

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

May 2017

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Background

The Virginia Department of Health (VDH) 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. 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 2015 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](#).

Highlights for May 2017

Statewide ED visits for overdose by opioid or unspecified substance among Virginia residents decreased by 3 visits (<1%) in May compared to April 2017.

- Among the 5 [VDH health planning regions](#), visits for overdose by opioid or unspecified substance increased slightly in the Northern (4 additional visits, 3%) and Central regions (4 additional visits, 2%). Visits decreased in the Eastern and Northwest regions while the Southwest region saw no change in the number of ED visits for overdose by opioid or unspecified substance. Central region has been the region with the highest rate (13.9 per 100,000 population) since November 2016.
- By sex, visits for overdose by opioid or unspecified substance increased among females (36 additional visits, 10%), while visits decreased among males (39 fewer visits, 10%).
- By age group, the greatest increase in visits for overdose by opioid or unspecified substance was observed among the 15-24 year old group (25 additional visits, 16%) followed by the 55-64 year old group (8 additional visits, 9%). A decrease in visits was observed in all other age groups.
- Among the 35 [VDH health districts](#), the largest increases in visits for overdose by opioid or unspecified substance were observed in Crater (11 additional visits, 110%), New River (12 additional visits, 80%), and Three Rivers (10 additional visits, 77%). Roanoke remained the VDH health district with the highest rate at 22.1 visits per 100,000 population.

Statewide ED visits for overdose by heroin among Virginia residents decreased by 13 visits (10%) in May compared to April 2017.

- Among the 5 [VDH health planning regions](#), visits for overdose by heroin increased in the Southwest region (14 additional visits, 140%) and decreased in the other four regions.
- By sex, visits for overdose by heroin increased among females (6 additional visits, 25%) and decreased among males (19 fewer visits, 20%). Males continue to contribute approximately twice as many visits for overdose by heroin compared to females.
- By age group, visits for overdose by heroin increased among those aged 35-44 years (3 additional visits, 14%). Visits decreased or remained the same among all other age groups. The largest proportion of visits remained among those aged 25-34 years representing 42% of visits over the previous 12 months as well as the highest visit rate (4.8 per 100,000 population).
- Among the 35 [VDH health districts](#), the largest increases in visits for overdose by heroin were observed in Loudoun (400%), Alleghany (233%), and Roanoke (50%). Roanoke also represented the health district with the highest visit rate (9.0 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

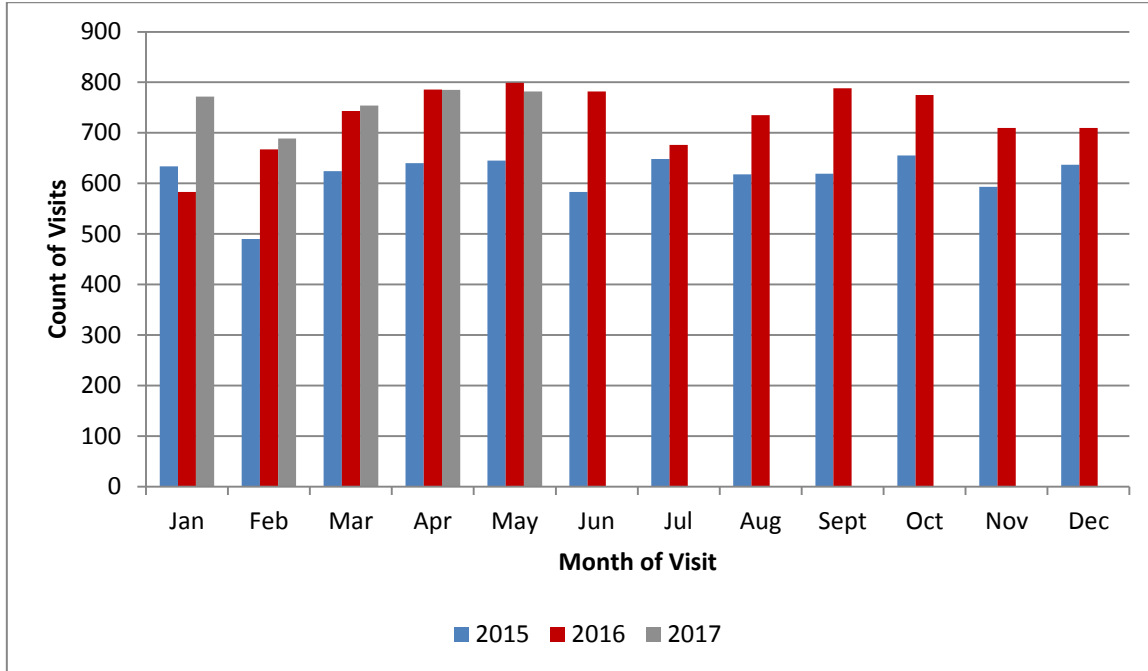
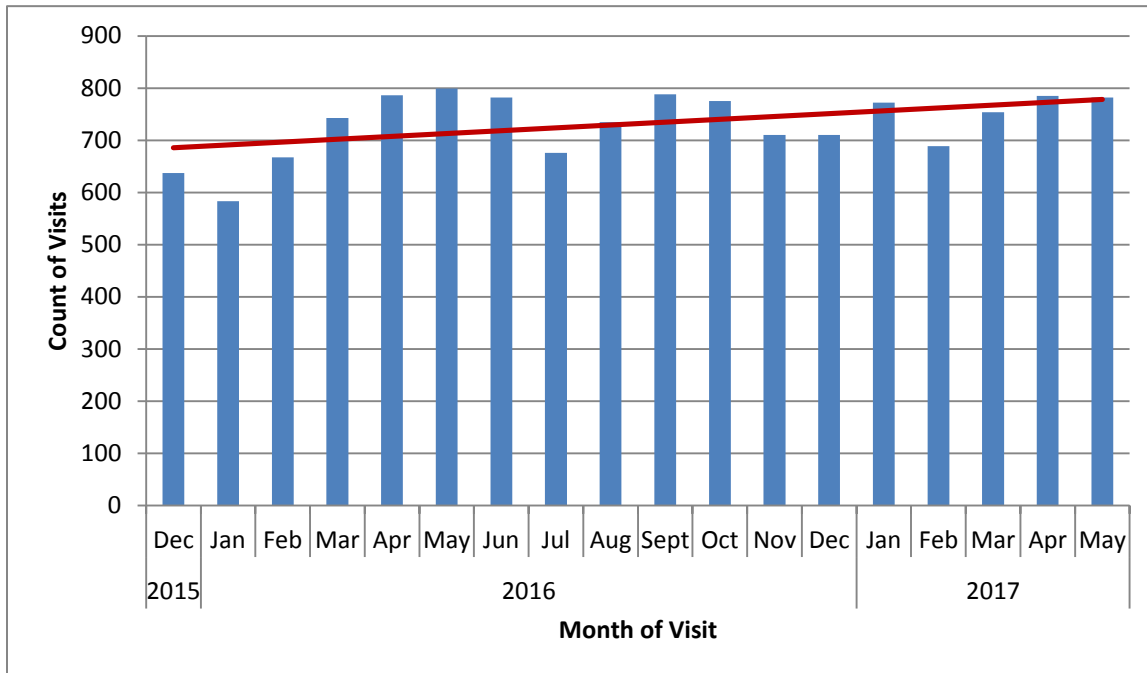


Figure 1B. Count of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month with Line of Best Fit, Previous 18 Months



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

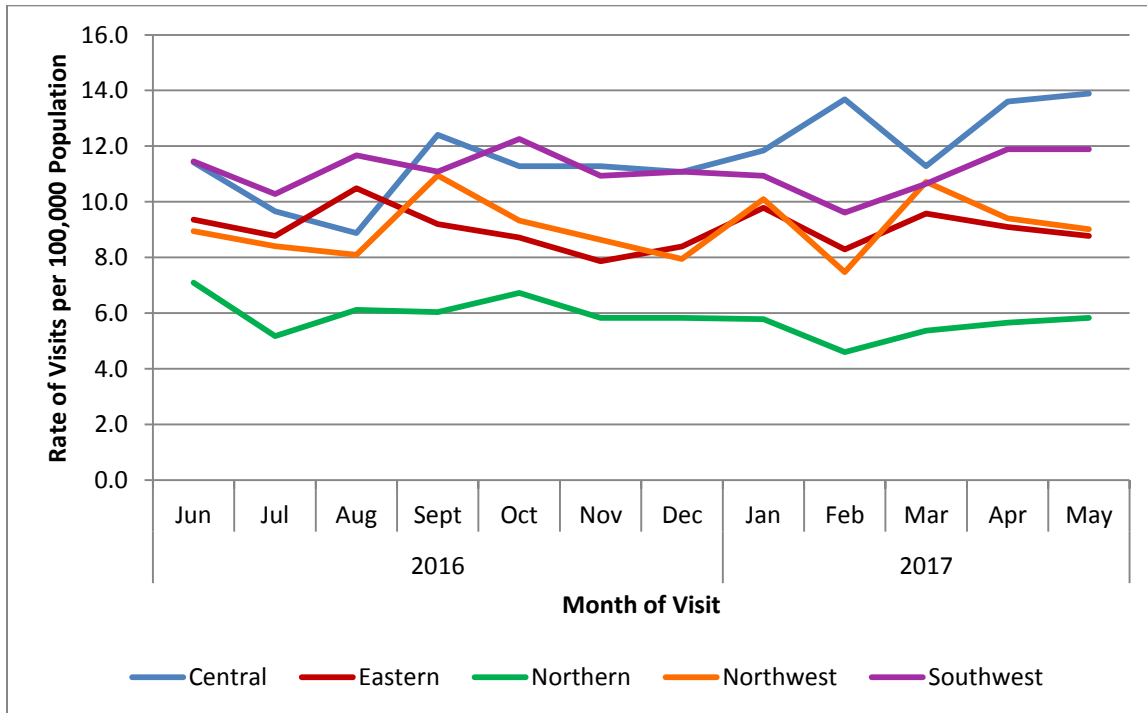


Figure 1D. Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Sex, Previous 12 Months

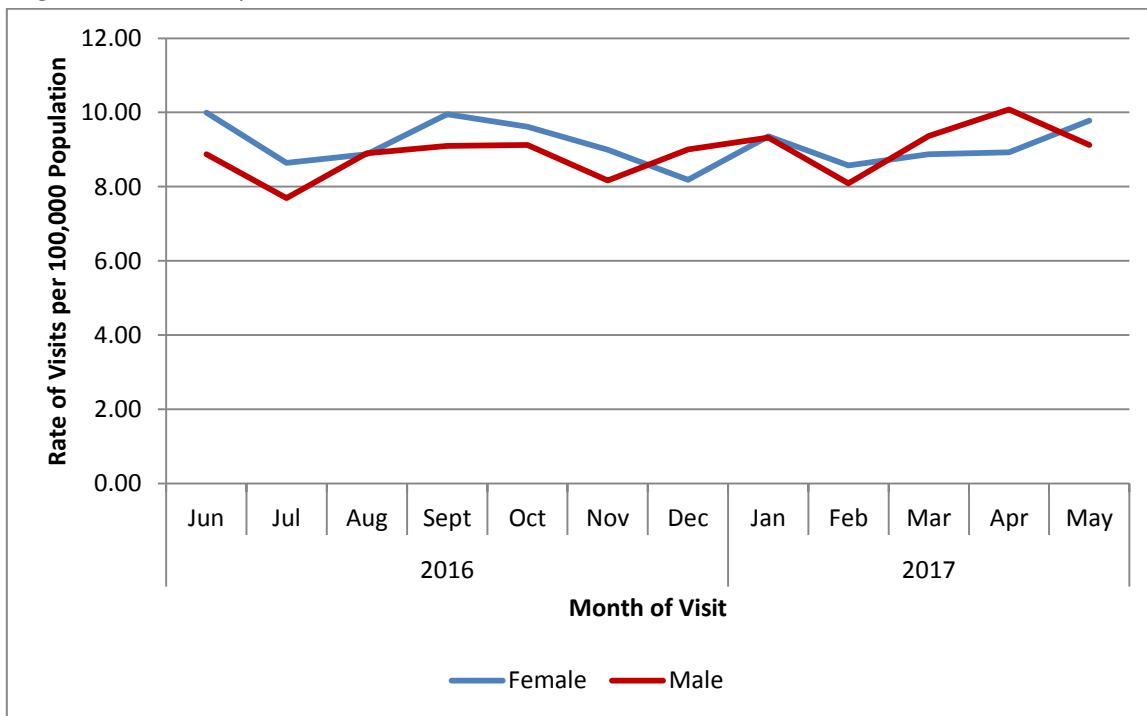


Figure 1E. Rate of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Age Group (Years), Previous 12 Months

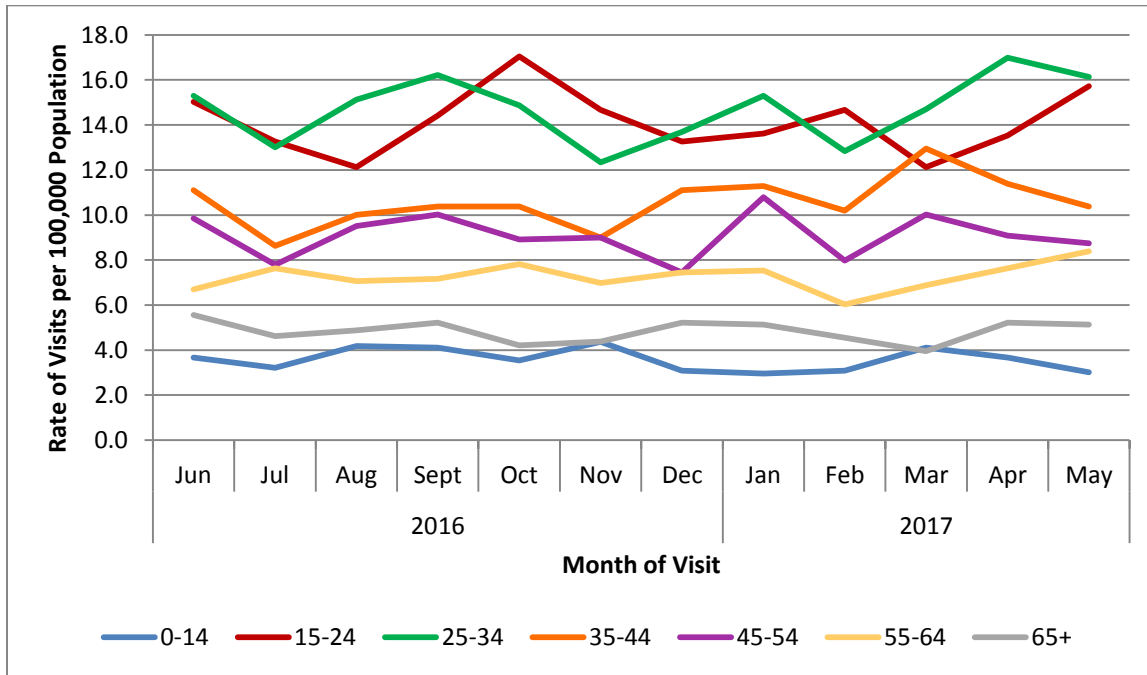


Table 1A. Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Opioid or Unspecified Substance among Virginia Residents by Month and Health District, Previous 6 Months^{†*}

Health District	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Alexandria	159,571	11	6.9	13	8.1	8	5.0	8	5.0	12	7.5	13	8.1
Alleghany	179,604	21	11.7	25	13.9	18	10.0	17	9.5	22	12.2	28	15.6
Arlington	234,678	13	5.5	12	5.1	13	5.5	9	3.8	6	2.6	10	4.3
Central Shenandoah	297,621	9	3.0	10	3.4	8	2.7	10	3.4	10	3.4	11	3.7
Central Virginia	259,900	28	10.8	12	4.6	16	6.2	15	5.8	26	10.0	23	8.8
Chesapeake	238,283	27	11.3	29	12.2	18	7.6	19	8.0	27	11.3	22	9.2
Chesterfield	379,107	36	9.5	46	12.1	40	10.6	39	10.3	39	10.3	37	9.8
Chickahominy	154,089	14	9.1	16	10.4	15	9.7	5	3.2	18	11.7	22	14.3
Crater	157,517	12	7.6	11	7.0	7	4.4	9	5.7	10	6.3	21	13.3
Cumberland Plateau	110,381	9	8.2	6	5.4	9	8.2	10	9.1	7	6.3	12	10.9
Eastern Shore	45,692	*	*	5	10.9	7	15.3	*	*	8	17.5	6	13.1
Fairfax	1,166,706	60	5.1	69	5.9	53	4.5	67	5.7	65	5.6	69	5.9
Hampton	138,626	16	11.5	25	18.0	13	9.4	17	12.3	9	6.5	11	7.9
Henrico	320,717	45	14.0	46	14.3	62	19.3	49	15.3	62	19.3	51	15.9
Lenowisco	91,830	13	14.2	14	15.2	11	12.0	14	15.2	14	15.2	9	9.8
Lord Fairfax	229,120	23	10.0	26	11.3	26	11.3	37	16.1	17	7.4	18	7.9
Loudoun	374,451	27	7.2	16	4.3	17	4.5	17	4.5	27	7.2	21	5.6
Mount Rogers	191,012	12	6.3	17	8.9	23	12.0	16	8.4	16	8.4	20	10.5
New River	182,991	11	6.0	12	6.6	16	8.7	19	10.4	15	8.2	27	14.8
Norfolk	247,189	15	6.1	18	7.3	20	8.1	18	7.3	22	8.9	17	6.9
Peninsula	353,464	29	8.2	49	13.9	40	11.3	50	14.1	37	10.5	36	10.2
Piedmont	104,667	9	8.6	7	6.7	9	8.6	9	8.6	8	7.6	10	9.6
Pittsylvania-Danville	105,799	12	11.3	13	12.3	9	8.5	6	5.7	17	16.1	9	8.5
Portsmouth	96,874	19	19.6	9	9.3	14	14.5	19	19.6	12	12.4	16	16.5
Prince William	500,740	31	6.2	31	6.2	21	4.2	30	6.0	28	5.6	29	5.8
Rappahannock	350,535	26	7.4	42	12.0	21	6.0	41	11.7	38	10.8	36	10.3
Rappahannock-Rapidan	171,228	28	16.4	31	18.1	25	14.6	33	19.3	33	19.3	24	14.0
Richmond City	217,938	32	14.7	36	16.5	54	24.8	42	19.3	50	22.9	48	22.0
Roanoke	99,681	24	24.1	21	21.1	15	15.0	27	27.1	23	23.1	22	22.1
Southside	84,304	9	10.7	6	7.1	7	8.3	7	8.3	6	7.1	8	9.5
Thomas Jefferson	248,500	17	6.8	22	8.9	17	6.8	18	7.2	24	9.7	28	11.3
Three Rivers	141,609	13	9.2	15	10.6	14	9.9	18	12.7	13	9.2	23	16.2
Virginia Beach	453,500	26	5.7	25	5.5	19	4.2	17	3.7	33	7.3	18	4.0
West Piedmont	141,119	21	14.9	29	20.6	14	9.9	21	14.9	22	15.6	12	8.5
Western Tidewater	153,950	9	5.8	8	5.2	10	6.5	17	11.0	9	5.8	15	9.7
VIRGINIA TOTAL	8,382,993	710	8.5	772	9.2	689	8.2	754	9.0	785	9.4	782	9.3

† Rate per 100,000 population based on 2015 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	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Accomack County	32,973	*	*	*	*	*	*	*	*	5	15.2	*	*
Albemarle County [‡]	152,300	9	5.9	9	5.9	11	7.2	10	7.2	14	9.2	16	10.5
Alleghany County [‡]	21,335	*	*	0	0	*	*	*	*	*	*	*	*
Amelia County	12,903	*	*	0	0	*	*	*	*	*	*	*	*
Amherst County	31,914	*	*	*	*	*	*	*	*	*	*	6	18.8
Appomattox County	15,414	*	*	0	0	0	0	0	0	*	*	0	0
Arlington County	229,164	13	5.7	12	5.2	13	5.7	9	3.9	6	2.6	10	4.4
Augusta County [‡]	120,221	0	0	*	*	0	0	0	0	*	*	*	*
Bath County	4,470	0	0	0	0	0	0	*	*	0	0	0	0
Bedford County	77,724	7	9.0	*	*	9	11.6	6	7.7	6	7.7	10	12.9
Bland County	6,561	0	0	0	0	0	0	0	0	0	0	0	0
Botetourt County	33,347	*	*	*	*	*	*	*	*	0	0	*	*
Brunswick County	16,698	0	0	*	*	*	*	*	*	*	*	*	*
Buchanan County	22,776	*	*	0	0	*	*	*	*	*	*	*	*
Buckingham County	17,032	*	*	*	*	*	*	*	*	*	*	*	*
Campbell County	55,086	6	10.9	*	*	0	0	0	0	6	10.9	*	*
Caroline County	29,984	*	*	*	*	*	*	*	*	*	*	6	20.0
Carroll County	29,724	*	*	*	*	*	*	*	*	*	*	*	*
Charles City County	7,040	*	*	0	0	0	0	0	0	0	0	0	0
Charlotte County	12,201	*	*	*	*	*	*	*	*	*	*	*	*
Chesterfield County [‡]	353,507	35	9.9	43	12.2	38	10.7	37	10.7	39	11.0	35	9.9
Clarke County	14,363	0	0	*	*	0	0	*	*	*	*	*	*
Craig County	5,211	0	0	*	*	*	*	*	*	*	*	*	*
Culpeper County	49,432	13	26.3	10	20.2	8	16.2	11	22.3	9	18.2	8	16.2
Cumberland County	9,719	*	*	0	0	0	0	*	*	0	0	0	0
Dickenson County	15,115	*	*	*	*	*	*	5	33.1	*	*	*	*
Dinwiddie County	27,852	*	*	0	0	0	0	0	0	0	0	0	0
Essex County	11,130	*	*	0	0	*	*	*	*	0	0	*	*
Fairfax County [‡]	1,180,139	60	5.1	69	5.8	53	4.5	67	5.7	65	5.5	69	5.8
Fauquier County	68,782	11	16.0	12	17.4	10	14.5	13	18.9	12	17.4	9	13.1
Floyd County	15,651	0	0	0	0	*	*	*	*	*	*	0	0
Fluvanna County	26,235	*	*	*	*	0	0	0	0	*	*	*	*
Franklin County	56,264	*	*	8	14.2	*	*	7	12.4	8	14.2	6	10.7
Frederick County [‡]	110,483	7	6.3	10	9.1	13	11.8	*	*	6	5.4	8	7.2
Giles County	16,708	*	*	*	*	*	*	*	*	*	*	*	*
Gloucester County	37,143	*	*	*	*	*	*	7	18.8	5	13.5	*	*
Goochland County	22,253	*	*	*	*	*	*	0	0	*	*	*	*

Locality	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Grayson County [‡]	22,926	*	*	6	26.2	8	34.9	0	0	7	30.5	*	*
Greene County	19,162	*	*	*	*	*	*	0	0	*	*	*	*
Greensville County [‡]	17,381	*	*	*	*	*	*	*	*	*	*	*	*
Halifax County	35,125	*	*	*	*	*	*	*	*	*	*	*	*
Hanover County	103,227	8	7.7	10	9.7	12	11.6	5	4.8	15	14.5	16	15.5
Henrico County	325,155	45	13.8	46	14.1	62	19.1	49	15.1	62	19.1	51	15.7
Henry County [‡]	65,526	17	25.9	21	32.0	10	15.3	14	21.4	13	19.8	6	9.2
Highland County	2,214	0	0	0	0	0	0	0	0	0	0	0	0
Isle of Wight County	36,314	*	*	0	0	*	*	*	*	*	*	0	0
James City County	73,147	*	*	15	20.5	9	12.3	7	9.6	6	8.2	10	13.7
King and Queen County	7,158	0	0	*	*	0	0	0	0	0	0	*	*
King George County	25,515	*	*	6	23.5	*	*	*	*	5	19.6	*	*
King William County	16,269	*	*	*	*	*	*	*	*	*	*	*	*
Lancaster County	10,965	0	0	*	*	*	*	0	0	0	0	*	*
Lee County	24,742	0	0	*	*	*	*	*	*	*	*	*	*
Loudoun County	375,629	27	7.2	16	4.3	17	4.5	17	4.5	27	7.2	21	5.6
Louisa County	34,602	*	*	5	14.5	*	*	5	14.5	6	17.3	6	17.3
Lunenburg County	12,299	*	*	*	*	0	0	*	*	0	0	0	0
Madison County	13,134	*	*	*	*	0	0	*	*	*	*	*	*
Mathews County	8,862	*	*	0	0	0	0	*	*	*	*	*	*
Mecklenburg County	31,081	6	19.3	*	*	*	*	*	*	*	*	*	*
Middlesex County	10,606	*	*	*	*	0	0	*	*	*	*	*	*
Montgomery County [‡]	115,056	6	5.2	6	5.2	11	9.6	10	10.4	9	7.8	19	16.5
Nelson County	14,785	0	0	*	*	0	0	*	*	*	*	0	0
New Kent County	20,392	*	*	*	*	*	*	0	0	*	*	5	24.5
Northampton County	12,155	*	*	*	*	*	*	*	*	*	*	*	*
Northumberland County	12,232	0	0	*	*	*	*	*	*	*	*	*	*
Nottoway County	15,673	0	0	*	*	*	*	0	0	*	*	*	*
Orange County	35,385	*	*	7	19.8	7	19.8	5	14.1	8	22.6	*	*
Page County	23,726	*	*	5	21.1	*	*	*	*	*	*	0	0
Patrick County	18,045	0	0	0	0	0	0	0	0	*	*	0	0
Pittsylvania County [‡]	104,276	12	11.5	13	12.5	9	8.6	*	*	17	16.3	9	8.6
Powhatan County	28,031	*	*	*	*	*	*	*	*	0	0	*	*
Prince Edward County	22,952	*	*	*	*	*	*	0	0	*	*	*	*
Prince George County	92,717	8	8.6	8	8.6	6	6.5	*	*	6	6.5	18	19.4
Prince William County [‡]	509,211	31	6.1	31	6.1	21	4.1	28	5.9	28	5.5	29	5.7
Pulaski County	34,332	*	*	5	14.6	*	*	*	*	*	*	7	20.4
Rappahannock County	7,378	*	*	*	*	0	0	*	*	0	0	0	0
Richmond County	8,908	0	0	0	0	0	0	0	0	*	*	0	0
Roanoke County [‡]	219,738	40	18.2	44	20.0	29	13.2	6	16.8	42	19.1	44	20.0

Locality	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Rockbridge County [‡]	36,234	*	*	*	*	*	*	0	0	*	*	5	13.8
Rockingham County [‡]	131,131	8	6.1	*	*	7	5.3	6	4.6	5	3.8	5	3.8
Russell County	27,891	*	*	*	*	*	*	*	*	*	*	*	*
Scott County	22,126	0	0	0	0	0	0	*	*	*	*	0	0
Shenandoah County	43,190	8	18.5	5	11.6	7	16.2	8	18.5	*	*	*	*
Smyth County	31,470	*	*	*	*	8	25.4	5	15.9	*	*	*	*
Southampton County [‡]	26,599	0	0	0	0	*	*	*	*	0	0	*	*
Spotsylvania County	130,475	10	7.7	22	16.9	11	8.4	16	12.3	11	8.4	14	10.7
Stafford County	142,003	5	3.5	9	6.3	5	3.5	13	9.2	18	12.7	12	8.5
Surry County	6,709	0	0	0	0	0	0	0	0	0	0	0	0
Sussex County	11,715	0	0	0	0	0	0	0	0	0	0	0	0
Tazewell County	42,899	*	*	*	*	*	*	*	*	*	*	*	*
Warren County	39,083	5	12.8	5	12.8	*	*	9	23.0	*	*	6	15.4
Washington County [‡]	71,732	*	*	5	7.0	*	*	5	8.4	*	*	6	8.4
Westmoreland County	17,629	*	*	*	*	*	*	*	*	*	*	5	28.4
Wise County [‡]	43,657	13	29.8	12	27.5	9	20.6	10	25.2	11	25.2	5	11.5
Wythe County	29,119	0	0	0	0	*	*	0	0	0	0	*	*
York County	67,837	*	*	*	*	7	10.3	*	*	*	*	7	10.3
Alexandria City	153,511	11	7.2	13	8.5	8	5.2	8	5.2	12	7.8	13	8.5
Bristol City [‡]	71,732	*	*	5	7.0	*	*	*	*	*	*	6	8.4
Buena Vista City [‡]	36,234	*	*	*	*	*	*	*	*	*	*	5	13.8
Charlottesville City [‡]	152,300	9	5.9	9	5.9	11	7.2	*	*	14	9.2	16	10.5
Chesapeake City	235,429	27	11.5	29	12.3	18	7.6	19	8.1	27	11.5	22	9.3
Colonial Heights City [‡]	353,507	35	9.9	43	12.2	38	10.7	*	*	39	11.0	35	9.9
Covington City [‡]	21,335	*	*	0	0	*	*	0	0	*	*	*	*
Danville City [‡]	104,276	12	11.5	13	12.5	9	8.6	*	*	17	16.3	9	8.6
Emporia City [‡]	17,381	*	*	*	*	*	*	0	0	*	*	*	*
Fairfax City [‡]	1,180,139	60	5.1	69	5.8	53	4.5	0	0	65	5.5	69	5.8
Falls Church City [‡]	1,180,139	60	5.1	69	5.8	53	4.5	0	0	65	5.5	69	5.8
Franklin City [‡]	26,599	0	0	0	0	*	*	*	*	0	0	*	*
Fredericksburg City	28,118	*	*	*	*	*	*	5	17.8	*	*	*	*
Galax City [‡]	22,926	*	*	6	26.2	8	34.9	*	*	7	30.5	*	*
Hampton City	136,454	16	11.7	25	18.3	13	9.5	17	12.5	9	6.6	11	8.1
Harrisonburg City [‡]	131,131	8	6.1	*	*	7	5.3	0	0	5	3.8	5	3.8
Hopewell City [‡]	92,717	8	8.6	8	8.6	6	6.5	5	7.5	6	6.5	18	19.4
Lexington City [‡]	36,234	*	*	*	*	*	*	0	0	*	*	5	13.8
Lynchburg City	79,812	9	11.3	6	7.5	*	*	8	10.0	8	10.0	5	6.3
Manassas City [‡]	509,211	31	6.1	31	6.1	21	4.1	*	*	28	5.5	29	5.7
Manassas Park City [‡]	509,211	31	6.1	31	6.1	21	4.1	0	0	28	5.5	29	5.7
Martinsville City [‡]	65,526	17	25.9	21	32.0	10	15.3	0	0	13	19.8	6	9.2

Locality	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Newport News City	182,385	24	13.2	28	15.4	22	12.1	39	21.4	26	14.3	19	10.4
Norfolk City	246,393	15	6.1	18	7.3	20	8.1	18	7.3	22	8.9	17	6.9
Norton City [‡]	43,657	13	29.8	12	27.5	9	20.6	*	*	11	25.2	5	11.5
Petersburg City [‡]	92,717	8	8.6	8	8.6	6	6.5	0	0	6	6.5	18	19.4
Poquoson City	12,059	*	*	*	*	*	*	0	0	*	*	0	0
Portsmouth City	96,201	19	19.8	9	9.4	14	14.6	19	19.8	12	12.5	16	16.6
Radford City [‡]	115,056	6	5.2	6	5.2	11	9.6	*	*	9	7.8	19	16.5
Richmond City	220,289	32	14.5	36	16.3	54	24.5	42	19.1	50	22.7	48	21.8
Roanoke City [‡]	219,738	40	18.2	44	20.0	29	13.2	27	16.8	42	19.1	44	20.0
Salem City [‡]	219,738	40	18.2	44	20.0	29	13.2	*	*	42	19.1	44	20.0
Staunton City [‡]	120,221	0	0	*	*	0	0	*	*	*	*	*	*
Suffolk City	88,161	6	6.8	8	9.1	6	6.8	12	13.6	7	7.9	12	13.6
Virginia Beach City	452,745	26	5.7	25	5.5	19	4.2	17	3.8	33	7.3	18	4.0
Waynesboro City [‡]	120,221	0	0	*	*	0	0	*	*	*	*	*	*
Williamsburg City	15,052	0	0	*	*	*	*	0	0	0	0	0	0
Winchester City [‡]	110,483	7	6.3	10	9.1	13	11.8	11	13.6	6	5.4	8	7.2
VIRGINIA TOTAL	8,382,993	710	8.5	772	9.2	689	8.2	754	9.0	785	9.4	782	9.3

† Rate per 100,000 population based on 2015 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	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,403,431	152	10.8	178	12.7	198	14.1	164	11.7	194	13.8	209	14.9
Division 2	836,683	78	9.3	94	11.2	76	9.1	110	13.1	87	10.4	75	9.0
Division 3	655,338	52	7.9	37	5.6	31	4.7	36	5.5	53	8.1	46	7.0
Division 4	441,778	39	8.8	43	9.7	46	10.4	44	10.0	41	9.3	49	11.1
Division 5	1,823,018	155	8.5	177	9.7	147	8.1	175	9.6	170	9.3	156	8.6
Division 6	775,091	92	11.9	102	13.2	79	10.2	94	12.1	102	13.2	105	13.5
Division 7	2,447,654	142	5.8	141	5.8	112	4.6	131	5.4	138	5.6	142	5.8
VIRGINIA TOTAL	8,382,993	710	8.5	772	9.2	689	8.2	754	9.0	785	9.4	782	9.3

† Rate per 100,000 population based on 2015 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

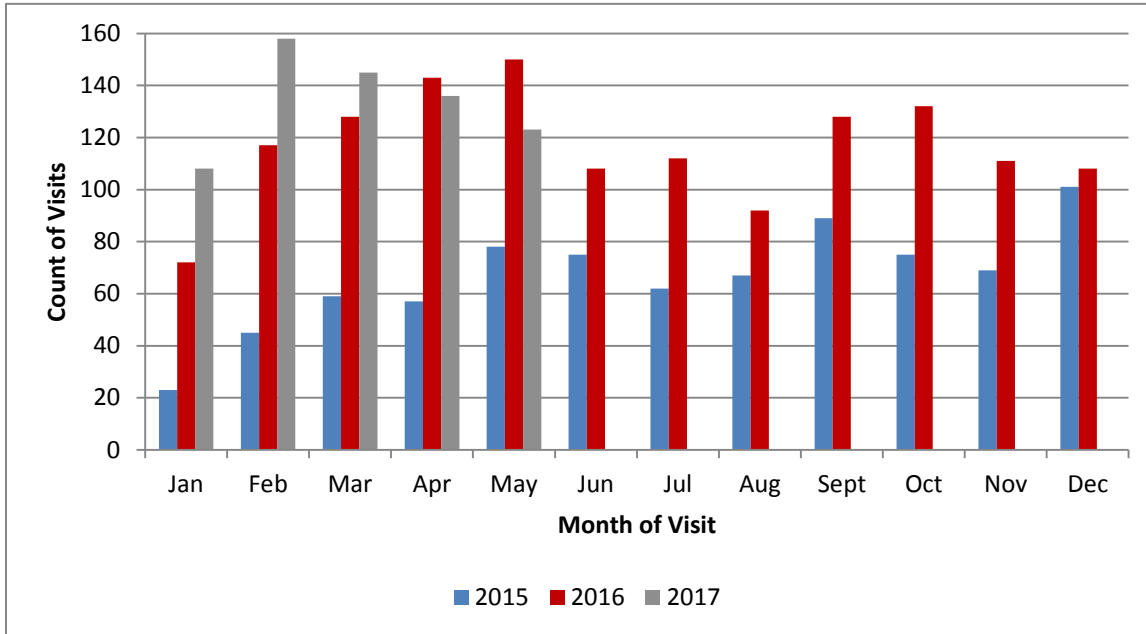
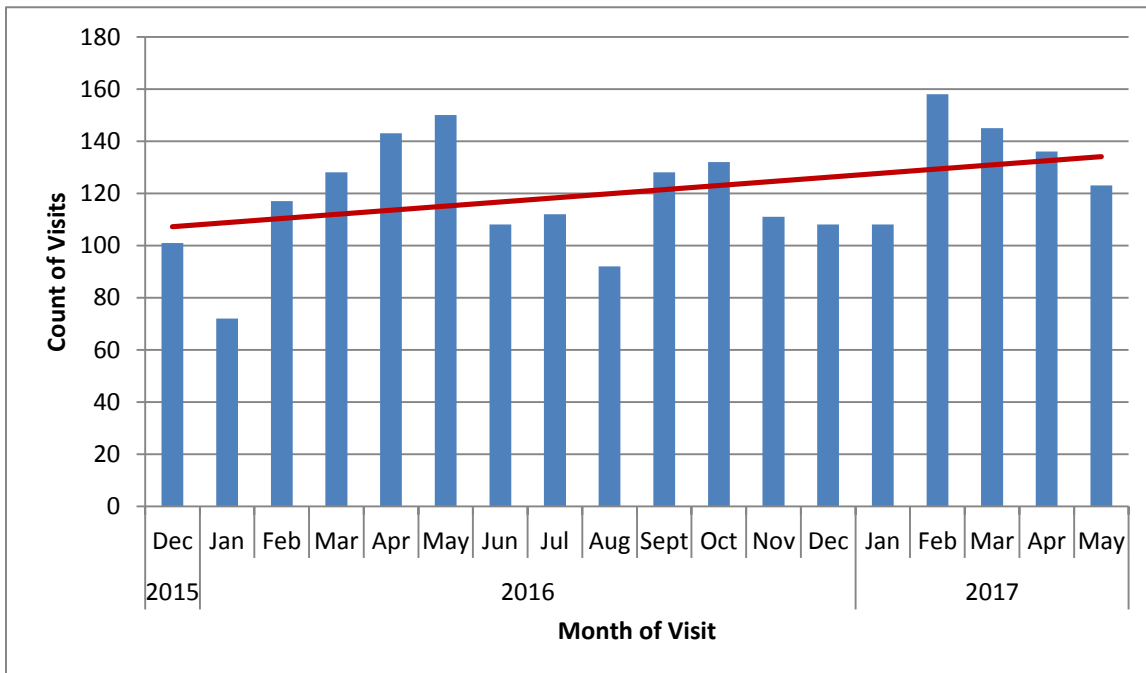


Figure 2B. Count of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month with Line of Best Fit, Previous 18 Months



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

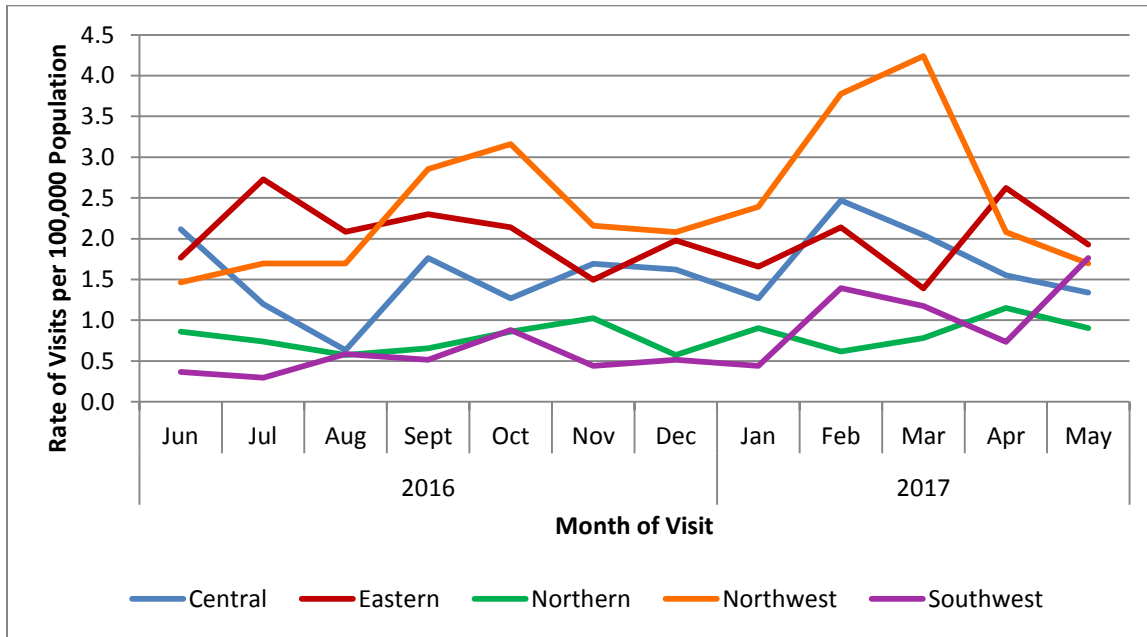


Figure 2D. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Sex, Previous 12 Months

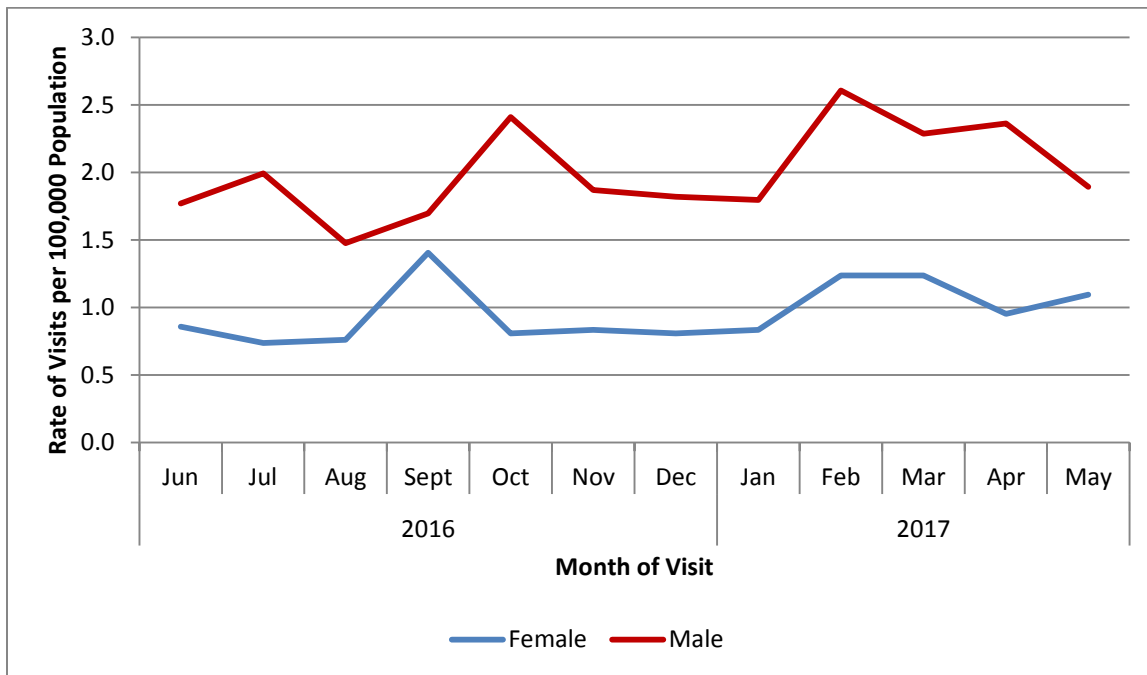


Figure 2E. Rate of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Age Group (Years), Previous 12 Months

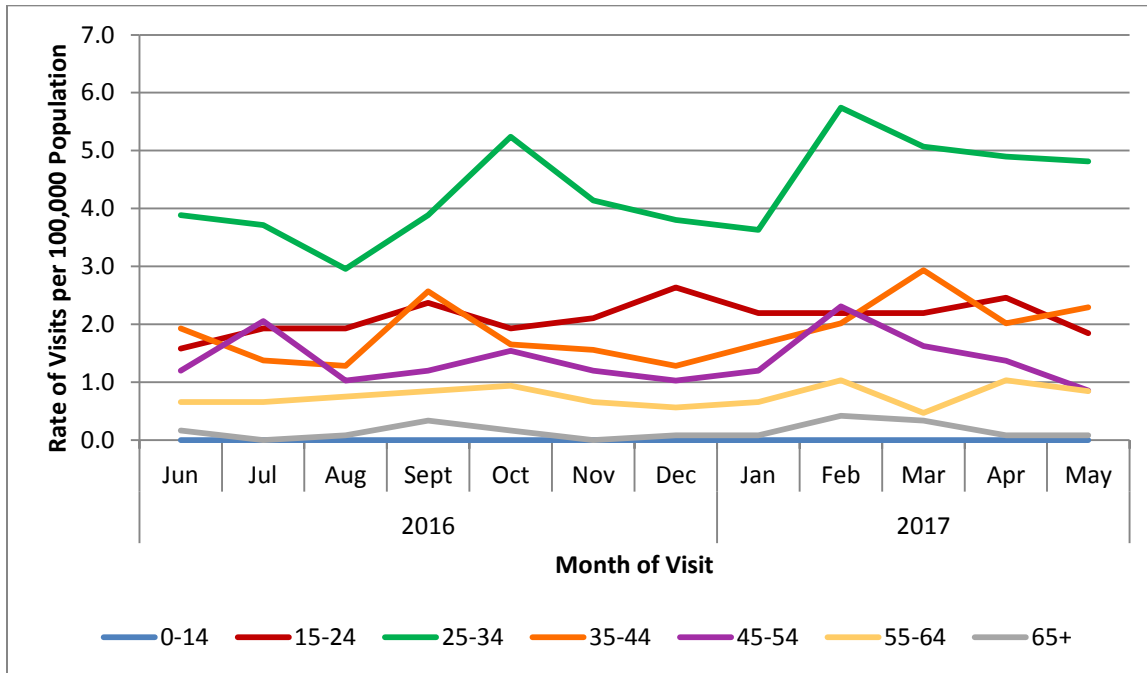


Table 2A. Count and Rate per 100,000 Population of ED Visits for Unintentional Overdose by Heroin among Virginia Residents by Month and Health District, Previous 6 Months^{†*}

Health District	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Alexandria	159,571	0	0	0	0	*	*	0	0	*	*	*	*
Alleghany	179,604	*	*	*	*	8	4.5	*	*	*	*	10	5.6
Arlington	234,678	*	*	*	*	*	*	0	0	*	*	*	*
Central Shenandoah	297,621	0	0	*	*	*	*	*	*	0	0	*	*
Central Virginia	259,900	0	0	*	*	0	0	*	*	*	*	0	0
Chesapeake	238,283	5	2.1	*	*	7	2.9	*	*	8	3.4	7	2.9
Chesterfield	379,107	7	1.8	6	1.6	8	2.1	*	*	7	1.8	5	1.3
Chickahominy	154,089	*	*	*	*	9	5.8	5	3.2	*	*	*	*
Crater	157,517	*	*	0	0	*	*	*	*	*	*	*	*
Cumberland Plateau	110,381	0	0	0	0	0	0	0	0	0	0	0	0
Eastern Shore	45,692	0	0	0	0	0	0	0	0	0	0	0	0
Fairfax	1,166,706	5	0.4	11	0.9	8	0.7	12	1.0	13	1.1	*	*
Hampton	138,626	6	4.3	7	5.0	*	*	*	*	*	*	*	*
Henrico	320,717	9	2.8	7	2.2	10	3.1	12	3.7	7	2.2	7	2.2
Lenowisco	91,830	0	0	0	0	0	0	0	0	0	0	0	0
Lord Fairfax	229,120	*	*	10	4.4	19	8.3	10	4.4	8	3.5	6	2.6
Loudoun	374,451	*	*	*	*	*	*	0	0	*	*	5	1.3
Mount Rogers	191,012	*	*	0	0	0	0	0	0	0	0	0	0
New River	182,991	0	0	0	0	*	*	*	*	0	0	*	*
Norfolk	247,189	5	2.0	7	2.8	7	2.8	5	2.0	15	6.1	7	2.8
Peninsula	353,464	*	*	*	*	7	2.0	*	*	*	*	*	*
Piedmont	104,667	0	0	0	0	*	*	0	0	0	0	0	0
Pittsylvania-Danville	105,799	0	0	0	0	0	0	0	0	0	0	0	0
Portsmouth	96,874	*	*	*	*	5	5.2	5	5.2	*	*	*	*
Prince William	500,740	*	*	9	1.8	*	*	7	1.4	12	2.4	11	2.2
Rappahannock	350,535	12	3.4	10	2.9	11	3.1	14	4.0	9	2.6	5	1.4
Rappahannock-Rapidan	171,228	9	5.3	5	2.9	11	6.4	22	12.8	8	4.7	6	3.5
Richmond City	217,938	*	*	*	*	5	2.3	5	2.3	5	2.3	*	*
Roanoke	99,681	*	*	*	*	8	8.0	7	7.0	6	6.0	9	9.0
Southside	84,304	0	0	0	0	0	0	*	*	0	0	0	0
Thomas Jefferson	248,500	*	*	*	*	7	2.8	6	2.4	*	*	*	*
Three Rivers	141,609	*	*	*	*	*	*	*	*	*	*	*	*
Virginia Beach	453,500	7	1.5	8	1.8	6	1.3	*	*	11	2.4	7	1.5
West Piedmont	141,119	*	*	0	0	0	0	*	*	0	0	*	*
Western Tidewater	153,950	*	*	0	0	*	*	*	*	*	*	*	*
VIRGINIA TOTAL	8,382,993	108	1.3	108	1.3	158	1.9	145	1.7	136	1.6	123	1.5

[†] Rate per 100,000 population based on 2015 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	2015 Population Estimate	Dec 2016		Jan 2017		Feb 2017		Mar 2017		Apr 2017		May 2017	
		Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Division 1	1,403,431	28	2.0	21	1.5	38	2.7	34	2.4	25	1.8	21	1.5
Division 2	836,683	23	2.7	27	3.2	41	4.9	44	5.3	23	2.7	20	2.4
Division 3	655,338	0	0	*	*	*	*	6	0.9	*	*	*	*
Division 4	441,778	*	*	0	0	0	0	0	0	0	0	*	*
Division 5	1,823,018	36	2.0	30	1.6	41	2.2	26	1.4	48	2.6	35	1.9
Division 6	775,091	6	0.8	6	0.8	19	2.5	16	2.1	10	1.3	23	3.0
Division 7	2,447,654	14	0.6	22	0.9	15	0.6	19	0.8	28	1.1	22	0.9
VIRGINIA TOTAL	8,382,993	108	1.3	108	1.3	158	1.9	145	1.7	136	1.6	123	1.5

† Rate per 100,000 population based on 2015 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