

VIRGINIA DEPARTMENT OF HEALTH

OFFICE OF THE CHIEF MEDICAL EXAMINER

“To promote and protect the health of all Virginians”

Fatal Drug Overdose Quarterly Report

4RD QUARTER 2015

Edition 2015.3

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, regardless of whether the OCME accepted the case or not. 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/medExam/ForensicEpidemiology.htm>).

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.

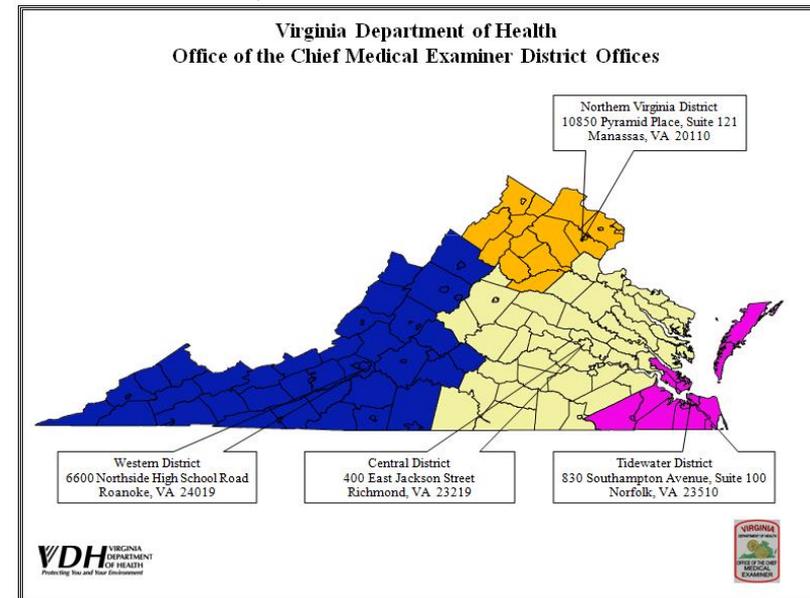
Prescription Opioids analyzed in this report include Codeine, Fentanyl, Hydrocodone, Hydromorphone, Methadone, Morphine, Oxycodone, Oxymorphone, and Tramadol and are included in the category of 'Prescription Opioids'. Benzodiazepines analyzed in this report include Alprazolam, Clonazepam, Diazepam, Flurazepam, Lorazepam, Midazolam, Nordiazepam, Oxazepam, Temazepam, and Triazolam and are included in the category of 'Benzodiazepines'.

Projected estimates for 2015 (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 the calendar year and are defined as follows:

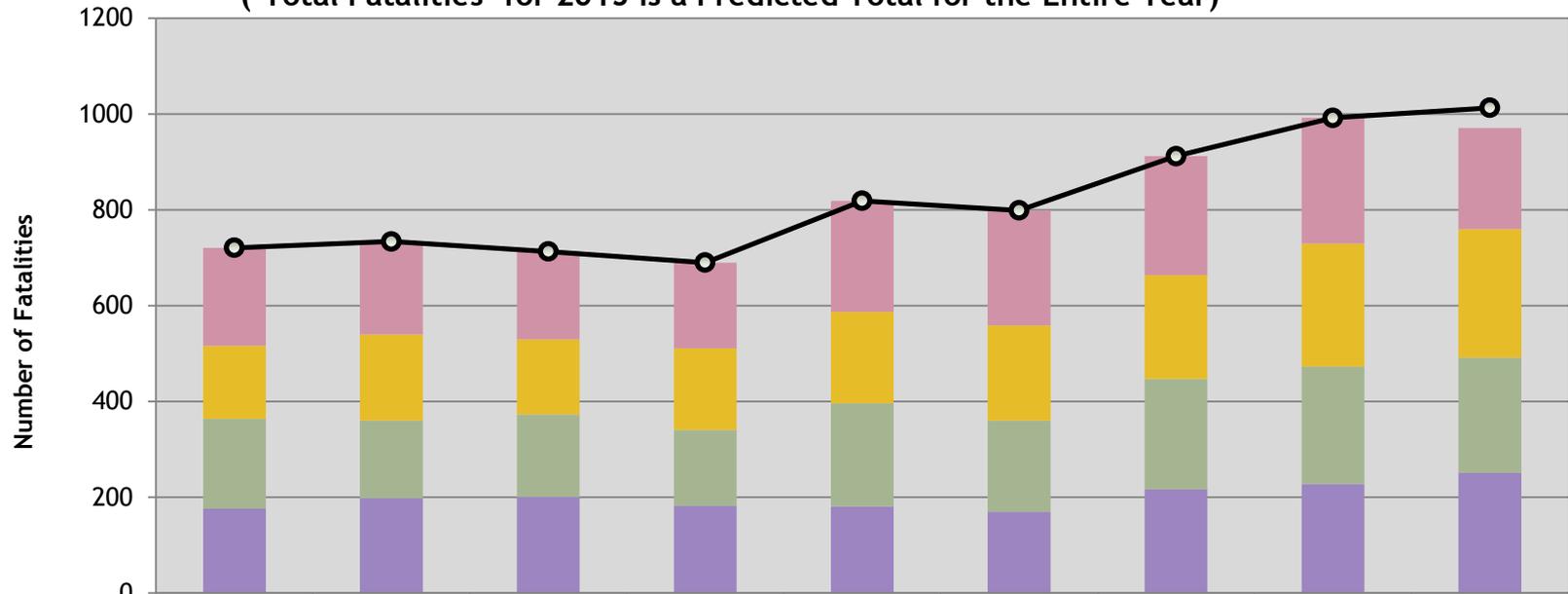
- Quarter 1 (Q1)- January 1st - March 31st
- Quarter 2 (Q2)- April 1st - June 30th
- Quarter 3 (Q3)- July 1st - September 31st
- Quarter 4 (Q4)- October 1st - December 31st



ALL DRUGS

The total number of fatal drug overdoses statewide have been increasing 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. Preliminary estimates suggest the number of fatal drug overdoses in 2015 will be similar to that of 2014.

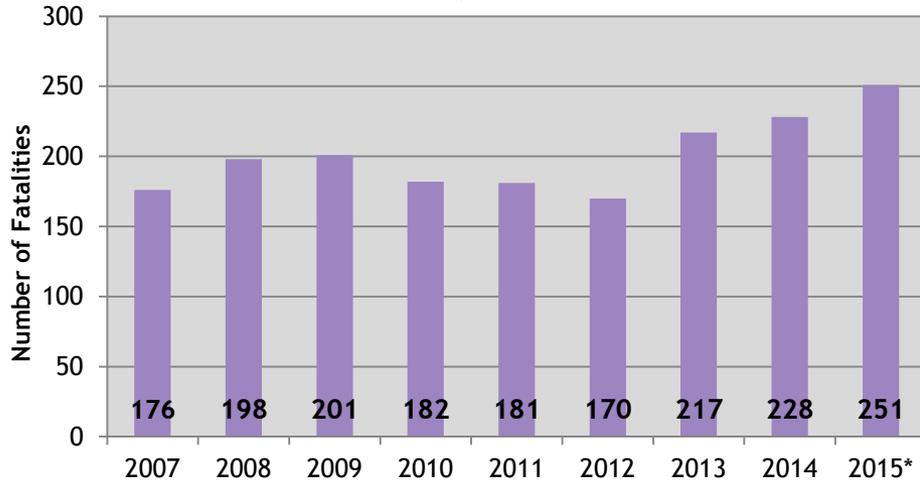
Total Number of Fatal Drug Overdoses by Quarter and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)



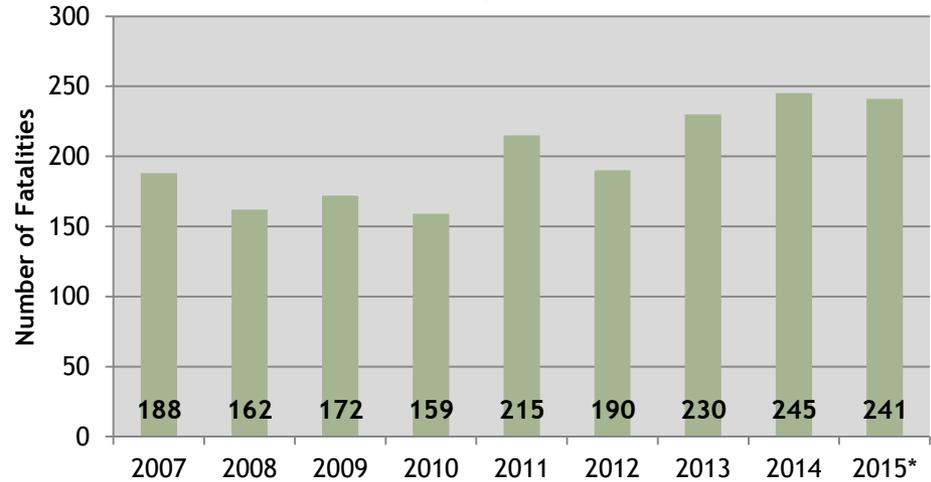
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015* |
|------------------|------|------|------|------|------|------|------|------|-------|
| Q4 | 205 | 194 | 183 | 179 | 232 | 240 | 248 | 262 | 211 |
| Q3 | 152 | 180 | 157 | 170 | 191 | 199 | 217 | 257 | 268 |
| Q2 | 188 | 162 | 172 | 159 | 215 | 190 | 230 | 245 | 241 |
| Q1 | 176 | 198 | 201 | 182 | 181 | 170 | 217 | 228 | 251 |
| Total Fatalities | 721 | 734 | 713 | 690 | 819 | 799 | 912 | 992 | 1013 |

ALL DRUGS

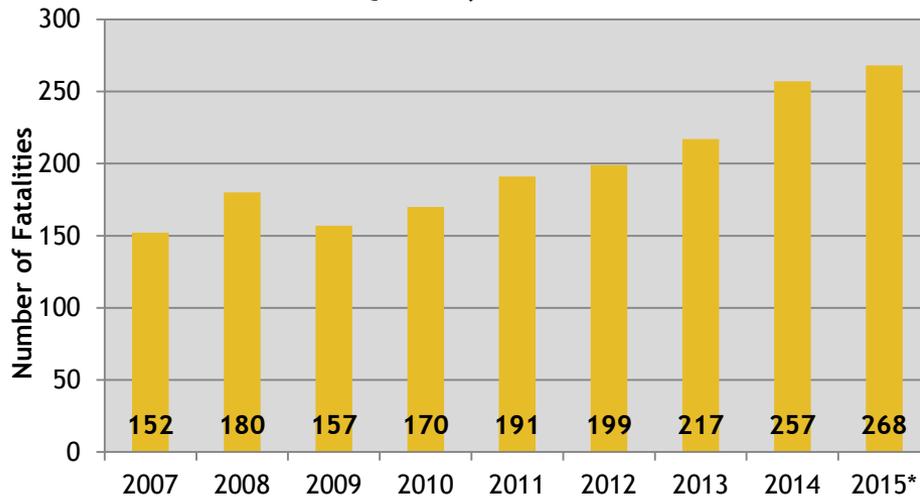
First Quarter, 2007-2015



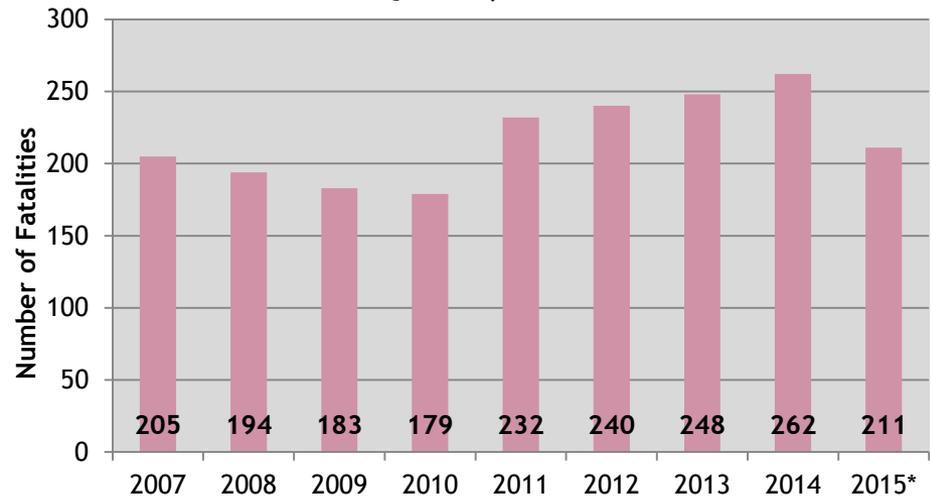
Second Quarter, 2007-2015



Third Quarter, 2007-2015



Fourth Quarter, 2007-2015



FATAL DRUG OVERDOSES BY NAME/CATEGORY

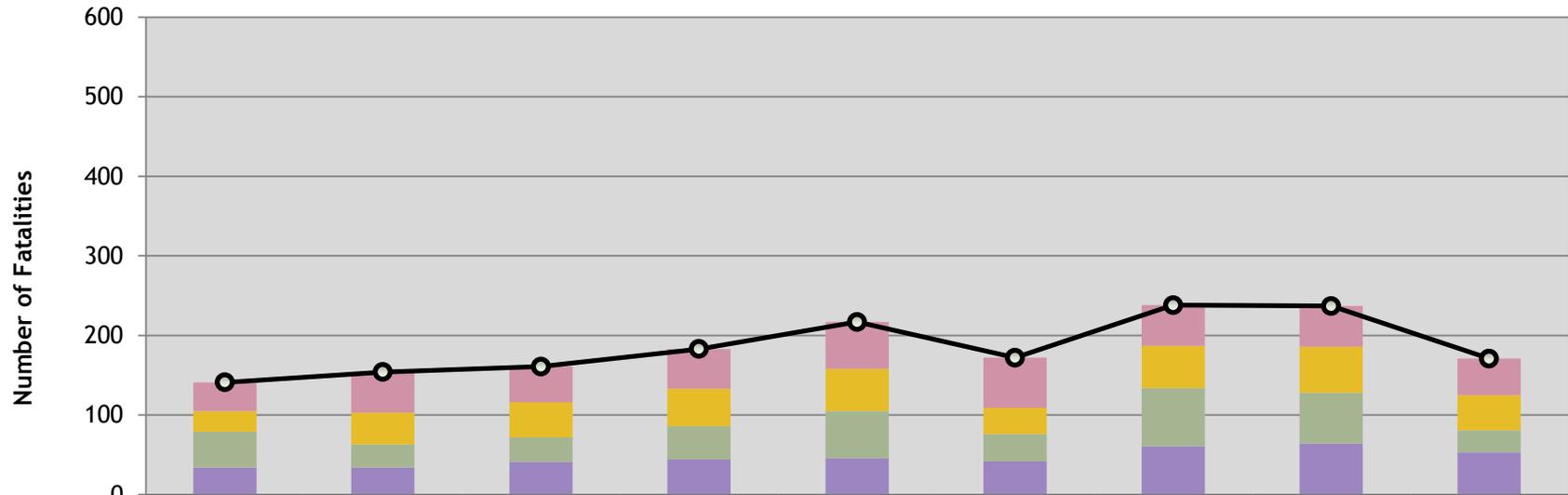


- Benzodiazepines
- Cocaine
- Heroin
- Prescription Opioids

BENZODIAZEPINES

Generally, the number of fatal benzodiazepine-related overdoses have been gradually increasing. 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, non-therapeutic amounts of benzodiazepines, the user is putting his/her life at risk by potentially creating a lethal cocktail of mixed substances. Over 80% of all fatal benzodiazepine overdoses over the 8 year time span (2007-2014) had one or more prescription opioids causing or contributing to death.

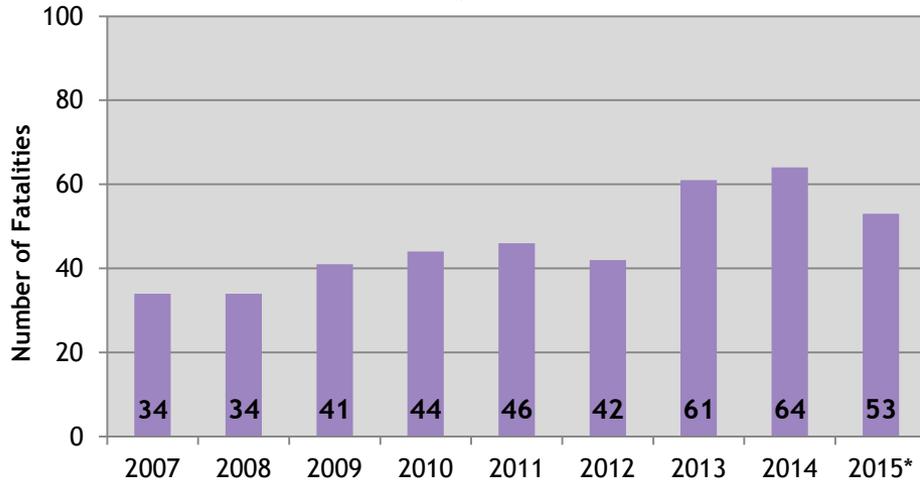
Total Number of Fatal Benzodiazepine Overdoses by Quarter and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)



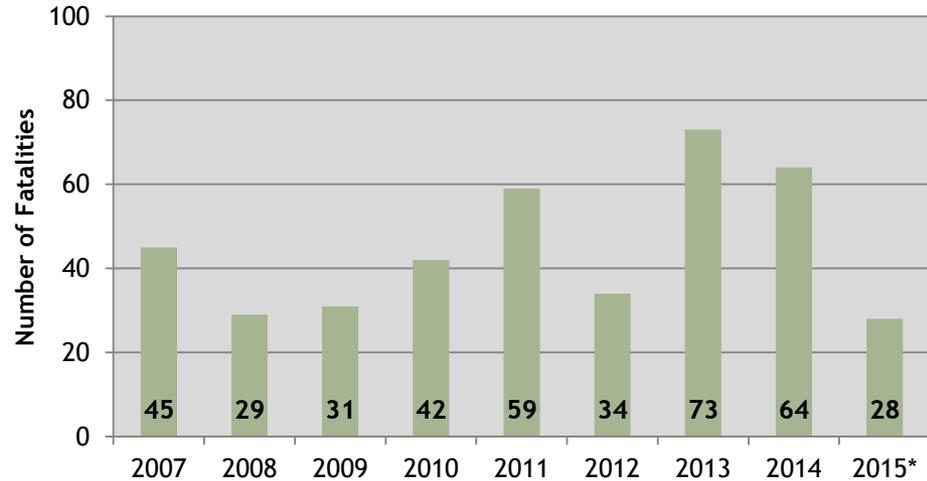
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015* |
|--------------------|------|------|------|------|------|------|------|------|-------|
| Q4 | 36 | 51 | 45 | 50 | 59 | 63 | 51 | 51 | 46 |
| Q3 | 26 | 40 | 44 | 47 | 53 | 33 | 53 | 58 | 44 |
| Q2 | 45 | 29 | 31 | 42 | 59 | 34 | 73 | 64 | 28 |
| Q1 | 34 | 34 | 41 | 44 | 46 | 42 | 61 | 64 | 53 |
| ○ Total Fatalities | 141 | 154 | 161 | 183 | 217 | 172 | 238 | 237 | 171 |

BENZODIAZEPINES

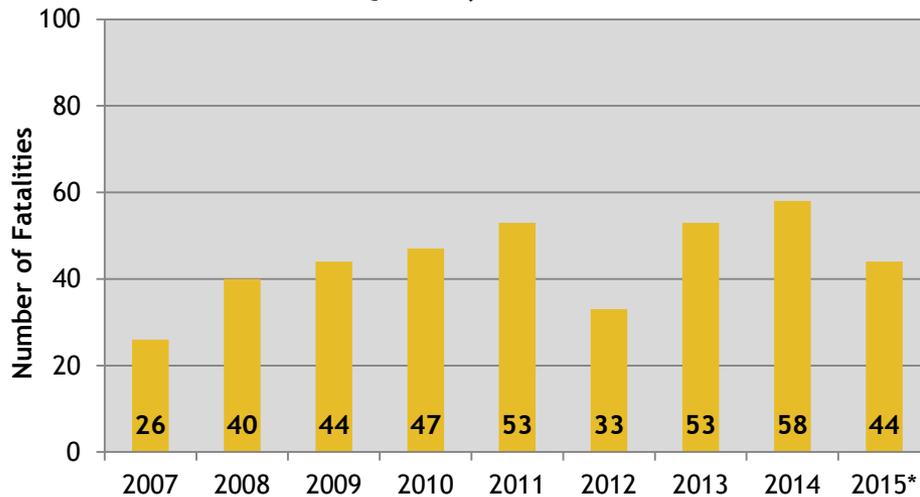
First Quarter, 2007-2015



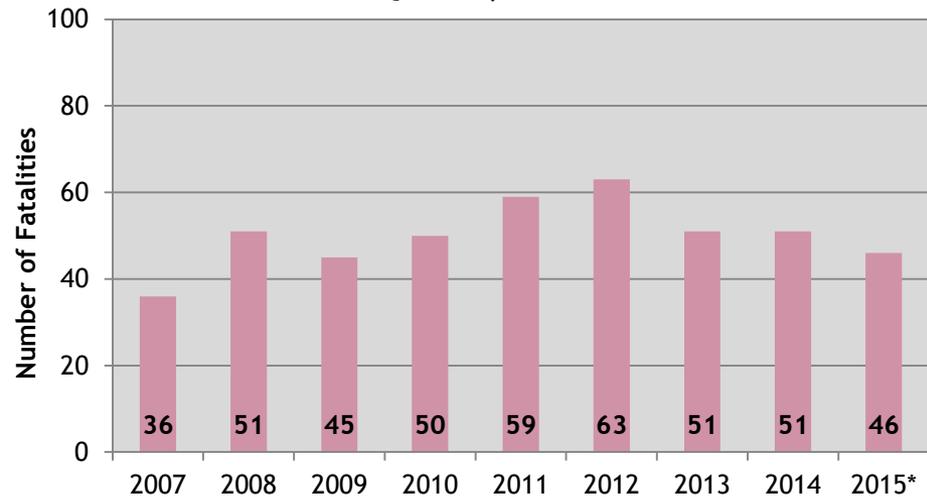
Second Quarter, 2007-2015



Third Quarter, 2007-2015

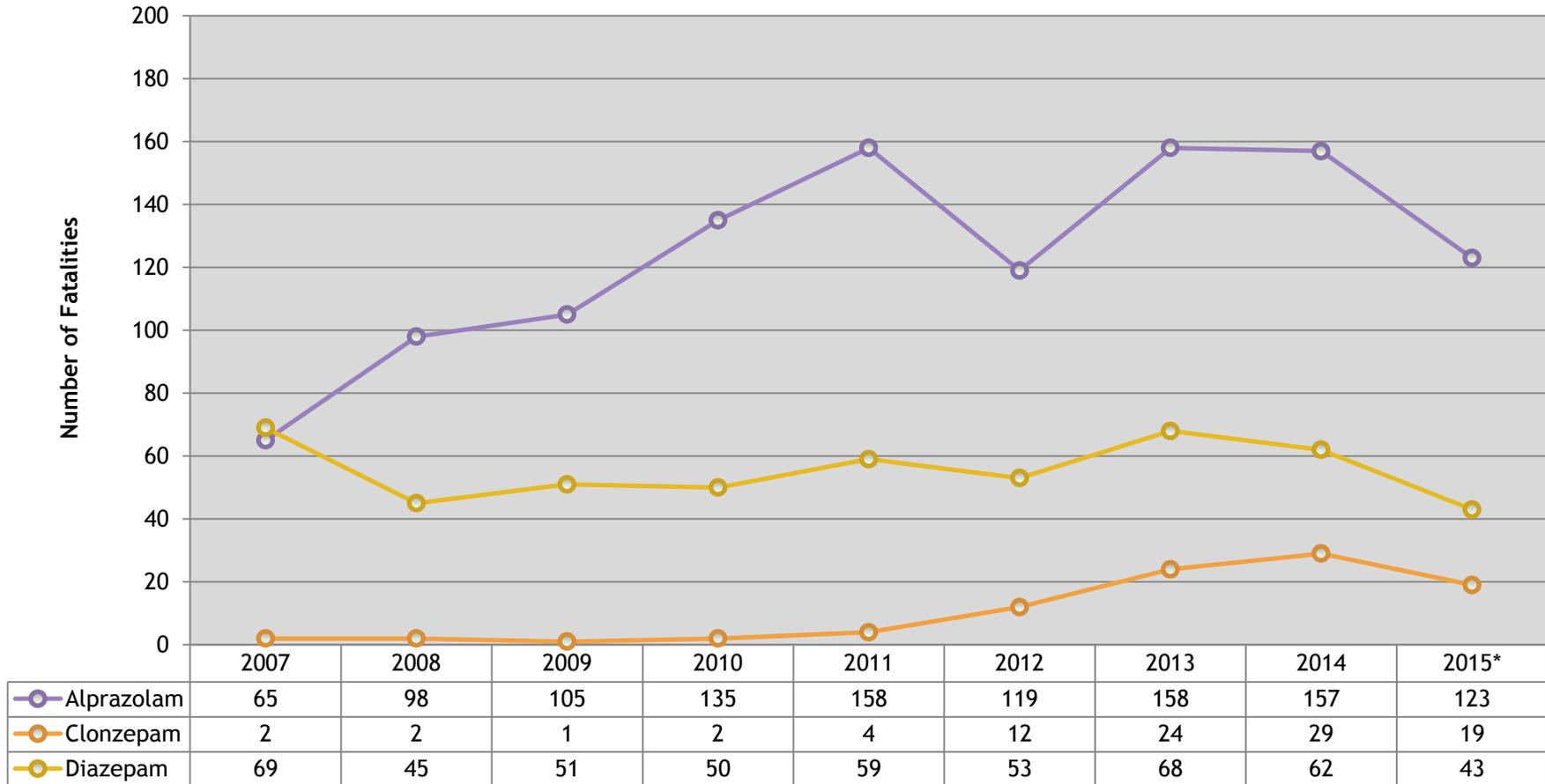


Fourth Quarter, 2007-2015



BENZODIAZEPINES

Total Number of Fatal Benzodiazepine Overdoses by Drug Name and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)

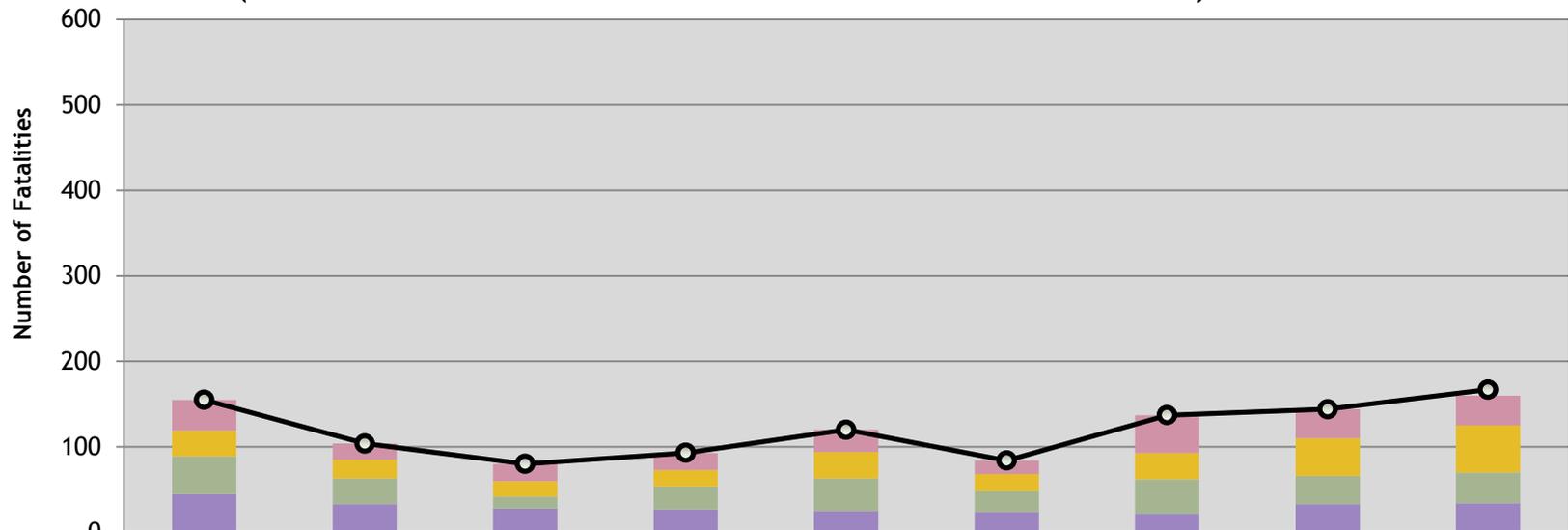


¹ Flurazepam, Lorazepam, Midazolam, Nordiazepam, Oxazepam, Temazepam and Triazolam were excluded from this analysis because of low annual case counts (<20 per year)
² Each benzodiazepine is tallied by each time it caused or contributed to death (analyzed from either toxicology or the cause of death statement) and therefore the total number of benzodiazepines will far exceed the actual number of fatalities

COCAINE

The total number of fatal cocaine-related overdoses statewide haven't changed much over the last 8 years. Fatal cocaine overdoses from 2007-2014 typically occurred as the only substance causing or contributing to death, or in addition to lethal combinations of one or more opioid prescription drugs (40.1%), heroin (23.9%), and/or alcohol at or above the legal limit of 0.08% BAC (15.7%).

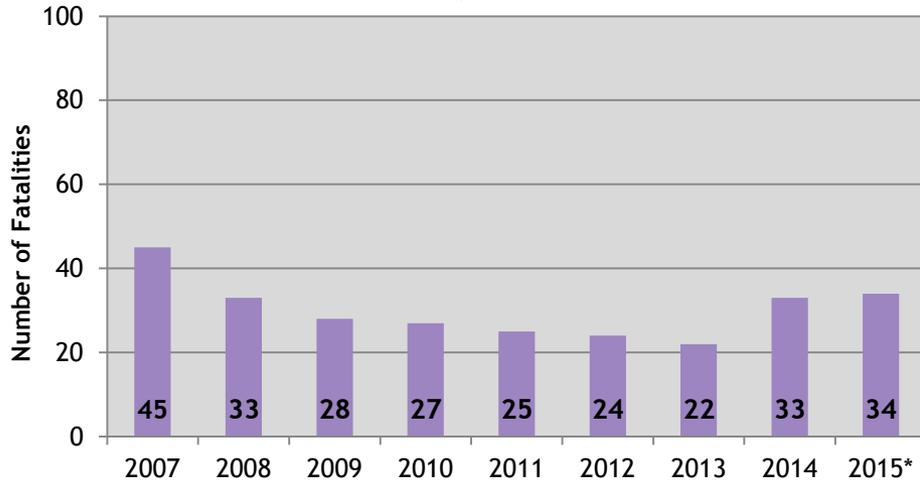
Total Number of Fatal Cocaine Overdoses by Quarter and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)



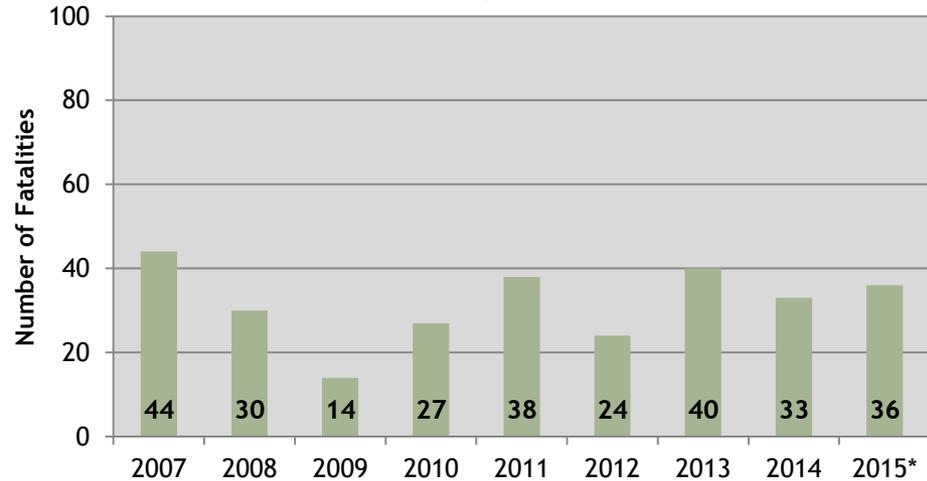
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015* |
|------------------|------|------|------|------|------|------|------|------|-------|
| Q4 | 36 | 19 | 20 | 20 | 26 | 16 | 44 | 34 | 35 |
| Q3 | 30 | 22 | 18 | 19 | 31 | 20 | 31 | 44 | 55 |
| Q2 | 44 | 30 | 14 | 27 | 38 | 24 | 40 | 33 | 36 |
| Q1 | 45 | 33 | 28 | 27 | 25 | 24 | 22 | 33 | 34 |
| Total Fatalities | 155 | 104 | 80 | 93 | 120 | 84 | 137 | 144 | 167 |

COCAINE

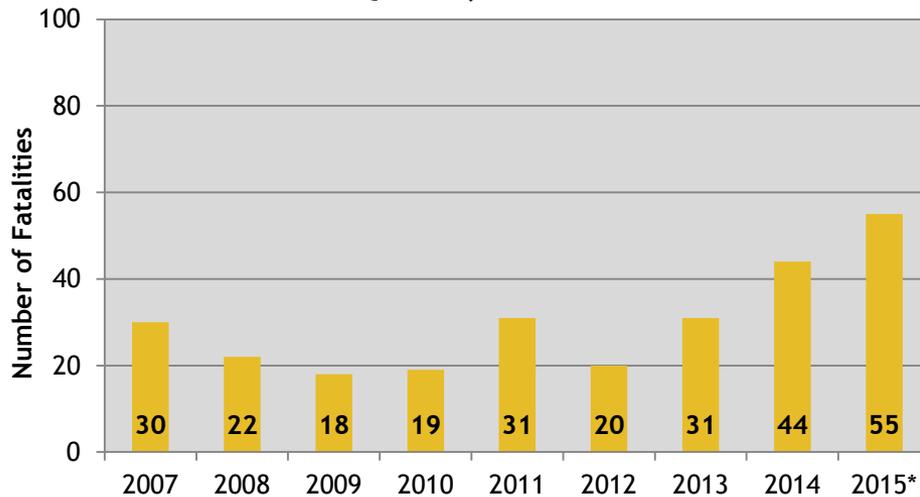
First Quarter, 2007-2015



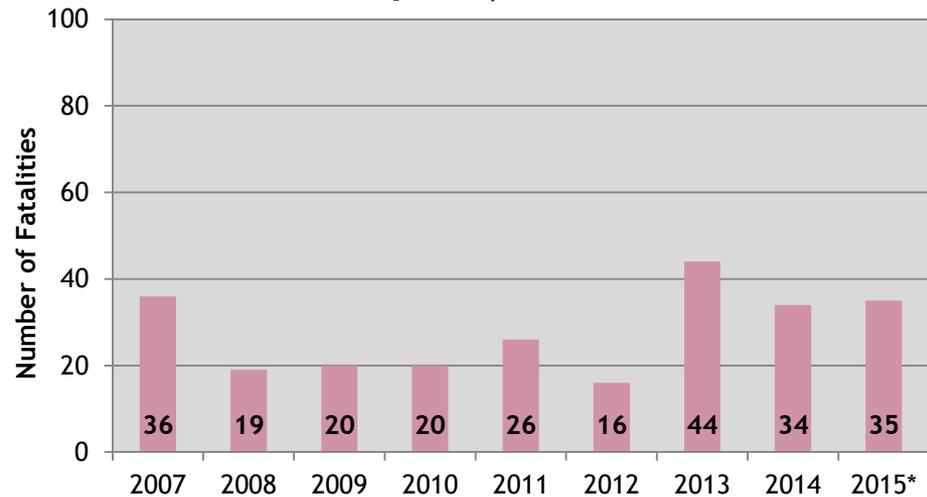
Second Quarter, 2007-2015



Third Quarter, 2007-2015



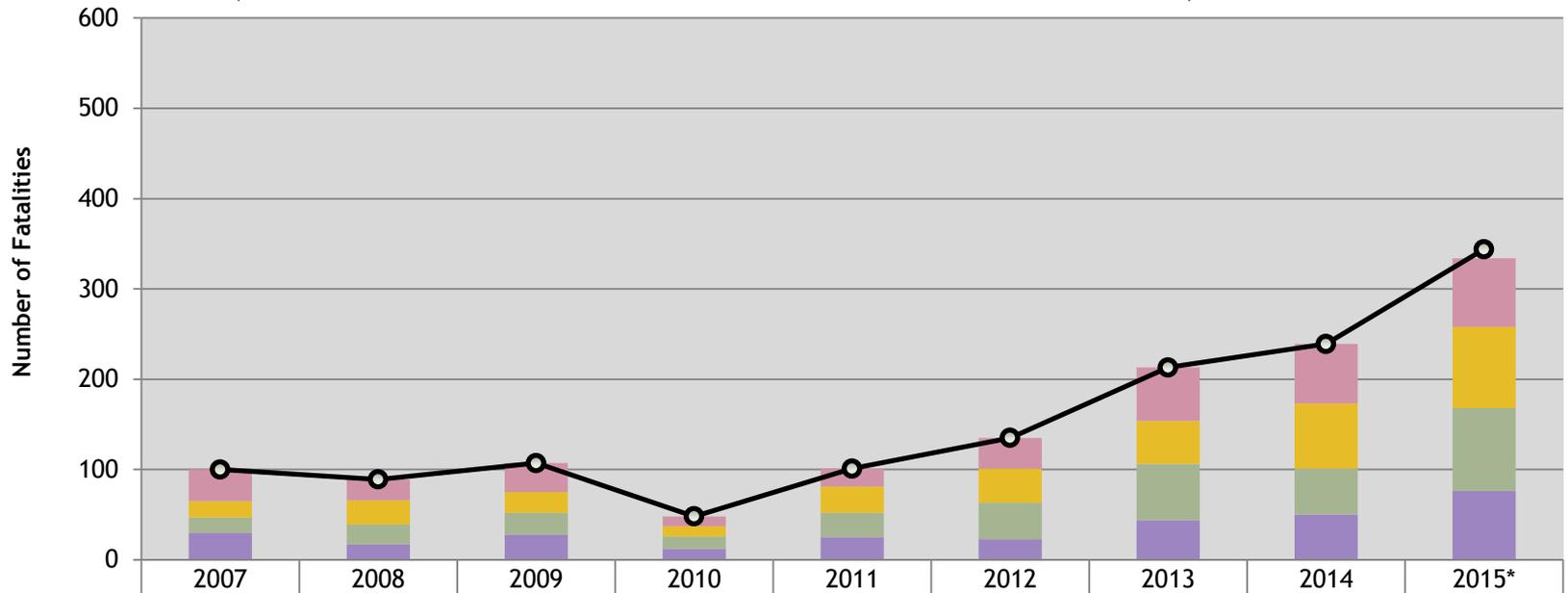
Fourth Quarter, 2007-2015



HEROIN

The total number of fatal heroin-related overdoses have been on an incline since 2010. Fatal heroin overdoses often occur as the primary drug causing death, without additional drugs playing any role in the fatal overdose. However, in fatal heroin overdoses where additional drugs did cause or contribute to death, one or more opioid prescription drugs (28.5%), alcohol at or above the legal limit of 0.08% BAC (23.6%), and/or cocaine (21.2%), were the primary substances.

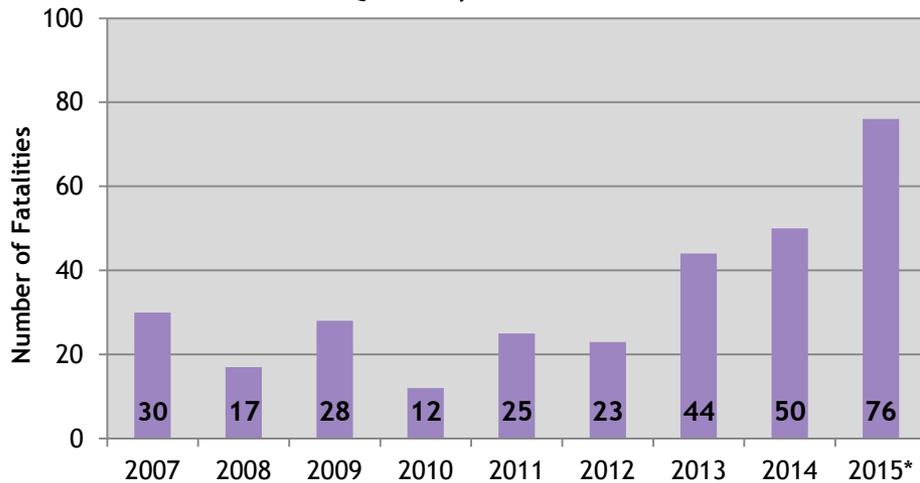
Total Number of Fatal Heroin Overdoses by Quarter and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)



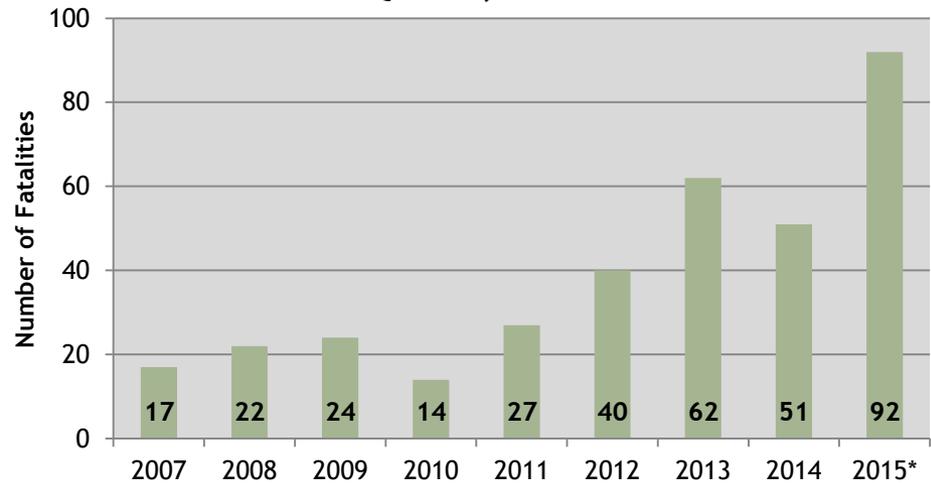
| | | | | | | | | | |
|------------------|-----|----|-----|----|-----|-----|-----|-----|-----|
| Q4 | 35 | 23 | 32 | 11 | 20 | 34 | 59 | 66 | 76 |
| Q3 | 18 | 27 | 23 | 11 | 29 | 38 | 48 | 72 | 90 |
| Q2 | 17 | 22 | 24 | 14 | 27 | 40 | 62 | 51 | 92 |
| Q1 | 30 | 17 | 28 | 12 | 25 | 23 | 44 | 50 | 76 |
| Total Fatalities | 100 | 89 | 107 | 48 | 101 | 135 | 213 | 239 | 344 |

HEROIN

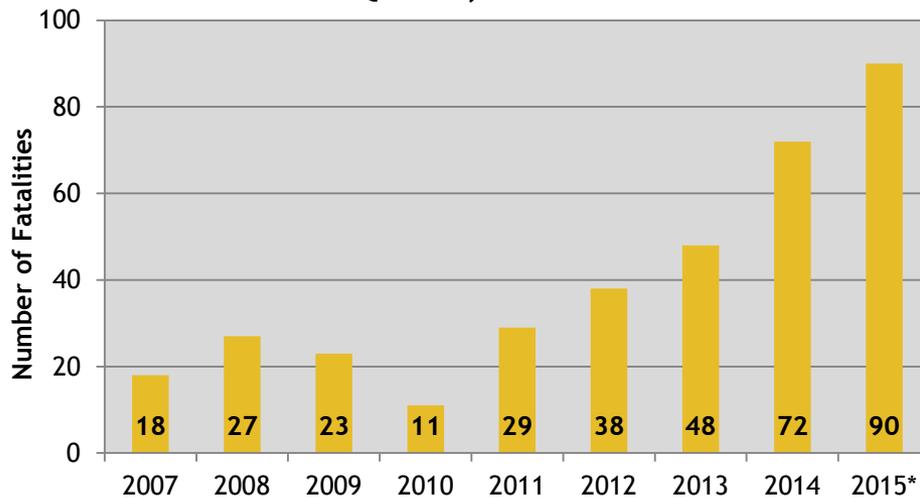
First Quarter, 2007-2015



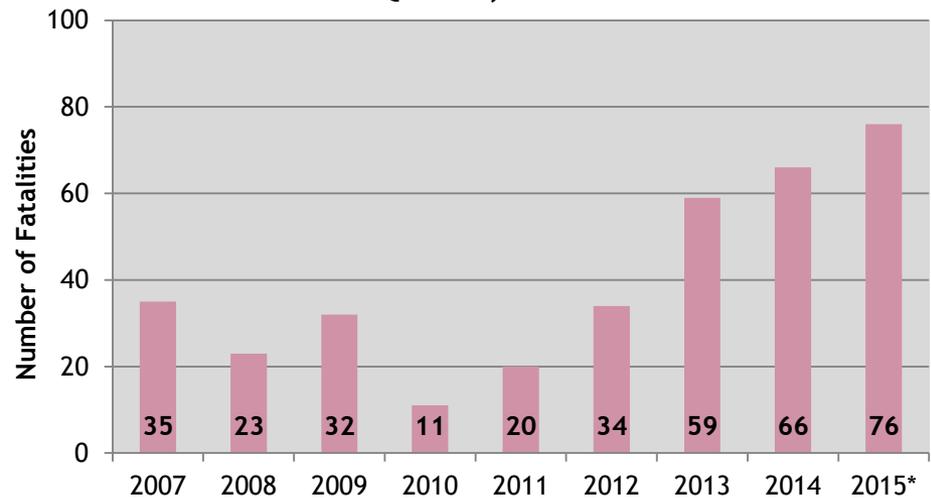
Second Quarter, 2007-2015



Third Quarter, 2007-2015



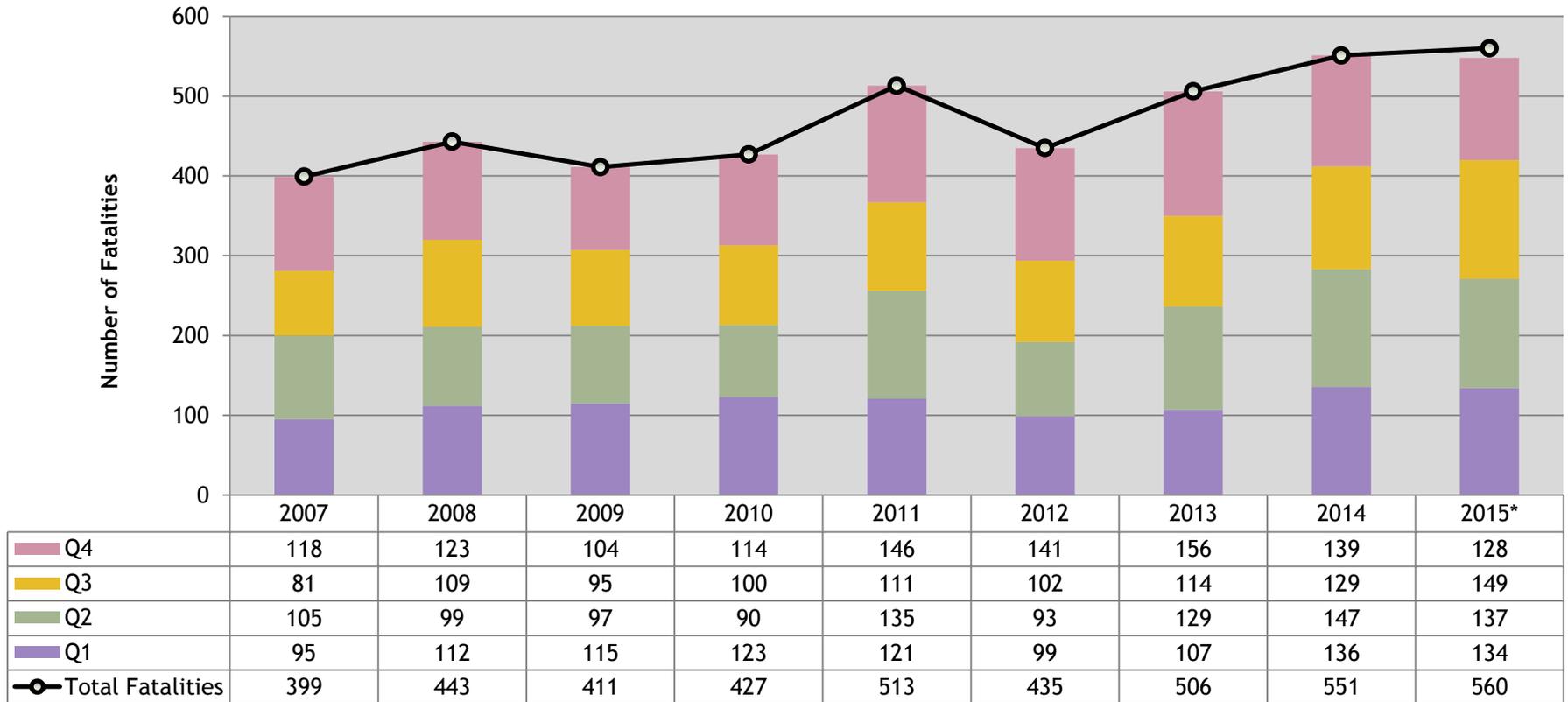
Fourth Quarter, 2007-2015



PRESCRIPTION OPIOIDS

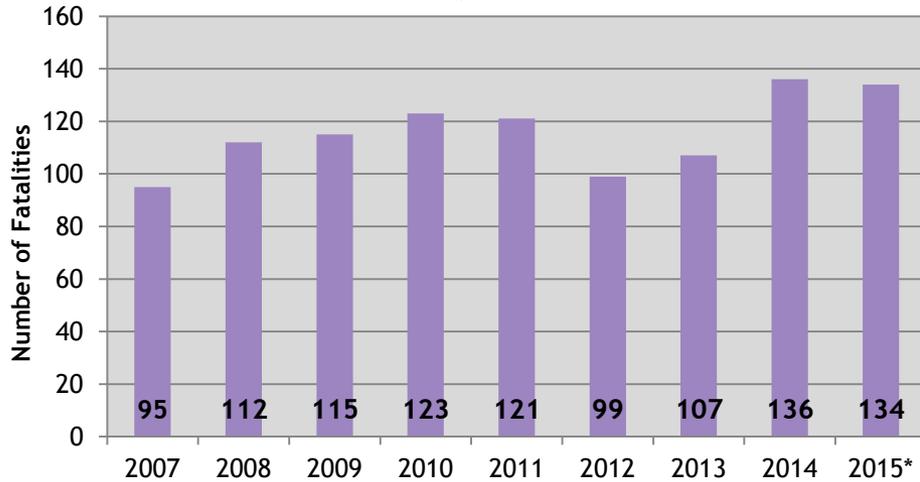
Since 2007, fatal prescription opioid overdoses have been the number one drug category causing or contributing to death in the Commonwealth, with Oxycodone being the most common drug. Fatal prescription opioid overdoses had an average of 1.4 prescription opioids causing or contributing to death and 32.9% had one or more benzodiazepines contributing to the fatality.

Total Number of Fatal Prescription Opioid Overdoses by Quarter and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)

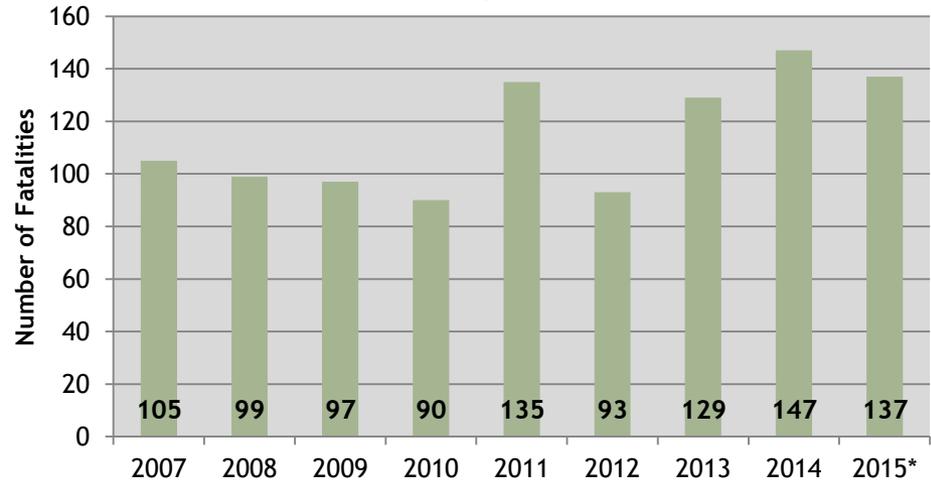


PRESCRIPTION OPIOIDS

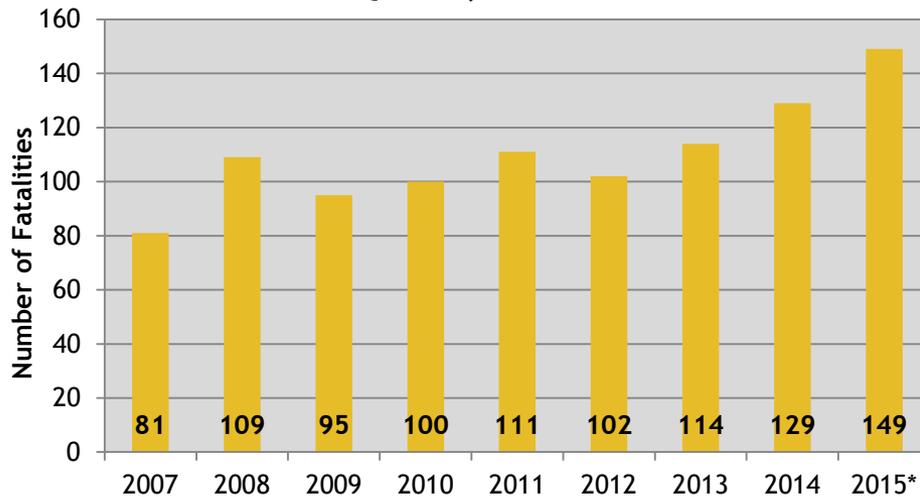
First Quarter, 2007-2015



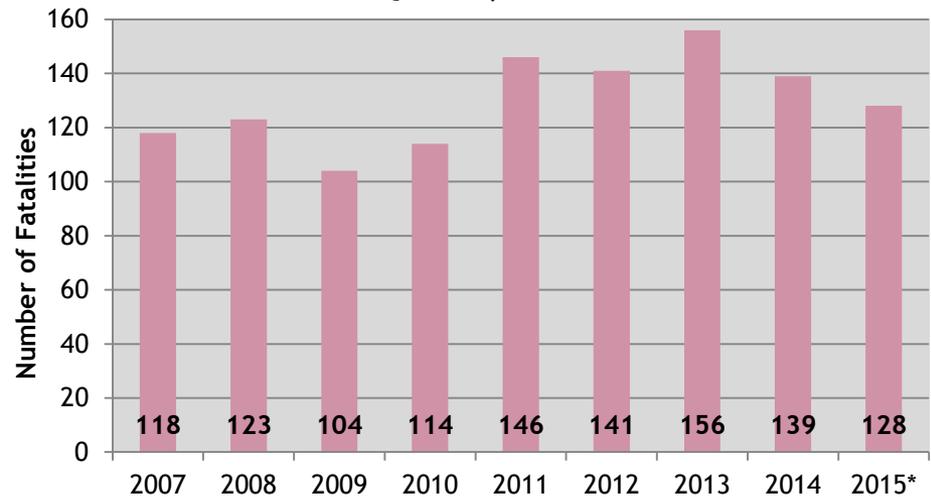
Second Quarter, 2007-2015



Third Quarter, 2007-2015

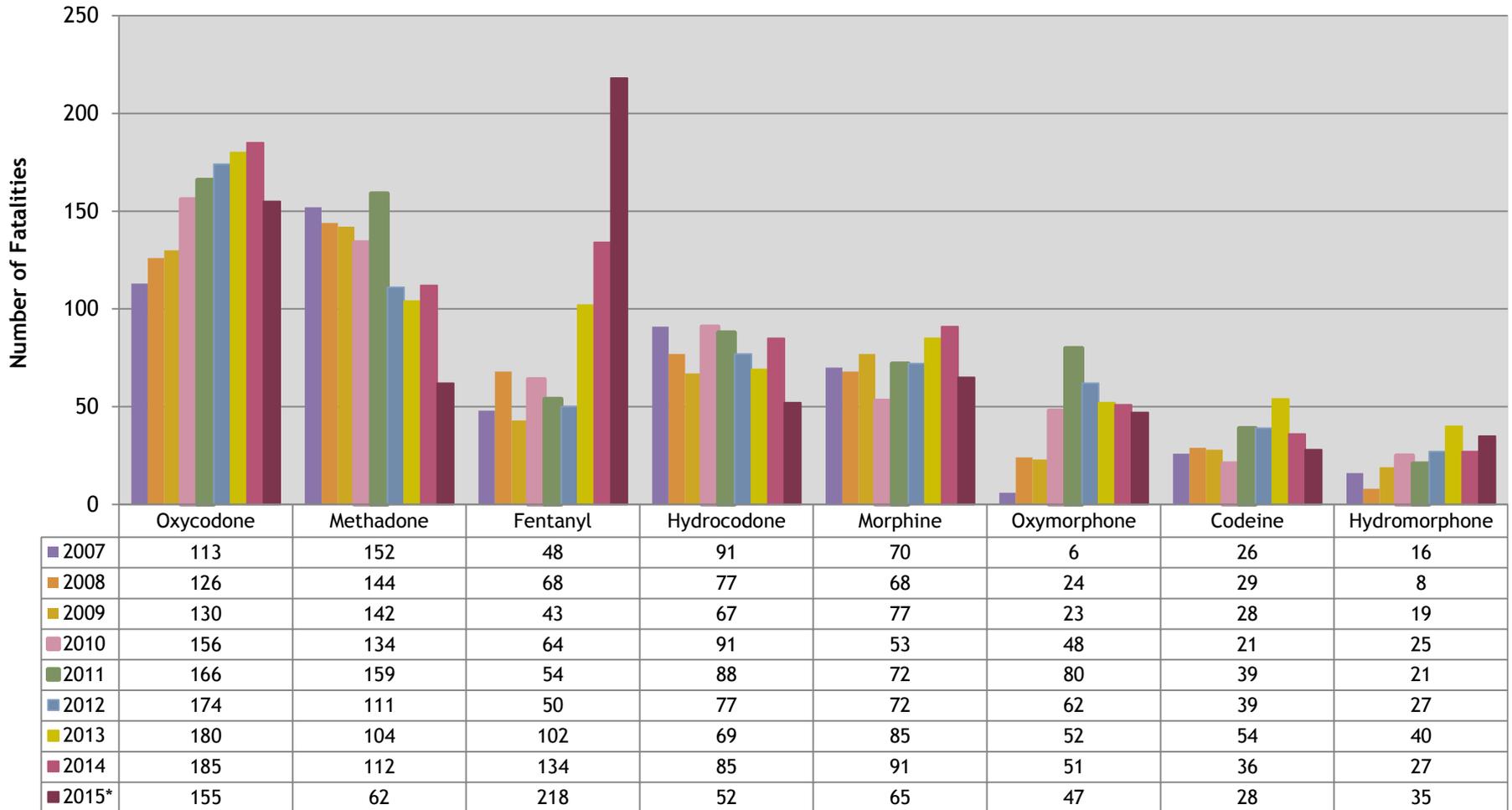


Fourth Quarter, 2007-2015



PRESCRIPTION OPIOIDS

Total Number of Fatal Prescription Opioid Overdoses by Drug Name and Year of Death, 2007-2015
(Data for 2015 is a Predicted Total for the Entire Year)



¹ Tramadol was excluded from this analysis because of low annual case counts (<20 per year)

² Fentanyl is 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 rather has been imported from out-of-country drug traffickers who are producing the drug. Since this determination is made through a police investigation and often not through toxicology results, fentanyl deaths represented in this reports will remain classified as prescription opioids

FATAL DRUG OVERDOSES OF SPECIAL INTEREST

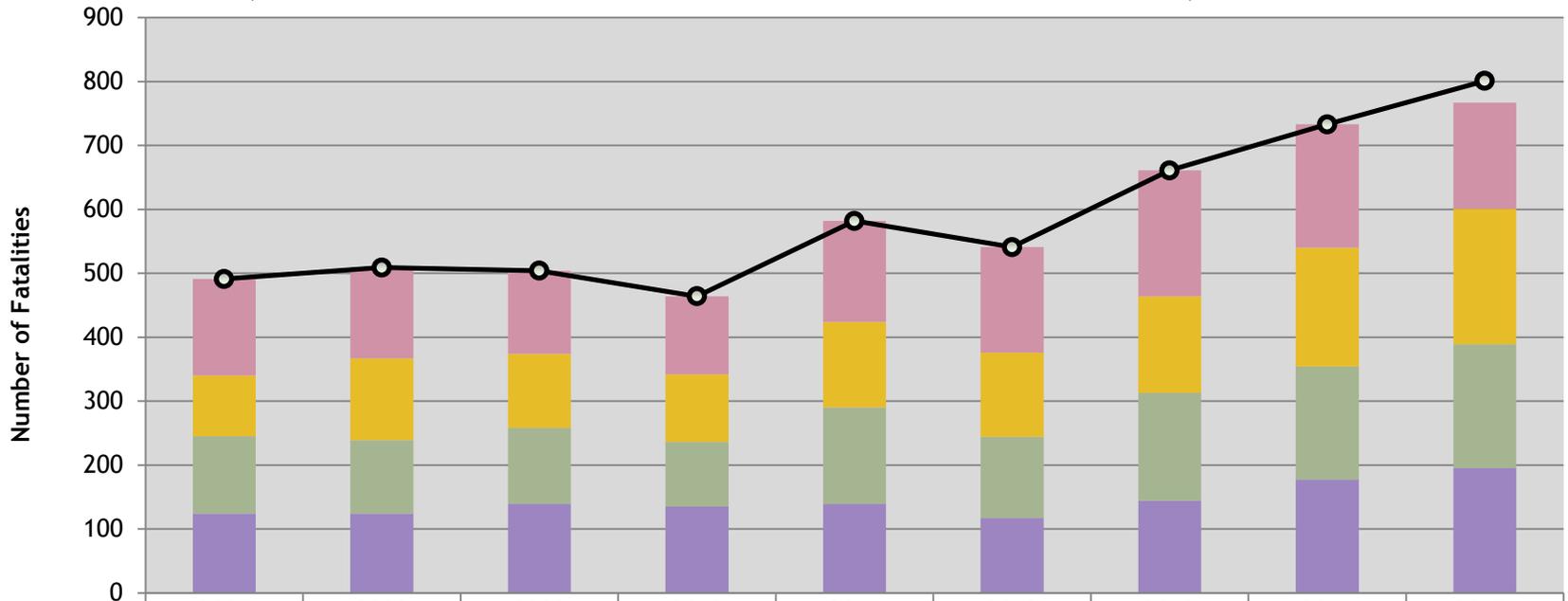


- All Opioids (Heroin and/or Prescription Opioids)
- Heroin and/or Fentanyl

ALL OPIOIDS

All opioids (heroin and/or one or more prescription opioids) make up 70-75% of all fatal drug overdoses annually in Virginia. Fatal opioid overdoses often have one or more benzodiazepines contributing to death (28.1%).

Total Number of Fatal Opioid Overdoses by Quarter and Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)



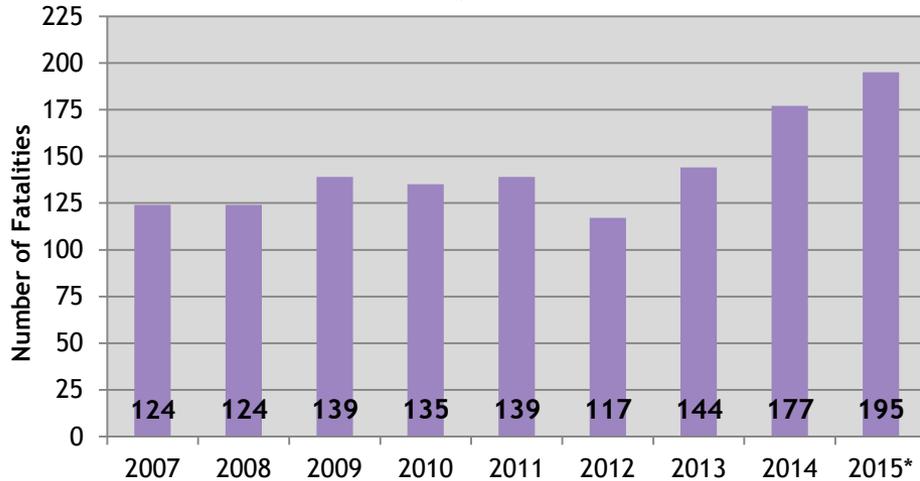
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015* |
|------------------|------|------|------|------|------|------|------|------|-------|
| Q4 | 151 | 142 | 130 | 122 | 158 | 165 | 197 | 193 | 166 |
| Q3 | 95 | 128 | 116 | 106 | 134 | 132 | 151 | 186 | 212 |
| Q2 | 121 | 115 | 119 | 101 | 151 | 127 | 169 | 177 | 194 |
| Q1 | 124 | 124 | 139 | 135 | 139 | 117 | 144 | 177 | 195 |
| Total Fatalities | 491 | 509 | 504 | 464 | 582 | 541 | 661 | 733 | 801 |

¹ 'All Opioids' include heroin, prescription opioids, and opioids unspecified

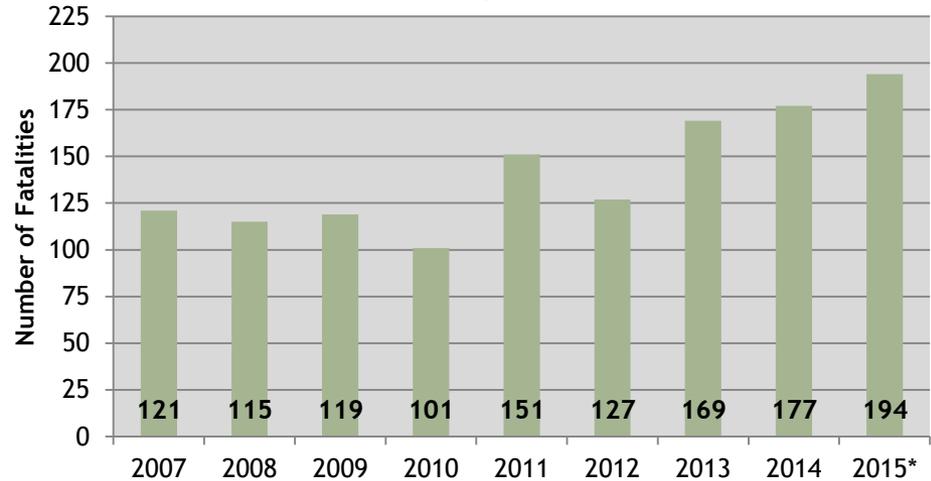
² 'Opioids Unspecified' are a small category of deaths in which the determination of heroin and/or one or more prescription opioids cannot be made due to specific circumstances of the death. Most commonly, these circumstances are a result of death several days after an overdose, in which the OCME cannot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

ALL OPIOIDS

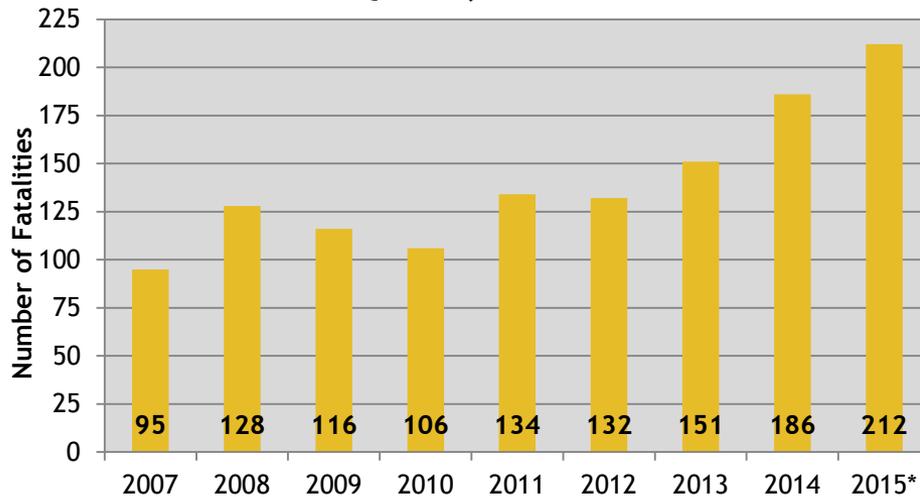
First Quarter, 2007-2015



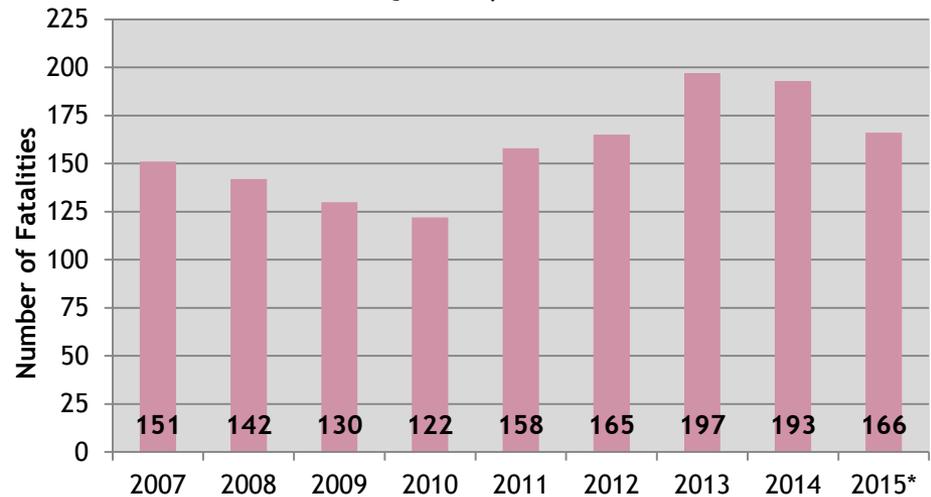
Second Quarter, 2007-2015



Third Quarter, 2007-2015



Fourth Quarter, 2007-2015

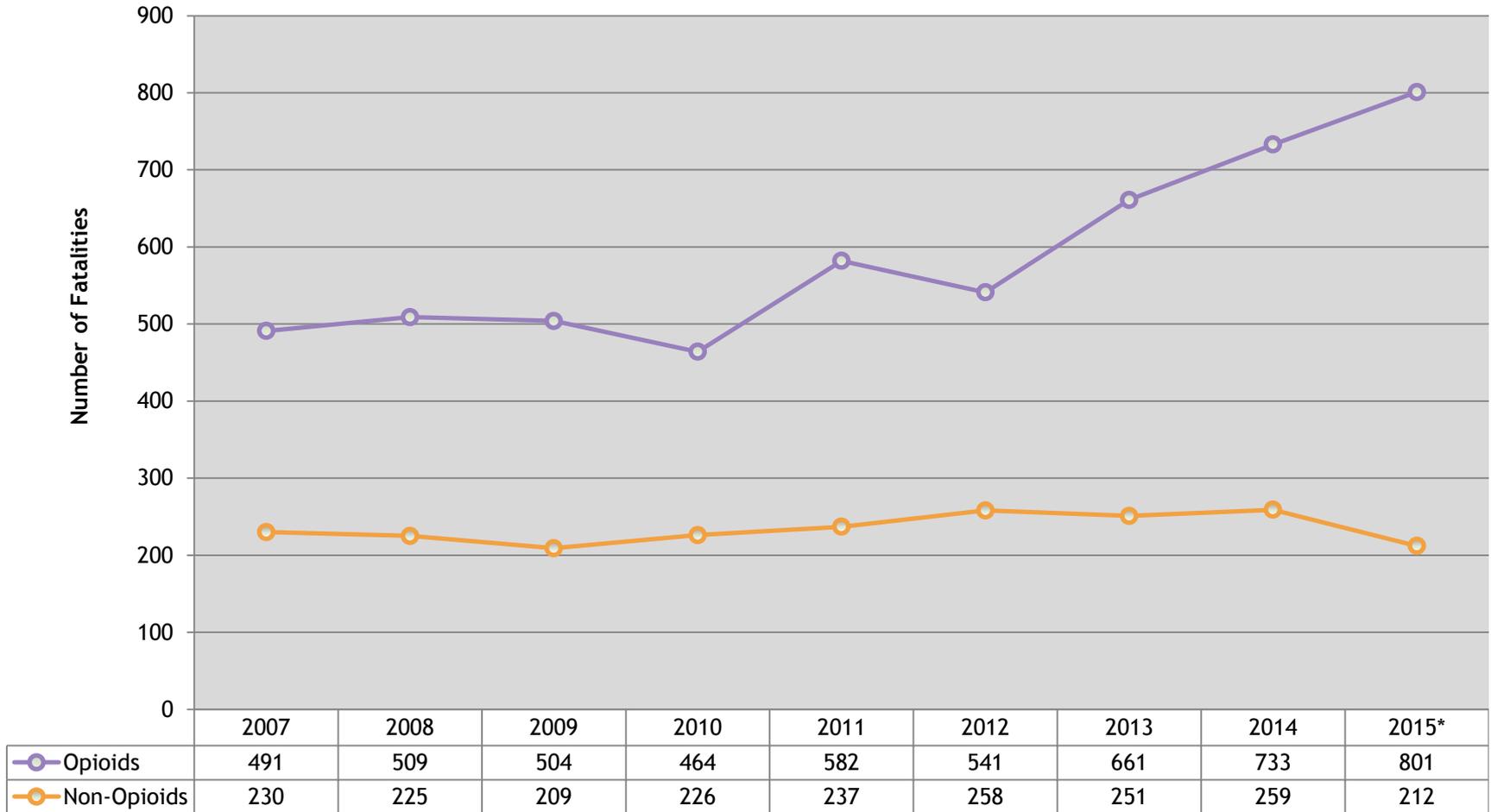


¹ 'All Opioids' include heroin, prescription opioids, and opioids unspecified

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.

OPIOIDS VS. NON-OPIOIDS

Total Number of Fatal Opioid Overdoses vs. Non-Opioid Overdoses by Year of Death, 2007-2015
(Data for 2015 is a Predicted Total for the Entire Year)



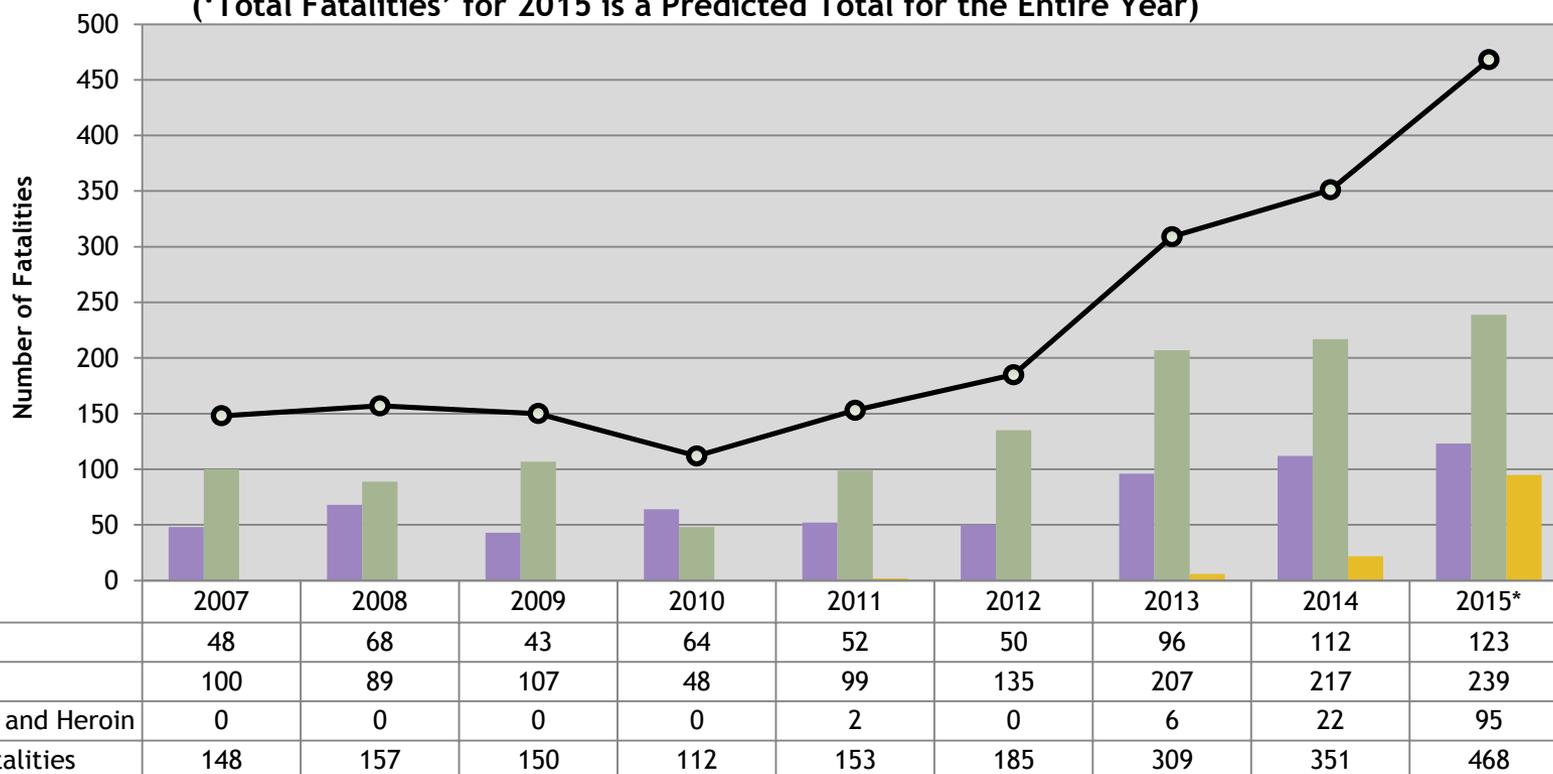
¹ 'All Opioids' include heroin, prescription opioids, and opioids unspecified

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.

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 began showing up as an additive to the heroin being sold. By late 2013 and early 2014, it was discovered that some heroin being sold on the street was actually completely fentanyl, unbeknownst to the user. Since users never know exactly what is in the drugs they are buying, it is essential to look at these fentanyl only, heroin only, and fentanyl and heroin combination deaths together.

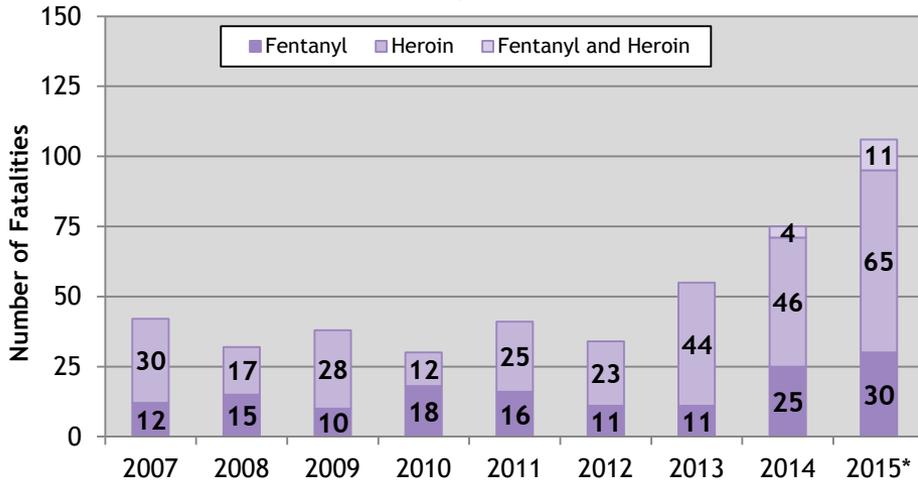
Total Number of Fatal Fentanyl and/or Heroin Overdoses by Year of Death, 2007-2015
 ('Total Fatalities' for 2015 is a Predicted Total for the Entire Year)



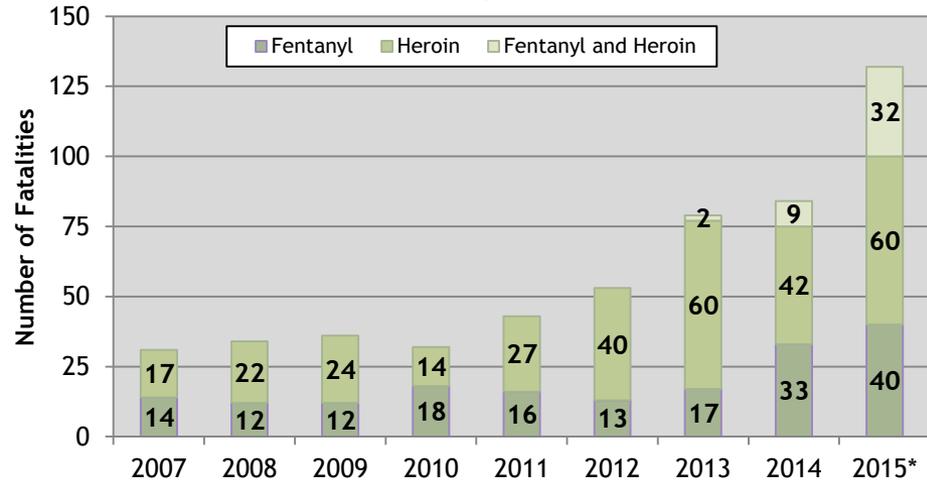
¹ Fentanyl is categorized as a prescription opioid because it is mass produced by pharmaceutical companies. However, recent law enforcement investigations and toxicology results have demonstrated that several recent fentanyl seizures have **not** been pharmaceutically produced, but rather has been imported from out-of-country drug traffickers who are producing the drug. Since this determination is made through a police investigation and often not through toxicology results, fentanyl deaths represented in this reports will remain classified as prescription opioids

FENTANYL AND/OR HEROIN

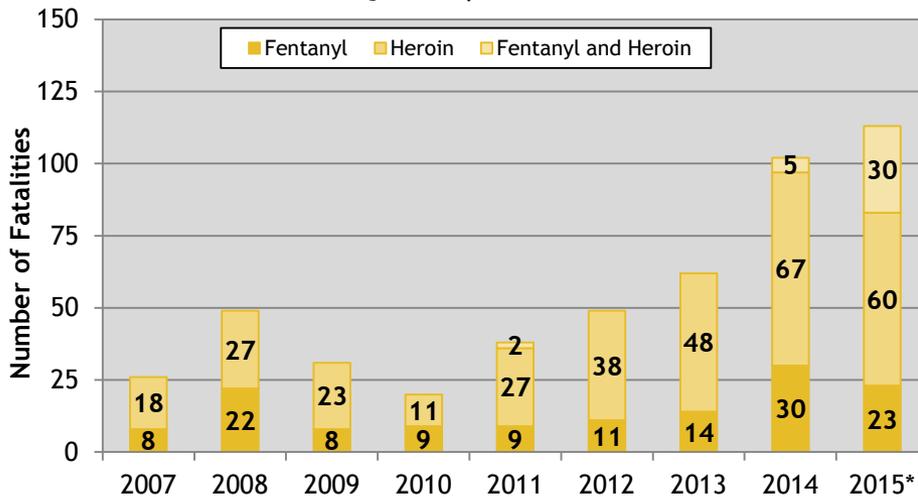
First Quarter, 2007-2015



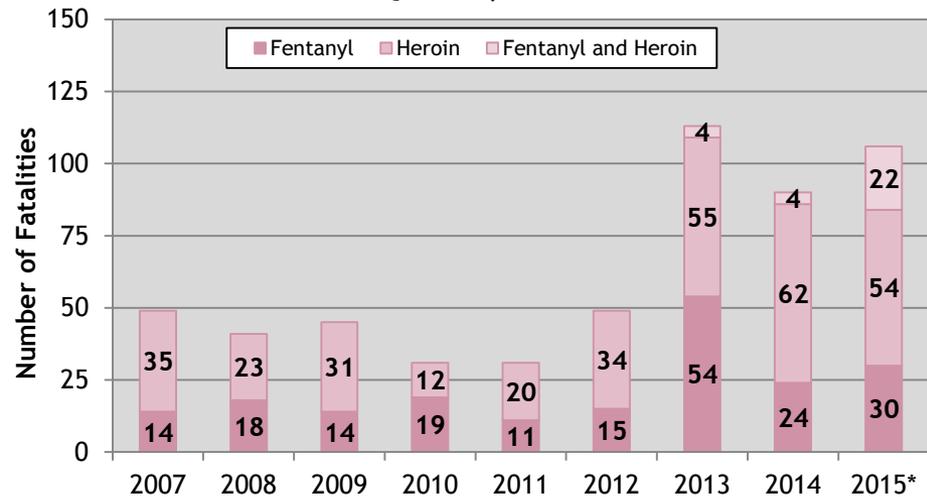
Second Quarter, 2007-2015



Third Quarter, 2007-2015

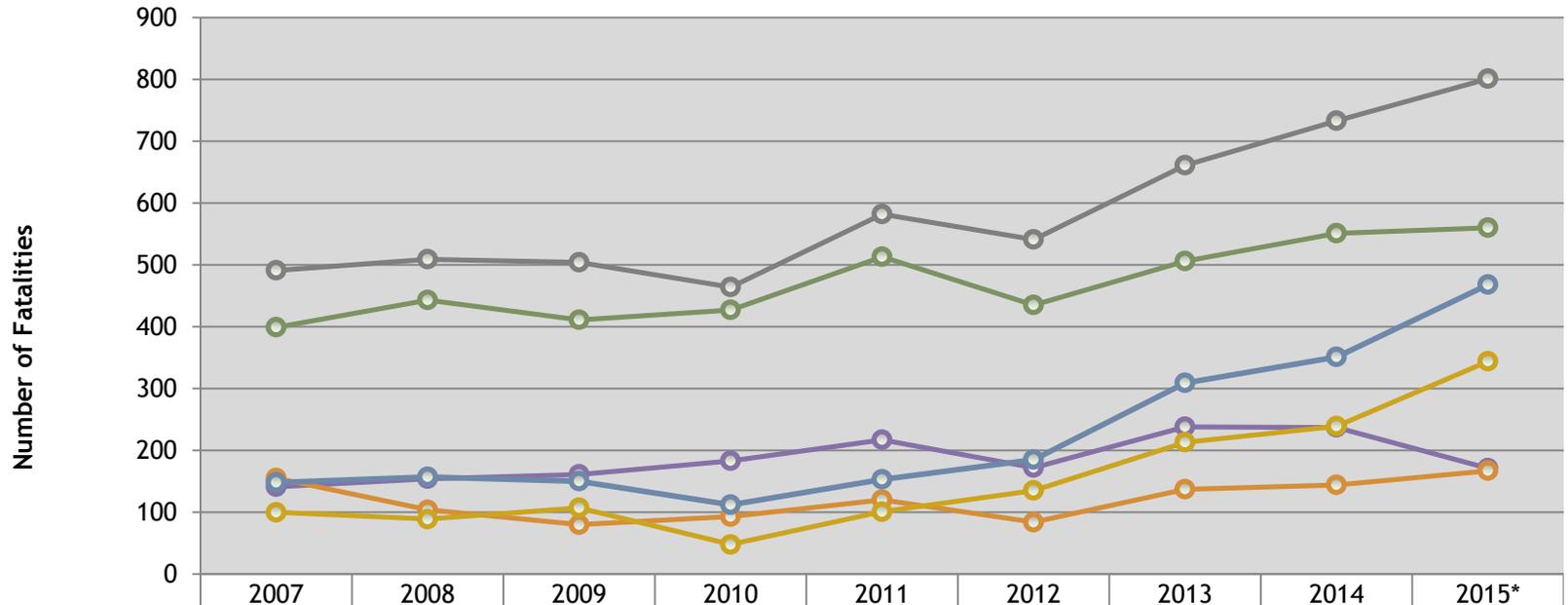


Fourth Quarter, 2007-2015



ALL DRUGS

Total Number of Fatal Drug Overdoses Drug Name/Category and Year of Death, 2007-2015
(Data for 2015 is a Predicted Total for the Entire Year)



| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015* |
|------------------------|------|------|------|------|------|------|------|------|-------|
| Benzodiazepines | 141 | 154 | 161 | 183 | 217 | 172 | 238 | 237 | 171 |
| Cocaine | 155 | 104 | 80 | 93 | 120 | 84 | 137 | 144 | 167 |
| Heroin | 100 | 89 | 107 | 48 | 101 | 135 | 213 | 239 | 344 |
| Prescription Opioids | 399 | 443 | 411 | 427 | 513 | 435 | 506 | 551 | 560 |
| All Opioids | 491 | 509 | 504 | 464 | 582 | 541 | 661 | 733 | 801 |
| Heroin and/or Fentanyl | 148 | 157 | 150 | 112 | 153 | 185 | 309 | 351 | 468 |

¹ Deaths may be represented in more than one category due to groupings of drug categories (e.g. heroin)

² 'All Opioids' include heroin, prescription opioids, 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 Fentanyl is 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 rather has been imported from out-of-country drug traffickers who are producing the drug. Since this determination is made through a police investigation and often not through toxicology results, fentanyl deaths represented in this reports will remain classified as prescription opioids

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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<http://www.vdh.state.va.us/medexam/>