# VIRGINIA DEPARTMENT OF HEALTH

## OFFICE OF THE CHIEF MEDICAL EXAMINER

*"To promote and protect the health of all Virginians"*

# Fatal Drug Overdose Quarterly Report

## 3RD QUARTER 2020

**Edition 2020.3**

Publication Date:
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# METHODS, CONSIDERATIONS, AND LIMITATIONS

This quarterly report contains the most recent number of drug related deaths in Virginia for the previous quarter. **The numbers represented in this report are preliminary, subject to change, and are most likely slightly under reported at the time of publication** due to operational practices and limitations (specifically case turnaround time for reports) within the agency; therefore updates and/or changes to numbers previously published in past reports should be expected. It is highly recommended that when citing these data and reports, the edition number is included.

Data analyzed in the report is obtained from the Virginia Medical Examiner Database System (VMEDS). VMEDS is an internal agency database which contains detailed information on all deaths reported to the OCME. Data presented in this report is based upon accepted cases of either full autopsy or external exams. All manners of fatal drug overdoses (accident, homicide, suicide, and undermined) are included in this report.

Due to the nature of law enforcement and OCME death investigation, all deaths presented in this report are based upon locality of occurrence and not residential status of the decedent. The numbers and rates of these death by locality of injury and drug name/drug category are available in separate documents **(http://www.vdh.virginia.gov/medical-examiner/forensic-epidemiology/).**

This report compiles data on drugs causing or contributing to death in fatal drug overdose cases. This report does not include data on drugs detected, but not contributing or causing death.

**Often, drug-related deaths have more than one drug causing or contributing to death. Therefore, deaths in which multiple categories of drugs caused or contributed to death will be represented once within each drug category, but multiple times within the entire report. Example: a fatal cocaine, heroin, and alprazolam overdose death will be counted in the cocaine summary, the heroin summary, and the benzodiazepine summary.**

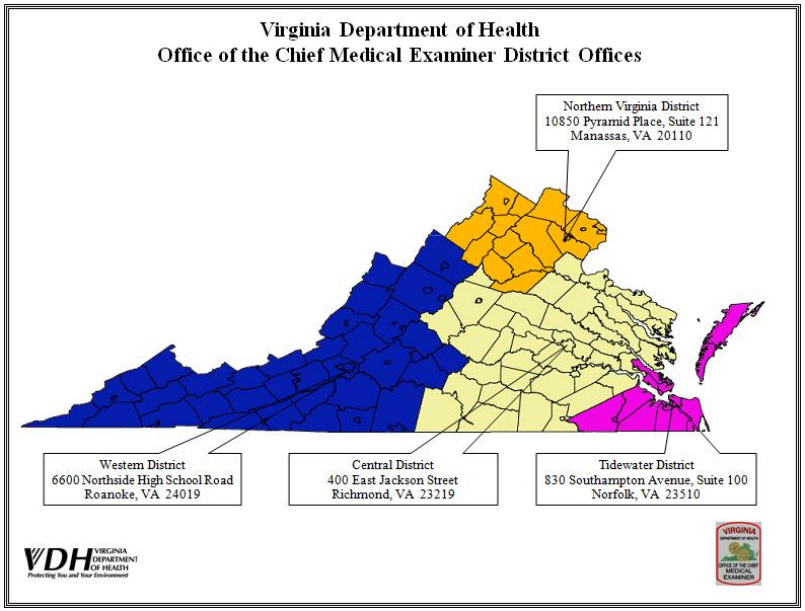
Prescription Opioids analyzed in this report include buprenorphine, codeine, hydrocodone, hydromorphone, levorphanol, meperidine, methadone, morphine, oxycodone, oxymorphone, pentazocine, propoxyphene, tapentadol, and tramadol and are included in the category of 'Prescription Opioids'. Benzodiazepines analyzed in this report include alprazolam, clonazepam, diazepam, flualprazolam, flurazepam, lorazepam, midazolam, nordiazepam, oxazepam, temazepam, and triazolam and are included in the category of 'Benzodiazepines'.

Projected estimates for 2020 (entire year) are calculated based upon initial counts by quarter, average toxicology turnaround time at the time of the report, the date of data analysis, and previous quarter fatality trend review.

Rate calculations are based upon Virginia population projections. These population estimates came from the Virginia Department of Health, Division of Health Statistics (http://www.vdh.virginia.gov/HealthStats/stats.htm).

Quarters are based upon calendar year and are defined as follows:

- Quarter 1 (Q1)- January 1st - March 31st
- Quarter 2 (Q2)- April 1st – June 30th
- Quarter 3 (Q3)- July 1st – September 31st
- Quarter 4 (Q4)- October 1st – December 31st

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# MAIN TAKEAWAYS

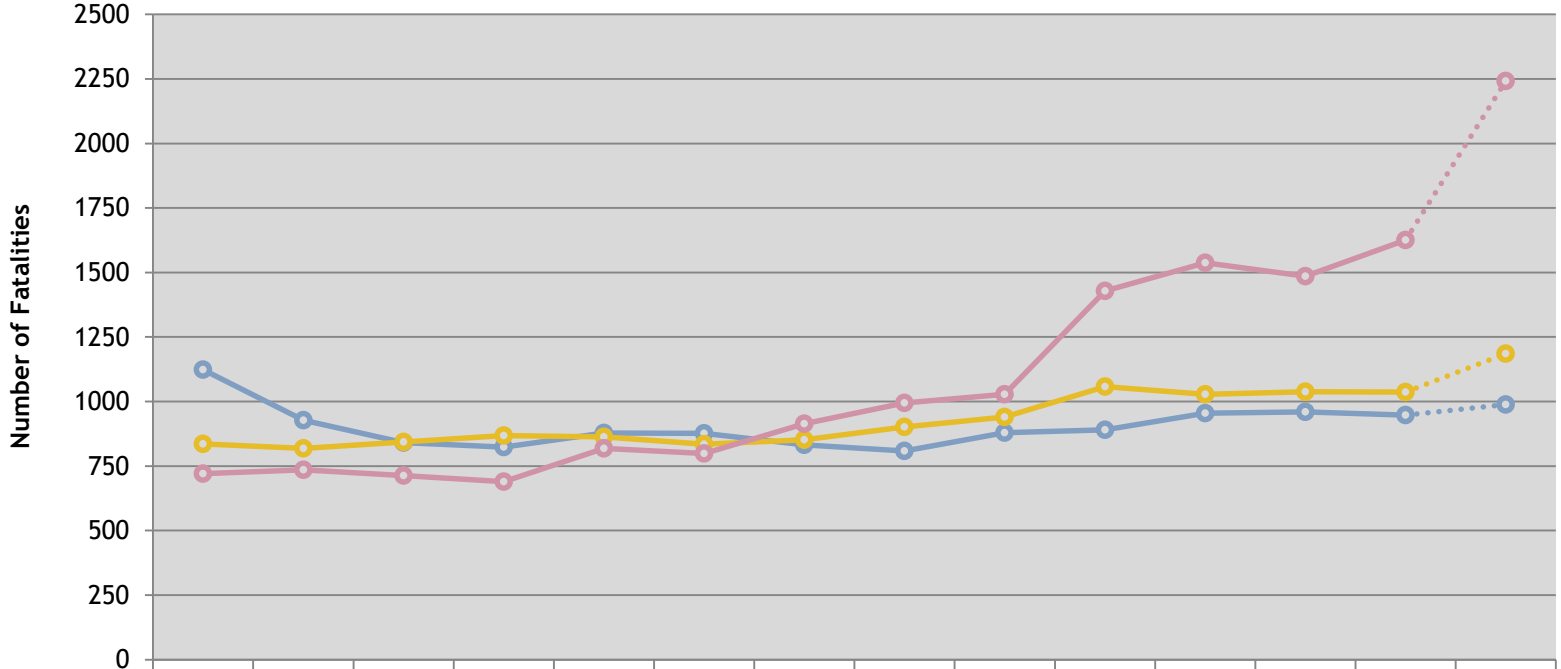
- Fatal drug overdose has been the leading method of unnatural death in Virginia since 2013
- Opioids have been the driving force behind the large increases in fatal overdoses since 2013
- In 2015 statewide, the number of illicit opioids deaths surpassed prescription (Rx) opioid deaths. This trend continued at a greater magnitude in 2016, 2017, 2018, and 2019
- There has not been a significant increase or decrease in fatal prescription (Rx) opioid overdoses over the 12 year time span (2007-2019)
- Fentanyl (prescription, illicit, and/or analogs) caused or contributed to death in 59.3% of all fatal overdoses in 2019
- Fatal non-opioid illicit drug overdoses are on the rise. In 2019 compared to 2018, fatal cocaine overdoses increased 9.4% and fatal methamphetamine overdoses increased 55.9%
- In 2019, fatal overdoses, all substances, increased by 9.4% compared to 2018. The number of fatal overdoses in 2019 (n=1,626) was the largest annual total ever seen in Virginia. Preliminary numbers from Q2 and Q3 of 2020 suggest an enormous increase in fatal overdoses since the beginning of the COVID-19 national shutdown (preliminary increase of 62.6% in Q2 and Q3 2020 compared to Q2 and Q3 2019). 2020 will be the worst year on record by far for fatal overdoses in Virginia

# TOP 3 METHODS OF UNNATURAL DEATH

The leading methods of unnatural death in Virginia since 2007 have been motor vehicle collisions, gun-related deaths, and fatal drug overdoses (these methods of death include all manners of death: accident, homicide, suicide, and undetermined). In 2013, fatal drug overdose became the leading method of unnatural death in the Commonwealth. This trend has continued to worsen at a greater magnitude due mainly to illicit opioids (heroin, illicit fentanyl, and fentanyl analogs).

**Total Number of Motor Vehicle, Gun, and Drug Related Fatalities by Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Motor Vehicle Related | 1124 | 928 | 841 | 823 | 878 | 877 | 832 | 808 | 879 | 890 | 955 | 960 | 948 | 988 |
| Gun Related | 836 | 818 | 843 | 868 | 863 | 835 | 852 | 901 | 940 | 1058 | 1028 | 1038 | 1037 | 1186 |
| Fatal Drug Overdose | 721 | 735 | 713 | 690 | 819 | 799 | 914 | 994 | 1028 | 1428 | 1537 | 1486 | 1626 | 2242 |

[1] Top 3 methods of death (motor vehicles, guns, and drugs) include all manners of death (accident, homicide, suicide, and undetermined)

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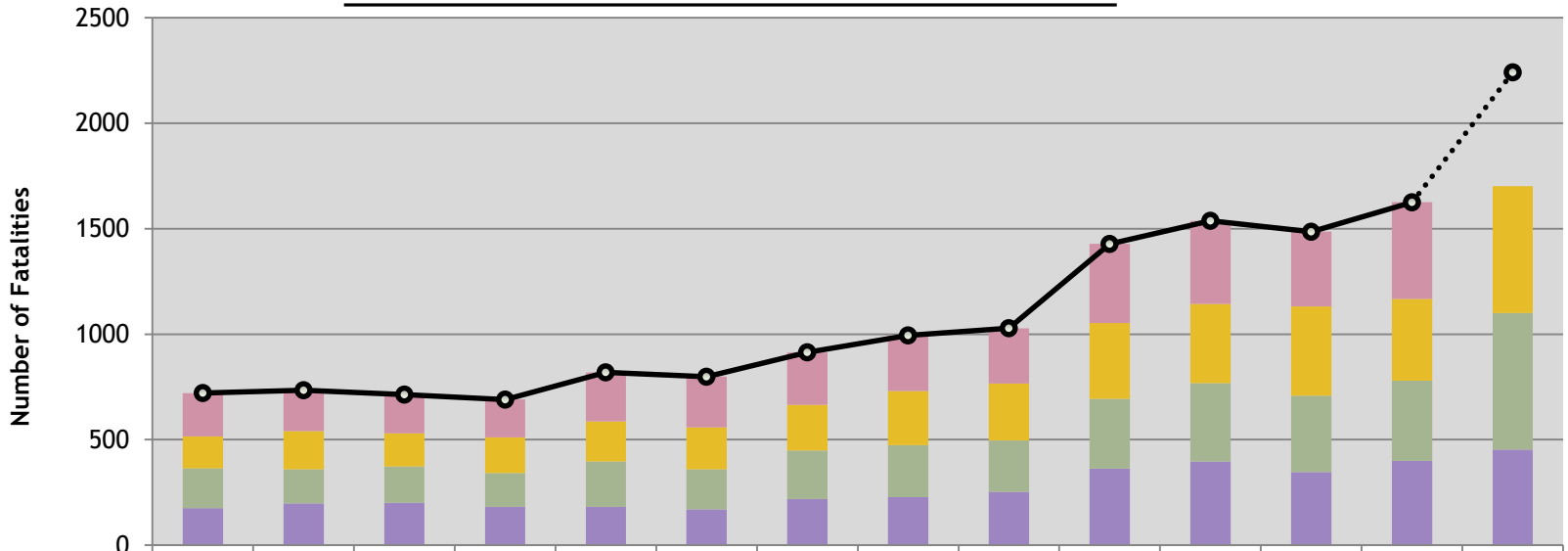
# ALL DRUGS

The total number of fatal drug overdoses statewide has increased each year. In 2013, fatal drug overdose became the number one method of unnatural death in the Commonwealth, surpassing both motor vehicle-related fatalities and gun-related fatalities. In 2014, fatal drug overdose became the leading cause of accidental death in Virginia. The number of all fatal overdoses in 2016 compared to 2015 increased by 38.9%---a record setting statistic. Preliminary totals for all of 2019 indicate an 9.4% increase in the total number of all fatal drug overdoses from the previous year (2018).

**Total Number of Fatal Drug Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 205 | 195 | 183 | 179 | 232 | 240 | 248 | 263 | 262 | 375 | 393 | 354 | 459 | |
| Q3 | 152 | 180 | 157 | 170 | 191 | 199 | 217 | 257 | 270 | 359 | 376 | 423 | 388 | 602 |
| Q2 | 188 | 162 | 172 | 159 | 215 | 190 | 230 | 246 | 243 | 332 | 371 | 363 | 380 | 647 |
| Q1 | 176 | 198 | 201 | 182 | 181 | 170 | 219 | 228 | 253 | 362 | 397 | 346 | 399 | 453 |
| Total Fatalities | 721 | 735 | 713 | 690 | 819 | 799 | 914 | 994 | 1028 | 1428 | 1537 | 1486 | 1626 | 2242 |

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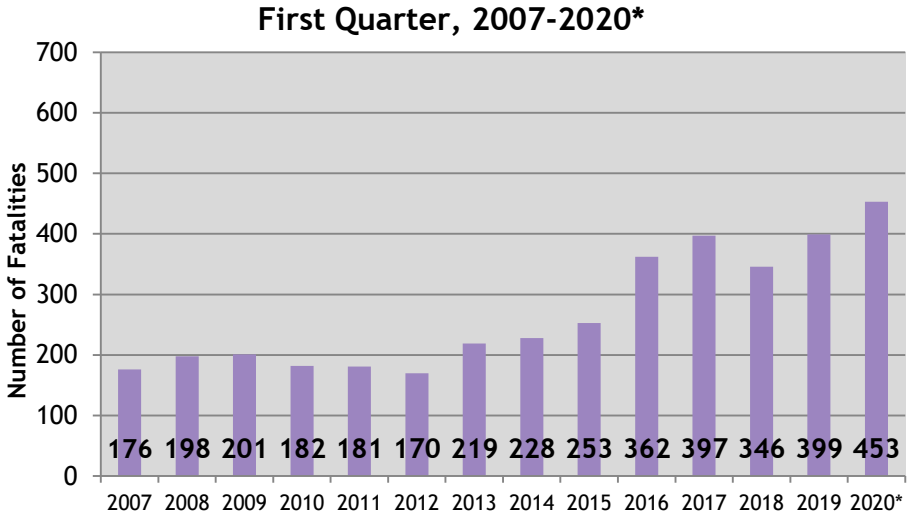
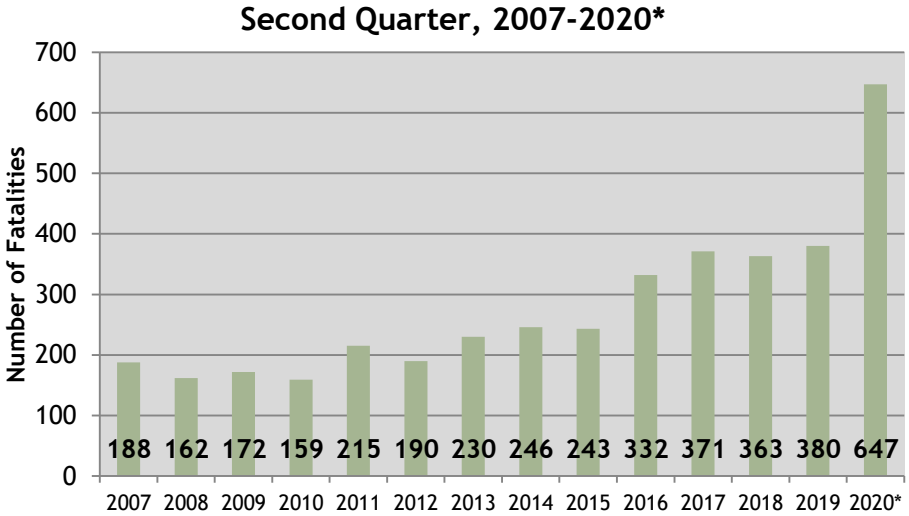
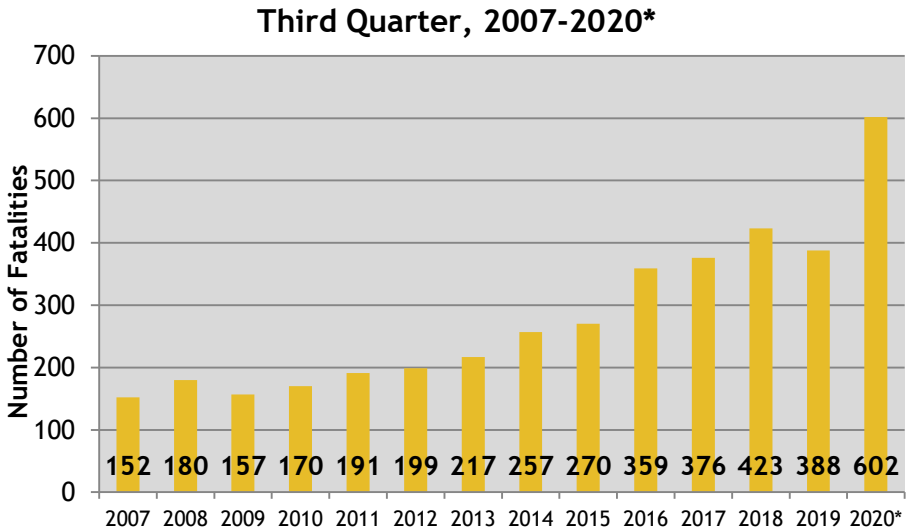
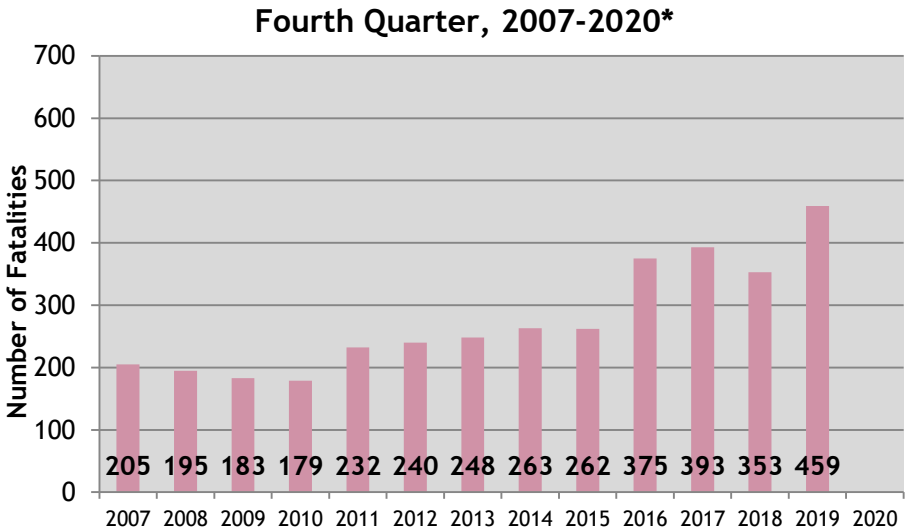
# ALL DRUGS

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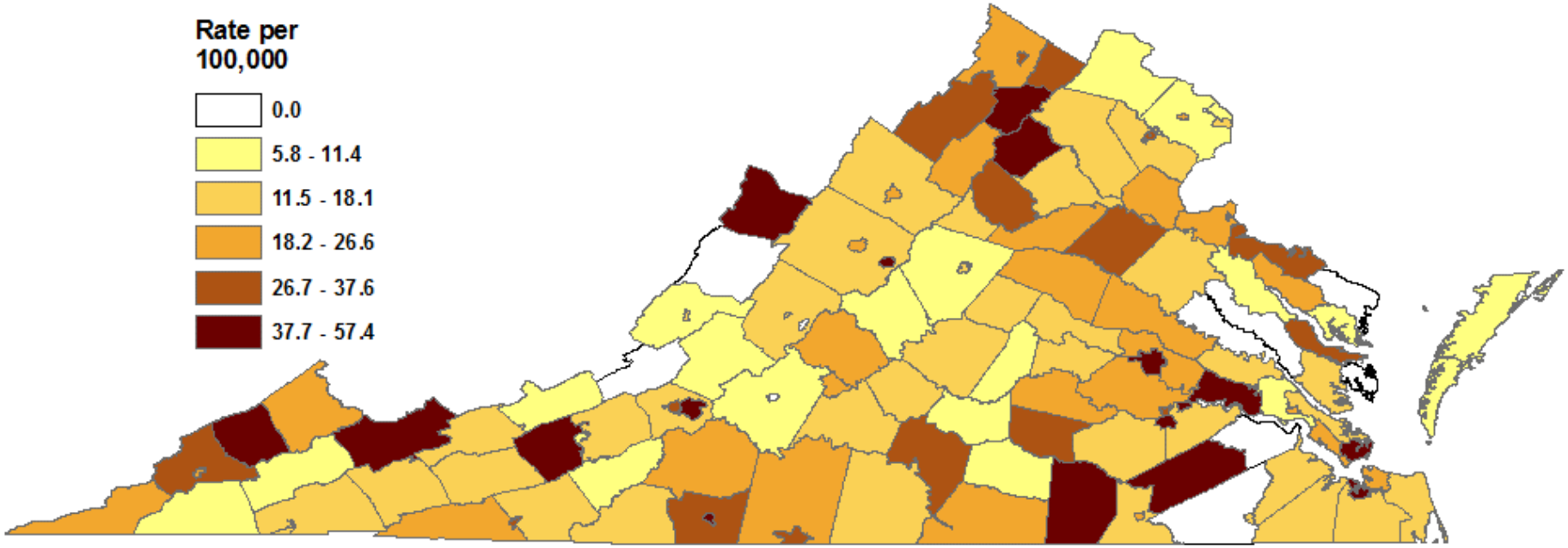
## Rate of All Fatal Drug Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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# FATAL DRUG OVERDOSES BY NAME/CATEGORY

- Benzodiazepines
- Cocaine
- Fentanyl
- Heroin
- Prescription Opioids (excluding Fentanyl)

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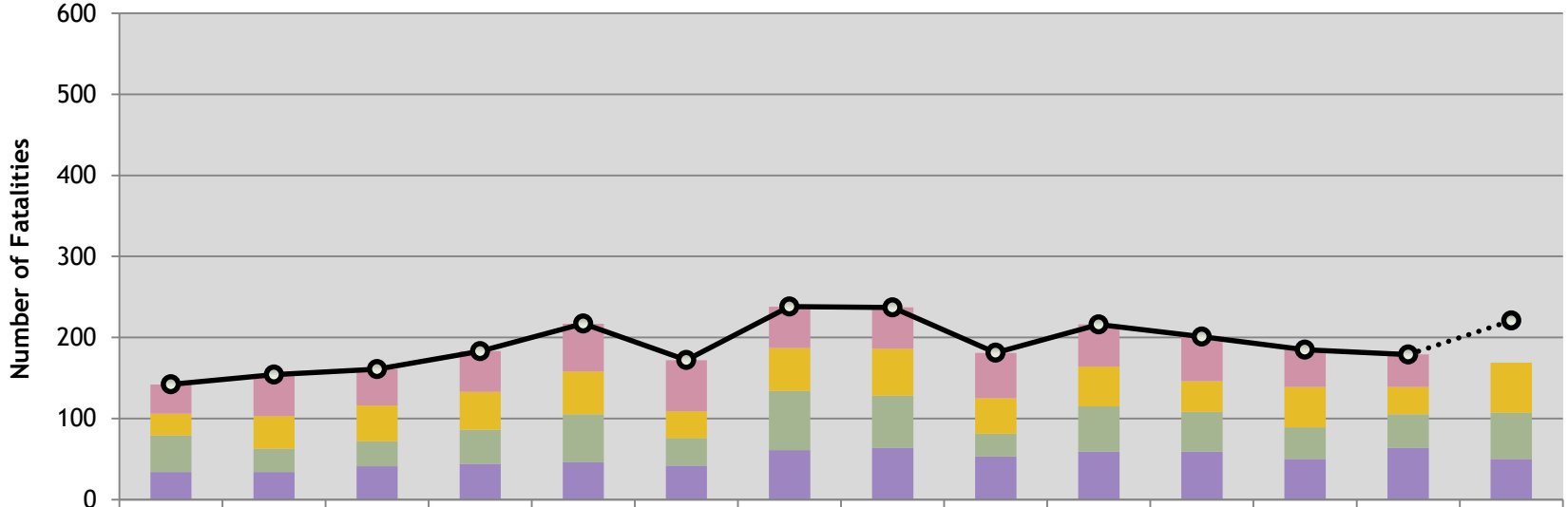
# BENZODIAZEPINES

The number of fatal benzodiazepine-related overdoses has fluctuated each year. It is very uncommon for a decedent to fatally overdose on one or more benzodiazepines alone. However, when a person ingests other substances (e.g. alcohol, opiates, methamphetamine) in addition to larger, nontherapeutic amounts of benzodiazepines, the user is potentially creating a lethal cocktail of mixed substances. Fatal benzodiazepine overdoses often had one or more prescription opioids (excluding fentanyl) causing or contributing to death; however, this proportion has slowly decreased in recent years from nearly 90% in 2007 to 59.7% in 2019.

**Total Number of Fatal Benzodiazepine Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 36 | 51 | 45 | 50 | 59 | 63 | 51 | 51 | 56 | 52 | 55 | 46 | 40 | |
| Q3 | 27 | 40 | 44 | 47 | 53 | 33 | 53 | 58 | 44 | 49 | 38 | 50 | 34 | 62 |
| Q2 | 45 | 29 | 31 | 42 | 59 | 34 | 73 | 64 | 28 | 56 | 49 | 39 | 41 | 57 |
| Q1 | 34 | 34 | 41 | 44 | 46 | 42 | 61 | 64 | 53 | 59 | 59 | 50 | 64 | 50 |
| Total Fatalities | 142 | 154 | 161 | 183 | 217 | 172 | 238 | 237 | 181 | 216 | 201 | 185 | 179 | 221 |

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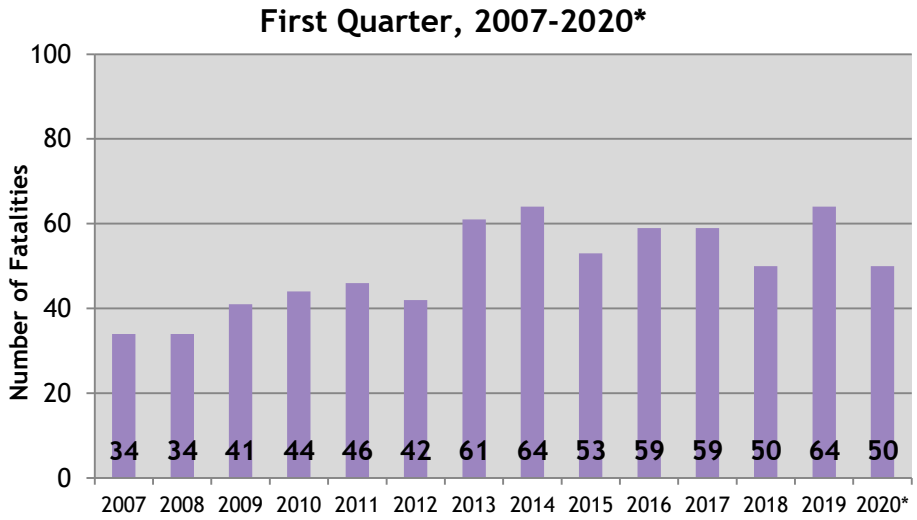
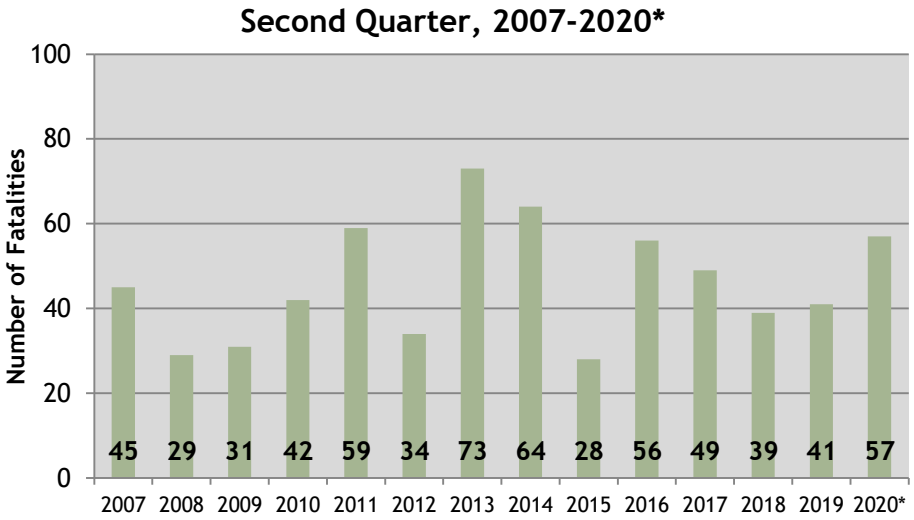
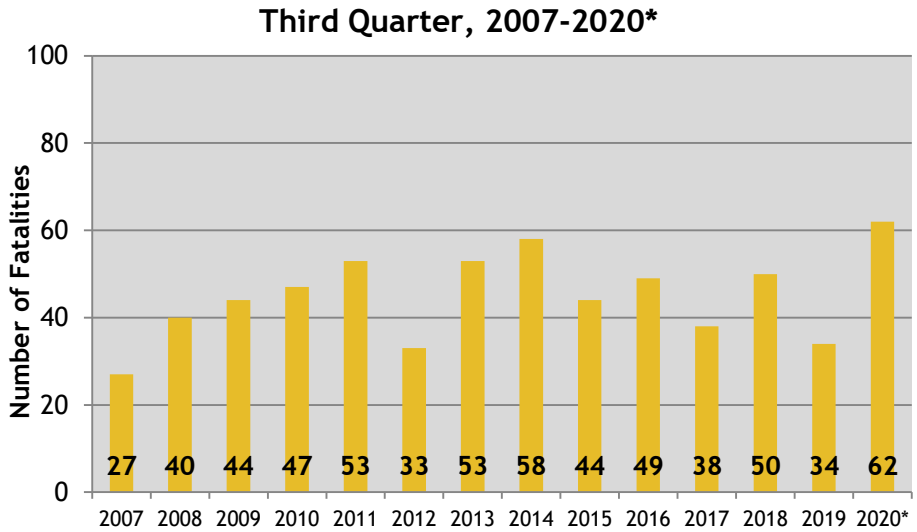
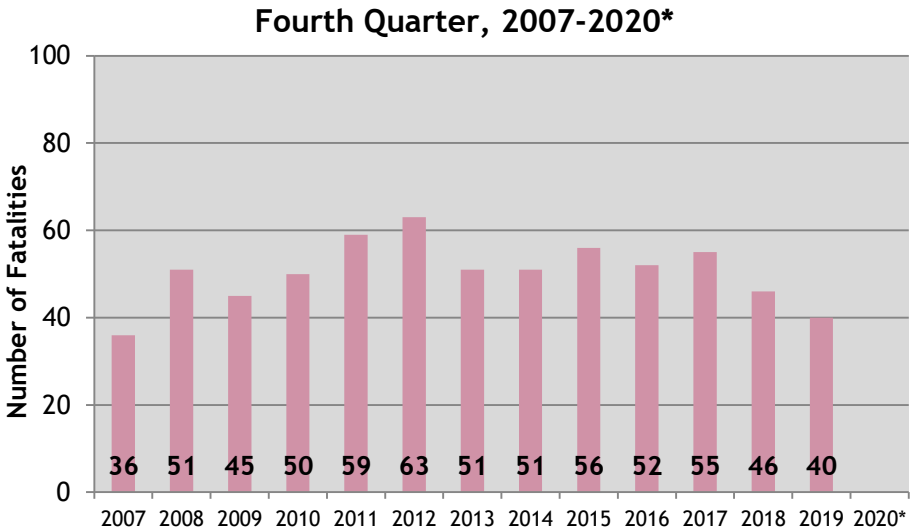
# BENZODIAZEPINES

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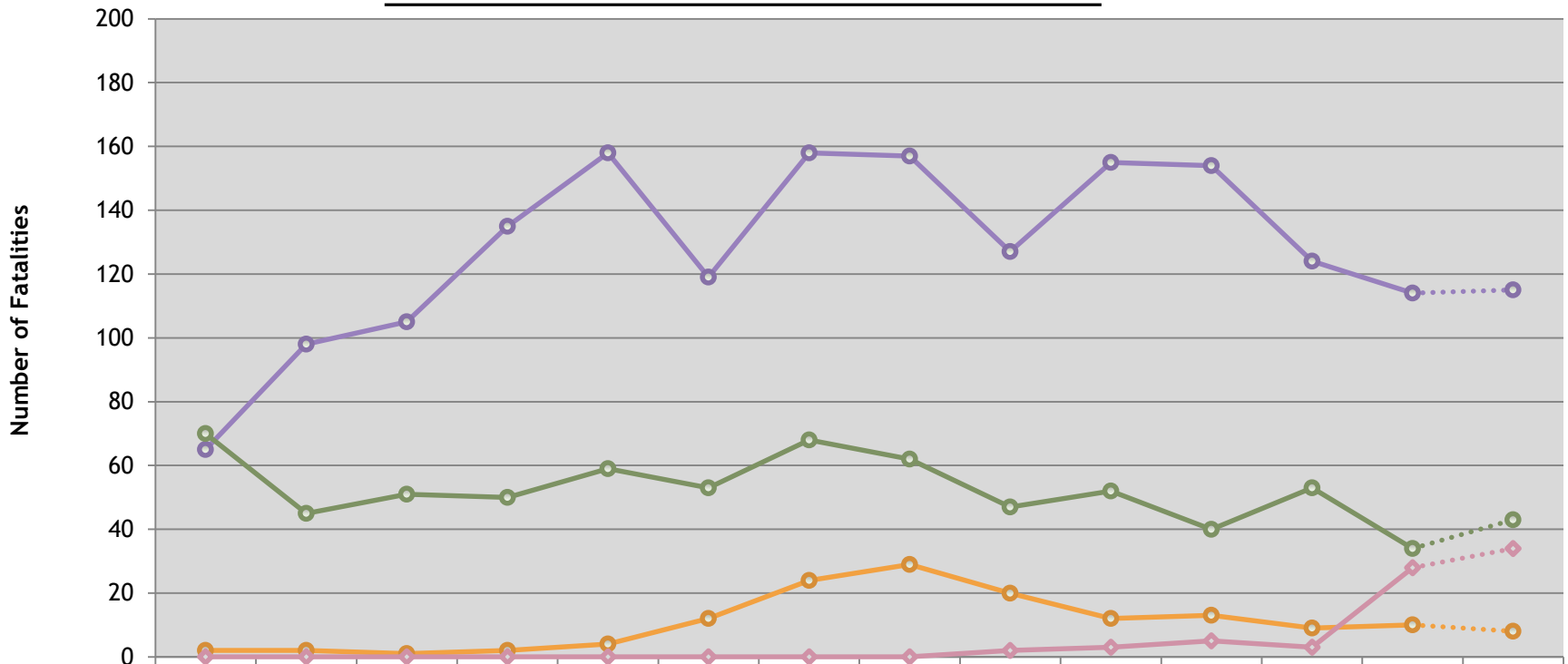
# BENZODIAZEPINES

**Total Number of Fatal Benzodiazepine Overdoses by Drug Name and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alprazolam | 65 | 98 | 105 | 135 | 158 | 119 | 158 | 157 | 127 | 155 | 154 | 124 | 114 | 115 |
| Clonzepam | 2 | 2 | 1 | 2 | 4 | 12 | 24 | 29 | 20 | 12 | 13 | 9 | 10 | 8 |
| Diazepam | 70 | 45 | 51 | 50 | 59 | 53 | 68 | 62 | 47 | 52 | 40 | 53 | 34 | 43 |
| Etizolam | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 3 | 28 | 34 |

[1] Flualprazolam, flurazepam, lorazepam, midazolam, nordiazepam, oxazepam, temazepam and triazolam were excluded from this analysis because of low annual case counts (<20 deaths per year)

[2] Each benzodiazepine is tallied by each time it caused or contributed to death (analyzed from either toxicology or the cause of death statement) and therefore the total number of benzodiazepines will far exceed the actual number of fatalities

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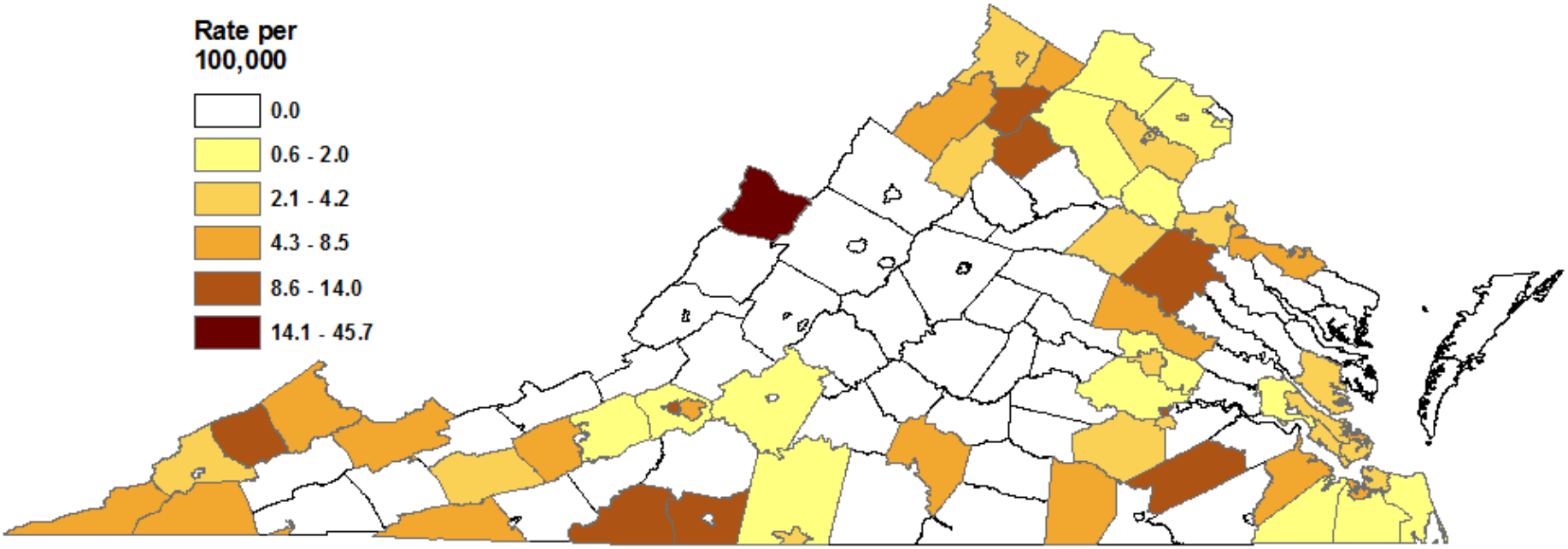
## Rate of Fatal Benzodiazepine Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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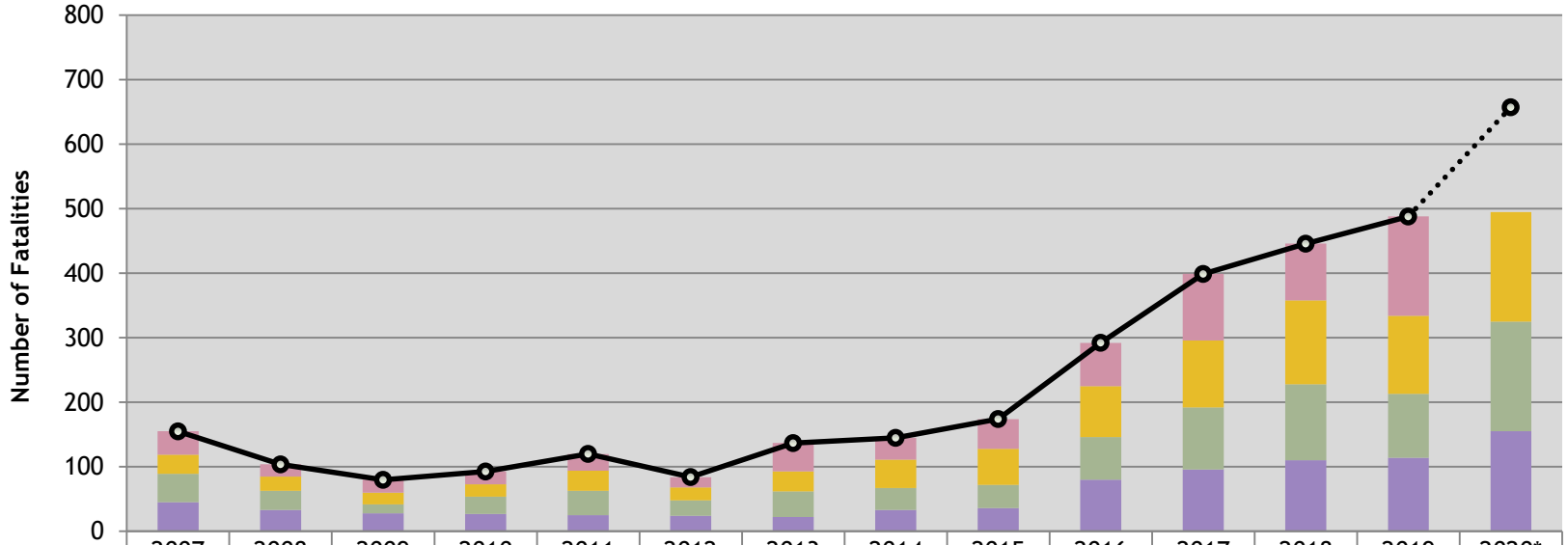
# COCAINE

The total number of fatal cocaine-related overdoses statewide has been slowly increasing since 2013. Fatal cocaine overdoses from 2007-2015 typically occurred as the only substance causing or contributing to death, or in addition to lethal combinations of one or more opioid prescription drugs (excluding fentanyl) (36.6%), heroin (24.6%), and/or alcohol at or above the legal limit of 0.08% BAC (16.0%). In 2019, over 67% of cocaine deaths also included fentanyl (prescription, illicit, or analogs). The number of fatal cocaine overdoses in 2019 compared to 2018 increased by 9.4%.

**Total Number of Fatal Cocaine Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 36 | 19 | 20 | 20 | 26 | 16 | 44 | 34 | 46 | 67 | 103 | 88 | 154 | |
| Q3 | 30 | 22 | 18 | 19 | 31 | 20 | 31 | 44 | 56 | 79 | 104 | 130 | 121 | 170 |
| Q2 | 44 | 30 | 14 | 27 | 38 | 24 | 40 | 34 | 36 | 66 | 96 | 118 | 99 | 170 |
| Q1 | 45 | 33 | 28 | 27 | 25 | 24 | 22 | 33 | 36 | 80 | 96 | 110 | 114 | 155 |
| Total Fatalities | 155 | 104 | 80 | 93 | 120 | 84 | 137 | 145 | 174 | 292 | 399 | 446 | 488 | 657 |

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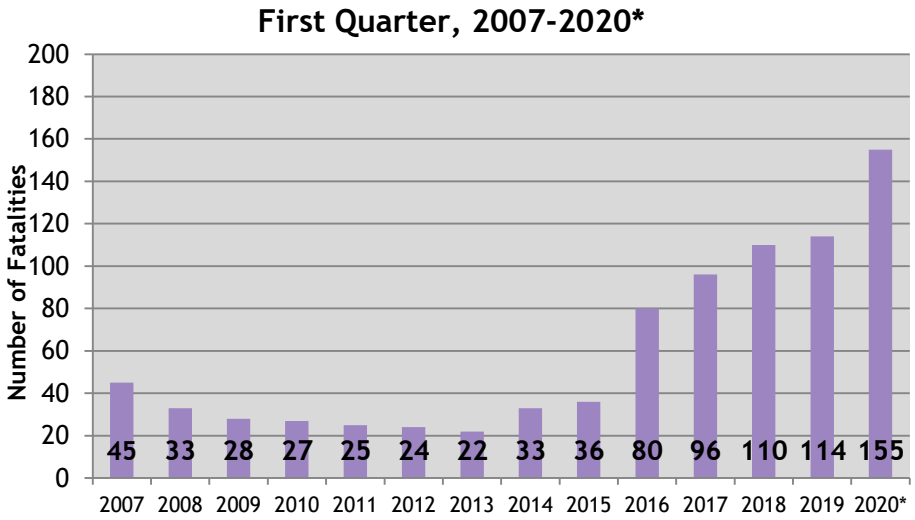
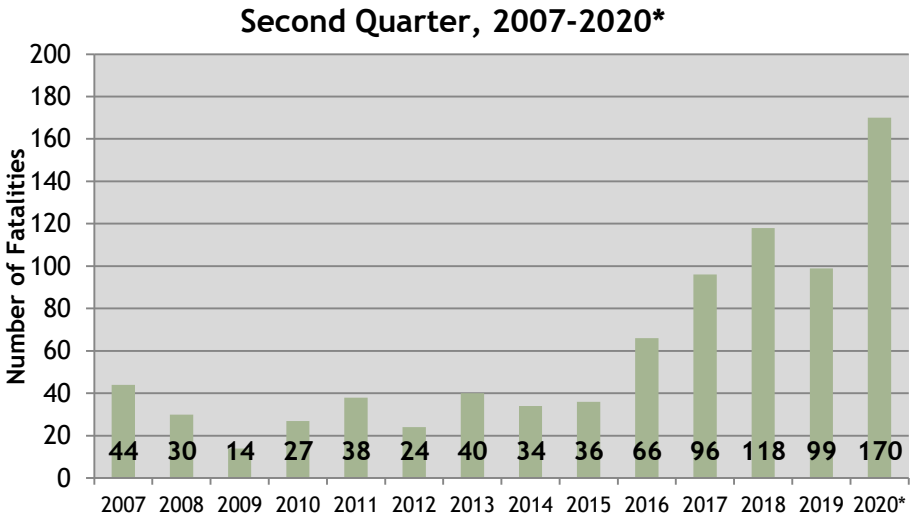
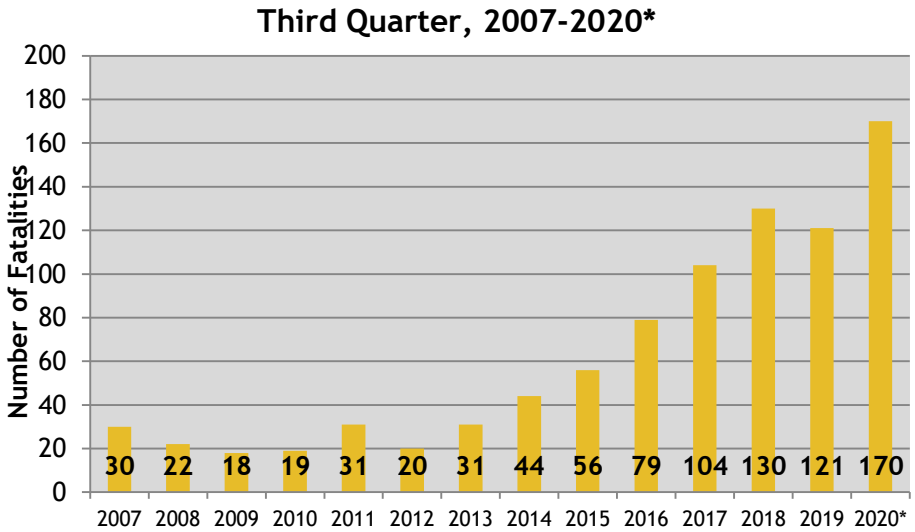
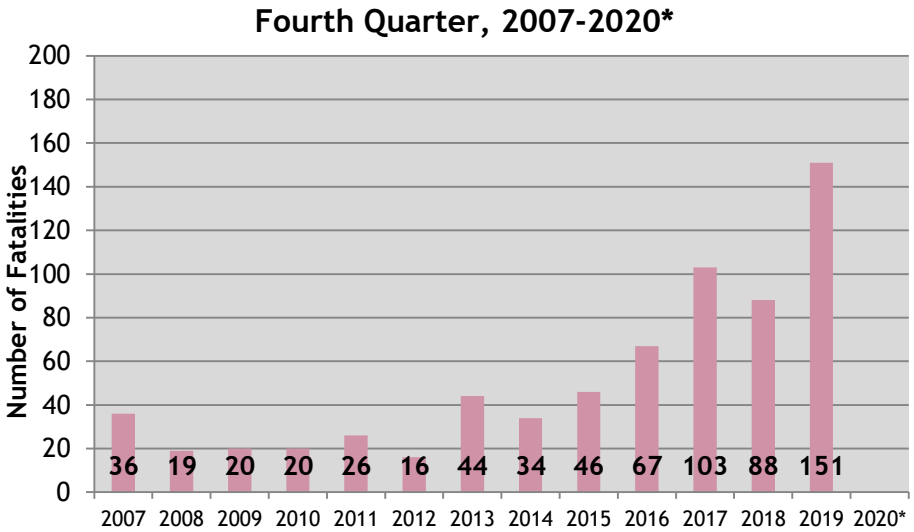
# COCAINE

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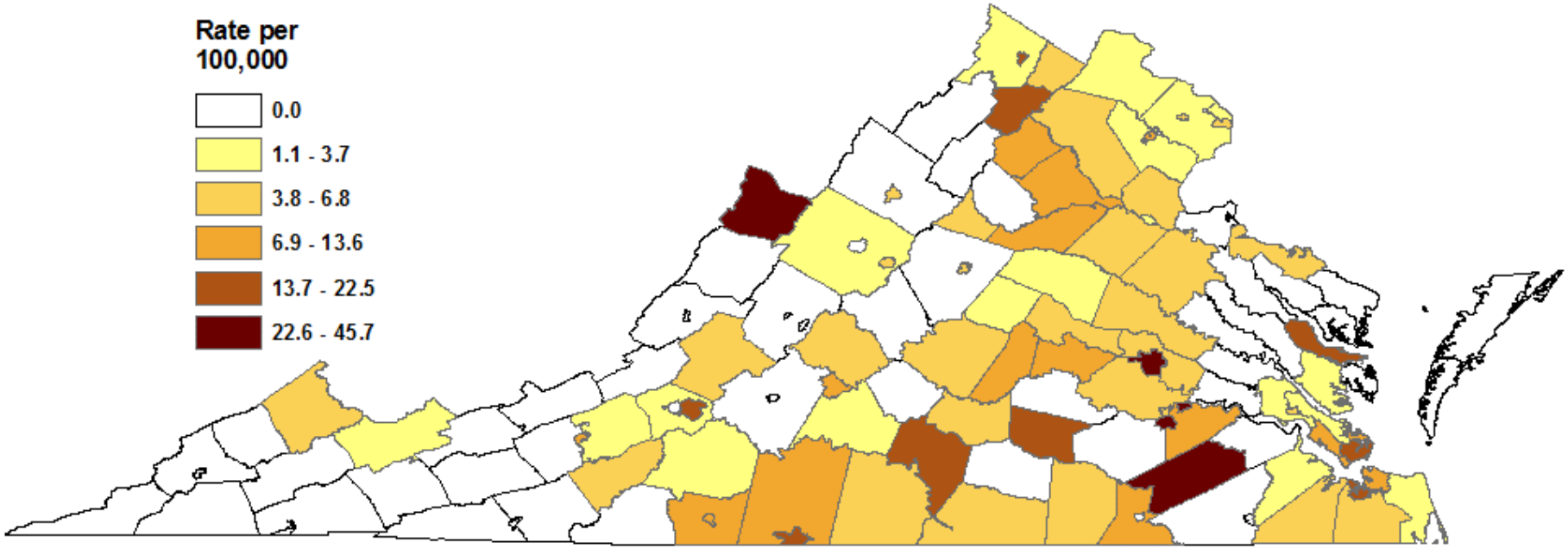
## Rate of Fatal Cocaine Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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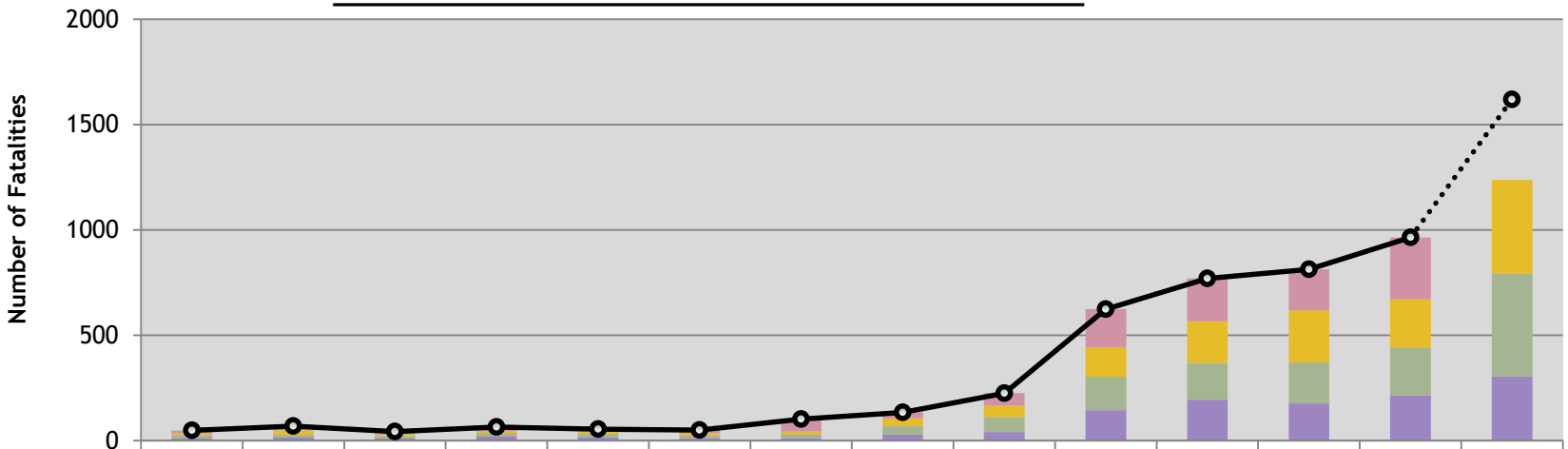
# FENTANYL

The total number of fatal fentanyl-related drug overdoses has sharply increased since 2012; which coincides with the dramatic increase in fatal heroin overdoses. Prior to 2013, most fentanyl-related deaths were due to illicit use of pharmaceutically produced fentanyl. However, in late 2013, early 2014, law enforcement investigations and toxicology testing demonstrated an increase in illicitly produced fentanyl. By 2016, most fatal fentanyl-related overdoses were due to illicitly produced fentanyl and fentanyl analogs, and not pharmaceutically produced fentanyl, with an increase of 177.3% in fentanyl deaths from 2015. For statistical purposes, 'fentanyl' includes all pharmaceutically produced fentanyl, illicitly produced fentanyl, and fentanyl analogs. The number of fatal fentanyl overdoses in 2019 compared to 2018 increased by 18.6%.

**Total Number of Fatal Fentanyl Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 14 | 19 | 13 | 19 | 11 | 15 | 58 | 28 | 59 | 180 | 203 | 194 | 294 | |
| Q3 | 8 | 22 | 8 | 9 | 11 | 11 | 14 | 35 | 53 | 141 | 199 | 248 | 228 | 444 |
| Q2 | 14 | 12 | 12 | 18 | 16 | 13 | 19 | 42 | 72 | 158 | 175 | 195 | 227 | 488 |
| Q1 | 12 | 15 | 10 | 18 | 16 | 11 | 11 | 29 | 41 | 145 | 193 | 176 | 215 | 304 |
| Total Fatalities | 48 | 68 | 43 | 64 | 54 | 50 | 102 | 134 | 225 | 624 | 770 | 813 | 964 | 1619 |

[1] Historically, fentanyl has been categorized as a prescription opioid because it is mass produced by pharmaceutical companies. However, law enforcement investigations and toxicology results have demonstrated that several recent fentanyl seizures have ***not*** been pharmaceutically produced, but illicitly produced. This illicit form of fentanyl is produced by international drug traffickers who import the drug into the United States and often, mix it into heroin being sold. This illicitly produced fentanyl has been the biggest contributor to the significant increase in the number of fatal opioid overdoses in Virginia.

[2] Illicit and pharmaceutically produced fatal fentanyl overdoses are represented in this analysis. This includes all different types of fentanyl analogs (acetyl fentanyl, furanyl fentanyl, etc.)

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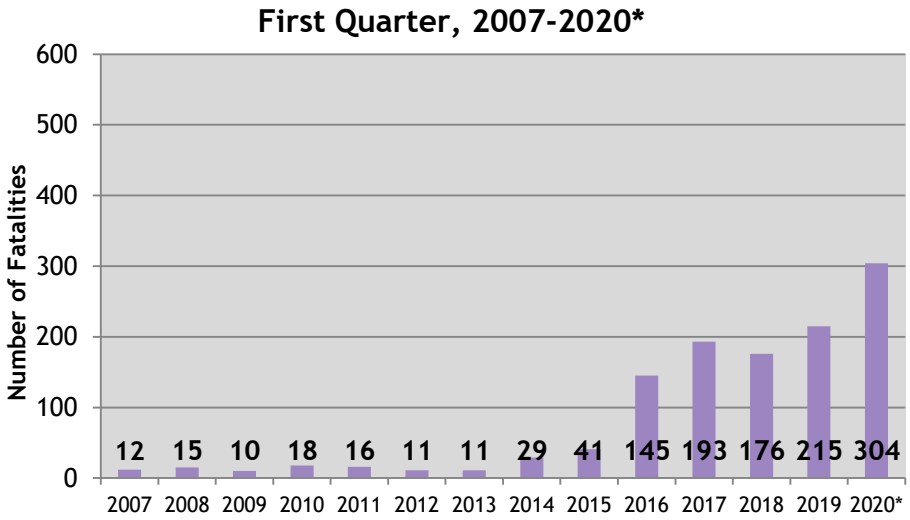
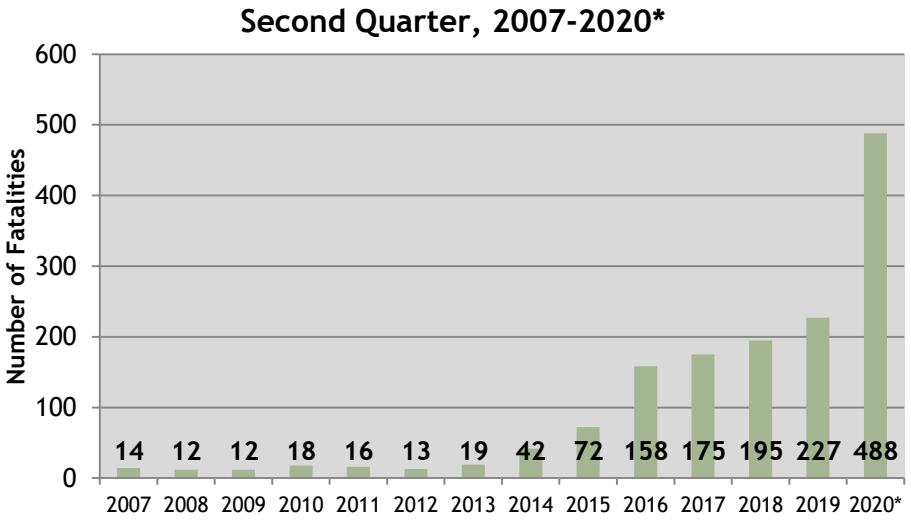
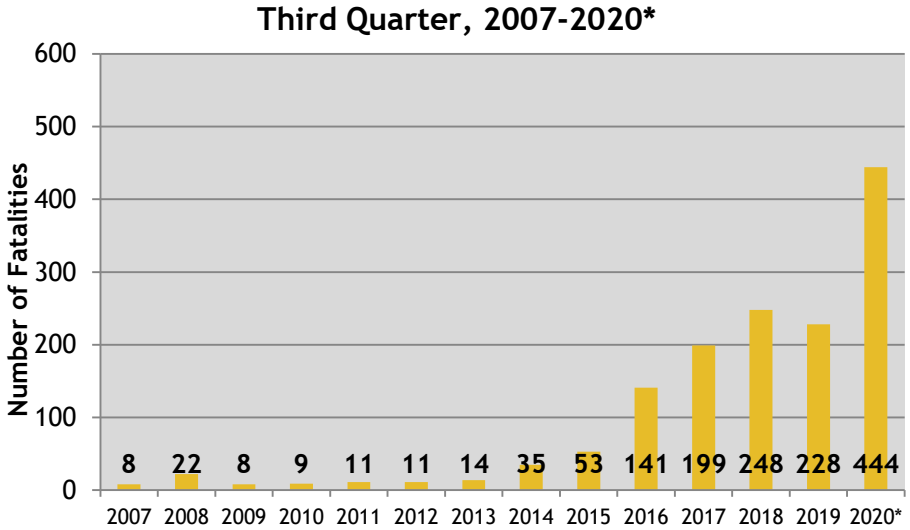
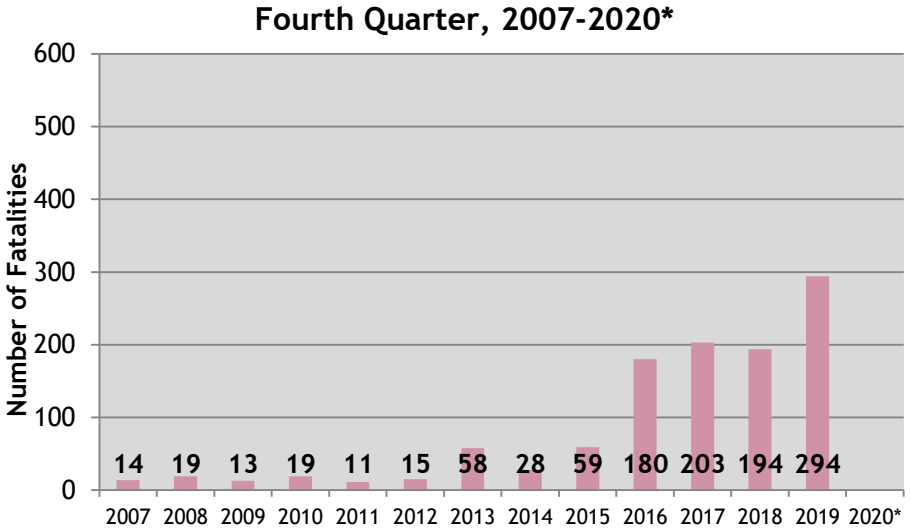
# FENTANYL

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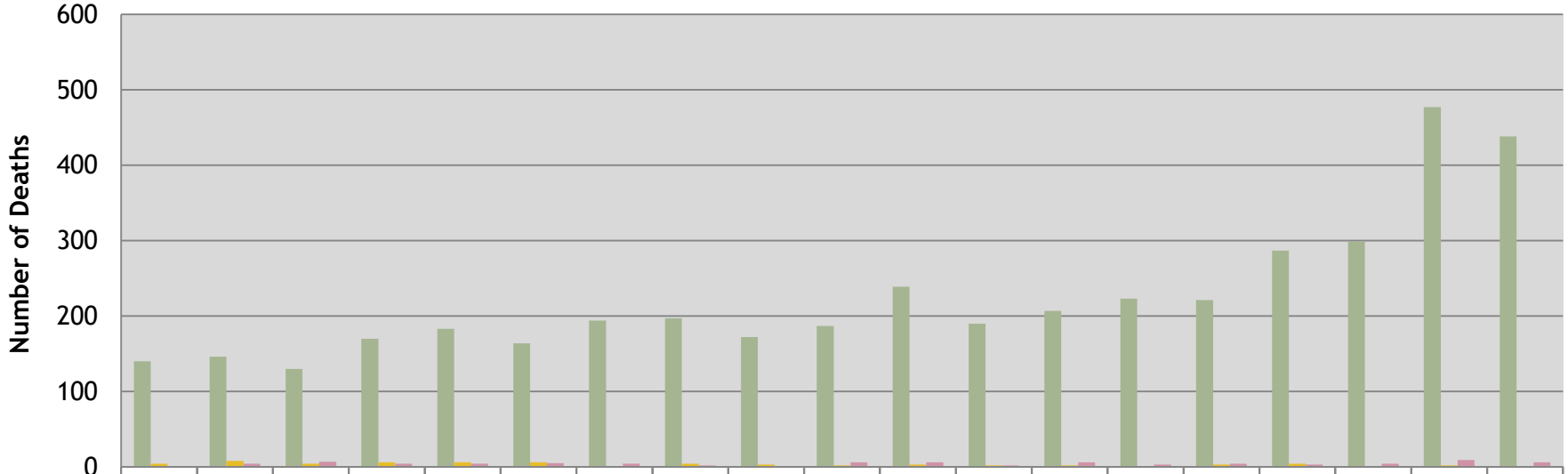
# FENTANYL

In 2016, the OCME began collecting information on the suspected origin of fentanyl (pharmaceutical production, illicit production, or unknown) on all fatal overdoses involving fentanyl. The determination is made by reviewing the examination report, toxicology report, police report, and several other sources of information collected during the death investigation process. This classification is more subjective than objective, but still provides detailed insight to the current proportion of illicitly produced fentanyl in Virginia that is contributing to fatal overdoses. In 2019, it was estimated that over 97% of fatal fentanyl overdoses were due to the illicitly produced versions of the drug.

**Total Number of Fatal Fentanyl Overdoses by Fentanyl Origin and Month of of Death, 2016-2020***




| | 2016 | | | | 2017 | | | | 2018 | | | | 2019 | | | | 2020* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 |
| Illicit | 140 | 146 | 130 | 170 | 183 | 164 | 194 | 197 | 172 | 187 | 239 | 190 | 207 | 223 | 221 | 287 | 299 | 477 | 438 |
| Prescription | 4 | 8 | 4 | 6 | 6 | 6 | 1 | 4 | 3 | 2 | 3 | 2 | 2 | 1 | 3 | 4 | 1 | 2 | 0 |
| Unknown | 1 | 4 | 7 | 4 | 4 | 5 | 4 | 2 | 1 | 6 | 6 | 2 | 6 | 3 | 4 | 3 | 4 | 9 | 6 |

[1] Historically, fentanyl has been categorized as a prescription opioid because it is mass produced by pharmaceutical companies. However, recent law enforcement investigations and toxicology results have demonstrated that several recent fentanyl seizures have ***not*** been pharmaceutically produced, but illicitly produced. This illicit form of fentanyl is produced by international drug traffickers who import the drug into the United States and often, mix it into heroin being sold. This illicitly produced fentanyl has been the biggest contributor to the significant increase in the number of fatal opioid overdoses in Virginia.

[2] Illicit and pharmaceutically produced fatal fentanyl overdoses are represented in this analysis. This includes all different types of fentanyl analogs (acetyl fentanyl, furanyl fentanyl, etc.)

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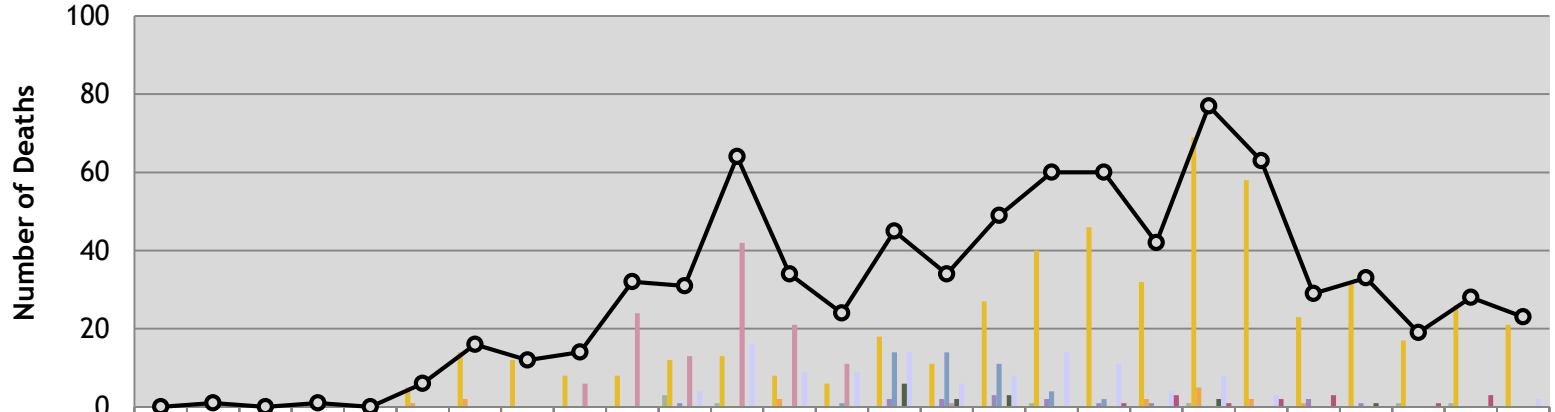
# FENTANYL ANALOGS

Fentanyl analogs are a category of illicitly produced opioids very similar to fentanyl, but slightly different in their chemical structure. Fentanyl analogs began appearing in Virginia in 2014 and have risen dramatically since the beginning of 2016. In fatal overdoses, fentanyl analogs are often found with fentanyl and/or two different fentanyl analogs together, and/or heroin or cocaine, or due to the analog itself, without other drugs detected. Fentanyl analogs are illicitly produced and are extremely potent, and can be blamed in part for the significant rise in fatal overdoses due to opioids. For statistical purposes, 'fentanyl' includes all pharmaceutically produced fentanyl, illicitly produced fentanyl, and fentanyl analogs.

**Total Number of Fatal Fentanyl Analog Overdoses by Quarter and Year of Death, 2014-2020***




| | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | | 2019 | | | | 2020* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 |
| 3-Methyl Fentanyl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Acetyl Fentanyl | 0 | 1 | 0 | 1 | 0 | 5 | 14 | 12 | 8 | 8 | 12 | 13 | 8 | 6 | 18 | 11 | 27 | 40 | 46 | 32 | 69 | 58 | 23 | 32 | 17 | 26 | 21 |
| Butyryl Fentanyl | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 |
| Carfentanil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Cyclopropyl Fentanyl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 14 | 11 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Furanyl Fentanyl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 24 | 13 | 42 | 21 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Methoxyacetyl Fentanyl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 |
| Para-Fluoroisobutyryl Fentanyl*** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 9 | 9 | 14 | 6 | 8 | 14 | 11 | 4 | 8 | 3 | 0 | 0 | 0 | 0 | 2 |
| Valerylfentanyl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 2 | 3 | 0 | 1 | 3 | 0 |
| Total Fentanyl Analog Fatalities | 0 | 1 | 0 | 1 | 0 | 6 | 16 | 12 | 14 | 32 | 31 | 64 | 34 | 24 | 45 | 34 | 49 | 60 | 60 | 42 | 77 | 63 | 29 | 33 | 19 | 28 | 23 |

[1] Each fentanyl analog is tallied by each time it caused or contributed to death (analyzed from either toxicology or the cause of death statement) and therefore the total number of analogs will exceed the actual number of fatalities

[2]*****NEW***** [2] New guidance in 2019 reevaluated despropionyl fentanyl as an active fentanyl analog and reclassified the drug as a known precursor chemical in the illicit synthesis of fentanyl and fentanyl analogs, as well as a potential metabolite of one or more fentanyl analogs. Therefore, despropionyl fentanyl has been removed from the list of fentanyl analogs and has been removed from the grouping of 'Total Fentanyl Analog Fatalities' analyzed in this report . With this revision, it should be expected that numbers in past reports are outdated and should be updated to include the most current laboratory guidance.

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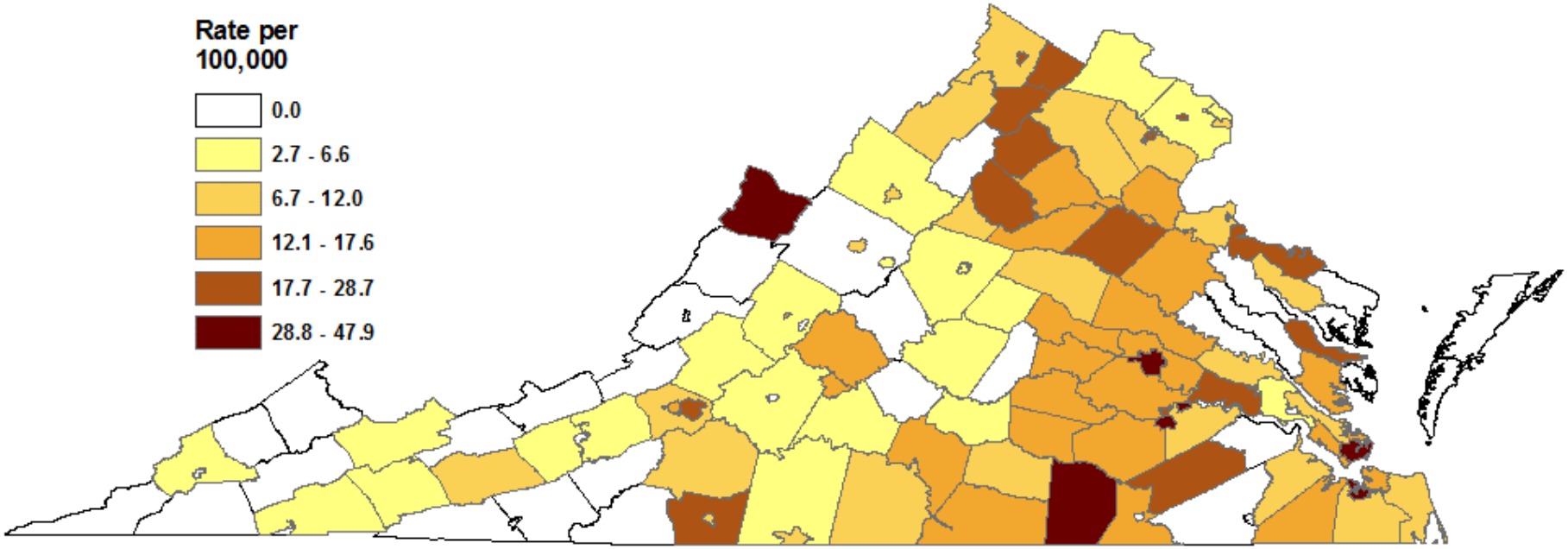
## Rate of Fatal Fentanyl (Rx, Illicit, and Analog) Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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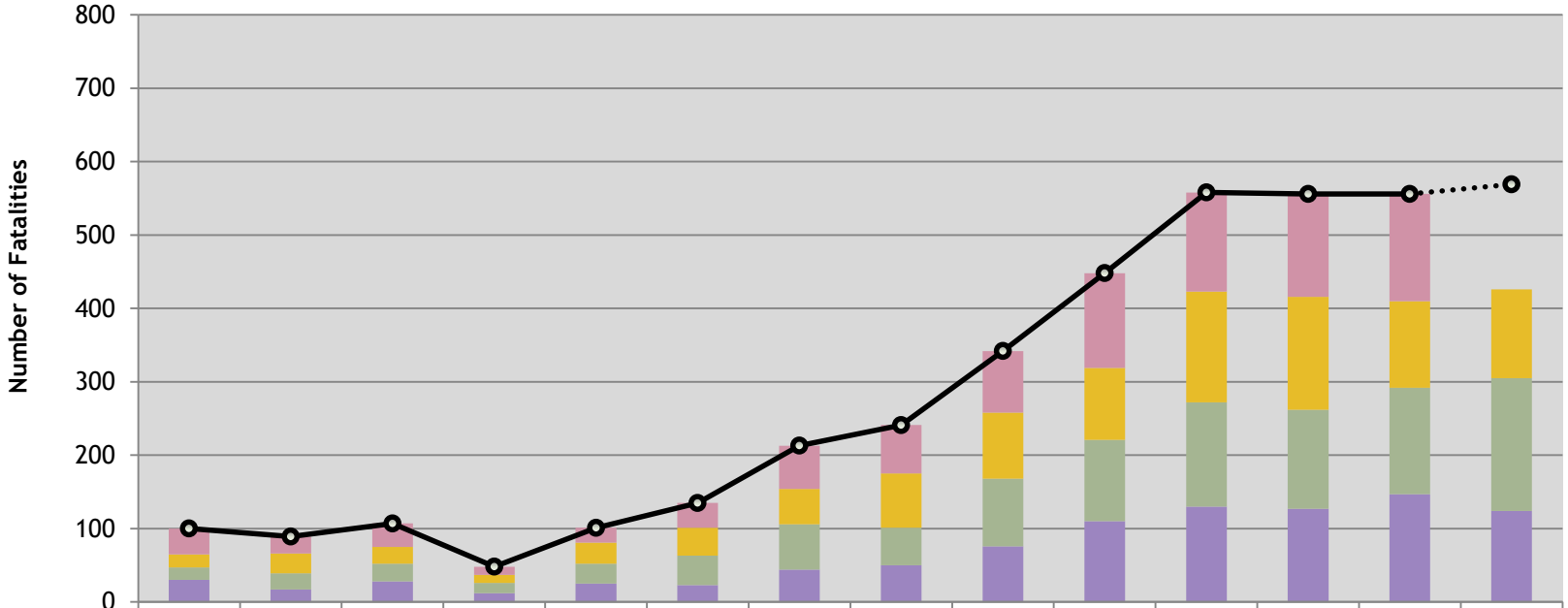
# HEROIN

The total number of fatal heroin-related overdoses have been increasing since 2010. Fatal heroin overdoses often occur as the primary drug causing death, but more recently, fentanyl and/or fentanyl analogs in addition to heroin have caused fatal overdoses. The number of fatal heroin overdoses in the last three years (2017-2019) has been nearly identical.

**Total Number of Fatal Heroin Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 35 | 23 | 32 | 11 | 20 | 34 | 59 | 66 | 84 | 129 | 135 | 140 | 146 | |
| Q3 | 18 | 27 | 23 | 11 | 29 | 38 | 48 | 74 | 90 | 98 | 151 | 154 | 118 | 121 |
| Q2 | 17 | 22 | 24 | 14 | 27 | 40 | 62 | 51 | 92 | 111 | 142 | 135 | 145 | 181 |
| Q1 | 30 | 17 | 28 | 12 | 25 | 23 | 44 | 50 | 76 | 110 | 130 | 127 | 147 | 124 |
| Total Fatalities | 100 | 89 | 107 | 48 | 101 | 135 | 213 | 241 | 342 | 448 | 558 | 556 | 556 | 569 |

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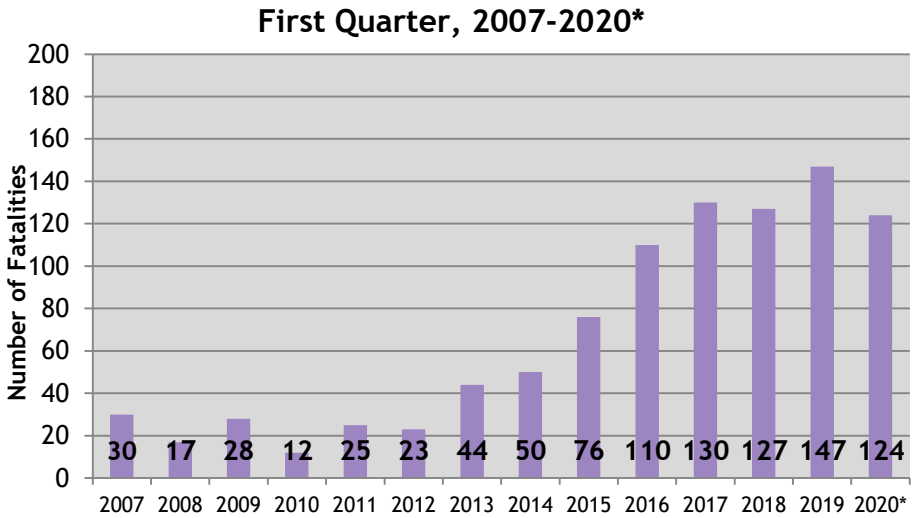
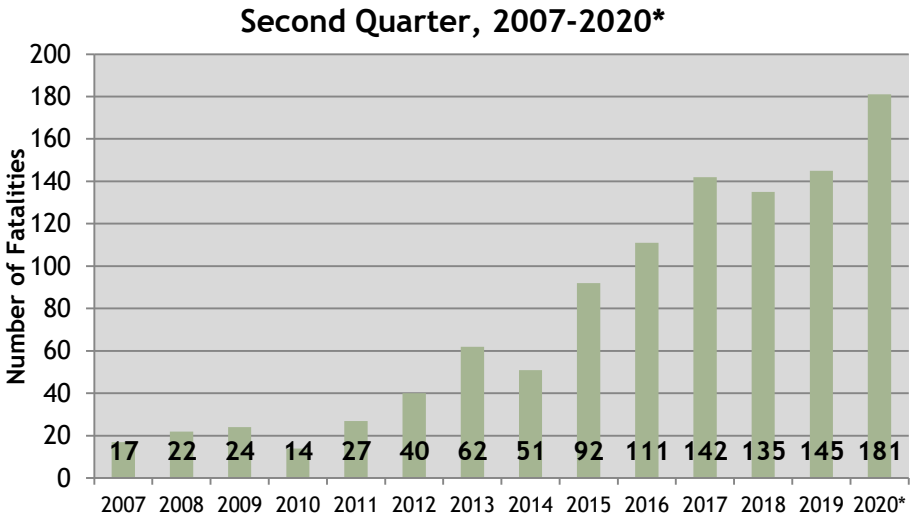
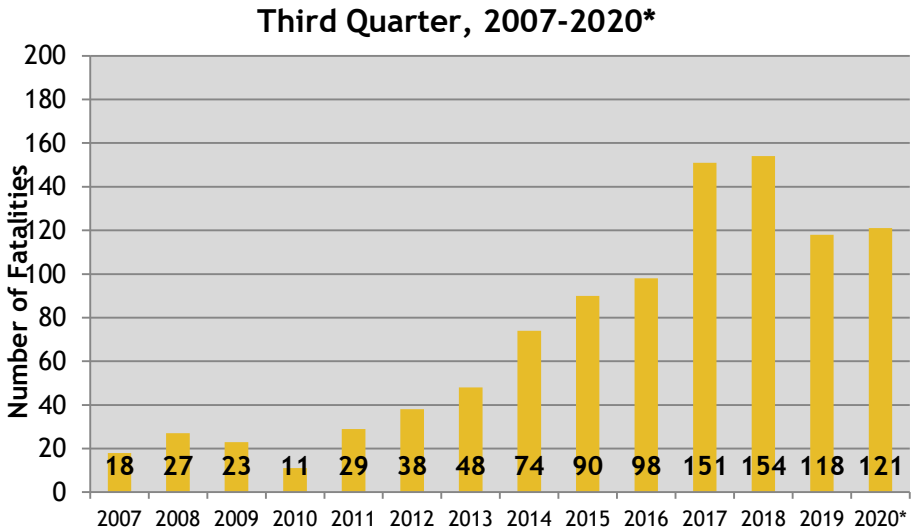
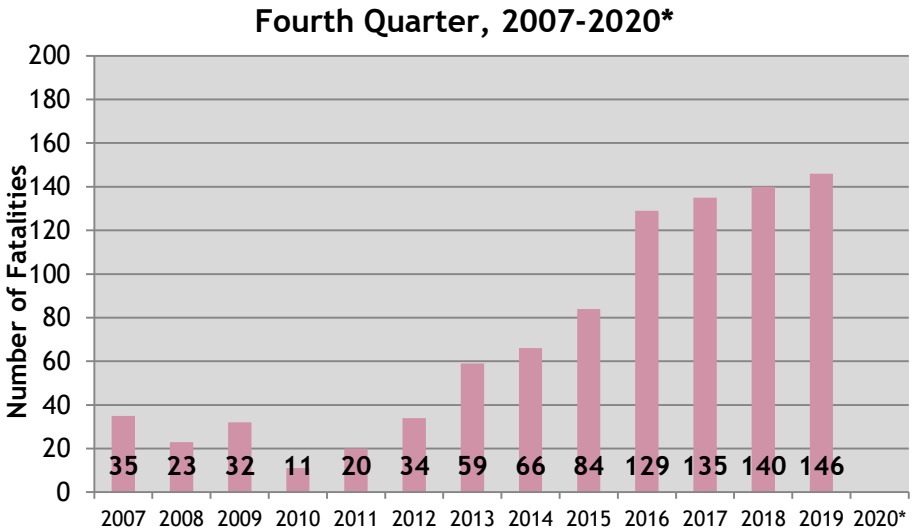
# HEROIN

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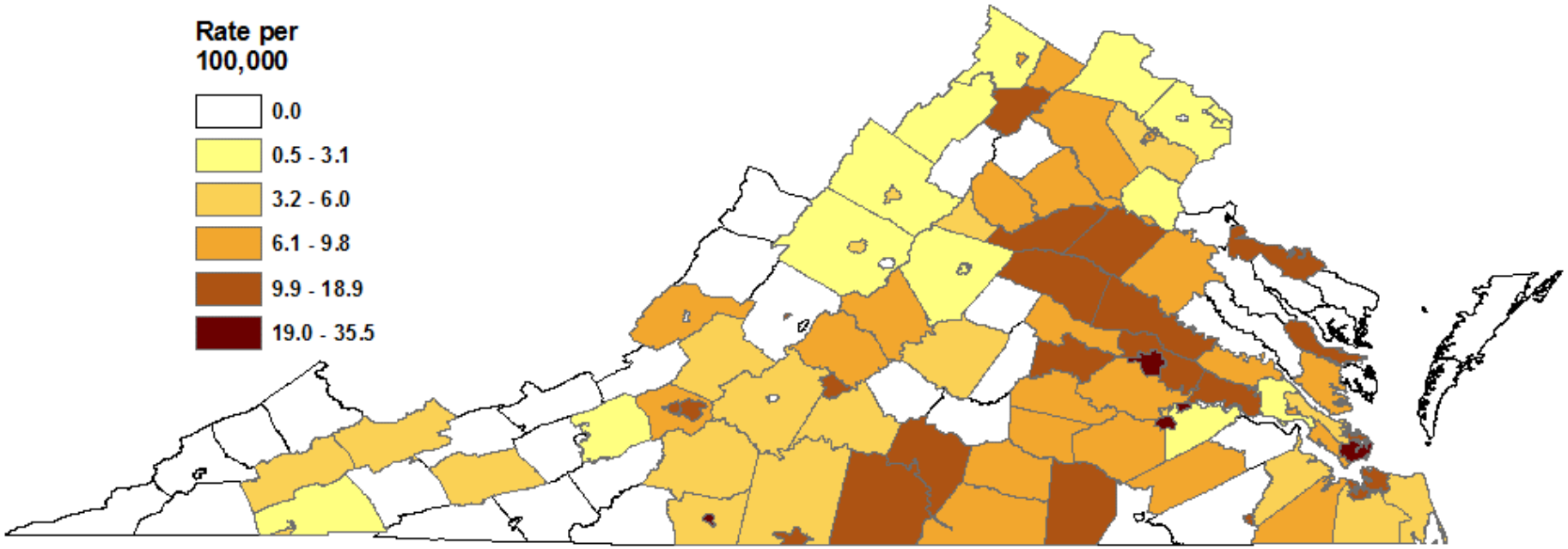
## Rate of Fatal Heroin Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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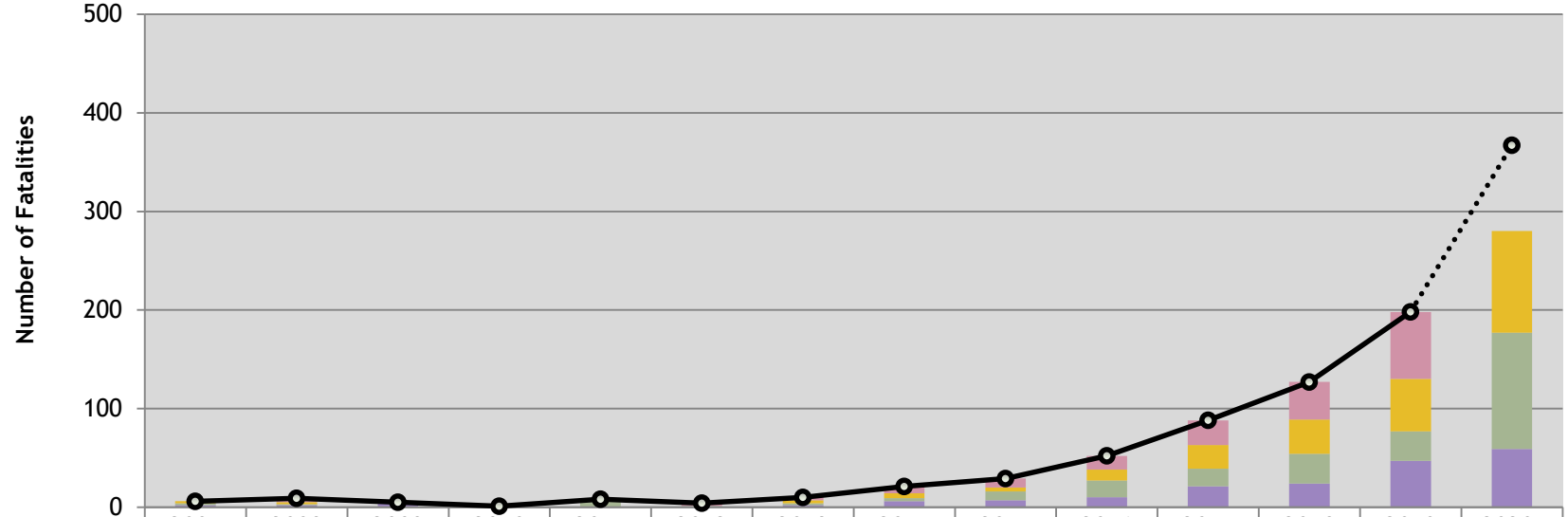
# METHAMPHETAMINE

From 2007 to 2014, fatal methamphetamine overdoses were relatively uncommon compared to other drugs/drug categories, but in 2014, the number of fatal methamphetamine overdoses began to increase. In 2019, fatal methamphetamine overdoses most frequently had fentanyl (prescription, illicit, and/or analogs) (40.4%), heroin (18.7%), and/or one or more prescription opioids (excluding fentanyl) causing or contributing to death (15.2%). Fatal methamphetamine overdoses increased by 55.9% in 2019 when compared to 2018.

**Total Number of Fatal Methamphetamine Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 0 | 4 | 0 | 0 | 2 | 3 | 3 | 7 | 9 | 14 | 25 | 38 | 68 | |
| Q3 | 2 | 2 | 0 | 1 | 0 | 0 | 3 | 5 | 4 | 11 | 24 | 35 | 53 | 103 |
| Q2 | 2 | 1 | 1 | 0 | 6 | 1 | 2 | 3 | 9 | 17 | 18 | 30 | 30 | 118 |
| Q1 | 2 | 2 | 4 | 0 | 0 | 0 | 2 | 6 | 7 | 10 | 21 | 24 | 47 | 59 |
| Total Fatalities | 6 | 9 | 5 | 1 | 8 | 4 | 10 | 21 | 29 | 52 | 88 | 127 | 198 | 367 |

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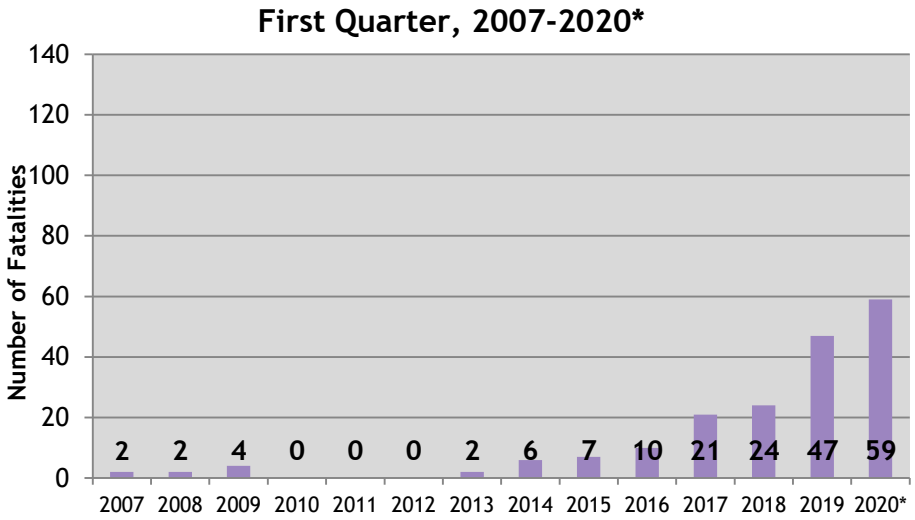
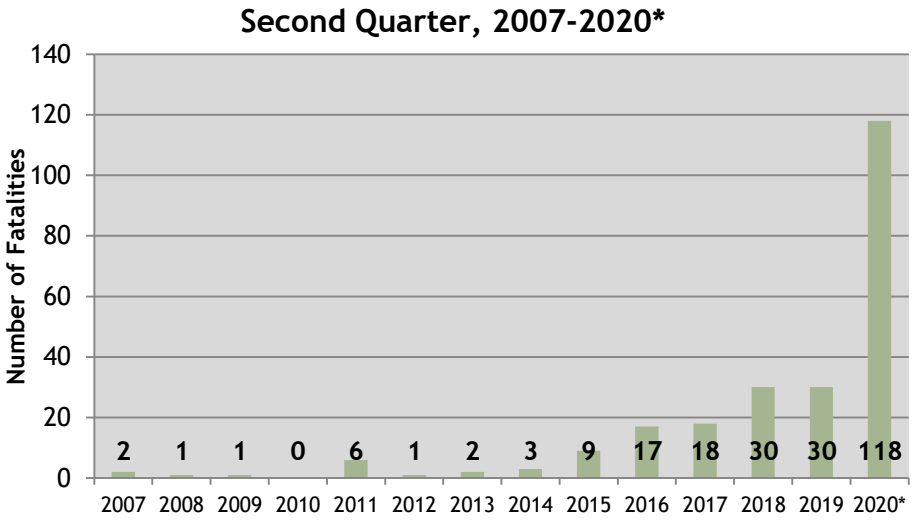
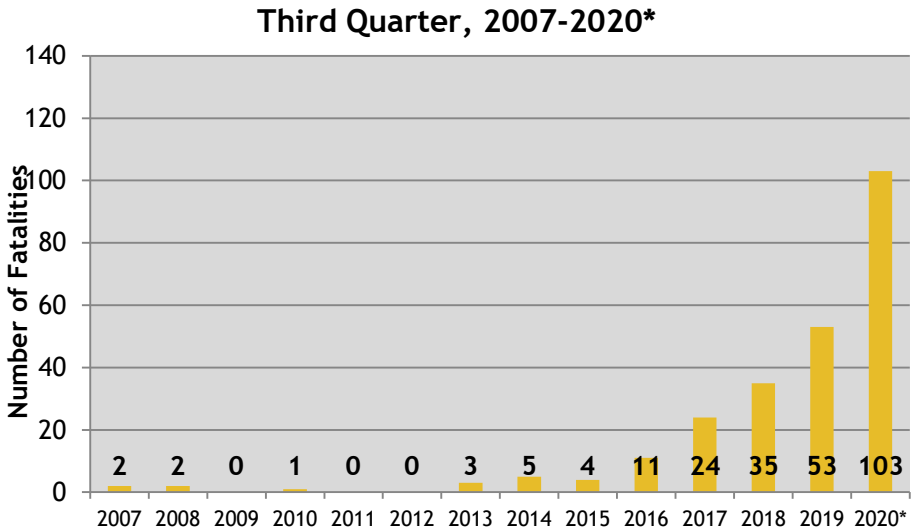
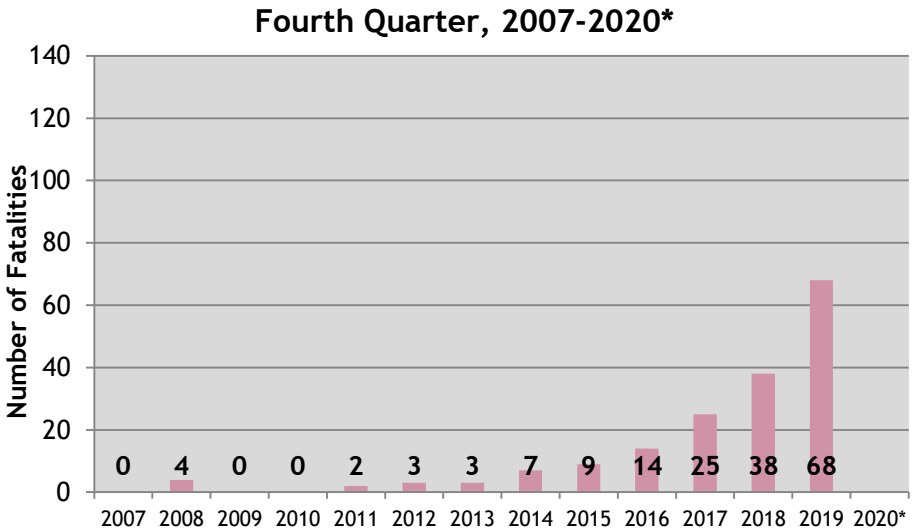
# METHAMPHETAMINE

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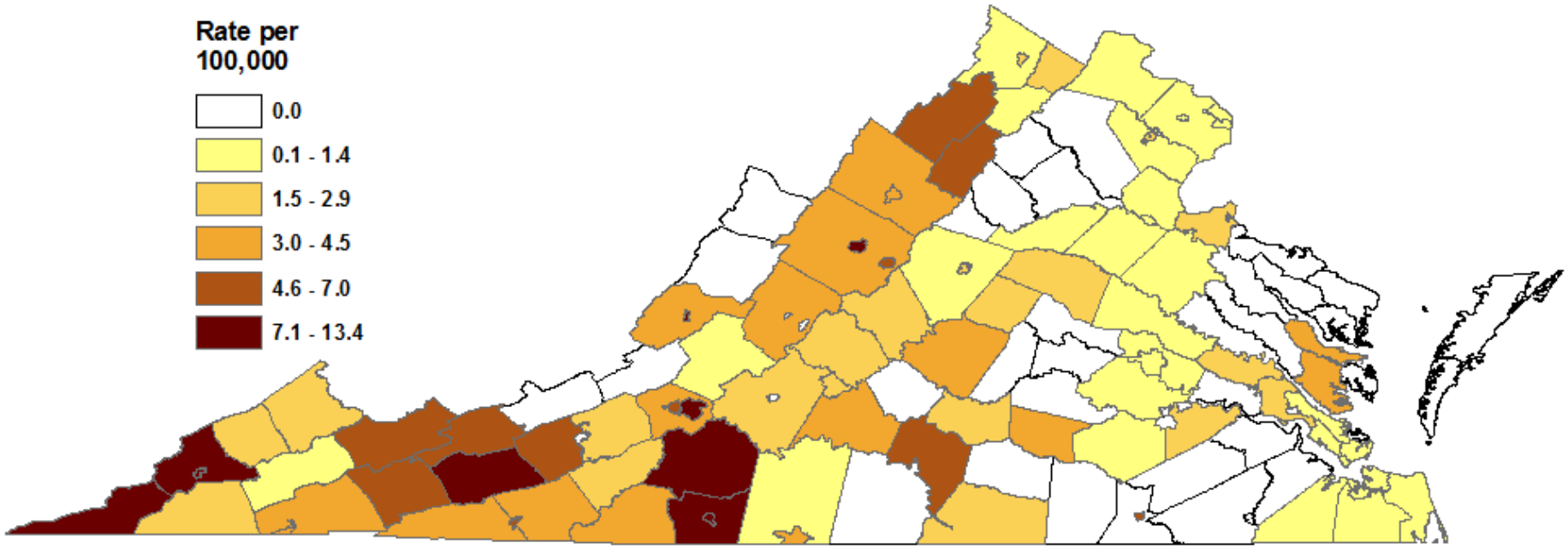
## Rate of Fatal Methamphetamine Overdoses by Locality of Overdose, 2017-2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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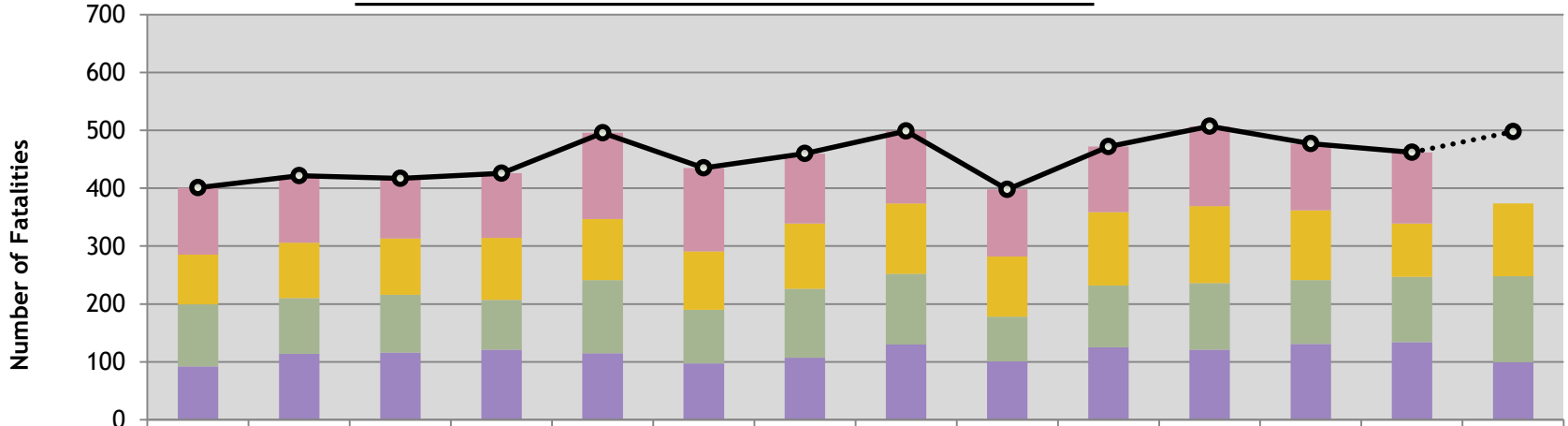
# PRESCRIPTION OPIOIDS (EXCLUDING FENTANYL)

Since 2007, fatal prescription (Rx) opioid overdoses have been the leading category of drugs causing or contributing to death in the Commonwealth, with historically, oxycodone being the most common drug. Given the transition in fatal fentanyl overdoses from pharmaceutically produced fentanyl (2007-2014) to nearly all illicitly produced fentanyl (2015-present), fentanyl needs to be removed from the Rx opioid category and analyzed separately. This allows one to see the significant impact the drug is having on fatal overdose numbers in Virginia. By removing fentanyl from this Rx category, it is to be expected that Rx opioid fatalities from 2007-2013 to be slightly undercounted because true Rx fentanyl overdoses are excluded and combined with all 'fentanyl' to capture recent trends of illicit fentanyl in Virginia.

**Total Number of Fatal Prescription Opioid Overdoses (Excluding Fentanyl) by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 116 | 116 | 104 | 112 | 149 | 144 | 121 | 125 | 116 | 113 | 138 | 115 | 123 | |
| Q3 | 86 | 96 | 97 | 107 | 106 | 101 | 113 | 122 | 104 | 127 | 133 | 121 | 92 | 126 |
| Q2 | 107 | 96 | 100 | 86 | 126 | 93 | 119 | 122 | 77 | 107 | 115 | 110 | 113 | 149 |
| Q1 | 92 | 114 | 116 | 121 | 115 | 97 | 107 | 130 | 101 | 125 | 121 | 131 | 134 | 99 |
| Total Fatalities | 401 | 422 | 417 | 426 | 496 | 435 | 460 | 499 | 398 | 472 | 507 | 477 | 462 | 498 |

[1] 'Prescription Opioids (excluding fentanyl)' calculates all deaths in which one or more prescription opioids caused or contributed to death, but excludes fentanyl from the **required list** of prescription opioid drugs used to calculate the numbers. However, given that some of these deaths have multiple drugs on board, some deaths may have fentanyl in addition to other prescriptions opioids, and are therefore counted in the total number. Analysis must be done this way because by excluding all deaths in which fentanyl caused or contributed to death, the calculation would also exclude other prescription opioid deaths (oxycodone, methadone, etc.) from the analysis and would thereby undercount the actual number of fatalities due to these true prescription opioids.

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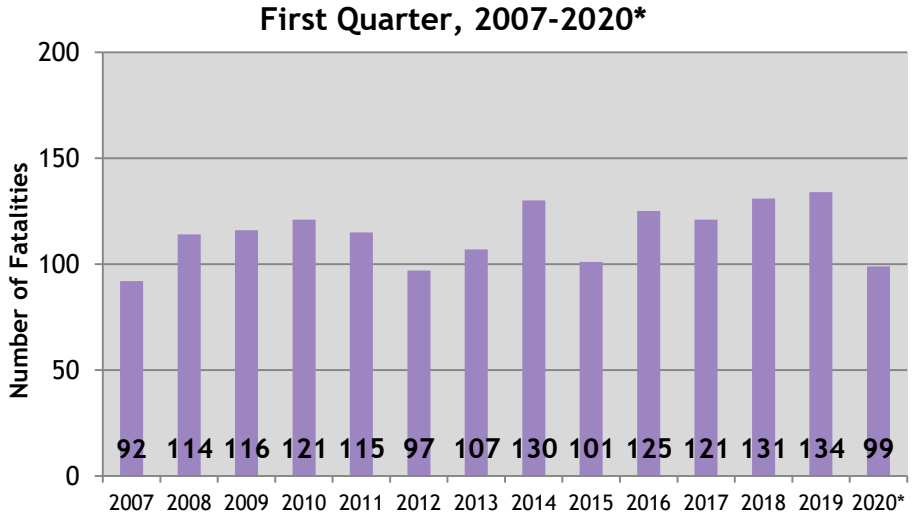
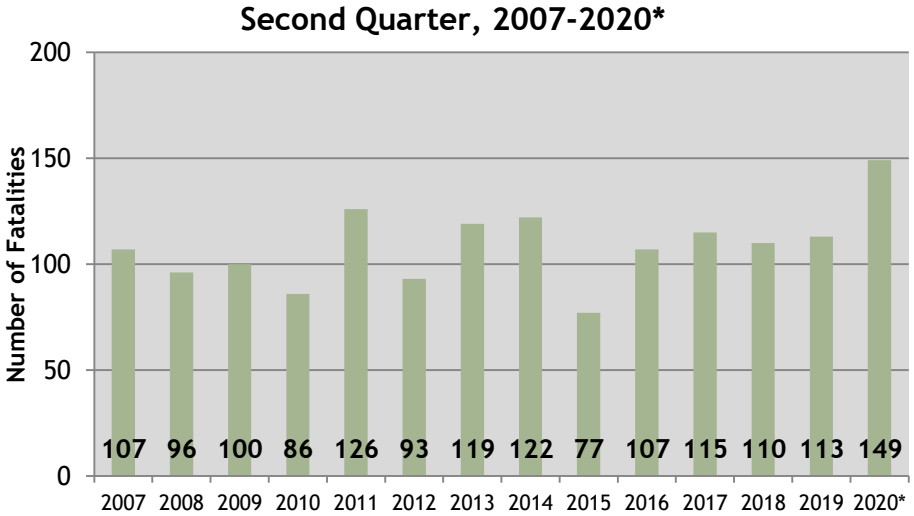
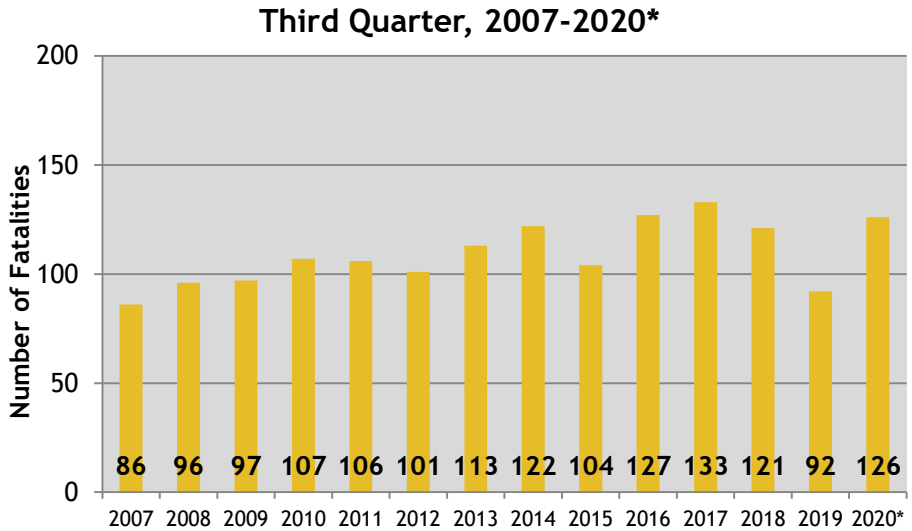
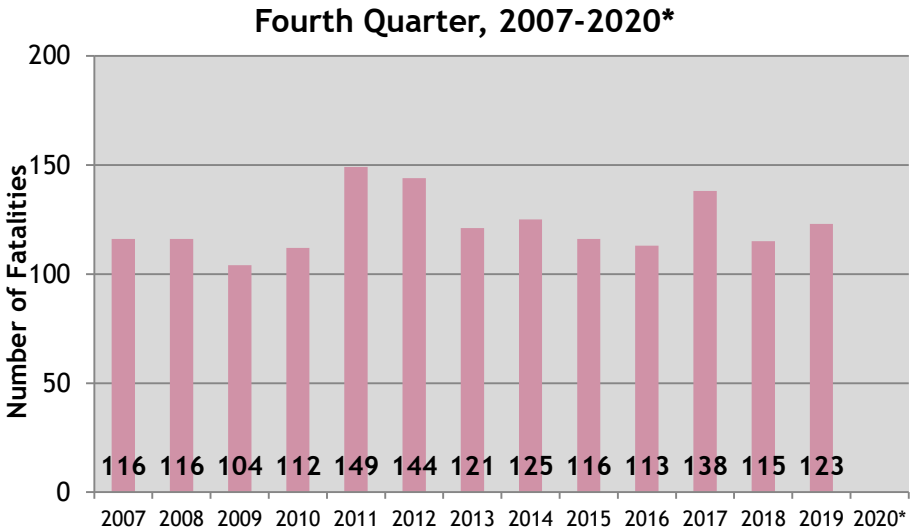
# PRESCRIPTION OPIOIDS (EXCLUDING FENTANYL)

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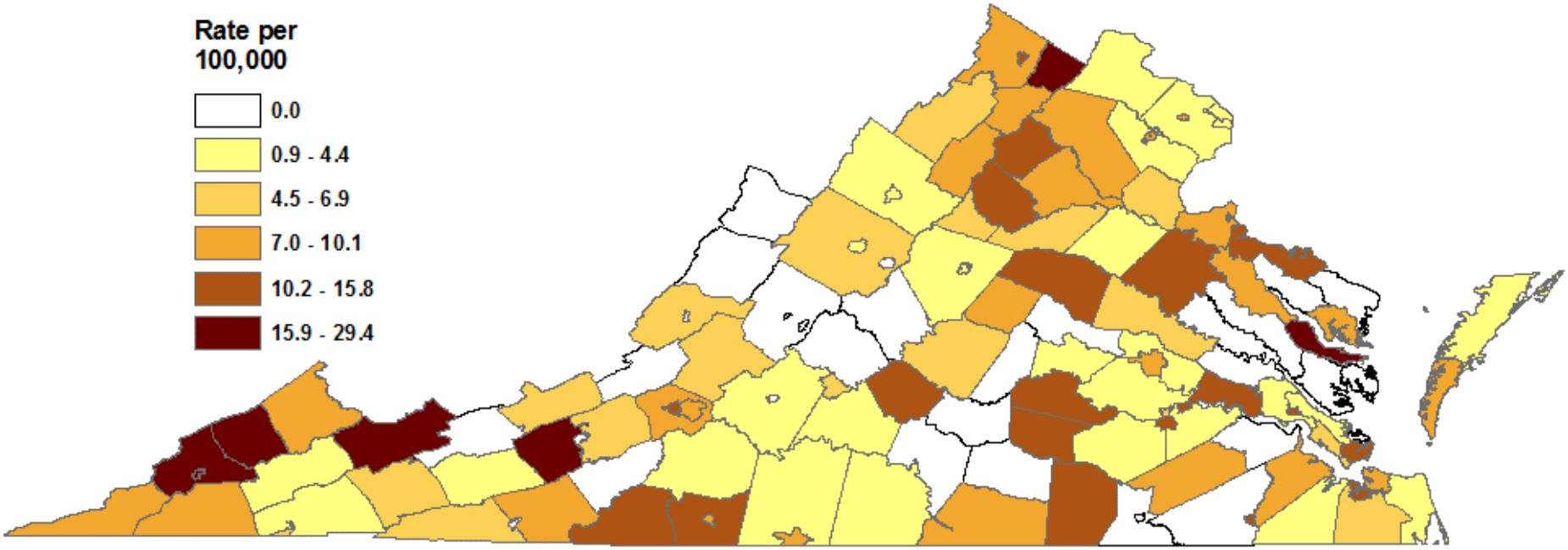
## Rate of Fatal Rx Opioid (Excluding Fentanyl) Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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# FATAL DRUG OVERDOSES OF SPECIAL INTEREST

- Synthetic Opioids and Fentanyl Analogs
- All Opioids (Fentanyl, Heroin, and/or Prescription Opioids)
- Heroin and/or Fentanyl

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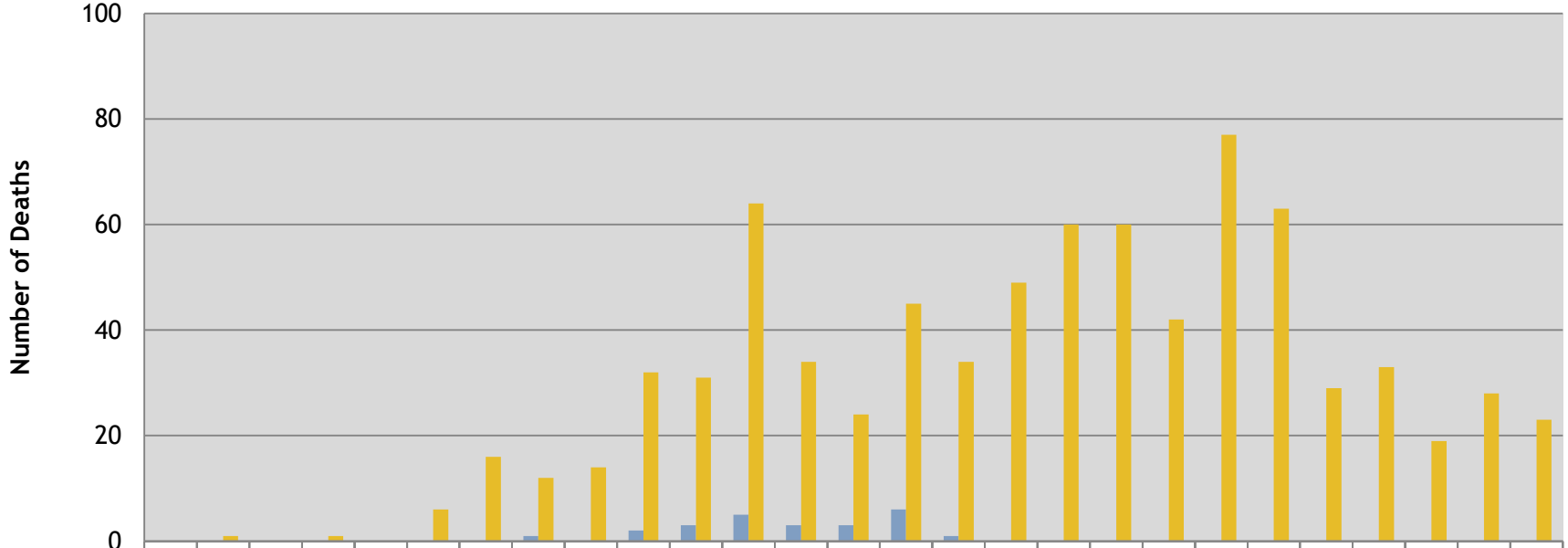
# SYNTHETIC OPIOIDS AND FENTANYL ANALOGS

Synthetic opioids are a large group of chemically manufactured drugs typically used as narcotic analgesics (fentanyl, oxycodone, and methadone are examples of synthetic opioids), whereas opiates like heroin and morphine are made from opium poppy plants. Fentanyl analogs and U-47700, while different, are synthetic opioids that are made illegally. Novel synthetic opioids like fentanyl analogs and U-47700 need to be monitored because as state and federal efforts are continually being made to schedule novel drugs, drug traffickers are persistently trying to stay one step ahead of the law by synthesizing and introducing novel synthetic opioids into the drug market.

**Total Number of Fatal Fentanyl Analog Overdoses by Quarter and Year of Death, 2014-2020***




| | 2014 Q1 | 2014 Q2 | 2014 Q3 | 2014 Q4 | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 Q1 | 2017 Q2 | 2017 Q3 | 2017 Q4 | 2018 Q1 | 2018 Q2 | 2018 Q3 | 2018 Q4 | 2019 Q1 | 2019 Q2 | 2019 Q3 | 2019 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U-47700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 5 | 3 | 3 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Fentanyl Analog Fatalities | 0 | 1 | 0 | 1 | 0 | 6 | 16 | 12 | 14 | 32 | 31 | 64 | 34 | 24 | 45 | 34 | 49 | 60 | 60 | 42 | 77 | 63 | 29 | 33 | 19 | 28 | 23 |

[1] Each fentanyl analog is tallied by each time it caused or contributed to death (analyzed from either toxicology or the cause of death statement) and therefore the total number of analogs will far exceed the actual number of fatalities

*****NEW***** [2] New guidance in 2019 reevaluated despropionyl fentanyl as an active fentanyl analog and reclassified the drug as a known precursor chemical in the illicit synthesis of fentanyl and fentanyl analogs, as well as a potential metabolite of one or more fentanyl analogs. Therefore, despropionyl fentanyl has been removed from the list of fentanyl analogs and has been removed from the grouping of 'Total Fentanyl Analog Fatalities' analyzed in this report . With this revision, it should be expected that numbers in past reports are outdated and should be updated to include the most current laboratory guidance.

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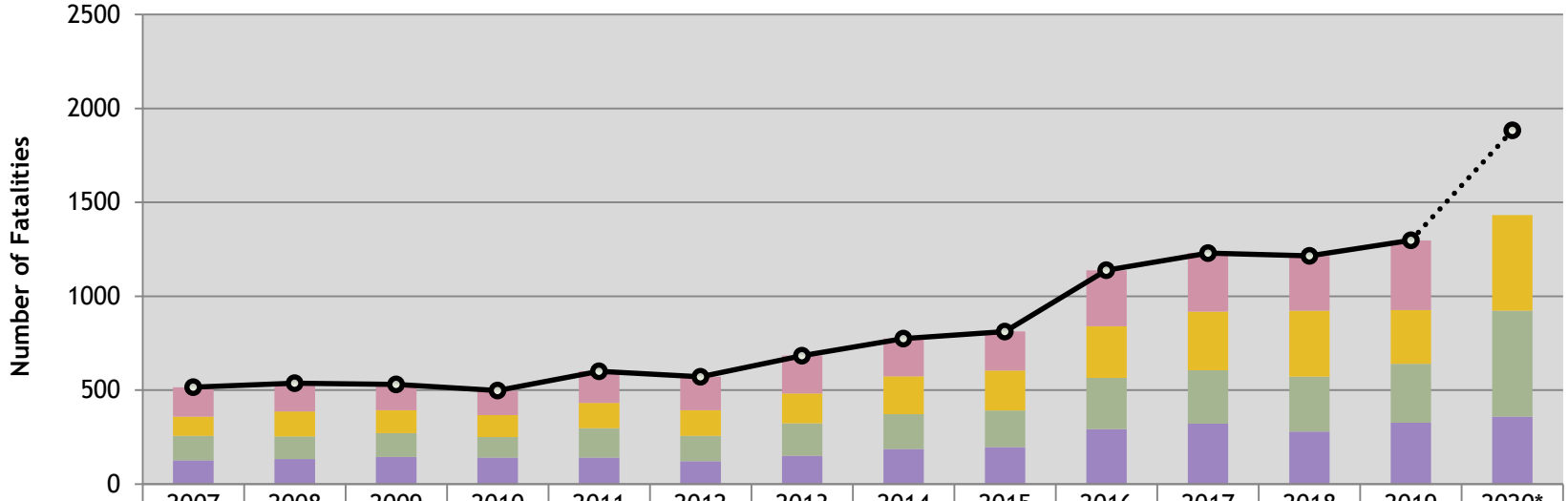
# ALL OPIOIDS

From 2007-2015, opioids (fentanyl, heroin, U-47700, and/or one or more prescription opioids) made up approximately 75% of all fatal drug overdoses annually in Virginia. However, this percentage is increasing each year due to the significant increase in fatal fentanyl and/or heroin overdoses which began in late 2013 and early 2014. In 2019, 79.7% of all fatal overdoses of any substance, were due to one or more opioids. In 2019, all fatal opioid overdoses increased 6.8% from the previous year.

**Total Number of Fatal Opioid Overdoses by Quarter and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 156 | 151 | 136 | 131 | 168 | 179 | 202 | 201 | 208 | 298 | 312 | 292 | 371 | |
| Q3 | 104 | 134 | 122 | 116 | 136 | 137 | 158 | 202 | 213 | 275 | 312 | 351 | 286 | 508 |
| Q2 | 130 | 120 | 128 | 109 | 156 | 134 | 173 | 185 | 195 | 272 | 284 | 292 | 314 | 564 |
| Q1 | 126 | 133 | 144 | 142 | 141 | 122 | 151 | 187 | 196 | 293 | 322 | 280 | 327 | 360 |
| Total Fatalities | 516 | 538 | 530 | 498 | 601 | 572 | 684 | 775 | 812 | 1138 | 1230 | 1215 | 1298 | 1883 |

[1] 'All Opioids' include all versions of fentanyl, heroin, prescription opioids, U-47700, and opioids unspecified

[2] 'Opioids Unspecified' are a small category of deaths in which the determination of heroin and/or one or more prescription opioids cannot be made due to specific circumstances of the death. Most commonly, these circumstances are a result of death several days after an overdose, in which the OCME cannot test for toxicology because the substances have been metabolized out of the decedent's system.

[3] Fatal opioid numbers have changed slightly from past reports due to the removal of fentanyl from the category of prescription opioids, as well as the addition of buprenorphine, levorphanol, meperidine, pentazocine, propoxyphene, and tapentadol added to the list of prescription opioids.

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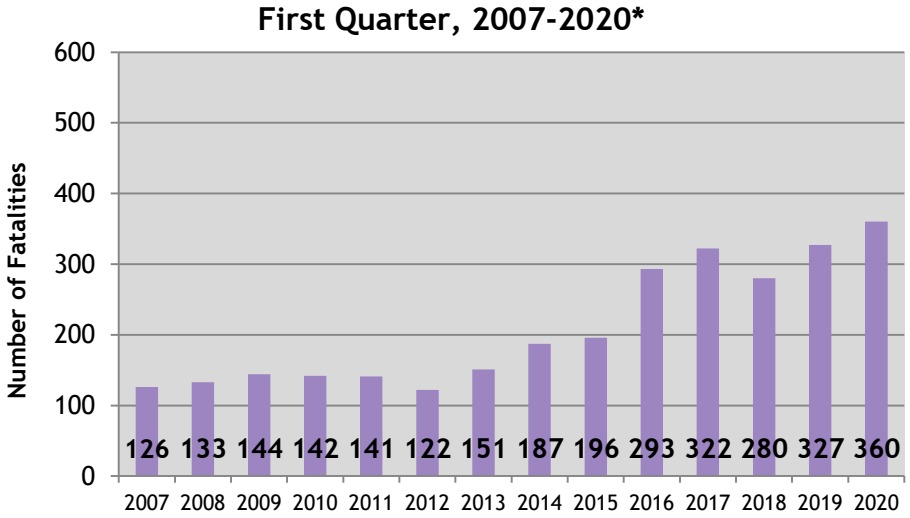
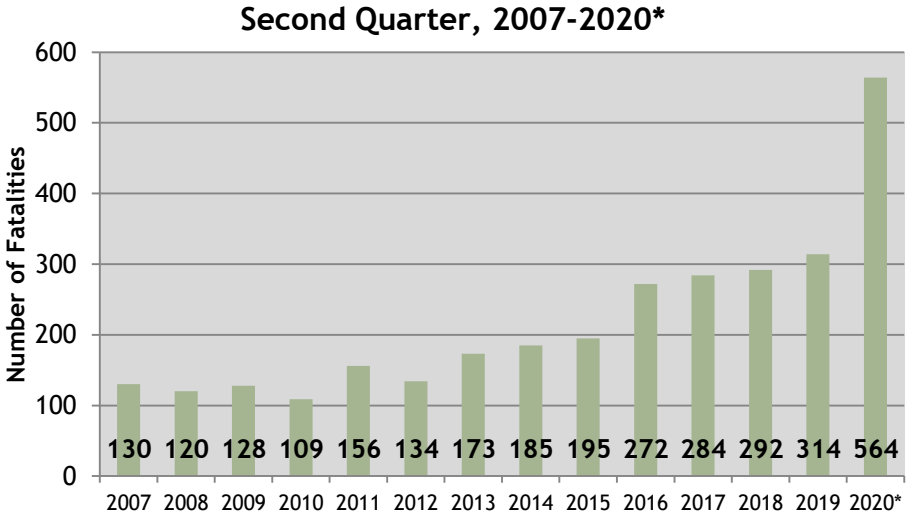
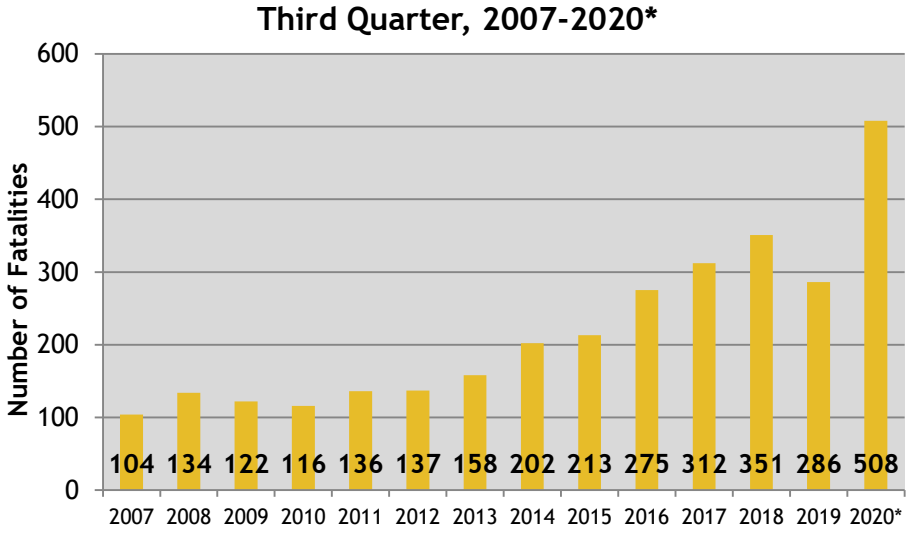
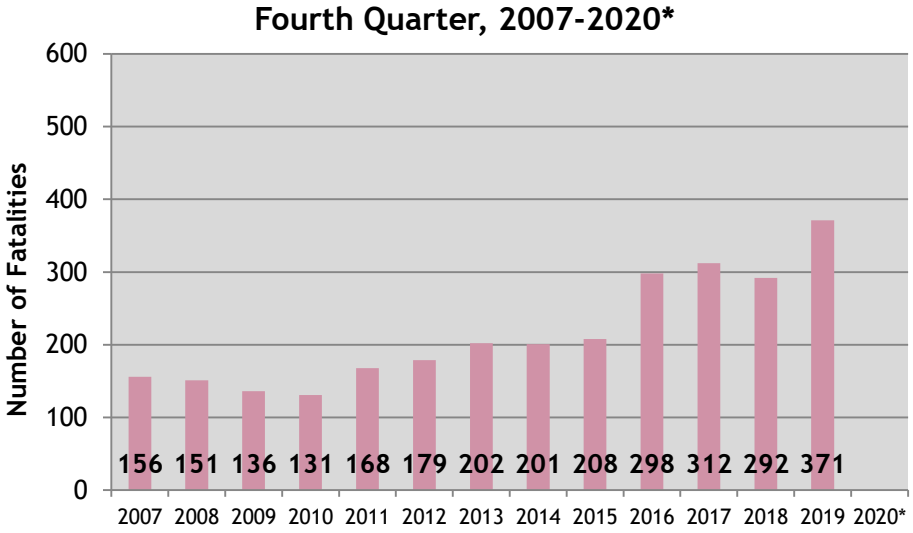
# ALL OPIOIDS




[1] 'All Opioids' include all versions of fentanyl, heroin, prescription opioids, U-47700, and opioids unspecified

[2] 'Opioids Unspecified' are a small category of deaths in which the determination of heroin and/or one or more prescription opioids cannot be made due to specific circumstances of the death. Most commonly, these circumstances are a result of death several days after an overdose, in which the OCME cannot test for toxicology because the substances have been metabolized out of the decedent's system.

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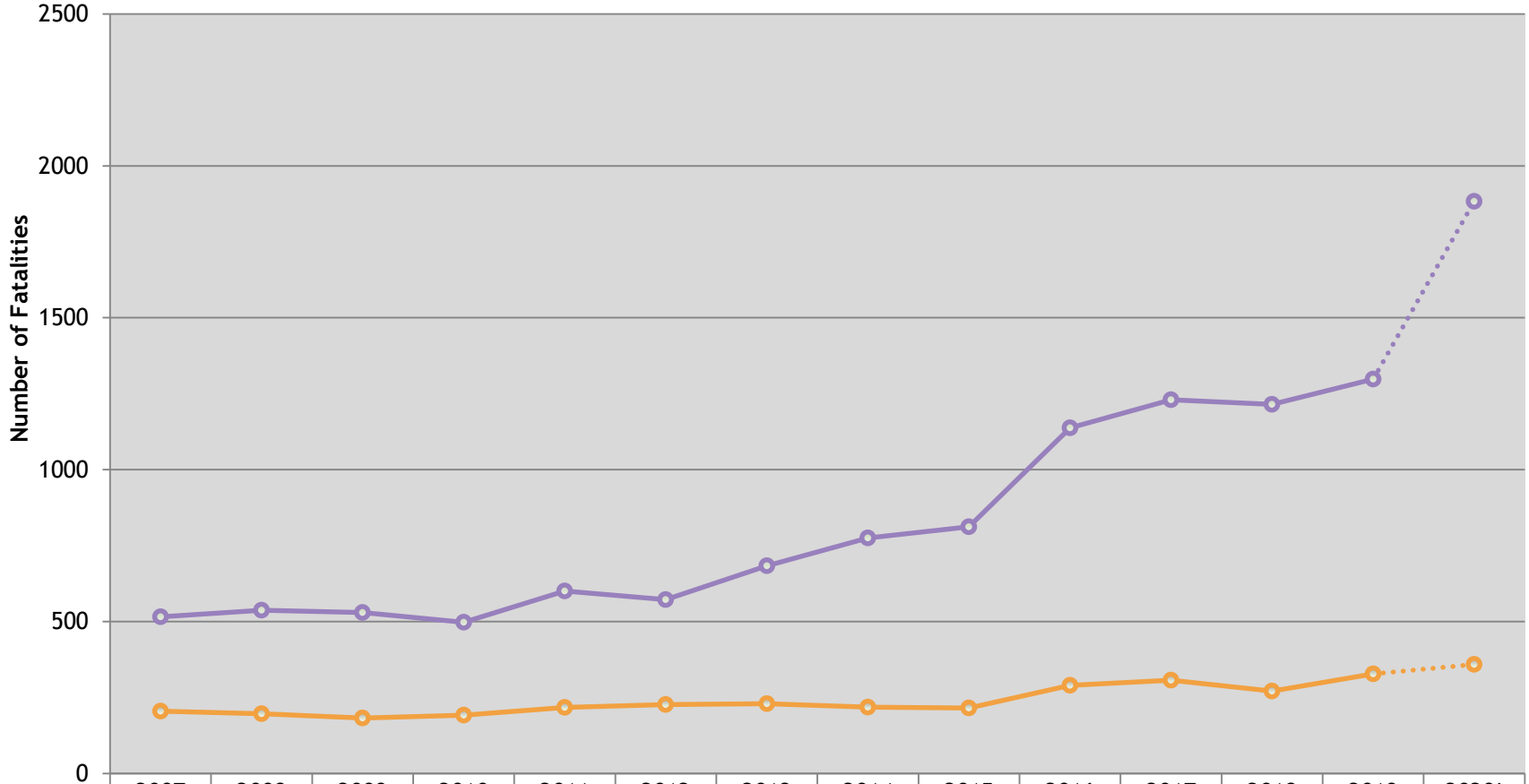
# OPIOIDS VS. NON-OPIOIDS

**Total Number of Fatal Opioid Overdoses vs. Non-Opioid Overdoses by Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Opioids | 516 | 538 | 530 | 498 | 601 | 572 | 684 | 775 | 812 | 1138 | 1230 | 1215 | 1298 | 1883 |
| Non-Opioids | 205 | 197 | 183 | 192 | 218 | 227 | 230 | 219 | 216 | 290 | 307 | 271 | 328 | 359 |

[1] 'All Opioids' include all versions of fentanyl, heroin, prescription opioids, U-47700, and opioids unspecified

[2] 'Opioids Unspecified' are a small category of deaths in which the determination of heroin and/or one or more prescription opioids cannot be made due to specific circumstances of the death. Most commonly, these circumstances are a result of death several days after an overdose, in which the OCME cannot test for toxicology because the substances have been metabolized out of the decedent's system.

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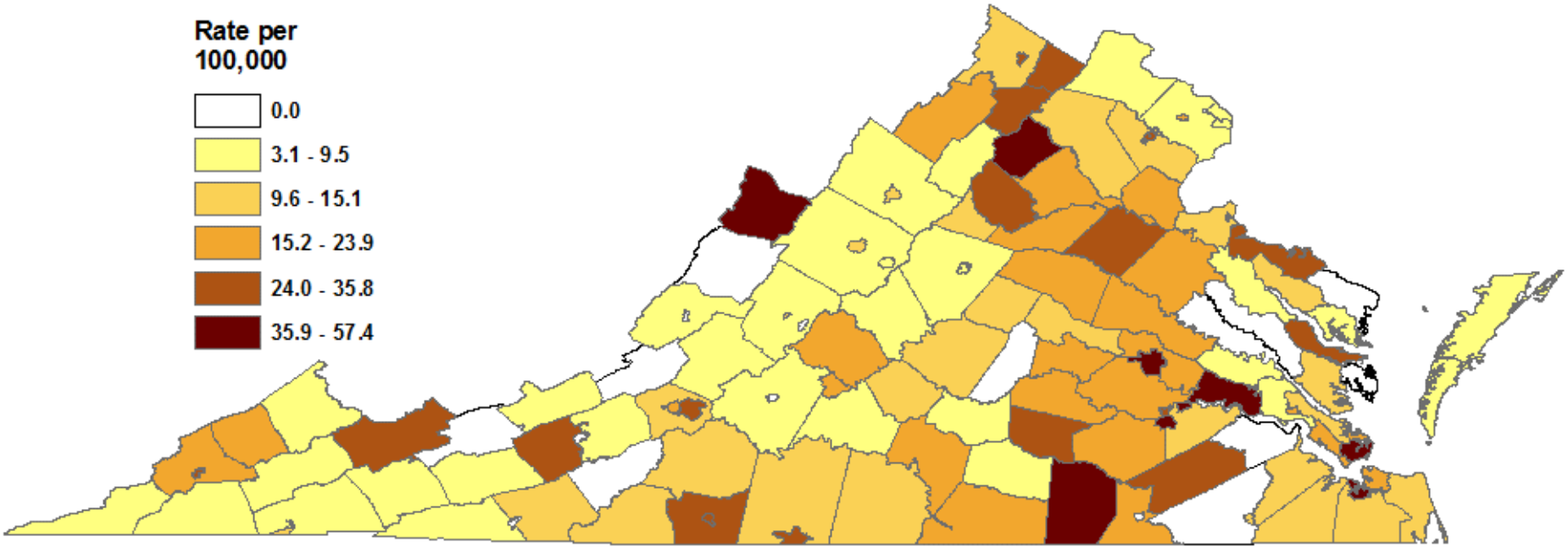
## Rate of All Fatal Opioid Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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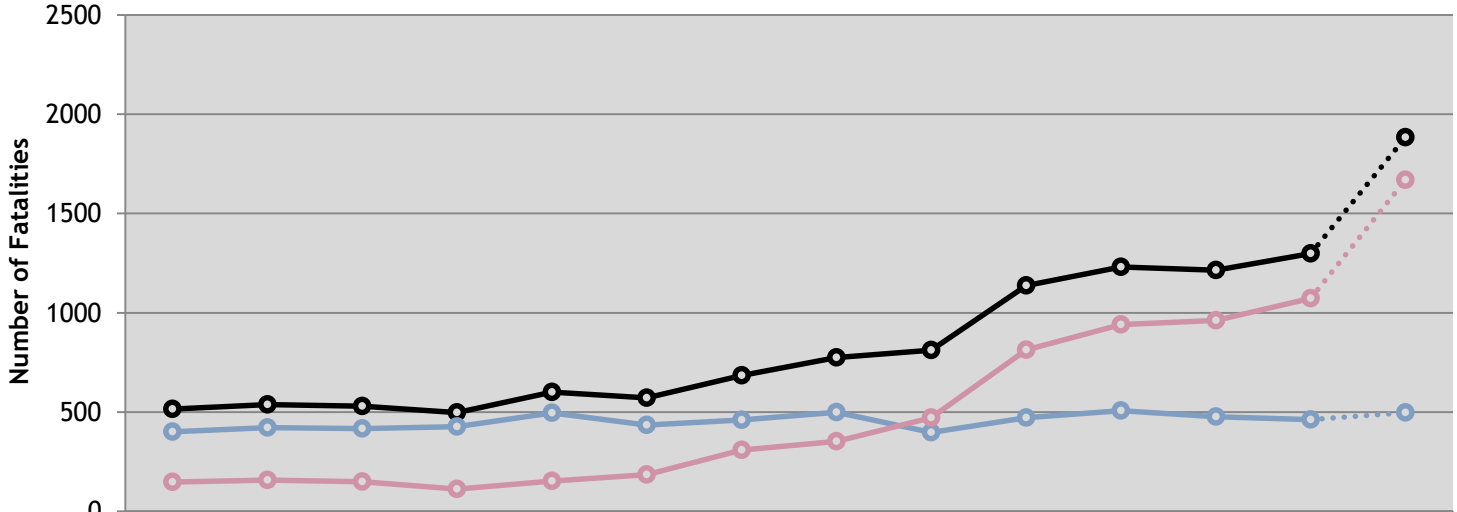
# OPIOIDS- A DIFFERENT PERSPECTIVE

Prescription opioids are a group of drugs that are commercially made by pharmaceutical companies in certified laboratories that act upon the opioid receptors in the brain. Historically, fentanyl has been one of these drugs. However, in late 2013, early 2014, illicitly made fentanyl began showing up in Virginia and by 2016, most fatal fentanyl overdoses were of illicit production of the drug. Separating fentanyl from the grouping of prescription opioids for this reason demonstrates a slight decrease in fatal prescription opioid overdoses in 2015 and a dramatic increase in the number of fatal fentanyl and/or heroin overdoses. This has caused the significant rise in all fatal opioid overdoses in the Commonwealth since 2012.

**Total Number of Prescription Opioid (Excluding Fentanyl), Fentanyl and/or Heroin, and All Opioid Overdoses by Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Opioids | 516 | 538 | 530 | 498 | 601 | 572 | 684 | 775 | 812 | 1138 | 1230 | 1215 | 1298 | 1883 |
| Prescription Opioids (excluding fentanyl) | 401 | 422 | 417 | 426 | 496 | 435 | 460 | 499 | 398 | 472 | 507 | 477 | 462 | 498 |
| Fentanyl and/or Heroin | 148 | 157 | 150 | 112 | 153 | 185 | 309 | 353 | 471 | 814 | 940 | 961 | 1073 | 1669 |

[1] 'All Opioids' include all versions of fentanyl, heroin, prescription opioids, and opioids unspecified

[2] Illicit and pharmaceutically produced fatal fentanyl overdoses are represented in this analysis. This includes all different types of fentanyl analogs (acetyl fentanyl, furanyl fentanyl, etc.)

[3] 'Prescription Opioids (excluding fentanyl)' calculates all deaths in which one or more prescription opioids caused or contributed to death, but excludes fentanyl from the **required list** of prescription opioid drugs used to calculate the numbers. However, given that some of these deaths have multiple drugs on board, some deaths may have fentanyl in addition to other prescriptions opioids, and are therefore counted in the total number. Analysis must be done this way because by excluding all deaths in which fentanyl caused or contributed to death, the calculation would also exclude other prescription opioid deaths (oxycodone, methadone, etc.) from the analysis and would thereby undercount the actual number of fatalities due to these true prescription opioids.

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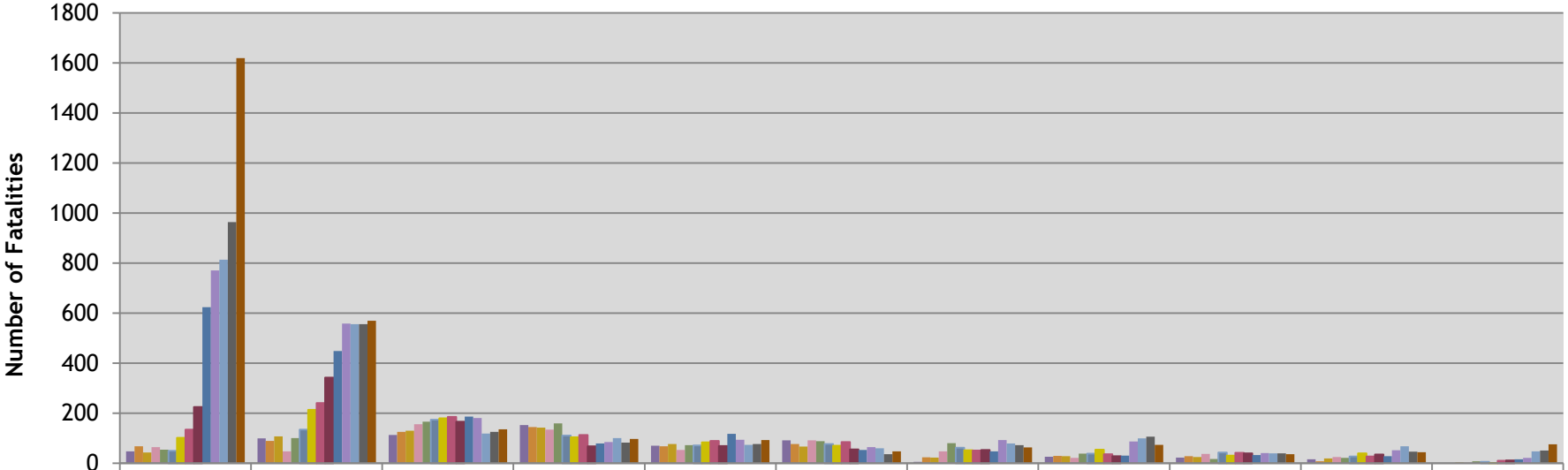
# ALL OPIOIDS

**Total Number of Fatal Opioid Overdoses by Drug Name and Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | Fentanyl | Heroin | Oxycodone | Methadone | Morphine | Hydrocodone | Oxymorphone | Codeine | Tramadol | Hydromorphone | Buprenorphine |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 | 48 | 100 | 113 | 152 | 70 | 91 | 6 | 26 | 23 | 16 | 1 |
| 2008 | 68 | 89 | 126 | 145 | 68 | 77 | 24 | 29 | 28 | 8 | 1 |
| 2009 | 43 | 107 | 130 | 142 | 77 | 67 | 23 | 28 | 25 | 19 | 3 |
| 2010 | 64 | 48 | 156 | 134 | 53 | 92 | 48 | 21 | 37 | 25 | 2 |
| 2011 | 54 | 101 | 166 | 159 | 72 | 88 | 80 | 39 | 17 | 21 | 8 |
| 2012 | 50 | 135 | 174 | 111 | 71 | 77 | 62 | 39 | 43 | 27 | 6 |
| 2013 | 102 | 213 | 180 | 104 | 84 | 70 | 52 | 54 | 31 | 40 | 1 |
| 2014 | 134 | 241 | 185 | 113 | 89 | 85 | 51 | 36 | 42 | 27 | 10 |
| 2015 | 225 | 342 | 166 | 68 | 69 | 55 | 53 | 28 | 40 | 35 | 11 |
| 2016 | 624 | 448 | 187 | 79 | 117 | 53 | 48 | 31 | 33 | 28 | 16 |
| 2017 | 770 | 558 | 181 | 85 | 94 | 65 | 93 | 87 | 41 | 52 | 22 |
| 2018 | 813 | 556 | 119 | 101 | 74 | 60 | 79 | 100 | 40 | 68 | 48 |
| 2019 | 964 | 556 | 126 | 82 | 77 | 36 | 72 | 106 | 40 | 46 | 51 |
| 2020* | 1619 | 569 | 136 | 97 | 93 | 47 | 63 | 73 | 36 | 44 | 76 |

[1] Illicit and pharmaceutically produced fatal fentanyl overdoses are represented in this analysis. This includes all different types of fentanyl analogs (acetyl fentanyl, furanyl fentanyl, etc.)

[2] Levorphanol, meperidine, pentazocine, propoxyphene, and tapentadol were excluded from this analysis due low annual case counts (<20 deaths)

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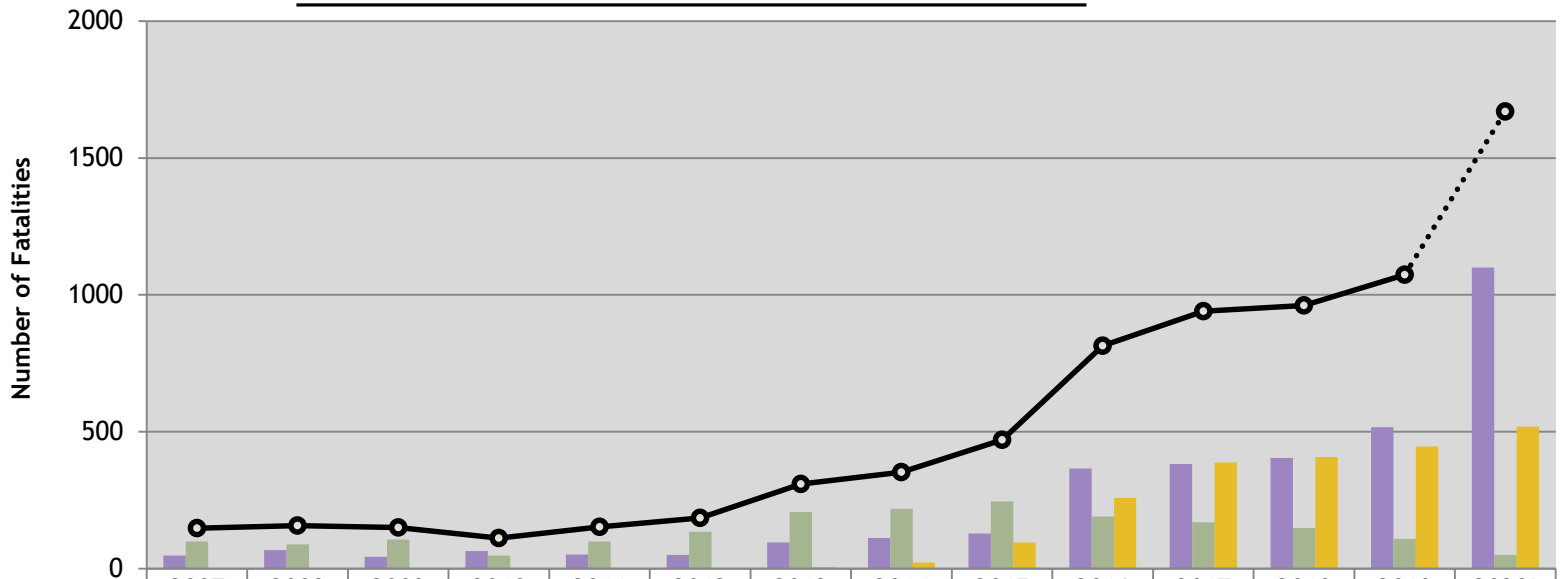
# FENTANYL AND/OR HEROIN

The total number of fatal fentanyl and/or heroin overdoses have significantly increased since late 2012. It is important to look at these two drugs together because as heroin became more popular in 2010, fentanyl occasionally began showing up as an additive to the heroin. By late 2013 and early 2014, some heroin being sold on the street was actually completely fentanyl, unbeknownst to the user. It is essential to look at these fentanyl (no heroin), heroin (no fentanyl), and fentanyl and heroin combination deaths together because users never know exactly what is in the illegal drugs purchased off the streets. Fatal fentanyl and/or heroin overdoses increased 11.7% in 2019 compared to 2018.

**Total Number of Fatal Fentanyl and/or Heroin Overdoses by Year of Death, 2007-2020***

**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fentanyl (No Heroin) | 48 | 68 | 43 | 64 | 52 | 50 | 96 | 112 | 129 | 366 | 382 | 405 | 517 | 1100 |
| Heroin (No Fentanyl) | 100 | 89 | 107 | 48 | 99 | 135 | 207 | 219 | 246 | 190 | 170 | 148 | 109 | 50 |
| Fentanyl and Heroin | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 22 | 96 | 258 | 388 | 408 | 447 | 519 |
| Total Fatalities | 148 | 157 | 150 | 112 | 153 | 185 | 309 | 353 | 471 | 814 | 940 | 961 | 1073 | 1669 |

[1] Illicit and pharmaceutically produced fatal fentanyl overdoses are represented in this analysis. This includes all different types of fentanyl analogs (acetyl fentanyl, furanyl fentanyl, etc.)

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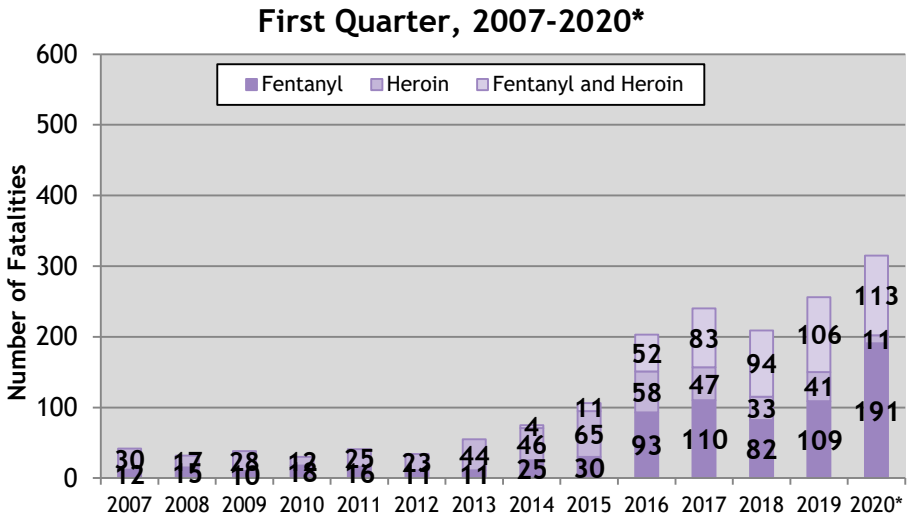
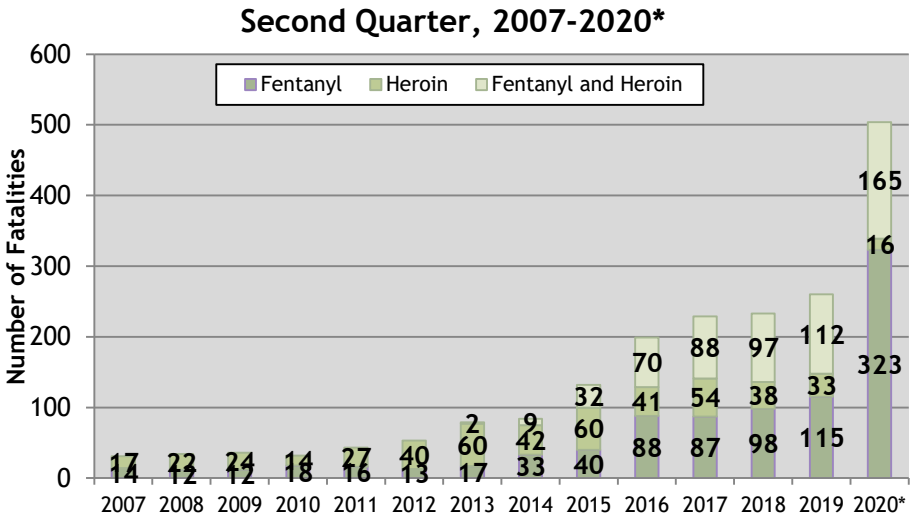
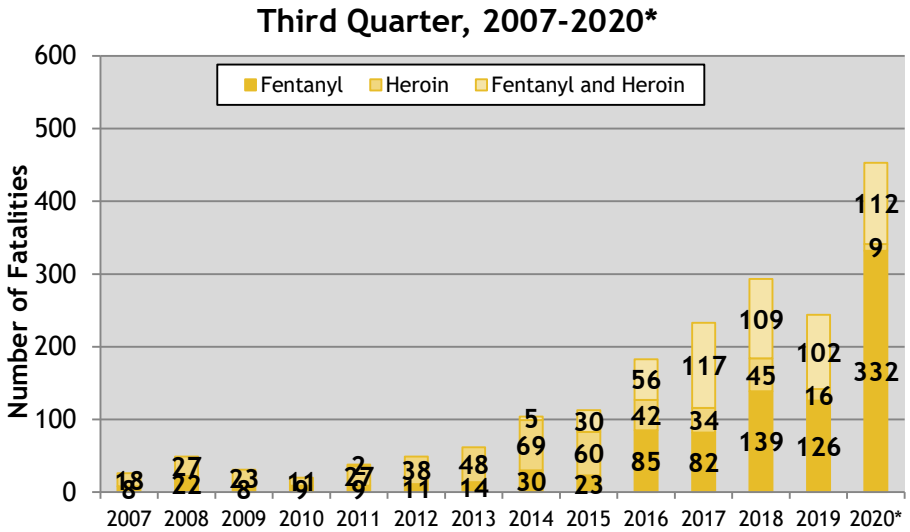
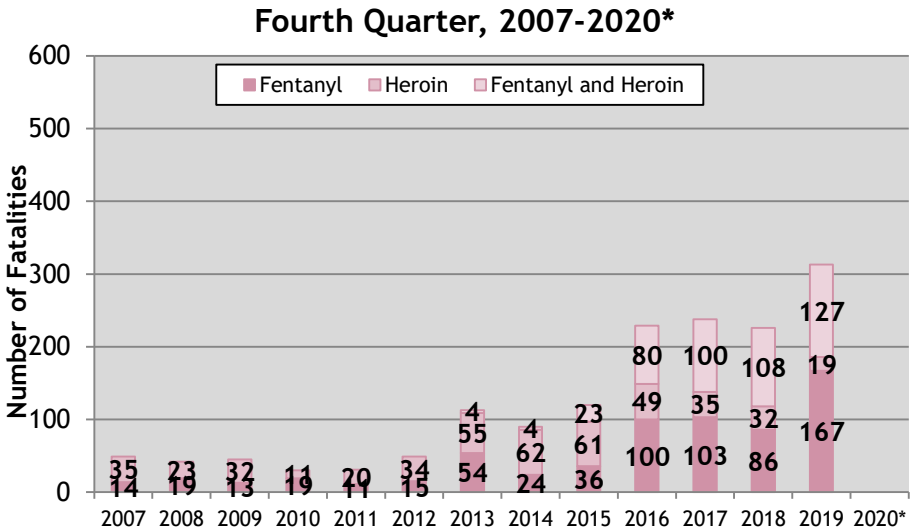
# FENTANYL AND/OR HEROIN



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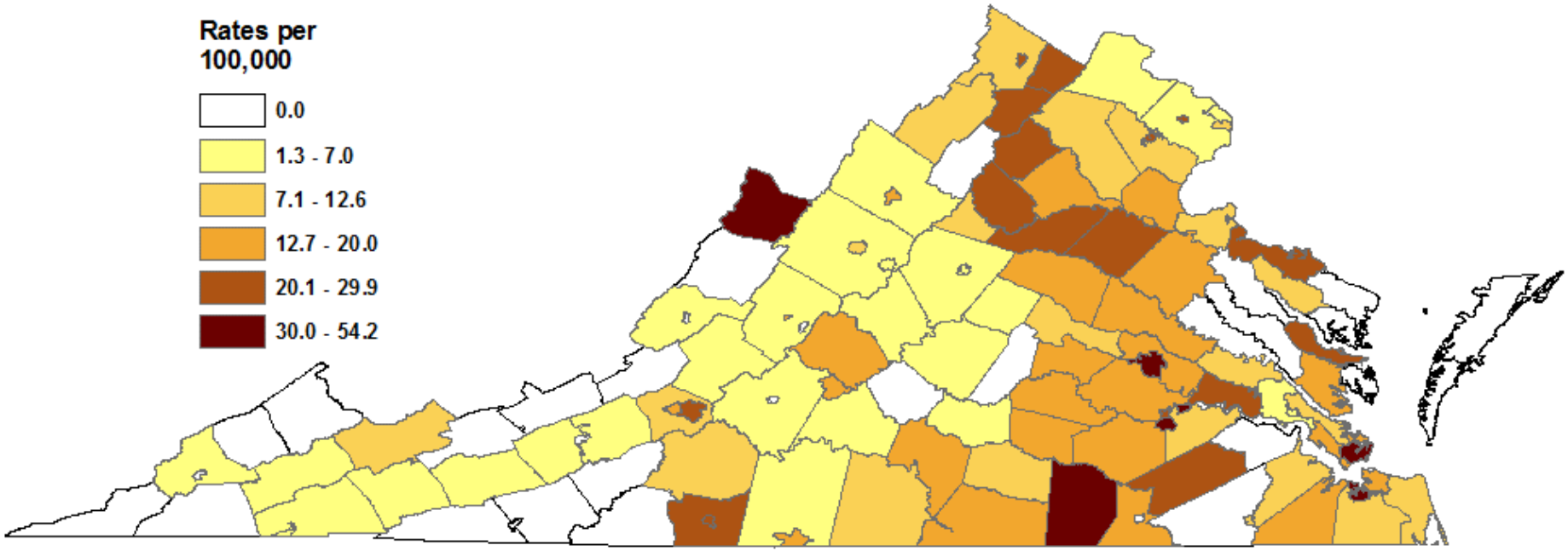
## Rate of Fatal Fentanyl (Rx, Illicit, or Analogs) and/or Heroin Overdoses by Locality of Overdose, 2019




Source: Virginia Department of Health, Office of the Chief Medical Examiner

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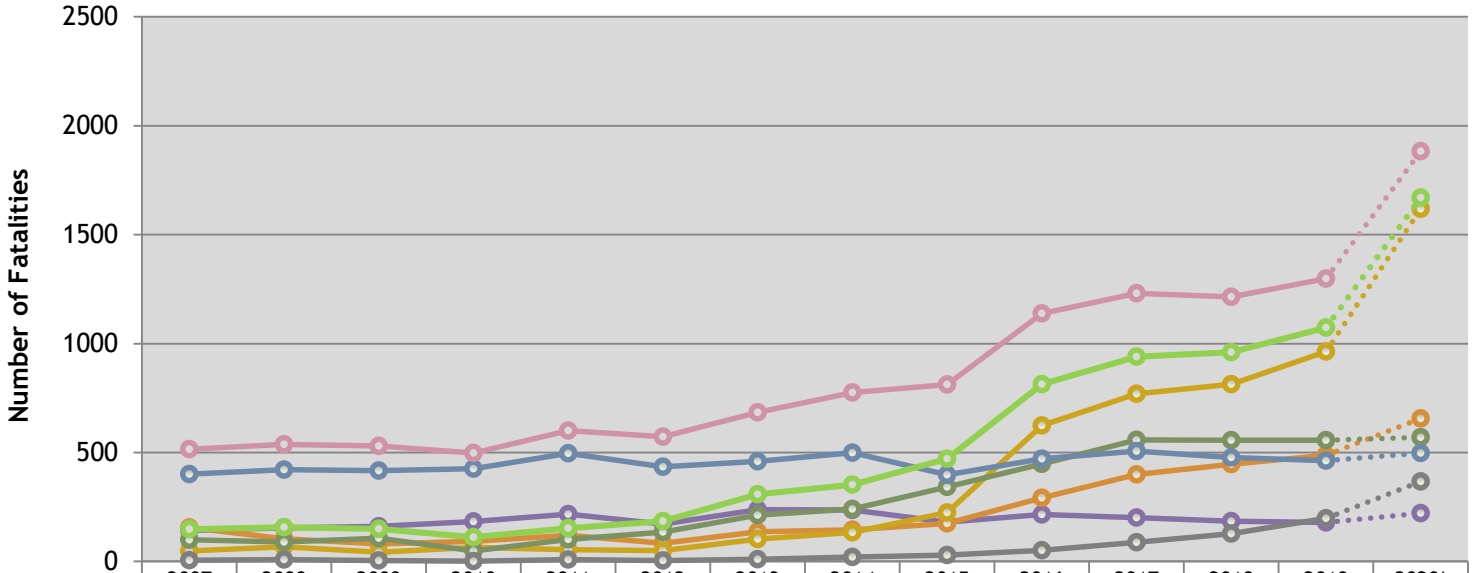
# ALL DRUGS

**Total Number of Fatal Drug Overdoses Drug Name/Category and Year of Death, 2007-2020***
**Data for 2020 is a Predicted Total for the Entire Year**




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzodiazepines | 142 | 154 | 161 | 183 | 217 | 172 | 238 | 237 | 181 | 216 | 201 | 185 | 179 | 221 |
| Cocaine | 155 | 104 | 80 | 93 | 120 | 84 | 137 | 145 | 174 | 292 | 399 | 446 | 488 | 657 |
| Fentanyl | 48 | 68 | 43 | 64 | 54 | 50 | 102 | 134 | 225 | 624 | 770 | 813 | 964 | 1619 |
| Heroin | 100 | 89 | 107 | 48 | 101 | 135 | 213 | 241 | 342 | 448 | 558 | 556 | 556 | 569 |
| Methamphetamine | 6 | 9 | 5 | 1 | 8 | 4 | 10 | 21 | 29 | 52 | 88 | 127 | 198 | 367 |
| Prescription Opioids (excluding Fentanyl) | 401 | 422 | 417 | 426 | 496 | 435 | 460 | 499 | 398 | 472 | 507 | 477 | 462 | 498 |
| All Opioids | 516 | 538 | 530 | 498 | 601 | 572 | 684 | 775 | 812 | 1138 | 1230 | 1215 | 1298 | 1883 |
| Heroin and/or Fentanyl | 148 | 157 | 150 | 112 | 153 | 185 | 309 | 353 | 471 | 814 | 940 | 961 | 1073 | 1669 |

[1] Deaths may be represented in more than one category due to groupings of drug categories (e.g. heroin)
[2] 'All Opioids' includes all versions of fentanyl, heroin, prescription opioids, U-47700, and opioids unspecified
[3] 'Opioids Unspecified' are a small category of deaths in which the determination of heroin and/or one or more prescription opioids cannot be made due to specific circumstances of the death. Most commonly, these circumstances are a result of death several days after an overdose, in which the OCME cannot test for toxicology because the substances have been metabolized out of the decedent's system.
[4] Historically, fentanyl has been categorized as a prescription opioid because it is mass produced by pharmaceutical companies. However, recent law enforcement investigations and toxicology results have demonstrated that several recent fentanyl seizures have ***not*** been pharmaceutically produced, but illicitly produced. This illicit form of fentanyl is produced by international drug traffickers who import the drug into the United States and often, mix it into heroin being sold. This illicitly produced fentanyl has been the biggest contributor to the significant increase in the number of fatal opioid overdoses in Virginia.
[5] Illicit and pharmaceutically produced fatal fentanyl overdoses are represented in this analysis. This includes all different types of fentanyl analogs (acetyl fentanyl, furanyl fentanyl, etc.)

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# CONTACT INFORMATION

This report is compiled by the Virginia Department of Health, Office of the Chief Medical Examiner. For additional information regarding these or other statistics, please contact:


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