

## EMERGENCY DEPARTMENT VISITS FOR GUNSHOT INJURIES IN VIRGINIA

Report Generated: June 28, 2019

### Background

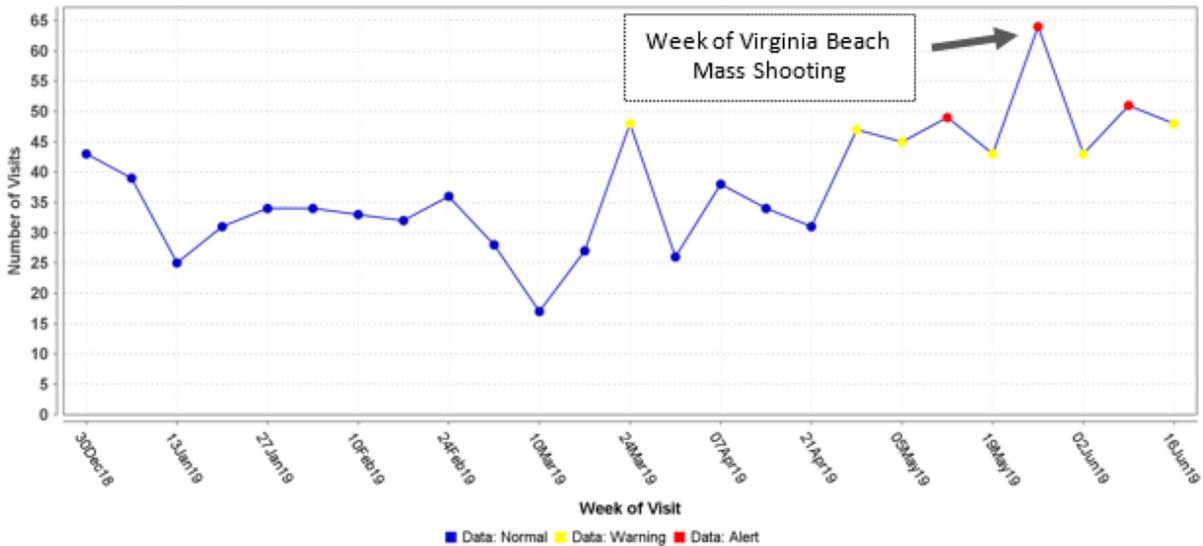
At the time of this report, the Virginia Department of Health (VDH) received data on visits to 85 acute care hospital emergency departments (EDs) and 19 free-standing EDs in Virginia for public health surveillance. The purpose of this report is to characterize ED visit trends for gunshot injuries in Virginia.

See page 6 for data sources and case definitions used in this report.

### ED Visits for Gunshot Injuries in May/June 2019

ED visits for **gunshot injuries have been significantly elevated for 8 consecutive weeks (4/28/19 – 6/22/19)**. The highest weekly total occurred in the last week of May (MMWR Week 22, 5/26/19 - 6/01/2019) with 64 visits for gunshot injuries including 25 from the Memorial Day Weekend and 5 which were associated with the mass shooting in Virginia Beach, which occurred on May 31 (Figure 1).

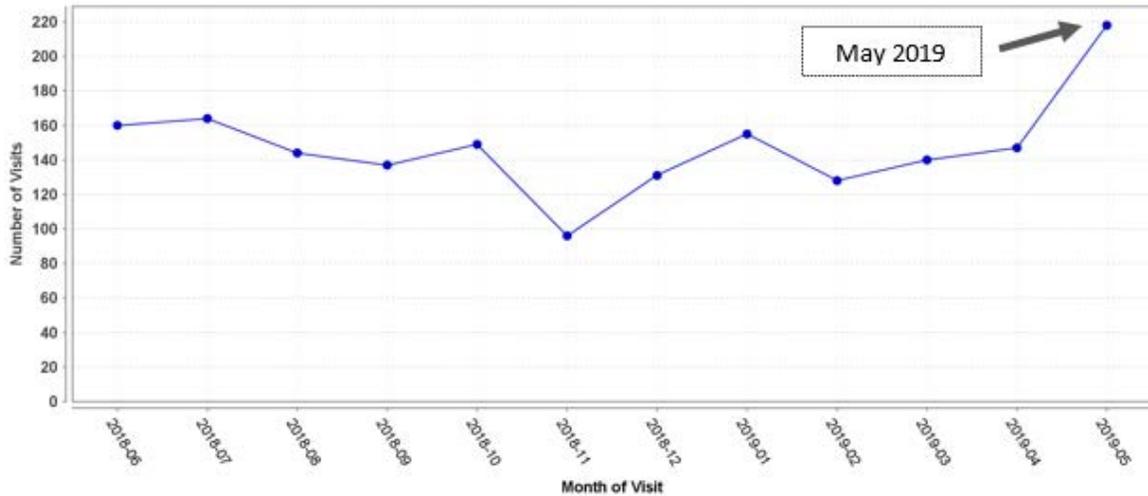
Figure 1. Weekly ED Visits for Gunshot Injuries in Virginia (Jan 1 – Jun 22, 2019)



**ED Visits for Gunshot Injuries, Most Recent 12 Months (June 2018 – May 2019)**

1,769 ED visits for gunshot injuries were seen in Virginia over the most recent 12 months (June 2018 – May 2019). **May 2019** had the highest monthly count observed since reporting began in 2015 (N=218) (Figure 2).

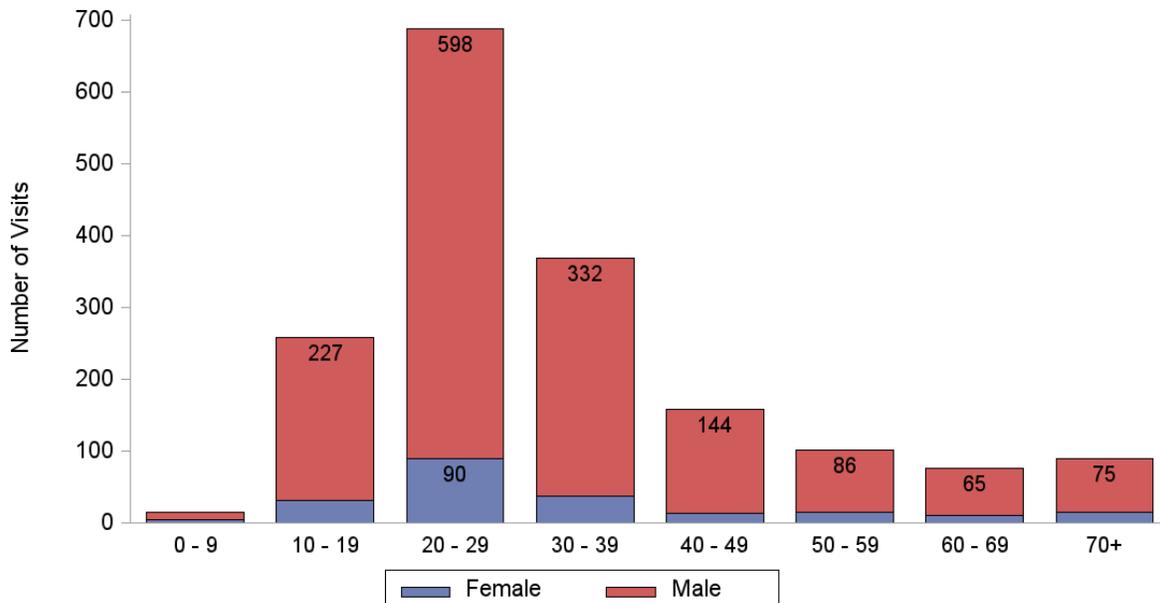
Figure 2. Monthly ED Visits for Gunshot Injuries in Virginia (June 2018 – May 2019)



**Sex and Age Group**

**Male** patients made up **87%** of total gunshot injury visits over the most recent 12 months (N=1,537). By age group, the highest proportion of visits occurred among **20-29 year olds** for both males and females (39% of total visits, N=688). However, among every age group, males made up the majority of gunshot injury visits (Figure 3).

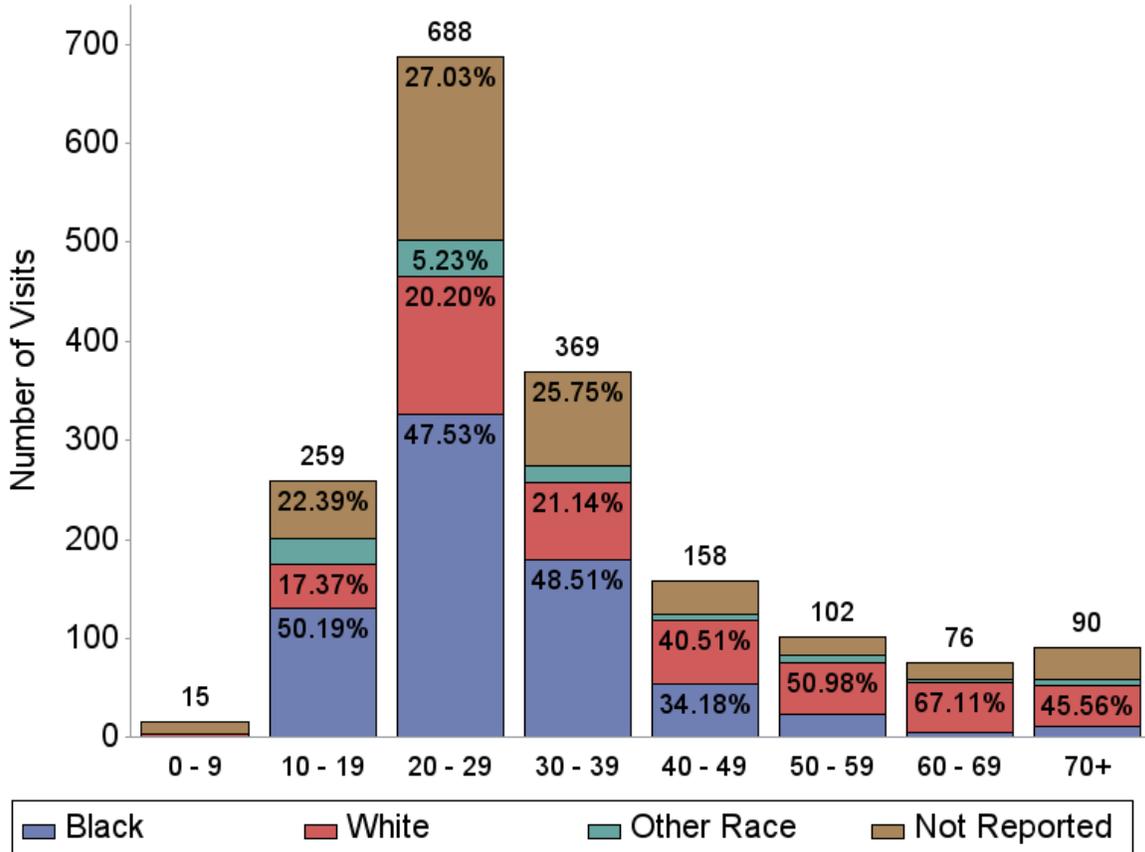
Figure 3. ED Visits for Gunshot Injuries by 10-Year Age Group and Sex



Race and Age Group

**Black or African American** patients accounted for over half of gunshot injury visits (**56%** of visits with known race, N=732) in the last 12 months. However, the racial distribution of these visits differed by age group. African Americans made up the highest proportion of visits for patients aged 10-39 years old, while gunshot injury visits among patients 40 years or older were primarily seen among whites (Figure 4).

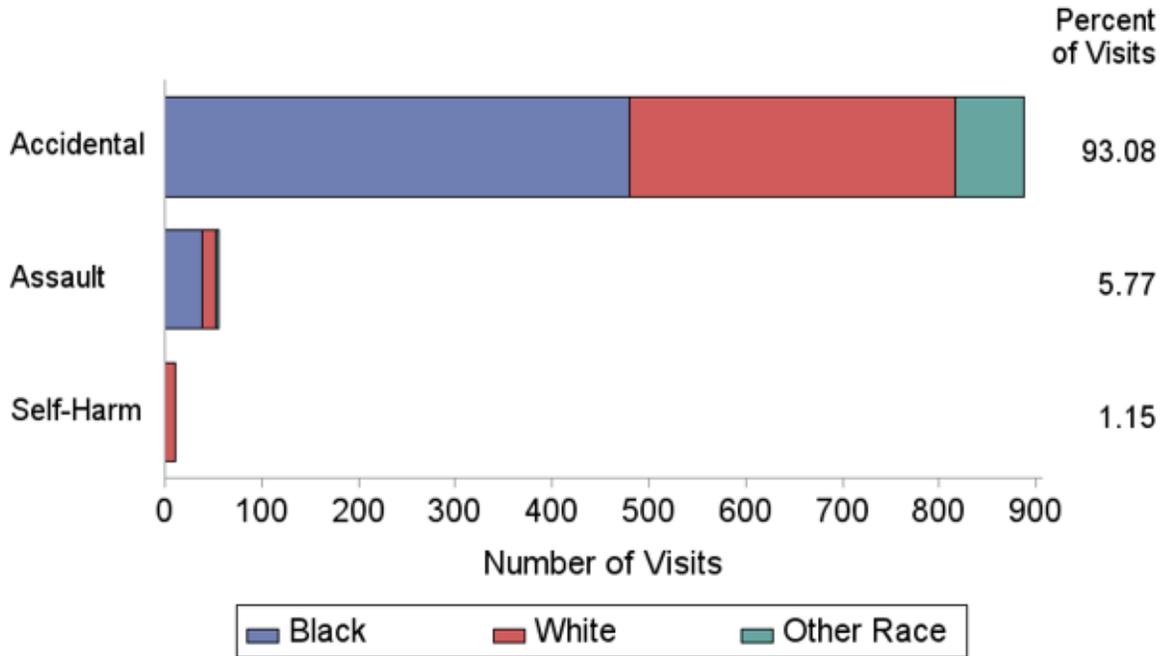
Figure 4. ED Visits for Gunshot Injuries by 10-Year Age Group and Race



Intent of Gunshot Injury

Most gunshot injuries over the last 12 months were **accidental injuries (93%, N=888)**. Only 6% of gunshot injuries were reported as intentional assault and 1% as intentional self-harm. For visits where both race and intent were known, African Americans made up the highest proportion of accidental and assault injuries (54% and 70%, respectively), but all self-harm gunshot injuries occurred among whites (Figure 5). Note: Figure 5 excludes visits where race or intent was not reported (46% of total gunshot injury visits, N Missing=815).

Figure 5. ED Visits for Gunshot Injuries by Intent and Race



Rate of Gunshot Injuries by VDH Health District

Virginia experienced a rate of 5.36 gunshot injuries per 10,000 ED visits in the last 12 months. VDH Health Districts with the highest rate of gunshot injury visits included **Richmond, Crater, and Roanoke** with respective rates of 13.9, 12.2, and 11.9 gunshot injuries per 10,000 total ED visits (Figure 6 and 7).

Note: Visits for non-Virginia residents were excluded from Figures 6 and 7 below (N Missing= 175).

Figure 6. Rate of ED Visits for Gunshot Injuries in Virginia, Most Recent 12 Months

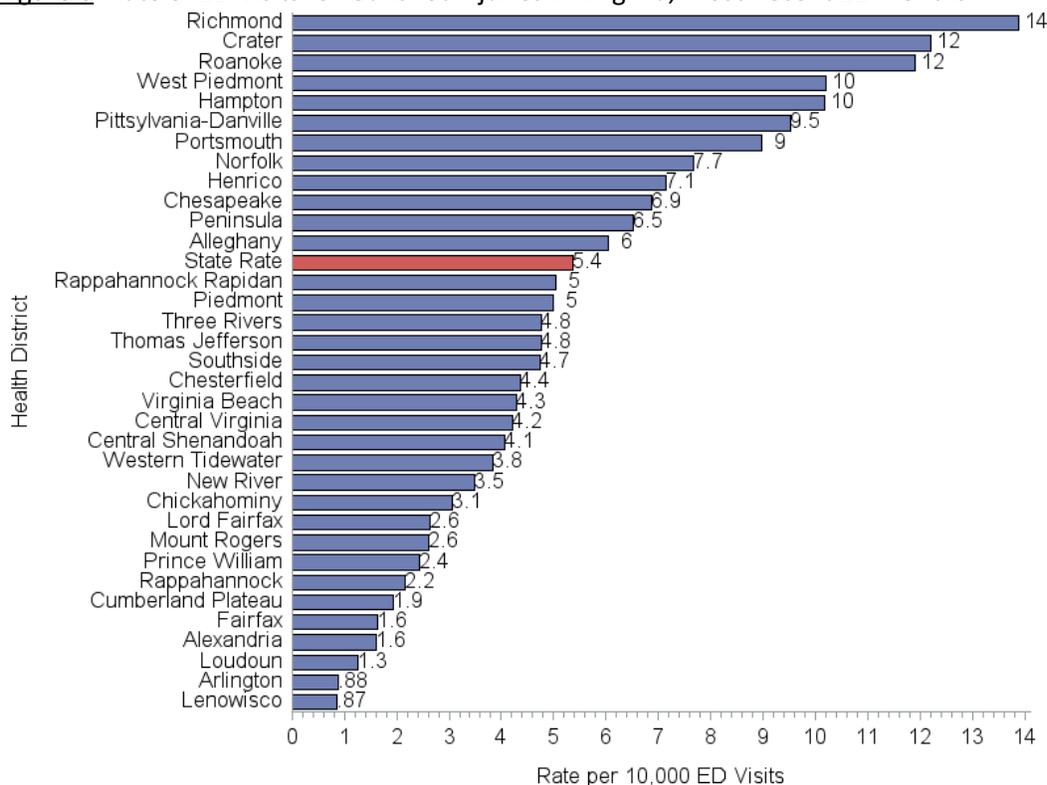
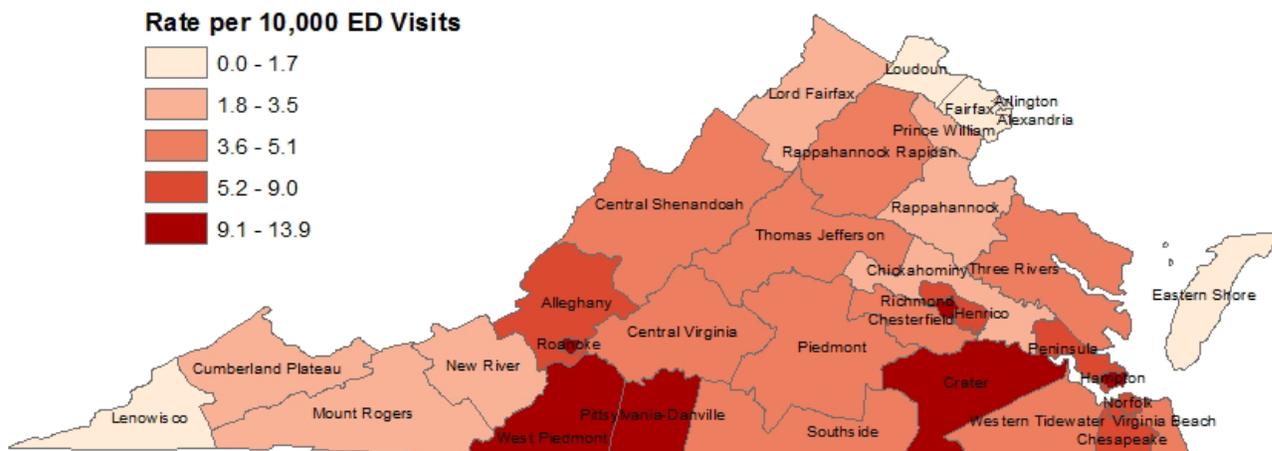


Figure 7. Rate of ED Visits for Gunshot Injuries in Virginia, Most Recent 12 Months



## Data Sources

VDH analyzes chief complaints and discharge diagnoses of ED visits to identify and monitor issues of public health concern across Virginia. The chief complaint is a free-text field capturing 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) 10th Revision or SNOMED code sets.

## Methodology

Gunshot injury rates are presented as a rate per 10,000 ED visits. The total number of ED visits that occurred among Virginia residents of a VDH Health District were used as the denominator to calculate this rate. This metric provides a consistent rate calculation across time when data reporting by EDs change (increases or decreases) as compared to the rate per 100,000 population. VDH Health District is assigned based on the patient's residential zip code.

Readers are strongly encouraged to review [syndromic surveillance data limitations](#) when interpreting this report.

## Case Definitions

**Gunshot injuries** were identified using the following terms for Chief Complaint and Discharge Diagnosis: *gun and wound; handgun; firearm*; SNOMED code 283545005, or ICD-10 codes *W32, W33, W34.00, W34.09, W34.10, W34.19, X72, X73, X74.8, X74.9, X93, X94, X95.8, X95.9, Y22, Y23, Y24.8, Y24.9, Y35.0, or Y38.4*. Visits mentioning air gun, BB gun, staple gun, stun gun, pellet gun, water gun were excluded.

**Intent** of the gunshot injury was determined by the presence of the following discharge diagnosis ICD-10 codes:

- Accidental: *W32, W33, W34*
- Assault: *X93, X94, X95, Y38*
- Self-Harm: *X72, X73, X74*