



# Office of the Medical Examiner

Monroe County, New York

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## ***Heroin/fentanyl deaths in Monroe County in 2021***

In 2021, there were 293 deaths in Monroe County that were attributed, in whole or in part, to the use of opioids such as heroin/morphine, fentanyl, and/or its analogs. This represents over a quarter (27%) of the Monroe County deaths investigated with toxicology by the Office of the Medical Examiner (OME)—a slight increase over the previous 3 years (20-25% in 2018-2020). The actual number of Monroe County deaths attributable to heroin/morphine and/or fentanyl/analogues increased 23% from the previous maximum 238 observed in 2020 (Table 1).

*NOTE: The data presented in this report refer only to those individuals who died in Monroe County, for whom the cause(s) of death was specifically attributed to the substances involved. It does not include deaths wherein these substances were present, but the cause of death was attributed to some traumatic injury (e.g., driving under the influence of drugs leading to a fatal crash). It also does not include cases from other counties that were investigated by the Monroe County OME. Not all deaths in Monroe County fall under the jurisdiction of the OME, and not all OME cases require toxicology testing. Medical examiner deaths with toxicology generally include natural (sudden and unexpected) deaths and suspected accidents, homicides, and suicides.*

The racial/ethnic heritage (Table 2) and sex distribution (Table 3) of overdose deaths reflects considerable diversity, with communities of color disproportionately affected. In particular, the proportion of African Americans dying of heroin/fentanyl overdose in Monroe County continues on a notably increasing trajectory, from 13.3% in 2018 to 31.1% in 2021.

Table 1. Number of deaths in Monroe County attributed to overdose from heroin/morphine and/or fentanyl, fentanyl analogs, or other designer opioids.

<b>Year</b>	<b>Number of Deaths</b>
2011-2013 (aggregate)	78
2014	81
2015	69
2016	169
2017	220
2018	195
2019	181
2020	238
2021	293

The opioid crisis also continues to affect people of all ages. In 2021, the ages of the victims of heroin/morphine/fentanyl/analogues overdose ranged from <20 to 90 years with a median age of 42 years (Figure 1).



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Table 2. Race/ethnicity distribution among heroin/morphine and fentanyl/analogs deaths in 2021, and estimates of the general population demographic distribution of Monroe County.

Race	Percent of Overdose Deaths	Monroe County General Population Estimate <sup>a</sup>
Caucasian	56.7%	76.7%
African American	31.1%	16.1%
Asian	1.0%	3.7%
Other <sup>b</sup>	11.3%	3.5%
Hispanic <sup>c</sup>	14.0%	9.6%

<sup>a</sup>Source: <https://www.census.gov/quickfacts/monroecountynewyork> Accessed 30 November 2022.  
<sup>b</sup>Other includes but is not limited to Native American, Native Hawaiian/Pacific Islander, and 2 or more races.  
<sup>c</sup>Hispanic ethnicity identification is independent of race identification.

Table 3. Sex distribution among heroin/morphine and fentanyl/analogs deaths in 2021, and estimates of the general population demographic distribution of Monroe County.

Sex	Percent of Overdose Deaths	Monroe County General Population Estimate <sup>a</sup>
Male	70.6%	48.5%
Female	29.4%	51.5%

<sup>a</sup>Source: <https://www.census.gov/quickfacts/monroecountynewyork> Accessed 30 November 2022.

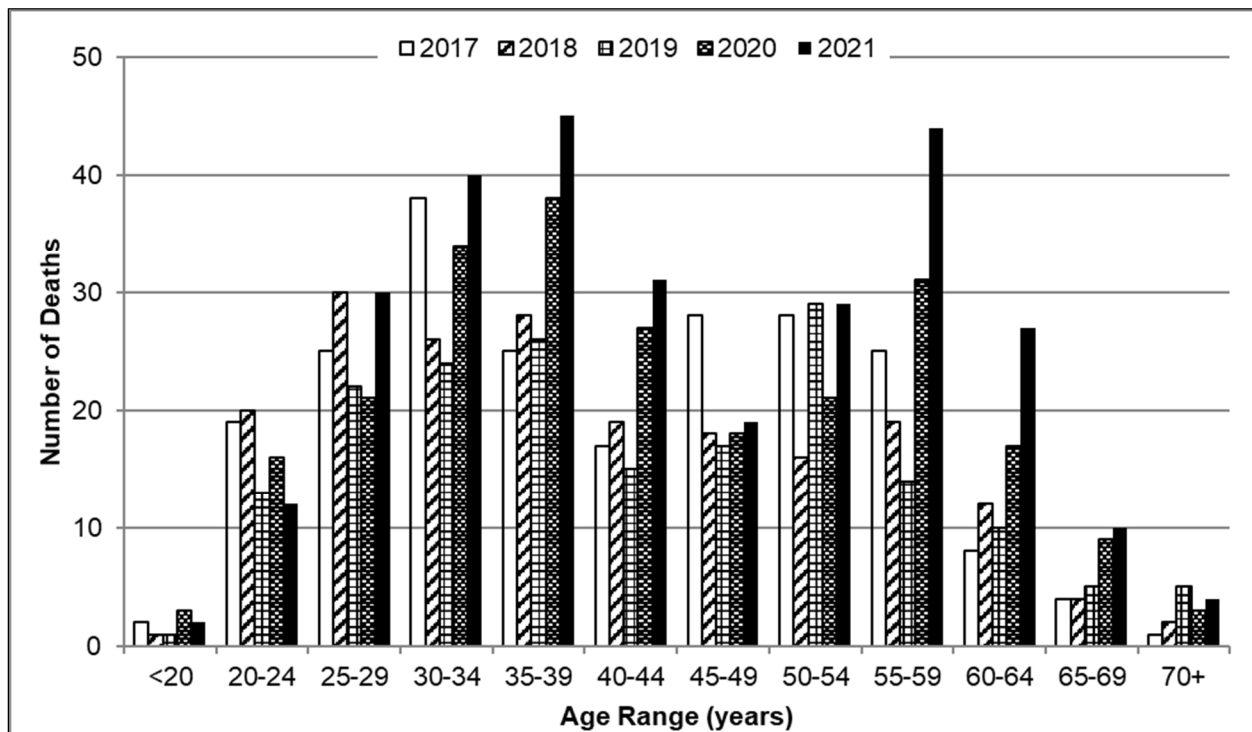


Figure 1. Age distribution of heroin/morphine and fentanyl/analogs deaths by year.



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Based on the raw number of Monroe County deaths listed above, it follows that the average number of heroin/fentanyl deaths per month in Monroe County also reached its highest point in 2021 (Table 4). That said, the most in any single given month in 2021 occurred in May (36) and September (37). No month in 2021 had fewer than 16 overdose deaths.

Table 4. Average number of Monroe County heroin/morphine and fentanyl/analogs deaths per month.

	Average Deaths/Month
2016	14
2017	18
2018	16
2019	15
2020	20
2021	24

Fentanyl remains by far the most common opioid associated with overdose deaths. Fentanyl/analogs were present in 97.6% of these opioid deaths in 2021 (Table 5). In contrast, the heroin/morphine<sup>1</sup> prevalence continued a sharp decline from its peak in an earlier wave of the opioid crisis (from 42.3% in 2017 to 5.8% in 2021)—having been superseded and largely replaced by the more-potent fentanyl in recent years. Only 4 (1.4%) of the overdose deaths contained heroin/morphine in the absence of fentanyl, consistent with 2020.

Availability, potency and/or composition of drugs on the street varies over time and by region. Fluoro fentanyl (first observed in autumn of 2020) became the most prevalent fentanyl analog in 2021, appearing in 19.8% of the year's overdose deaths. Meanwhile, most other fentanyl analogs detected in previous years had also largely dropped away in 2021, with the exception of acetyl fentanyl (2.0% of the overdose deaths). These analog compounds are typically detected alongside fentanyl itself, and they vary in potency. Xylazine, a veterinary sedative not approved for human use, has also appeared frequently in opioid overdose deaths, taking off notably in 2021 with 19.1% of the cases containing this compound. It is most often utilized as a cutting agent for illicit fentanyl formulations. The dynamic and frequently changing novel psychoactive substance (NPS) and illicit drug market presents unique and ongoing challenges for toxicological testing. The OME continues to watch developments carefully and adapt testing methodology to detect these threats to public health.

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<sup>1</sup>Upon entry into the body, heroin is rapidly metabolized to morphine through an intermediate (6-monoacetylmorphine, 6-MAM). Detecting 6-MAM helps differentiate heroin from pharmaceutical morphine, but its absence does not preclude it. Seven (2.4%) of the 293 deaths involved morphine that could not necessarily be attributed to heroin. Fentanyl and analogs are often sold on the street as heroin or cocaine, frequently in preparations or mixtures with those compounds.



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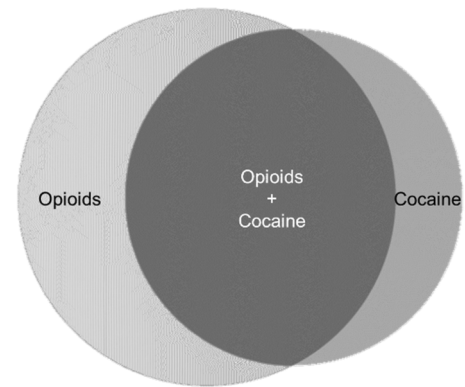
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Combinations of fentanyl/analogs, heroin/morphine, ethanol (alcohol) and cocaine are still frequently encountered together in postmortem cases. Among the 293 cases described herein, again in 2021 there was both a mean and median of 2 of these 4 substances that were listed as direct contributors to the cause of death. Cocaine is the single most common concurrent contributing substance in opioid overdoses, appearing in over 60% of the opioid deaths in 2021 (Table 5). Although preparations vary, when cocaine and opioids appear together it is generally not possible to establish whether cocaine and fentanyl/analogs were contained in the same mixture or merely utilized concurrently. However, the public should be cautioned about the risks of taking multiple drugs and/or combining drugs with alcohol—as well as the fact that illicit drugs may contain unknown mixtures of compounds and produce unexpected or exaggerated effects.

Cocaine also remains a growing concern for overdose deaths in its own right. Cocaine overdoses—even in the absence of opioids—have become especially frequent in recent years. In addition to the 180 overdoses involving combined effects of opioids and cocaine (darkest shading), there were also 53 other cocaine deaths (medium grey) that did *not* involve opioids, for a total of 233 cocaine-related deaths. In the face of the so-called “opioid epidemic” that is frequently publicized, the public should be cautioned that although cocaine is not an opioid it does not represent a safer alternative.



Other findings of drugs contributing to these overdose deaths are presented in Table 5. In addition to prescription opioids, alcohol, amphetamines and benzodiazepines also frequently contribute to opioid overdose deaths.

Table 5. Number of 2021 opioid overdose cases for which common substances were listed in the cause of death.

Compound / Drug Class	Number of Cases	Percent of Opioid Overdose Deaths
Fentanyl/Analogs	286	97.6%
Cocaine	180	61.4%
Heroin	10	3.4%
Morphine	7	2.4%
Alcohol	85	29.0%
Prescription Opioids <sup>a</sup>	36	12.3%
Benzodiazepines <sup>b</sup>	14	4.8%
Amphetamines <sup>c</sup>	19	6.5%
Mitragynine (Kratom)	3	1.0%
Gabapentin	12	4.1%
Cyclobenzaprine	7	2.4%

<sup>a</sup>Note: these data do not include deaths attributed to prescription opioids in the absence of fentanyl/analogs or heroin/morphine. Prescription opioids include buprenorphine, hydrocodone, methadone, oxycodone, and tramadol.  
<sup>b</sup>Includes novel psychoactive substance [designer] benzodiazepines: 1 (etizolam) in 2021  
<sup>c</sup>Includes amphetamine, methamphetamine, and 3,4-methylenedioxyamphetamine (MDMA, ecstasy)