

NC Department of Health and Human Services

Unintentional Motor Vehicle Traffic Injuries in North Carolina

2021

NC Division of Public Health

Data updated March 19, 2024

Unintentional Motor Vehicle Traffic Technical Notes

Surveillance methods have been updated to identify any mention of an injury in our morbidity data sources. Individual records with multiple injuries listed will be included in the total for each of those injuries, but only counted once for overall total injury count. Previously, only the first listed injury was counted, which has resulted in an increase in the number of specific injuries identified.

For questions or for more information see technical notes document available at <https://www.injuryfreenc.ncdhhs.gov/DataSurveillance/>

Case definitions used:

*Data is limited to unintentional motor vehicle traffic (MVT)

- **Deaths** – ICD-10 codes listed as cause of death
 - [V02–V04](.1,.9), V09.2, [V12–V14](.3–.9), V19(.4–.6), [V20–V28](.3–.9), [V29–V79](.4–.9), V80(.3–.5), V81.1, V82.1, [V83–V86](.0–.3), V87(.0–.8), V89.2

*See technical notes document for a full list of ICD-10 codes used for TBI deaths

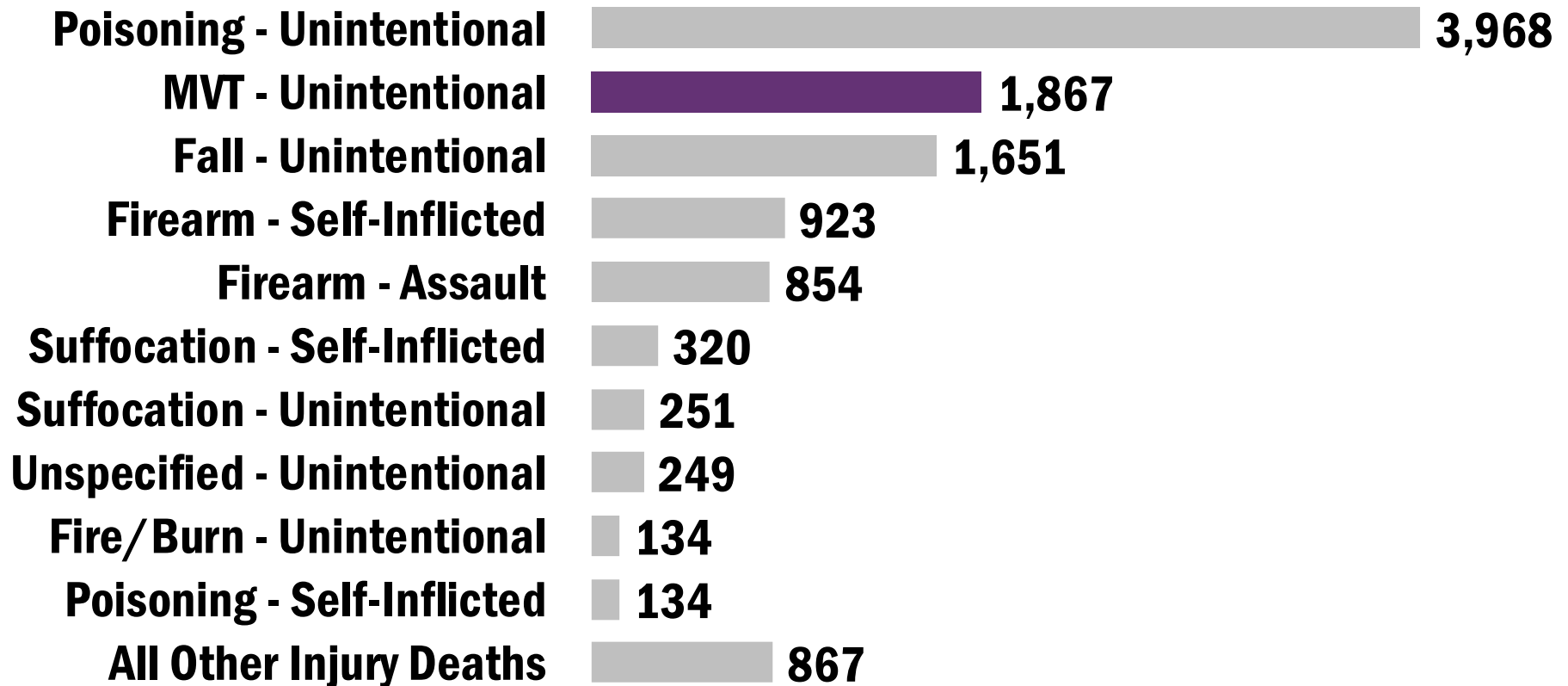
Technical Notes, Continued

- **Hospitalizations** – Among records with an ICD-10-CM injury code*, any mention of the following ICD-10-CM codes (includes records resulting in death)
- **Emergency Department Visits** – Any mention of the following ICD-10-CM codes (includes records resulting in hospitalization or death)

V02.1, V02.9, V03.1, V03.9, V04.1, V04.9, V09.2, V09.3	MVT Pedestrian
V12-V14 (.3-.9), V19.4-V19.6, V19.9	MVT Pedal cycle
V20-V28 (.3-.9), V29.4-V29.9	MVT Motorcycle
V30-V79 (.4-.9), V83-V86 (.0-.3), V87.0-V87.8, V89.2	MVT Occupant
V80.3-V80.5, V81.1, V82.1	MVT Other
*7 th character of A, B, or missing (reflects initial encounter, active treatment)	

*See technical notes document for a full list of ICD-10-CM injury diagnosis codes

Unintentional MVT death is the second leading cause of injury-related death



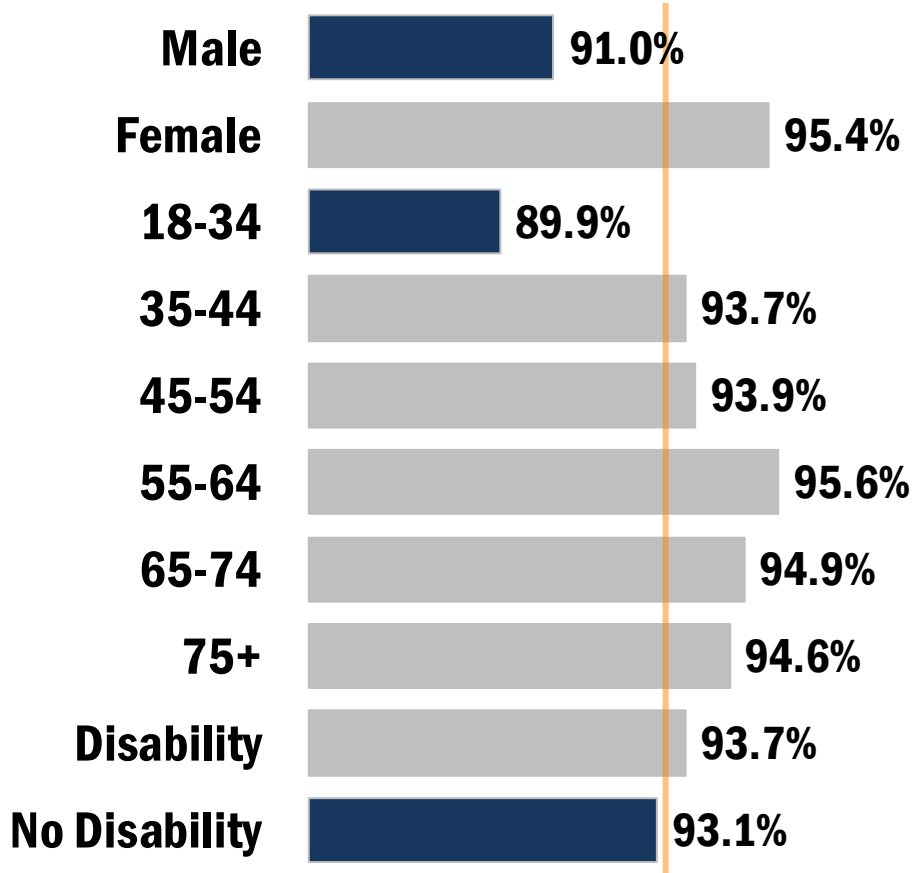
Limited to NC Residents, 2021

Source: NC State Center for Health Statistics, Vital Statistics-Deaths (2021)

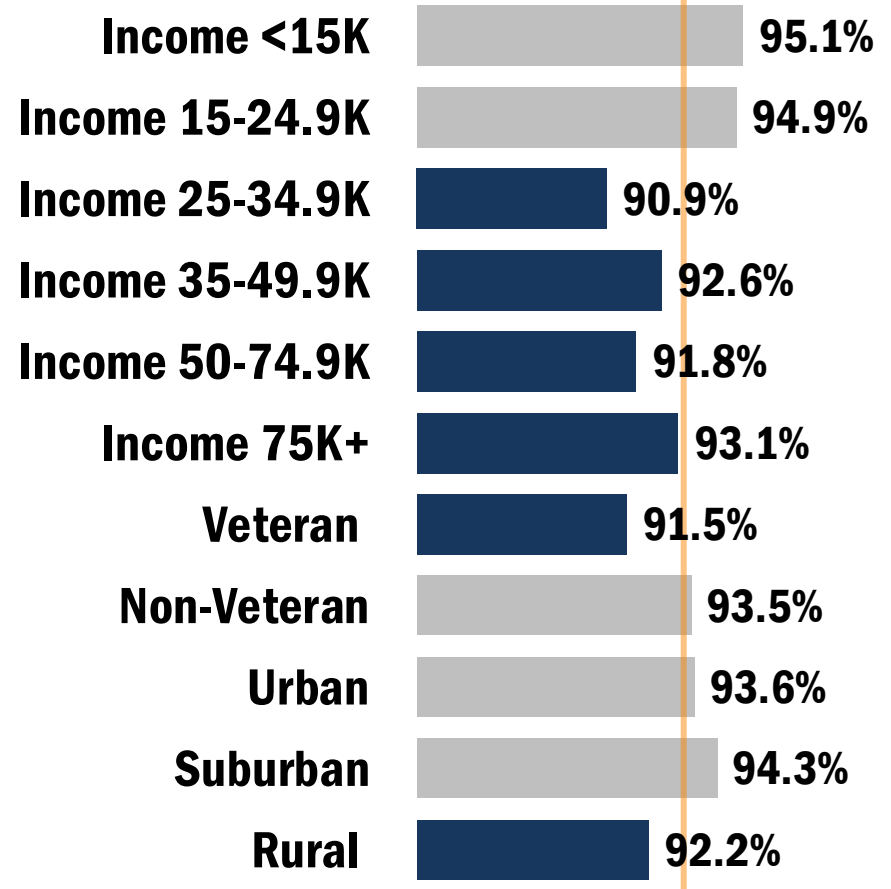
Analysis by Injury Epidemiology and Surveillance Unit

Proportion of demographic groups reporting always wearing a seatbelt, 2020 BRFSS

Overall 93.3%

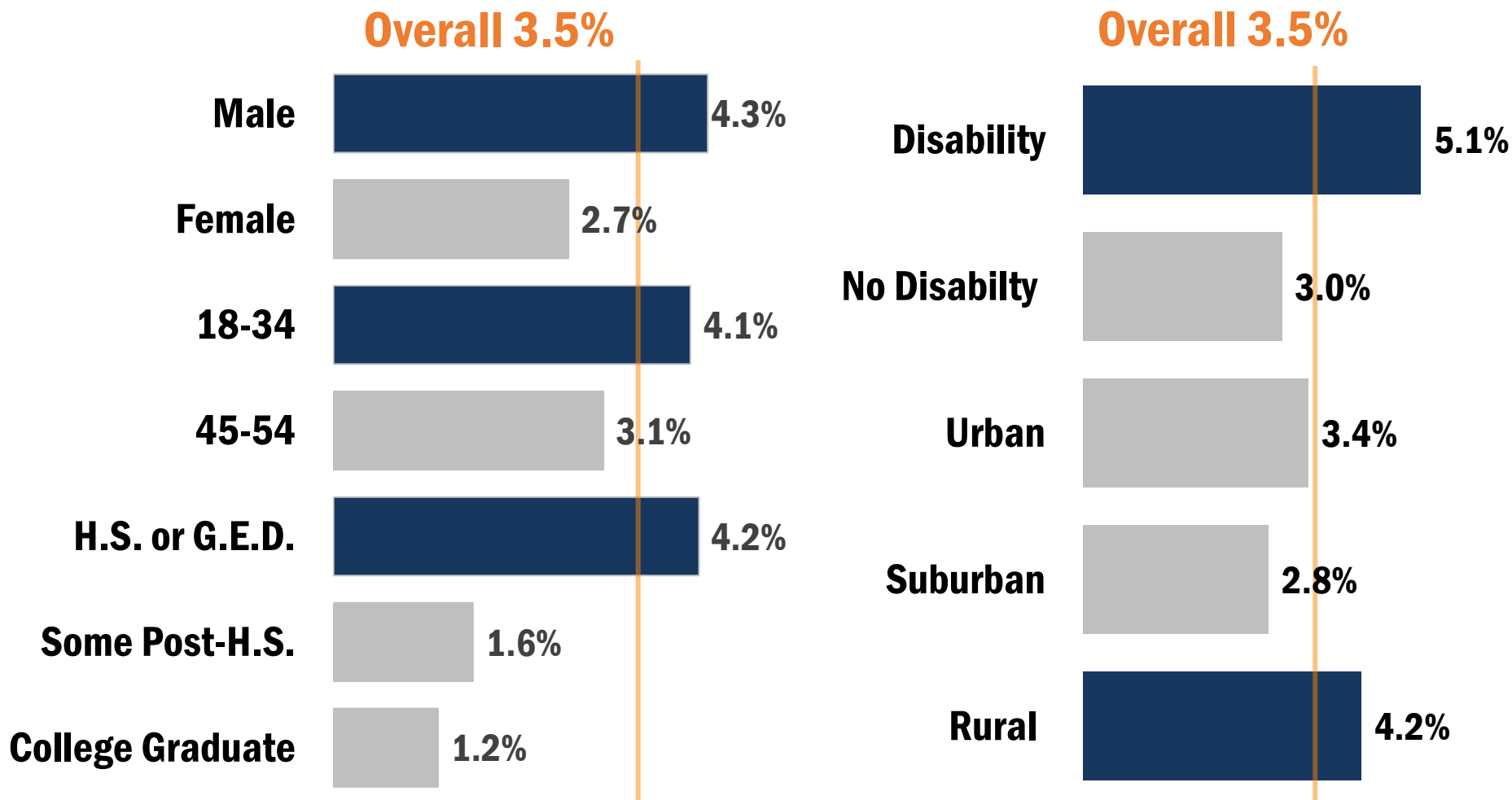


Overall 93.3%



Source: NC State Center of Health Statistics, 2020 Behavioral Risk Factor Surveillance System (BRFSS) Survey Results

Proportion of groups reporting driving while having had too much to drink, *2020 BRFSS

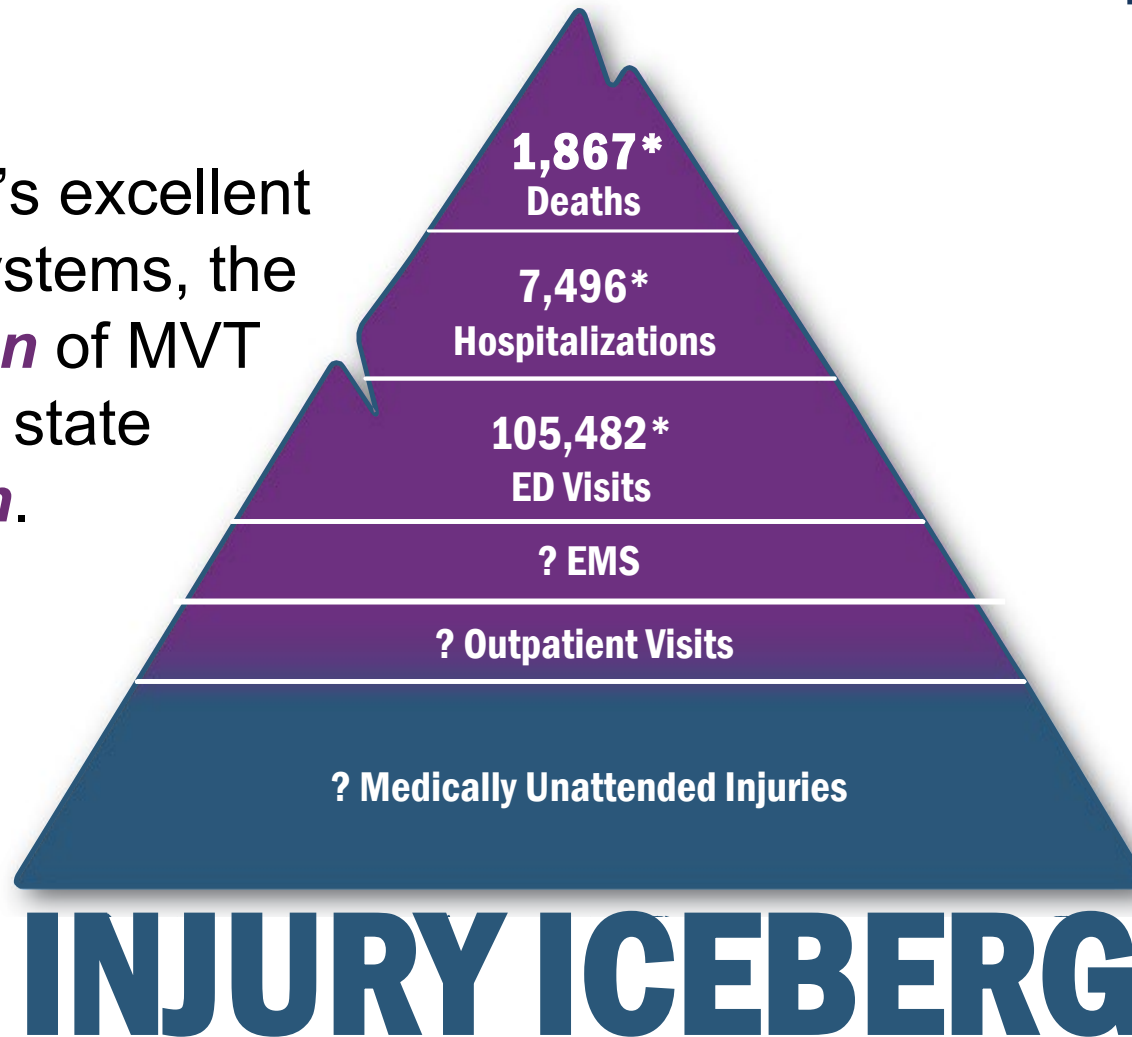


*in the last 30 days

Source: NC State Center of Health Statistics, 2020 Behavioral Risk Factor Surveillance System (BRFSS) Survey Results

Unintentional MVT deaths are the tip of the iceberg

Despite NC's excellent reporting systems, the *total burden* of MVT injury in the state is *unknown*.



Limited to NC Residents, 2021

Source: NC State Center for Health Statistics, Vital Statistics-Deaths (2021) and Hospitalization Discharge Data (2021); NC DETECT (2021)

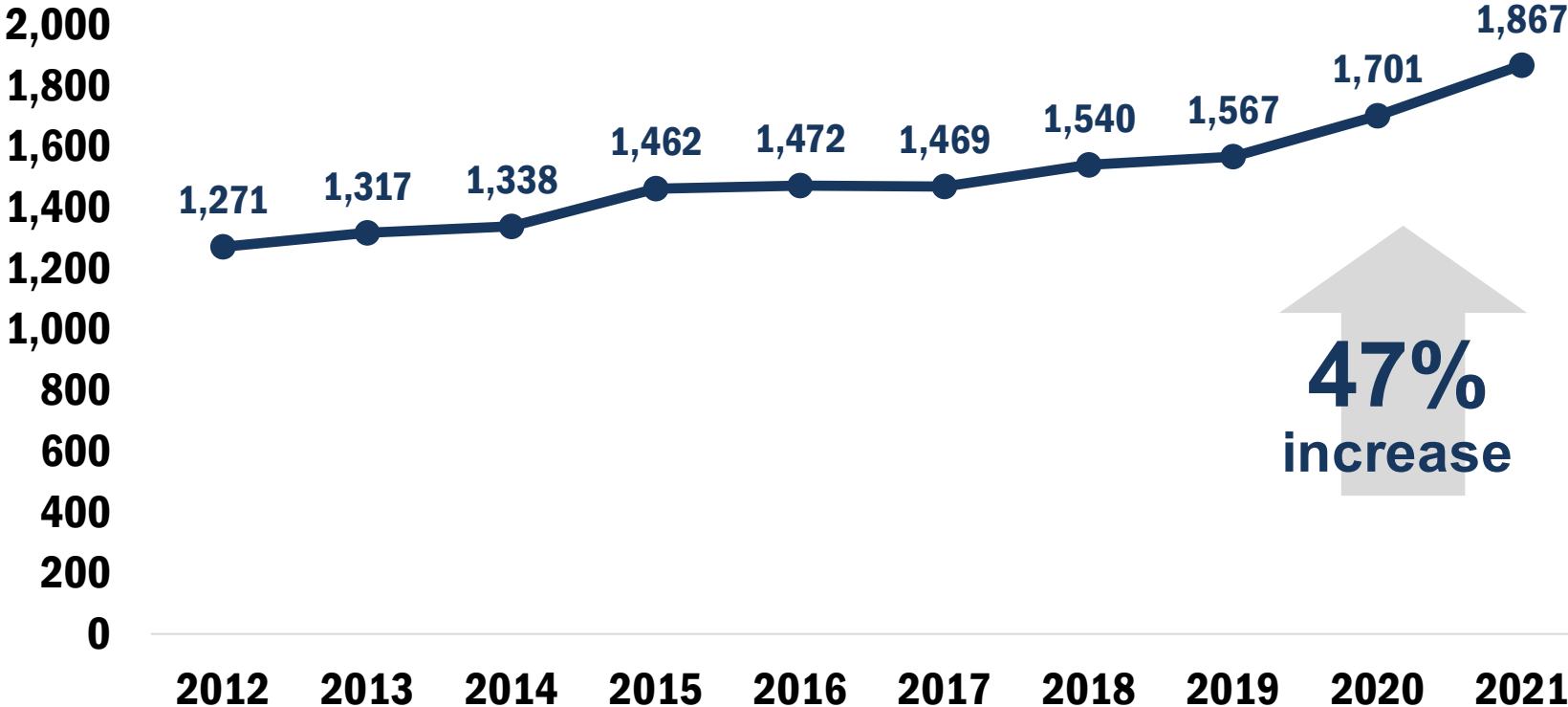
Analysis by Injury Epidemiology and Surveillance Unit



Unintentional Motor Vehicle Traffic Deaths

MVT deaths have continued to increase from 2012 to 2021

Number of Deaths

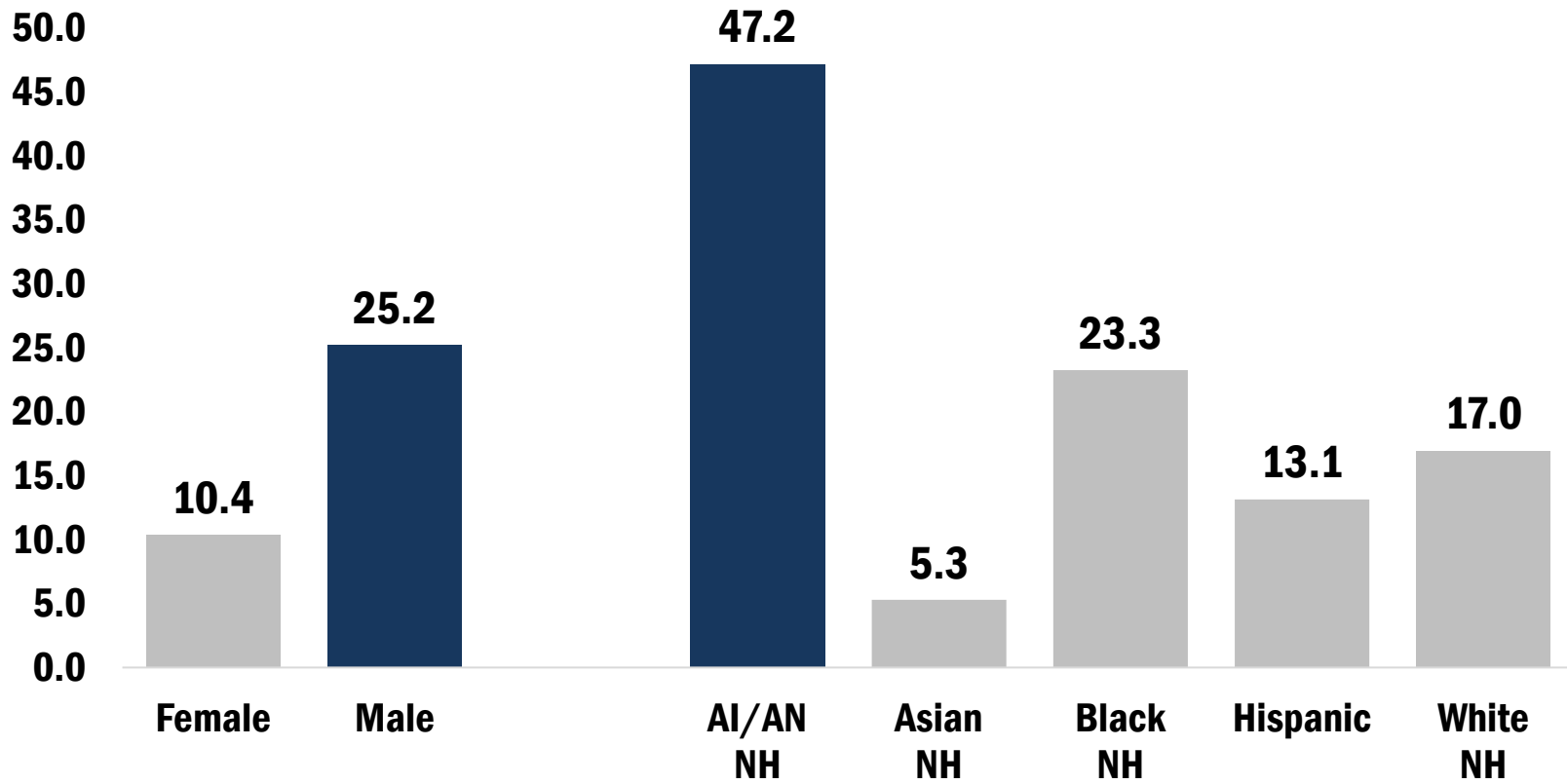


Limited to NC Residents, 2012-2021
Source: NC State Center for Health Statistics, Vital Statistics-Deaths (2012-2021)
Analysis by Injury Epidemiology and Surveillance Unit

Rates of MVT deaths were highest among men and non-Hispanic AI/AN

Rate of Motor Vehicle Traffic Deaths by Demographic Group, 2021

Rate per 100,000



Limited to NC Residents, 2021, N=1,867; NH-non-Hispanic; Rate not calculated for Other, NH

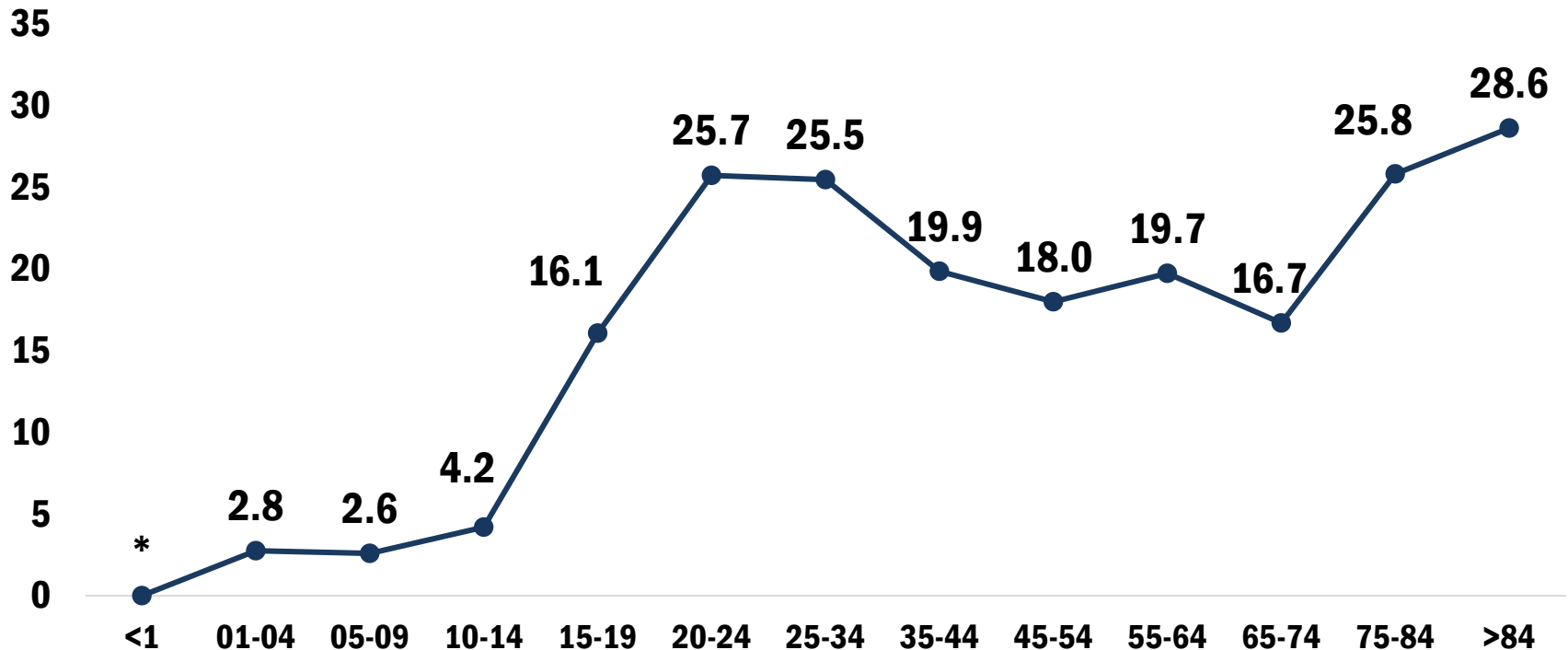
Source: NC State Center for Health Statistics, Vital Statistics-Deaths (2021)

Analysis by Injury Epidemiology and Surveillance Unit

MVT death rates are highest among those 85 and older

Rate of Motor Vehicle Traffic Deaths by Age Group, 2021

Rate per 100,000



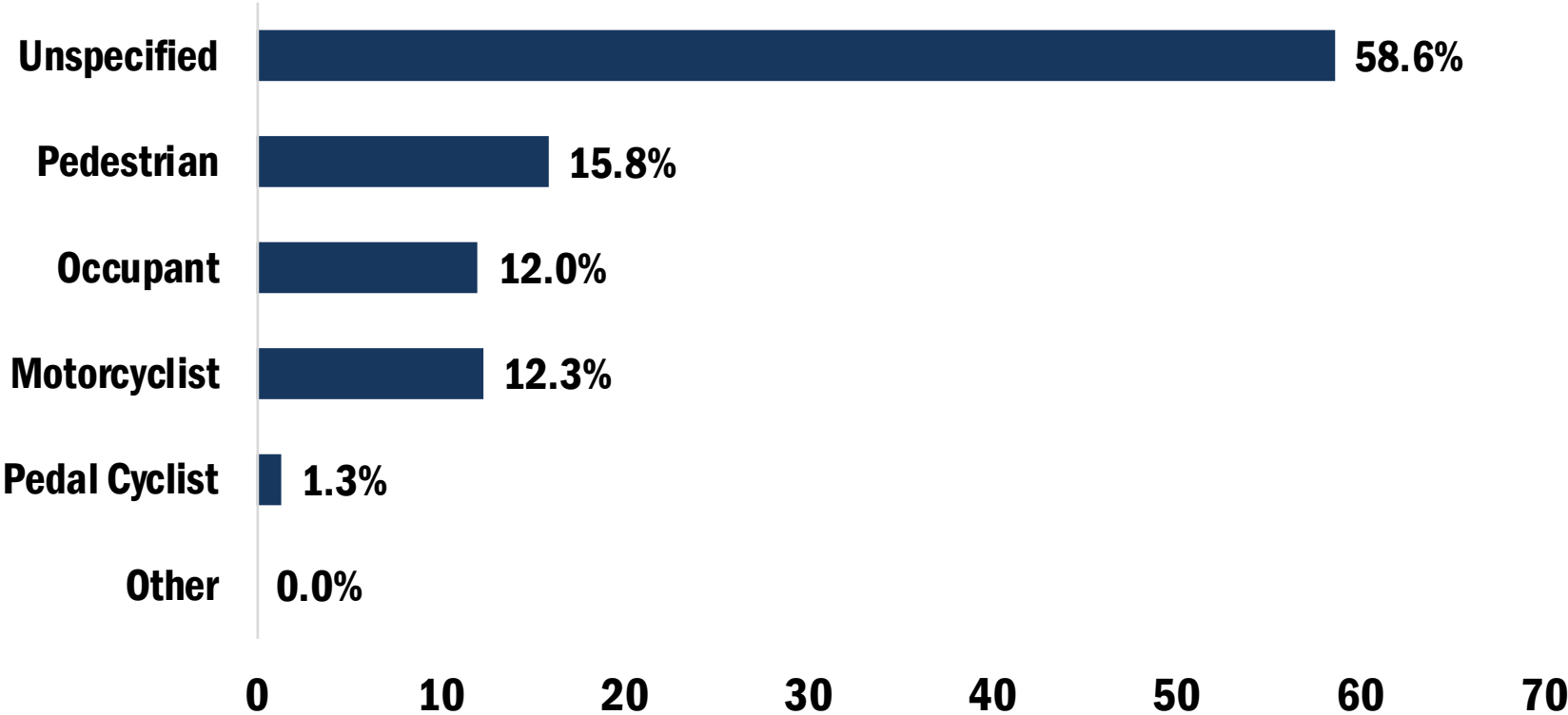
Limited to NC Residents, 2012-2021, N=1,867

Source: NC State Center for Health Statistics, Vital Statistics-Deaths (2012-2021)

Analysis by Injury Epidemiology and Surveillance Unit

Most MVT deaths with a known sub-cause were pedestrians killed in an MVT incident

Percent of Motor Vehicle Traffic Deaths by Known Subcause, 2021



Limited to NC Residents, 2021, N=1,867

Source: NC State Center for Health Statistics, Vital Statistics-Deaths (2021)

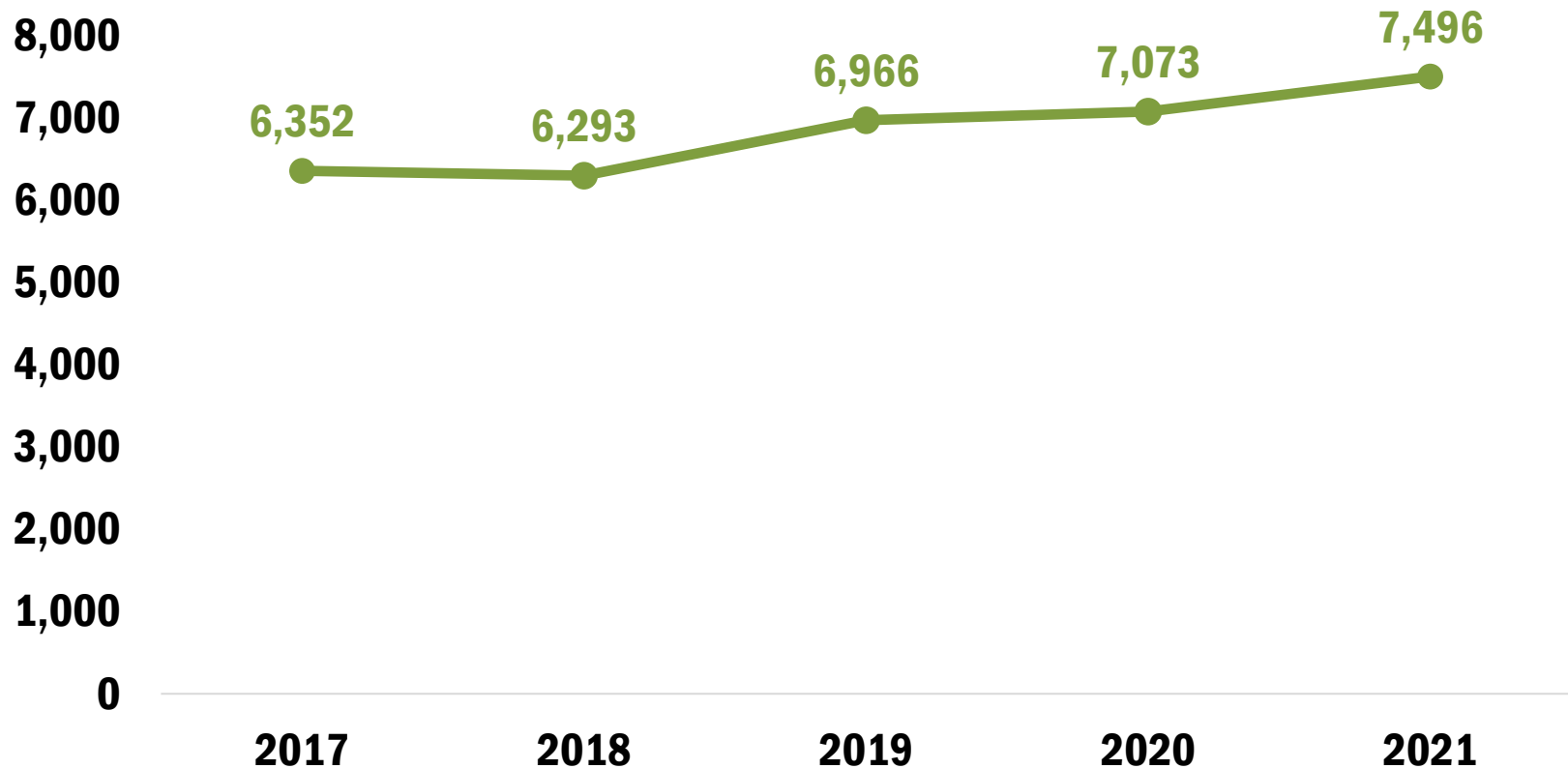
Analysis by Injury Epidemiology and Surveillance Unit



Unintentional Motor Vehicle Traffic Hospitalizations

MVT hospitalizations increased by 18% from 2017 to 2021

Number of Hospitalizations



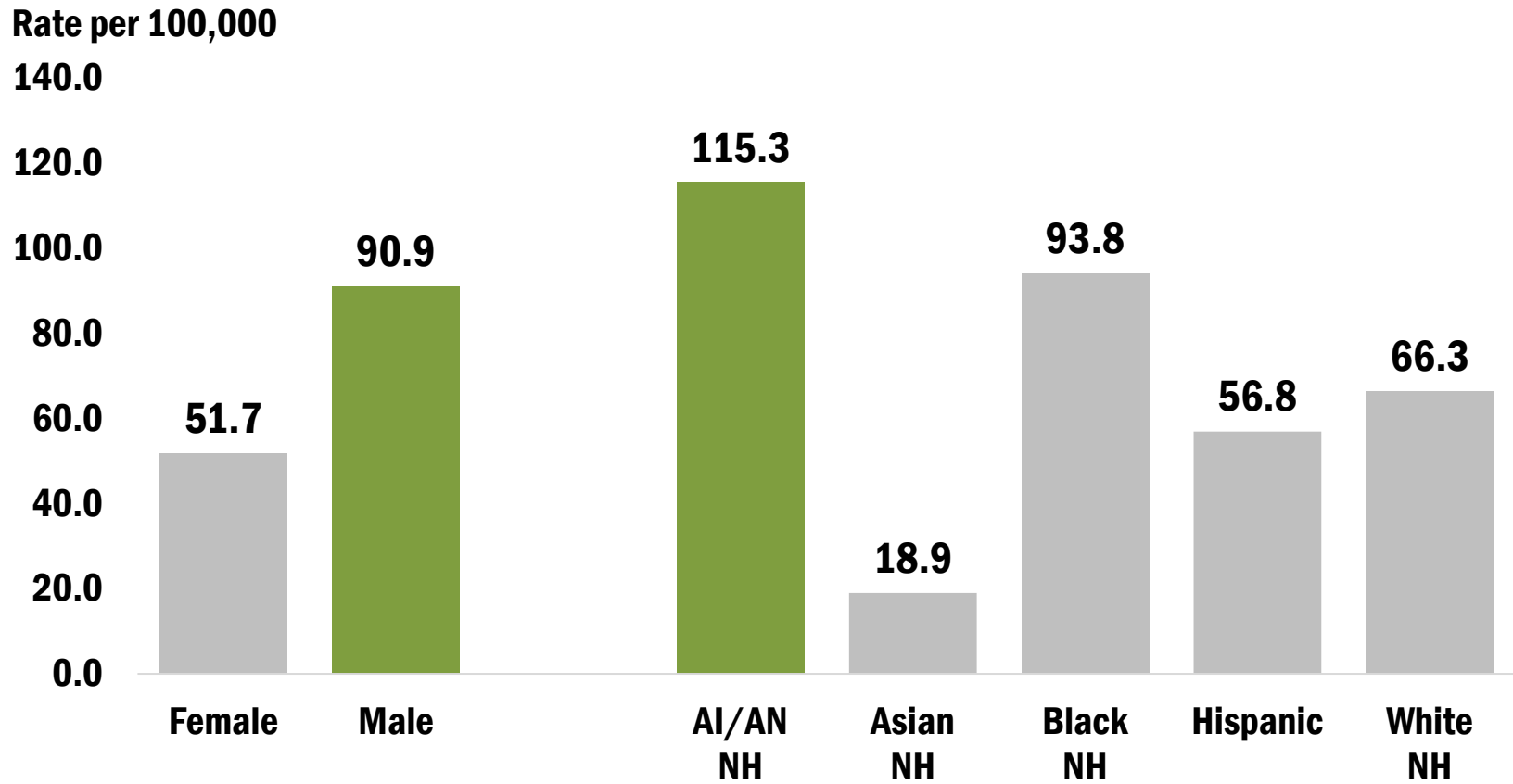
Limited to NC Residents, 2017-2021

Source: NC State Center for Health Statistics, Hospitalization Discharge Data (2017-2021)

Analysis by Injury Epidemiology and Surveillance Unit

MVT hospitalization rates were highest among men and non-Hispanic AI/NA

Rate of Motor Vehicle Traffic Hospitalizations by Demographic Group, 2021

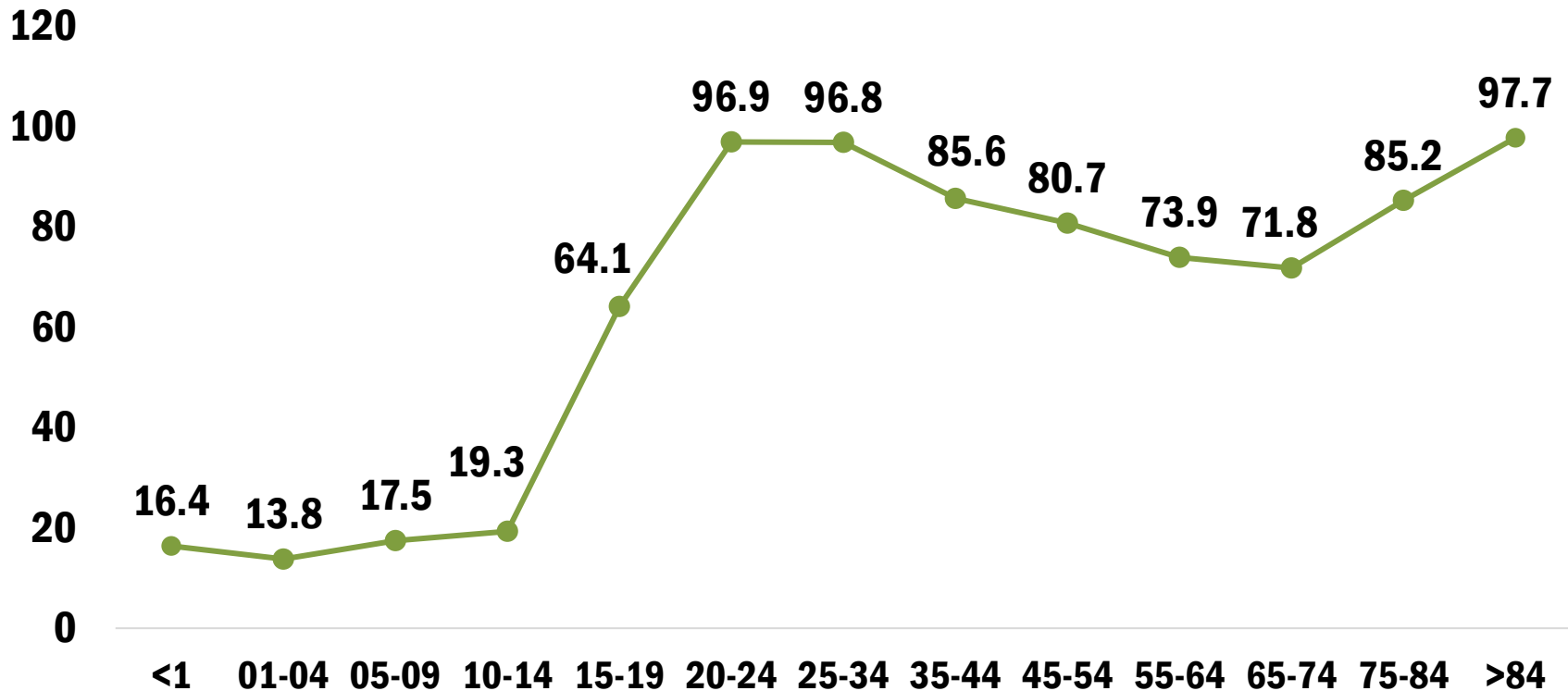


Limited to NC Residents, 2021, N=7,496; NH-non-Hispanic; Rate not calculated for Other NH
Source: NC State Center for Health Statistics, Hospitalization Discharge Data (2021)
Analysis by Injury Epidemiology and Surveillance Unit

Rates of MVT hospitalizations are highest among adults 20-24 and 85 and older

Rate of Motor Vehicle Traffic Hospitalizations by Age Group, 2021

Rate per 100,000



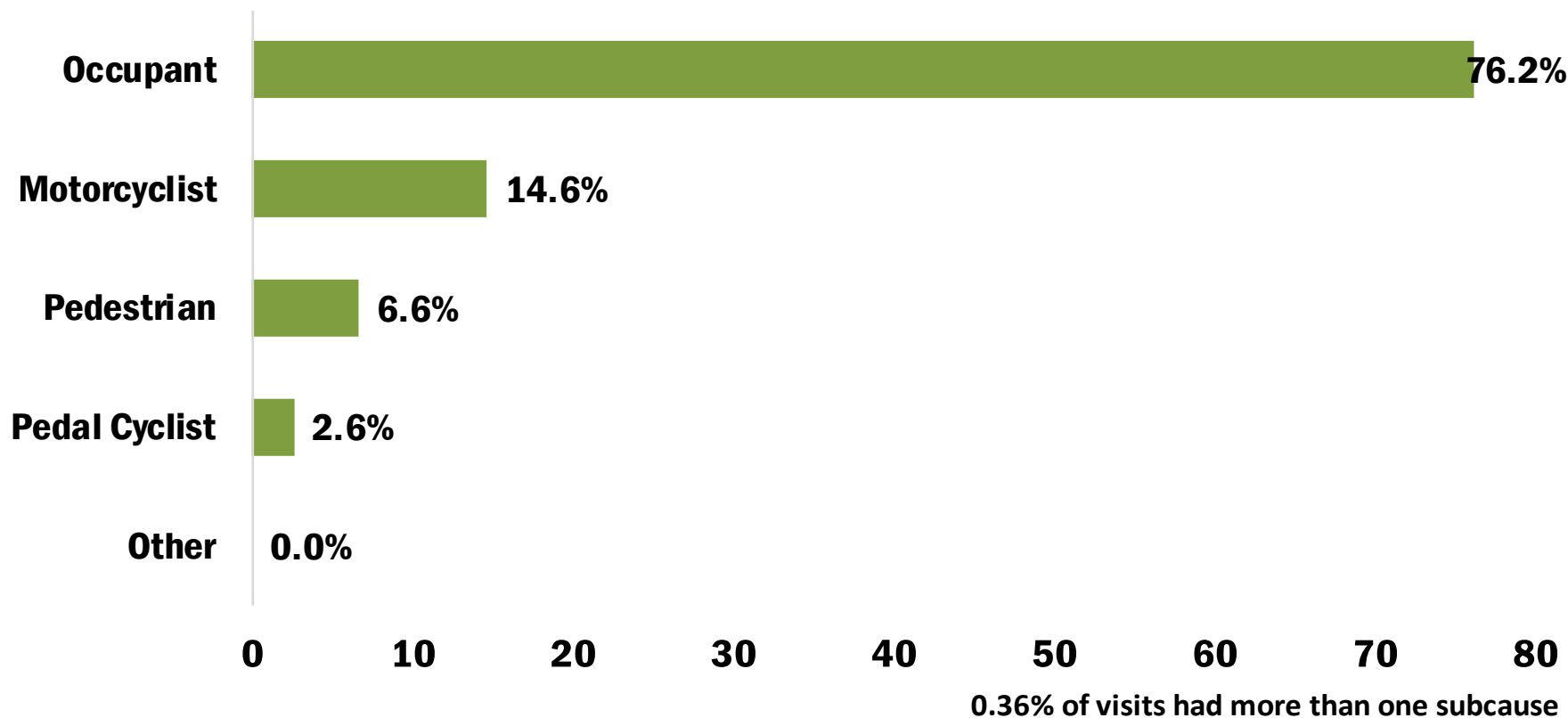
Limited to NC Residents, 2021, N=7,496

Source: NC State Center for Health Statistics, Hospitalization Discharge Data (2021)

Analysis by Injury Epidemiology and Surveillance Unit

MVT-Occupant was the leading sub-cause for MVT hospitalizations

Percent of MVT Injury Hospitalizations by Known Subcause, 2021



Limited to NC Residents, 2021, N=7,469

Source: NC State Center for Health Statistics, Hospitalization Discharge Data (2021)

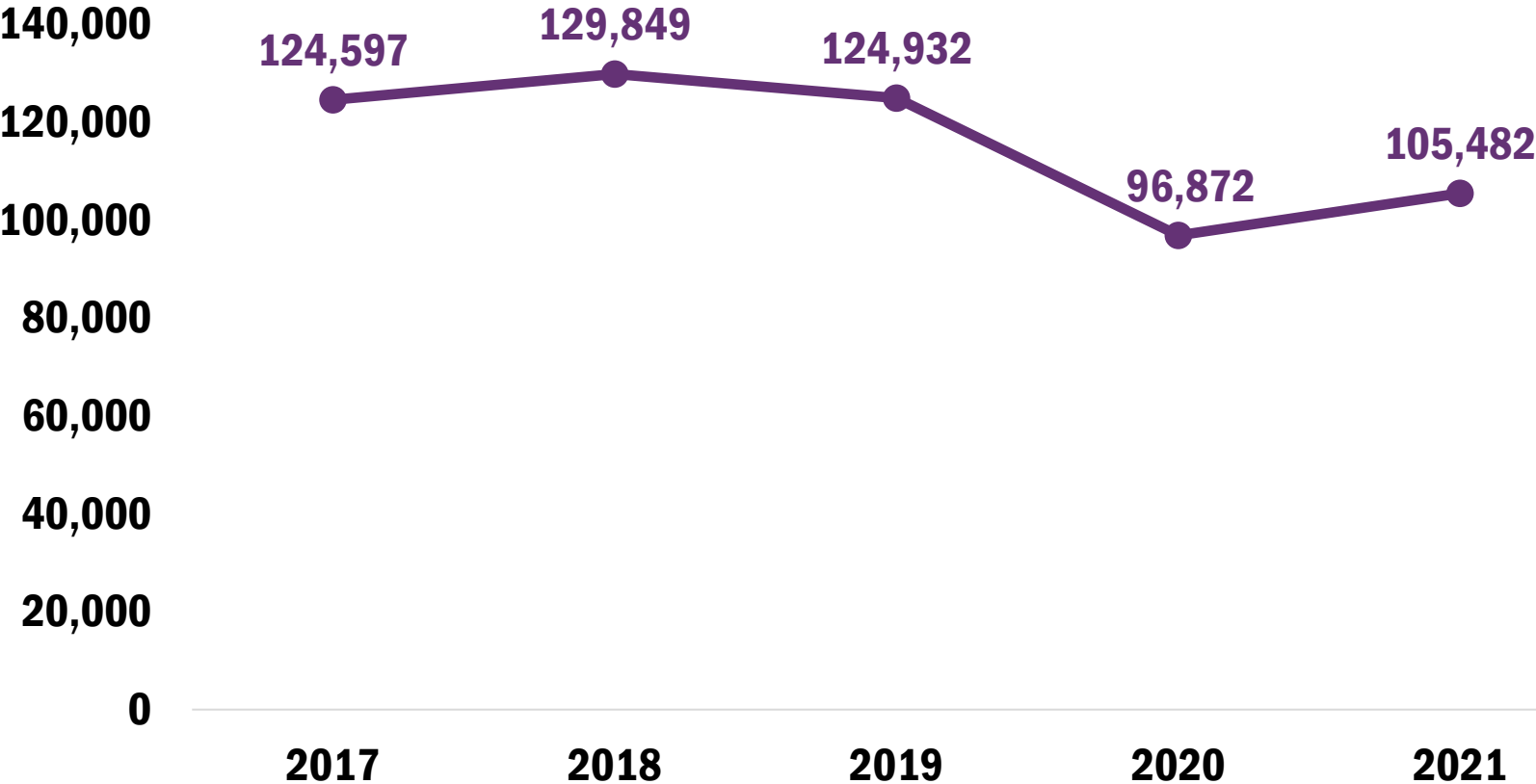
Analysis by Injury Epidemiology and Surveillance Unit



Unintentional Motor Vehicle Traffic Emergency Department Visits

MVT ED visits decreased by 15% from 2017 to 2021

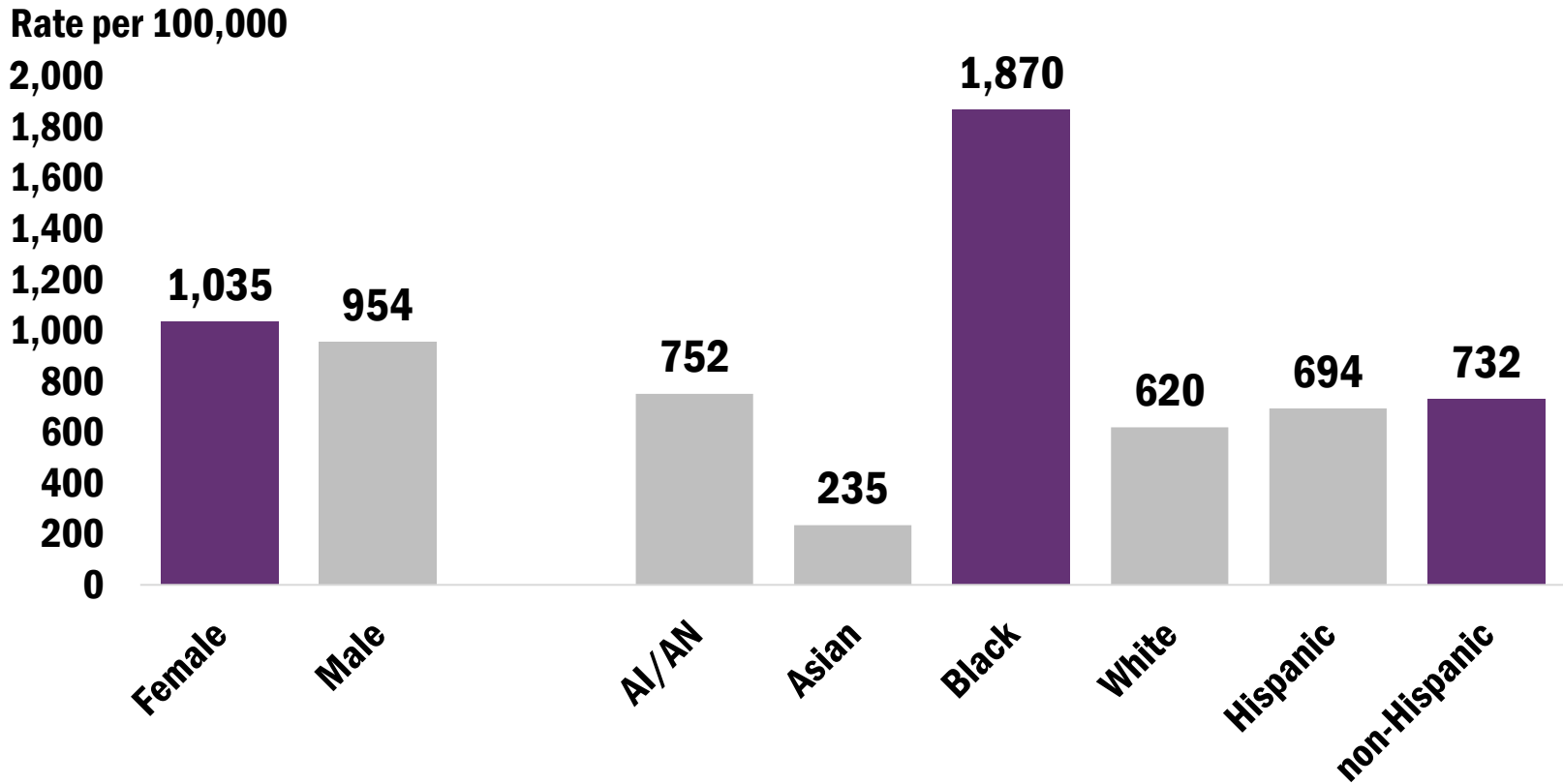
Number of ED Visits



Limited to NC Residents, 2017-2021
Source: NC DETECT (2017-2021)
Analysis by Injury Epidemiology and Surveillance Unit

Rates of MVT ED visits were highest among women, Black and non-Hispanic people

Rate of Motor Vehicle Traffic ED Visits by Demographic Group, 2021



Race and ethnicity were analyzed separately; Rate not calculated for Other

Sex was unknown for 281(<0.1%) injury ED visits and race or ethnicity was unknown for 34,376(<0.1%) injury ED visits.

Limited to NC Residents, 2021, N=105,482

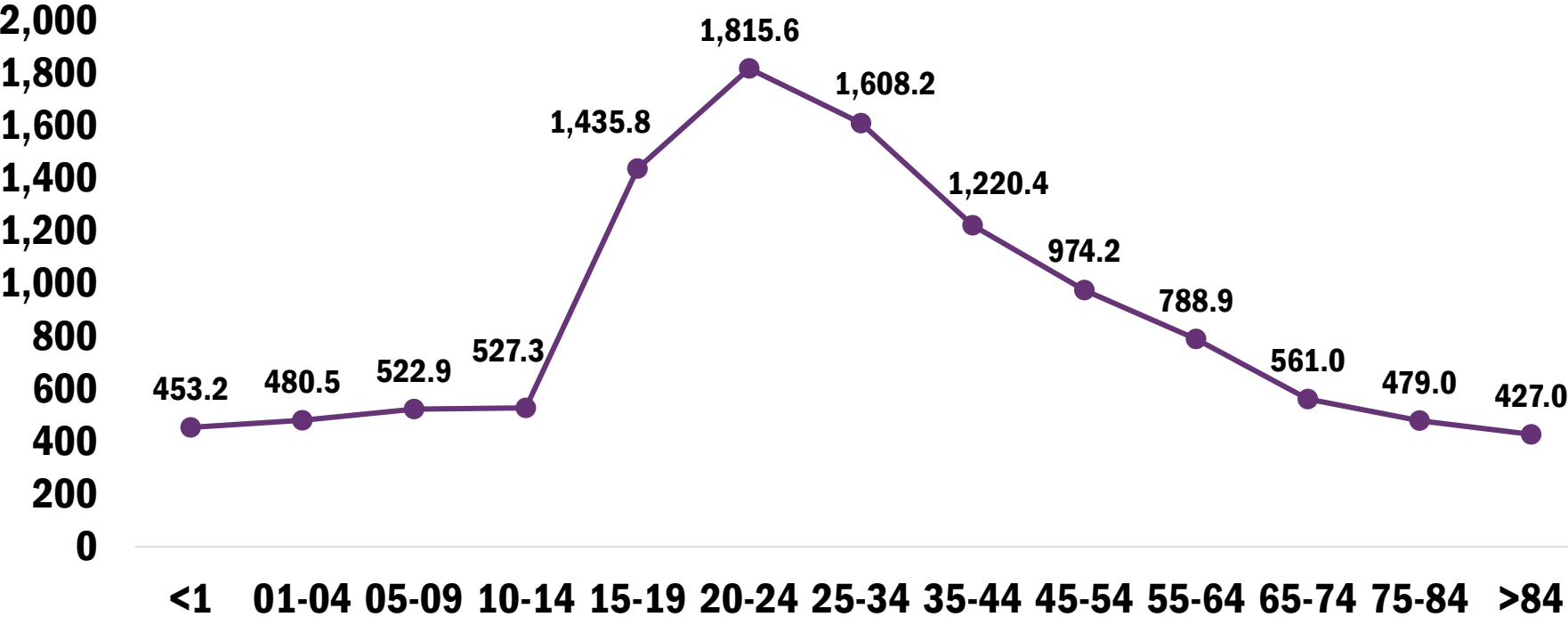
Source: NC DETECT (2021)

Analysis by Injury Epidemiology and Surveillance Unit

Adults ages 20-24 have the highest rates of MVT ED Visits

Rate of Motor Vehicle traffic ED Visits by Age Group, 2021

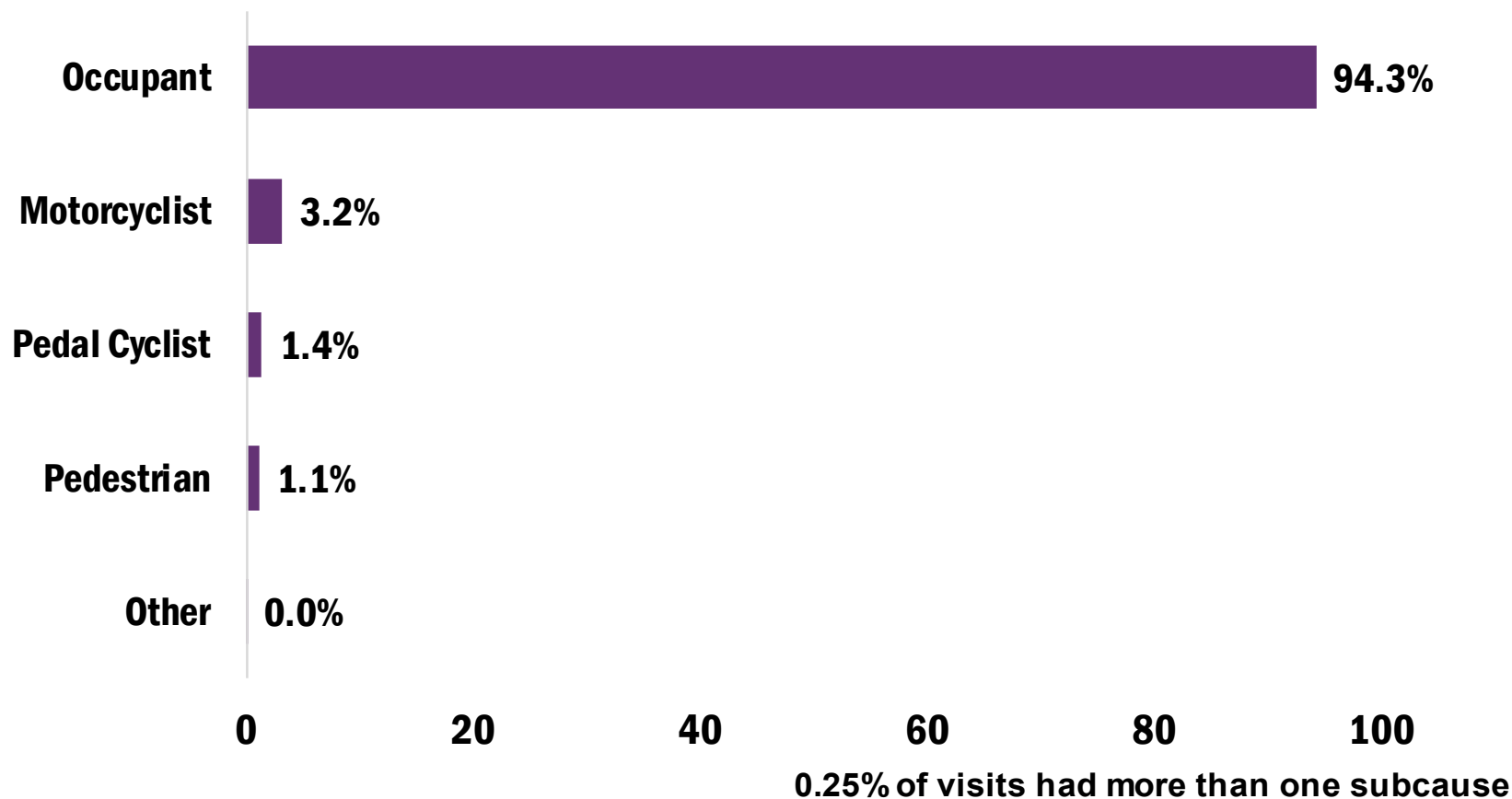
Rate per 100,000



Age was unknown for 231 ED visits
Limited to NC Residents, 2021, N=105,482
Source: NC DETECT (2021)
Analysis by Injury Epidemiology and Surveillance Unit

MVT-Occupant was the leading sub-cause for MVT ED visits

Percent of MVT Injury ED Visits by Known Subcause, 2021



Limited to NC Residents, 2021, N=105,482

Source: NC DETECT (2021)

Analysis by Injury Epidemiology and Surveillance Unit

Summary of Unintentional Motor Vehicle Traffic Injury in North Carolina

- In 2021, motor vehicle traffic injuries resulted in:
 - Over **1,800** deaths
 - Over **7,000** hospitalizations
 - Over **105,000** emergency department visits
- Most MVT-related injuries and deaths occur among **males and Non-Hispanic Blacks and American Indians and Alaskan Natives**
- Rates of MVT injuries are highest in the **20-24** and **25-34** age groups