VDH Virginia Department of Health

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

June 2017

Contents

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 77[§] 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 that uses standardized values outlined by the International Classification of Diseases (ICD) 9th and 10th 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.[1] These 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: *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 in order 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.

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. Places where the Virginia city and county populations have been combined to calculate a rate per 100,000 population due to zip codes spanning multiple localities can be found in Appendix 1.

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§ Between May and June 2017, fluctuations in reporting to VDH were observed. Before June, 82 acute care hospital EDs and 13 free-standing EDs submitted data. In June, one healthcare system in the Eastern Health Planning Region became unable to provide data. As a result, 77 out of an expected 82 acute care hospital EDs and 13 free-standing EDs reported data for June; any observed decreases in the count or rate of overdoses in the Eastern Region might be artificially low because of this change in reporting. Additionally, one acute care hospital-ED in the Northwest Health Planning Region improved its data quality during June so that visits can be attributed to overdoses more accurately, thereby increasing the counts for that area. Please consider these changes in reporting when interpreting the contents of this report.

Highlights for June 2017

Statewide ED visits for overdose by opioid or unspecified substance among Virginia residents decreased by 22 visits (2.8%) in June compared to May 2017.

- Among the 5 VDH health planning regions, visits for overdose by opioid or unspecified substance decreased in Central (41 fewer visits, 21%) and Eastern regions (13 fewer visits, 8%). Visits increased in the Northwest (14 additional visits, 12%), Northern (9 additional visits, 6%) and Southwest regions (9 additional visits, 6%). The Southwest region observed the highest rate (12.6 per 100,000 population) in June 2017.
- By sex, approximately 52% of visits for overdose by opioid or unspecified substance were among females and 48% were among males. Visits decreased among both females (19 fewer visits, 5%) and males (3 fewer visits, <1%).
- By age group, the greatest increase in visits for overdose by opioid or unspecified substance was observed among those aged 35-44 years (22 additional visits, 20%) followed by those 45-54 years (12 additional visits, 12%). A large decrease in visits was observed for those aged 15-24 years (40 fewer visits, 23%).
- Among the 35 VDH health districts, the largest increases in visits for overdose by opioid or unspecified substance were observed in Central Shenandoah (14 additional visits, 127%), Norfolk (14 additional visits, 82%), and Chesapeake (17 additional visits, 77%). Roanoke remained the VDH health district with the highest rate (37.1 visits per 100,000 population) since March 2017.

Statewide ED visits for overdose by heroin among Virginia residents increased by 39 visits (31%) in June compared to May 2017, and are at the highest rate observed (1.94 visits per 100,000 population) since reporting began in January 2015.

- Among the 5 VDH health planning regions, visits for overdose by heroin increased in the Eastern (22 additional visits, 61%), Northwest (12 additional visits, 52%), Northern (4 additional visits, 18%) and Southwest regions (4 additional visits, 17%). Visits decreased in the Central region (3 fewer visits, 16%)
- By sex, visits for overdose by heroin increased among both males (36 additional visits, 47%) and females (3 additional visits, 6%). Males contributed over twice as many visits for overdose by heroin compared to females.
- By age group, increases in visits for overdose by heroin were observed among those aged 55-64 years (6 additional visits, 67%), 45-54 years (6 additional visits, 60%), 35-44 years (14 additional visits, 56%), and 25-34 years (15 additional visits, 26%). Visits decreased only among those 15-24 years of age. The highest visit rate continues to be observed in those aged 25-34 years (6.1 per 100,000 population).
- Among the 35 VDH health districts, the largest increases in visits for overdose by heroin were observed in Fairfax (267%), Portsmouth (175%) and Virginia Beach (157%). Portsmouth also represented the health district with the highest visit rate (11.5 per 100,000 population) among VDH health districts.

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. Count of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month with Line of Best Fit, Previous 18 Months.

Note: A line of best fit is used to identify a trend in the relationship between two variables.

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

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

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

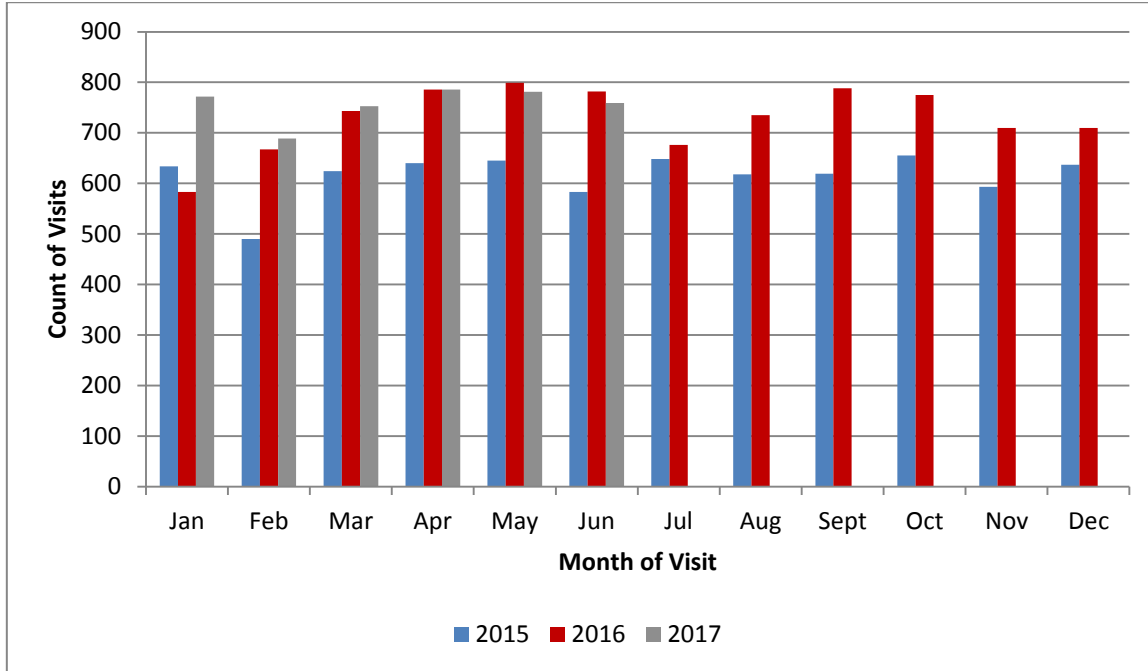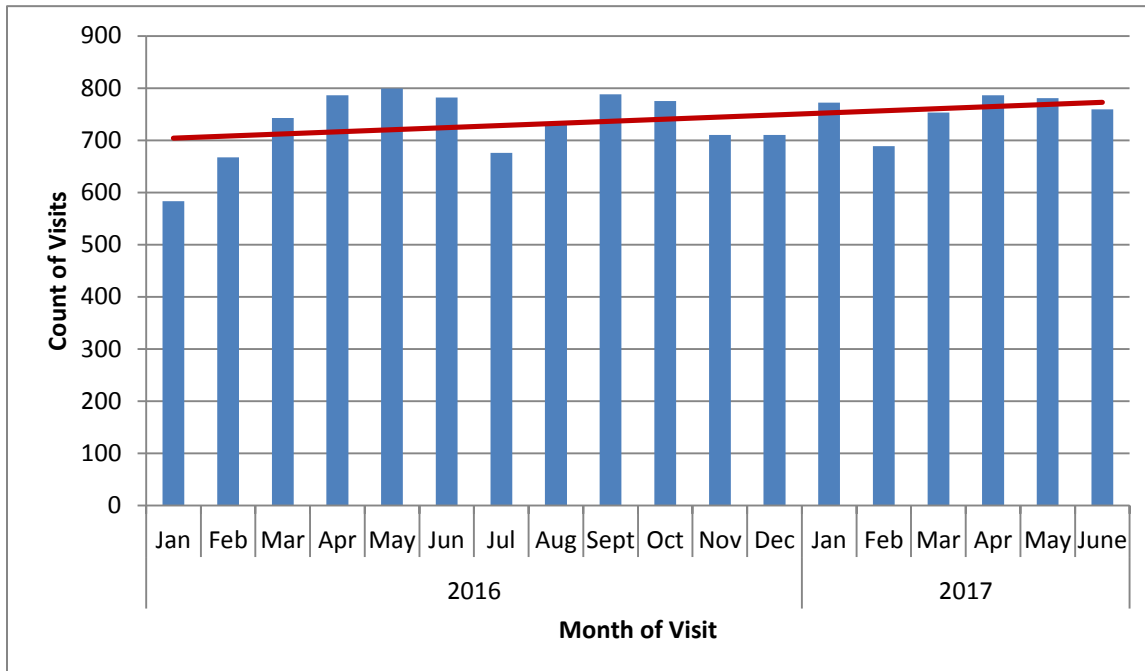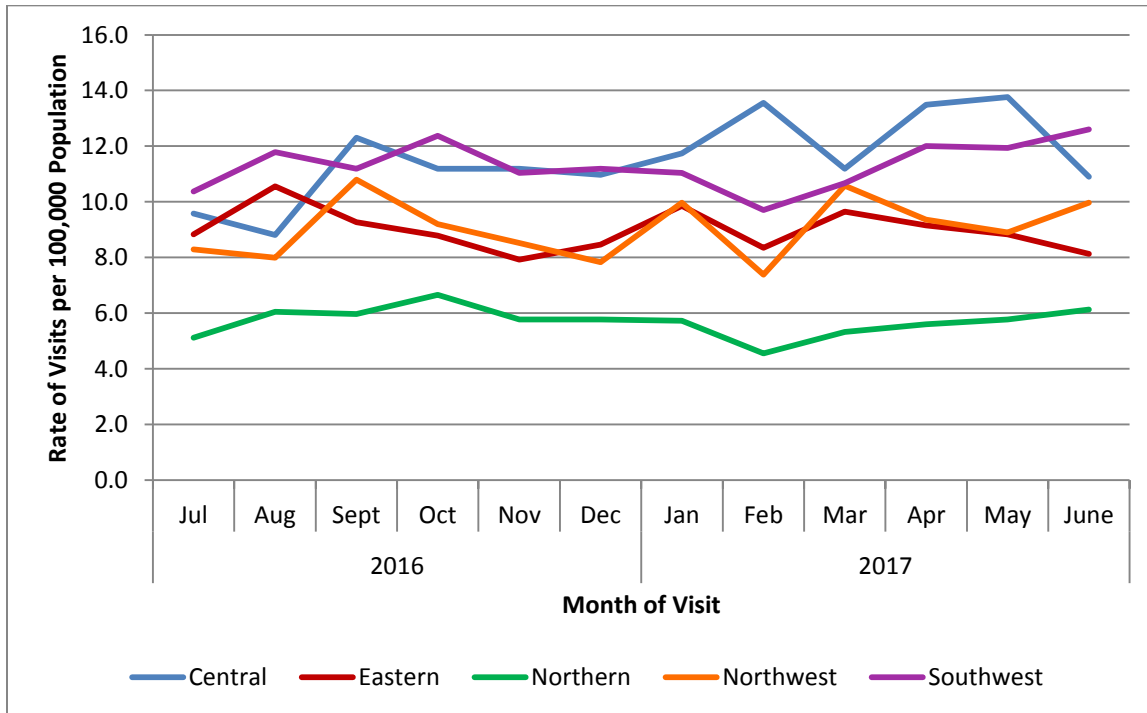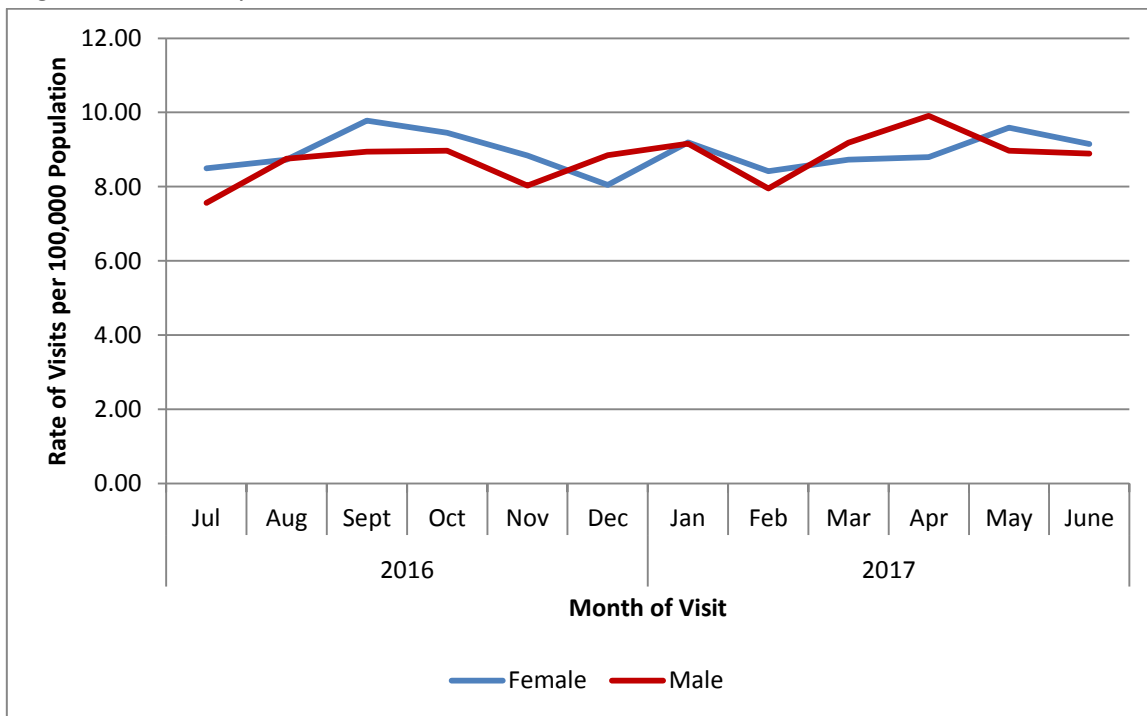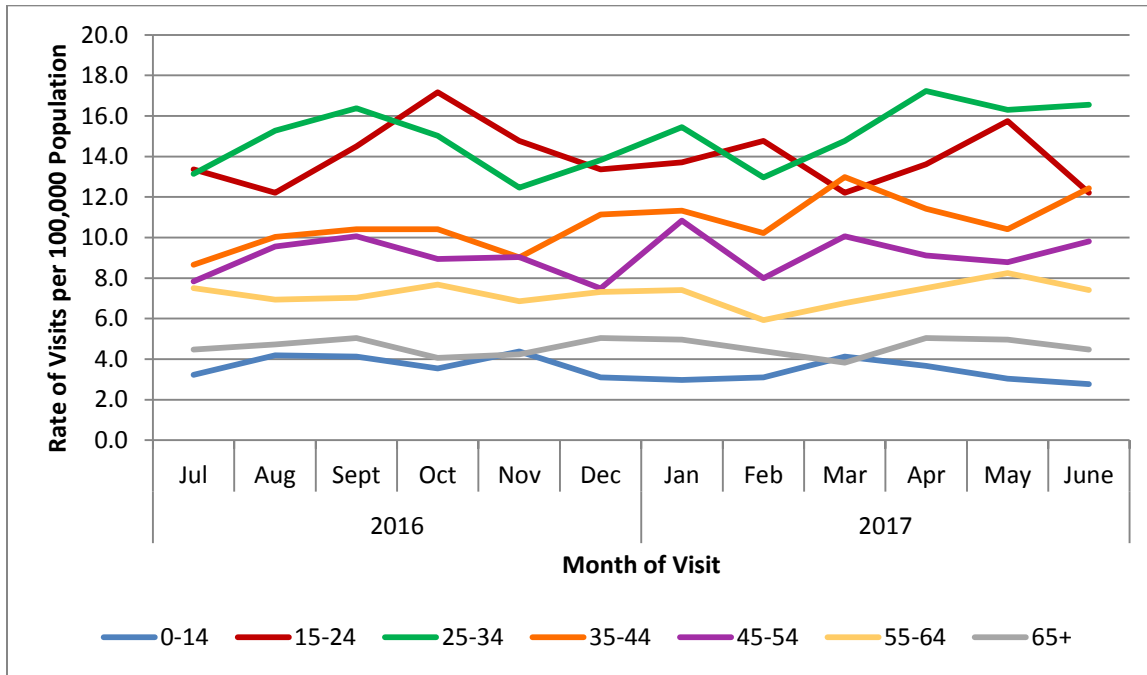**Table 1A**. Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Health District, Previous 6 Months[†*]

Health District	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Alexandria	155,810	13	8.3	8	5.1	8	5.1	12	7.7	13	8.3	10	6.4
Alleghany	179,082	25	14.0	18	10.1	17	9.5	22	12.3	28	15.6	19	10.6
Arlington	230,050	12	5.2	13	5.7	9	3.9	6	2.6	10	4.3	8	3.5
Central Shenandoah	296,650	10	3.4	8	2.7	10	3.4	10	3.4	11	3.7	25	8.4
Central Virginia	260,232	12	4.6	16	6.1	15	5.8	26	10.0	23	8.8	25	9.6
Chesapeake	237,940	29	12.2	18	7.6	19	8.0	27	11.3	22	9.2	39	16.4
Chesterfield	385,224	46	11.9	40	10.4	39	10.1	39	10.1	37	9.6	33	8.6
Chickahominy	155,278	16	10.3	15	9.7	5	3.2	18	11.6	22	14.2	16	10.3
Crater	155,665	11	7.1	7	4.5	9	5.8	10	6.4	21	13.5	14	9.0
Cumberland Plateau	106,666	6	5.6	9	8.4	10	9.4	7	6.6	12	11.3	14	13.1
Eastern Shore	45,086	5	11.1	7	15.5	*	*	8	17.7	6	13.3	0	0
Fairfax	1,176,830	69	5.9	53	4.5	67	5.7	65	5.5	69	5.9	75	6.4
Hampton	135,410	25	18.5	13	9.6	17	12.6	9	6.6	11	8.1	7	5.2
Henrico	326,501	46	14.1	62	19.0	49	15.0	62	19.0	51	15.6	39	11.9
Lenowisco	89,201	14	15.7	11	12.3	14	15.7	14	15.7	9	10.1	6	6.7
Lord Fairfax	232,295	26	11.2	26	11.2	37	15.9	17	7.3	18	7.7	21	9.0
Loudoun	385,945	16	4.1	17	4.4	17	4.4	27	7.0	21	5.4	27	7.0
Mount Rogers	189,178	17	9.0	23	12.2	16	8.5	16	8.5	20	10.6	22	11.6
New River	182,876	12	6.6	16	8.7	19	10.4	15	8.2	27	14.8	18	9.8
Norfolk	245,115	18	7.3	20	8.2	18	7.3	22	9.0	17	6.9	31	12.6
Peninsula	351,436	49	13.9	40	11.4	50	14.2	37	10.5	36	10.2	9	2.6
Piedmont	102,752	7	6.8	9	8.8	9	8.8	8	7.8	10	9.7	9	8.8
Pittsylvania-Danville	103,585	13	12.6	9	8.7	6	5.8	17	16.4	9	8.7	9	8.7
Portsmouth	95,252	9	9.4	14	14.7	19	19.9	12	12.6	16	16.8	18	18.9
Prince William	512,608	31	6.0	21	4.1	30	5.9	28	5.5	29	5.7	31	6.0
Rappahannock	360,830	42	11.6	21	5.8	41	11.4	38	10.5	36	10.0	32	8.9
Rappahannock-Rapidan	175,151	31	17.7	25	14.3	33	18.8	33	18.8	24	13.7	27	15.4
Richmond City	223,170	36	16.1	54	24.2	42	18.8	50	22.4	48	21.5	41	18.4
Roanoke	99,660	21	21.1	15	15.1	27	27.1	23	23.1	22	22.1	37	37.1
Southside	82,127	6	7.3	7	8.5	7	8.5	6	7.3	8	9.7	*	*
Thomas Jefferson	249,537	22	8.8	17	6.8	18	7.2	24	9.6	28	11.2	26	10.4
Three Rivers	140,950	15	10.6	14	9.9	18	12.8	13	9.2	23	16.3	11	7.8
Virginia Beach	452,602	25	5.5	19	4.2	17	3.8	33	7.3	18	4.0	24	5.3
West Piedmont	138,882	29	20.9	14	10.1	21	15.1	22	15.8	12	8.6	20	14.4
Western Tidewater	152,232	8	5.3	10	6.6	17	11.2	9	5.9	15	9.9	12	7.9
VIRGINIA TOTAL	8,411,808	772	9.2	689	8.2	754	9.0	785	9.3	782	9.3	759	9.0

† Rate per 100,000 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.

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, Previous 6 Months[†‡*]

Locality	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Accomack County	32,947	*	*	*	*	*	*	5	15.2	*	*	0	0
Albemarle County[‡]	153,790	9	5.9	11	7.2	10	7.2	14	9.1	16	10.4	18	11.7
Alleghany County[‡]	21,113	0	0	*	*	*	*	*	*	*	*	*	*
Amelia County	12,913	0	0	*	*	*	*	*	*	*	*	*	*
Amherst County	31,633	*	*	*	*	*	*	*	*	6	19.0	*	*
Appomattox County	15,475	0	0	0	0	0	0	*	*	0	0	*	*
Arlington County	230,050	12	5.2	13	5.7	9	3.9	6	2.6	10	4.3	8	3.5
Augusta County[‡]	121,247	*	*	0	0	0	0	*	*	*	*	9	7.4
Bath County	4,476	0	0	0	0	*	*	0	0	0	0	*	*
Bedford County	77,960	*	*	9	11.5	6	7.7	6	7.7	10	12.8	10	12.8
Bland County	6,513	0	0	0	0	0	0	0	0	0	0	*	*
Botetourt County	33,231	*	*	*	*	*	*	0	0	*	*	0	0
Brunswick County	16,243	*	*	*	*	*	*	*	*	*	*	*	*
Buchanan County	22,178	0	0	*	*	*	*	*	*	*	*	*	*
Buckingham County	17,048	*	*	*	*	*	*	*	*	*	*	0	0
Campbell County	54,952	*	*	0	0	0	0	6	10.9	*	*	*	*
Caroline County	30,178	*	*	*	*	*	*	*	*	6	19.9	*	*
Carroll County	29,531	*	*	*	*	*	*	*	*	*	*	*	*
Charles City County	7,071	0	0	0	0	0	0	0	0	0	0	*	*
Charlotte County	12,129	*	*	*	*	*	*	*	*	*	*	*	*
Chesterfield County[‡]	356,781	43	12.1	38	10.7	37	10.7	39	10.9	35	9.8	33	9.2
Clarke County	14,374	*	*	0	0	*	*	*	*	*	*	0	0
Craig County	5,158	*	*	*	*	*	*	*	*	*	*	0	0
Culpeper County	50,083	10	20.0	8	16.0	11	22.0	9	18.0	8	16.0	*	*
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	0	0	0	0	0	0
Essex County	11,123	0	0	*	*	*	*	0	0	*	*	0	0
Fairfax County[‡]	1,176,830	69	5.9	53	4.5	67	5.7	65	5.5	69	5.9	75	6.4
Fauquier County	69,069	12	17.4	10	14.5	13	18.8	12	17.4	9	13.0	13	18.8
Floyd County	15,731	0	0	*	*	*	*	*	*	0	0	*	*
Fluvanna County	26,271	*	*	0	0	0	0	*	*	*	*	0	0
Franklin County	56,069	8	14.3	*	*	7	12.5	8	14.3	6	10.7	6	10.7
Frederick County[‡]	111,937	10	8.9	13	11.6	*	*	6	5.4	8	7.1	11	9.8
Giles County	16,857	*	*	*	*	*	*	*	*	*	*	*	*
Gloucester County	37,214	*	*	*	*	7	18.8	5	13.4	*	*	*	*
Goochland County	22,668	*	*	*	*	0	0	*	*	*	*	0	0

Locality	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Grayson County[‡]	21,882	6	27.4	8	36.6	0	0	7	32.0	*	*	*	*
Greene County	19,371	*	*	*	*	0	0	*	*	*	*	*	*
Greensville County[‡]	17,011	*	*	*	*	*	*	*	*	*	*	5	29.4
Halifax County	34,992	*	*	*	*	*	*	*	*	*	*	0	0
Hanover County	104,392	10	9.6	12	11.5	5	4.8	15	14.4	16	15.3	13	12.5
Henrico County	326,501	46	14.1	62	19.0	49	15.0	62	19.0	51	15.6	39	11.9
Henry County[‡]	64,890	21	32.4	10	15.4	14	21.6	13	20.0	6	9.2	13	20.0
Highland County	2,216	0	0	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	15	20.2	9	12.1	7	9.4	6	8.1	10	13.4	*	*
King and Queen County	7,159	*	*	0	0	0	0	0	0	*	*	*	*
King George County	25,984	6	23.1	*	*	*	*	5	19.2	*	*	*	*
King William County	16,334	*	*	*	*	*	*	*	*	*	*	*	*
Lancaster County	10,972	*	*	*	*	0	0	0	0	*	*	*	*
Lee County	24,179	*	*	*	*	*	*	*	*	*	*	*	*
Loudoun County	385,945	16	4.1	17	4.4	17	4.4	27	7.0	21	5.4	27	7.0
Louisa County	35,236	5	14.2	*	*	5	14.2	6	17.0	6	17.0	6	17.0
Lunenburg County	12,273	*	*	0	0	*	*	0	0	0	0	0	0
Madison County	13,078	*	*	0	0	*	*	*	*	*	*	*	*
Mathews County	8,782	0	0	0	0	*	*	*	*	*	*	0	0
Mecklenburg County	30,892	*	*	*	*	*	*	*	*	*	*	*	*
Middlesex County	10,778	*	*	0	0	*	*	*	*	*	*	0	0
Montgomery County[‡]	116,085	6	5.2	11	9.5	10	10.3	9	7.8	19	16.4	10	8.6
Nelson County	14,869	*	*	0	0	*	*	*	*	0	0	0	0
New Kent County	21,147	*	*	*	*	0	0	*	*	5	23.6	*	*
Northampton County	12,139	*	*	*	*	*	*	*	*	*	*	0	0
Northumberland County	12,222	*	*	*	*	*	*	*	*	*	*	0	0
Nottoway County	15,595	*	*	*	*	0	0	*	*	*	*	0	0
Orange County	35,533	7	19.7	7	19.7	5	14.1	8	22.5	*	*	8	22.5
Page County	23,654	5	21.1	*	*	*	*	*	*	0	0	*	*
Patrick County	17,923	0	0	0	0	0	0	*	*	0	0	*	*
Pittsylvania County[‡]	103,585	13	12.6	9	8.7	*	*	17	16.4	9	8.7	9	8.7
Powhatan County	28,443	*	*	*	*	*	*	0	0	*	*	0	0
Prince Edward County	23,142	*	*	*	*	0	0	*	*	*	*	0	0
Prince George County	92,462	8	8.7	6	6.5	*	*	6	6.5	18	19.5	8	8.7
Prince William County[‡]	512,608	31	6.0	21	4.1	28	5.9	28	5.5	29	5.7	31	6.0
Pulaski County	34,203	5	14.6	*	*	*	*	*	*	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	0	0
Roanoke County[‡]	219,240	44	20.1	29	13.2	6	16.9	42	19.2	44	20.1	53	24.2

Locality	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Rockbridge County[‡]	35,889	*	*	*	*	0	0	*	*	5	13.9	*	*
Rockingham County[‡]	132,822	*	*	7	5.3	6	4.5	5	3.8	5	3.8	13	9.8
Russell County	27,370	*	*	*	*	*	*	*	*	*	*	6	21.9
Scott County	21,930	0	0	0	0	*	*	*	*	0	0	0	0
Shenandoah County	43,175	5	11.6	7	16.2	8	18.5	*	*	*	*	*	*
Smyth County	31,062	*	*	8	25.8	5	16.1	*	*	*	*	11	35.4
Southampton County[‡]	26,363	0	0	*	*	*	*	0	0	*	*	*	*
Spotsylvania County	132,010	22	16.7	11	8.3	16	12.1	11	8.3	14	10.6	13	9.8
Stafford County	144,361	9	6.2	5	3.5	13	9.0	18	12.5	12	8.3	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	0	0	0	0
Tazewell County	42,150	*	*	*	*	*	*	*	*	*	*	*	*
Warren County	39,155	5	12.8	*	*	9	23.0	*	*	6	15.3	6	15.3
Washington County[‡]	71,174	5	7.0	*	*	5	8.4	*	*	6	8.4	*	*
Westmoreland County	17,592	*	*	*	*	*	*	*	*	5	28.4	*	*
Wise County[‡]	43,092	12	27.8	9	20.9	10	25.5	11	25.5	5	11.6	*	*
Wythe County	29,016	0	0	*	*	0	0	0	0	*	*	0	0
York County	67,976	*	*	7	10.3	*	*	*	*	7	10.3	*	*
Alexandria City	155,810	13	8.3	8	5.1	8	5.1	12	7.7	13	8.3	10	6.4
Bristol City[‡]	71,174	5	7.0	*	*	*	*	*	*	6	8.4	*	*
Buena Vista City[‡]	35,889	*	*	*	*	*	*	*	*	5	13.9	*	*
Charlottesville City[‡]	153,790	9	5.9	11	7.2	*	*	14	9.1	16	10.4	18	11.7
Chesapeake City	237,940	29	12.2	18	7.6	19	8.0	27	11.3	22	9.2	39	16.4
Colonial Heights City[‡]	356,781	43	12.1	38	10.7	*	*	39	10.9	35	9.8	33	9.2
Covington City[‡]	21,113	0	0	*	*	0	0	*	*	*	*	*	*
Danville City[‡]	103,585	13	12.6	9	8.7	*	*	17	16.4	9	8.7	9	8.7
Emporia City[‡]	17,011	*	*	*	*	0	0	*	*	*	*	5	29.4
Fairfax City[‡]	1,176,830	69	5.9	53	4.5	0	0	65	5.5	69	5.9	75	6.4
Falls Church City[‡]	1,176,830	69	5.9	53	4.5	0	0	65	5.5	69	5.9	75	6.4
Franklin City[‡]	26,363	0	0	*	*	*	*	0	0	*	*	*	*
Fredericksburg City	28,297	*	*	*	*	5	17.7	*	*	*	*	*	*
Galax City[‡]	21,882	6	27.4	8	36.6	*	*	7	32.0	*	*	*	*
Hampton City	135,410	25	18.5	13	9.6	17	12.6	9	6.6	11	8.1	7	5.2
Harrisonburg City[‡]	132,822	*	*	7	5.3	0	0	5	3.8	5	3.8	13	9.8
Hopewell City[‡]	92,462	8	8.7	6	6.5	5	7.6	6	6.5	18	19.5	8	8.7
Lexington City[‡]	35,889	*	*	*	*	0	0	*	*	5	13.9	*	*
Lynchburg City	80,212	6	7.5	*	*	8	10.0	8	10.0	5	6.2	11	13.7
Manassas City[‡]	512,608	31	6.0	21	4.1	*	*	28	5.5	29	5.7	31	6.0
Manassas Park City[‡]	512,608	31	6.0	21	4.1	0	0	28	5.5	29	5.7	31	6.0
Martinsville City[‡]	64,890	21	32.4	10	15.4	0	0	13	20.0	6	9.2	13	20.0

Locality	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Newport News City	181,825	28	15.4	22	12.1	39	21.4	26	14.3	19	10.4	7	3.8
Norfolk City	245,115	18	7.3	20	8.2	18	7.3	22	9.0	17	6.9	31	12.6
Norton City[‡]	43,092	12	27.8	9	20.9	*	*	11	25.5	5	11.6	*	*
Petersburg City[‡]	92,462	8	8.7	6	6.5	0	0	6	6.5	18	19.5	8	8.7
Poquoson City	12,017	*	*	*	*	0	0	*	*	0	0	0	0
Portsmouth City	95,252	9	9.4	14	14.7	19	19.9	12	12.6	16	16.8	18	18.9
Radford City[‡]	116,085	6	5.2	11	9.5	*	*	9	7.8	19	16.4	10	8.6
Richmond City	223,170	36	16.1	54	24.2	42	18.8	50	22.4	48	21.5	41	18.4
Roanoke City[‡]	219,240	44	20.1	29	13.2	27	16.9	42	19.2	44	20.1	53	24.2
Salem City[‡]	219,240	44	20.1	29	13.2	*	*	42	19.2	44	20.1	53	24.2
Staunton City[‡]	121,247	*	*	0	0	*	*	*	*	*	*	9	7.4
Suffolk City	89,273	8	9.0	6	6.7	12	13.4	7	7.8	12	13.4	8	9.0
Virginia Beach City	452,602	25	5.5	19	4.2	17	3.8	33	7.3	18	4.0	24	5.3
Waynesboro City[‡]	121,247	*	*	0	0	*	*	*	*	*	*	9	7.4
Williamsburg City	15,214	*	*	*	*	0	0	0	0	0	0	0	0
Winchester City[‡]	111,937	10	8.9	13	11.6	11	13.4	6	5.4	8	7.1	11	9.8
VIRGINIA TOTAL	8,411,808	772	9.2	689	8.2	754	9.0	785	9.3	782	9.3	759	9.0

† Rate per 100,000 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.

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, Previous 6 Months[†*§]

VSP Division	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		Jun 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,414,861	178	12.6	198	14.0	164	11.6	194	13.7	209	14.8	160	11.3
Division 2	844,936	94	11.1	76	9.0	110	13.0	87	10.3	75	8.9	88	10.4
Division 3	657,948	37	5.6	31	4.7	36	5.5	53	8.1	46	7.0	52	7.9
Division 4	436,105	43	9.9	46	10.5	44	10.1	41	9.4	49	11.2	49	11.2
Division 5	1,823,149	177	9.7	147	8.1	175	9.6	170	9.3	156	8.6	150	8.2
Division 6	773,566	102	13.2	79	10.2	94	12.2	102	13.2	105	13.6	109	14.1
Division 7	2,461,243	141	5.7	112	4.6	131	5.3	138	5.6	142	5.8	151	6.1
VIRGINIA TOTAL	8,411,808	772	9.2	689	8.2	754	9.0	785	9.3	782	9.3	759	9.0

† Rate per 100,000 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

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.
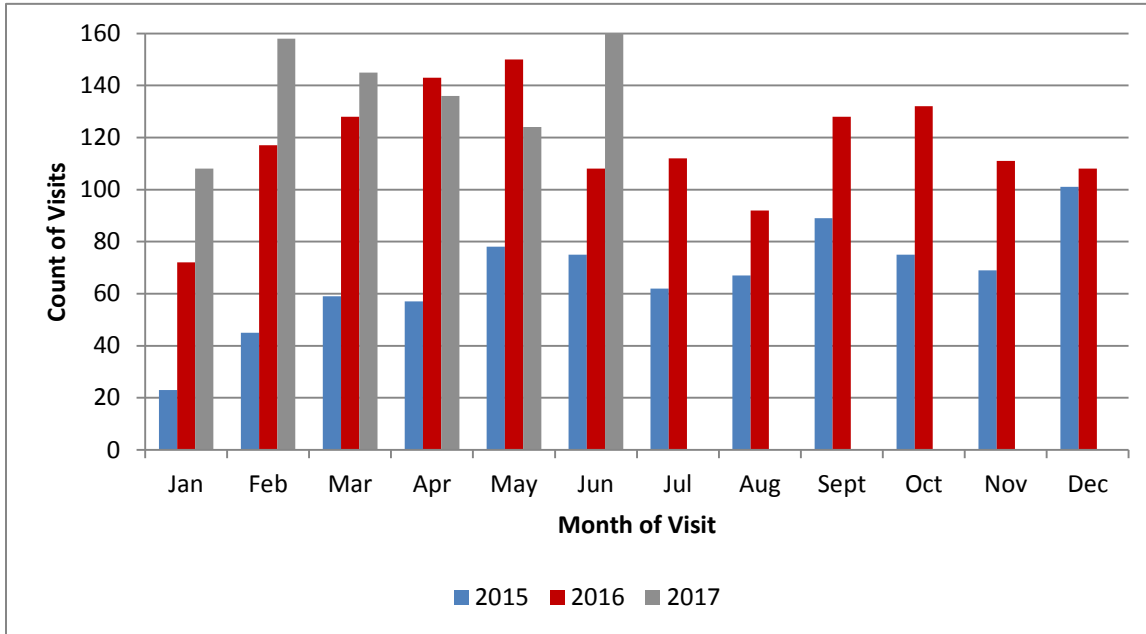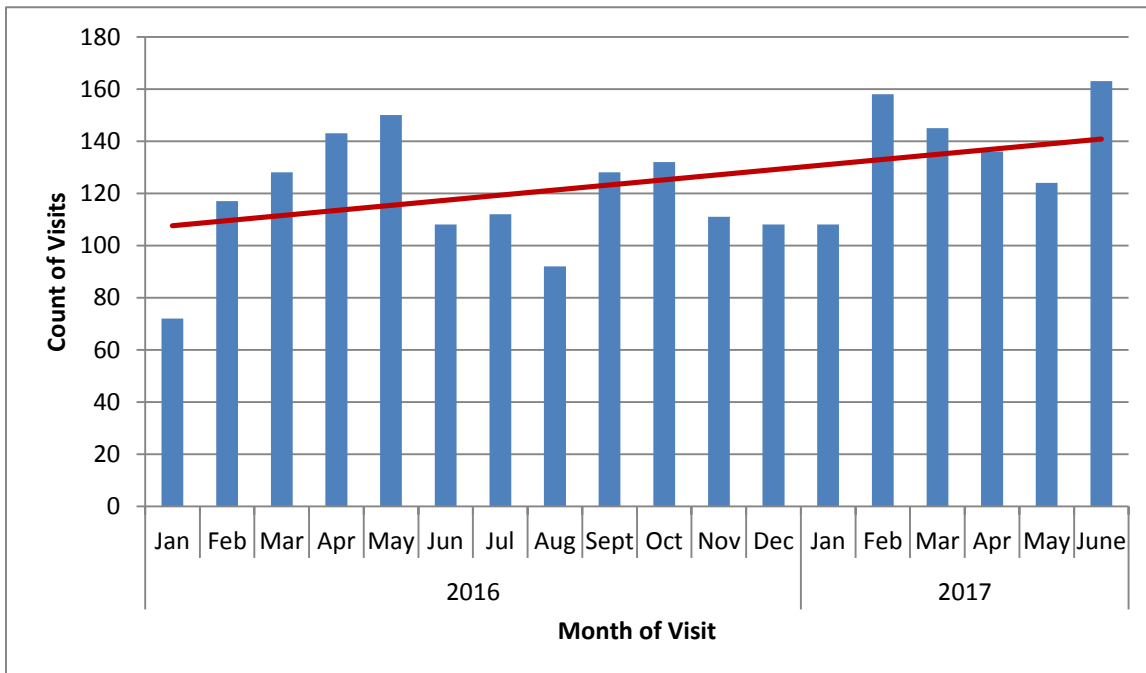

Figure 2B. Count of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month with Line of Best Fit, Previous 18 Months.

Note: A line of best fit is used to identify a trend in the relationship between two variables.

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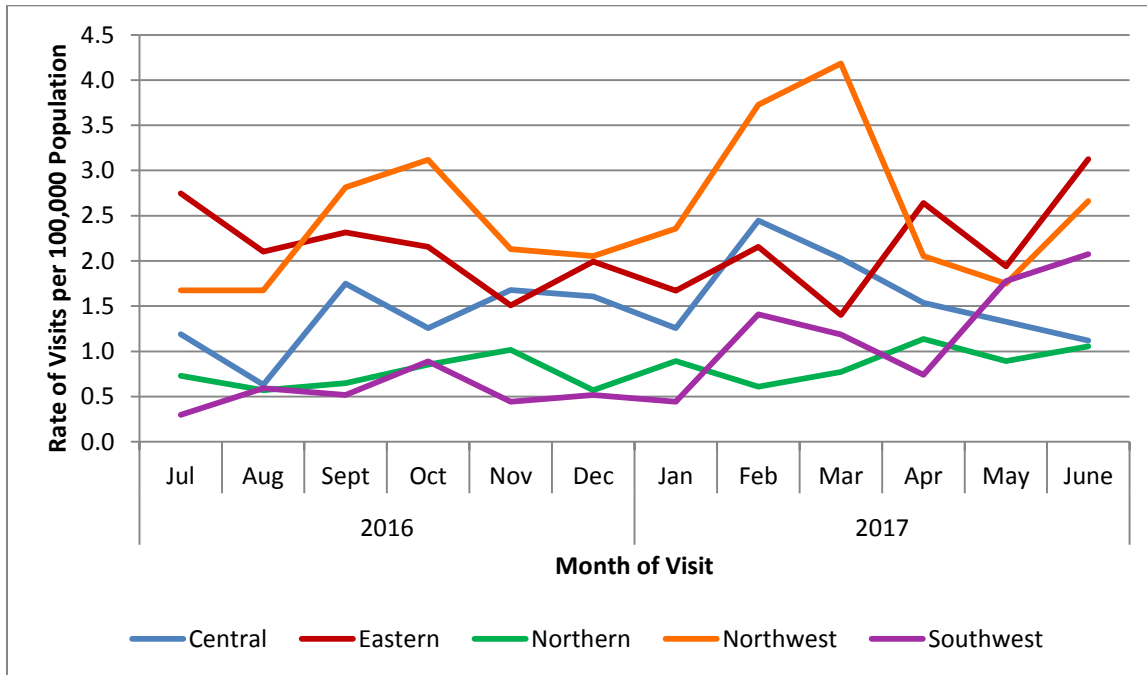

Figure 2D. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Sex, Previous 12 Months.
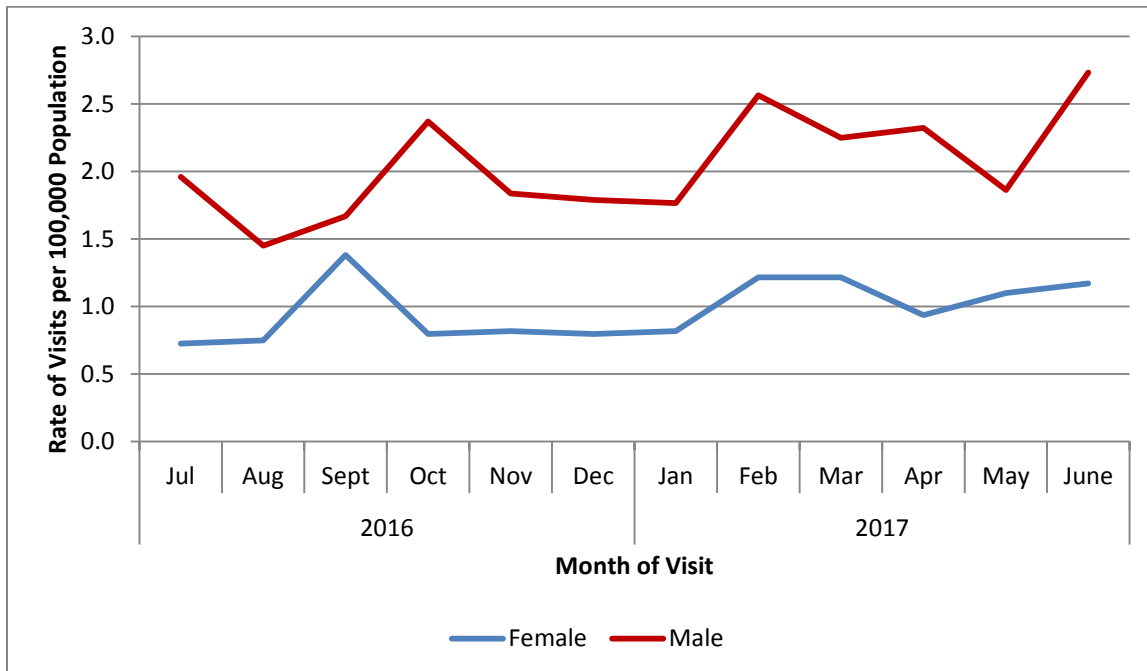
Figure 2E. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Age Group (Years), Previous 12 Months.
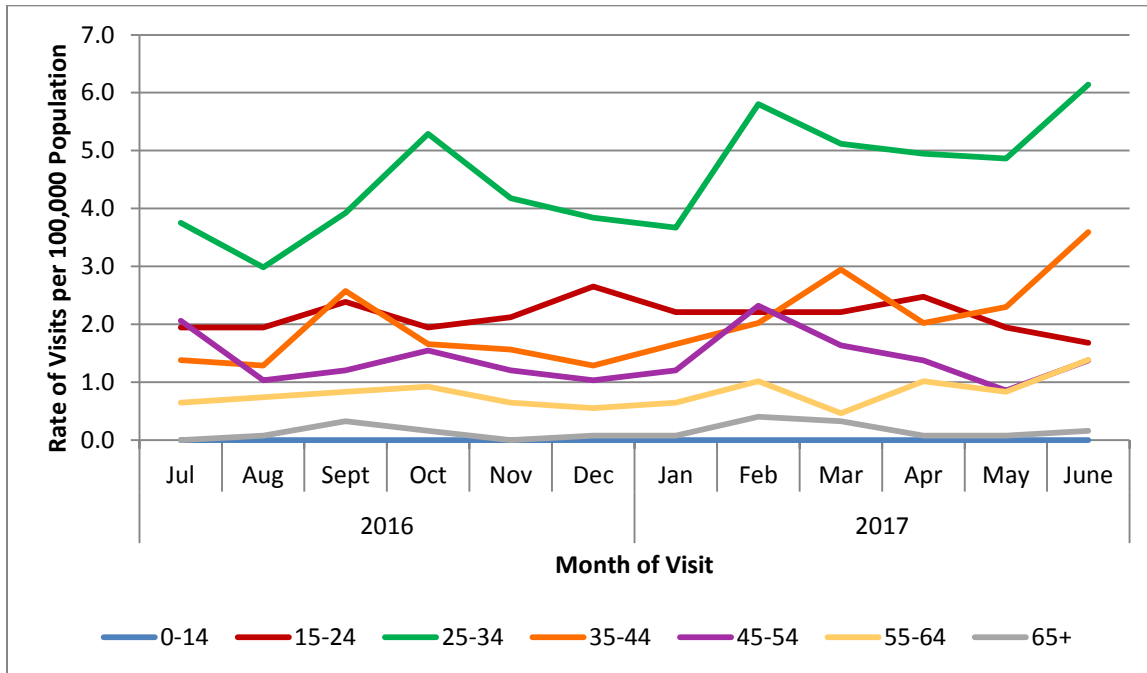
Table 2A. Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Health District, Previous 6 Months[†*]

Health District	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Alexandria	155,810	0	0	*	*	0	0	*	*	*	*	5	3.2
Alleghany	179,082	*	*	8	4.5	*	*	*	*	10	5.6	10	5.6
Arlington	230,050	*	*	*	*	0	0	*	*	*	*	*	*
Central Shenandoah	296,650	*	*	*	*	*	*	0	0	*	*	*	*
Central Virginia	260,232	*	*	0	0	*	*	*	*	0	0	*	*
Chesapeake	237,940	*	*	7	2.9	*	*	8	3.4	7	2.9	7	2.9
Chesterfield	385,224	6	1.6	8	2.1	*	*	7	1.8	5	1.3	*	*
Chickahominy	155,278	*	*	9	5.8	5	3.2	*	*	*	*	*	*
Crater	155,665	0	0	*	*	*	*	*	*	*	*	*	*
Cumberland Plateau	106,666	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
Fairfax	1,176,830	11	0.9	8	0.7	12	1.0	13	1.1	*	*	11	0.9
Hampton	135,410	7	5.2	*	*	*	*	*	*	*	*	*	*
Henrico	326,501	7	2.1	10	3.1	12	3.7	7	2.1	7	2.1	*	*
Lenowisco	89,201	0	0	0	0	0	0	0	0	0	0	0	0
Lord Fairfax	232,295	10	4.3	19	8.2	10	4.3	8	3.4	6	2.6	8	3.4
Loudoun	385,945	*	*	*	*	0	0	*	*	5	1.3	*	*
Mount Rogers	189,178	0	0	0	0	0	0	0	0	0	0	0	0
New River	182,876	0	0	*	*	*	*	0	0	*	*	*	*
Norfolk	245,115	7	2.9	7	2.9	5	2.0	15	6.1	7	2.9	7	2.9
Peninsula	351,436	*	*	7	2.0	*	*	*	*	*	*	5	1.4
Piedmont	102,752	0	0	*	*	0	0	0	0	0	0	0	0
Pittsylvania-Danville	103,585	0	0	0	0	0	0	0	0	0	0	0	0
Portsmouth	95,252	*	*	5	5.2	5	5.2	*	*	*	*	11	11.5
Prince William	512,608	9	1.8	*	*	7	1.4	12	2.3	11	2.1	6	1.2
Rappahannock	360,830	10	2.8	11	3.0	14	3.9	9	2.5	5	1.4	15	4.2
Rappahannock-Rapidan	175,151	5	2.9	11	6.3	22	12.6	8	4.6	6	3.4	6	3.4
Richmond City	223,170	*	*	5	2.2	5	2.2	5	2.2	*	*	6	2.7
Roanoke	99,660	*	*	8	8.0	7	7.0	6	6.0	9	9.0	11	11.0
Southside	82,127	0	0	0	0	*	*	0	0	0	0	0	0
Thomas Jefferson	249,537	*	*	7	2.8	6	2.4	*	*	*	*	*	*
Three Rivers	140,950	*	*	*	*	*	*	*	*	*	*	*	*
Virginia Beach	452,602	8	1.8	6	1.3	*	*	11	2.4	7	1.5	18	4.0
West Piedmont	138,882	0	0	0	0	*	*	0	0	*	*	*	*
Western Tidewater	152,232	0	0	*	*	*	*	*	*	*	*	*	*
VIRGINIA TOTAL	8,411,808	108	1.3	158	1.9	145	1.7	136	1.6	123	1.5	163	1.9

† Rate per 100,000 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.

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, Previous 6 Months[†*§]

VSP Division	2016 Population Estimate	Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017		June 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,414,861	21	1.5	38	2.7	34	2.4	25	1.8	21	1.5	23	1.6
Division 2	844,936	27	3.2	41	4.9	44	5.2	23	2.7	20	2.4	27	3.2
Division 3	657,948	2	0.3	4	0.6	6	0.9	2	0.3	1	0.2	4	0.6
Division 4	436,105	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Division 5	1,823,149	30	1.6	41	2.2	26	1.4	48	2.6	35	1.9	55	3.0
Division 6	773,566	6	0.8	19	2.5	16	2.1	10	1.3	23	3.0	28	3.6
Division 7	2,461,243	22	0.9	15	0.6	19	0.8	28	1.1	22	0.9	26	1.1
VIRGINIA TOTAL	8,411,808	108	1.3	158	1.9	145	1.7	136	1.6	123	1.5	163	1.9

† Rate per 100,000 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

Appendix 1

Virginia Localities that were 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