

TRAUMATIC BRAIN INJURIES IN VIRGINIA

DATA AND TRENDS

INTRODUCTION

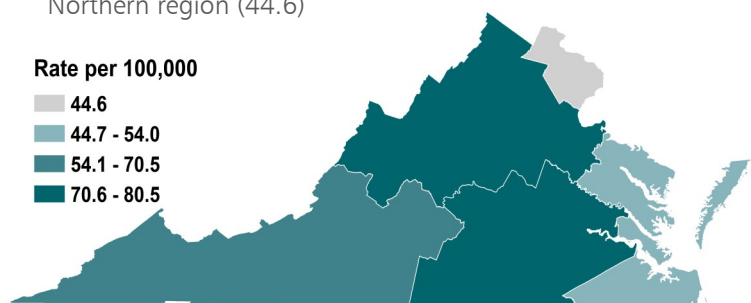
The Centers for Disease Control and Prevention define a traumatic brain injury (TBI) as an injury, “caused by a bump, blow or jolt to the head or a penetrating head injury that disrupts the normal function of the brain.”¹ Traumatic brain injuries (TBIs) contribute substantially to both death and disability across Virginia. They account for approximately one-third of all injury-related deaths to Virginia residents each year, and roughly 15% of all injury-related inpatient, acute care hospitalizations. TBIs may range in severity from mild concussions to more severe injuries requiring long-term care or resulting in death.

SUMMARY

- In 2014, 1,565 Virginians died because of TBIs². Furthermore, a total of 5,172 hospital discharges related to TBIs occurred that year³.
- The TBI death rate among males in Virginia in 2014 was 28.2 per 100,000, nearly three times the rate among females (9.7). Similarly, TBI hospitalization is more likely to occur among males than females; the male rate in 2014 was 73.7, while the female rate was 50.8.
- By age group, the highest rates of TBI death and hospitalization occur among adults ages 65 years and over in Virginia. In 2014, the rate of TBI death in this age

group was 45.8, more than two and a half times the rate among adults ages 25 to 64 years and more than four and a half times the rate among those under age 24. The rate of TBI hospitalization in those ages 65 and over was 216.2 in 2014, more than five times the rate among those ages 25 to 64 and nearly seven times the rate among those under age 24.

Figure 1b. 2014 TBI hospitalization rates are highest in the Central region (80.5 per 100,000) and lowest in the Northern region (44.6)



- TBI death and hospitalization rates vary by region in Virginia.
- The leading cause of TBI-related death in Virginia between 2010 and 2014 was firearms (3,008 deaths), followed by motor vehicle traffic (1,928 deaths) and falls (1,616 deaths). The leading cause of TBI-related hospitalization in the same period was falls (12,980 hospitalizations), followed by motor vehicle traffic (6,163 hospitalizations), and struck by/against injuries (1,402 hospitalizations). The majority of homicide and suicide deaths in Figure 4 for those older than infancy are attributable to firearms injuries, making that mechanism a leading cause of death for Virginians.
- More than half (55.3%) of all TBI-related deaths occurring between 2010 and 2014 were attributed to unintentional causes, compared to 88.2% of TBI-related hospitalizations.

Figure 1a. 2014 TBI death rates were highest in the Southwestern region (26.8 per 100,000) and lowest in the Northern region (11.2)

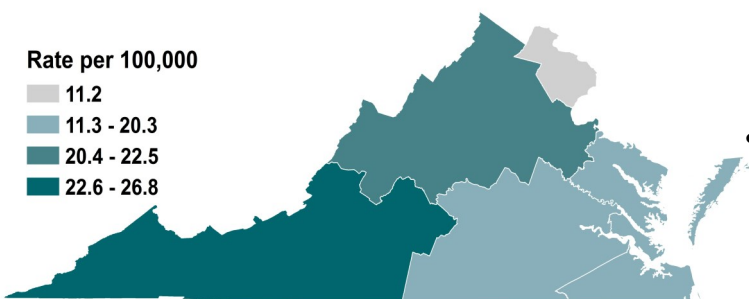


Figure 2a. Males are more likely than females to die by TBI in Virginia than females

Death Rate per 100,000 Persons

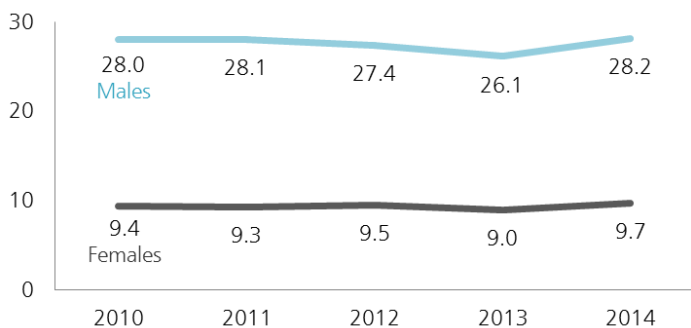


Figure 2b. Males are also more likely than females to be hospitalized for TBI in Virginia

Hospitalization Rate per 100,000 Persons

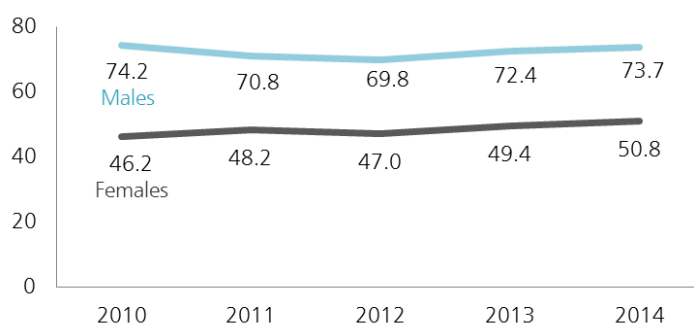


Figure 3a. Rates of TBI death are highest among the elderly

Death Rate per 100,000 Persons

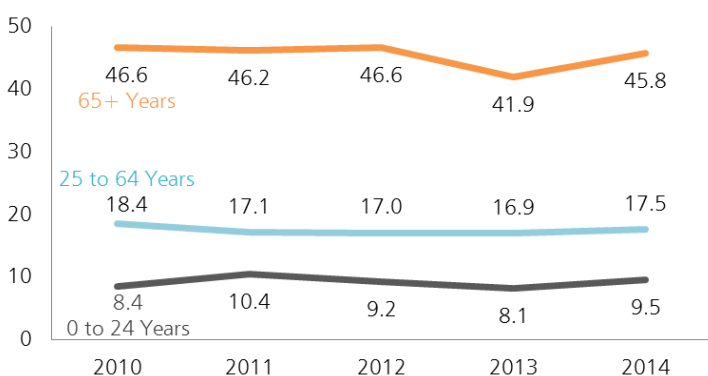


Figure 3b. Rates of TBI hospitalization are also highest

Hospitalization Rate per 100,000 Persons

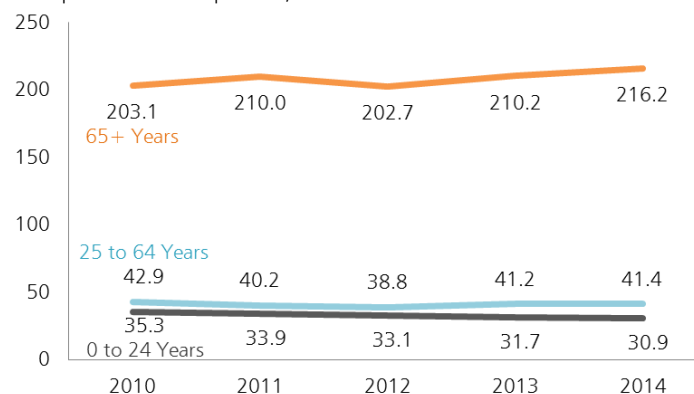


Figure 4. The leading causes of TBI death by age group in Virginia, 2010-2014

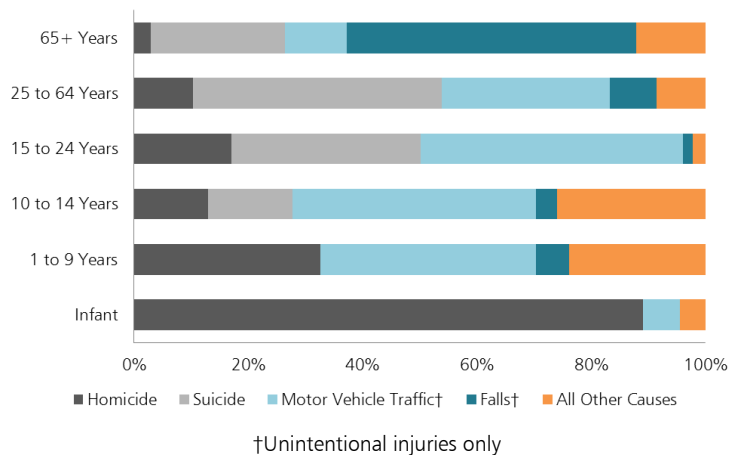
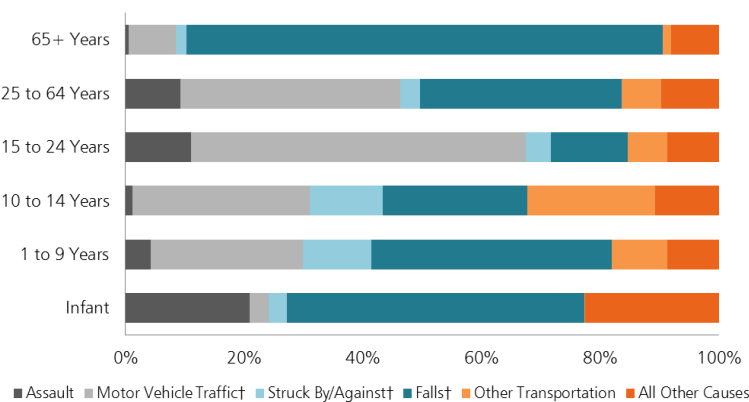


Figure 5. The leading causes of TBI hospitalization by age group in Virginia, 2010-2014



REFERENCES

1. CDC Injury Center. Basic Information about Traumatic Brain Injury and Concussion. <https://www.cdc.gov/traumaticbraininjury/basics.html>. Accessed September 2, 2016.
2. Division of Population Health Data. Resident death certificate data from Virginia Vital Records database. Richmond, VA: Virginia Department of Health; 2016.
3. Division of Population Health Data. Resident hospital discharge data from Virginia Health Information database. Richmond, VA: Virginia Department of Health; 2016.

MORE INFORMATION

The majority of TBIs are preventable. If a TBI occurs, proper recognition and response can prevent further injury and can help with recovery. To learn more about preventing TBIs, visit the VDH Injury and Prevention Program: VDHLiveWell.com/tbi

Interactive data on TBI death and hospitalization trends at the state, regional and health district level are available through the Virginia Department of Health's Tableau Public data portal, at: www.vdh.virginia.gov/data/injury-violence/

Additional Virginia injury and violence data is available through the Virginia Online Injury Reporting System (VOIRS). VDHLiveWell.com/voirs