Bureau of Highway Safety Serious Injury Analysis 2022

June 28, 2024

Prepared for the Bureau of Highway Safety

Survey Research Center Cutler Institute for Health & Social Policy University of Southern Mane



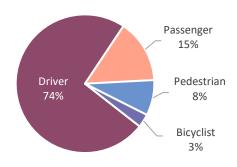
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Serious Injuries

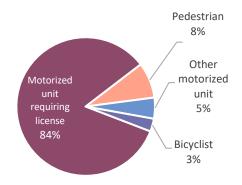
This report summarizes the findings from an analysis of highway crashes resulting in serious injuries in 2022. The dataset used for analysis contained a total of 1389 records, each representing an individual involved in a serious injury crash. In total, there were 665 serious injury crashes in 2022 and 737 serious injuries.

Fatalities by Person Type



A total of 737 drivers, passengers, bicyclists, and pedestrians were seriously injured as a result of highway crashes in 2022. The majority of these serious injuries (74%) were driver injuries, 15% were passenger injuries, 8% were pedestrian injuries, and the remaining 3% were bicyclist injuries.

Fatalities by Unit Type



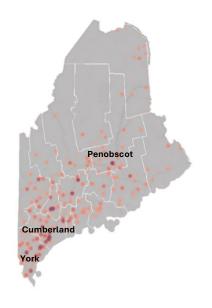
The majority of seriously injured persons, 84%, were occupants of motorized vehicles requiring a driver's license (e.g., cars, motorcycles, etc.), 8% were pedestrians, 5% were operating or riding other motorized vehicles (e.g., ATVs or snowmobiles), and 3% were bicyclists.

Serious Injury Crashes by Month

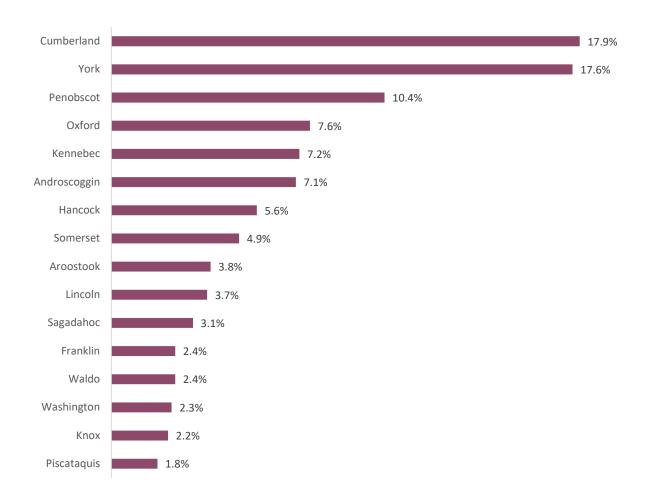
While Maine's roads are most dangerous during the winter months, a higher number of serious injury crashes occur during the summer months. This may reflect a reduction in the number of miles driven during winter months and/or increased care taken by drivers when navigating during inclement weather. A little less than a third (31%) of all serious injuries in 2022 occurred in May, June, and July.



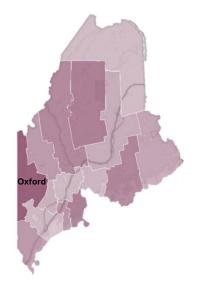
Serious Injuries by County



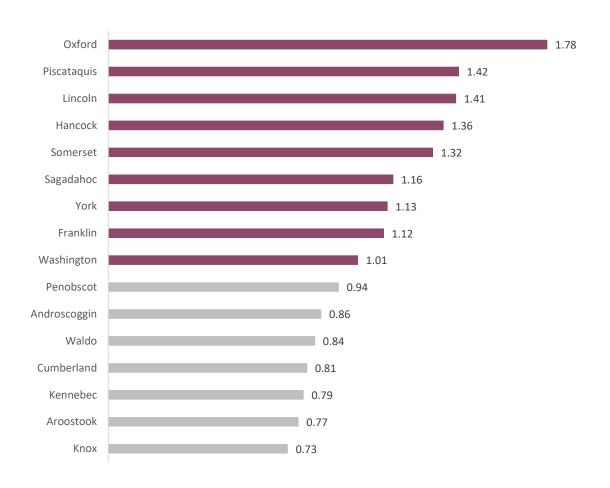
Approximately 17.90% of the 737 serious injuries in 2022 occurred in Cumberland County, followed by 17.6% in York County, and 10.4% in Penobscot County.



Serious Injury Crashes by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate serious injury rates, relative rates were computed by dividing the serious injury rate of each county by its population rate. Oxford County, which held 4.26% of the population according to the last 5-year American Community Survey, had 7.60% of the serious injuries in 2022, resulting in a relative rate of 1.78. This rate is disproportionately high, as are the rates of all the counties displayed in red below.

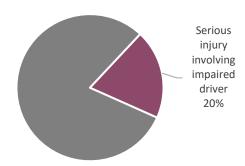


Impaired Driving

Summary

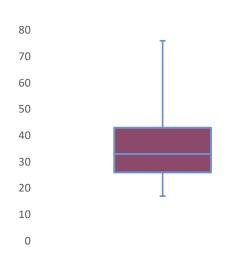
- There were 124 impaired-driving serious injury crashes involving 125 impaired drivers in 2022.
- There were 145 impaired-driving-related serious injuries during this period.
- Twenty percent (20%) of all serious injuries involved an impaired driver.
- Thirteen percent (13%) of all drivers involved in serious injury crashes were impaired.

Impaired-Driving Serious Injuries



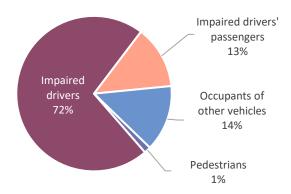
Approximately 20% of all serious injuries involved an impaired driver.

Impaired Driving and Age



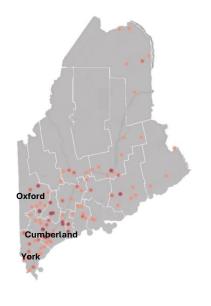
The median age of drivers operating under the influence in serious injury crashes was 33, meaning half of the impaired drivers were younger than 33 and half were older. One-quarter of all drivers operating under the influence were between the ages of 17 and 25, and one-quarter were between the ages of 26 and 32. These are dense distributions compared to the remaining two quartiles, which together span the ages of 33 and 76; as such, the bottom two age quartiles might make good targets for public safety messages.

Impaired-Driving Serious Injuries by Person Type

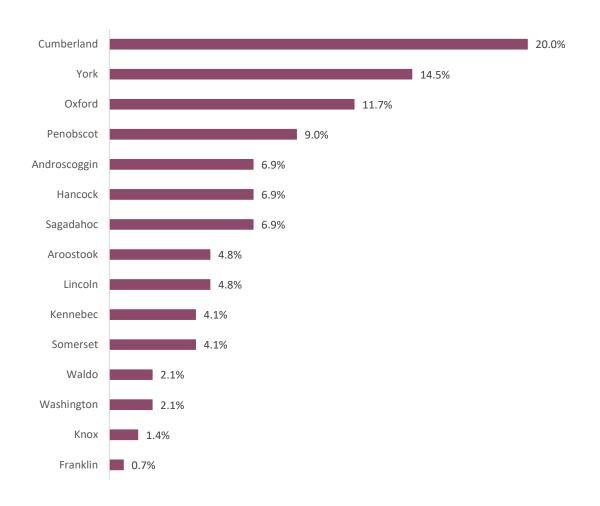


Crashes involving impaired driving resulted in 145 serious injuries in 2022. The majority of these serious injuries (72%) involved injury to the impaired driver. An additional 13% of serious injuries involved the impaired drivers' passengers. This suggests that 85% of the risk associated with impaired driving is borne by impaired drivers and their passengers. An additional 15% of serious injuries involved occupants of other vehicles and pedestrians.

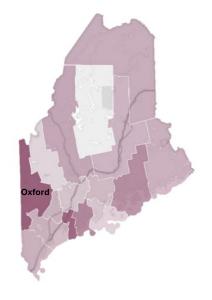
Impaired-Driving Serious Injuries by County



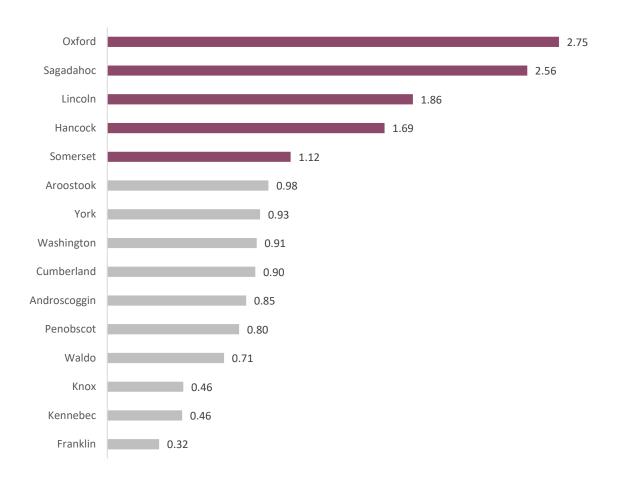
Approximately 20.0% of the 145 impaireddriving serious injuries in 2022 occurred in Cumberland County, followed by 14.5% in York County, and 11.7% in Oxford County.



Impaired-Driving Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate driver-impaired serious injury rates, relative rates were computed by dividing the driver-impaired serious injury rate of each county by its population rate. Oxford County, which held 4.26% of the population according to the last 5-year American Community Survey, had 11.72% of the driver-impaired serious injuries in 2022 resulting in a relative rate of 2.75. This rate is disproportionately high, as are the rates of all counties displayed in red below.

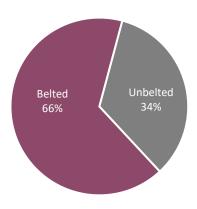


Occupant Protection

Summary

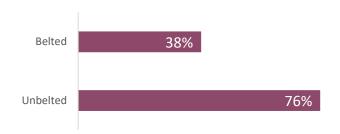
- Over a third (34%) of the occupants with serious injuries who were required to be belted were
- Seventy-nine percent (79%) of those involved in serious injury crashes (injured or not) in 2022 were wearing seat belts while 21% were not.
- Seventy-seven percent (77%) of males involved in serious injury crashes in 2022 were wearing seat belts while 82% of females were.
- Those 20 years of age and younger were no more or less likely than older occupants to be wearing a seat belt.

Unbelted Occupant Serious Injuries

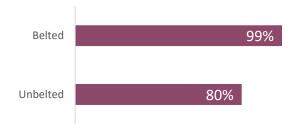


More than a third (34%) of all occupants with serious injuries who were required to be belted were not.

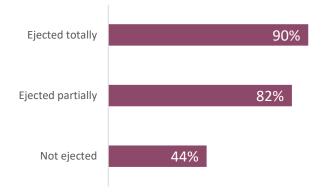
Impact of Seat Belt Use on Serious Injuries



Approximately 46% of all people involved in serious injury crashes in 2022 who were required to wear seat belts were seriously injured, but unbelted occupants were injured at a significantly higher rate (76%) than belted occupants (38%). Seat belt use may partially determine who is and is not seriously injured in a serious injury crash.

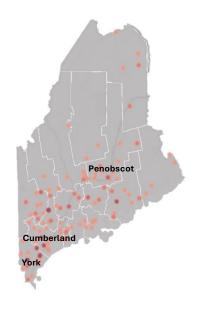


Seat belt use protects occupants in part by preventing them from being ejected during crashes. Approximately 20% of all those who were not belted were partially or fully ejected from their vehicles during serious injury crashes, while less than 1% of those who were belted were ejected.

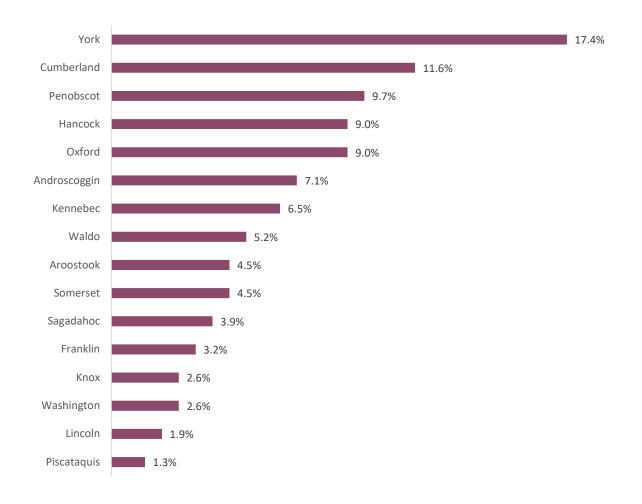


Ejection, in turn, results in a much higher probability of serious injury. While 44% of those who were not ejected nevertheless were seriously injured, the rates were much higher for those who were totally or partially ejected at 82% and 90%, respectively.

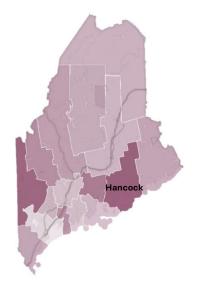
Unbelted Occupant Serious Injuries by County



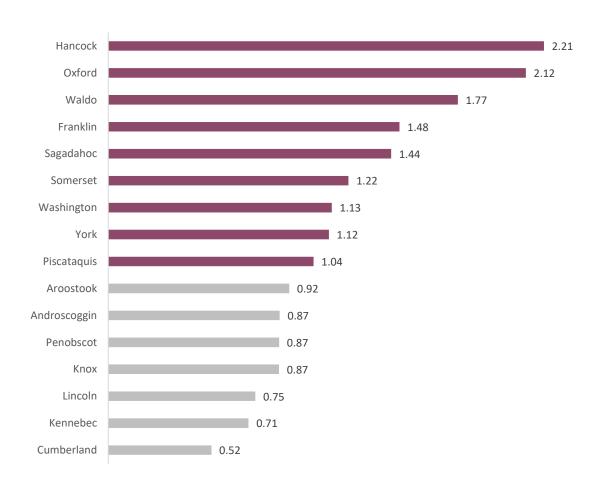
Approximately 17.4% of the 155 unbelted occupant serious injuries in 2022 occurred in York County, with another 11.6% in Cumberland County, and 9.7% in Penobscot County.



Unbelted Occupant Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate unbelted serious injury rates, relative rates were computed by dividing the unbelted serious injury rate of each county by its population rate. Hancock County, which held 4.09% of the population according to the last 5-year American Community Survey, had 9.03% of the unbelted serious injuries in 2022, resulting in a relative rate of 2.21. This rate is disproportionately high, as are the rates of all counties displayed in red below.

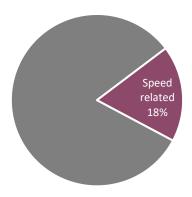


Speeding

Summary

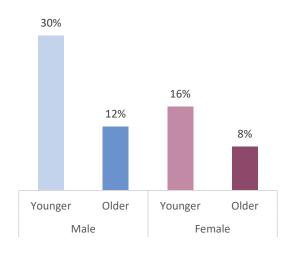
- There were 116 speed-related serious injury crashes in 2022.
- There were 131 speed-related serious injuries in 2022, including 105 driver injuries, 23 passenger injuries, 2 pedestrian injuries, and 1 bicyclist injury.
- Eighteen percent (18%) of all serious injuries were speed related.

Speed-Related Serious Injuries



In 2022, there were 131 serious injuries related to speeding. This was approximately 18% of all serious injuries.

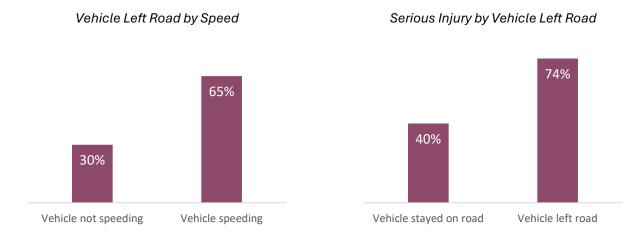
Speeding by Sex and Age



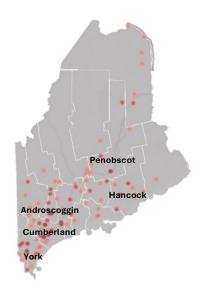
While 12% of all drivers involved in serious injury crashes were speeding, young (under age 21) male drivers were more likely to be speeding than other drivers. Thirty percent (30%) of young male drivers were speeding, compared to all other drivers, with rates between 8% and 16%.

Speed-Related Serious Injuries and Leaving the Road

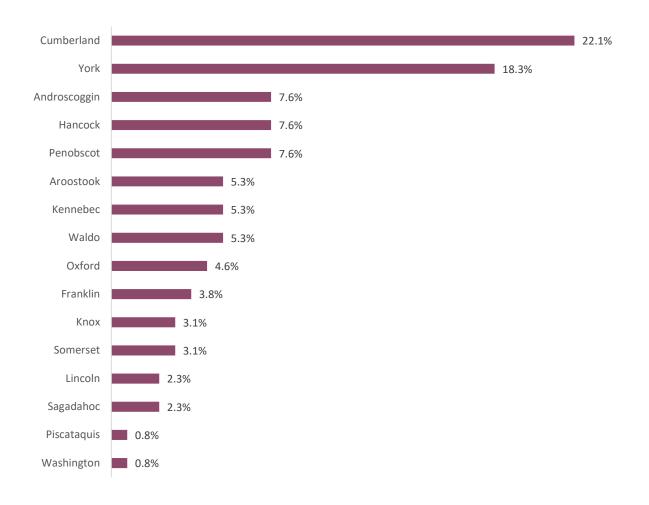
Approximately 30% of non-speeding vehicles left the road, while 65% of speeding vehicles did so. This is an important distinction because a larger proportion of people involved in serious injury crashes in which the vehicle leaves the road are seriously injured. Approximately 40% of occupants involved in crashes in which the vehicle remains on the road are seriously injured, but when the vehicle leaves the road, the proportion rises to 74%.



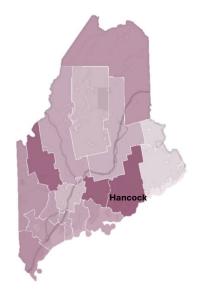
Speed-Related Serious Injuries by County



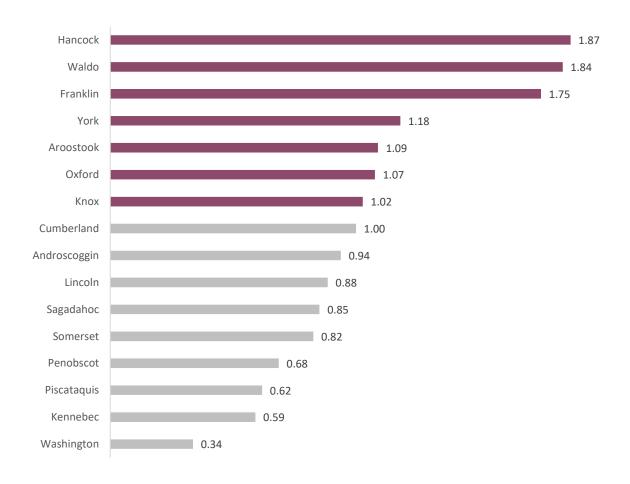
Approximately 22.1% of the 131 speed-related serious injuries in 2022 occurred in Cumberland County, followed by 18.3% in York County, and 7.6% each in Androscoggin, Hancock, and Penobscot Counties.



Speed-Related Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate speed-related serious injury rates, relative rates were computed by dividing the speed-related serious injury rate of each county by its population rate. Hancock County, which held 4.09% of the population according to the last 5-year American Community Survey, had 7.63% of the speed-related serious injuries in 2022, resulting in a relative rate of 1.87. This rate is disproportionately high, as are the rates of all counties displayed in red below.

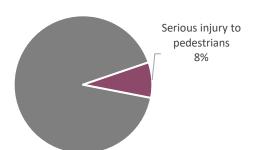


Pedestrians

Summary

- There were 60 pedestrian crashes in 2022 resulting in the serious injury of 61 pedestrians.
- One-quarter (25%) of the pedestrians who were seriously injured in crashes were injured after dark.

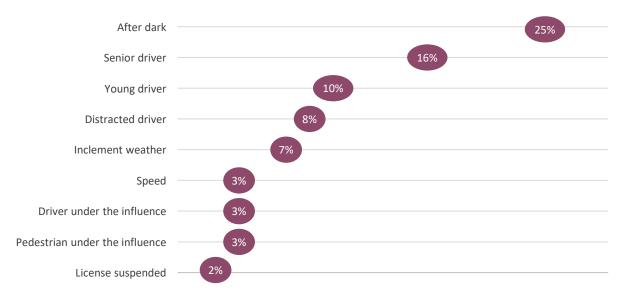
Pedestrian Serious Injuries



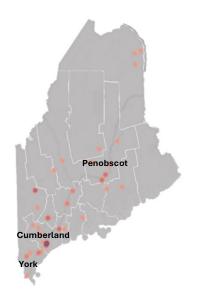
Approximately 8% of serious injuries were to pedestrians.

Pedestrian Serious Injuries and Other Factors

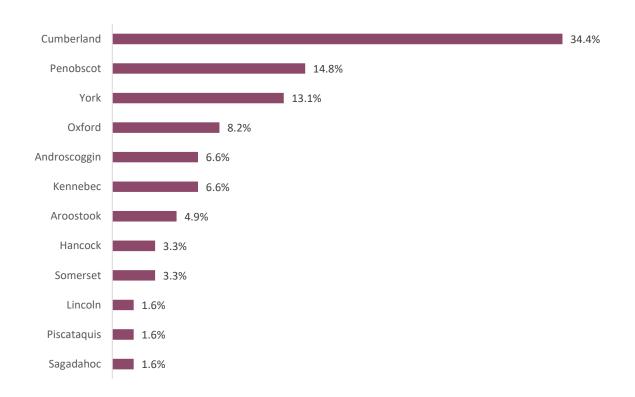
A number of factors contribute to the serious injury of pedestrians. The following table summarizes the percentage of serious injury associated with some of these known factors. The highest contributing factor was *after dark*, at 25%. A little over a half (51%) of pedestrian serious injuries were not associated with any of the factors presented below.



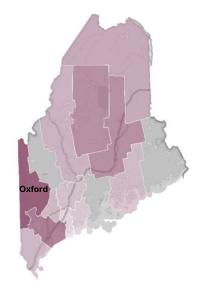
Pedestrian Serious Injuries by County



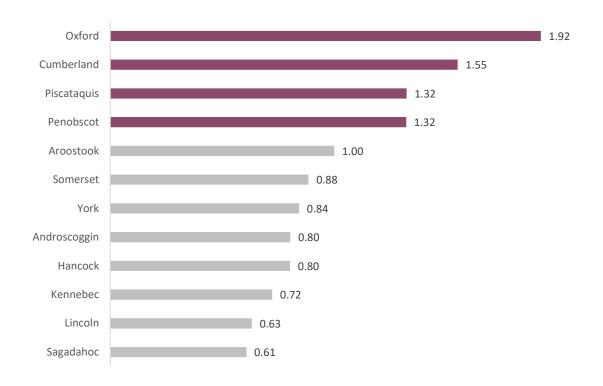
Approximately 34.4% of the 61 pedestrian serious injuries in 2022 occurred in Cumberland County, followed by 14.8% in Penobscot County, and 13.1 in York County.



Pedestrian Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate pedestrian serious injury rates, relative rates were computed by dividing the pedestrian serious injury rate of each county by its population rate. Oxford County, which held 4.26% of the population according to the last 5-year American Community Survey, had 8.20% of the pedestrian serious injuries in 2022, resulting in a relative rate of 1.92. This rate is disproportionately high, as are the rates of all counties displayed in red below.

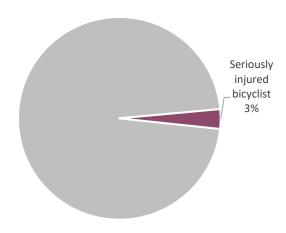


Bicyclists

Summary

• There were 23 crashes resulting in serious injury to 23 bicyclists in 2022.

Bicyclist Serious Injuries



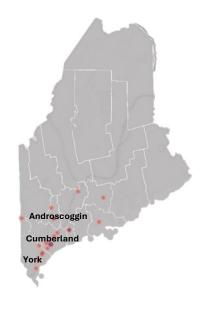
Bicyclists make up a very small proportion, 3%, of all serious injuries.

Bicyclist Serious Injuries and Other Factors

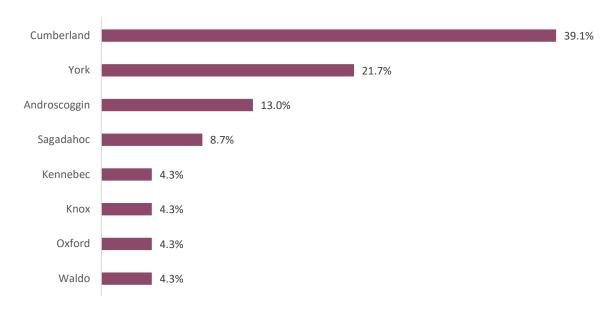
A number of factors contribute to the serious injury of bicyclists:

- ♦ 3 serious injuries involved a senior (≥ age 65) vehicle driver
- ♦ 3 serious injuries involved a young (≤ age 20) vehicle driver
- ♦ 3 serious injuries involved young (≤ age 20) bicyclist
- ♦ 2 serious injuries involved a senior (≥ age 65) bicyclist
- 2 serious injuries involved riding after dark
- 1 serious injury involved a distracted driver
- 1 serious injury involved a speeding vehicle
- 1 serious injury involved an impaired bicyclist
- 1 serious injury involved a driver with a suspended license

Bicyclist Serious Injuries by County



Approximately 39.1% of the 23 bicyclist serious injuries in 2022 occurred in Cumberland County, followed by 21.7% in York County, and 13.0% in Androscoggin County.

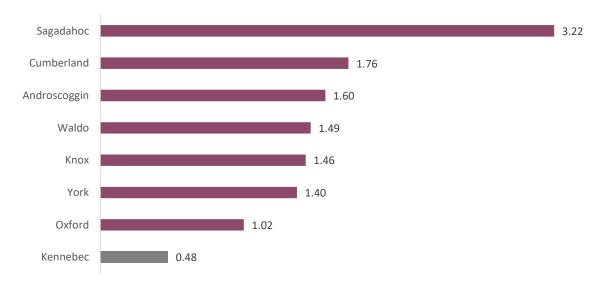


Bicyclist Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate bicyclist serious injury rates, relative rates were computed by dividing the bicyclist serious injury rate of each county by its population rate.

Sagadahoc County, which held 2.70% of the population according to the last 5-year American Community Survey, had 8.70% of the bicyclist serious injuries in 2022, resulting in a relative rate of 3.22. This rate is disproportionately high, as are the rates of all counties displayed in red below.

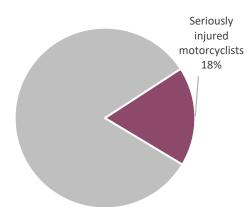


Motorcyclists

Summary

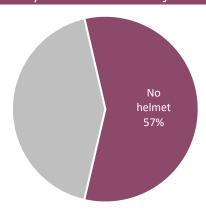
- There were 121 crashes resulting in serious injury to motorcyclists in 2022 involving 143 motorcyclists (125 drivers and 18 passengers).
- One hundred thirty-one (131) motorcyclists were seriously injured in these crashes (117 drivers and 14 passengers).

Motorcyclist Serious Injuries



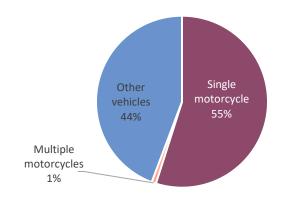
Seriously injured motorcyclists accounted for 18% of all serious injuries in 2022.

Motorcyclist Serious Injuries and Helmet Use



Approximately 57% of seriously injured motorcyclists were not using a (DOT-compliant) helmet.

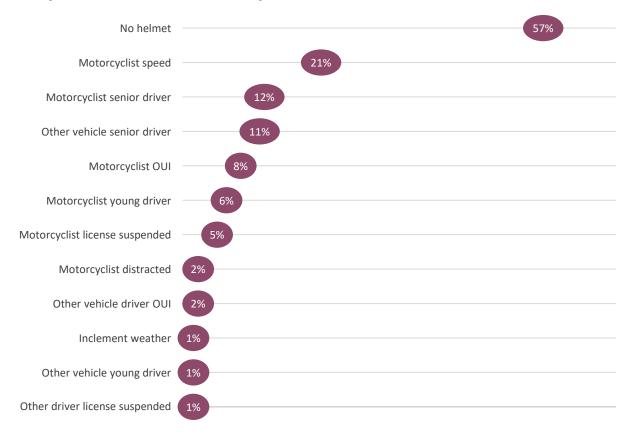
Other Vehicle Involvement



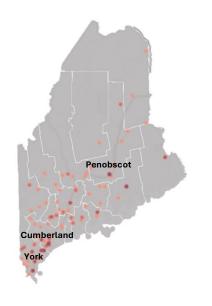
In approximately 55% of all crashes involving a seriously injured motorcyclist, only a single motorcycle was involved. In an additional 1%, another motorcycle was involved. In 44%, at least one other non-motorcycle vehicle was involved. Thus, 56% of all crashes involving a seriously injured motorcyclist involved only one or two motorcycles but no other vehicle.

Motorcyclist Serious Injuries and Other Factors

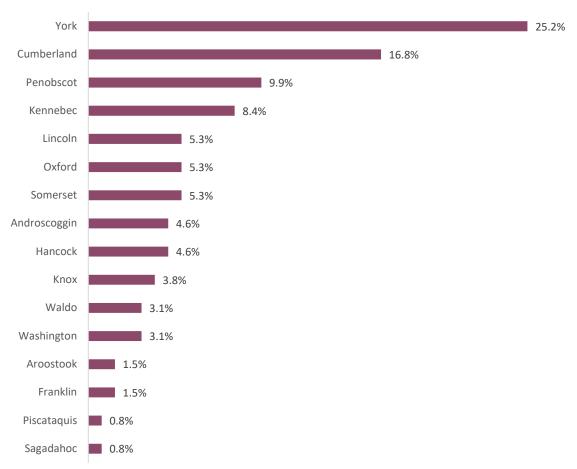
A number of factors may contribute to the serious injury of motorcyclists. The following graphic displays the percentage of serious injuries associated with each factor. The highest contributing factor was *no helmet*, at 57%, followed by *motorcyclist speed*, at 21%. Only 20% of all serious injuries to motorcyclists were not associated with any of the factors shown.



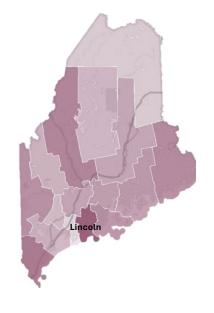
Motorcyclist Serious Injuries by County



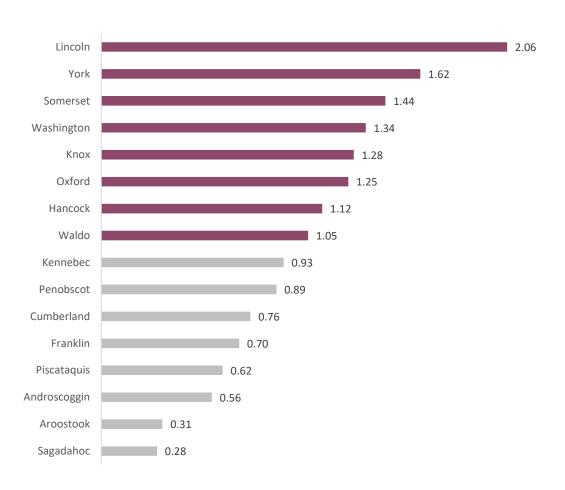
Approximately 25.2% of the 131 motorcyclist serious injuries in 2022 occurred in York County, followed by 16.8% in Cumberland County, and 9.9% in Penobscot County.



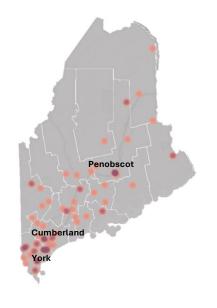
Motorcyclist Serious Injuries by County, Relative Rate



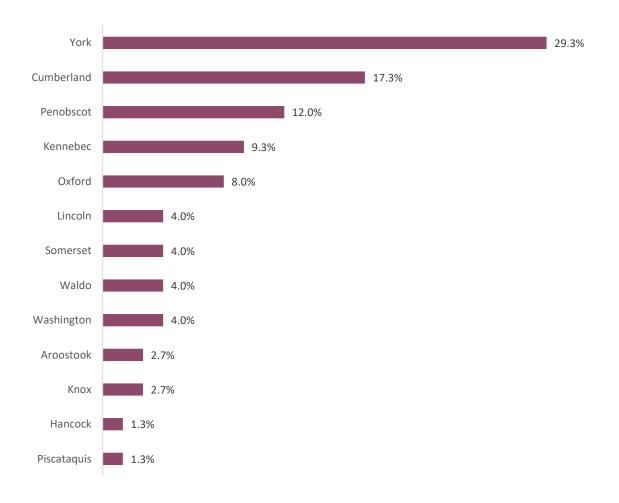
Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate motorcyclist serious injury rates, relative rates were computed by dividing the serious injury rate of each county by its population rate. Lincoln County, which held 2.59% of the population according to the last 5-year American Community Survey, had 5.34% of the motorcyclist serious injuries in 2022, resulting in a relative rate of 2.06. This rate is disproportionately high, as are the rates of all counties displayed in red below.



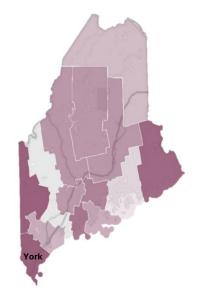
Unhelmeted Motorcyclist Serious Injuries by County



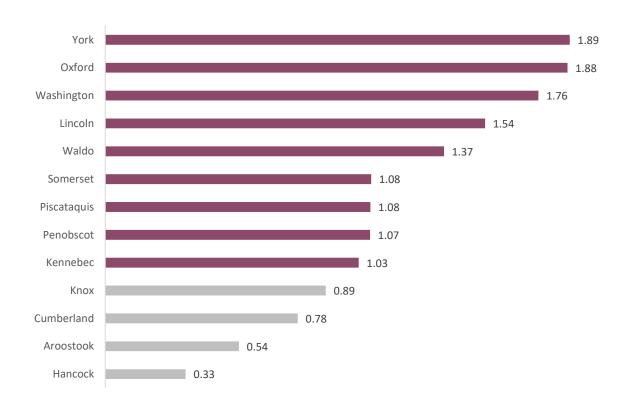
Approximately 29.3% of the 75 unhelmeted motorcyclist serious injuries in 2022 occurred in York County, with another 17.3% in Cumberland County, and another 12.0% in Penobscot County.



Unhelmeted Motorcyclist Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate unhelmeted motorcyclist serious injury rates, relative rates were computed by dividing the unhelmeted motorcyclist serious injury rate of each county by its population rate. York County, which held 15.56% of the population according to the last 5-year American Community Survey, had 29.33% of the unhelmeted motorcyclist serious injuries in 2022, resulting in a relative rate of 1.89. This rate is disproportionately high, as are the rates of all counties displayed in red below.

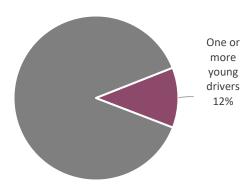


Young Drivers

Summary

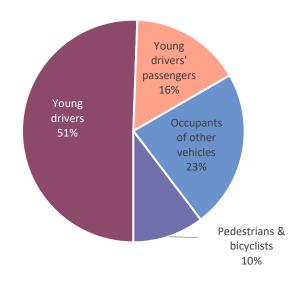
- Young drivers (ages 16 to 20) were involved in 79 of the 665 crashes (12%) that resulted in serious injury.
- Eighty-seven (87) of the 737 serious injuries involved a young driver (12%).
- Eight percent (8%) of drivers involved in crashes resulting in serious injury in 2022 were young drivers.

Young-Driver-Related Serious Injuries



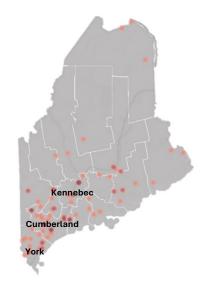
A total of 87 serious injuries were associated with young drivers (ages 16 to 20) in 2022. These injuries accounted for 12% of all serious injuries.

Young-Driver-Related Serious Injuries by Person Type

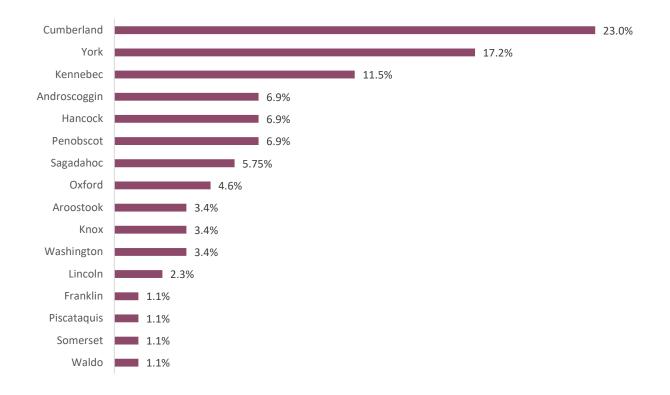


Many of the serious injuries associated with young drivers (51%) were sustained by a young driver. An additional 16% of serious injuries were sustained by a young drivers' passengers. This suggests that 67% of the risk associated with young drivers is borne by young drivers and their passengers. An additional 23% of serious injuries were sustained by occupants of other vehicles and 10% were sustained by pedestrians and bicyclists.

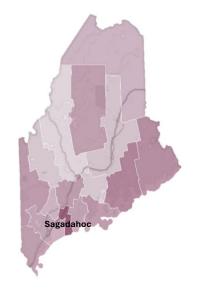
Young-Driver-Related Serious Injuries by County



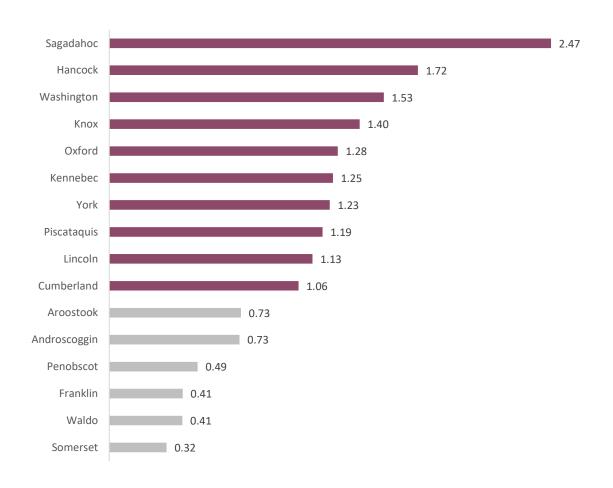
Approximately 23.0% of the 87 young-driverrelated serious injuries in 2022 occurred in Cumberland County, followed by 17.2% in York County, and 11.5% in Kennebec County.



Young-Driver-Related Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate young-driver-related serious injury rates, relative rates were computed by dividing the young-driver-related serious injury rate of each county by its population rate. Sagadahoc County, which held 2.33% of the youth population (aged 16 to 20) according to the last 5-year American Community Survey, had 5.75% of the young-driver-related serious injuries in 2022, resulting in a relative rate of 2.47. This rate is disproportionately high, as are the rates of all counties displayed in red below.

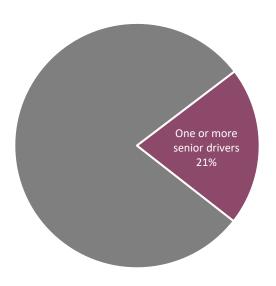


Senior Drivers

Summary

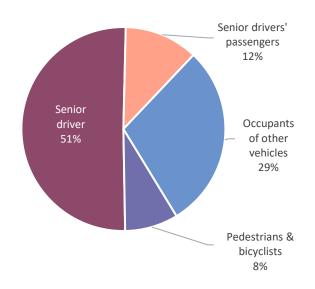
- Senior drivers were involved in 130 of the 665 crashes (20%) that resulted in serious injury in 2022.
- Of the 737 serious injuries that occurred, 154 (21%) involved a senior driver.

Senior-Driver-Related Serious Injuries



A total of 154 serious injuries were associated with senior drivers (ages 65 and older) in 2022. These injuries accounted for 21% of all serious injuries.

Senior-Driver-Related Seriously Injuries by Person Type



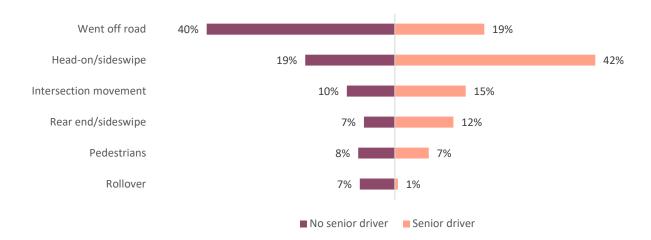
Many of the serious injuries associated with senior drivers, 51%, were sustained by the senior driver. An additional 12% of injuries were sustained by the senior drivers' passengers. This suggests that 62% of the risk associated with senior drivers is borne by senior drivers and their passengers. An additional 38% of serious injuries were sustained by occupants of other vehicles, bicyclists, and pedestrians.

Type of Crash

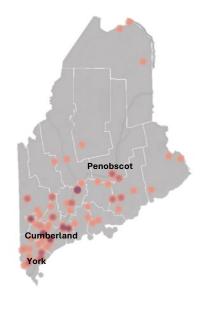
The majority (91%) of **all** serious injuries in 2022 were related to one of the following crash types:

- Went off road (35%)
- ♦ Head-on/sideswipe (24%)
- Intersection movement (11%)
- Rear-end/sideswipe (8%)
- Pedestrians (8%)
- Rollover (6%)

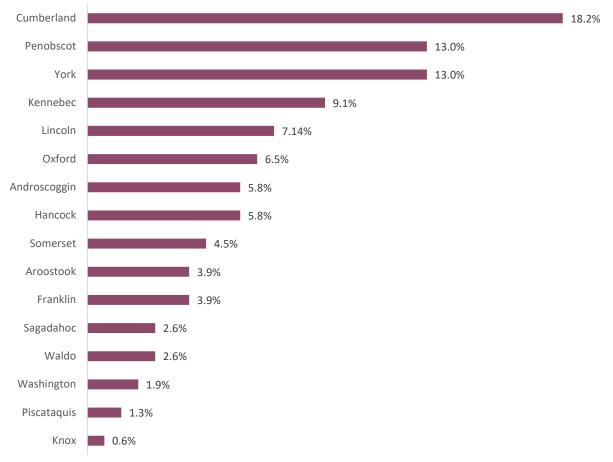
The top categories differed, however, depending on whether the crash involved a senior driver, as shown in the graphic below. Crashes involving a senior driver were most likely to be *head-on/sideswipe* crashes. This type of crash accounted for 42% of all serious injury crashes involving a senior driver and 19% of all crashes involving no senior drivers. Crashes involving no senior driver were most likely to be *went off road* crashes. This type of crash accounted for 40% of all serious injury crashes involving no senior drivers and 19% of all crashes involving a senior driver.



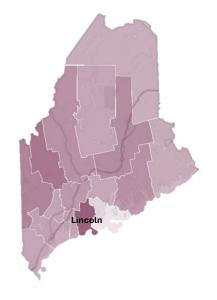
Senior-Driver-Related Serious Injuries by County



Approximately 18.2% of the 154 senior-driverrelated serious injuries in 2022 occurred in Cumberland County, followed by 13.0% each in Penobscot and York Counties.



Senior-Driver-Related Serious Injuries by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate senior-driver-related serious injury rates, relative rates were computed by dividing the senior-driver-related serious injury rate of each county by its population rate. Lincoln County, which held 3.42% of the senior population (aged 65 and older) according to the last 5-year American Community Survey, had 7.14% of the senior-driver-related serious injuries in 2022, resulting in a relative rate of 2.09. This rate is disproportionately high, as are the rates of all counties displayed in red below.

