VDH VIRGINIA DEPARTMENT OF HEALTH

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

March 2018

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Please direct questions or comments to the Division of Surveillance and Investigation, Enhanced Surveillance Team: syndromic@vdh.virginia.gov

Background

The Virginia Department of Health (VDH) currently receives data on visits to 78¶ 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) 9th and 10th Revision code sets.

Methodology

ED visits 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.[1] 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 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, 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.

¶ Refer to Appendix 2 for a summary of data reporting changes that should be considered when interpreting this report.

Highlights for March 2018

Statewide ED visits for overdose by opioid or unspecified substance among Virginia residents increased by 13% from February 2018 (593 visits) to March 2018 (672 visits) with March having the highest monthly count since September 2017 (Figure 1A). The total Year-to-Date (January to March) count of ED visits is 16% lower in 2018 as compared to 2017, and 6% lower as compared to 2016 (Figure 1B).

- Among the five VDH Health Planning Regions, rates of visits for overdose by opioid or unspecified substance were highest in the Central (12.1 per 100,000) and Northwest (10.5 per 100,000) regions. The lowest rates were in the Eastern (4.6 per 100,000) and Northern (5.8 per 100,000) regions (Figure 1C). The Year-to-Date 2018 counts for the Northern and Northwest regions are higher than their 2017 visit counts (Figure 1D).
- By sex, males contributed significantly ($p < 0.05$) more visits for overdose by opioids or unspecified substance as compared to females in March 2018 (Figure 1E). This is a change from the prior 4 months where no significant difference between males and females was observed.
- By age group, the number of visits for overdose by opioid or unspecified substance among 25-34 year olds increased by 30%, and remained the age group with the highest rate (14.9 per 100,000) in March (Figure 1F). The 35-44 and 55-64 year old age groups saw a visit increase of 41% (12.6 per 100,000) and 25% (6.8 per 100,000), respectively, from February 2018.

Statewide ED visits for overdose by heroin among Virginia residents decreased by 8% from February 2018 (113 visits) to March 2018 (104 visits) (Figure 2A). The total Year-to-Date (January to March) count of ED visits is 30% lower in 2018 compared to 2017, and 3% lower as compared to 2016 (Figure 2B).

- Among the five VDH Health Planning Regions, rates of visits for overdose by heroin were highest in the Central region (2.3 per 100,000), where an increase in visits for heroin overdoses was observed between February and March 2018. All other regions experienced a visit decrease in March 2018. (Figure 2C). The Year-to-Date 2018 counts for all regions are lower than their 2017 visit counts (Figure 2D).
- By sex, males contributed significantly ($p < 0.05$) more visits for overdose by heroin as compared to females in the past 12 months, and have since October 2016 (Figure 2E).
- By age group, the rate of visits for overdose by heroin was the highest in the 25-34 year old age group (4.4 per 100,000) in March 2018, and the rate for this age group has been higher than any other age groups since January 2015 when reporting by VDH began. The 35-44 and 45-54 year old age groups saw a visit decrease of 48% (1.2 per 100,000) and 46% (0.6 per 100,000), respectively, from February 2018 (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, 2016 - 2018.

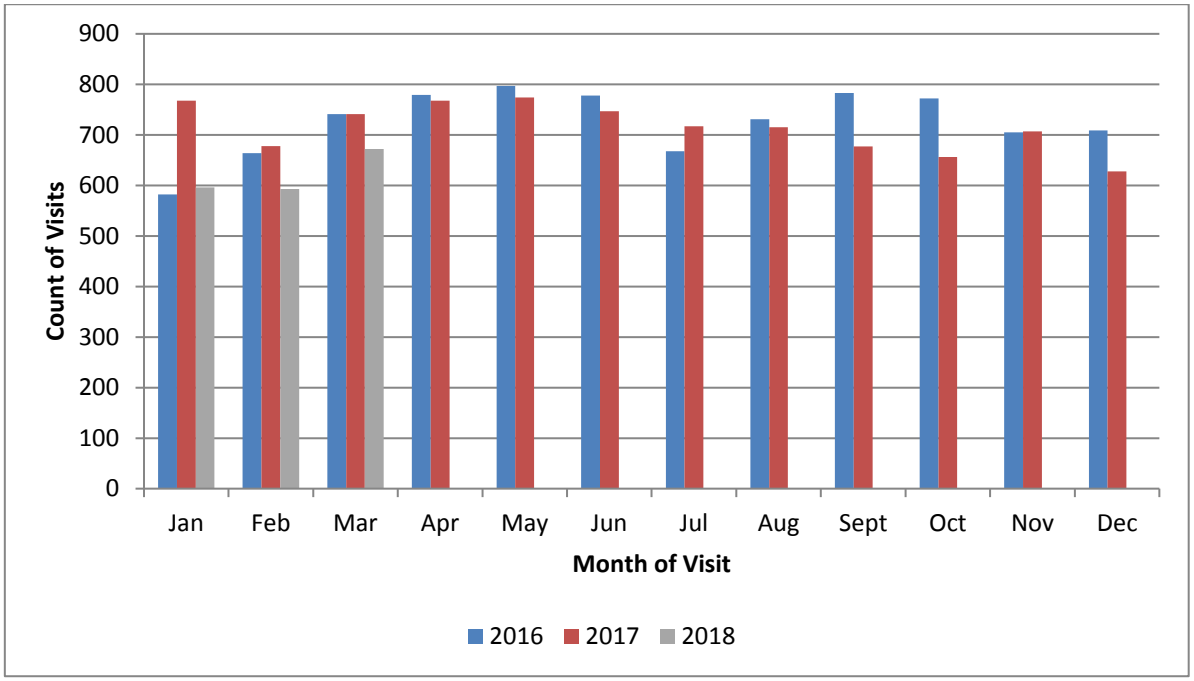

Figure 1B. Year-to-Date Count (January-March) of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Year.

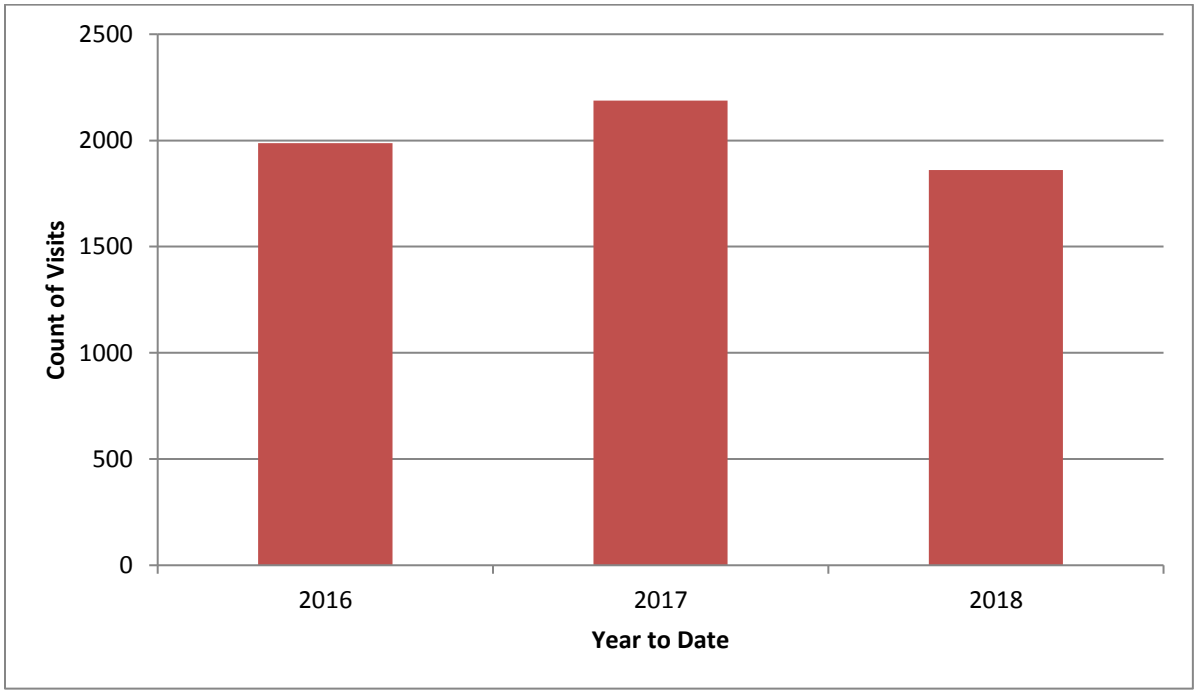

Figure 1C. Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Health Region, Most Recent 12 Months.

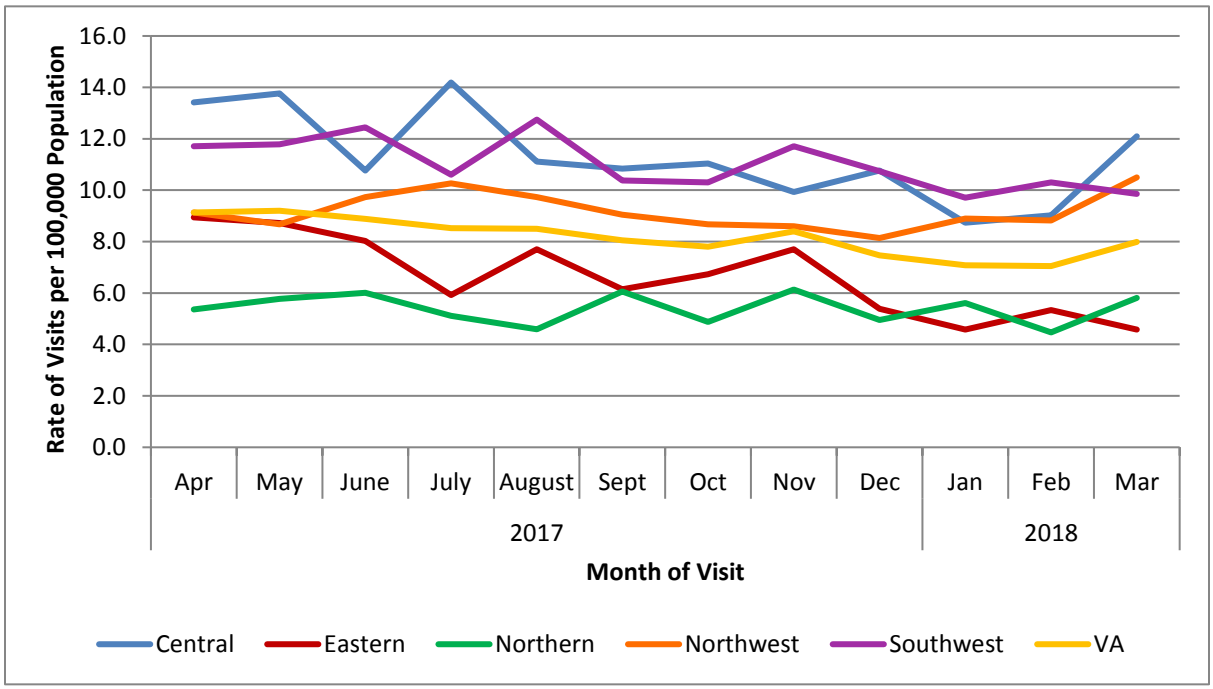

Figure 1D. Year-to-Date Count (January-February) of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Year and Region.

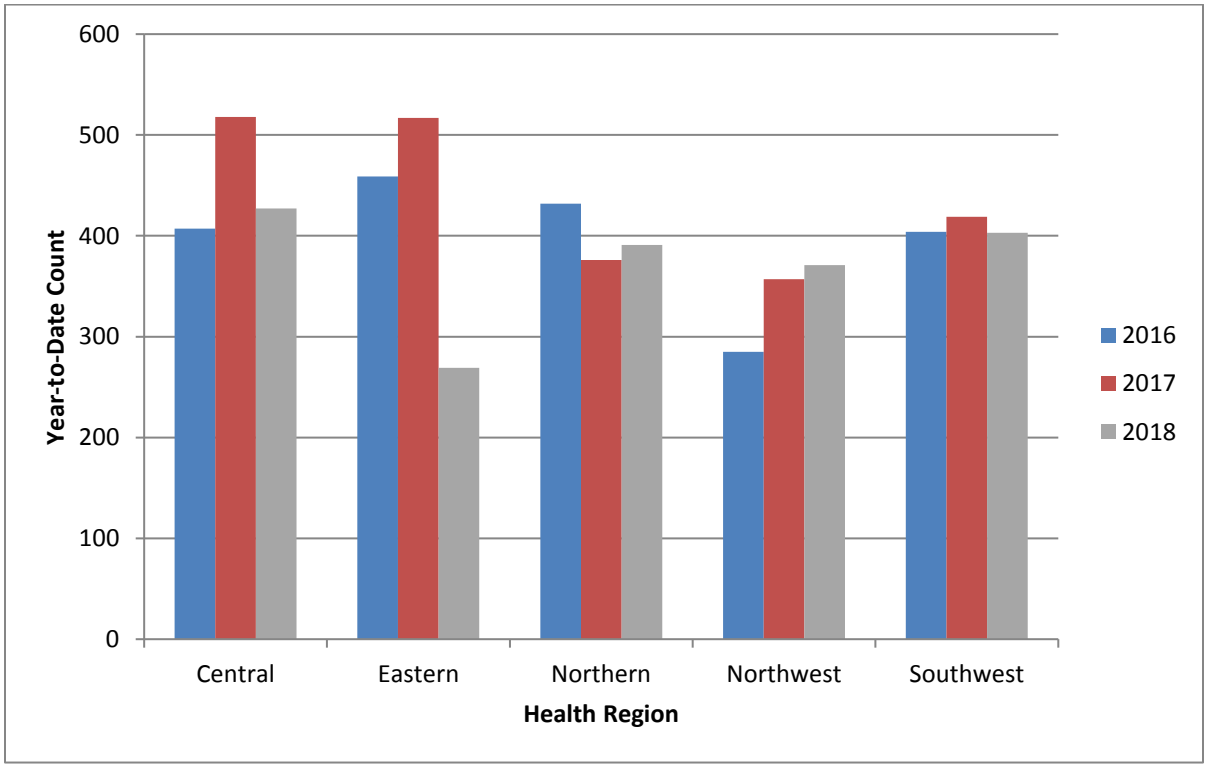

Figure 1E. Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Sex, Most Recent 12 Months.

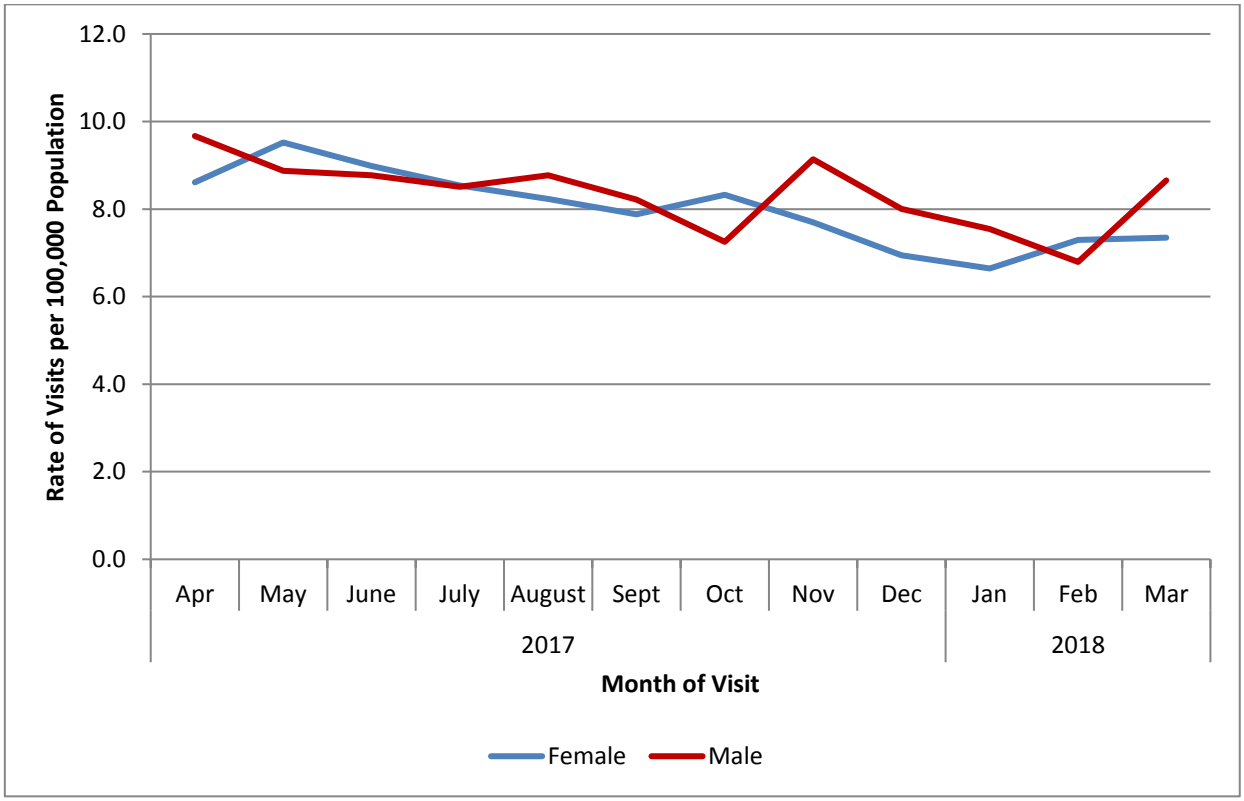

Figure 1F. Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Age Group (Years), Most Recent 12 Months.

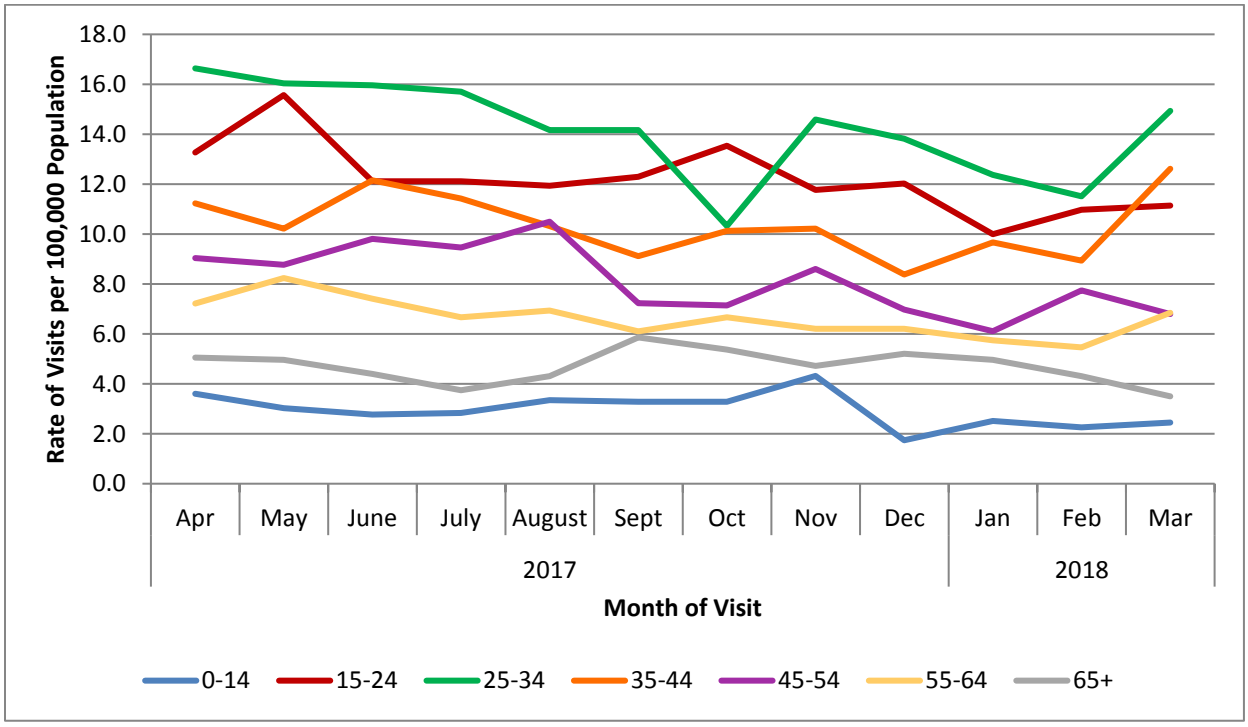

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Table 1A. Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Health District, Most Recent 5 Months[†*]

Health District	2016 Population Estimate	Nov 2017		Dec 2017		Jan 2018		Feb 2018		Mar 2018		5-month Average	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count[^]	Rate
Alexandria	155,810	7	4.5	8	5.1	9	5.8	6	3.9	8	5.1	8	4.9
Alleghany	179,082	18	10.1	17	9.5	16	8.9	13	7.3	11	6.1	15	8.4
Arlington	230,050	*	*	6	2.6	14	6.1	*	*	12	5.2	8	3.5
Central Shenandoah	296,650	18	6.1	20	6.7	23	7.8	18	6.1	15	5.1	19	6.3
Central Virginia	260,232	26	10.0	14	5.4	24	9.2	17	6.5	28	10.8	22	8.4
Chesapeake	237,940	30	12.6	19	8.0	13	5.5	20	8.4	18	7.6	20	8.4
Chesterfield	385,224	33	8.6	39	10.1	32	8.3	32	8.3	40	10.4	35	9.1
Chickahominy	155,278	8	5.2	10	6.4	5	3.2	7	4.5	*	*	7	4.3
Crater	155,665	9	5.8	8	5.1	9	5.8	8	5.1	26	16.7	12	7.7
Cumberland Plateau	106,666	18	16.9	17	15.9	6	5.6	11	10.3	6	5.6	12	10.9
Eastern Shore	45,086	0	0	0	0	0	0	0	0	0	0	0	0.0
Fairfax	1,176,830	71	6.0	66	5.6	63	5.4	58	4.9	73	6.2	66	5.6
Hampton	135,410	10	7.4	*	*	9	6.6	9	6.6	*	*	7	5.3
Henrico	326,501	40	12.3	53	16.2	33	10.1	35	10.7	48	14.7	42	12.8
Lenowisco	89,201	*	*	10	11.2	11	12.3	5	5.6	12	13.5	8	9.4
Lord Fairfax	232,295	28	12.1	34	14.6	35	15.1	30	12.9	31	13.3	32	13.6
Loudoun	385,945	36	9.3	20	5.2	26	6.7	22	5.7	26	6.7	26	6.7
Mount Rogers	189,178	13	6.9	18	9.5	12	6.3	15	7.9	14	7.4	14	7.6
New River	182,876	16	8.7	16	8.7	18	9.8	9	4.9	14	7.7	15	8.0
Norfolk	245,115	25	10.2	18	7.3	12	4.9	15	6.1	16	6.5	17	7.0
Peninsula	351,436	19	5.4	10	2.8	13	3.7	15	4.3	7	2.0	13	3.6
Piedmont	102,752	8	7.8	5	4.9	8	7.8	7	6.8	8	7.8	7	7.0
Pittsylvania-Danville	103,585	13	12.6	11	10.6	8	7.7	18	17.4	15	14.5	13	12.6
Portsmouth	95,252	15	15.7	16	16.8	10	10.5	12	12.6	9	9.4	12	13.0
Prince William	512,608	33	6.4	22	4.3	26	5.1	20	3.9	24	4.7	25	4.9
Rappahannock	360,830	22	6.1	21	5.8	25	6.9	26	7.2	29	8.0	25	6.8
Rappahannock-Rapidan	175,151	21	12.0	15	8.6	18	10.3	21	12.0	36	20.6	22	12.7
Richmond City	223,170	37	16.6	30	13.4	35	15.7	36	16.1	43	19.3	36	16.2
Roanoke	99,660	32	32.1	23	23.1	10	10.0	16	16.1	6	6.0	17	17.5
Southside	82,127	7	8.5	9	11.0	*	*	*	*	5	6.1	6	6.8
Thomas Jefferson	249,537	24	9.6	17	6.8	16	6.4	21	8.4	27	10.8	21	8.4
Three Rivers	140,950	6	4.3	*	*	0	0	*	*	*	*	3	2.4
Virginia Beach	452,602	34	7.5	22	4.9	22	4.9	21	4.6	22	4.9	24	5.3
West Piedmont	138,882	18	13.0	19	13.7	26	18.7	35	25.2	27	19.4	25	18.0
Western Tidewater	152,232	*	*	7	4.6	6	3.9	*	*	5	3.3	5	3.4
VIRGINIA TOTAL	8,411,808	707	8.4	628	7.5	596	7.1	593	7.0	672	8.0	639	7.6

† Population based on 2016 U.S. Census estimates available at 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.

¶ Refer to Appendix 2 for a summary of data reporting changes that should be considered when interpreting this report.

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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[†‡*]

Locality	2016 Population Estimate	Nov 2017		Nov 2017		Jan 2018		Feb 2018		Mar 2018	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Accomack County	32,947	0	0	0	0	0	0	0	0	0	0
Albemarle County[‡]	153,790	*	*	*	*	5	5.2	5	5.2	12	9.8
Alleghany County[‡]	21,113	0	0	*	*	5	23.7	*	*	*	*
Amelia County	12,913	*	*	*	*	0	0	0	0	0	0
Amherst County	31,633	*	*	*	*	*	*	*	*	*	*
Appomattox County	15,475	0	0	0	0	*	*	*	*	*	*
Arlington County	230,050	*	*	6	2.6	14	6.1	*	*	12	5.2
Augusta County[‡]	121,247	*	*	*	*	5	9.1	*	*	*	*
Bath County	4,476	0	0	*	*	0	0	0	0	0	0
Bedford County	77,960	9	11.5	6	7.7	9	11.5	*	*	*	*
Bland County	6,513	0	0	0	0	*	*	0	0	0	0
Botetourt County	33,231	*	*	*	*	*	*	*	*	*	*
Brunswick County	16,243	0	0	*	*	0	0	0	0	*	*
Buchanan County	22,178	0	0	*	*	*	*	*	*	*	*
Buckingham County	17,048	*	*	0	0	*	*	0	0	*	*
Campbell County	54,952	7	12.7	*	*	*	*	*	*	*	*
Caroline County	30,178	*	*	6	19.9	*	*	*	*	5	16.6
Carroll County	29,531	*	*	*	*	*	*	*	*	*	*
Charles City County	7,071	0	0	*	*	*	*	0	0	*	*
Charlotte County	12,129	0	0	*	*	*	*	*	*	*	*
Chesterfield County[‡]	356,781	31	8.7	35	10.1	28	8.7	30	8.7	33	10.4
Clarke County	14,374	0	0	*	*	*	*	0	0	*	*
Craig County	5,158	*	*	0	0	*	*	0	0	0	0
Culpeper County	50,083	6	12.0	6	12.0	*	*	*	*	8	16.0
Cumberland County	9,652	0	0	*	*	0	0	*	*	*	*
Dickenson County	14,968	*	*	5	33.4	*	*	*	*	0	0
Dinwiddie County	28,144	0	0	*	*	0	0	0	0	*	*
Essex County	11,123	*	*	0	0	0	0	0	0	*	*
Fairfax County[‡]	1,176,830	70	6.0	66	5.6	63	5.4	58	4.9	71	6.2
Fauquier County	69,069	11	15.9	7	10.1	*	*	12	17.4	15	21.7
Floyd County	15,731	0	0	0	0	0	0	*	*	*	*
Fluvanna County	26,271	*	*	*	*	*	*	*	*	*	*
Franklin County	56,069	*	*	*	*	8	14.3	6	10.7	*	*
Frederick County[‡]	111,937	7	13.4	8	16.1	5	15.2	5	9.8	*	*
Giles County	16,857	*	*	*	*	*	*	0	0	*	*
Gloucester County	37,214	*	*	0	0	0	0	0	0	0	0
Goochland County	22,668	0	0	*	*	0	0	*	*	0	0

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Locality	2016 Population Estimate	Nov 2017		Nov 2017		Jan 2018		Feb 2018		Mar 2018	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Grayson County‡	21,882	0	0	*	*	*	*	0	0	*	*
Greene County	19,371	*	*	*	*	*	*	*	*	5	25.8
Greensville County‡	17,011	*	*	*	*	*	*	*	*	*	*
Halifax County	34,992	*	*	*	*	0	0	*	*	*	*
Hanover County	104,392	7	6.7	5	4.8	*	*	6	5.7	*	*
Henrico County	326,501	40	12.3	53	16.2	33	10.1	35	10.7	48	14.7
Henry County‡	64,890	14	21.6	17	27.7	15	23.1	24	37.0	18	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	0	0	5	6.7	5	6.7	5	6.7
King and Queen County	7,159	0	0	*	*	0	0	0	0	0	0
King George County	25,984	*	*	*	*	*	*	*	*	*	*
King William County	16,334	*	*	*	*	0	0	0	0	0	0
Lancaster County	10,972	*	*	0	0	0	0	*	*	*	*
Lee County	24,179	*	*	*	*	*	*	0	0	*	*
Loudoun County	385,945	36	9.3	20	5.2	26	6.7	22	5.7	26	6.7
Louisa County	35,236	9	25.5	6	17.0	*	*	8	22.7	5	14.2
Lunenburg County	12,273	*	*	*	*	*	*	0	0	*	*
Madison County	13,078	*	*	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	0	0	0	0
Montgomery County‡	116,085	10	9.5	6	6.9	7	8.6	*	*	*	*
Nelson County	14,869	*	*	0	0	*	*	0	0	0	0
New Kent County	21,147	*	*	0	0	*	*	0	0	0	0
Northampton County	12,139	0	0	0	0	0	0	0	0	0	0
Northumberland County	12,222	0	0	0	0	0	0	*	*	0	0
Nottoway County	15,595	*	*	0	0	0	0	*	*	*	*
Orange County	35,533	*	*	*	*	10	28.1	*	*	11	31.0
Page County	23,654	0	0	*	*	*	*	*	*	*	*
Patrick County	17,923	*	*	0	0	*	*	5	27.9	5	27.9
Pittsylvania County‡	103,585	*	*	*	*	*	*	5	17.4	5	14.5
Powhatan County	28,443	*	*	*	*	*	*	*	*	*	*
Prince Edward County	23,142	0	0	0	0	*	*	*	*	0	0
Prince George County	92,462	*	*	0	0	*	*	0	0	*	*
Prince William County‡	512,608	32	6.4	19	4.3	22	5.1	17	3.9	22	4.7
Pulaski County	34,203	*	*	*	*	7	20.5	*	*	*	*
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‡	219,240	8	20.1	6	16.9	6	7.8	5	11.4	6	6.4

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Locality	2016 Population Estimate	Nov 2017		Nov 2017		Jan 2018		Feb 2018		Mar 2018	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Rockbridge County‡	35,889	*	*	*	*	*	*	*	*	*	*
Rockingham County‡	132,822	7	6.0	*	*	5	5.3	7	6.0	6	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	7	16.2	*	*	6	13.9	7	16.2
Smyth County	31,062	*	*	*	*	5	16.1	7	22.5	*	*
Southampton County‡	26,363	0	0	*	*	0	0	0	0	0	0
Spotsylvania County	132,010	11	8.3	8	6.1	11	8.3	9	6.8	8	6.1
Stafford County	144,361	*	*	5	3.5	9	6.2	7	4.8	11	7.6
Surry County	6,544	0	0	0	0	0	0	0	0	0	0
Sussex County	11,504	*	*	0	0	0	0	0	0	0	0
Tazewell County	42,150	6	14.2	5	11.9	*	*	*	*	*	*
Warren County	39,155	7	17.9	*	*	9	23.0	9	23.0	9	23.0
Washington County‡	71,174	*	*	0	0	*	*	*	*	*	*
Westmoreland County	17,592	0	0	*	*	0	0	*	*	*	*
Wise County‡	43,092	*	*	5	16.2	6	13.9	*	*	6	16.2
Wythe County	29,016	*	*	*	*	0	0	0	0	*	*
York County	67,976	*	*	*	*	*	*	*	*	0	0
Alexandria City	155,810	7	4.5	8	5.1	9	5.8	6	3.9	8	5.1
Bristol City‡	71,174	0	0	*	*	0	0	0	0	0	0
Buena Vista City‡	35,889	*	*	*	*	*	*	*	*	*	*
Charlottesville City‡	153,790	6	6.5	*	*	*	*	*	*	*	*
Chesapeake City	237,940	30	12.6	19	8.0	13	5.5	20	8.4	18	7.6
Colonial Heights City‡	356,781	0	0	*	*	*	*	*	*	*	*
Covington City‡	21,113	0	0	0	0	0	0	0	0	0	0
Danville City‡	103,585	9	12.6	10	10.6	5	7.7	13	17.4	10	14.5
Emporia City‡	17,011	0	0	0	0	0	0	0	0	0	0
Fairfax City‡	1,176,830	0	0	0	0	0	0	0	0	0	0
Falls Church City‡	1,176,830	*	*	0	0	0	0	0	0	*	*
Franklin City‡	26,363	0	0	*	*	*	*	*	*	*	*
Fredericksburg City	28,297	5	17.7	*	*	*	*	6	21.2	*	*
Galax City‡	21,882	*	*	9	45.7	*	*	0	0	*	*
Hampton City	135,410	10	7.4	*	*	9	6.6	9	6.6	*	*
Harrisonburg City‡	132,822	*	*	*	*	*	*	*	*	*	*
Hopewell City‡	92,462	*	*	*	*	*	*	7	7.6	11	22.7
Lexington City‡	35,889	0	0	0	0	0	0	0	0	0	0
Lynchburg City	80,212	9	11.2	5	6.2	9	11.2	8	10.0	15	18.7
Manassas City‡	512,608	*	*	*	*	*	*	*	*	*	*
Manassas Park City‡	512,608	0	0	0	0	0	0	0	0	0	0
Martinsville City‡	64,890	0	0	*	*	0	0	0	0	0	0

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Locality	2016 Population Estimate	Nov 2017		Nov 2017		Jan 2018		Feb 2018		Mar 2018	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Newport News City	181,825	11	6.0	7	3.8	5	2.7	6	3.3	*	*
Norfolk City	245,115	25	10.2	18	7.3	12	4.9	15	6.1	16	6.5
Norton City‡	43,092	*	*	*	*	0	0	*	*	*	*
Petersburg City‡	92,462	*	*	*	*	*	*	0	0	9	22.7
Poquoson City	12,017	0	0	*	*	0	0	0	0	0	0
Portsmouth City	95,252	15	15.7	16	16.8	10	10.5	12	12.6	9	9.4
Radford City‡	116,085	*	*	*	*	*	*	*	*	*	*
Richmond City	223,170	37	16.6	30	13.4	35	15.7	36	16.1	43	19.3
Roanoke City‡	219,240	32	20.1	23	16.9	10	7.8	16	11.4	6	6.4
Salem City‡	219,240	*	*	8	16.9	*	*	*	*	*	*
Staunton City‡	121,247	*	*	*	*	5	9.1	*	*	0	0
Suffolk City	89,273	*	*	*	*	*	*	*	*	*	*
Virginia Beach City	452,602	34	7.5	22	4.9	22	4.9	21	4.6	22	4.9
Waynesboro City‡	121,247	*	*	*	*	*	*	*	*	*	*
Williamsburg City	15,214	0	0	0	0	0	0	0	0	0	0
Winchester City‡	111,937	8	13.4	10	16.1	12	15.2	6	9.8	8	10.7
VIRGINIA TOTAL	8,411,808	707	8.4	628	7.5	596	7.1	593	7.0	672	8.0

† Population based on 2016 U.S. Census estimates available at 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.

¶ Refer to Appendix 2 for a summary of data reporting changes that should be considered when interpreting this report.

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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[†*§]

VSP Division	2016 Population Estimate	Nov 2017		Dec 2017		Jan 2018		Feb 2018		Mar 2018	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,414,861	147	10.4	157	11.1	120	8.5	134	9.5	175	12.4
Division 2	844,936	76	9.0	69	8.2	81	9.6	81	9.6	96	11.4
Division 3	657,948	50	7.6	38	5.8	50	7.6	42	6.4	62	9.4
Division 4	436,105	40	9.2	53	12.2	37	8.5	33	7.6	38	8.7
Division 5	1,823,149	140	7.7	98	5.4	86	4.7	97	5.3	85	4.7
Division 6	773,566	103	13.3	91	11.8	84	10.9	96	12.4	73	9.4
Division 7	2,461,243	151	6.1	122	5.0	138	5.6	110	4.5	143	5.8
VIRGINIA TOTAL	8,411,808	707	8.4	628	7.5	596	7.1	593	7.0	672	8.0

† Population based on 2016 U.S. Census estimates available at 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

¶ Refer to Appendix 2 for a summary of data reporting changes that should be considered when interpreting this report.

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, 2016 – 2018.

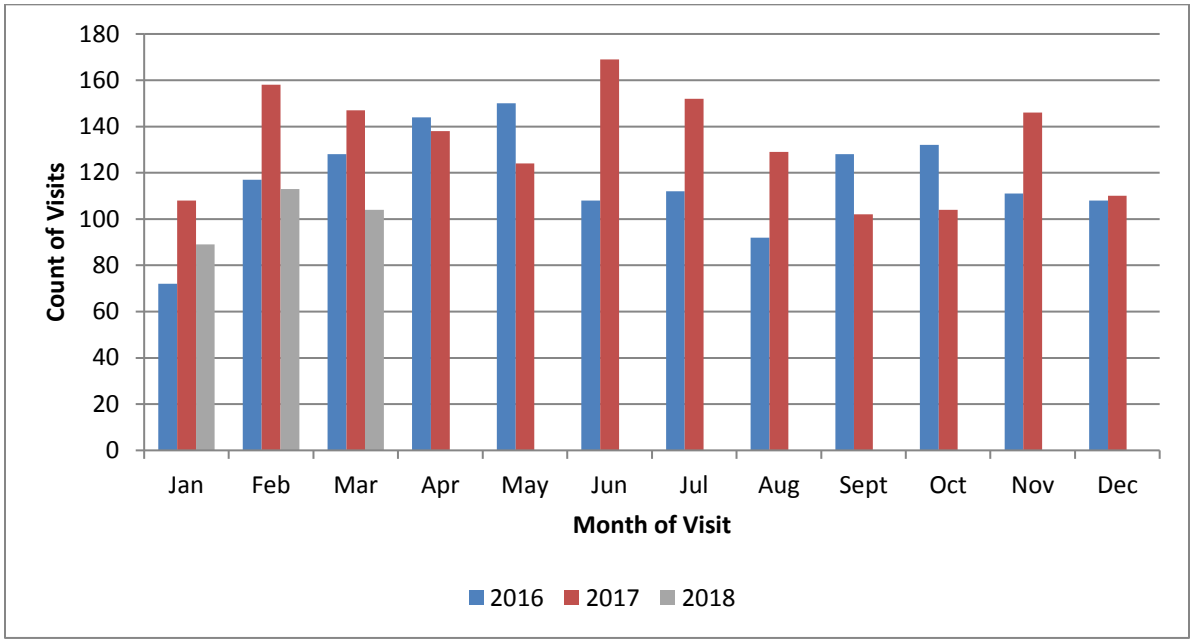

Figure 2B. Year-to-Date Count (January-March) of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Year.

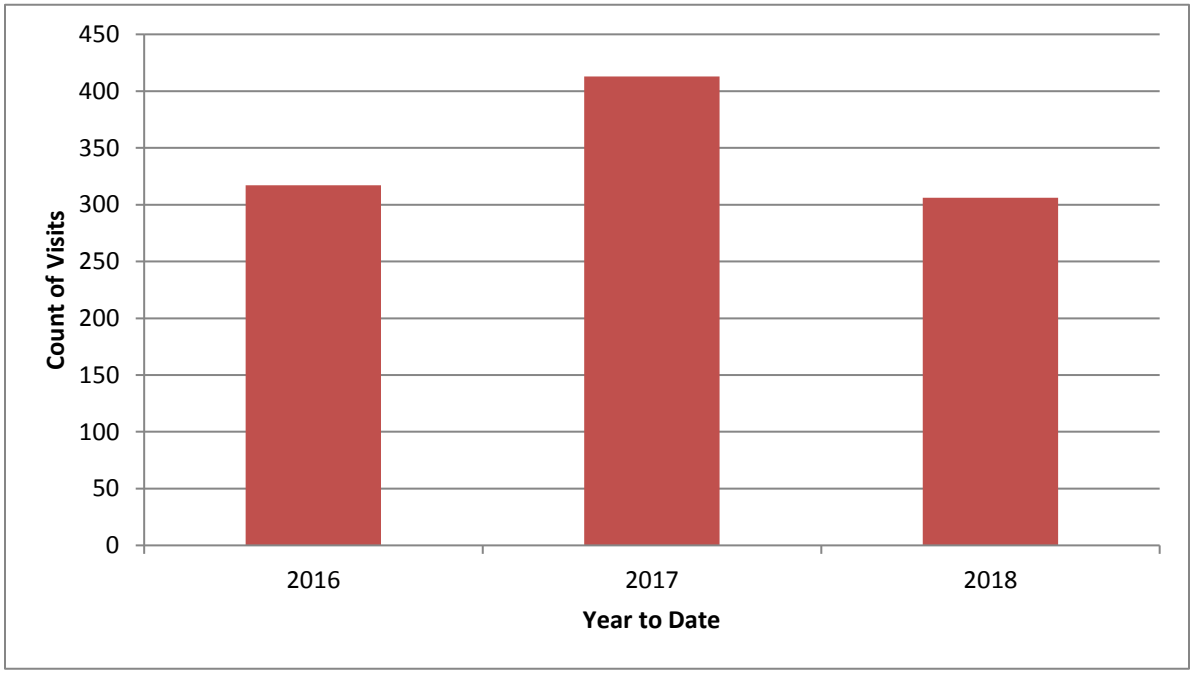

Figure 2C. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Health Region, Most Recent 12 Months.

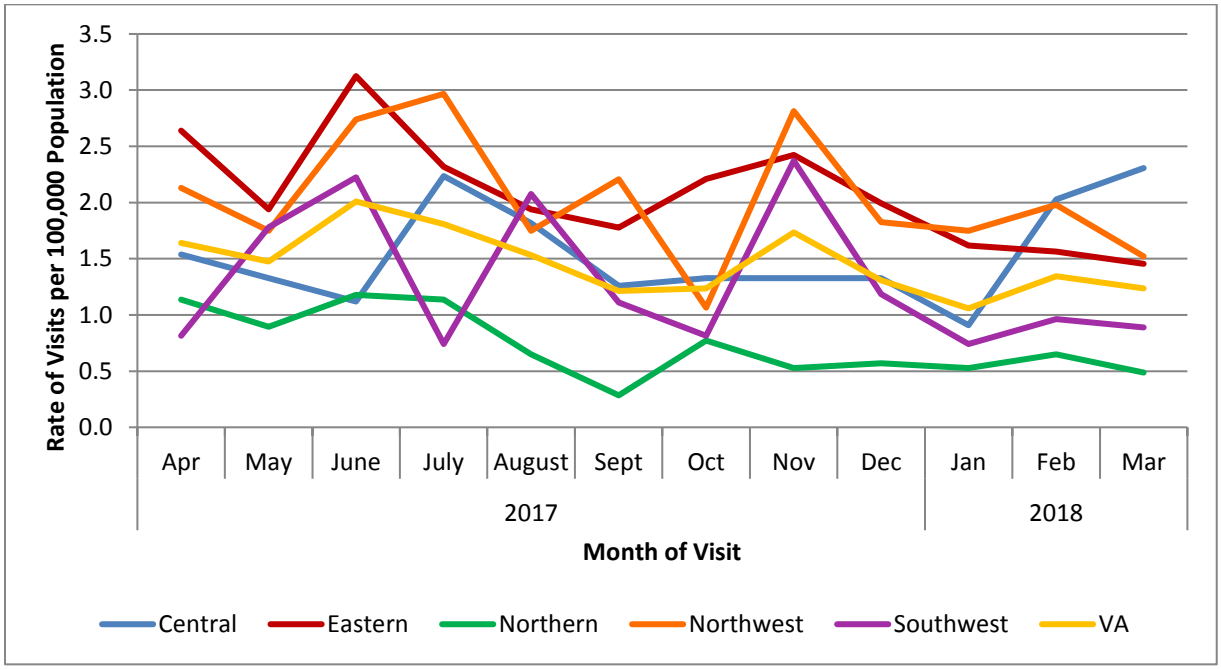

Figure 2D. Year-to-Date Count (January-February) of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Year and Region.

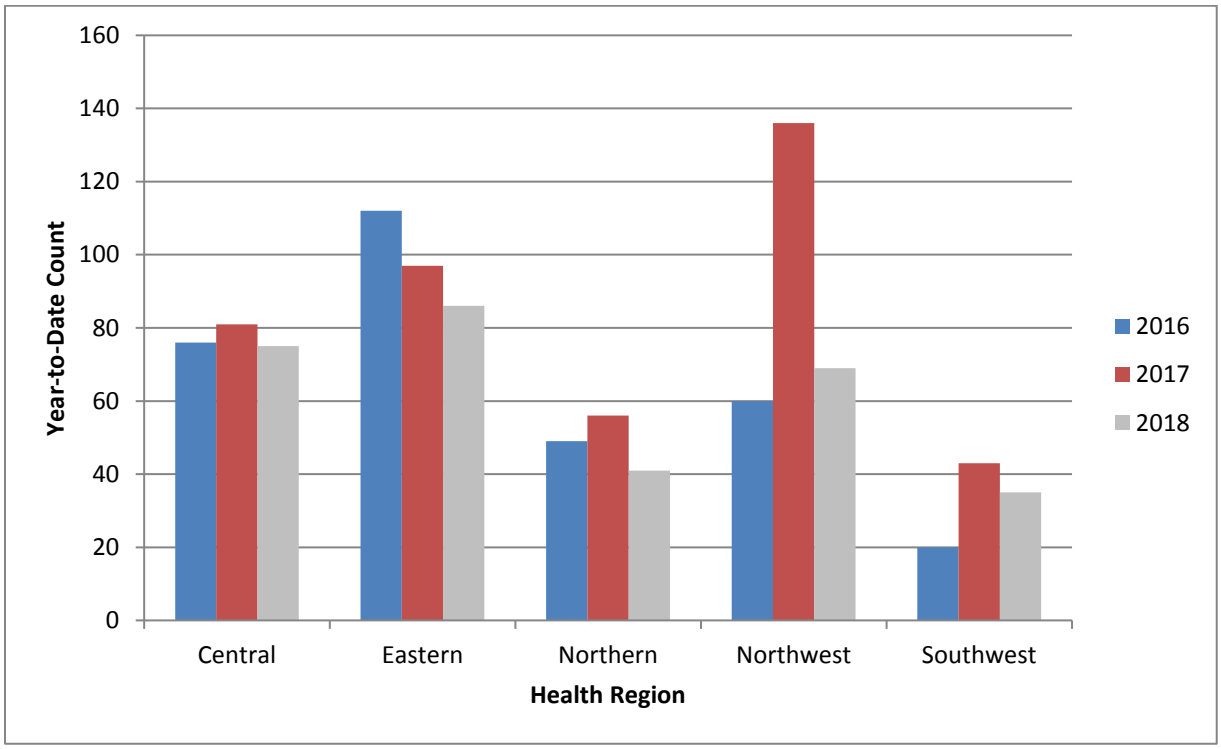

Figure 2E. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Sex, Most Recent 12 Months.

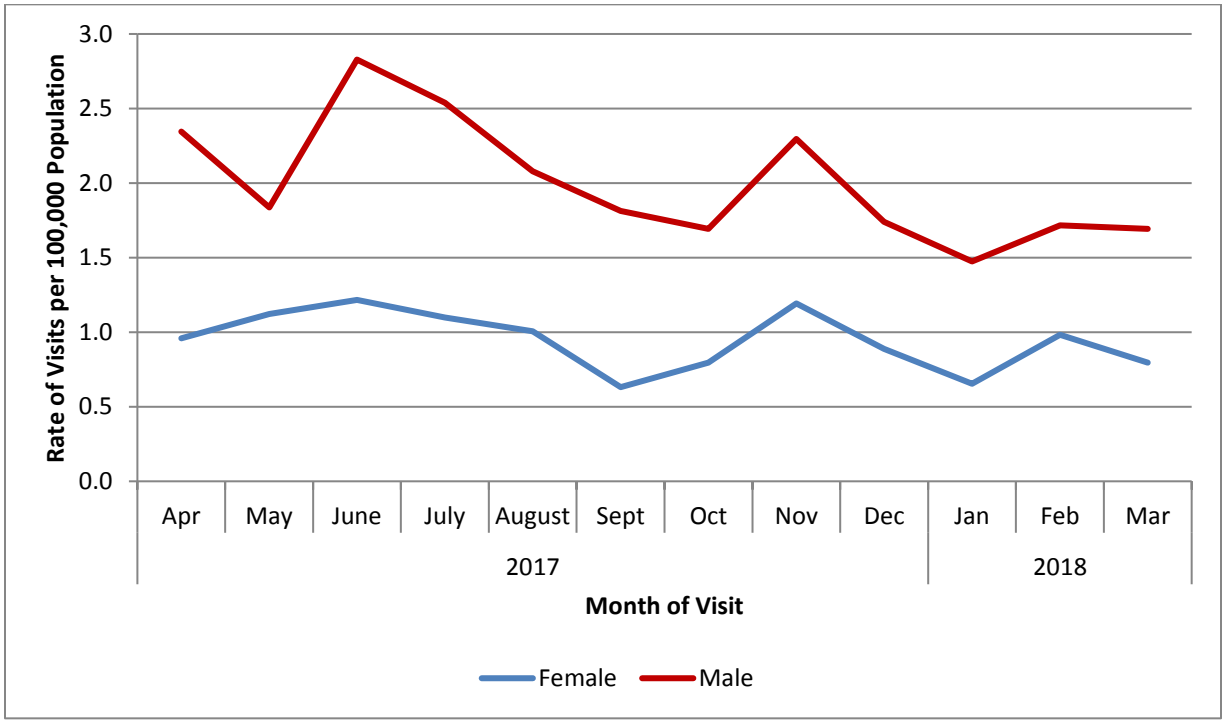

Figure 2F. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Age Group (Years), Most Recent 12 Months.

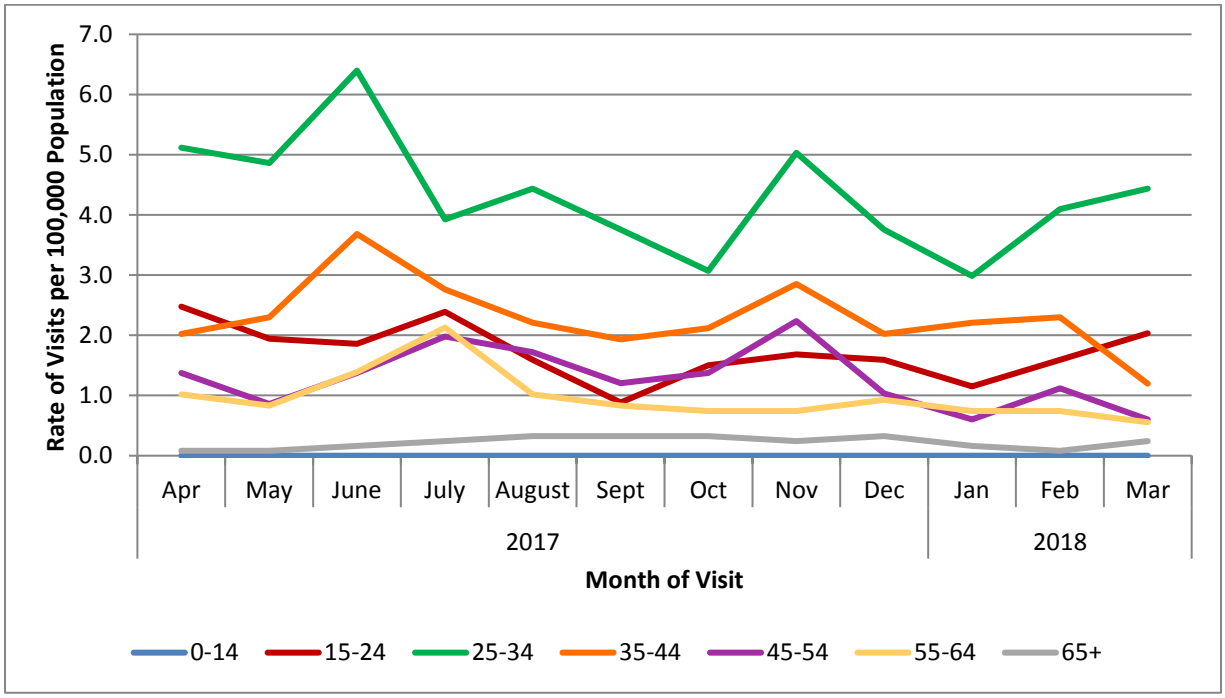

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Table 2A. Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Health District, Most Recent 5 Months[†*]

Health District	2016 Population Estimate	Nov 2017		Dec 2017		Jan 2018		Feb 2018		Mar 2018		5-month Average	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count[^]	Rate
Alexandria	155,810	0	0	*	*	0	0	0	0	*	*	1	0.4
Alleghany	179,082	12	6.7	*	*	*	*	*	*	*	*	5	3.0
Arlington	230,050	*	*	*	*	5	2.2	0	0	*	*	2	1.0
Central Shenandoah	296,650	*	*	0	0	*	*	*	*	*	*	1	0.4
Central Virginia	260,232	0	0	*	*	*	*	0	0	0	0	1	0.3
Chesapeake	237,940	*	*	6	2.5	11	4.6	7	2.9	6	2.5	7	2.8
Chesterfield	385,224	*	*	9	2.3	5	1.3	6	1.6	6	1.6	6	1.5
Chickahominy	155,278	*	*	*	*	*	*	*	*	*	*	2	1.5
Crater	155,665	0	0	0	0	0	0	9	5.8	5	3.2	3	1.8
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	5	0.4	7	0.6	5	0.4	7	0.6	*	*	5	0.5
Hampton	135,410	5	3.7	*	*	0	0	*	*	*	*	3	2.1
Henrico	326,501	9	2.8	*	*	*	*	6	1.8	7	2.1	6	1.7
Lenowisco	89,201	0	0	0	0	0	0	0	0	0	0	0	0.0
Lord Fairfax	232,295	6	2.6	6	2.6	9	3.9	7	3.0	*	*	6	2.8
Loudoun	385,945	0	0	*	*	0	0	*	*	*	*	1	0.3
Mount Rogers	189,178	0	0	0	0	0	0	0	0	0	0	0	0.0
New River	182,876	*	*	*	*	0	0	0	0	*	*	1	0.3
Norfolk	245,115	9	3.7	9	3.7	8	3.3	6	2.4	5	2.0	7	3.0
Peninsula	351,436	*	*	0	0	0	0	*	*	*	*	2	0.5
Piedmont	102,752	*	*	0	0	*	*	0	0	*	*	1	1.0
Pittsylvania-Danville	103,585	0	0	0	0	0	0	0	0	0	0	0	0.0
Portsmouth	95,252	10	10.5	10	10.5	6	6.3	5	5.2	*	*	7	6.9
Prince William	512,608	*	*	*	*	*	*	5	1.0	5	1.0	4	0.8
Rappahannock	360,830	16	4.4	6	1.7	5	1.4	9	2.5	*	*	8	2.2
Rappahannock-Rapidan	175,151	7	4.0	8	4.6	5	2.9	*	*	7	4.0	6	3.4
Richmond City	223,170	*	*	*	*	*	*	6	2.7	8	3.6	5	2.1
Roanoke	99,660	15	15.1	8	8.0	*	*	7	7.0	7	7.0	8	7.8
Southside	82,127	0	0	0	0	0	0	*	*	*	*	0	0.5
Thomas Jefferson	249,537	6	2.4	*	*	*	*	5	2.0	*	*	4	1.8
Three Rivers	140,950	*	*	0	0	*	*	*	*	*	*	2	1.3
Virginia Beach	452,602	10	2.2	7	1.5	*	*	*	*	*	*	5	1.1
West Piedmont	138,882	*	*	*	*	*	*	*	*	0	0	2	1.4
Western Tidewater	152,232	*	*	*	*	*	*	*	*	*	*	2	1.1
VIRGINIA TOTAL	8,411,808	146	1.7	110	1.3	89	1.1	113	1.3	104	1.2	112	1.3

† Population based on 2016 U.S. Census estimates available at 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.

¶ Refer to Appendix 2 for a summary of data reporting changes that should be considered when interpreting this report.

VDH VIRGINIA DEPARTMENT OF HEALTH

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[†*§]

VSP Division	2016 Population Estimate	Nov 2017		Dec 2017		Jan 2018		Feb 2018		Mar 2018	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,414,861	27	1.9	20	1.4	13	0.9	30	2.1	35	2.5
Division 2	844,936	27	3.2	20	2.4	19	2.2	20	2.4	14	1.7
Division 3	657,948	5	0.8	*	*	5	0.8	7	1.1	5	0.8
Division 4	436,105	0	0	0	0	0	0	0	0	0	0
Division 5	1,823,149	42	2.3	37	2.0	29	1.6	27	1.5	26	1.4
Division 6	773,566	32	4.1	16	2.1	10	1.3	13	1.7	12	1.6
Division 7	2,461,243	13	0.5	14	0.6	13	0.5	16	0.7	12	0.5
VIRGINIA TOTAL	8,411,808	146	1.7	110	1.3	89	1.1	113	1.3	104	1.2

† Population based on 2016 U.S. Census estimates available at 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

¶ Refer to Appendix 2 for a summary of data reporting changes that should be considered when interpreting this report.

Appendix 1

Virginia Localities Combined for the Purposes of Rate Calculation 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

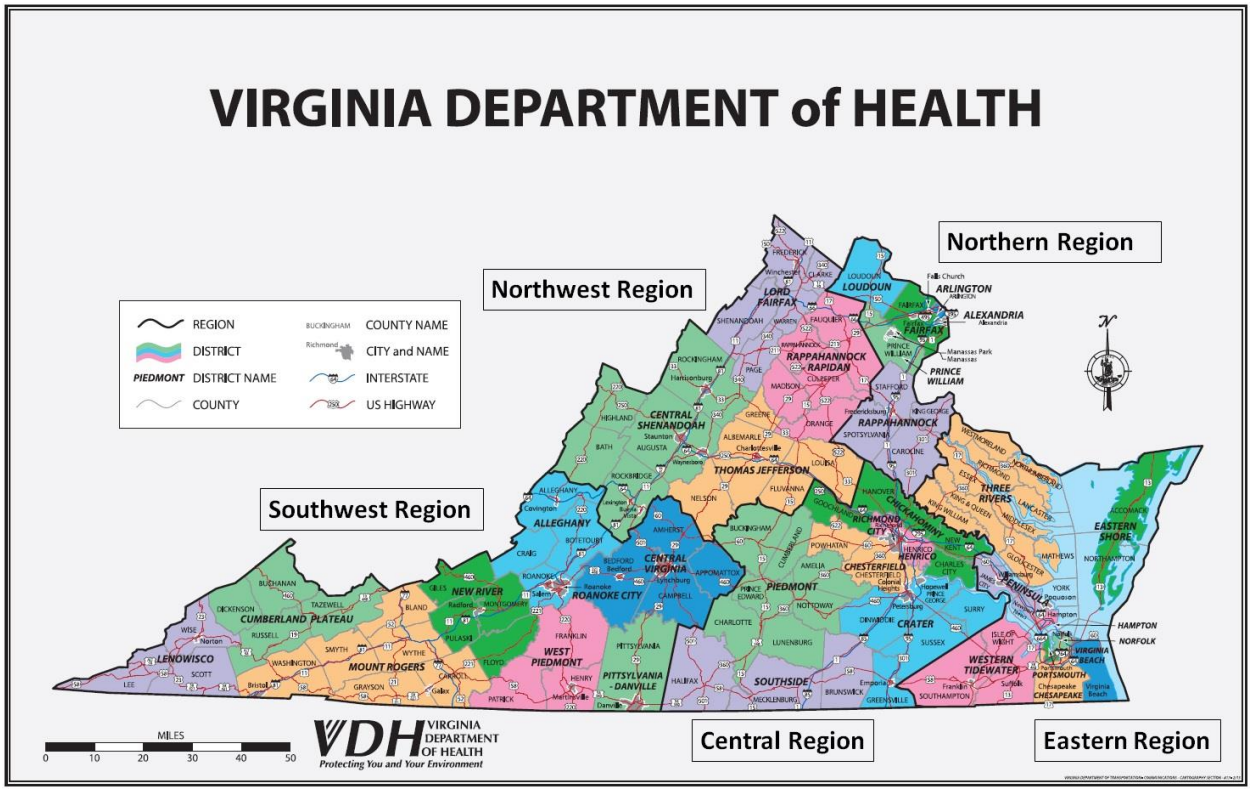
Appendix 2

Summary of Data Reporting Changes by Emergency Departments in Virginia

The volume and quality of data reported by emergency departments to the Virginia Department of Health for syndromic surveillance affect the volume and quality of data in this report. In general, volume and quality have improved over time as additional EDs report to the Virginia Department of Health. This general increase in data volume should be taken into consideration when interpreting trends in visit counts and rates over time. Occasionally, EDs stop reporting data, which can lead to a decrease in data volume and a lowering of trends. Other factors that can affect the data are changes in the quality reported by EDs, which can improve or reduce the accuracy of the data.

Please consider the following data reporting changes when interpreting the contents of *Emergency Department Visits for Overdose by Opioid, Unspecified Substance and Heroin among Virginia Residents* reports.

Month	Health Region	Description
June 2017	Eastern	A single healthcare system representing five acute care hospital EDs became unable to report data, reducing the quantity and representativeness of the data from that region.
June 2017	Northwest	One acute care hospital ED improved its data quality, supporting more accurate capture of overdose visit data.
February 2018	Central	One additional acute care hospital ED began reporting data to VDH, increasing the quantity and representativeness of data from that region.

Appendix 3

VDH Health Planning Regions and Health Districts Map