

EXPANDED MAINE DRUG DEATH REPORT FOR 2017

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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 2017. 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. Analysis of these deaths reveals an 11% increase over 2016 in the total number of fatalities due to drugs, driven by a sharp 27% increase in overdoses due to non-pharmaceutical fentanyl and fentanyl analogs, and a sharp 27% decrease in heroin deaths. In addition, there has been an increase in both cocaine and methamphetamine deaths, and a decrease in deaths caused by benzodiazepines.

Overview

- **Total:** In 2017 there were 418 drug-induced deaths statewide, 42 (11%) more than in 2016. This is a smaller increase than the increase between 2015 and 2016, which was 38%.
- **Manners of death:** Of these 418, 365 (87%) were accidental overdoses, 49 (12%) were suicides, and 4 (1%) undetermined manner.
- **Overall patterns of note in 2017:**
 - Most (79%) drug deaths were caused by two or more drugs. The average cause of death involved 3 drugs.
 - The vast majority of overdoses (85%) were caused by at least one opioid, including pharmaceutical and illicit (non-pharmaceutical) opioid drugs, similar to the 2016 proportion (84%).
 - Fentanyl (or its analogs) caused 58% of deaths, up from 51% in 2016.
 - Heroin caused 21% of deaths, down from 32% in 2016.
 - Cocaine-involved deaths, 22% of 2017 deaths, have increased from 16% since 2016.
 - Pharmaceutical opioid deaths, 30% of 2017 deaths, have decreased slightly from 33%. Most were not prescribed to the decedent.
 - The percent of overdoses with naloxone (Narcan) found in toxicology has increased from 25% in 2016 to 31%.
- **Demographic patterns:** Males outnumber females 2.5 to 1, the proportion increasing from 66% in 2016 to 72% in 2017. The average age has remained stable at 41.

	Total	Average Age	Age Range	Percent Male
All drug deaths	418	42	18-94	299 (72%)
Accidents	365	40	18-75	277 (76%)
Suicides	49	55	27-94	20 (41%)

- Involvement of specific drug categories:**

Specific drug or drug category causing the death (alone or in combination with other drugs and/or alcohol)	Number	Percent of 418 drug deaths
Number of deaths caused by more than one drug	330	79%
Any pharmaceutical drug	254	61%
Any opioid (pharmaceutical or non-pharmaceutical)	354	85%
Naloxone present in the toxicology report*	129	31%
Any illicitly manufactured drug (includes heroin/morphine, non-pharmaceutical fentanyl, fentanyl analogs, other illicitly-manufactured opioids, cocaine, methamphetamine, and MDMA)	305	73%
Any non-pharmaceutical opioid drugs (heroin/morphine, fentanyl, fentanyl analogs, U-47700, mitragynine).	281	67%
Heroin/morphine and/or fentanyl or fentanyl analogs	281	67%
Fentanyl and/or fentanyl analogs (known pharmaceutical fentanyl removed)	247	59%
Heroin/morphine (known pharmaceutical morphine removed)	88	21%
Any pharmaceutical opioid (most were <u>not</u> prescribed to the decedent)	124	30%
Any benzodiazepine	98	23%
Cocaine	91	22%
Methamphetamine	16	4%

*Excludes cases with buprenorphine in toxicology.

- County/City frequencies:** The following table provides totals for the eight counties and six cities that had 10 or more drug deaths in 2017. The following counties had more than 10 deaths in 2016, but have dropped below 10 in 2017: Aroostook, Hancock, and Oxford. Knox County and the city of Sanford had a total below 10 in 2016, but rose above that threshold in 2017. *(The reader is cautioned that such small-number fluctuations are likely due to random changes, rather than epidemiological or programmatic effects.)*

COUNTY CITY	TOTAL NUMBER (%) OF OVERDOSE DEATHS 2017 N=418	TOTAL NUMBER (%) OF OPIOID DEATHS 2017 N=354	PERCENT OF MAINE CENSUS POPULATION 2016 (1,329,923)
Androscoggin	25 (6%)	21 (6%)	8%
<i>Lewiston</i>	17 (4%)	15 (4%)	3%
Cumberland	109 (26%)	94 (27%)	22%
<i>Portland</i>	57 (14%)	51 (14%)	5%
Kennebec	47 (11%)	43 (12%)	9%
<i>Augusta</i>	14 (3%)	13 (4%)	1%
Knox	11 (3%)	8 (2%)	3%
Penobscot	65 (16%)	50 (14%)	12%

<i>Bangor</i>	30 (7%)	20 (6%)	2%
Somerset	18 (4%)	16 (5%)	4%
Washington	13 (3%)	12 (3%)	2%
York	82 (20%)	67 (19%)	15%
<i>Biddeford</i>	23 (6%)	20 (6%)	2%
<i>Sanford</i>	12 (3%)	11 (3%)	2%

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 suspected heroin overdoses. In 2017 there were 88 deaths due to (non-pharmaceutical) heroin/morphine alone or in combination with other drugs. This is an 27% decrease from the 120 heroin/morphine deaths identified in 2016.
 - 67 (76%) are male and 21 (24%) are female.
 - Average age of heroin/morphine deaths is 40 (age range 22-69).
 - In a quarter of the heroin/morphine deaths, cocaine was also listed as a cause of death, 22 (25%).

- **Involvement of co-intoxicant drugs in heroin/morphine deaths:**

Specific co-intoxicants in addition to heroin/morphine identified on the death certificate as a cause of death	Number	Percent of Heroin/Morphine Deaths N=88
One or more drugs (or alcohol) in addition to heroin/morphine	75	85%
At least one pharmaceutical opioid in addition to heroin/morphine	19	22%
Non-pharmaceutical fentanyl and/or at least one fentanyl analog in addition to heroin/morphine	54	62%
Alcohol in addition to heroin/morphine	26	30%
At least one benzodiazepine in addition to heroin/morphine	15	17%
Cocaine was mentioned in addition to heroin/morphine	22	25%

Non-Pharmaceutical (“Illicit”) Fentanyl and/or Fentanyl Analog Deaths

- This category includes deaths caused by non-pharmaceutical (illicitly manufactured) fentanyl or fentanyl analogs. We removed all cases that involved known pharmaceutical fentanyl from these totals. There were 257 overdoses due to non-pharmaceutical fentanyl and/or fentanyl analogs in 2017. This is an 27% increase over the 194 deaths in 2016.
 - 198 (80%) are male and 49 (20%) are female.
 - The average age in illicit fentanyl/fentanyl analog deaths is 38 (age range 18-69).
 - A smaller proportion of fentanyl/fentanyl analog deaths had heroin also listed as a cause of death: 22% in 2017, down from 39% in 2016.
 - Cocaine is identified as a cause of death in 27% of the fentanyl/fentanyl analog deaths in 2017, up from 18% in 2016.
 - The proportion of deaths caused by fentanyl analogs (alone or in combination) has risen slightly from 39% in 2016 to 43% in 2017. Several new fentanyl analogs have appeared in 2017: butyryl fentanyl (n=2), carfentanil (n=5), cyclopropyl fentanyl (n=8), and methoxyacetyl fentanyl (n=11).

- **Involvement of co-intoxicant drugs in non-pharmaceutical fentanyl deaths:**

Specific co-intoxicants in addition to fentanyl and/or fentanyl analogs identified as a cause of death	Number	Percent of Fentanyl/Fentanyl Analog Deaths N=247
FENTANYL and FENTANYL ANALOG COMBINATIONS		
• Fentanyl (with or without fentanyl analogs)	198	80%
• Fentanyl analogs (with or without fentanyl)	107	43%
• <u>Both</u> non-pharmaceutical fentanyl and at least one fentanyl analog	58	23%
CO-INTOXICANTS IDENTIFIED IN FENTANYL and/or FENTANYL ANALOG DEATHS		
• One or more drugs (or alcohol) in addition to fentanyl and/or fentanyl analogs	215	87%
• One or more pharmaceutical opioids in addition to fentanyl and/or fentanyl analogs	45	18%
• Heroin/morphine in addition to fentanyl and/or fentanyl analogs	54	22%
• Alcohol in addition to fentanyl and/or fentanyl analogs	68	28%
• One or more benzodiazepines in addition to fentanyl and/or fentanyl analogs	45	18%
• Cocaine in addition to fentanyl and/or fentanyl analogs	67	27%

- **Fentanyl analogs identified:**

Fentanyl Analog Identified	Total Number of Cases*	Percent of Fentanyl Analog-Involved Deaths N=107
4-ANPP Fentanyl (despropionyl fentanyl)	16	15%
Acetyl Fentanyl	50	47%
Acryl Fentanyl	1	1%
Butyryl Fentanyl	2	2%
Carfentanil	5	5%
Cyclopropyl Fentanyl	8	7%
Furanyl Fentanyl	32	30%
Methoxyacetyl Fentanyl	11	10%
Para-fluorobutyryl Fentanyl	10	9%

*Some cases had more than one analog

Total Drug Deaths, Comparing the Totals for Deaths Casued by Pharmaceutical and Non-Pharmaceutical (Illicit) Drugs

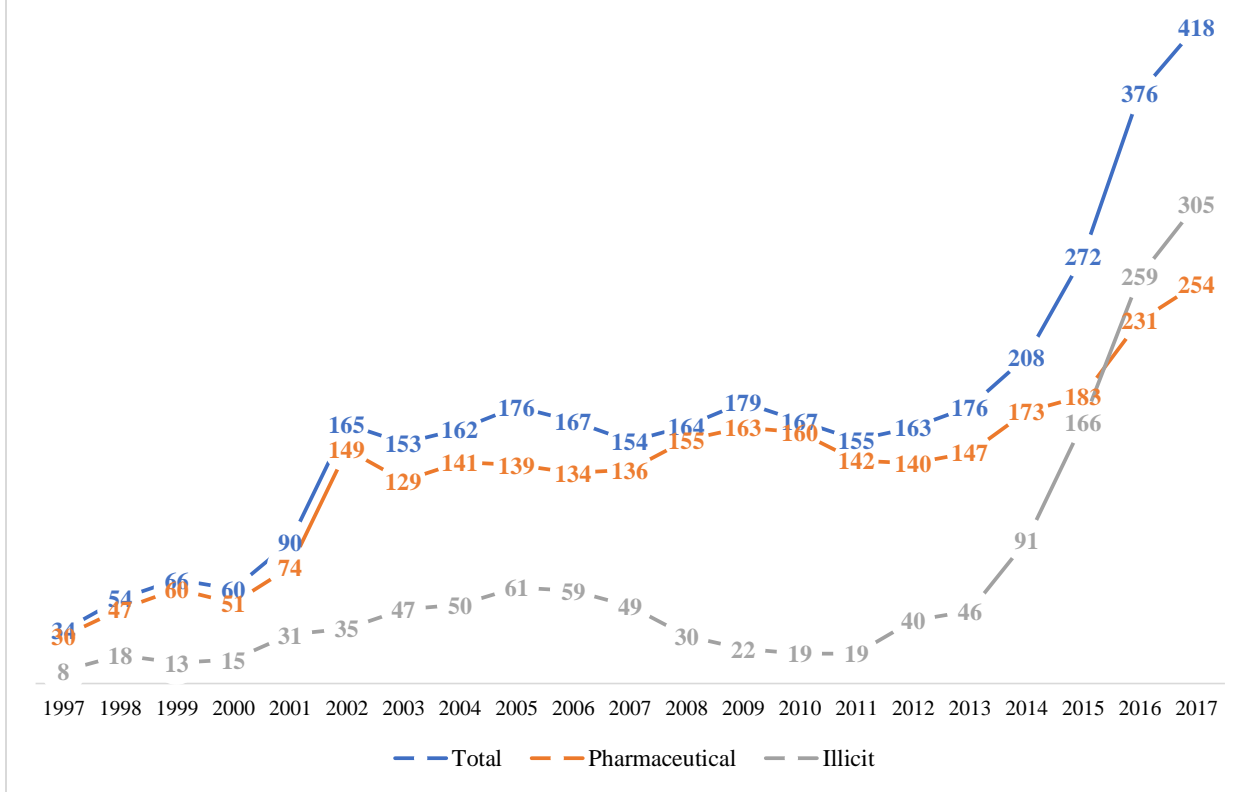


Figure 1. Number of drug-induced deaths in Maine, with subtotals for deaths caused by any pharmaceutical drugs and for deaths caused by any illicit (non-pharmaceutical) drugs. Most deaths are caused by more than one drug. Pharmaceutical and illicit drugs may be combined to cause death.

Total Deaths due to Pharmaceutical Opioids Compared to Non-Pharmaceutical (Illicit) Opioids, Alone or in Combination

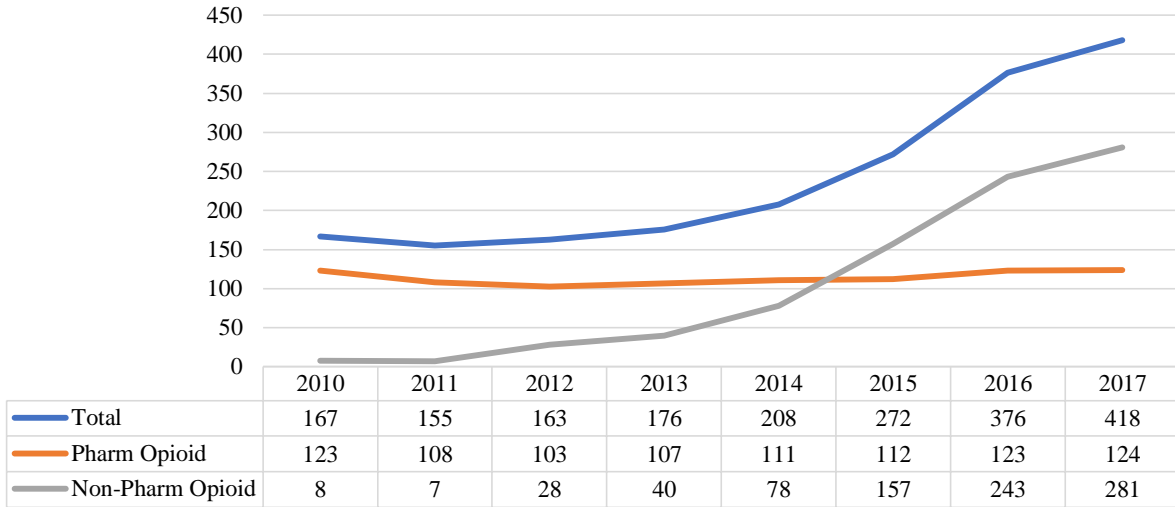


Figure 2. Comparison of the number deaths due to pharmaceutical versus non-pharmaceutical opioids, alone or in combination with other drugs or alcohol.

Deaths due to Heroin/Morphine and Non-Pharmaceutical Fentanyl and/or its Analogs

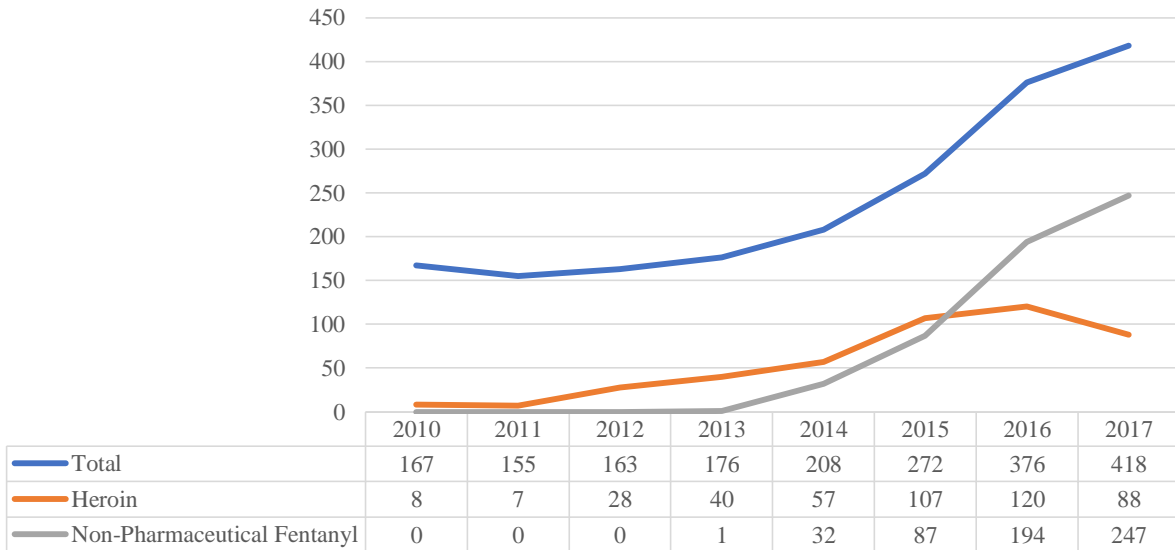


Figure 3. Total drug deaths with subtotals for the number of deaths due to heroin/morphine and non-pharmaceutical fentanyl and/or its analogs. Although separate totals are provided for heroin/morphine and fentanyl/fentanyl analog fatalities, many deaths include both drug categories.

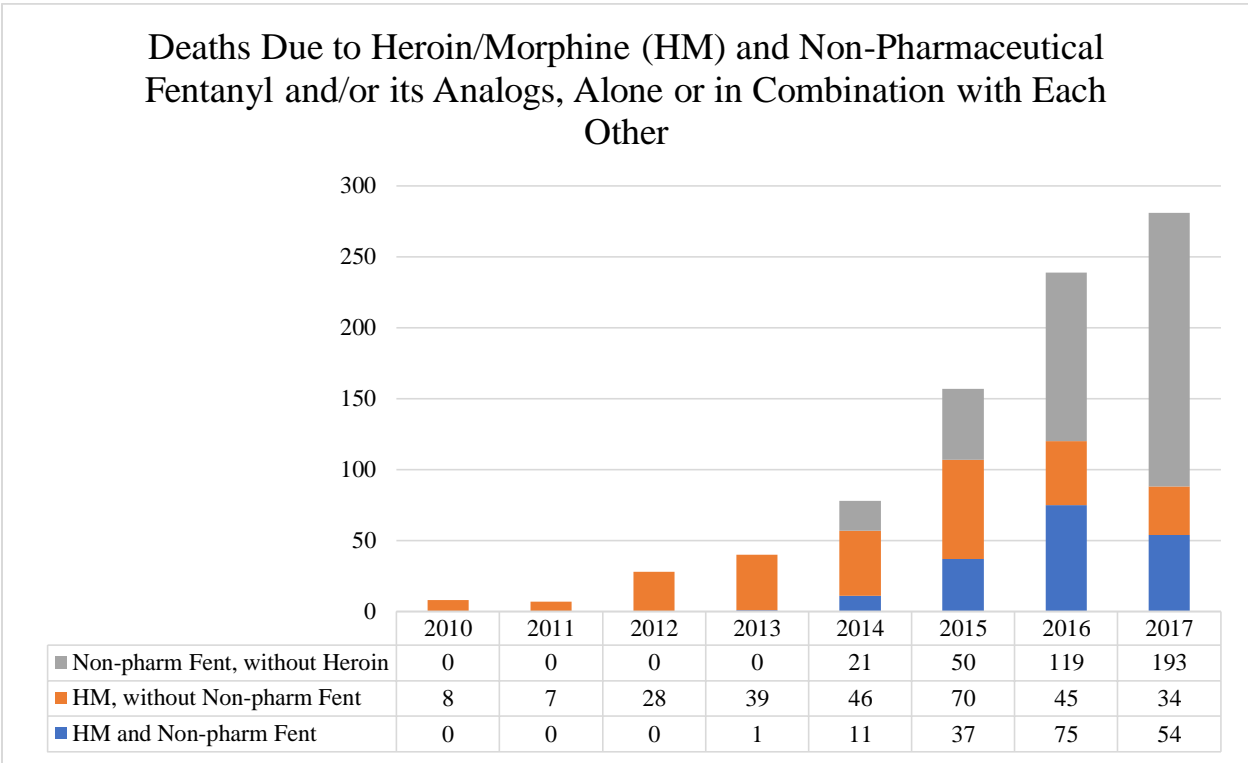


Figure 4. Total deaths due to heroin/morphine (“HM”) with non-pharmaceutical fentanyl (Non-pharm Fent”) and/or its analogs, alone or in combination with each other.

Deaths due to Key Pharmaceutical Opioids, Alone or in Combination

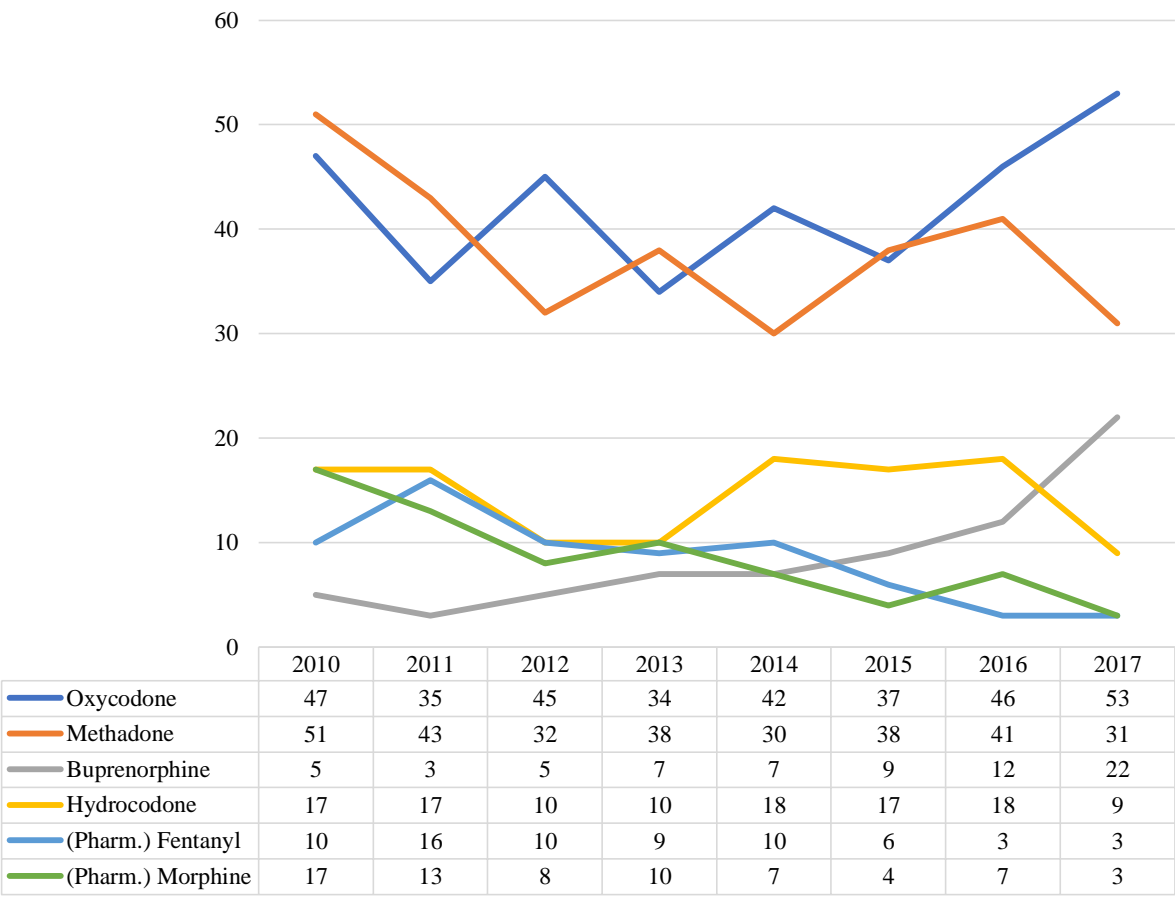


Figure 5. Number of deaths caused by key pharmaceutical opioids, alone or in combination with other drugs. Note that these fentanyl cases are caused by pharmaceutical fentanyl.

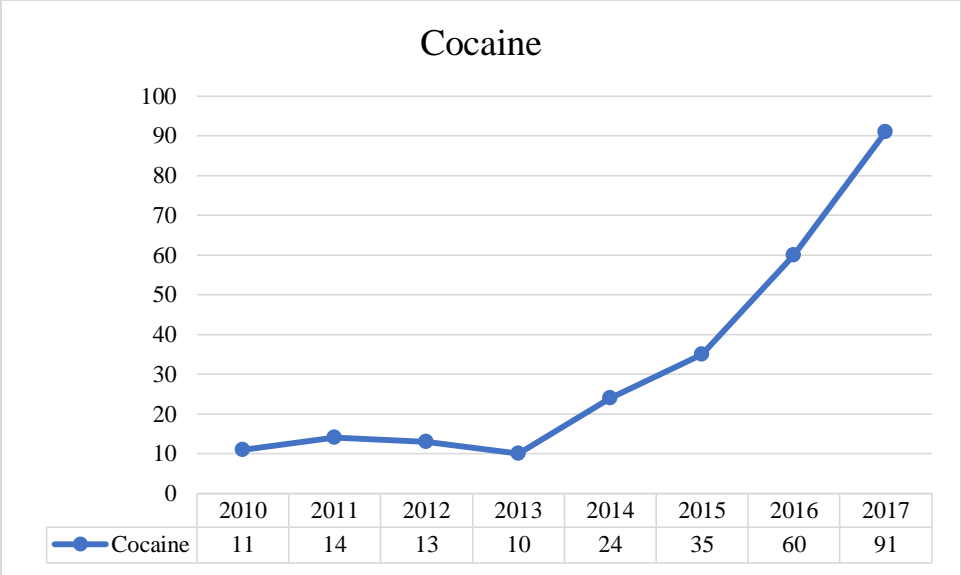


Figure 6. Number of deaths caused by cocaine, alone or in combination with other drugs