

Opioid Overdose Data Quarterly Report

4th Quarter 2016

Introduction

Public health data produced or collected by the Virginia Department of Health (VDH) is utilized to describe the burden of opioid overdose morbidity and mortality across the Commonwealth of Virginia. Public health data sources included in this report are:

- [Patients demonstrating improved response after being given Narcan](#) by Emergency Medical Services (EMS) providers (Office of Emergency Medical Services)
- [Emergency department \(ED\) visits](#) with a chief complaint or diagnosis of opioid overdose, including overdose where the substance is not specified, or heroin overdose (Office of Epidemiology)
- [Hospital inpatient discharges](#) with a diagnosis of prescription opioid overdose, heroin overdose, or Neonatal Abstinence Syndrome (Office of Family Health Services)
- [Fatal overdoses](#) by all opioids, prescription opioids (excluding fentanyl), fentanyl and/or heroin, or fentanyl analogs (Office of the Chief Medical Examiner)
- [Hepatitis C diagnoses](#) (acute or chronic) among 18 to 30 year olds (Office of Epidemiology)

In this report the data sources listed above are displayed by: 1) Virginia locality incidence rate for the most recent four quarters (12 months) and 2) Virginia statewide quarterly total for the most recent six quarters (18 months). It is important to note that each data source has its own reporting schedule and therefore, how each data source defines what is most recent varies from source to source. Readers of this report are strongly encouraged to review the description of each data source as well as the methodology used in their preparation and analysis found on [page 10](#).

This report is compiled and published quarterly. 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

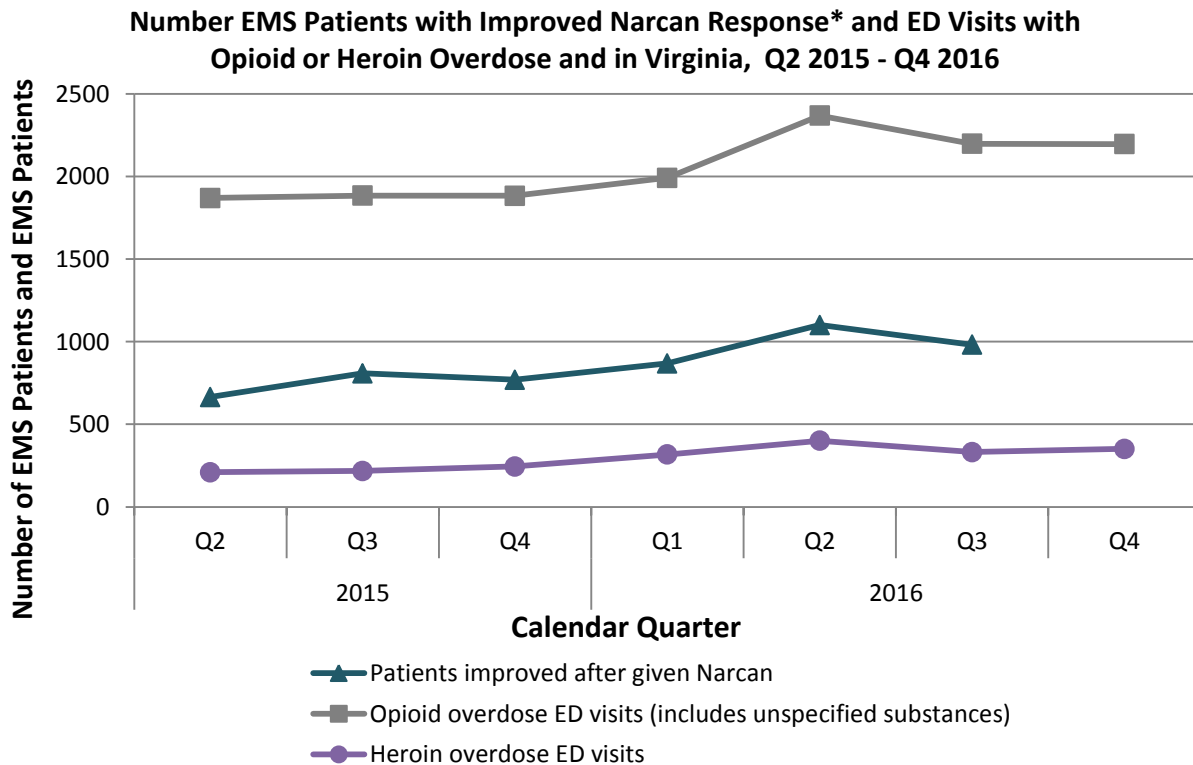
Executive Summary for 4th Quarter 2016

- Prescription opioid overdose morbidity and mortality, as well as Neonatal Abstinence Syndrome (NAS) and Hepatitis C diagnoses among 18 to 30 years olds are geographically concentrated in the southwestern area of Virginia.
- Illicit opioid overdose (fentanyl and/or heroin) morbidity and mortality are geographically concentrated in the northwestern, central, and north eastern areas of Virginia.
- A high fatality rate for prescription opioid overdose combined with a low rate of patients demonstrating an improved response after being given Narcan by EMS providers in southwestern Virginia may indicate an area where expanded utilization of Narcan could be beneficial.

EMS Patients with Improved Narcan Response and ED Visits

- The number of EMS patients given Narcan that showed an improved response decreased in Q3 2016 compared to Q2, which had the largest number of patients (1,101) (Fig 1).
- Richmond City was the locality with the highest Narcan improved response incidence rate (210.1 per 100,000 residents). Virginia overall had an incidence rate of 46.4 per 100,000 residents (Map 1).
- The number of ED visits for opioid overdose (including overdose by substances not specified) remain unchanged between Q3 and Q4 2016 while heroin overdose increased slightly (Fig 1).
- Of the total number of ED visits among Virginia residents reported to VDH in Q4 2016, opioid overdose (including overdose by substances not specified) accounted for 258.7 per 100,000 ED visits and heroin overdose accounted for 41.3 per 100,000 ED visits.

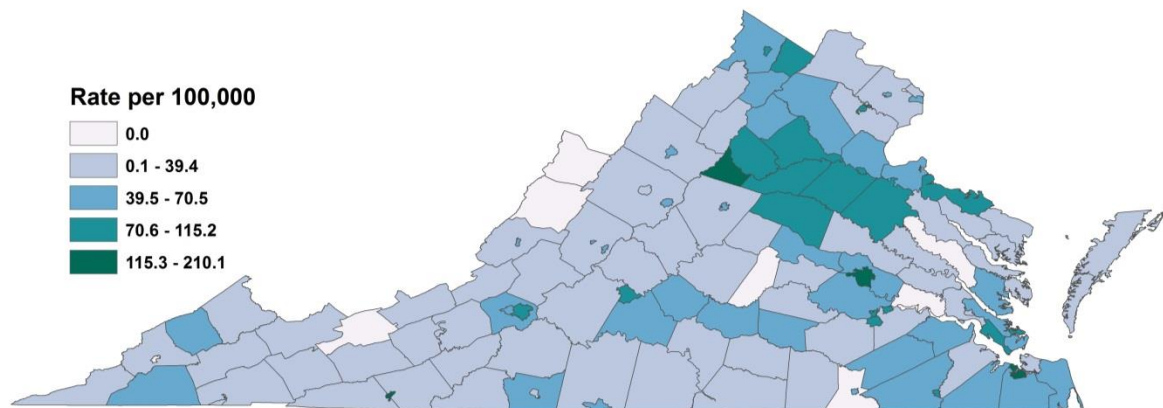
Figure 1.



Note: Quarter 4 2016 statistics for EMS patients with improved narcan response are not yet available.

Map 1.

EMS Patients with Improved Narcan Response by Virginia Locality, Rate per 100,000 Persons, Q4 2015 through Q3 2016

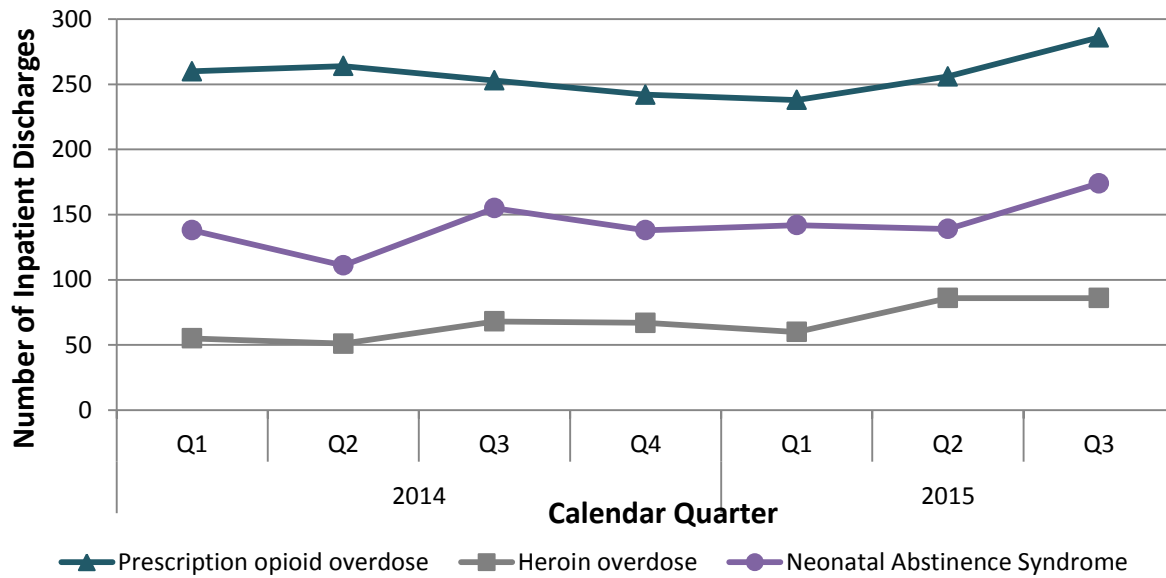


Hospital Inpatient Discharges

- The total number of inpatient prescription opioid overdose and neonatal abstinence syndrome (NAS) discharges increased between Q1 2015 and Q3 2015 (Fig 2).
- The number of inpatient NAS discharges has increased during the period Q2 to Q3 for both 2014 and 2015 (Fig 2).
- Case rates for prescription opioid and heroin overdose hospitalizations may be lower in areas of southwestern Virginia immediately adjacent to Tennessee due to critical cases being transported across state lines for treatment, where they would not be captured by Virginia's discharge reporting data system (Map 2 and 3).
- NAS case rates per 1,000 live births for the period between Q4 2014 and Q3 2015 are highest by locality in the far southwestern area of Virginia. This has been a consistent pattern over time in our NAS surveillance reporting (Map 4).

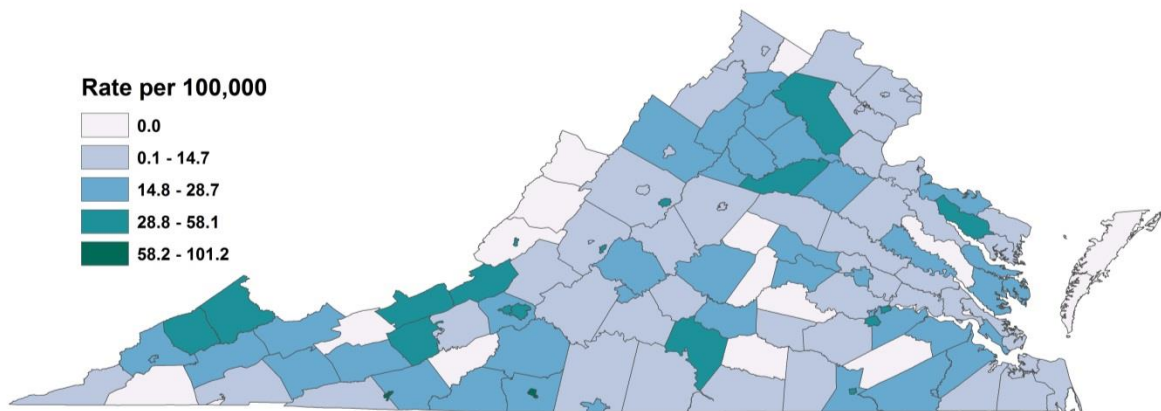
Figure 2.

Number of Inpatient Discharges from Virginia Hospitals with Diagnosis of Prescription Opioid Overdose, Heroin Overdose or Neonatal Abstinence Syndrome, Q1 2014 - Q3 2015



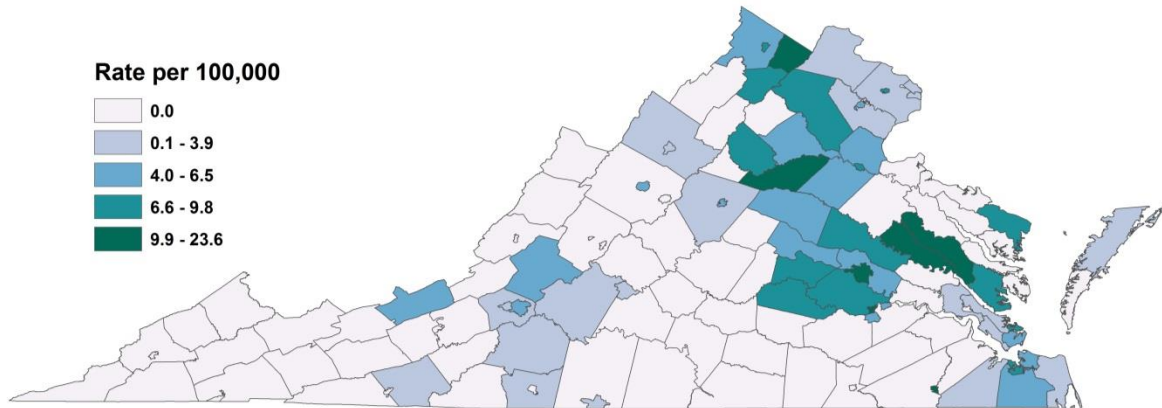
Map 2.

Prescription Opioid Overdose Inpatient Discharges by Virginia Locality, Rate per 100,000 Persons, Q4 2014 through Q3 2015



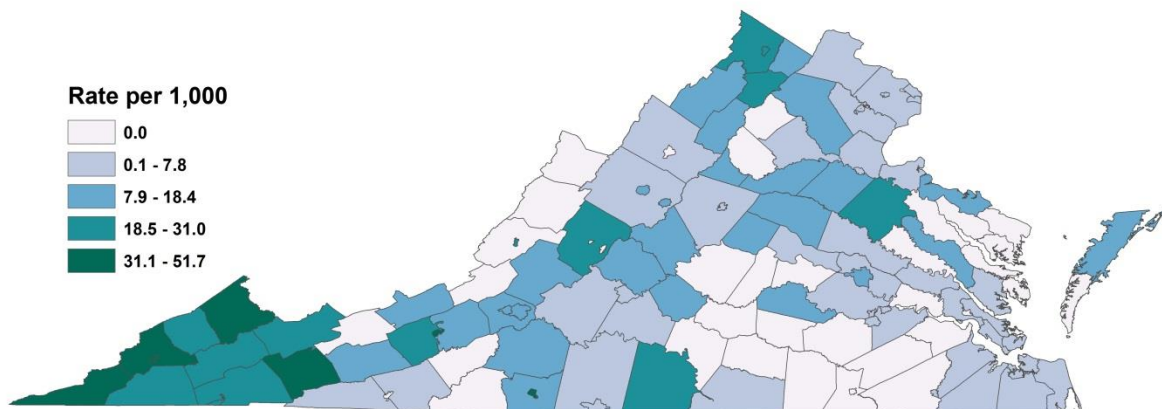
Map 3.

**Heroin Overdose Inpatient Discharges by Virginia Locality,
Rate per 100,000 Persons, Q4 2014 through Q3 2015**



Map 4.

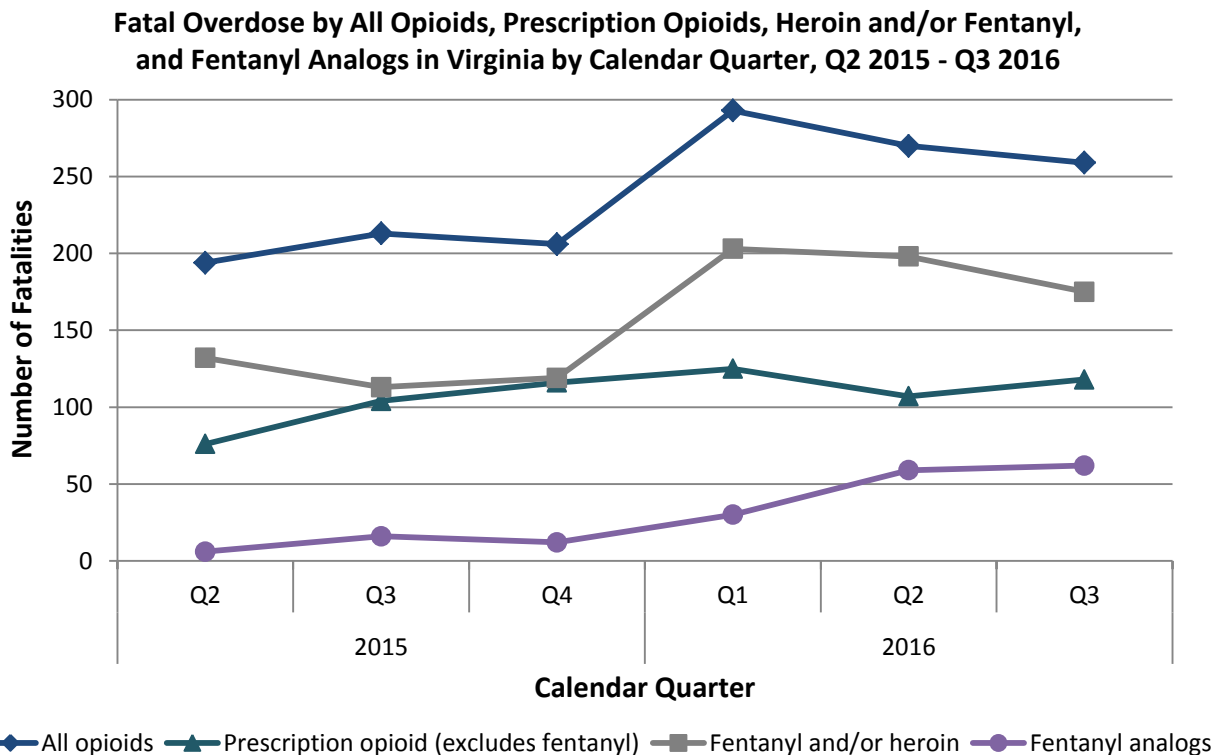
**Neonatal Abstinence Syndrome Inpatient Discharges by Virginia Locality,
Rate per 1,000 Live Births, Q4 2014 through Q3 2015**



Fatalities

- The total number of fatal overdoses by ‘all opioids’ have increased since 2012 due to the significant increase in fatal illicit opioid overdoses (fentanyl and/or heroin) (Fig 4).
- The highest mortality rate for ‘prescription opioid overdoses (excluding fentanyl)’ occurs in southwestern Virginia (Map 5).
- The highest mortality rate for ‘fentanyl and/or heroin’ overdoses occurs in urban areas within the central, northwestern and eastern regions of Virginia (Map 6).
- Historically, prescription opioids have caused the largest number of overdose deaths, but in 2015, illicit opioids (fentanyl and/or heroin) surpassed prescription opioid deaths and became the leading category of drugs causing fatal overdose. This trend has become even more apparent in 2016 (Fig 4).

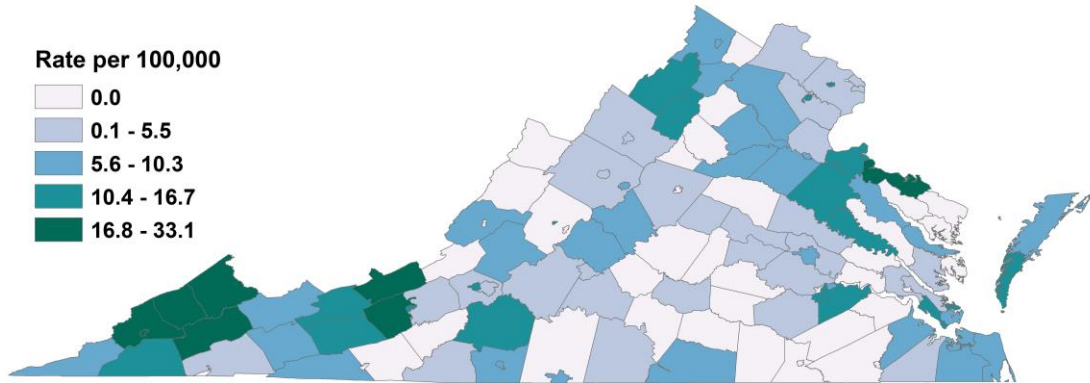
Figure 3.



Note: For statistical purposes, ‘fentanyl’ includes all pharmaceutically produced fentanyl, illicitly produced fentanyl, and fentanyl analogs.

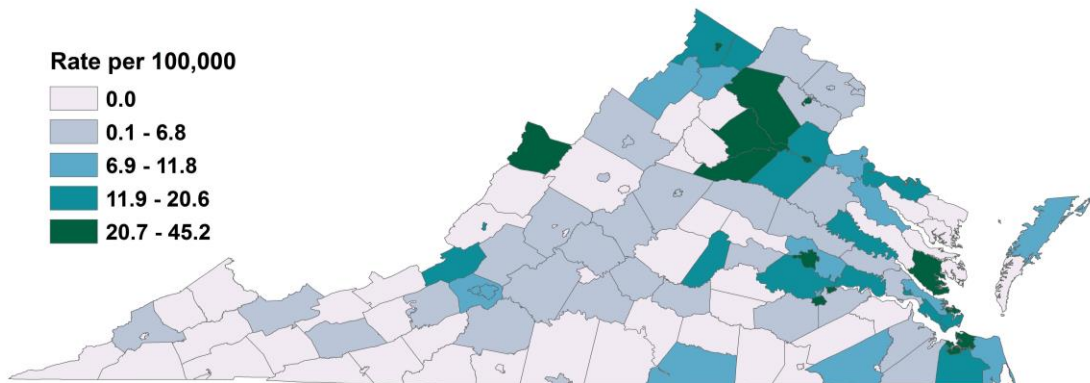
Map 5.

**Prescription Opioid Overdose Deaths (Excluding Fentanyl)
by Virginia Locality, Rate per 100,000 Persons,
Q4 2015 Through Q3 2016**



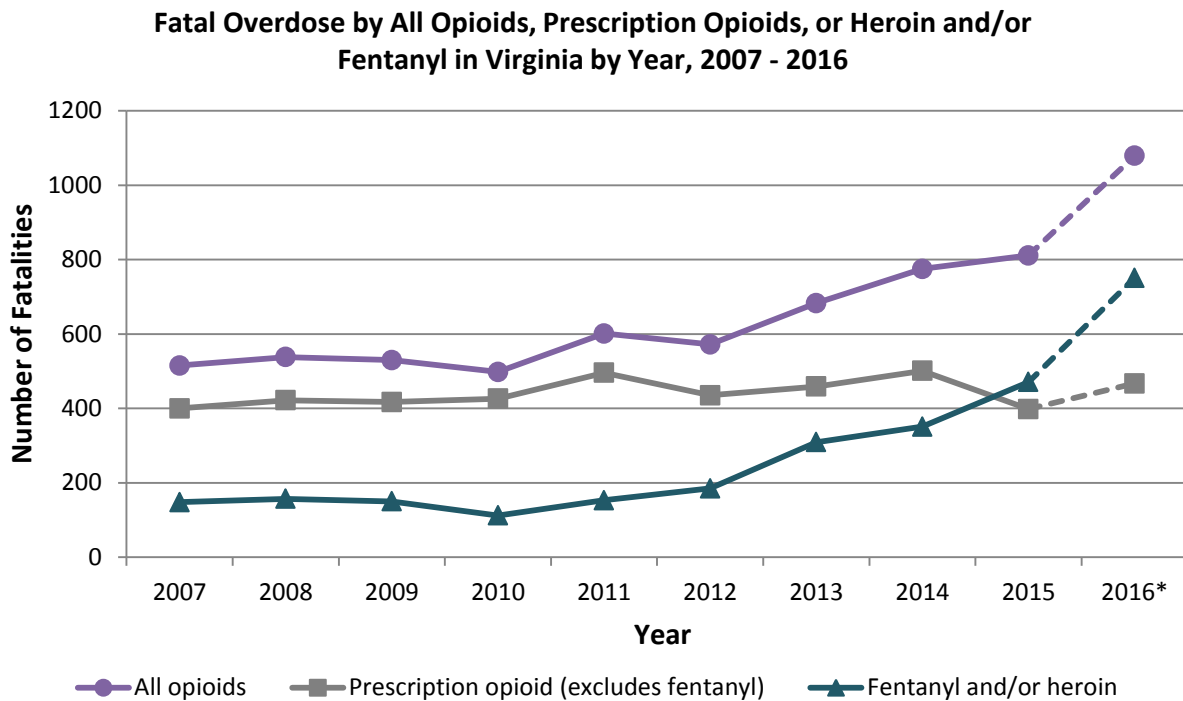
Map 6.

**Fentanyl and/or Heroin Overdose Deaths by Virginia Locality,
Rate per 100,000 Persons, Q4 2015 Through Q3 2016**



Note: For statistical purposes, 'fentanyl' includes all pharmaceutically produced fentanyl, illicitly produced fentanyl, and fentanyl analogs.

Figure 4.



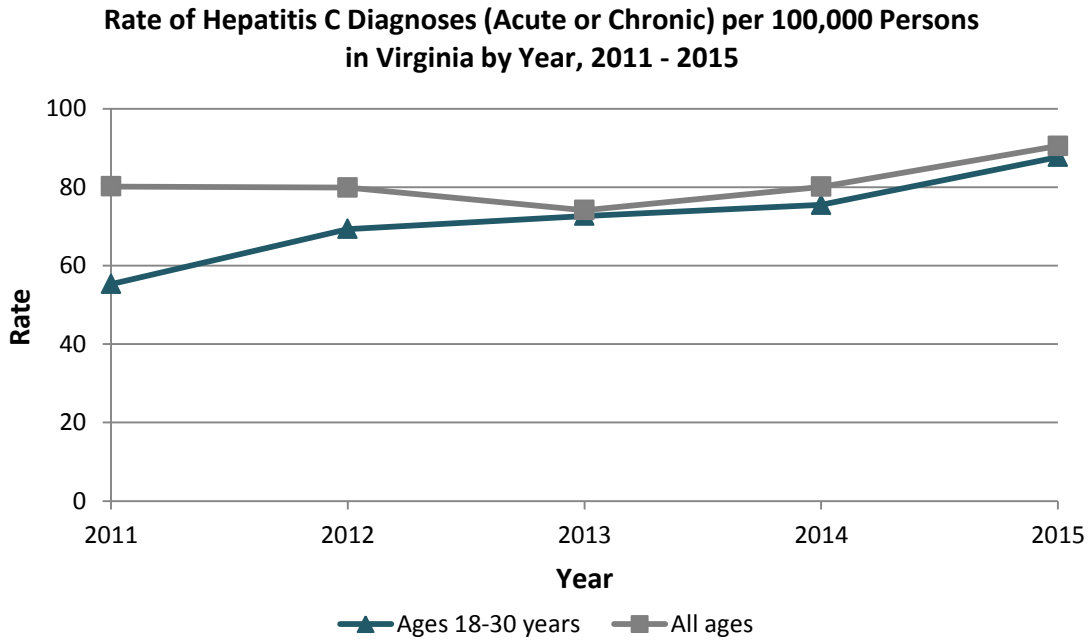
**'Total Fatalities' for 2016 is a predicted total for the entire year*

Note: For statistical purposes, 'fentanyl' includes all pharmaceutically produced fentanyl, illicitly produced fentanyl, and fentanyl analogs.

Acute and Chronic Hepatitis C Diagnoses (18 to 30 year olds)

- Rates of reported hepatitis C in persons aged 18-30 years in 2015 were highest in the Southwest region, followed by the Northwest region (Map 7).
- Reported cases of hepatitis C in persons aged 18-30 have been increasing more rapidly than reported cases of hepatitis C in all age groups (Fig 5).
- People 30 years of age and under with hepatitis C are more likely than older age groups to report drug use as the primary or only known risk factor for infection with hepatitis C.
- Individuals who were incarcerated at the time of diagnosis with hepatitis C (n=164) are not included in Map 7, but are included in the statewide totals in Fig 5.

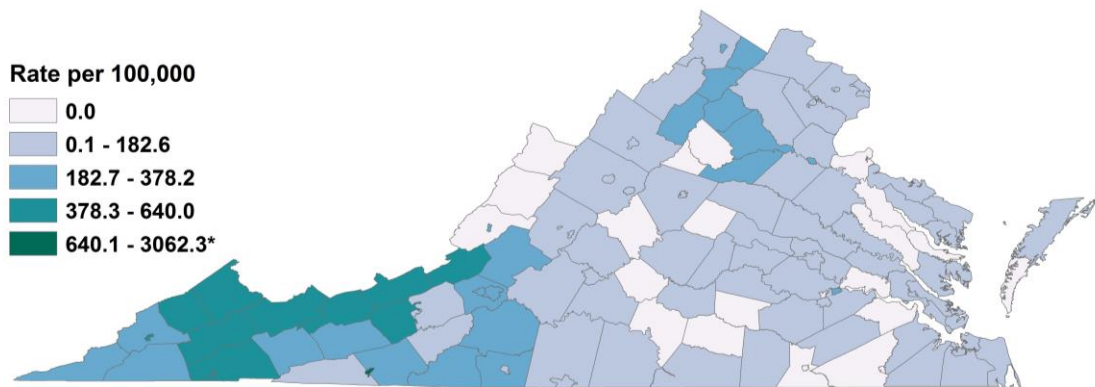
Figure 5.



Note: Statistics include individuals who were incarcerated at the time of diagnosis.

Map 7.

**Hepatitis C Diagnoses Among Those 18 to 30 Years of Age
by Virginia Locality, Rate per 100,000 Persons,
Q1 2015 Through Q4 2015**



*Galax City was the only locality with a rate in this category, at 3062.3 per 100,000 persons.

Note: Statistics exclude individuals who were incarcerated at the time of diagnosis.

Methodology

EMS Patients with Improved Narcan Response (Office of Emergency Medical Services)

Emergency Medical Services (EMS) patient data is compiled from patient medical records submitted to the Virginia Pre-Hospital Information Bridge (VPHIB) program (v2, v3) within VDH's Office of Emergency Medical Services, Division of Trauma and Critical Care. This report includes all EMS responses in which the patient was treated by EMS providers and demonstrated an improved response after being given naloxone (Narcan). An improved response after being administered Narcan indicates Narcan was successful in temporarily reversing the effects of an opioid overdose. This report does not include EMS patients who received Narcan but did not demonstrate an improved response to Narcan. An unimproved response indicates that the patient did not have any opioids present in their system and thus was not suffering from an opioid overdose. The locality of the patient is based on the locality of the EMS agency.

Questions can be directed to:

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ED Visits (Office of Epidemiology)

The Office of Epidemiology (OEPI), Division of Surveillance and Investigation receives data on visits to 82 acute care hospital emergency departments (EDs) and 13 free-standing EDs in Virginia for purposes of public health surveillance. Chief complaints and discharge diagnoses of ED visits are analyzed by OEPI to describe health trends as opposed to being an exact measure of illness and injury among Virginia residents. When using these data to interpret health trends it is important to keep in mind certain data [limitations](#). These data represent ED visit encounters, not unique individuals. The chief complaint is a free-text field that captures the patient's primary reason for seeking medical care as interpreted by the ED registration staff. The discharge diagnosis is a coded field that uses standardized values outlined by the International Classification of Diseases (ICD) 9th and 10th Revision code sets. For additional information on overdose ED visits please refer to the monthly report *Emergency Department Visits for Overdose by Opioid, Unspecified Substance and Heroin among Virginia Residents* published here: <http://www.vdh.virginia.gov/surveillance-and-investigation/syndromic-surveillance/>

Questions can be directed to:

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Hospital Inpatient Discharges (Office of Family Health Services)

The Office of Family Health Services, Division of Population Health Data conducts surveillance for drug overdose and Neonatal Abstinence Syndrome hospitalizations by monitoring trends and cases presenting in the inpatient discharge dataset provided to VDH by Virginia Health Information (VHI). This data source reflects all inpatient discharges occurring in Virginia hospitals, and case detection for prescription opioid and heroin overdose discharges is based on coding standards set by the Centers for Disease Control and Prevention through its Prescription Drug Overdose Prevention for States initiative. Cases from this data system are reflective of discharges, not unique individuals. If an individual was discharged more than once for the same condition, the person would be counted in this report more than once. Case definitions used for this report further exclude out-of-state residents hospitalized in Virginia facilities, and reflect only acute care hospitalizations. Inpatient discharge data in this report was coded to the ICD 9-Clinical Modification (CM) standard, as it reflects surveillance from the period before the ICD 10-CM conversion, which occurred on October 1, 2015.

Questions can be directed to:

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Fatalities (Office of the Chief Medical Examiner)

Fatality data is obtained from the Virginia Medical Examiner Database System (VMEDS), which is an internal Office of the Chief Medical Examiner (OCME) agency database containing detailed information on all deaths reported to the OCME. Data presented in this report are based upon accepted cases of either full autopsy or external exams. All manners of fatal drug overdoses (accident, homicide, suicide, and undermined) are included. 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. 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. Projected estimates for 2016 (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. For additional information on fatal drug overdoses please refer to the *Fatal Drug Overdose Quarterly Report* published here:

<http://www.vdh.virginia.gov/medical-examiner/forensic-epidemiology/>

Questions can be directed to:

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Acute and Chronic Hepatitis C Diagnoses (Office of Epidemiology)

Hepatitis C virus is primarily spread when blood from someone infected with Hepatitis C enters the body of someone not infected, usually by passing through the skin. The most common means of Hepatitis C infection in the U.S. is injection drug use, including the sharing of needles, syringes, or other equipment used to inject drugs. Infection can also occur from needlestick injuries in health care settings, or by being born to a Hepatitis C virus-infected mother. Risk factor information obtained through interview of acute Hepatitis C cases by public health are collected using the CDC Viral Hepatitis Case Report form and entered into an internal database for case management. For additional information on Hepatitis C infection please refer to the annual *Reportable Disease Surveillance in Virginia* reports which contain aggregate information on risk factor information including drug use for acute Hepatitis C cases, published here:

<http://www.vdh.virginia.gov/surveillance-and-investigation/virginia-reportable-disease-surveillance-data/>.

Questions on hepatitis surveillance can be directed to:

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