

## EMERGENCY DEPARTMENT VISITS FOR OVERDOSE BY OPIOID, UNSPECIFIED SUBSTANCE AND HEROIN AMONG VIRGINIA RESIDENTS

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**December 2017**

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**Please direct questions or comments to the Division of Surveillance and Investigation,  
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## Background

The Virginia Department of Health (VDH) currently receives data on visits to 77<sup>s</sup> acute care hospital emergency departments (EDs) and 13 free-standing EDs in Virginia for purposes of public health surveillance. The purpose of this report is to characterize ED visit trends for acute unintentional overdose by opioids and heroin among Virginia residents.

Chief complaints and discharge diagnoses of ED visits are analyzed by VDH to identify and monitor issues of public health concern across Virginia. 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 using standardized values defined by the International Classification of Diseases (ICD) 9<sup>th</sup> and 10<sup>th</sup> Revision code sets.

## Methodology

ED visits that are identified as **unintentional overdose by opioid or unspecified substance** include those with medical and non-medical use of a prescription opioid or where the substance is not specified, given evidence that the majority of fatal overdoses are opioid-related.<sup>1</sup> Visits must meet the following inclusion and exclusion criteria:

- Inclusion terms from Chief Complaint or Discharge Diagnosis: *overdose, OD, sobredosis, opioid, opiate, opium, narcotic, Narcan, naloxone, E850.1, E850.2, 965.00, 965.02, 965.09, 977.9, T40.0X1, T40.0X4, T40.2X1, T40.2X4, T40.3X1, T40.3X4, T40.4X1, T40.4X4, T40.601, T40.604, T40.691, T40.694, T50.901, T50.904*
- Exclusions terms from Chief Complaint or Discharge Diagnosis: *heroin, herion, heron, 965.01, T40.1X, suicide, alcohol overdose alone, withdrawal, detoxification, rehab, addiction, dependency, mental health or psychological evaluation, allergies, constipation, chronic pain, refill requests, and any specified non-opioid drug or medication*

ED visits that are identified as **unintentional overdose by heroin** must meet the following inclusion and exclusion criteria:

- Inclusion terms from Chief Complaint or Discharge Diagnosis: *heroin, herion, 965.01, E850.0, T40.1X1A, T40.1X4A*
- Exclusions terms from Chief Complaint or Discharge Diagnosis: *suicide, withdrawal, detoxification, rehab, and addiction*

These criteria were revised in September 2016 and again in August 2017 to improve specificity in the identification of ED visits for unintentional drug overdose. Readers are strongly encouraged to review [syndromic surveillance data limitations](#) when interpreting this report.

A technical issue resulted in underreporting of ED visits published in the November 2017 monthly report; this issue is corrected as of the December 2017 monthly report.

ED visits for unintentional overdose by opioid or unspecified substance and heroin are presented by count or rate per 100,000 population. Rates are calculated using U.S. Census Bureau 2016 population estimates. To protect confidentiality and maintain accurate rate calculations, ED visit counts of 1 to 4 and rates with numerators of 1 to 4 are suppressed in this report. Counts of 0 are included.

The geographic location is assigned based on the patient’s residential zip code provided. A single zip code may span multiple city and county localities in Virginia. If a patient resides in such a zip code, the visit is assigned to the locality where the majority of the population resides. Virginia city and county populations combined to calculate a rate per 100,000 population because of zip codes spanning multiple localities can be found in [Appendix 1](#).

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§ In June 2017, several data reporting changes occurred, please consider the following changes when interpreting the contents of this report. A single healthcare system in the Eastern Health Planning Region became unable to report data starting June 2017; reducing the number of reporting EDs to 77 out of an expected 82 acute care hospital EDs and 13 free-standing EDs. Any observed decreases in the count or rate of overdoses in the Eastern Region may be artificially low because of this change. Additionally, one acute care hospital ED in the Northwest Health Planning Region improved its data quality supporting more accurate capture of overdose visits, thereby increasing the count and rate for the Northwest Region as of June 2017.

## Highlights for December 2017

Statewide ED visits for overdose by opioid or unspecified substance among Virginia residents decreased by 11% from November (708 visits) to December 2017 (630 visits) with December having the lowest monthly count in 2017 (Figure 1A). The 2017 annual count of ED visits is 22% lower as compared to 2016, and 17% higher as compared to 2015 (Figure 1B).

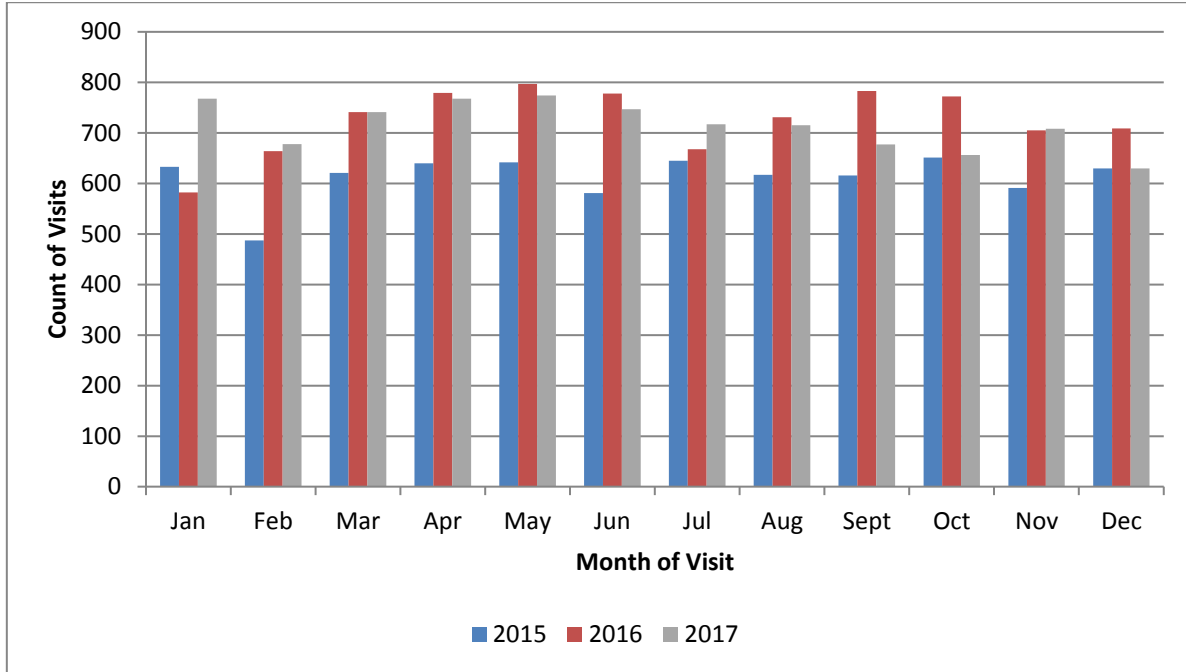
- Among the 5 [VDH health planning regions](#), rates of visits for overdose by opioid or unspecified substance have remained the highest in the Southwest and Central (both 10.8 per 100,000) regions. The lowest rates were in the Northern (5.0 per 100,000) and Eastern (5.4 per 100,000) regions (Figure 1C). The 2017 annual counts for the Central, Northwest and Southwest regions are higher than 2015 and 2016 (Figure 1D).
- By sex, there has been no significant difference in the proportion of visits for overdose by opioid or unspecified substance between females and males in the past 12 months (Figure 1E).
- By age group, the number of visits for overdose by opioid or unspecified substance among 25-34 year olds decreased by 5%, but this age group still had the highest rate in December (13.8 per 100,000) (Figure 1F).

Statewide ED visits for overdose by heroin among Virginia residents decreased by 24% from November (145 visits) to December 2017 (110 visits) (Figure 2A). The 2017 annual count of ED visits is 13% higher as compared to 2016 and 98% higher as compared to 2015 (Figure 2B).

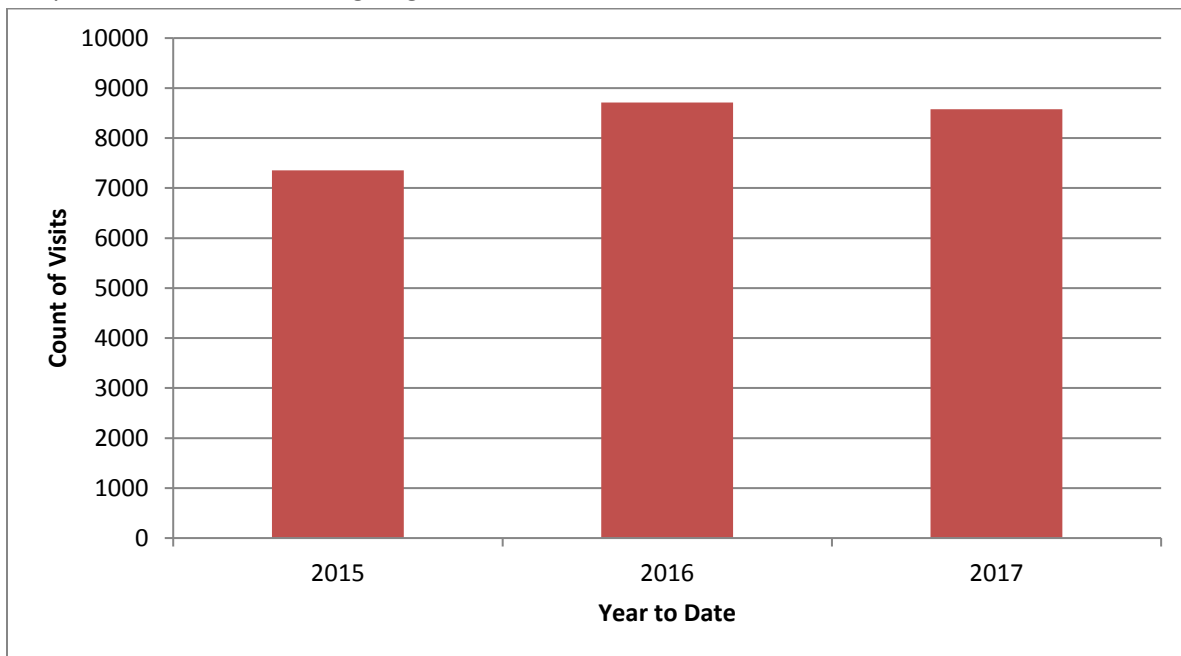
- Among the 5 [VDH health planning regions](#), rates of visits for overdose by heroin were highest in the Eastern (2.0 per 100,000) and Northwest (1.8 per 100,000) regions. The Southwest and Northwest regions saw a decrease of 48% and 35%, respectively, from the previous month (Figure 2C). The 2017 annual counts for the Northern, Northwest and Southwest regions are higher than 2015 and 2016 (Figure 2D).
- By sex, males contributed significantly ( $p$ -value < 0.01) more visits for overdose by heroin as compared to females in the past 12 months (Figure 2E).
- By age group, the rate of visits for overdose by heroin was the highest in the 25-34 year age group (3.8 per 100,000) in December 2017, and the rate for this age group has been higher than any other age groups for the past 12 months. The 45-54 year age group saw a visit decrease of 54% from November (Figure 2F).

## Emergency Department Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents

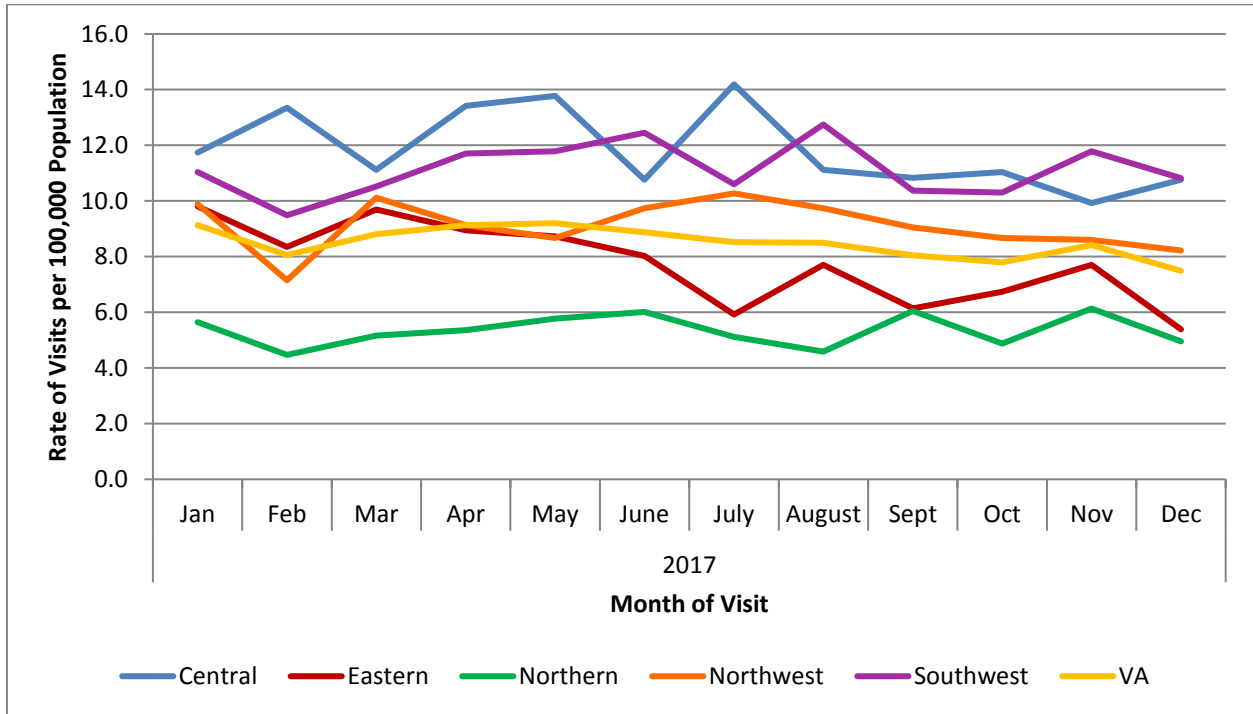
**Figure 1A.** Count of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month, 2015 - 2017.



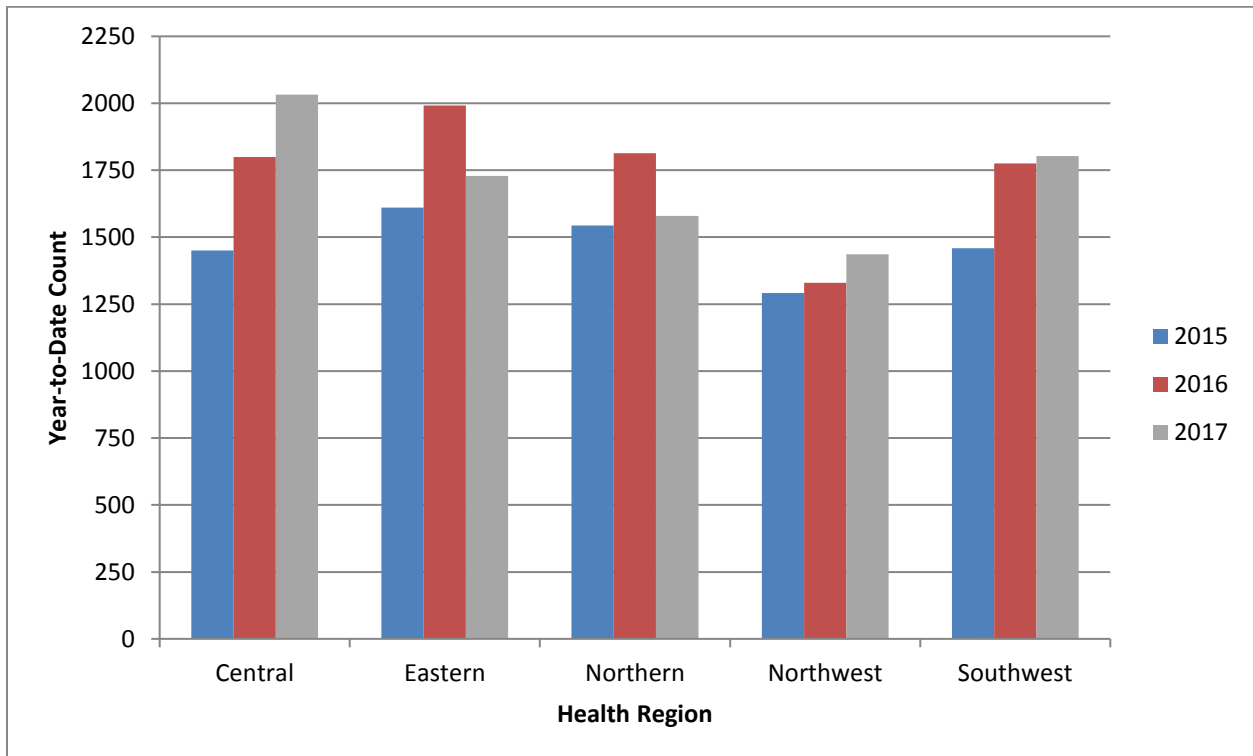
**Figure 1B.** Annual Count (January – December) of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents.



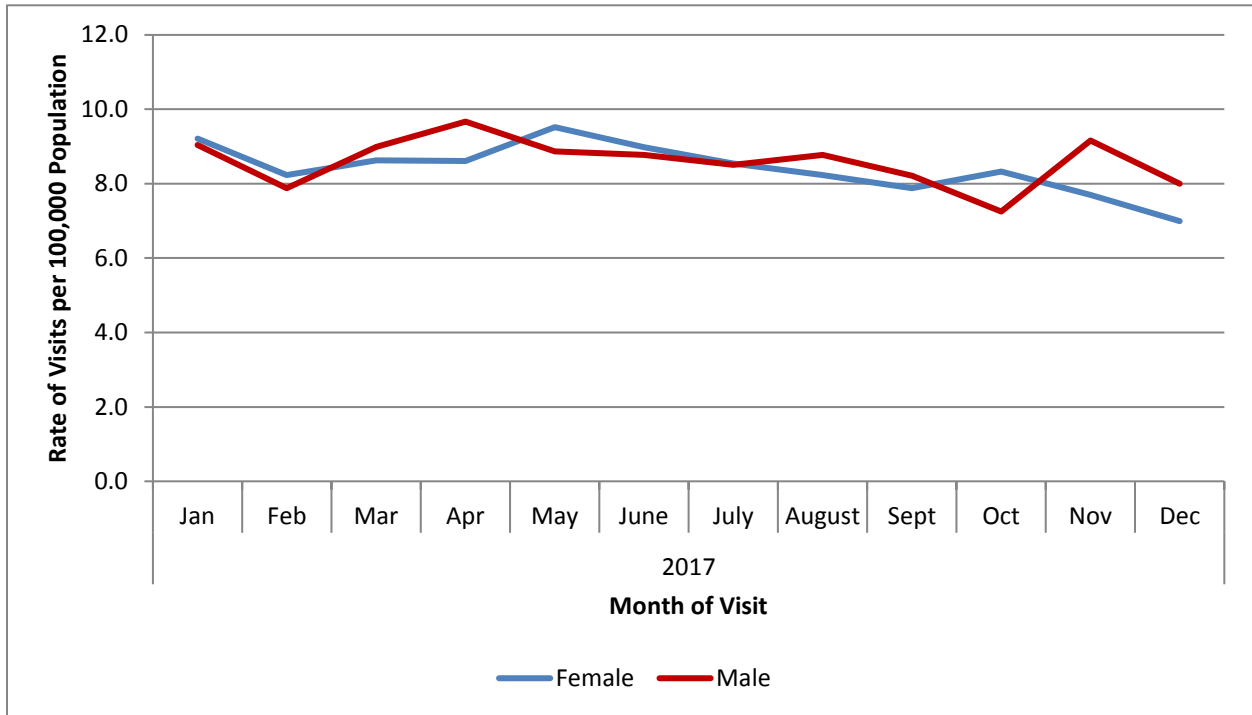
**Figure 1C.** Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Health Region, Most Recent 12 Months.



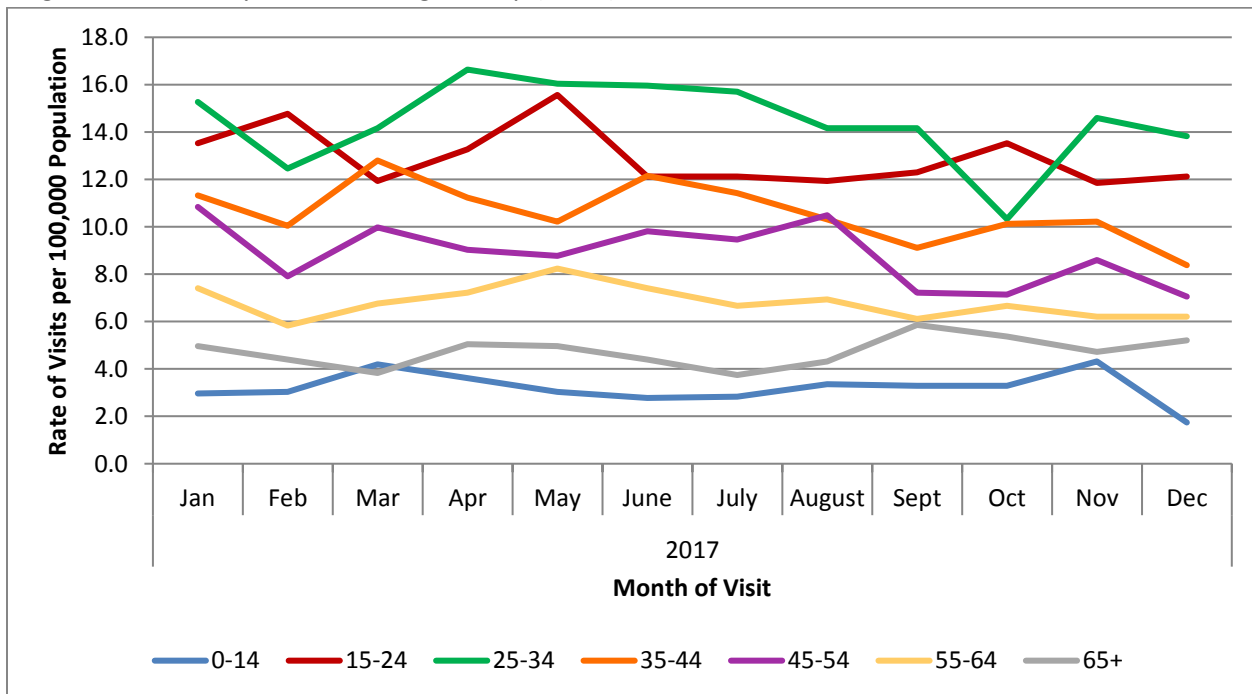
**Figure 1D.** Annual Count (January - December) of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Region.



**Figure 1E.** Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Sex, Most Recent 12 Months.



**Figure 1F.** Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Age Group (Years), Most Recent 12 Months.



**Table 1A.** Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Health District, Most Recent 5 Months\*\*

Health District	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017		5-month Average	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count <sup>†</sup>	Rate
Alexandria	155,810	6	3.9	10	6.4	15	9.6	7	4.5	8	5.1	9	5.9
Alleghany	179,082	34	19.0	25	14.0	17	9.5	19	10.6	17	9.5	22	12.5
Arlington	230,050	7	3.0	10	4.3	7	3.0	*	*	6	2.6	7	3.0
Central Shenandoah	296,650	20	6.7	27	9.1	19	6.4	18	6.1	20	6.7	21	7.0
Central Virginia	260,232	14	5.4	19	7.3	10	3.8	26	10.0	14	5.4	17	6.4
Chesapeake	237,940	29	12.2	21	8.8	25	10.5	30	12.6	19	8.0	25	10.4
Chesterfield	385,224	43	11.2	50	13.0	44	11.4	33	8.6	39	10.1	42	10.9
Chickahominy	155,278	13	8.4	12	7.7	10	6.4	8	5.2	10	6.4	11	6.8
Crater	155,665	6	3.9	7	4.5	8	5.1	9	5.8	8	5.1	8	4.9
Cumberland Plateau	106,666	7	6.6	6	5.6	10	9.4	18	16.9	17	15.9	12	10.9
Eastern Shore	45,086	0	0	*	*	0	0	0	0	0	0	0	0.4
Fairfax	1,176,830	58	4.9	72	6.1	60	5.1	71	6.0	66	5.6	65	5.6
Hampton	135,410	15	11.1	9	6.6	17	12.6	10	7.4	*	*	11	8.1
Henrico	326,501	39	11.9	36	11.0	46	14.1	40	12.3	53	16.2	43	13.1
Lenowisco	89,201	12	13.5	10	11.2	17	19.1	*	*	10	11.2	11	11.9
Lord Fairfax	232,295	26	11.2	24	10.3	23	9.9	28	12.1	34	14.6	27	11.6
Loudoun	385,945	19	4.9	26	6.7	20	5.2	36	9.3	20	5.2	24	6.3
Mount Rogers	189,178	20	10.6	20	10.6	15	7.9	13	6.9	18	9.5	17	9.1
New River	182,876	12	6.6	9	4.9	9	4.9	16	8.7	16	8.7	12	6.8
Norfolk	245,115	20	8.2	14	5.7	25	10.2	25	10.2	18	7.3	20	8.3
Peninsula	351,436	25	7.1	14	4.0	11	3.1	19	5.4	10	2.8	16	4.5
Piedmont	102,752	12	11.7	*	*	12	11.7	8	7.8	5	4.9	8	8.0
Pittsylvania-Danville	103,585	18	17.4	8	7.7	19	18.3	13	12.6	11	10.6	14	13.3
Portsmouth	95,252	14	14.7	19	19.9	9	9.4	15	15.7	16	16.8	15	15.3
Prince William	512,608	23	4.5	31	6.0	18	3.5	33	6.4	22	4.3	25	5.0
Rappahannock	360,830	38	10.5	31	8.6	23	6.4	22	6.1	22	6.1	27	7.5
Rappahannock-Rapidan	175,151	22	12.6	18	10.3	25	14.3	21	12.0	15	8.6	20	11.5
Richmond City	223,170	34	15.2	43	19.3	35	15.7	37	16.6	30	13.4	36	16.0
Roanoke	99,660	36	36.1	24	24.1	18	18.1	32	32.1	24	24.1	27	26.9
Southside	82,127	12	14.6	*	*	*	*	7	8.5	9	11.0	7	8.3
Thomas Jefferson	249,537	22	8.8	19	7.6	24	9.6	24	9.6	17	6.8	21	8.5
Three Rivers	140,950	7	5.0	8	5.7	7	5.0	6	4.3	*	*	6	4.5
Virginia Beach	452,602	22	4.9	17	3.8	20	4.4	34	7.5	22	4.9	23	5.1
West Piedmont	138,882	19	13.7	19	13.7	24	17.3	18	13.0	19	13.7	20	14.3
Western Tidewater	152,232	11	7.2	11	7.2	11	7.2	*	*	7	4.6	9	5.8
<b>VIRGINIA TOTAL</b>	<b>8,411,808</b>	<b>715</b>	<b>8.5</b>	<b>677</b>	<b>8.0</b>	<b>656</b>	<b>7.8</b>	<b>708</b>	<b>8.4</b>	<b>630</b>	<b>7.5</b>	<b>677</b>	<b>8.1</b>

† Population based on 2016 U.S. Census estimates available at [www.census.gov/popest/](http://www.census.gov/popest/)

\* Visit counts of 1 to 4 and rates with numerators of 1 to 4 are suppressed to maintain confidentiality and accurate rate calculations.

^ The 5-month average count was rounded to the nearest integer.

**Table 1B.** Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and City/County Locality, Most Recent 5 Months<sup>†‡\*</sup>

Locality	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Accomack County	32,947	0	0	*	*	0	0	0	0	0	0
Albemarle County <sup>†</sup>	153,790	15	9.8	9	7.8	9	9.1	*	*	*	*
Alleghany County <sup>†</sup>	21,113	*	*	*	*	*	*	0	0	*	*
Amelia County	12,913	*	*	*	*	*	*	*	*	*	*
Amherst County	31,633	*	*	*	*	*	*	*	*	*	*
Appomattox County	15,475	0	0	*	*	0	0	0	0	0	0
Arlington County	230,050	7	3.0	10	4.3	7	3.0	*	*	6	2.6
Augusta County <sup>‡</sup>	121,247	9	7.4	*	*	*	*	*	*	*	*
Bath County	4,476	0	0	0	0	0	0	0	0	*	*
Bedford County	77,960	*	*	7	9.0	*	*	9	11.5	6	7.7
Bland County	6,513	0	0	0	0	0	0	0	0	0	0
Botetourt County	33,231	*	*	*	*	*	*	*	*	*	*
Brunswick County	16,243	5	30.8	0	0	0	0	0	0	*	*
Buchanan County	22,178	*	*	0	0	*	*	0	0	*	*
Buckingham County	17,048	*	*	0	0	*	*	*	*	0	0
Campbell County	54,952	*	*	0	0	*	*	7	12.7	*	*
Caroline County	30,178	*	*	6	19.9	*	*	*	*	6	19.9
Carroll County	29,531	*	*	5	16.9	*	*	*	*	*	*
Charles City County	7,071	*	*	*	*	*	*	0	0	*	*
Charlotte County	12,129	*	*	0	0	*	*	0	0	*	*
Chesterfield County <sup>†</sup>	356,781	41	11.5	43	12.3	41	11.8	31	8.7	35	10.1
Clarke County	14,374	*	*	*	*	0	0	0	0	*	*
Craig County	5,158	*	*	0	0	*	*	*	*	0	0
Culpeper County	50,083	*	*	6	12.0	5	10.0	6	12.0	6	12.0
Cumberland County	9,652	0	0	0	0	0	0	0	0	*	*
Dickenson County	14,968	*	*	*	*	*	*	*	*	5	33.4
Dinwiddie County	28,144	*	*	0	0	0	0	0	0	*	*
Essex County	11,123	0	0	*	*	0	0	*	*	0	0
Fairfax County <sup>†</sup>	1,176,830	58	4.9	68	6.1	57	5.1	70	6.0	66	5.6
Fauquier County	69,069	13	18.8	8	11.6	11	15.9	11	15.9	7	10.1
Floyd County	15,731	0	0	0	0	0	0	0	0	0	0
Fluvanna County	26,271	*	*	*	*	*	*	*	*	*	*
Franklin County	56,069	6	10.7	5	8.9	6	10.7	*	*	*	*
Frederick County <sup>†</sup>	111,937	12	10.7	*	*	8	12.5	7	13.4	8	16.1
Giles County	16,857	*	*	*	*	*	*	*	*	*	*
Gloucester County	37,214	0	0	0	0	0	0	*	*	0	0
Goochland County	22,668	0	0	*	*	0	0	0	0	*	*



Locality	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Grayson County <sup>†</sup>	21,882	6	27.4	*	*	*	*	0	0	*	*
Greene County	19,371	*	*	*	*	*	*	*	*	*	*
Greensville County <sup>†</sup>	17,011	0	0	*	*	*	*	*	*	*	*
Halifax County	34,992	*	*	*	*	*	*	*	*	*	*
Hanover County	104,392	11	10.5	9	8.6	8	7.7	7	6.7	5	4.8
Henrico County	326,501	39	11.9	36	11.0	46	14.1	40	12.3	53	16.2
Henry County <sup>†</sup>	64,890	12	18.5	13	20.0	15	23.1	14	21.6	17	27.7
Highland County	2,216	0	0	0	0	0	0	0	0	0	0
Isle of Wight County	36,596	0	0	*	*	*	*	0	0	*	*
James City County	74,404	*	*	5	6.7	*	*	5	6.7	0	0
King and Queen County	7,159	0	0	0	0	0	0	0	0	*	*
King George County	25,984	*	*	*	*	*	*	*	*	*	*
King William County	16,334	*	*	*	*	*	*	*	*	*	*
Lancaster County	10,972	*	*	*	*	*	*	*	*	0	0
Lee County	24,179	0	0	*	*	*	*	*	*	*	*
Loudoun County	385,945	19	4.9	26	6.7	20	5.2	36	9.3	20	5.2
Louisa County	35,236	*	*	*	*	5	14.2	9	25.5	6	17.0
Lunenburg County	12,273	*	*	*	*	0	0	*	*	*	*
Madison County	13,078	0	0	0	0	0	0	*	*	0	0
Mathews County	8,782	0	0	0	0	0	0	0	0	0	0
Mecklenburg County	30,892	*	*	*	*	*	*	*	*	*	*
Middlesex County	10,778	0	0	*	*	*	*	0	0	0	0
Montgomery County <sup>†</sup>	116,085	6	5.2	*	*	*	*	10	9.5	6	6.9
Nelson County	14,869	*	*	0	0	*	*	*	*	0	0
New Kent County	21,147	*	*	*	*	*	*	*	*	0	0
Northampton County	12,139	0	0	0	0	0	0	0	0	0	0
Northumberland County	12,222	*	*	*	*	*	*	0	0	0	0
Nottoway County	15,595	0	0	0	0	*	*	*	*	0	0
Orange County	35,533	5	14.1	*	*	9	25.3	*	*	*	*
Page County	23,654	*	*	5	21.1	*	*	0	0	*	*
Patrick County	17,923	*	*	*	*	*	*	*	*	0	0
Pittsylvania County <sup>†</sup>	103,585	18	17.4	*	*	*	*	*	*	*	*
Powhatan County	28,443	*	*	6	21.1	*	*	*	*	*	*
Prince Edward County	23,142	*	*	0	0	*	*	0	0	0	0
Prince George County	92,462	5	5.4	*	*	*	*	*	*	0	0
Prince William County <sup>†</sup>	512,608	23	4.5	30	6.0	17	3.5	32	6.4	19	4.3
Pulaski County	34,203	*	*	5	14.6	*	*	*	*	*	*
Rappahannock County	7,388	*	*	0	0	0	0	0	0	0	0
Richmond County	8,774	0	0	0	0	0	0	*	*	0	0
Roanoke County <sup>†</sup>	219,240	64	29.2	10	18.7	5	13.2	9	20.5	6	17.3

Locality	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Rockbridge County <sup>†</sup>	35,889	*	*	*	*	*	*	*	*	*	*
Rockingham County <sup>†</sup>	132,822	7	5.3	*	*	7	6.8	7	6.0	*	*
Russell County	27,370	*	*	*	*	*	*	9	32.9	*	*
Scott County	21,930	*	*	0	0	*	*	0	0	0	0
Shenandoah County	43,175	*	*	6	13.9	5	11.6	6	13.9	7	16.2
Smyth County	31,062	*	*	5	16.1	5	16.1	*	*	*	*
Southampton County <sup>†</sup>	26,363	*	*	*	*	0	0	0	0	*	*
Spotsylvania County	132,010	11	8.3	11	8.3	8	6.1	11	8.3	8	6.1
Stafford County	144,361	14	9.7	5	3.5	7	4.8	*	*	6	4.2
Surry County	6,544	0	0	0	0	*	*	0	0	0	0
Sussex County	11,504	0	0	*	*	0	0	*	*	0	0
Tazewell County	42,150	0	0	*	*	*	*	6	14.2	5	11.9
Warren County	39,155	7	17.9	5	12.8	*	*	7	17.9	*	*
Washington County <sup>†</sup>	71,174	6	8.4	5	7.0	*	*	*	*	0	0
Westmoreland County	17,592	*	*	*	*	*	*	0	0	*	*
Wise County <sup>†</sup>	43,092	11	25.5	6	18.6	12	27.8	*	*	5	16.2
Wythe County	29,016	*	*	*	*	0	0	*	*	*	*
York County	67,976	6	8.8	*	*	*	*	*	*	*	*
Alexandria City	155,810	6	3.9	10	6.4	15	9.6	7	4.5	8	5.1
Bristol City <sup>†</sup>	71,174	6	8.4	0	0	0	0	0	0	*	*
Buena Vista City <sup>†</sup>	35,889	*	*	*	*	*	*	*	*	*	*
Charlottesville City <sup>†</sup>	153,790	15	9.8	*	*	5	9.1	6	6.5	*	*
Chesapeake City	237,940	29	12.2	21	8.8	25	10.5	30	12.6	19	8.0
Colonial Heights City <sup>†</sup>	356,781	41	11.5	*	*	*	*	0	0	*	*
Covington City <sup>†</sup>	21,113	*	*	0	0	0	0	0	0	0	0
Danville City <sup>†</sup>	103,585	18	17.4	7	7.7	16	18.3	9	12.6	10	10.6
Emporia City <sup>†</sup>	17,011	0	0	0	0	0	0	0	0	0	0
Fairfax City <sup>†</sup>	1,176,830	58	4.9	*	*	0	0	0	0	0	0
Falls Church City <sup>†</sup>	1,176,830	58	4.9	*	*	*	*	*	*	0	0
Franklin City <sup>†</sup>	26,363	*	*	*	*	*	*	0	0	*	*
Fredericksburg City	28,297	9	31.8	6	21.2	*	*	5	17.7	*	*
Galax City <sup>†</sup>	21,882	6	27.4	*	*	*	*	*	*	9	45.7
Hampton City	135,410	15	11.1	9	6.6	17	12.6	10	7.4	*	*
Harrisonburg City <sup>†</sup>	132,822	7	5.3	*	*	*	*	*	*	*	*
Hopewell City <sup>†</sup>	92,462	5	5.4	*	*	*	*	*	*	*	*
Lexington City <sup>†</sup>	35,889	*	*	0	0	0	0	0	0	0	0
Lynchburg City	80,212	8	10.0	8	10.0	*	*	9	11.2	5	6.2
Manassas City <sup>†</sup>	512,608	23	4.5	*	*	*	*	*	*	*	*
Manassas Park City <sup>†</sup>	512,608	23	4.5	0	0	0	0	0	0	0	0
Martinsville City <sup>†</sup>	64,890	12	18.5	0	0	0	0	0	0	*	*

Locality	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Newport News City	181,825	15	8.2	6	3.3	5	2.7	11	6.0	7	3.8
Norfolk City	245,115	20	8.2	14	5.7	25	10.2	25	10.2	18	7.3
Norton City <sup>†</sup>	43,092	11	25.5	*	*	0	0	*	*	*	*
Petersburg City <sup>‡</sup>	92,462	5	5.4	0	0	0	0	*	*	*	*
Poquoson City	12,017	*	*	*	*	0	0	0	0	*	*
Portsmouth City	95,252	14	14.7	19	19.9	9	9.4	15	15.7	16	16.8
Radford City <sup>‡</sup>	116,085	6	5.2	*	*	*	*	*	*	*	*
Richmond City	223,170	34	15.2	43	19.3	35	15.7	37	16.6	30	13.4
Roanoke City <sup>‡</sup>	219,240	64	29.2	24	18.7	18	13.2	32	20.5	24	17.3
Salem City <sup>‡</sup>	219,240	64	29.2	7	18.7	6	13.2	*	*	8	17.3
Staunton City <sup>‡</sup>	121,247	9	7.4	5	14.0	*	*	*	*	*	*
Suffolk City	89,273	7	7.8	8	9.0	7	7.8	*	*	*	*
Virginia Beach City	452,602	22	4.9	17	3.8	20	4.4	34	7.5	22	4.9
Waynesboro City <sup>‡</sup>	121,247	9	7.4	9	14.0	*	*	*	*	*	*
Williamsburg City	15,214	0	0	0	0	0	0	0	0	0	0
Winchester City <sup>‡</sup>	111,937	12	10.7	*	*	6	12.5	8	13.4	10	16.1
<b>VIRGINIA TOTAL</b>	<b>8,411,808</b>	<b>715</b>	<b>8.5</b>	<b>677</b>	<b>8.0</b>	<b>656</b>	<b>7.8</b>	<b>708</b>	<b>8.4</b>	<b>630</b>	<b>7.5</b>

† Population based on 2016 U.S. Census estimates available at [www.census.gov/popest/](http://www.census.gov/popest/)

‡ The rate per 100,000 population for each locality within a combined group is based on the aggregated total population of the combined group. Refer to [Appendix 1](#) for the list of localities that are combined.

\* Visit counts of 1 to 4 and rates with numerators of 1 to 4 are suppressed to maintain confidentiality and accurate rate calculations.

**Table 1C.** Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Virginia State Police Division, Most Recent 5 Months<sup>†\*§</sup>

VSP Division	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,414,861	152	10.7	168	11.9	162	11.4	147	10.4	157	11.1
Division 2	844,936	89	10.5	71	8.4	75	8.9	76	9.0	70	8.3
Division 3	657,948	55	8.4	49	7.4	39	5.9	50	7.6	38	5.8
Division 4	436,105	45	10.3	42	9.6	46	10.5	40	9.2	53	12.2
Division 5	1,823,149	141	7.7	109	6.0	124	6.8	140	7.7	98	5.4
Division 6	773,566	120	15.5	89	11.5	90	11.6	104	13.4	92	11.9
Division 7	2,461,243	113	4.6	149	6.1	120	4.9	151	6.1	122	5.0
<b>VIRGINIA TOTAL</b>	<b>8,411,808</b>	<b>715</b>	<b>8.5</b>	<b>677</b>	<b>8.0</b>	<b>656</b>	<b>7.8</b>	<b>708</b>	<b>8.4</b>	<b>630</b>	<b>7.5</b>

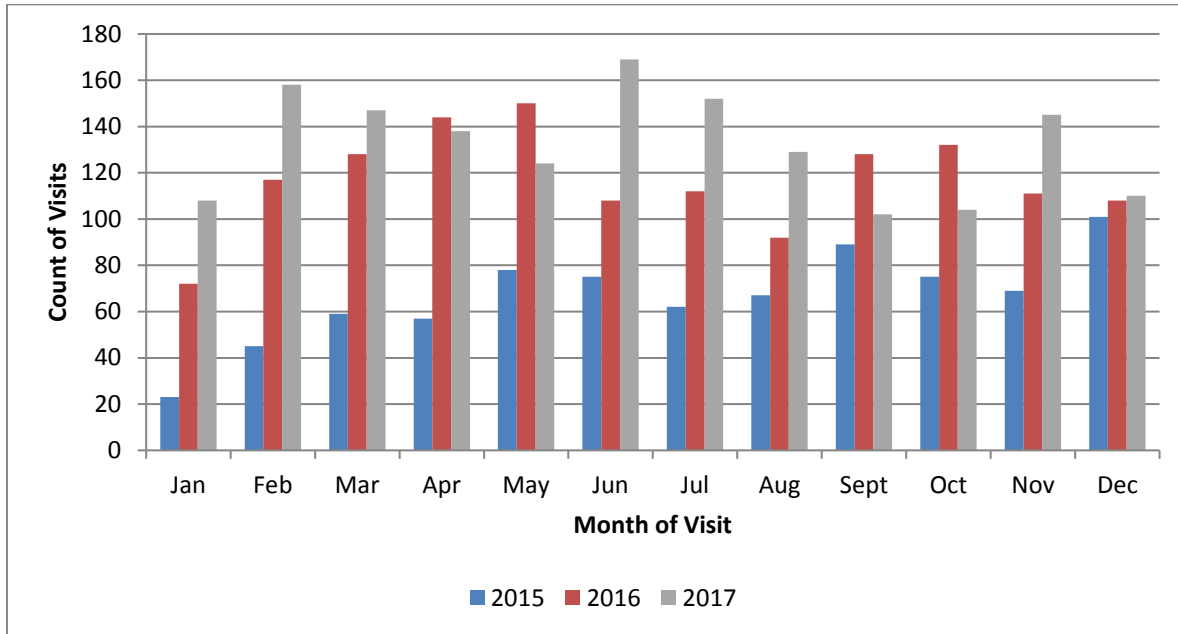
† Population based on 2016 U.S. Census estimates available at [www.census.gov/popest/](http://www.census.gov/popest/)

\* Visit counts of 1 to 4 and rates with numerators of 1 to 4 are suppressed to maintain confidentiality and accurate rate calculations.

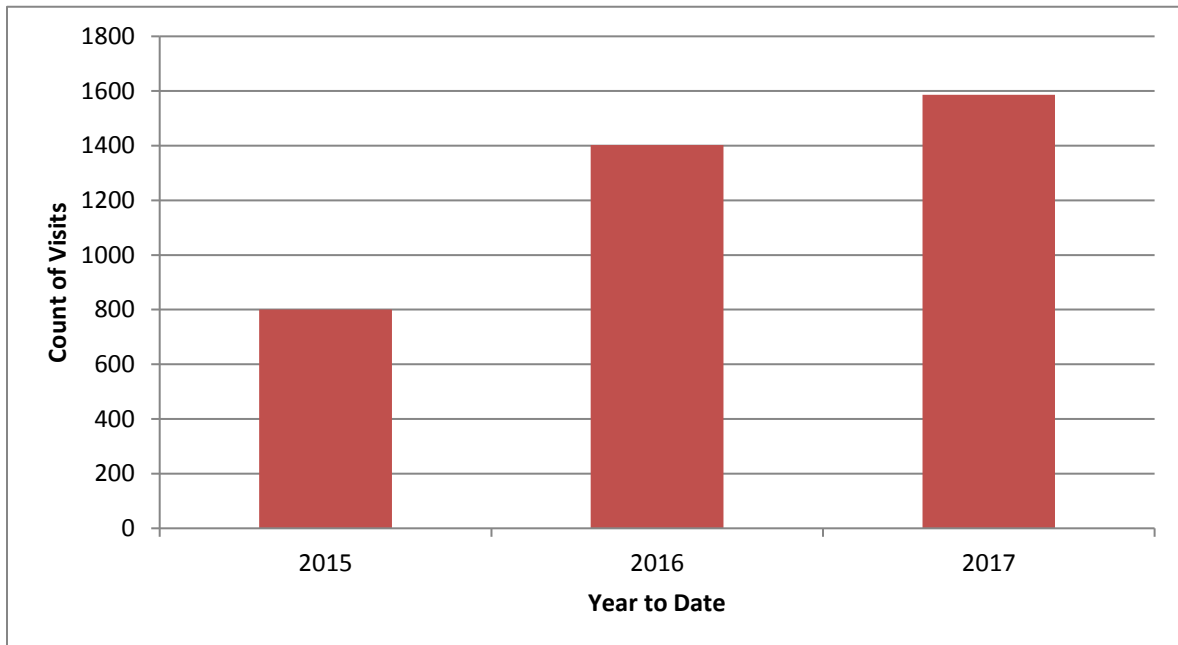
§ Virginia State Police Divisions available at [http://www.vsp.state.va.us/Office\\_Locations.shtm](http://www.vsp.state.va.us/Office_Locations.shtm)

## Emergency Department Visits for Unintentional Overdose by Heroin among Virginia Residents

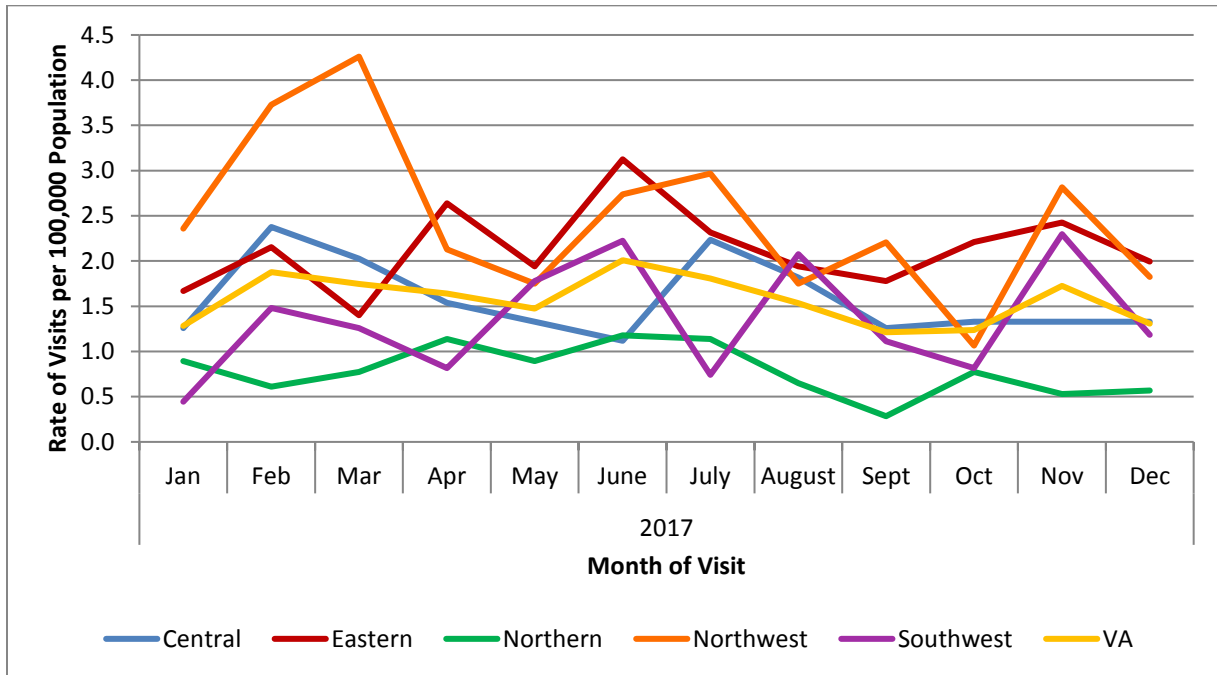
**Figure 2A.** Count of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month, 2015 – 2017.



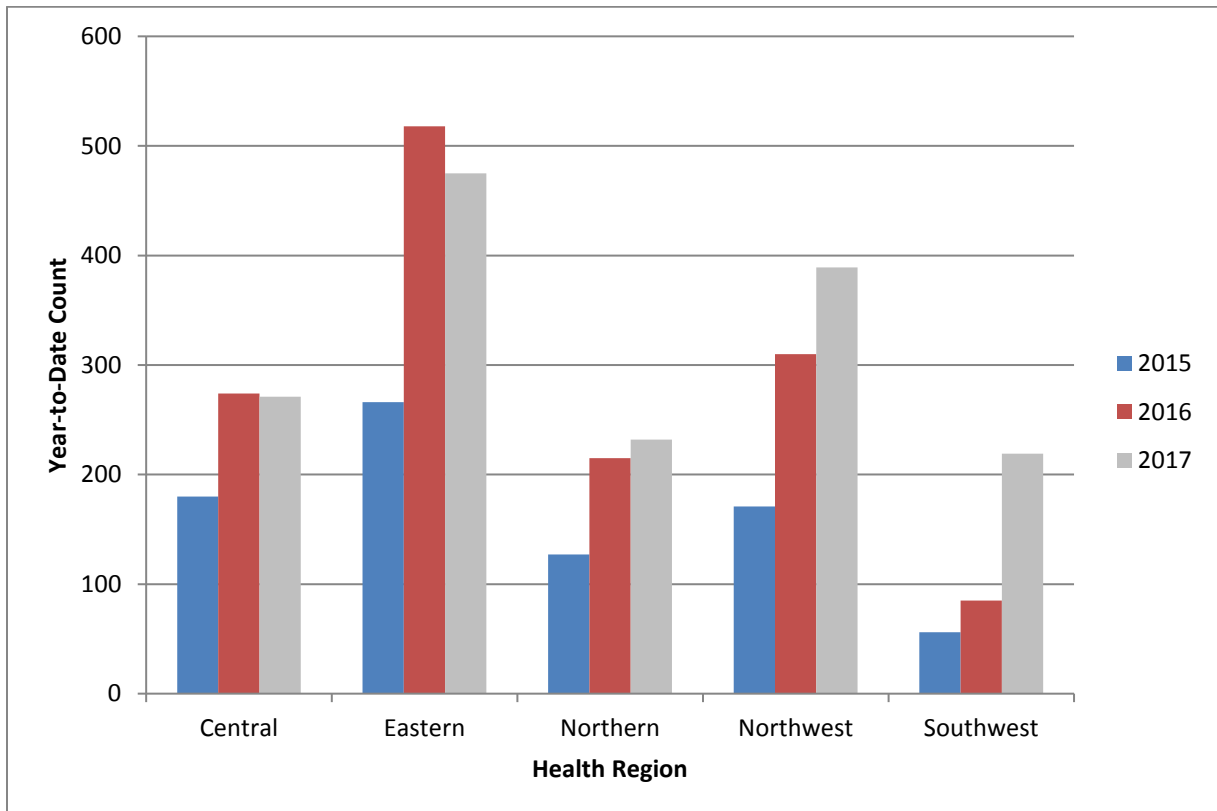
**Figure 2B.** Annual Count (January – December) of ED Visits for Unintentional Overdose by Heroin among Virginia Residents.



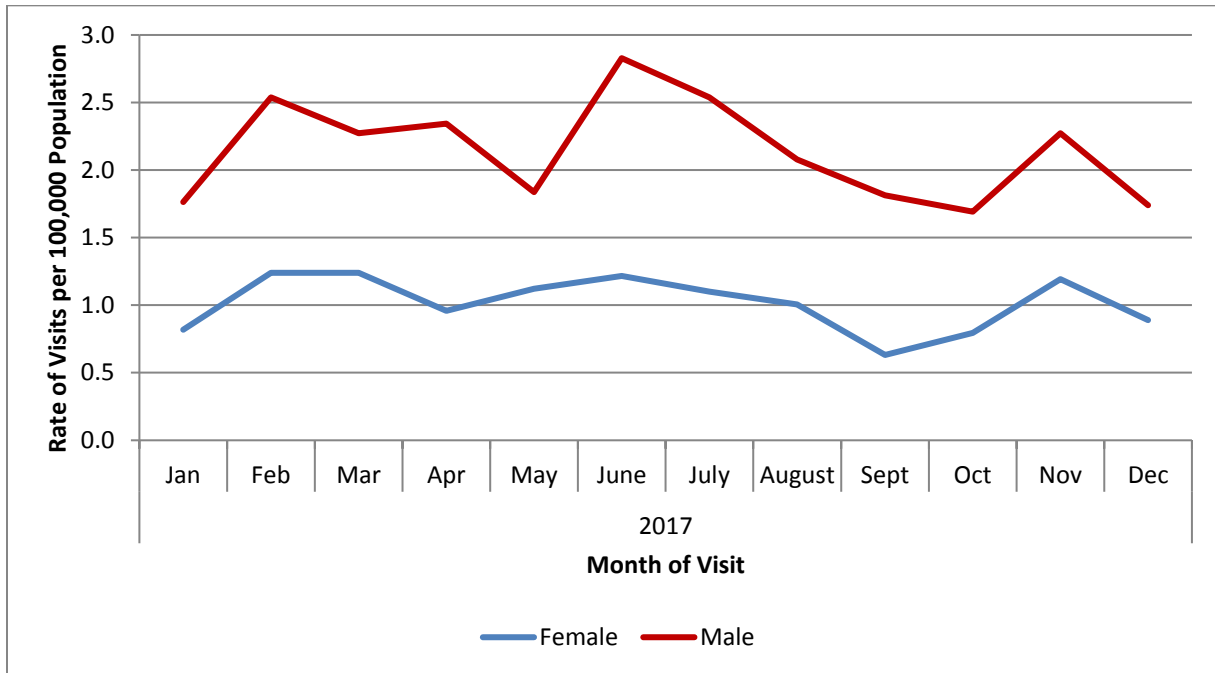
**Figure 2C.** Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Health Region, Most Recent 12 Months.



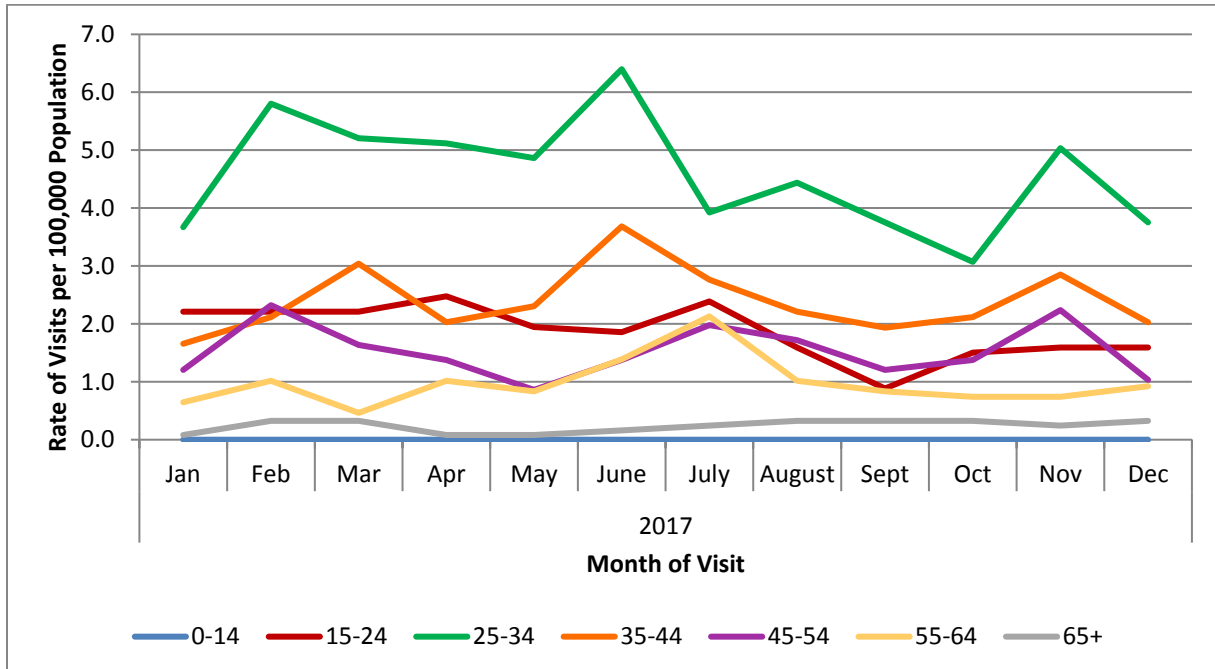
**Figure 2D.** Annual Count (January - December) of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Region.



**Figure 2E.** Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Sex, Most Recent 12 Months.



**Figure 2F.** Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Age Group (Years), Most Recent 12 Months.



**Table 2A.** Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Health District, Most Recent 5 Months<sup>†\*</sup>

Health District	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017		5-month Average	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count <sup>^</sup>	Rate
Alexandria	155,810	*	*	0	0	*	*	0	0	*	*	1	0.6
Alleghany	179,082	10	5.6	*	*	*	*	11	6.1	*	*	6	3.6
Arlington	230,050	0	0	*	*	*	*	*	*	*	*	1	0.6
Central Shenandoah	296,650	*	*	*	*	*	*	*	*	0	0	2	0.5
Central Virginia	260,232	0	0	*	*	0	0	0	0	*	*	1	0.4
Chesapeake	237,940	7	2.9	7	2.9	5	2.1	*	*	6	2.5	6	2.4
Chesterfield	385,224	13	3.4	6	1.6	6	1.6	*	*	9	2.3	7	1.9
Chickahominy	155,278	*	*	*	*	*	*	*	*	*	*	2	1.2
Crater	155,665	*	*	5	3.2	*	*	0	0	0	0	2	1.3
Cumberland Plateau	106,666	0	0	0	0	0	0	0	0	0	0	0	0.0
Eastern Shore	45,086	0	0	0	0	0	0	0	0	0	0	0	0.0
Fairfax	1,176,830	7	0.6	5	0.4	7	0.6	5	0.4	7	0.6	6	0.5
Hampton	135,410	*	*	0	0	*	*	5	3.7	*	*	3	2.1
Henrico	326,501	6	1.8	*	*	*	*	9	2.8	*	*	5	1.5
Lenowisco	89,201	0	0	0	0	0	0	0	0	0	0	0	0.0
Lord Fairfax	232,295	*	*	5	2.2	*	*	6	2.6	6	2.6	4	1.9
Loudoun	385,945	*	*	0	0	*	*	0	0	*	*	1	0.2
Mount Rogers	189,178	*	*	0	0	0	0	0	0	0	0	0	0.1
New River	182,876	*	*	0	0	0	0	*	*	*	*	1	0.7
Norfolk	245,115	11	4.5	7	2.9	9	3.7	9	3.7	9	3.7	9	3.7
Peninsula	351,436	*	*	*	*	*	*	*	*	0	0	3	0.7
Piedmont	102,752	0	0	0	0	*	*	*	*	0	0	1	0.6
Pittsylvania-Danville	103,585	0	0	0	0	0	0	0	0	0	0	0	0.0
Portsmouth	95,252	6	6.3	5	5.2	6	6.3	10	10.5	10	10.5	7	7.8
Prince William	512,608	7	1.4	*	*	7	1.4	*	*	*	*	5	0.9
Rappahannock	360,830	7	1.9	7	1.9	8	2.2	16	4.4	6	1.7	9	2.4
Rappahannock-Rapidan	175,151	8	4.6	6	3.4	*	*	7	4.0	8	4.6	6	3.4
Richmond City	223,170	*	*	*	*	*	*	*	*	*	*	3	1.5
Roanoke	99,660	11	11.0	7	7.0	7	7.0	15	15.1	8	8.0	10	9.6
Southside	82,127	*	*	0	0	0	0	0	0	0	0	0	0.2
Thomas Jefferson	249,537	*	*	9	3.6	*	*	6	2.4	*	*	5	1.8
Three Rivers	140,950	*	*	0	0	0	0	*	*	0	0	1	0.7
Virginia Beach	452,602	*	*	8	1.8	12	2.7	10	2.2	7	1.5	8	1.8
West Piedmont	138,882	*	*	*	*	0	0	*	*	*	*	2	1.3
Western Tidewater	152,232	*	*	*	*	*	*	*	*	*	*	2	1.3
<b>VIRGINIA TOTAL</b>	<b>8,411,808</b>	<b>129</b>	<b>1.5</b>	<b>102</b>	<b>1.2</b>	<b>104</b>	<b>1.2</b>	<b>145</b>	<b>1.7</b>	<b>110</b>	<b>1.3</b>	<b>118</b>	<b>1.4</b>

<sup>†</sup> Population based on 2016 U.S. Census estimates available at [www.census.gov/popest/](http://www.census.gov/popest/)

\* Visit counts of 1 to 4 and rates with numerators of 1 to 4 are suppressed to maintain confidentiality and accurate rate calculations.

<sup>^</sup> The 5-month average count was rounded to the nearest integer.



**Table 2B.** Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Virginia State Police Division, Most Recent 5 Months<sup>†§</sup>

VSP Division	2016 Population Estimate	Aug 2017		Sept 2017		Oct 2017		Nov 2017		Dec 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,414,861	30	2.1	19	1.3	19	1.3	27	1.9	20	1.4
Division 2	844,936	18	2.1	17	2.0	11	1.3	27	3.2	20	2.4
Division 3	657,948	*	*	10	1.5	*	*	5	0.8	*	*
Division 4	436,105	*	*	0	0	0	0	0	0	0	0
Division 5	1,823,149	34	1.9	35	1.9	43	2.4	42	2.3	37	2.0
Division 6	773,566	27	3.5	14	1.8	11	1.4	31	4.0	16	2.1
Division 7	2,461,243	16	0.7	7	0.3	19	0.8	13	0.5	14	0.6
<b>VIRGINIA TOTAL</b>	<b>8,411,808</b>	<b>129</b>	<b>1.5</b>	<b>102</b>	<b>1.2</b>	<b>104</b>	<b>1.2</b>	<b>145</b>	<b>1.7</b>	<b>110</b>	<b>1.3</b>

† Population based on 2016 U.S. Census estimates available at [www.census.gov/popest/](http://www.census.gov/popest/)

\* Visit counts of 1 to 4 and rates with numerators of 1 to 4 are suppressed to maintain confidentiality and accurate rate calculations.

§ Virginia State Police Divisions available at [http://www.vsp.state.va.us/Office\\_Locations.shtm](http://www.vsp.state.va.us/Office_Locations.shtm)

## Appendix 1

Virginia Localities that are Combined for the Purposes of Calculating Rate per 100,000 Population

- Alleghany County and Covington City
- Albemarle County and Charlottesville City
- Augusta County, Staunton City, and Waynesboro City
- Chesterfield County and Colonial Heights City
- Frederick County and Winchester City
- Fairfax County, Fairfax City, and Falls Church City
- Grayson County and Galax City
- Greensville County and Emporia City
- Henry County and Martinsville City
- Montgomery County and Radford City
- Pittsylvania County and Danville City
- Prince George County, Hopewell City, and Petersburg City
- Prince William County, Manassas City, and Manassas Park City
- Roanoke County, Roanoke City, and Salem City
- Rockingham County and Harrisonburg City
- Rockbridge County, Buena Vista City, and Lexington City
- Southampton County and Franklin City
- Washington County and Bristol City
- Wise County and Norton City