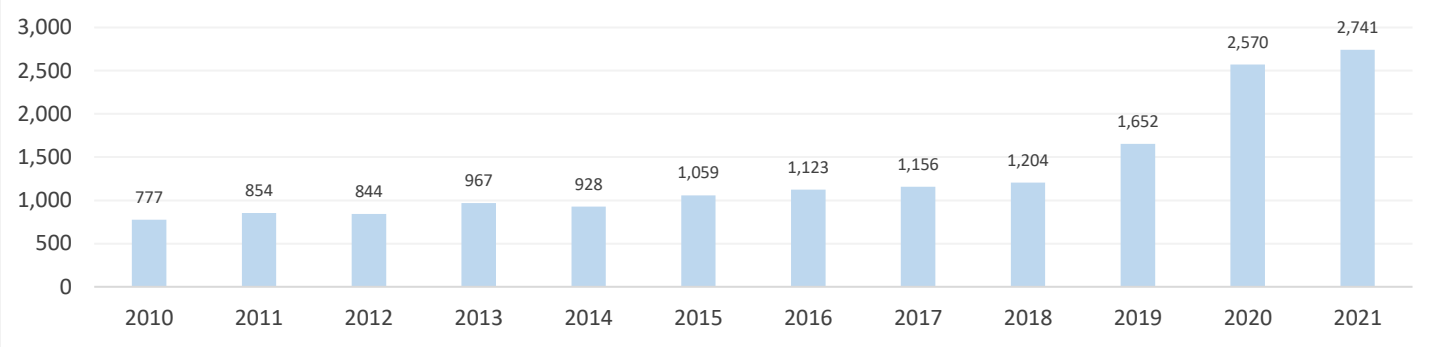
Figure 2. Interrupted Time Series Analysis of Age-adjusted Rate of Accidental Drug Overdose Deaths, Los Angeles County, 2018 – 2021



Note: *Based on data as of May 2022. December 2021 data may be incomplete, and was omitted from the analysis.*

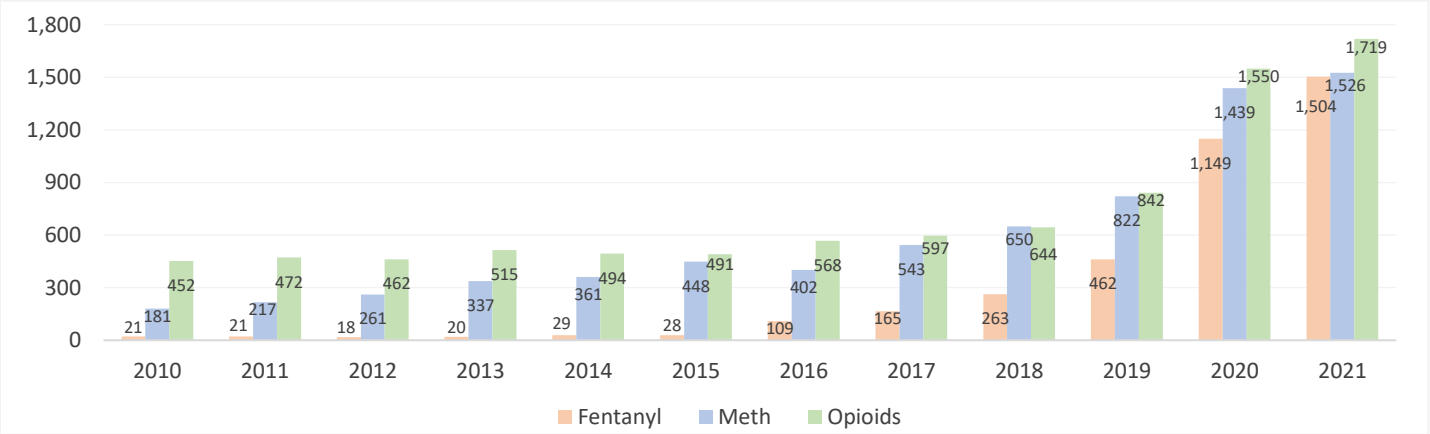
The annual numbers of accidental drug overdose deaths from 2010 to 2021 show a large increase in deaths in 2019, and an even steeper increase in 2020. Compared to 2019, there were 918 more drug overdose deaths in 2020, a 56% increase. The number of drug overdose deaths remained high in 2021, increasing 7% from 2020 (see Figure 3).

Figure 3. Number of Accidental Drug Overdose Deaths by Year, Los Angeles County, 2010 – 2021



Breaking down these deaths by the two most common drug types associated with drug overdoses – methamphetamine and fentanyl, respectively, one can see that these two drugs accounted for the majority of overdose deaths across Los Angeles County in recent years (see Figure 4). In recent years, the proportion of drug overdose deaths involving fentanyl has surged, nearly reaching that of methamphetamine in 2021. As context, local law enforcement agencies have anecdotally reported increased seizures of illicitly manufactured fentanyl, counterfeit pills of pharmaceuticals such as opioids or sedatives that contained fentanyl, and methamphetamine in the Los Angeles region over the past several years. This collective information suggests that methamphetamine and fentanyl are significant drivers of regional increases in drug overdose deaths in Los Angeles County.

Figure 4. Number of Fentanyl, Methamphetamine, and Opioid Overdose Deaths by Year, Los Angeles County, 2010 –2021



Recent Trends

Table 1 below provides an overview of the accidental drug overdose death counts, comparing the age-adjusted rates per 100,000 population, and the rate change from the pre-pandemic (March 2018 to December 2019) to pandemic period (March 2020 to December 2021). The overall number and rate of accidental drug overdose deaths increased 89% in the pandemic period compared to the pre-pandemic period.

The rates of accidental drug overdose deaths increased across nearly every data category. Notable exceptions were prescription opioids excluding fentanyl which significantly decreased, and heroin which did not change significantly. Small categories were excluded from subsequent monthly analyses.

Table 1. Number and Rate of Accidental Drug Overdose Deaths During the Pre-Pandemic (Mar 2018 to Dec 2019) and Pandemic Period (Mar 2020 to Dec 2021), Los Angeles County

	Pre-Pandemic Mar 2018 – Dec 2019		Pandemic Mar 2020 – Dec 2021		Rate change[6,7]	
Decedent Characteristic	**Number**	**Rate[5]**	**Number**	**Rate[5]**	**Absolute change**	**Relative change**
All	2,677	24.6	4,970	46.4	21.8*	88.5%*
Gender						
- Male	2,073	38.5	3,812	71.6	33.0*	85.7%*
- Female	602	11.0	1,127	21.1	10.0*	91.3%*
Age Group (years)						
- 0 to 11	10	0.7	16	1.2	0.5	71.0%
- 12 to 17	13	1.7	53	7.1	5.4*	315.2%*
- 18 to 24	205	19.6	450	44.9	25.3*	129.4%*
- 25 to 34	567	37.2	1,168	78.3	41.1*	110.7%*
- 35 to 44	526	36.9	1,063	74.2	37.4*	101.3%*
- 45 to 64	1,194	44.3	1,926	71.3	27.1*	61.1%*
- 65+	162	12.0	294	20.6	8.6*	71.5%*
Race/Ethnicity[1]						
- American Indian/Alaska Native	9	31.1	11	44.0	12.8	41.3%
- Asian	77	5.2	129	8.4	3.2*	62.0%*
- Black/African American	497	51.4	982	107.3	55.9*	108.9%*
- Latinx/Hispanic	831	16.4	1,808	35.5	19.1*	116.2%*
- Pacific Islander	9	35.4	9	34.3	-1.2	-3.3%
- White	1,227	40.3	1,976	67.3	27.0*	67.0%*

Decedent Characteristic	Pre-pandemic Mar 2018 – Dec 2019		Pandemic Mar 2020 – Dec 2021		Rate change[6,7]	
	Number	Rate[5]	Number	Rate[5]	Absolute change	Relative change
Drug Category[2]						
Alcohol	298	2.8	704	6.7	3.9*	139.4%*
Opioid	1,385	12.9	3,085	29.2	16.4*	127.1%*
- Heroin	554	5.1	557	5.1	0.0	0.2%
- Fentanyl	685	6.5	2,529	24.2	17.7*	271.5%*
- Rx Opioid (excl. fentanyl)	541	4.9	345	3.1	-1.8*	-37.1%*
- Other Opioid	4	0.0	11	0.1	0.1	0.0%
Sedative	150	1.4	393	3.8	2.4*	167.8%*
- Benzodiazepines	128	1.2	347	3.4	2.2*	177.0%*
- Other Sedative	22	0.2	50	0.5	0.3*	133.0%*
Stimulant	1,862	17.0	3,494	32.3	15.2*	89.5%*
- Methamphetamine	1,388	12.7	2,795	26.0	13.2*	103.7%*
- Cocaine	628	5.7	944	8.5	2.8*	49.5%*
- Other Stimulant	27	0.3	36	0.4	0.1	40.3%
Area Poverty[3]						
- <10% area poverty	1,239	22.3	2,224	40.0	17.7*	79.5%*
- 10% to 20% area poverty	811	27.8	1,457	49.9	22.1*	79.7%*
- 20% to 30% area poverty	376	28.2	755	56.7	28.5*	100.8%*
- >30% area poverty	179	51.3	413	118.4	67.1*	130.7%*
Supervisorial District (SD)[4]						
- SD 1	686	31.6	1,289	59.2	27.6*	87.3%*
- SD 2	511	23.9	956	45.1	21.1*	88.2%*
- SD 3	553	24.3	1,014	45.8	21.6*	88.8%*
- SD 4	497	22.2	895	40.7	18.5*	83.4%*
- SD 5	378	18.9	749	38.7	19.8*	105.1%*
Service Planning Area (SPA)[4]						
- SPA 1	141	36.1	291	77.2	41.1*	113.6%*
- SPA 2	449	18.6	881	37.9	19.3*	103.4%*
- SPA 3	287	15.2	496	27.1	11.9*	78.5%*
- SPA 4	650	49.2	1,240	93.5	44.3*	90.0%*
- SPA 5	165	23.0	302	43.3	20.2*	87.9%*
- SPA 6	270	26.7	530	51.3	24.6*	91.9%*
- SPA 7	235	17.2	421	31.2	14.0*	81.6%*
- SPA 8	428	25.5	742	45.2	19.8*	77.7%*

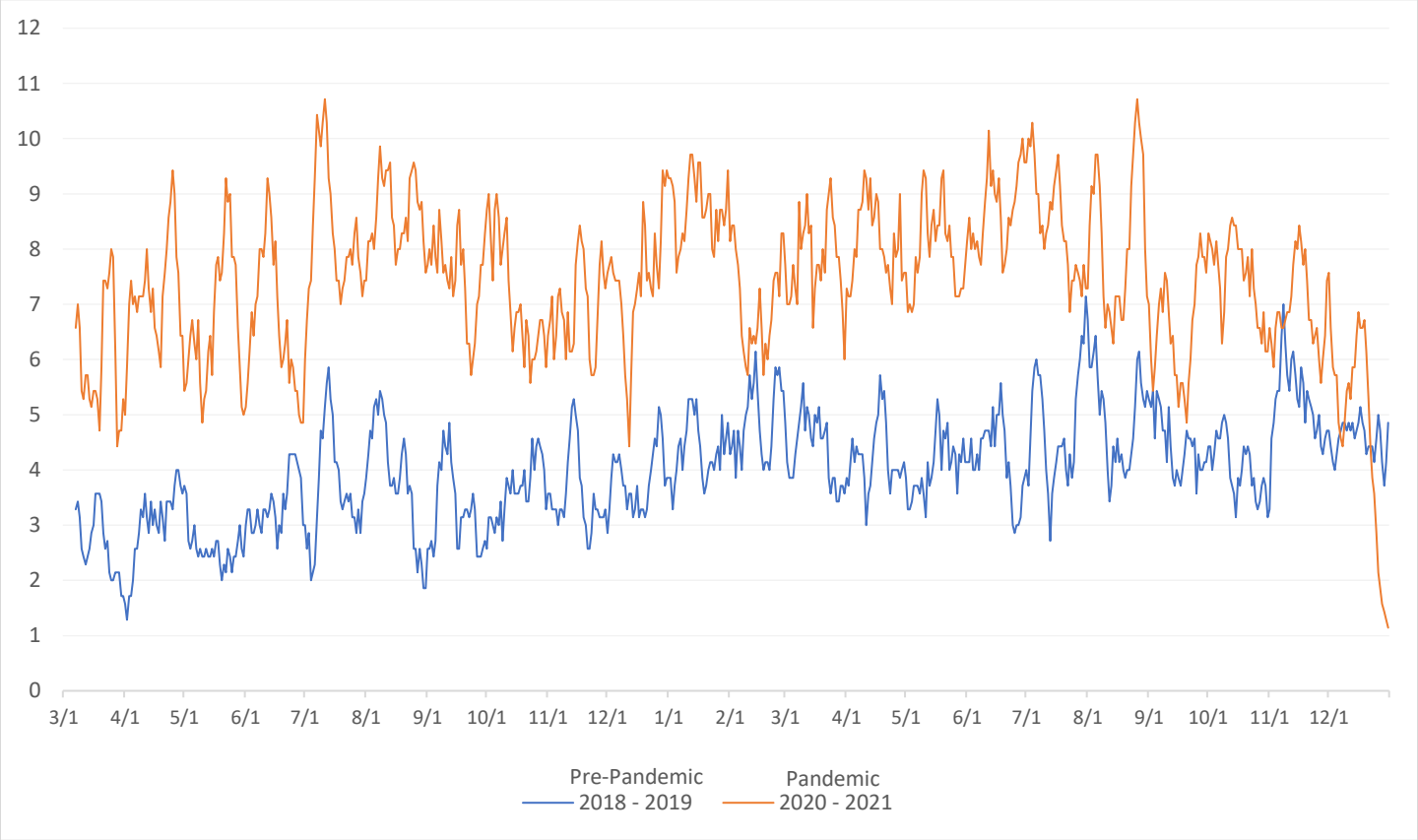
Table 1 Notes:

1. *Data for Latinx/Hispanic origin should be interpreted with caution; studies comparing Latinx/Hispanic origin on death certificates and on Census surveys have shown inconsistent reporting on Latinx/Hispanic ethnicity. Potential race misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native and Asian/Pacific Islander decedents.*
2. *Drugs involved in an overdose death are not mutually exclusive, as overdose deaths often involve more than one drug. Thus, summation of drug types will result in more than the total number of overdose deaths. Rx opioids refers to overdose deaths that involves prescription opioids, but do not mention fentanyl as one of the causes of death or positive toxicology tests; when a death involves both Rx opioids and fentanyl as causes of death, the death was included in the fentanyl counts.*
3. *Area Poverty reflects the percentage of families in the census tract living at or below the federal poverty line. Area poverty estimates are derived from the US Census 5-year (2016-2020) American Community Survey at the census tract level. Census tract was based on residential address; if residential address was missing (35%), death location or event address was used.*
4. *Supervisorial District and Service Planning Area were based on residential address; if residential address was missing (35%), death location or event address was used.*
5. *Rates are age-adjusted using the direct method and the 2000 U.S. standard population, except for age-specific and area poverty crude rates. All rates are per 100,000 population. Rates for the pre-pandemic period March 2018 – December 2019 were calculated using 2018 population estimates, and rates for the pandemic period March 2020 – December 2021 were calculated using 2020 population estimates.*
6. *Absolute rate change is the difference between rates during the March 2018 – December 2019 and March 2020 – December 2021 periods. Relative rate change is the absolute rate change divided by the March 2018 – December 2019 rate, multiplied by 100. Non-overlapping confidence intervals based on the gamma method were used if the number of deaths was <100 in the March 2018 – December 2019 or March 2020 – December 2021 period, and z-tests were used if the number of deaths was ≥100 in both the March 2018 – December 2019 and March 2020 – December 2021 periods.*
7. *Rate changes were statistically significant (p-value <0.05) for all sociodemographic and drug categories, except for those aged 0-11 years, American Indian/Alaskan Natives, Pacific Islanders, heroin, other opioids, and other stimulants.*
8. *Cells with the number of accidental drug overdose deaths less than 10 were excluded from further analysis.*
9. *Data was reported only for categories with non-missing values.*

Data Source: *Accidental drug overdose death data was extracted by the Los Angeles County Medical Examiner-Coroner's Office in May 2022 and prepared by the Health Outcomes and Data Analytics (HODA) Branch within the Los Angeles County Department of Public Health's Division of Substance Abuse Prevention and Control (SAPC).*

Figure 5 presents the number of accidental drug overdose deaths as a 7-day moving average from the pre-pandemic time period March 2018 – December 2019 (blue line) and the pandemic time period March 2018 – December 2021 (orange line). The 7-day moving averages for drug overdose deaths were consistently higher in the pandemic period compared to the pre-pandemic period for the same time of year.

Figure 5. Number of Accidental Drug Overdose Deaths (7 Day Moving Average) by Date, Los Angeles County, Mar 2018 – Dec 2019 and Mar 2020 – Dec 2021



Notes: *Moving averages are used to track and identify trends by reducing normal day-to-day fluctuations and minimizing the amount of "noise" in the daily data. In this case, moving averages provide a visual representation of the recent accidental drug overdose death trends. Based on data as of May 2022. December 2021 data may be incomplete.*

1. Gender

During the COVID-19 pandemic period, accidental overdose death rates per 100,000 population among males increased by 86% (from 38.5 to 71.6) compared to the same 22-month period before the pandemic, and increased by 91% (from 11.0 to 21.1) among females. The gender distribution did not change during the pandemic period, remaining at over three-quarters (77%) of total accidental drug overdose deaths among males (n=3,812) and 23% among females (n=1,127) (Table 1, see Figures 6-7 for monthly trends).

Figure 6. Age-Adjusted Accidental Drug Overdose Death Rate (per 100,000 population) by Gender, Los Angeles County, Jan 2018 – Dec 2021

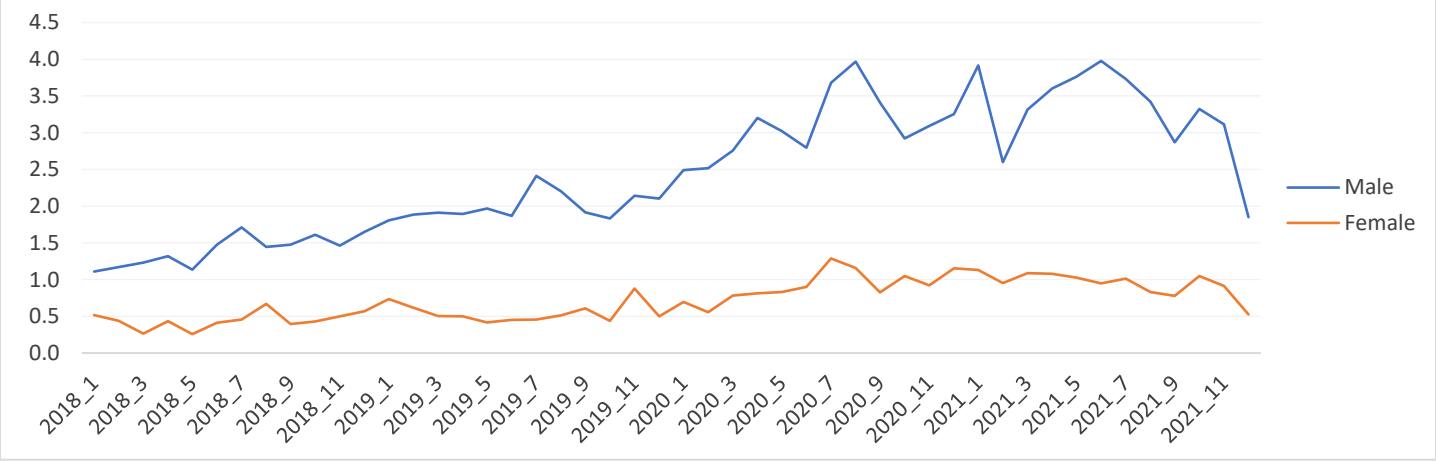
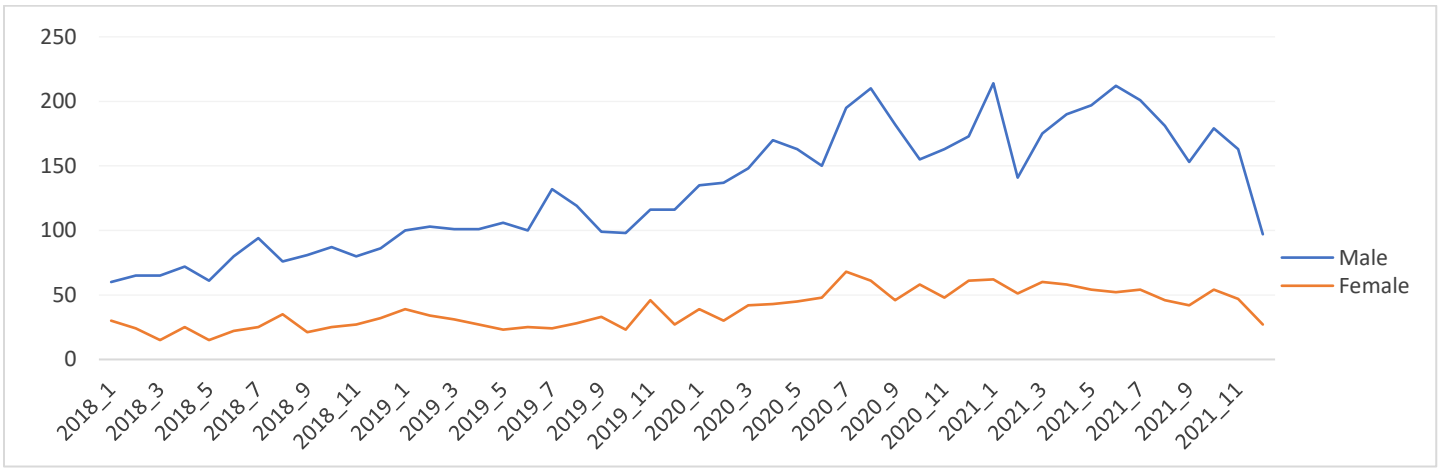


Figure 7. Number of Accidental Drug Overdose Deaths by Gender, Los Angeles County, Jan 2018 – Dec 2021

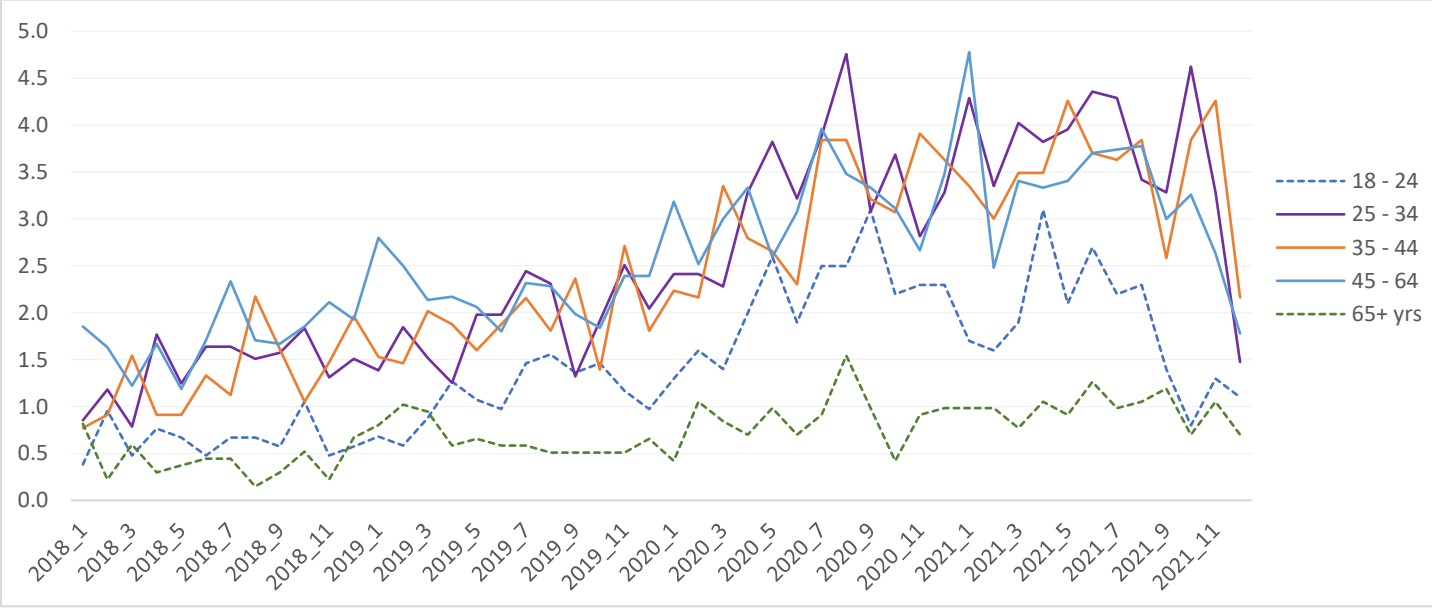


2. Age Group

During the pandemic period, the accidental drug overdose death rate per 100,000 population was highest among people aged 25-34 years (78.3), followed by those aged 35-44 years (74.2), 45-64 years (71.3), 18-24 years (44.9), 65+ years (20.6), and 12-17 years (7.1). Accidental drug overdose death rates increased more for younger age groups, at a 315% increase among people aged 12-17 years, 129% increase among those aged 18-24 years, 111% increase among those aged 25-34 years, 101% increase among those aged 35-44 years, while there was a 72% increase among those aged 65+ years, and a 61% increase among those aged 45-64 years compared to the same period before the pandemic (Table 1, see Figure 8 for monthly trends).

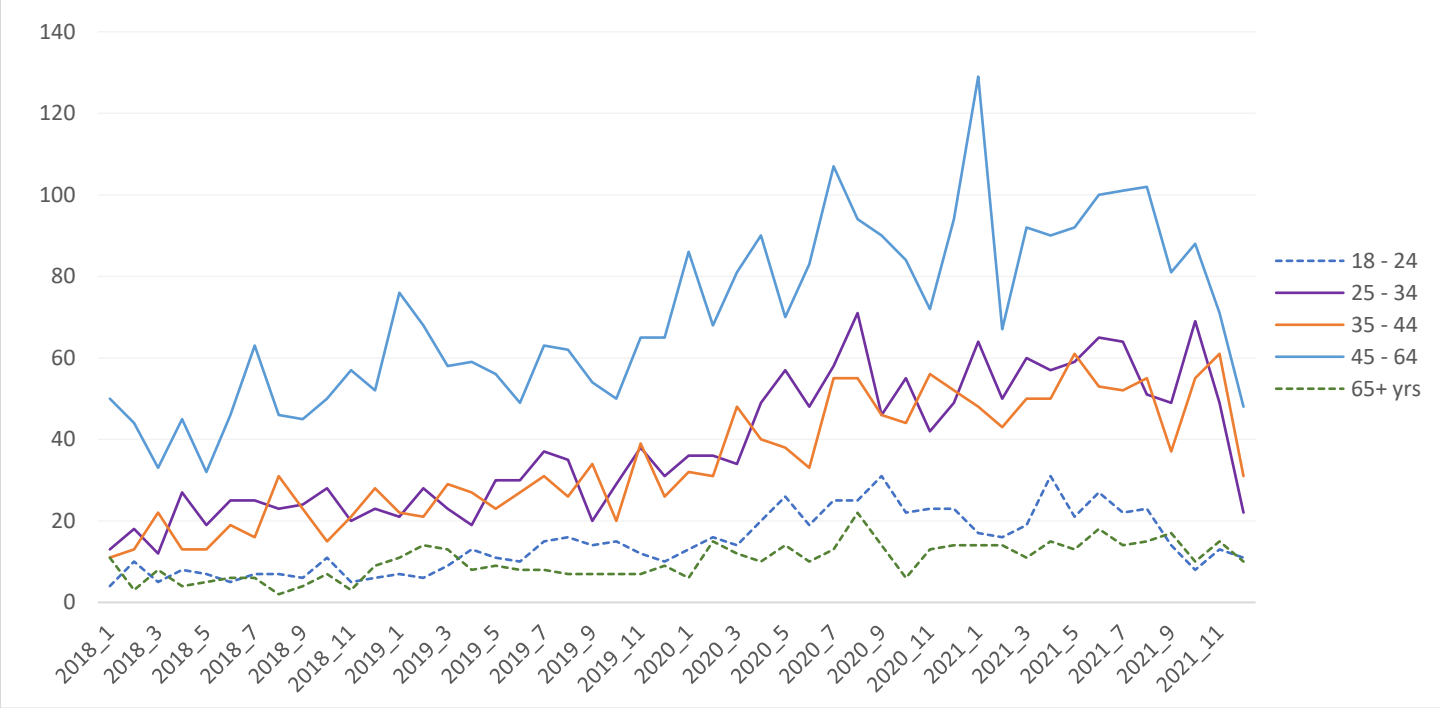
The number of accidental drug overdose deaths was highest among those aged 45-64 (n=1,926), followed by those aged 25-34 (n=1,168), aged 35-44 (n=1,063), aged 18-24 (n=450), aged 65+ (n=294), aged 12-17 (n=53), and aged 0-11 (n=16) during the pandemic period (see Table 1). The number of accidental drug overdose deaths increased through the summer of 2020 and remained stable among those aged 18-24 and 65+, peaked in January 2021 then decreased among those aged 45-64, and continued trending up through 2021 among those aged 25-34 and 35-44 years (see Figure 9 for monthly trends).

Figure 8. Accidental Drug Overdose Death Rate (per 100,000 population) by Age Group, Los Angeles County, Jan 2018 – Dec 2021



***Notes**: The majority of monthly death counts used to calculate age-specific rates were 20 or less and statistically unstable. Rates should be interpreted with caution. Age groups 0-11 and 12-17 were not included due to small numbers.*

Figure 9. Number of Accidental Drug Overdose Deaths by Age Group, Los Angeles County, Jan 2018 – Dec 2021



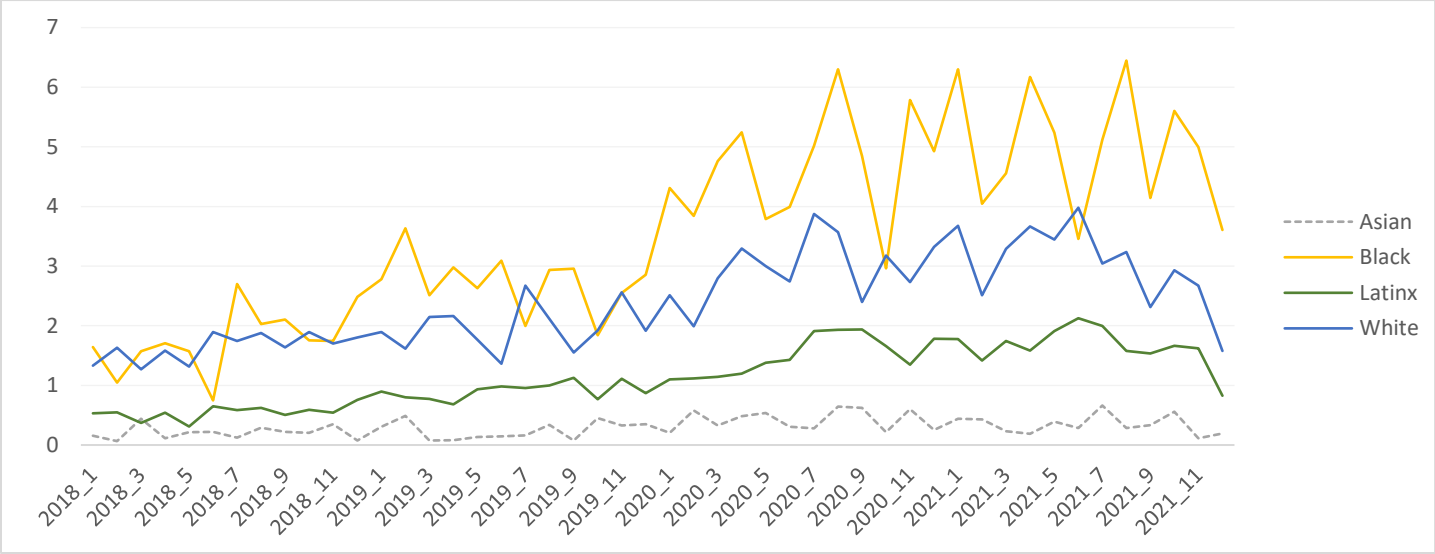
3. Race/Ethnicity

While Whites and Latinxs had the highest total number of accidental drug overdose deaths during the pandemic period, Blacks/African Americans had the highest age-adjusted accidental drug overdose death rate per 100,000 population (107.3), followed by Whites (67.3), American Indians/Alaskan Natives (44.0), Latinxs (35.5), Pacific Islanders (34.3), then Asians (8.4).

With respect to statistically significant findings and compared to the pre-pandemic period, the age-adjusted accidental drug overdose death rates increased the most for Latinxs (by 116%) during the pandemic period, followed by Blacks/African Americans (by 109%), Whites (by 67%), and Asians (by 62%) (Table 1, see Figure 10 for monthly trends).

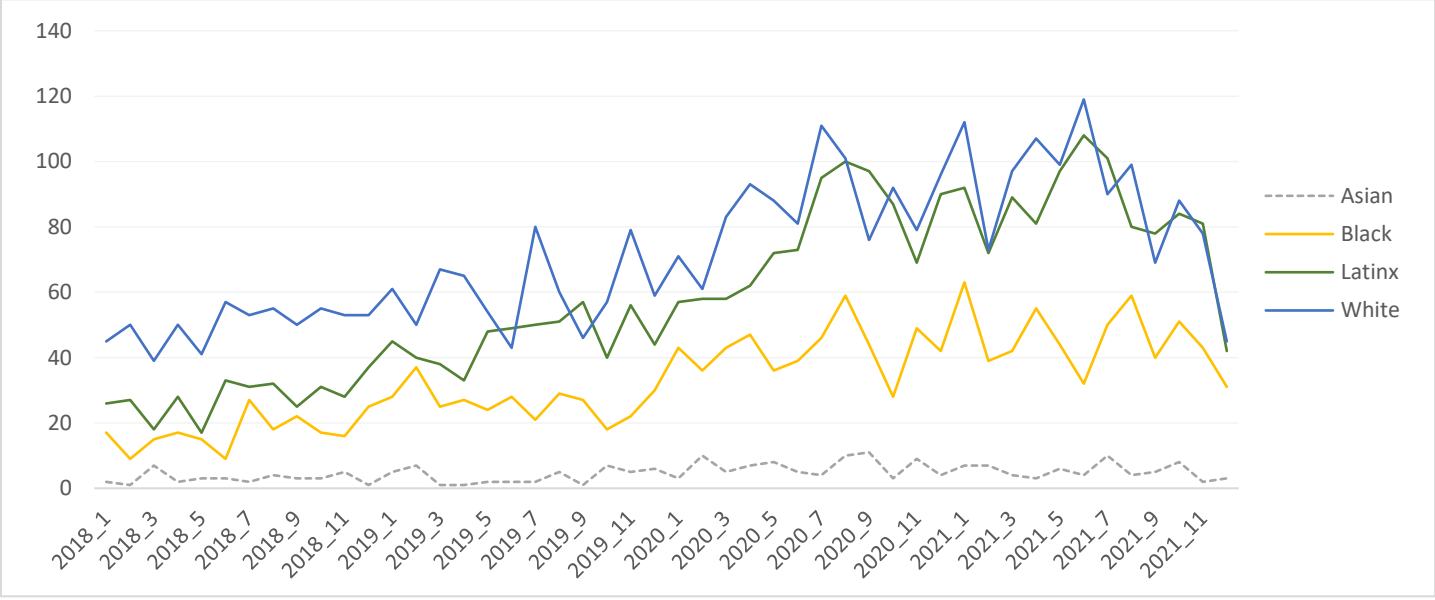
During the pandemic period, the highest number of accidental drug overdose deaths occurred among Whites (n=1,976), followed by Latinxs (n=1,808), Blacks/African Americans (n=982), Asians (n=129), American Indians/Alaska Natives (n=11), and Pacific Islanders (n=9) (Table 1, see Figure 11 for monthly trends).

Figure 10. Age-Adjusted Accidental Drug Overdose Death Rate (per 100,000 population) by Race/Ethnicity, Los Angeles County, Jan 2018 – Dec 2021



Notes: *The majority of monthly death counts used to calculate age-adjusted rates for Asians and Black/African Americans were 20 or less and statistically unstable. Rates should be interpreted with caution. Other races were not included due to small numbers.*

Figure 11. Number of Accidental Drug Overdose Deaths by Race/Ethnicity, Los Angeles County, Jan 2018 - Dec 2021



4. Drug Type

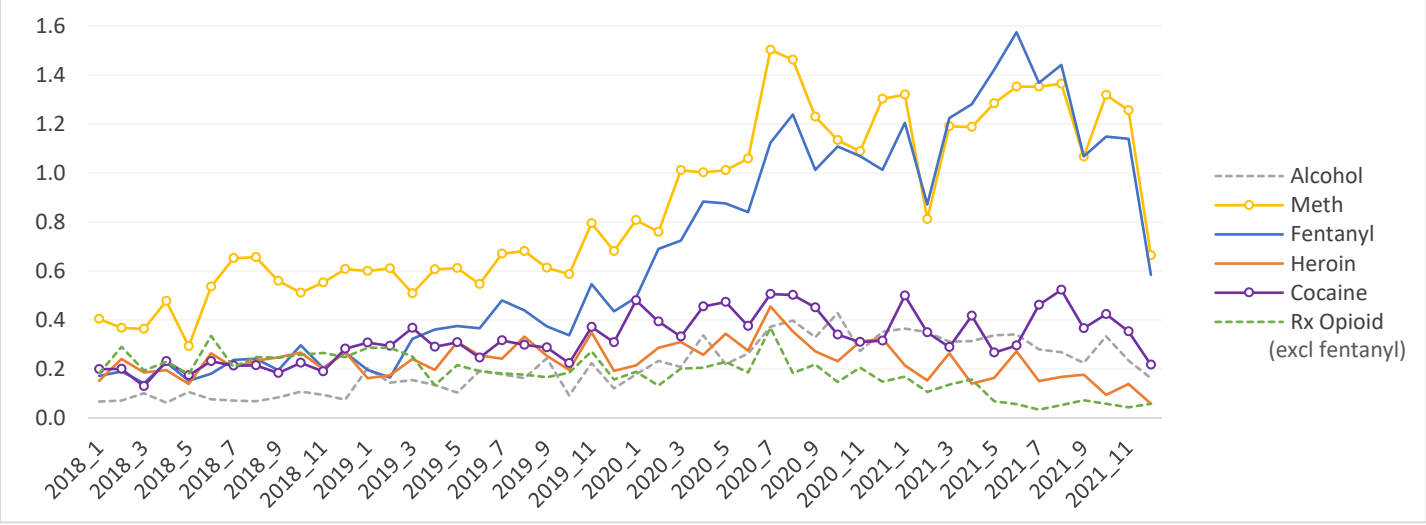
During the pandemic period, methamphetamine was associated with the highest accidental drug overdose death rate per 100,000 population (26.0), followed by fentanyl (24.2), cocaine (8.5), alcohol (6.7), heroin (5.1), benzodiazepines (3.4), and prescription (Rx) opioids (3.1) (Table 1).

Compared to the pre-pandemic period, fentanyl overdose deaths increased by 269% (from 685 to 2,529), and the fentanyl overdose death rate per 100,000 population increased by 272% (from 6.5 to 24.2). Meanwhile, methamphetamine overdose deaths increased by 101% (from 1,388 to 2,795) and the methamphetamine overdose death rate per 100,000 population increased by 104% (from 12.7 to 26.0) (Table 1, see Figures 12-13 for monthly trends).

The data trend clearly demonstrates that methamphetamine and fentanyl are the top two drug types implicated in the majority of accidental overdose deaths. Furthermore, the methamphetamine overdose death trend closely mirrors that of fentanyl, raising the concern that these deaths may be due to methamphetamine tainted with fentanyl.

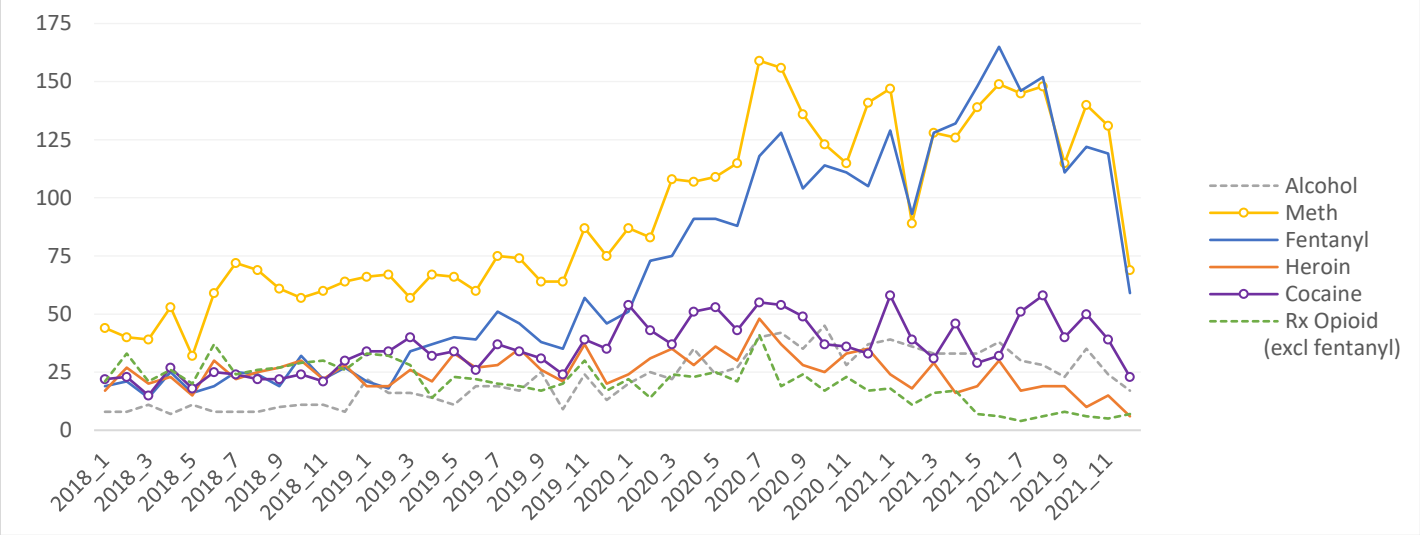
Compared to the pre-pandemic period, the age adjusted death rate of drug overdose involving prescription opioids (excluding fentanyl) decreased by 37% from the pre-pandemic period. Death rates for heroin overdose remained stable (Table 1, see Figures 12-13 for monthly trends).

Figure 12. Age-Adjusted Accidental Drug Overdose Death Rate (per 100,000 population) by Drug Category, Los Angeles County, Jan 2018 – Dec 2021



Note: *Some monthly death counts used to calculate age-adjusted rates were 20 or less and statistically unstable. Rates should be interpreted with caution.*

Figure 13. Number of Accidental Drug Overdose Deaths by Drug Category, Los Angeles County, Jan 2018 – Dec 2021

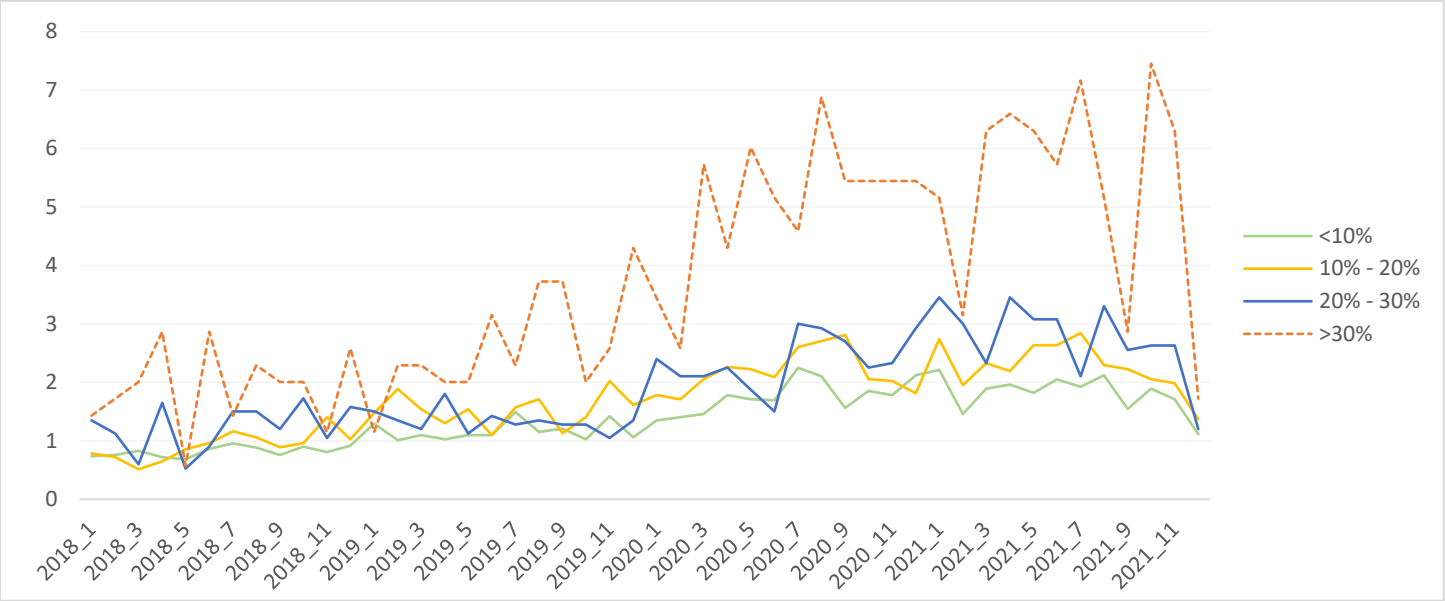


5. Area Poverty

During the pandemic period, areas with more than 30% of families living in poverty had the highest death rate per 100,000 population (118.4), followed by areas with 20% to 30% of families living poverty (56.7), areas with 10% to 20% of families living in poverty (49.9), and areas with less than 10% of families living in poverty (40.0). Compared to the pre-pandemic period, accidental drug overdose death rates per 100,000 population increased by 131% (from 51.3 to 118.4) in areas with 30% or more families living in poverty, by 101% (from 28.2 to 56.7) in areas with 20% to 30% of families living in poverty, by 80% (from 27.8 to 49.9) in areas with 10% to 20% of families living in poverty, and by 80% (from 22.3 to 40.0) in areas with less than 10% of families living in poverty (Table 1, see Figure 14 for monthly trends).

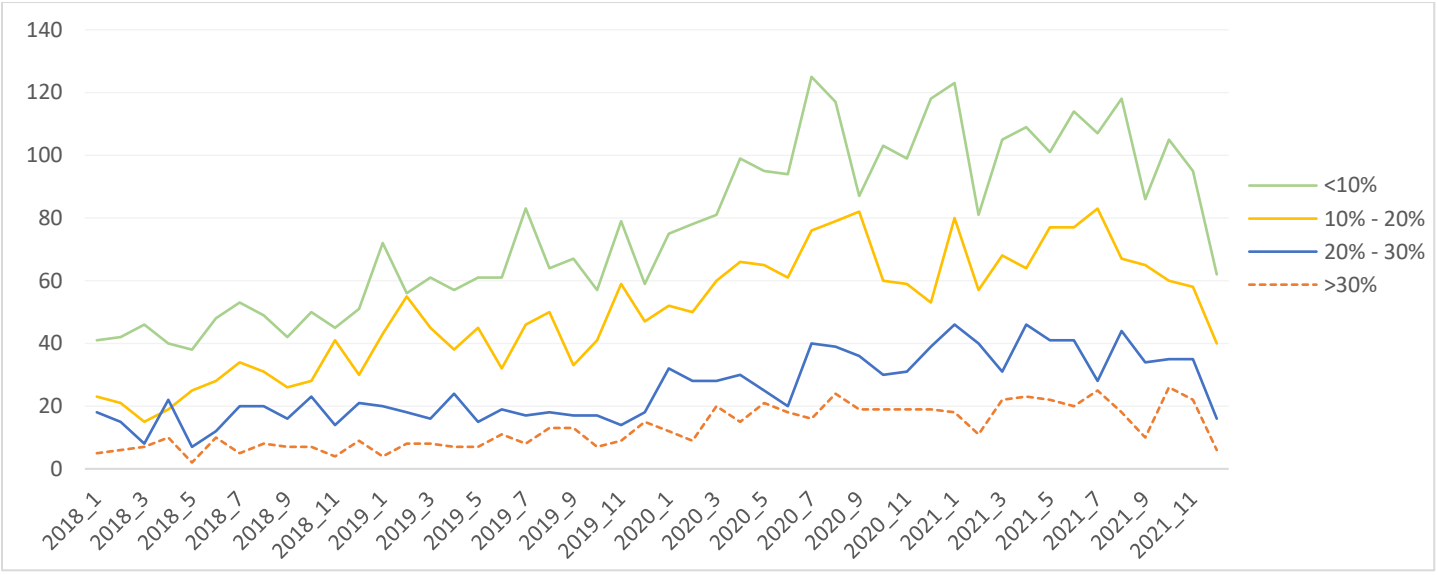
As shown in Figure 15, higher rates of area poverty were associated with higher accidental drug overdose death rates per 100,000 population. The impact of this trend was greater during the pandemic period and the opposite association was found for overall drug overdose death numbers. In other words, lower rates of area poverty were associated with higher numbers of total drug overdose deaths. This may be due to potential interactions among residents density, poverty areas, lethality of drug types used, health disparities that may have led to greater access to prescription opioids in more affluent areas and subsequent increases in use of counterfeit pills once prescription opioids could no longer be obtained, in addition to higher densities of Blacks/African Americans and Latinx – who as highlighted above have experienced higher accidental drug overdose death rates during the pandemic – in higher poverty areas.

Figure 14. Accidental Drug Overdose Death Rate (per 100,000 families) by Area Poverty, Los Angeles County, Jan 2018 - Dec 2021



Note: *Some monthly death counts used to calculate crude rates were 20 or less and statistically unstable. Rates should be interpreted with caution.*

Figure 15. Number of Accidental Drug Overdose Death by Area Poverty, Los Angeles County, Jan 2018 – Dec 2021

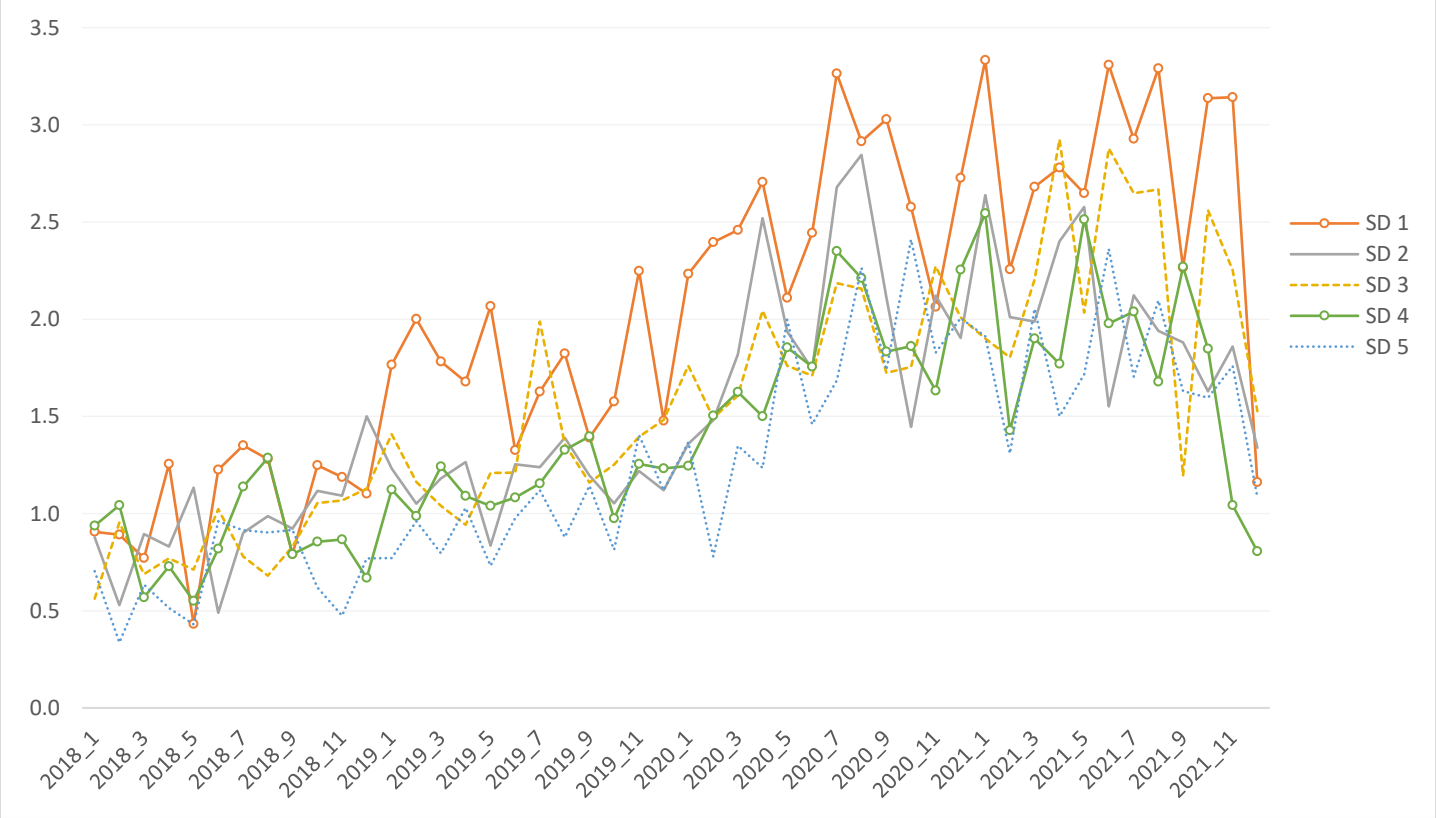


6. Supervisorial District (SD)

During the pandemic period, the accidental drug overdose death rates per 100,000 population in SDs were as follows from highest to lowest: SD 1 (59.2), SD 3 (45.8), SD 2 (45.1), SD 4 (40.7), and SD 5 (38.7). Total accidental drug overdose death numbers followed the same pattern as the death rates by SD (Table 1, see Figures 16-17 for monthly trends).

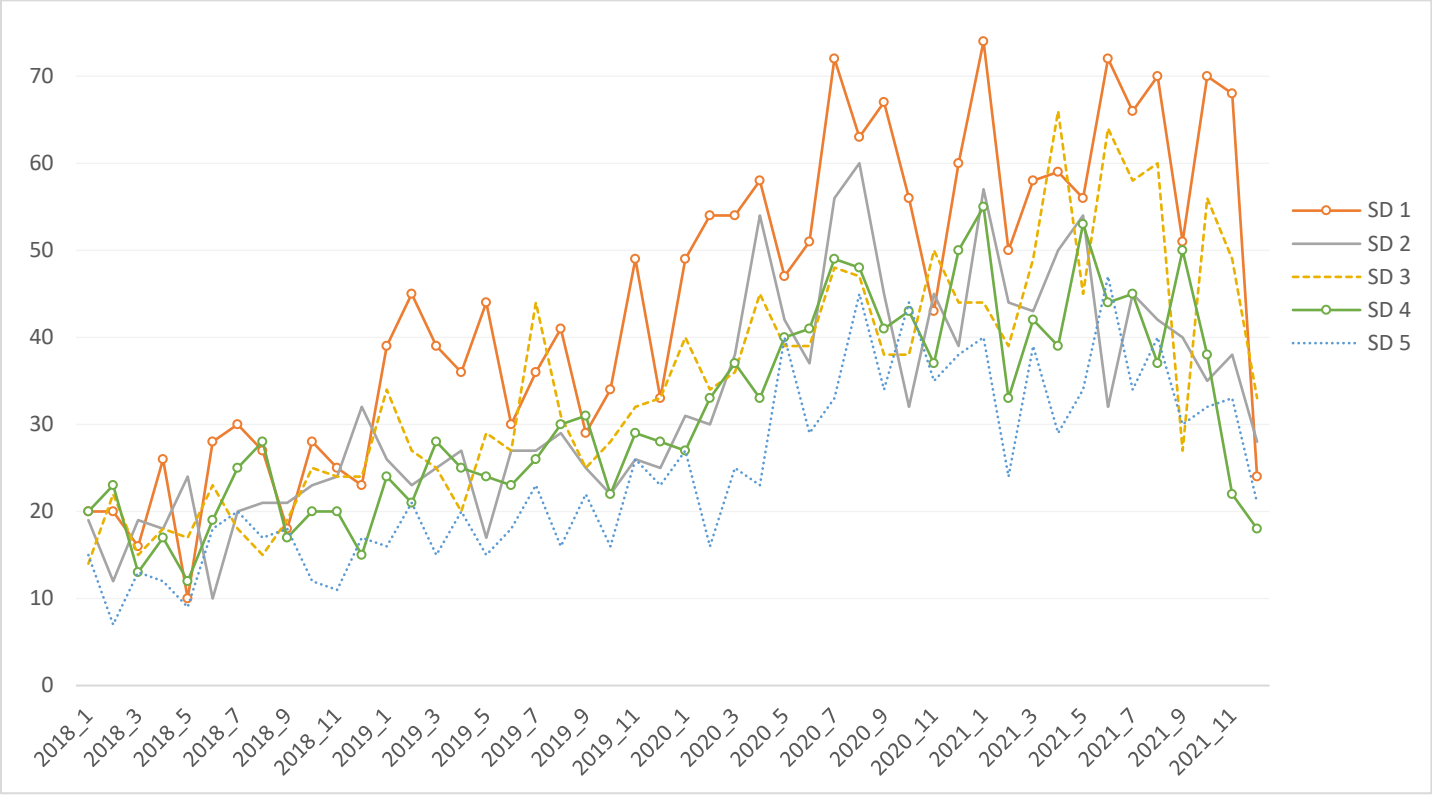
Compared to the pre-pandemic period, accidental drug overdose death rates per 100,000 population increased by 105% (from 18.9 to 38.7) in SD 5, by 89% (from 24.3 to 45.8) in SD 3, by 88% (from 23.9 to 45.1) in SD 2, by 87% (from 31.6 to 59.2) in SD 1, and by 83% (from 22.2 to 40.7) in SD 4 in the pandemic period.

Figure 16. Age-Adjusted Accidental Drug Overdose Death Rate (per 100,000 population) by Supervisorial District, Los Angeles County, Jan 2018 – Dec 2021



Notes: *Most of the monthly death counts used to calculate age-adjusted rates were 20 or less and statistically unstable. Rates should be interpreted with caution. Based on SD 2021 boundaries.*

Figure 17. Number of Accidental Drug Overdose Deaths by Supervisorial District, Los Angeles County, Jan 2018 – Dec 2021

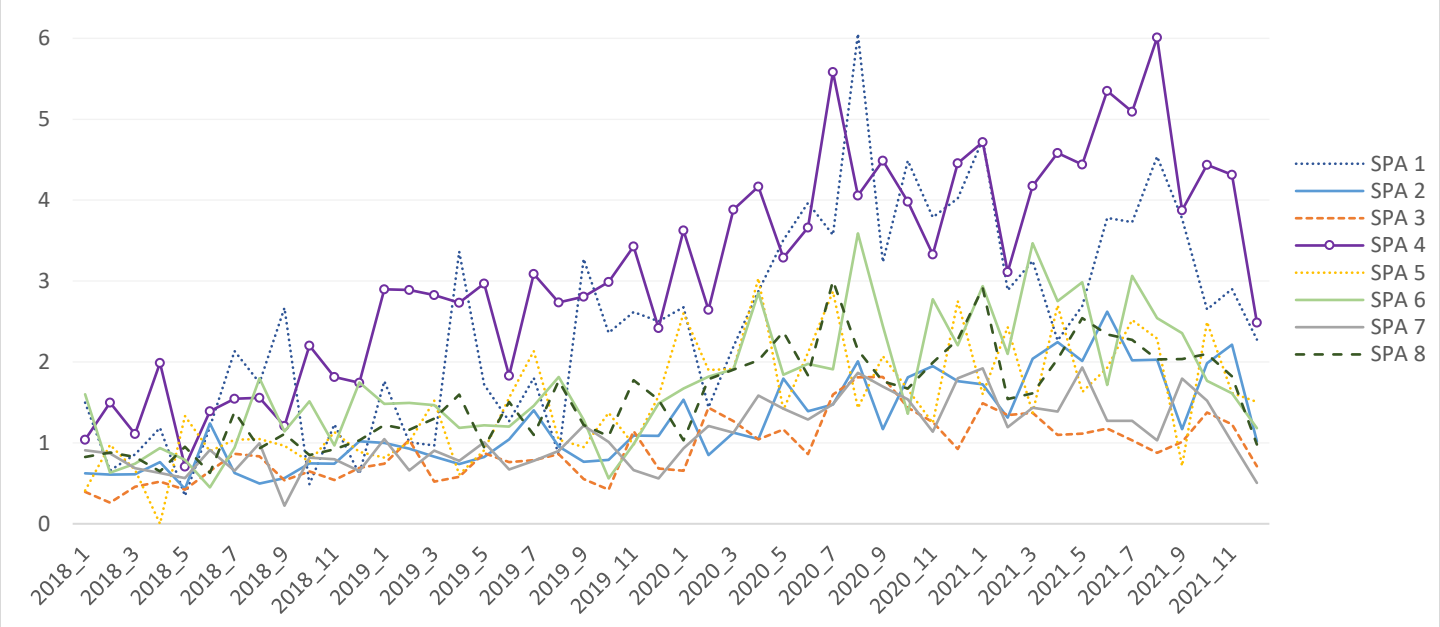


7. Service Planning Area (SPA)

During the pandemic period, the accidental drug overdose death rates per 100,000 population in the SPAs were as follows from highest to lowest: SPA 4 Metro (93.5), SPA 1 Antelope Valley (77.2), SPA 6 South (51.3), SPA 8 South Bay (45.2), SPA 5 West (43.3), SPA 2 San Fernando (37.9), SPA 7 East (31.2), and SPA 3 San Gabriel (27.1). This order did not change from the pre-pandemic period (Table 1, see Figures 18-19 for monthly trends).

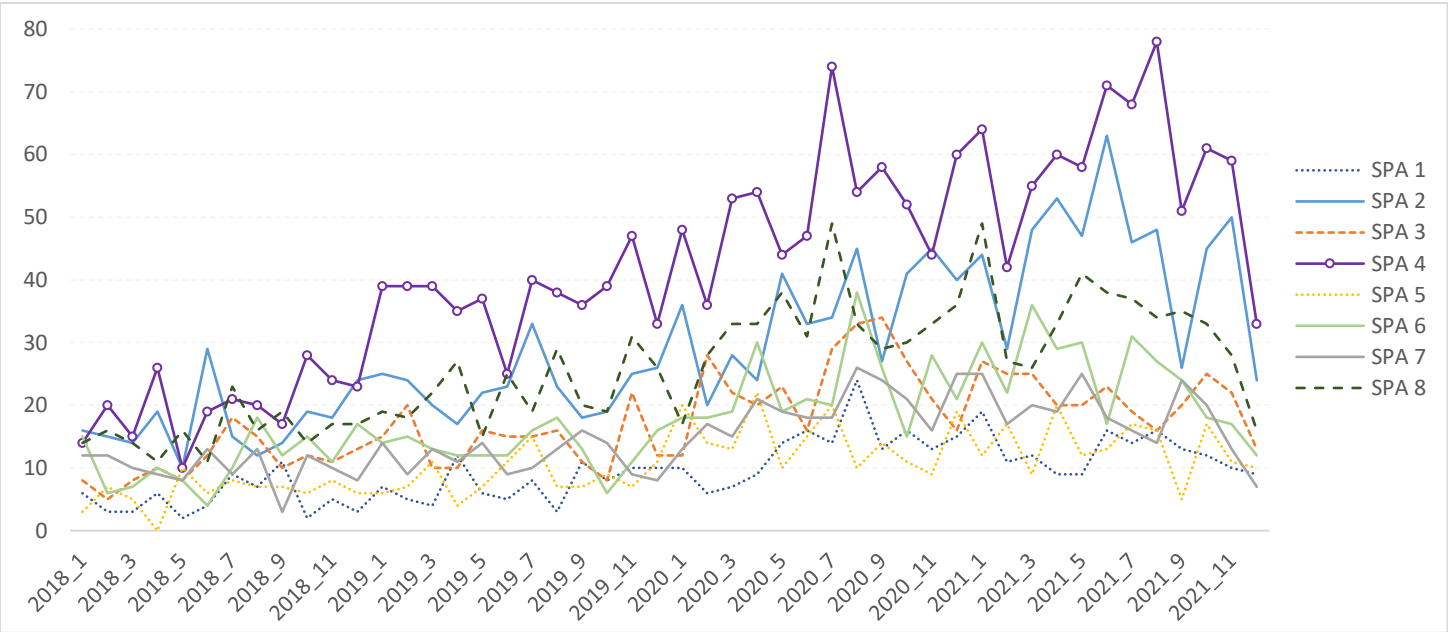
Compared to the pre-pandemic period, the SPAs with the highest increase in accidental drug overdose death rates per 100,000 population were: SPA 1 (114%), SPA 2 (103%), SPA 6 (92%), SPA 4 (90%), SPA 5 (88%), SPA 7 (82%), SPA 3 (79%), and SPA 8 (78%).

Figure 18. Age-Adjusted Accidental Drug Overdose Death Rate (per 100,000 population) by Service Planning Area, Los Angeles County, Jan 2018 – Dec 2021



***Note**: The majority of monthly death counts used to calculate age-adjusted rates were 20 or less and statistically unstable. Rates should be interpreted with caution. Based on SPA 2022 boundaries.*

Figure 19. Number of Accidental Drug Overdose Deaths by Service Planning Area, Los Angeles County, Jan 2018 – Dec 2021



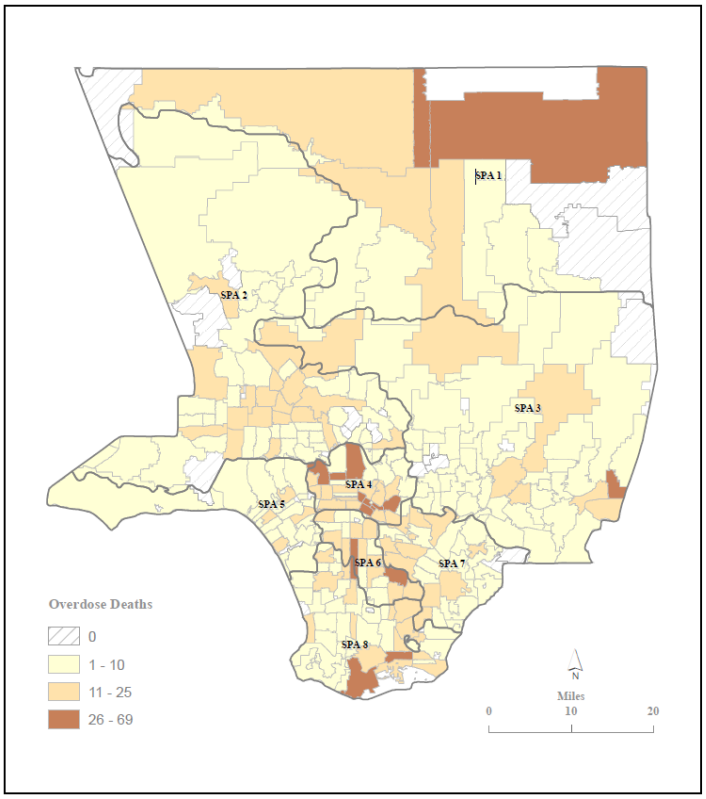
8. Zip Code

To supplement the analysis of COVID-19 impact on accidental drug overdose deaths by SD and SPA, drug overdose death data by zip codes were also analyzed, using residential addresses or death/event locations to examine concentrations of drug overdose deaths throughout Los Angeles County.

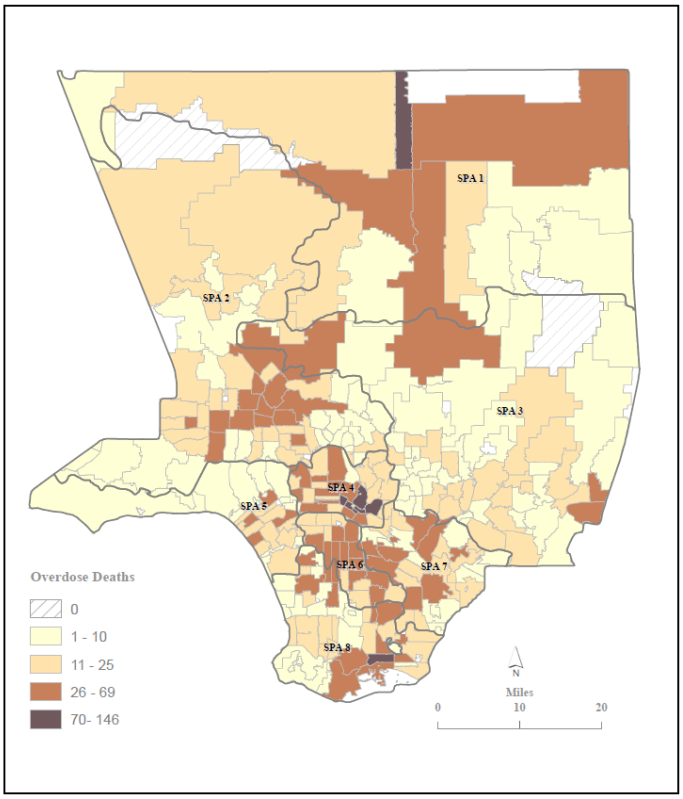
Findings generally demonstrated higher densities of drug overdose deaths and increased numbers during the pandemic period compared to the pre-pandemic period. Higher densities of deaths were identified in the Downtown, Westlake, Chinatown, Boyle Heights, Lancaster, and Long Beach areas (Figure 20).

Figure 20. Accidental Drug Overdose Deaths by Zip Code, Los Angeles County, Mar 2018 – Dec 2019 and Mar 2020 – Dec 2021

Pre-Pandemic (Mar 2018 to Dec 2019)



During Pandemic (Mar 2020 to Dec 2021)



***Notes**: Zip codes were based on residential address; if residential address was missing (35%), death location or event address was used. Los Angeles County GIS Repository data layers for Service Planning Area (SPA) and zip code boundaries were used. Maps developed by the Department of Public Health's Division of Substance Abuse Prevention and Control, Health Outcomes and Data Analytics (HODA) Unit.*

Conclusion

Findings from this data report indicate that there has been a slight but steady increase in accidental drug overdose deaths in Los Angeles County over the past 12 years, with notable increases since 2018 largely due to increases in methamphetamine- and fentanyl-related deaths. The escalation in overdose deaths in 2018 exhibited a sharp surge starting in March 2020 and leveled off by September 2020. This finding suggests a clear association between an acceleration in rising drug overdose deaths and the start of the pandemic.

During the pandemic period, the vast majority (77%) of drug overdose deaths involved males. The data also revealed that middle-aged (aged 25-44) and older individuals (aged 45-64) had the highest accidental drug overdose death rate and total raw numbers of deaths, respectively. The death rate among youth aged 12-17 during pandemic were nearly twice as high as compared to the pre-pandemic period.

In terms of drug-related deaths among racial and ethnic groups during the pandemic period, COVID-19 appeared to contribute to greater drug overdose deaths among minority groups, particularly Blacks/African Americans and Latinxs. The highest accidental drug overdose death rate per 100,000 population was among Blacks/African Americans, although the total number of accidental drug overdose deaths was highest among Whites. The two populations with the highest respective increases in drug overdose death rate during the pandemic were Latinxs and Blacks/African Americans.

Methamphetamine and fentanyl are the first and second, respectively, most common drug types involved in accidental drug overdose deaths in Los Angeles County. When considering other opioids in addition to fentanyl such as heroin and prescription opioids, opioid-related overdose deaths slightly outnumber methamphetamine-related overdose deaths. While methamphetamine contributed to more deaths in total and also had the highest accidental drug overdose death rate per 100,000 population, fentanyl-related deaths rate increased by 272% during the pandemic period compared to the 104% increase in methamphetamine-related deaths.

Findings also demonstrated that accidental drug overdose death rates were higher in areas with higher percentages of poverty, though the largest number of accidental drug overdose deaths occurred in areas with lower levels of poverty.

Mapping of drug overdose deaths indicated higher densities of drug overdose deaths in the Downtown, Westlake, Chinatown, Boyle Heights, Lancaster, and Long Beach areas, which correspond to Supervisorial District 1 and Service Planning Areas 1, 4 and 6.

In summary, the findings of this data report indicate that COVID-19 has contributed to more drug overdose deaths in Los Angeles County than would otherwise be anticipated in the absence of the pandemic. The implications of the data also suggest that the greatest positive impact would likely result from interventions that target methamphetamine and fentanyl use, particularly among males, middle-aged and older adults, and Blacks/African Americans. Whether due to social disconnection and/or additional stressors related to the pandemic, it will be increasingly important to ensure that residents of Los Angeles County continue to have access to substance use prevention and recovery-oriented treatment services to mitigate the direct and indirect toll of COVID-19.