

MAINE DRUG DEATH REPORT FOR 2020

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This report, funded by the Maine Office of Attorney General, provides a summary of statistics regarding drug fatalities in Maine during 2020. Data for the report were collected at the Office of Chief Medical Examiner. A drug death is identified when one or more drugs are mentioned on the death certificate as a cause or significant contributing factor for the death. All drug deaths that occurred in Maine are included, whether or not they were Maine residents. Deaths of Maine residents who died out of state are not included.

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Executive Summary

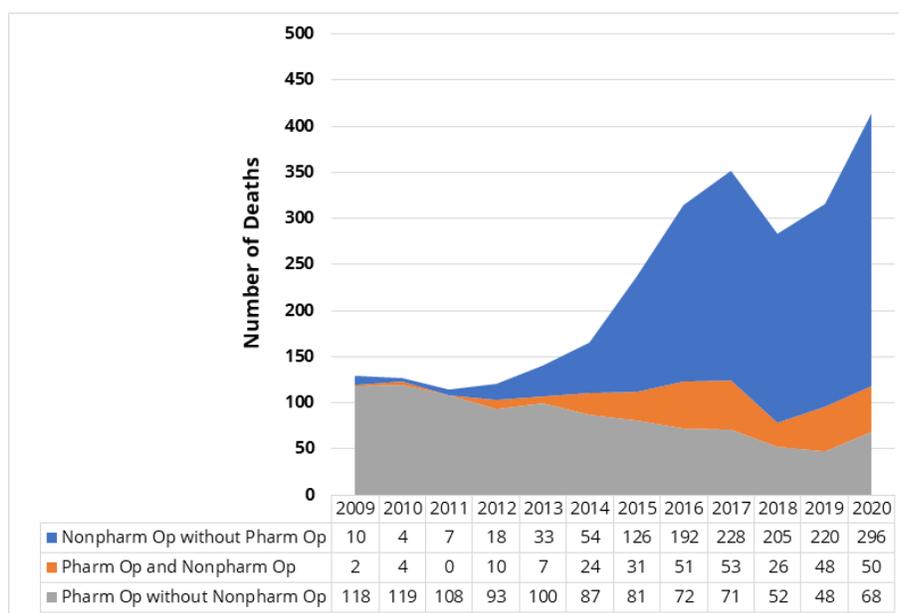
Drug deaths totaled 504 in 2020, a 33% increase over 380 in 2019. Of those 504, 83% were caused by opioids, nearly always in combination with other drugs or alcohol. This rise over 2019 was largely driven by a 33% rise in deaths due to nonpharmaceutical drugs, primarily fentanyl, increasingly combined with methamphetamine or cocaine. Because fentanyl is nearly always combined with other drug categories, such as pharmaceutical opioids, benzodiazepines, and alcohol, as well as illicit stimulants, the fentanyl increase is associated with an increase in those categories as well. Deaths due to nonpharmaceutical fentanyl with or without other co-intoxicants, increased 30% from 259 to 336.

[Figure 1](#) highlights changes in the major categories of nonpharmaceutical opioid versus pharmaceutical opioid deaths. The nonpharmaceutical opioid category includes fentanyl (97%) and its analogs, as well as heroin (11%). Heroin is involved mostly in combination with fentanyl. As can be seen in [Figure 1](#), the nonpharmaceutical opioid category constitutes the majority (69%) of drug deaths. Pharmaceutical opioids, on the other hand, are named as a cause of death in 118 (23%) of deaths in 2020, an increase of 23% from 96 deaths in 2019. This category includes a minority of cases where there was a current prescription (19%) as well as those without a prescription (81%). Of those 118 pharmaceutical opioid cases, the overwhelming majority (82%) also included fentanyl as a co-intoxicant cause of death.

Maine has also seen a dramatic increase in the involvement of non-opioid, illicit stimulant drugs, frequently combined with fentanyl. These include cocaine, which increased 7% from 110 in 2019 to 118 in 2020, and methamphetamine, which increased 111% from 47 to 99. These drugs are frequently combined with nonpharmaceutical opioids. Cocaine was a co-intoxicant cause of death in 29% of fentanyl deaths and methamphetamine was a co-intoxicant cause of death in 21% of fentanyl deaths.

Nearly all counties in Maine experienced substantial increases in the number of deaths, with the exception of Cumberland, Lincoln and Somerset, which saw decreases (Tables [6](#) and [7](#)). Most of these increases were proportionate to the county's share of the drug deaths in 2019, rising or decreasing by 1% in 2020.

Figure 1. Comparison of pharmaceutical opioid (Pharm Op) and nonpharmaceutical opioid (Nonpharm Op) trends, alone and in combination.



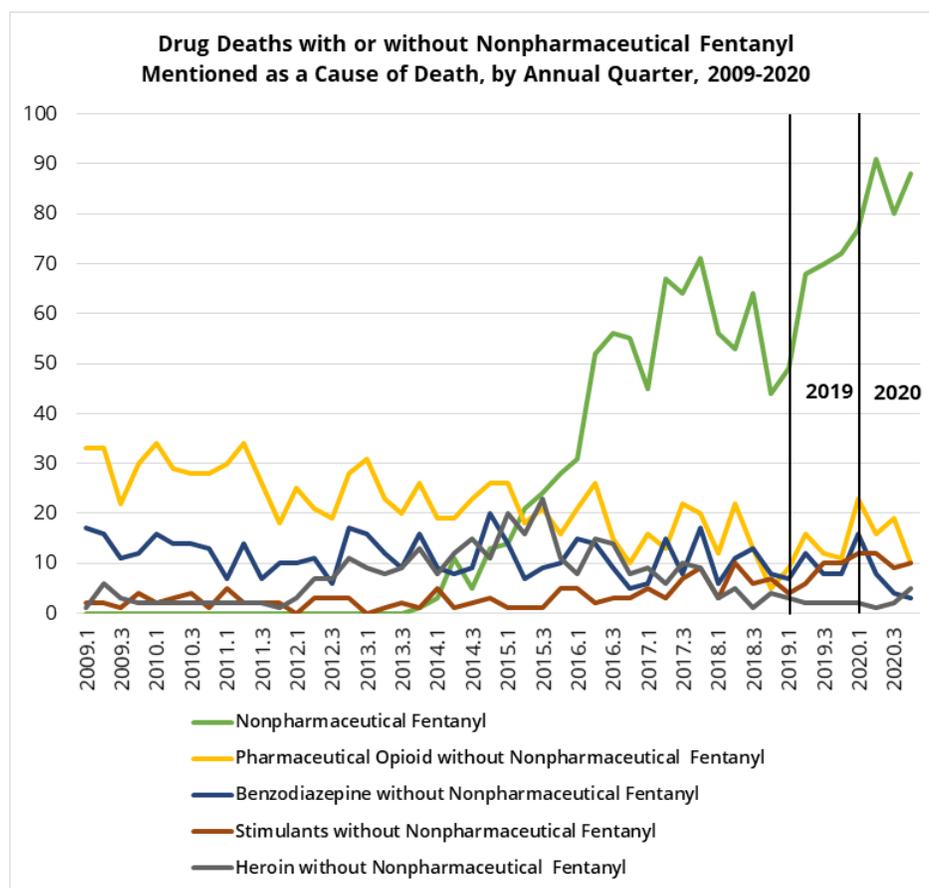
However, Cumberland saw a larger decrease in its proportion of drug deaths, down by 7%. And Penobscot, by contrast, saw a 5% increase. It is important to note that fluctuations up and down within small populations are to be expected statistically. Nevertheless, these deaths will have a troubling impact on the communities in which they occurred.

The COVID-19 pandemic is associated in time with an increase in drug deaths during 2020. However, as shown in both Figures 1 and 2, the increase in deaths began in 2019, prior to the start of the pandemic. Figure 2 displays the quarterly trend lines for key drug categories. It groups all deaths in which fentanyl was a cause of death, and contrasts that total with the number of deaths due to other categories, without fentanyl. Fentanyl involvement is clearly driving much of the increase both before and during the pandemic.

The increase in drug deaths is not due to the COVID-19 infection itself (Table 4). Only 22 cases out of 504 had symptoms or circumstances that prompted testing, and only one person out of the 22 was positive.

Nor is the increase due to an increase in suicidal overdoses; that number declined from 34 in 2019 to 33 in 2020, while accidental overdoses rose from 341 to 457. It is also not due to an increase in a particular age category or gender. We are doing more research to explore whether characteristics of the pandemic, such as isolation, access to medical services, or to alterations in opioid availability with associated fluctuations in opioid tolerance may have differentially exposed people more to the lethal effects of illicit fentanyl compared to other drug less lethal categories.

Figure 2. Comparison of drug deaths with and without nonpharmaceutical fentanyl mentioned as a cause of death, by annual quarter. The current increase in drug-induced deaths began in 2019 and was predominantly among deaths involving nonpharmaceutical fentanyl, and not cases caused by other drug categories without co-intoxicant fentanyl present.



Overview Statistics

Manners of death

- Of the 504 drug deaths, 457 (91%) were accidental overdoses, 33 (6%) were suicidal overdoses, and 14 (3%) were certified as undetermined manner of death.

Drug patterns of note in 2020 compared to 2019

- The average cause of death involved three drugs.
- Most deaths (407, 81%) were caused by two or more drugs. This is a 26% increase over 2019 (323, 85%), and slightly less in percentage.
- Deaths caused by opioids totaled 417 (83%), a 31% increase in number compared to 2019 (318, 84%), but about the same proportion.
- Deaths caused by nonpharmaceutical opioids such as illicit fentanyl and heroin totaled 346 (69% of all deaths and 83% of opioid deaths), a 29% increase in number compared to 2019 levels (268, 70% of all deaths and 84% of opioid deaths), but about the same proportion.
- Deaths caused by pharmaceutical opioids totaled 118 (23% of all drug deaths and 28% of opioid deaths), a 23% increase in number compared to 2019 (96, 25% of all drug deaths and 30% of opioid deaths), but about the same proportion.
- Deaths caused by pharmaceutical benzodiazepines totaled 84 (17%), the same number as in 2019 84 (22%), but 5% lower in proportion.
- Fentanyl and its analogs caused 336 deaths (67% of all drug deaths and 81% of opioid deaths), a 30% increase in number compared to 2019 (259, 68% of all drug deaths and 81% of opioid deaths), but about the same proportion.
- Heroin caused 57 deaths (11% of all drug deaths and 18% of opioid deaths), slightly fewer in number and proportion of all drug deaths and about the same proportion of opioid deaths as in 2019 (61, 16% of all drug deaths and 19% of opioid deaths).
- Cocaine-involved deaths totaled 118 (23% of drug deaths), a 7% increase in number compared to 2019 (110, 29% of drug deaths), but a lower proportion. Cocaine is a co-intoxicant in 29% of fentanyl deaths and 30% of heroin deaths.
- Methamphetamine-involved deaths totaled 99 (20% of all deaths), a 111% increase in number compared to 2019 (47, 12% of all deaths), and an 8% increase in percentage.
- Deaths in Penobscot County totaled 94 (19% of state total), an increase of 77% in number compared to 2019 (53, 14% of state total). In Bangor specifically, deaths totaled 57 (11% of state total) in 2020, increasing from 28 (7% of state total) in 2019. Deaths in Cumberland County plateaued in number and decreased in proportion in 2020 (97, 19% of state total) compared to 2019 (100, 26% of state total). The same trend occurred in Portland with deaths totaling 56 (11% of state total) in 2020, compared to 55 (14% of state total) in 2019.
- Of the 504 total drug deaths, 475 (94%) occurred in decedents who were described on the death certificate as white, 16 (3%) were Black or African American, and 10 (2%) were American Indian or Alaska Native. In comparison to the Maine census population,

the proportion of white is slightly less (94% versus 97%), Black or African American is slightly greater (3% versus 2%) and American Indian or Alaska Native is similar (2% versus 2%). The proportion of drug deaths for all other race and ethnicity categories is less than or similar to the census population. These proportional comparisons should be interpreted with caution due to the small population numbers.

Population characteristics

Table 1. Age and sex patterns by manner of death, total number and percent, 2020

Manner	Total	Average age	Age range	18–24	25–39	40–59	60+	Male
All drug deaths	504	43	0–96	30 (6%)	183 (36%)	235 (47%)	54 (11%)	357 (71%)
Accidents	457	42	16–96	29 (6%)	176 (39%)	213 (47%)	38 (8%)	331 (72%)
Suicides	33	53	22–82	1 (3%)	6 (18%)	16 (48%)	10 (30%)	18 (55%)

¹ Undetermined manner cases (n = 14) are not included in demographic analysis.

Table 2. Race and ethnicity by manner of death, total number and percent, 2020

Manner	Total	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or other Pacific Islander	Some other Race	Hispanic or Latino ethnicity
All drug deaths	504	475 (94%)	16 (3%)	10 (2%)	< 5	< 5	< 5	7 (1%)
Accidents	457	431 (94%)	16 (4%)	see note 5	0	< 5	< 5	7 (2%)
Suicides	33	30 (91%)	0	see note 5	< 5	0	0	0

¹ Undetermined manner cases (n = 14) are not included in demographic analysis.

² Category titles are in accordance with U.S. Census Bureau and U.S. Office of Management and Budget guidelines.

³ Race categories include single race alone or in combination with one or more other categories. Therefore, the sum of all categories may exceed the total.

⁴ Values of five or fewer are suppressed to protect privacy.

⁵ Accidents and suicides cannot be disaggregated for American Indian or Alaska Native due to small number of cases for each manner.

Table 3. Persons experiencing homelessness among drug deaths, 2020

	Total	Persons Experiencing Homelessness
All drug deaths	504	36 (7%)

Table 4. COVID-19 testing patterns among drug deaths, 2020

	Total	COVID-19 Tested	COVID-19 Positive Test
All drug deaths	504	22	1

Table 5. Naloxone administration at the scene at the time of event, 2020

	Total	Naloxone – EMS	Naloxone – law enforcement	Naloxone - bystander
All drug deaths	504	58	13	21

1 Naloxone is a medication that can potentially reverse an opioid overdose.

2 In some cases, naloxone was administered by more than one entity.

3 Two additional naloxone administrations by first responders are not included in table (unknown if EMS, Law enforcement, or bystander).

County/city frequencies

Table 6. Frequency of all drug deaths and opioid deaths by county and major city of death, 2020

County City	Total number (%) of overdose deaths N=504	Total number (%) of opioid deaths N=417	Percentage of Maine census population (1,335,492)
Androscoggin	52 (10%)	43 (10%)	8%
<i>Lewiston</i>	31 (6%)	26 (6%)	3%
Aroostook	17 (3%)	14 (3%)	5%
Cumberland	97 (19%)	81 (19%)	22%
<i>Portland</i>	56 (11%)	45 (11%)	5%
<i>South Portland</i>	14 (3%)	12 (3%)	2%
Franklin	8 (2%)	8 (2%)	2%
Hancock	13 (3%)	7 (2%)	4%
Kennebec	49 (10%)	37 (9%)	9%
<i>Augusta</i>	18 (4%)	13 (3%)	1%
<i>Waterville</i>	12 (2%)	8 (2%)	1%
Knox	16 (3%)	16 (4%)	3%
Lincoln	9 (2%)	5 (1%)	3%
Oxford	15 (3%)	13 (3%)	4%
Penobscot	94 (19%)	78 (19%)	11%
<i>Bangor</i>	57 (11%)	48 (12%)	2%
Piscataquis	10 (2%)	7 (2%)	1%
Sagadahoc	8 (2%)	7 (2%)	3%
Somerset	13 (3%)	13 (3%)	4%
Waldo	9 (2%)	6 (1%)	3%
Washington	20 (4%)	19 (5%)	2%
York	74 (15%)	63 (15%)	15%
<i>Biddeford</i>	16 (3%)	15 (4%)	2%
<i>Sanford</i>	11 (2%)	9 (2%)	2%

Table 7. Frequency of all drug deaths and accidental manner, by county and major city of death, 2020

County City	Total number (%) of overdose deaths N=504	Number (%) of overdose deaths, accident N=457	Percentage of Maine census population (1,335,492)
Androscoggin	52 (10%)	46 (11%)	8%
<i>Lewiston</i>	31 (6%)	30 (7%)	3%
Aroostook	17 (3%)	16 (4%)	5%
Cumberland	97 (19%)	88 (19%)	22%
<i>Portland</i>	56 (11%)	50 (11%)	5%
<i>South Portland</i>	14 (3%)	14 (3%)	2%
Franklin	8 (2%)	7 (2%)	2%
Hancock	13 (3%)	13 (3%)	4%
Kennebec	49 (10%)	43 (9%)	9%
<i>Augusta</i>	18 (4%)	15 (3%)	1%
<i>Waterville</i>	12 (2%)	11 (2%)	1%
Knox	16 (3%)	15 (3%)	3%
Lincoln	9 (2%)	9 (2%)	3%
Oxford	15 (3%)	14 (3%)	4%
Penobscot	94 (19%)	90 (20%)	11%
<i>Bangor</i>	57 (11%)	56 (12%)	2%
Piscataquis	10 (2%)	9 (2%)	1%
Sagadahoc	8 (2%)	6 (1%)	3%
Somerset	13 (3%)	13 (3%)	4%
Waldo	9 (2%)	7 (2%)	3%
Washington	20 (4%)	19 (4%)	2%
York	74 (15%)	59 (13%)	15%
<i>Biddeford</i>	16 (3%)	15 (3%)	2%
<i>Sanford</i>	11 (2%)	9 (2%)	2%

¹ Undetermined manner cases (n = 14) and suicidal overdoses (n = 33) are not included in county and major city breakdown due to small numbers.

Involvement of specific drug categories associated with fentanyl

Table 8. Frequency of specific drug categories and nonpharmaceutical fentanyl involvement, 2020

Specific drug or drug category causing the death (alone or in combination with other drugs and/or alcohol)	Total number (%) of deaths N=504	Number (%) within row involving nonpharmaceutical fentanyl
Number of deaths caused by more than one drug	407 (81%)	274 (67%)
Any pharmaceutical drug	322 (64%)	183 (57%)
Any opioid, pharmaceutical or nonpharmaceutical	417 (83%)	336 (81%)
Naloxone present in the toxicology report (see note 1)	140 (28%)	116 (83%)
Any illicitly manufactured drug (includes heroin/morphine, nonpharmaceutical fentanyl, fentanyl analogs, other illicitly-manufactured opioids, cocaine, methamphetamine, and MDMA)	399 (79%)	336 (84%)
Any nonpharmaceutical opioid drugs (includes heroin/morphine, fentanyl, fentanyl analogs, U-47700, mitragynine)	346 (69%)	336 (97%)
Fentanyl and/or fentanyl analogs (known pharmaceutical fentanyl removed)	336 (67%)	336 (100%)
Heroin/morphine (known pharmaceutical morphine removed)	57 (11%)	47 (82%)
Any pharmaceutical opioid 23 (19%) of 118 had at least one current opioid prescription; 8 (35%) of those 23 also had nonpharmaceutical fentanyl mentioned as a cause of their death.	118 (23%)	49 (42%)
Highest frequency opioids itemized below:		
Buprenorphine [12 (31%) decedents had current prescription]	39 (8%)	18 (46%)
Methadone [1 (4%) decedent had current prescription]	27 (5%)	8 (30%)
Oxycodone [6 (21%) decedents had current prescription]	29 (6%)	13 (45%)
Any pharmaceutical benzodiazepine 9 (11%) of 84 had at least one current benzodiazepine prescription; 3 (33%) of those 9 also had nonpharmaceutical fentanyl mentioned as a cause of their death	84 (17%)	51 (61%)
Highest frequency benzodiazepines itemized below:		
Alprazolam [5 (19%) decedents had current prescription]	28 (6%)	20 (71%)
Clonazepam [1 (5%) decedent had current prescription]	19 (4%)	12 (63%)
Diazepam [1 (8%) decedent had current prescription]	12 (2%)	7 (58%)
Temazepam [2 (66%) had current prescription]	3 (1%)	1 (33%)
Cocaine	118 (23%)	97 (82%)
Methamphetamine	99 (20%)	70 (71%)
Mitragynine (Kratom)	20 (4%)	11 (55%)

¹ Excludes cases with buprenorphine in toxicology.

² Cause of death can be due to multiple substances; therefore, sum of categories exceeds total drug deaths.

Pharmaceutical Opioid Deaths

This category includes deaths caused by opioids that are manufactured by legitimate pharmaceutical companies and available by prescription ([Figure 5](#)).

- Most deaths (81%) in this category involve drugs that were not currently prescribed to the decedent. There were 118 overdoses due to pharmaceutical opioids, alone or in combination with other drugs and alcohol. Of that total, 23 (19%) had a current prescription for the opioid that caused death, dispensed to them within 30 days of death. There was an additional 1 individual who had a current prescription for a pharmaceutical opioid, but who died due to a nonpharmaceutical opioid, and their prescription drug was not actually involved in the death.
- Of the 118 deaths due to pharmaceutical opioids, almost half (50, 42%) also had a nonpharmaceutical opioid listed as a cause. Of the 23 that died due to a drug for which they had a current prescription, 9 (39%) also had a nonpharmaceutical listed as a cause of their death.
- The most common pharmaceutical opioids listed as a cause of death are buprenorphine (39, 33% of the pharmaceutical opioid deaths), methadone (27, 23%), and oxycodone (29, 25%) (see [Figures 6](#) and [7](#)). Of the 39 decedents with buprenorphine listed as a cause of death, 12 had a current prescription. Of those 27 who died due to methadone, 1 had a current prescription. Of those 29 who died due to oxycodone, 6 had a current prescription.
- Of the 118 deaths due to pharmaceutical opioids 102 (86%) were of accidental manner, 14 (12%) were suicide and 2 (2%) are undetermined.

Nonpharmaceutical (Illicit) Fentanyl and/or Fentanyl Analog Deaths

This category includes deaths caused by nonpharmaceutical (illicitly manufactured) fentanyl or fentanyl analogs. We removed all cases that involved known pharmaceutical fentanyl from these totals.

- There were 336 overdoses due to nonpharmaceutical fentanyl and/or fentanyl analogs in 2020. This is a 30% increase from 259 deaths in 2019. There were 47 (14%) of the fentanyl and/or analog deaths combined with heroin (see [Figure 8](#)), 74 (22%) combined with alcohol, and 97 (29%) combined with cocaine.
- Of the 336 deaths, 331 were of accidental manner, 3 were suicide and 2 were of undetermined manner.

Table 9. Frequency of co-intoxicant drugs involved in fentanyl deaths, 2020

Specific co-intoxicants in addition to fentanyl and/or fentanyl analogs identified as a cause of death	Total number (%) of fentanyl/fentanyl analog deaths N=336	Number (%) of fentanyl/fentanyl analog deaths, accidental manner N=331
Fentanyl and fentanyl analog combinations		
Fentanyl (with or without fentanyl analogs)	335 (99%)	330 (99%)
Fentanyl analogs (with or without fentanyl)	38 (11%)	36 (11%)
Both nonpharmaceutical fentanyl and at least one fentanyl analog	37 (11%)	35 (11%)
Co-intoxicants identified in fentanyl and/or fentanyl analog deaths		
One or more drugs (or alcohol) in addition to fentanyl and/or fentanyl analogs	272 (81%)	268 (81%)
One or more pharmaceutical opioids in addition to fentanyl and/or fentanyl analogs	49 (15%)	48 (15%)
Heroin/morphine in addition to fentanyl and/or fentanyl analogs	47 (14%)	47 (14%)
Alcohol in addition to fentanyl and/or fentanyl analogs	74 (22%)	71 (21%)
One or more benzodiazepines in addition to fentanyl and/or fentanyl analogs	51 (15%)	51 (15%)
Cocaine in addition to fentanyl and/or fentanyl analogs	97 (29%)	96 (29%)
Methamphetamine in addition to fentanyl and/or fentanyl analogs	70 (21%)	69 (21%)

¹ Undetermined (n=2) and suicide (n=3) manner cases are not included in analysis. Thus, the difference between total (N=336) and accidental manner (n=331).

Table 10. Frequency of fentanyl analogs identified as a cause of death, 2020

Fentanyl analog identified (Some cases had more than one analog)	Total number of cases	Percentage of fentanyl analog-involved deaths N=38
4-ANPP fentanyl	2	5%
Acetyl fentanyl	33	87%
Carfentanil	0	0%
Parafluoroisobutyryl fentanyl	1	3%
Valeryl fentanyl	1	3%

¹ Some cases identify more than one analog as a cause of death.

² 4-ANPP, despropionyl fentanyl was mentioned on two case death certificates, however it is generally categorized as a precursor of fentanyl, produced during manufacture, or as a metabolite. .

Heroin/Morphine Deaths

Heroin/morphine deaths include any death in which the cause of death identifies “heroin” or “morphine.” We have removed all cases involving known pharmaceutical morphine, so the heroin/morphine deaths are all probable heroin overdoses.

- In 2020 there were 57 deaths due to (nonpharmaceutical) heroin/morphine alone or in combination with other drugs. This is a 7% decrease from the 61 heroin/morphine deaths identified in 2019.
- Of the 57 deaths, 44 (77%) were male and 13 (23%) were female. The average age of heroin/morphine deaths was 45 (age range 23-82).
- 55 of 57 (97%) were ruled accidental manner of death.

Table 11. Frequency of co-intoxicant drugs involved in heroin/morphine deaths, 2020

Specific co-intoxicants in addition to heroin/morphine identified on the death certificate as a cause of death	Total number (%) of heroin/morphine deaths N=57	Number (%) of heroin/morphine deaths, accident N=55
One or more drugs (or alcohol) in addition to heroin/morphine	56 (98%)	55 (100%)
At least one pharmaceutical opioid in addition to heroin/morphine	11 (19%)	11 (20%)
Nonpharmaceutical fentanyl and/or at least one fentanyl analog in addition to heroin/morphine	47 (82%)	47 (85%)
Alcohol in addition to heroin/morphine	12 (21%)	12 (22%)
At least one benzodiazepine in addition to heroin/morphine	10 (18%)	9 (16%)
Cocaine in addition to heroin/morphine	17 (30%)	17 (31%)
Methamphetamine in addition to heroin/morphine	15 (26%)	15 (27%)

¹ Undetermined (N=1) and suicide (N=1) manner cases are not included analysis. Thus, the difference between total (N=57) and accidental manner (N=55).

Deaths Involving Illicit Stimulants Cocaine and Methamphetamine

Deaths involving cocaine have been rising since 2014 (see [Figure 4](#)). In 2013 there were 10 cocaine deaths. By 2014 the number had more than doubled to 24. The total has been rising steadily, and reached 118 in 2020, which is 23% of all drug deaths, compared to 110 (29%) of drug deaths in 2019. Most (97, 82%) of cocaine deaths list at least one nonpharmaceutical opioid as a co-intoxicant; 23 (19%) of cocaine deaths list at least one pharmaceutical opioid as a co-intoxicant. Cocaine is a co-intoxicant in 29% of fentanyl deaths and 30% of heroin deaths. Of the 118 deaths involving cocaine, 116 (98%) were of accidental manner and 2 (2%) were suicide.

Deaths due to methamphetamine totaled 99, a 111% increase from 47 in 2019. As shown in [Figure 4](#), these totals began rising in 2016. Most (73, 74%) of methamphetamine deaths list at least one nonpharmaceutical opioid as a co-intoxicant; 16 (16%) of methamphetamine deaths

list at least one pharmaceutical opioid as a co-intoxicant. Methamphetamine is a co-intoxicant in 21% of fentanyl deaths and 26% of heroin deaths. Methamphetamine is a co-intoxicant in 16 of the 118 total (14%) cocaine deaths. Of the 99 deaths, 98 were of accidental manner and 1 is undetermined.

Figure 3. Number of drug-induced deaths in Maine, with subtotals for deaths caused by any pharmaceutical drugs (alone or in combination) and for deaths caused by any nonpharmaceutical (illicit) drugs (alone or in combination). Most deaths were caused by more than one drug. Pharmaceutical and nonpharmaceutical (illicit) drugs may be combined to cause death. Note: 2017 total was revised from 418 to 417 subsequent to the release of the 2017 report.

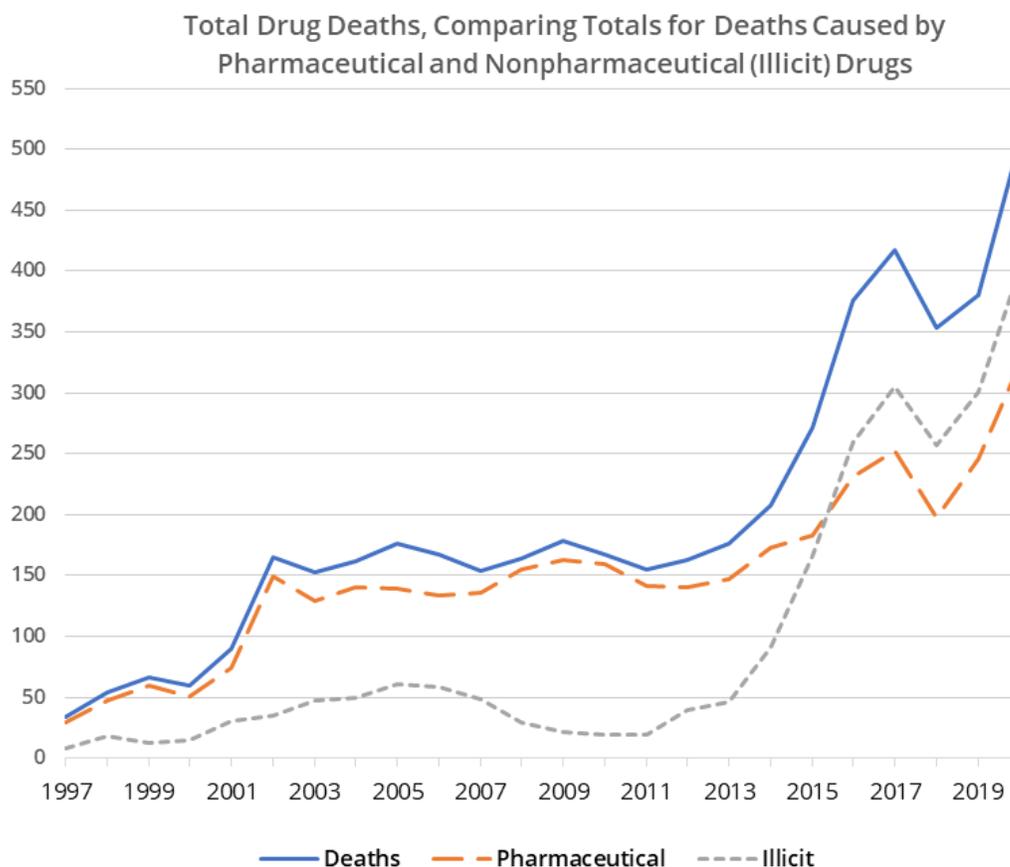


Figure 4. Number of deaths caused by cocaine and by methamphetamine, alone or in combination with other drugs.

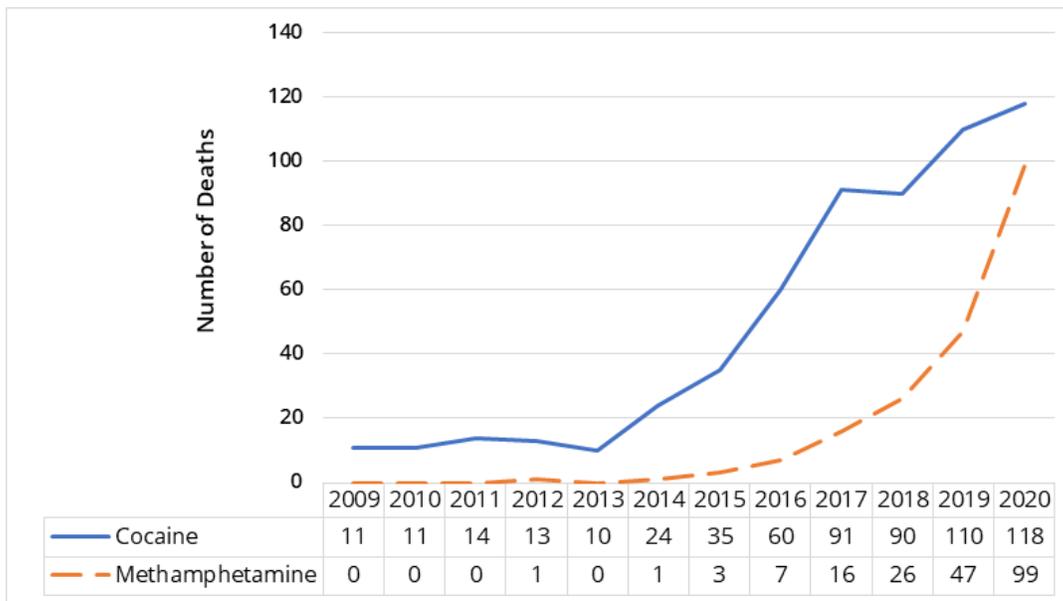


Figure 5. Comparison of the total number drug deaths and the total due to pharmaceutical versus nonpharmaceutical opioids, alone or in combination with other drugs and/or alcohol.

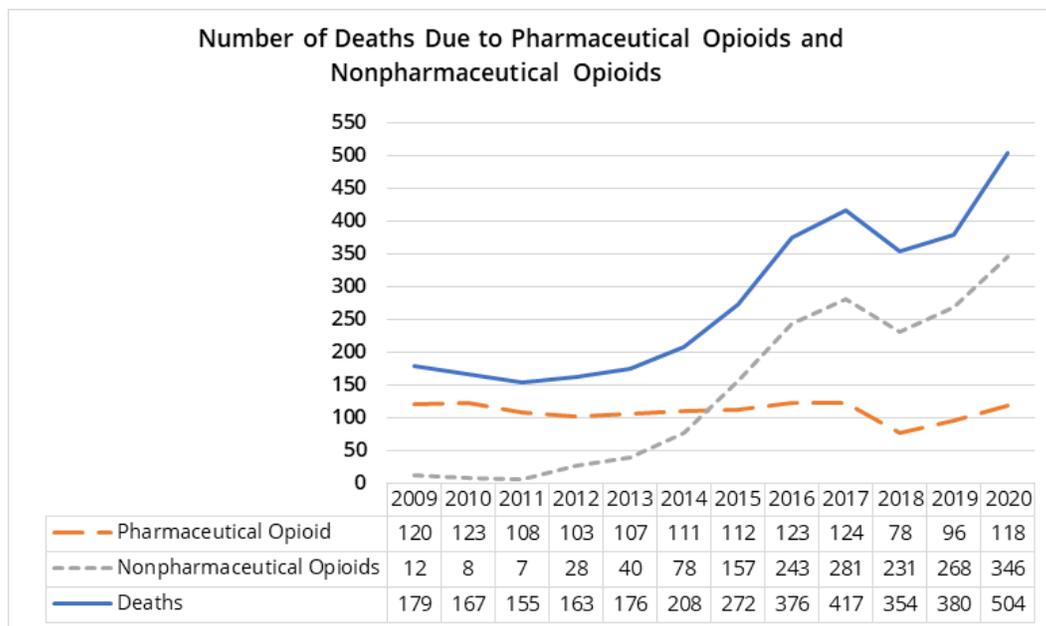


Figure 6. Number of deaths caused by key pharmaceutical opioids, alone or in combination with other drugs. Note that fentanyl cases in this graph are pharmaceutical fentanyl.

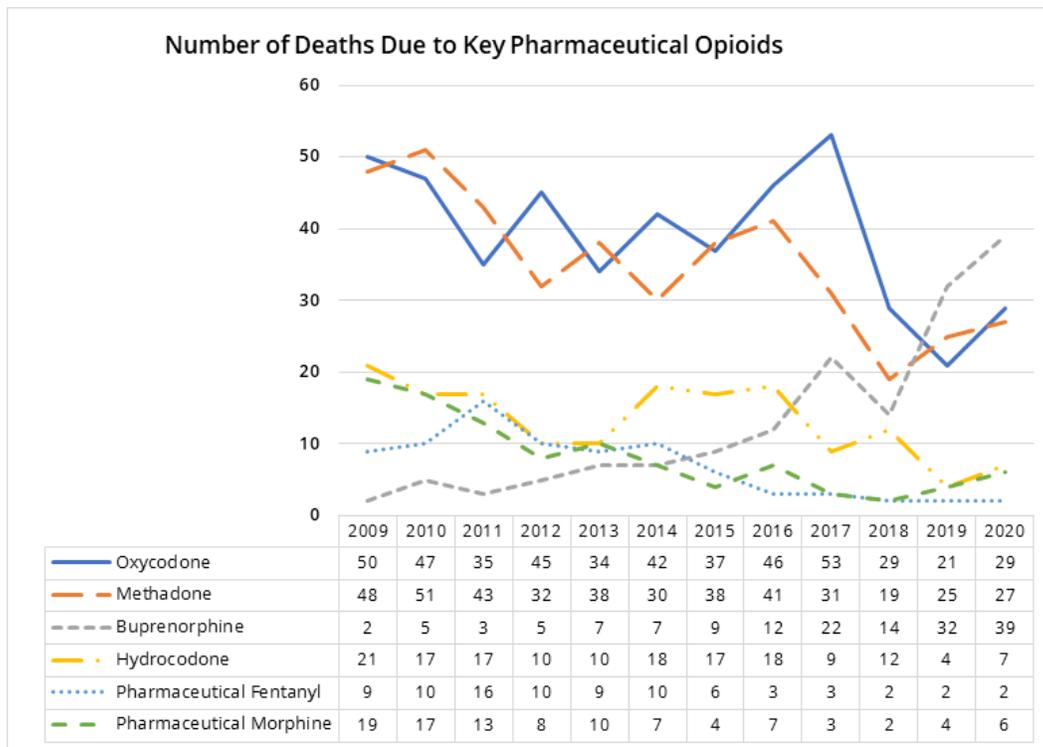


Figure 7. Comparison of deaths due to buprenorphine combined or not combined with nonpharmaceutical fentanyl and/or fentanyl analogs.

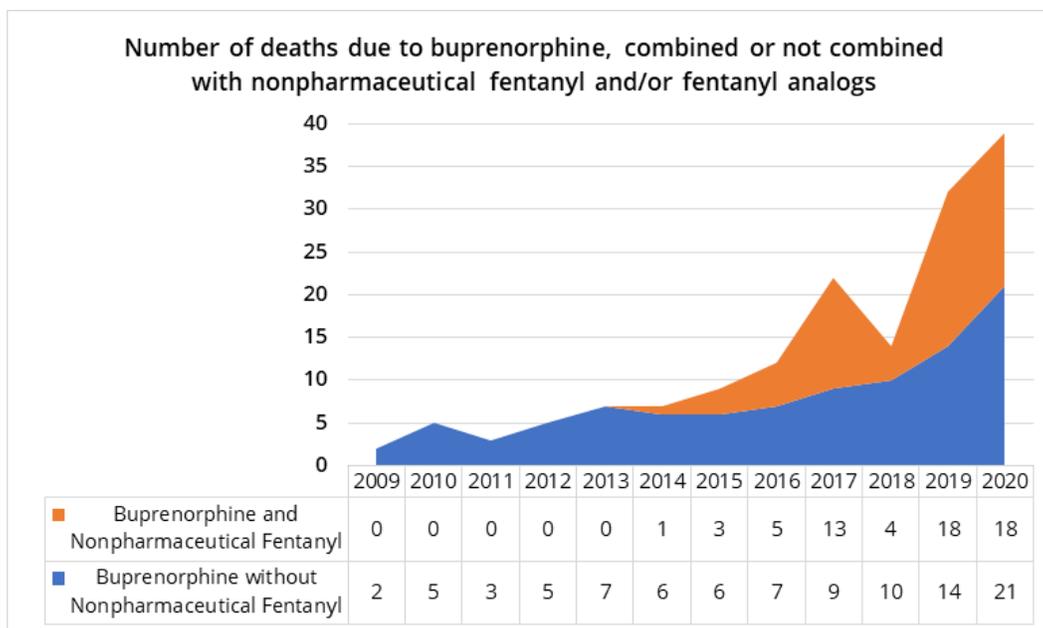
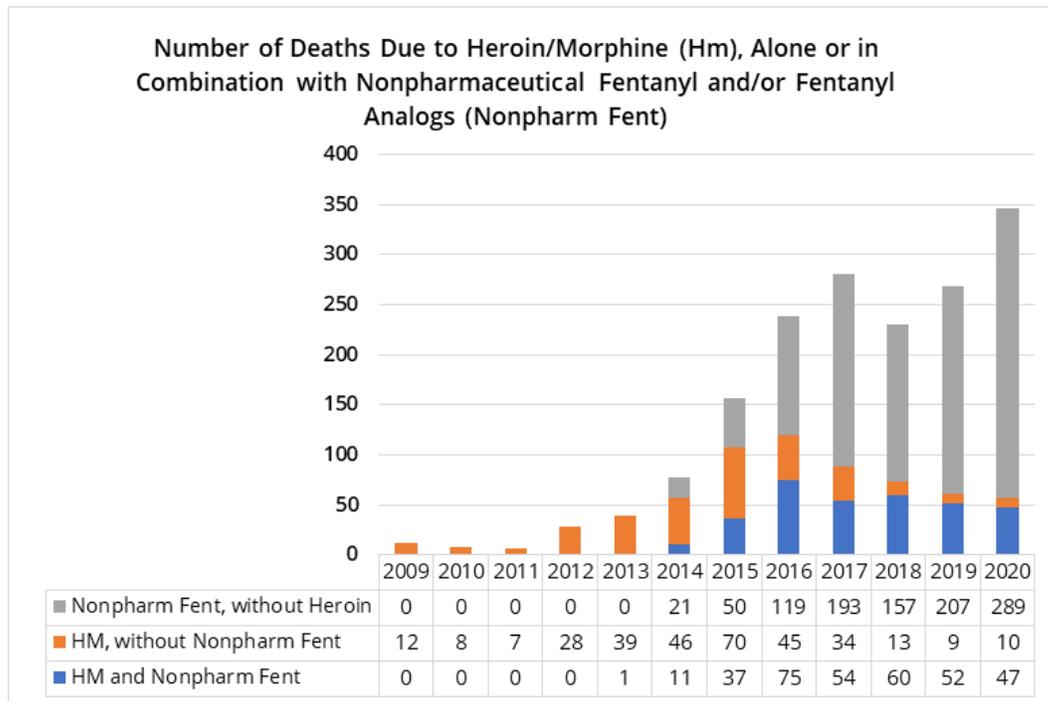


Figure 8. Total deaths due to heroin/morphine (HM) with nonpharm fent (nonpharm fent) and/or fentanyl analogs, alone or in combination with each other.



References

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