

NEVADA'S TRAFFIC RESEARCH AND EDUCATION NEWSLETTER

TREND In Focus: Speed-Related Crashes

Crash and Trauma Outcomes for Motor Vehicle Occupants

By Laura K. Gryder, MA, Samantha A. Slinkard-Barnum, MPH, and Deborah A. Kuhls, MD

Vehicle speed is a major contributing factor to crashes and related injuries. The faster a vehicle is traveling, the more likely the driver may: 1) lose control, 2) require more time and distance to stop, and 3) experience increased crash and related injury severity.[1] Speeding contributed to nearly one third of all fatal crashes nationwide in 2018, killing an average of twenty-five people per day.[2] In Nevada, speeding contributed to the deaths of 180 road users between 2018 and 2019.[3] This *TREND in Focus* analysis investigates the relationship between speed, crash severity, and injury severity for motor vehicle occupants presenting to any of Nevada's four trauma centers between 2015 and 2017 following a crash on a highway with a posted speed of 55-65 MPH or 70+ MPH (N=2,324).

CONTENT

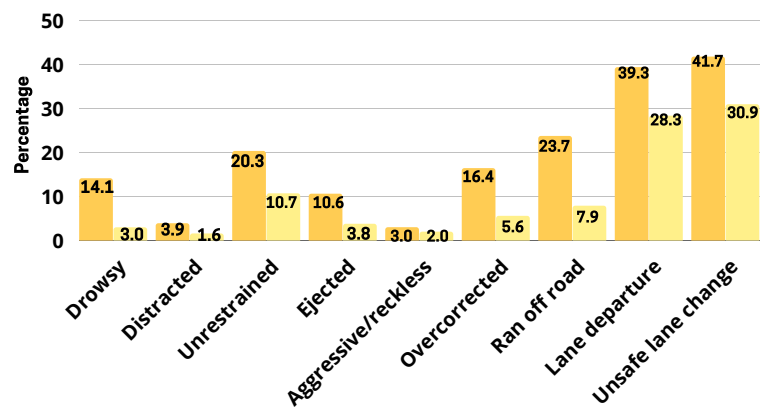
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Results

Crash Factors:

Driving over the speed limit was a factor in 30% of crashes on highways with posted speed limits of 55-65 MPH and 38% of crashes on highways with speed limits over 70 MPH. Figure 1 shows a comparison of various significant crash factors for motor vehicle crashes on highways with 70+ MPH speed limits compared to 55-65 MPH limit highways. Drivers on 70+ MPH highways were significantly more likely to be **drowsy** (14.1% vs. 3.0%), **distracted** (3.9% vs. 1.6%), **unrestrained** (20.3% vs. 10.7%), **ejected** from their vehicle (10.6% vs. 3.8%), and to **overcorrect** their vehicle (16.4% vs. 5.6%) compared to drivers who crashed on 55-65 MPH highways.

Fig 1. Crash Facts 70+ MPH vs. 55-65 MPH speed limits:



Injury Outcomes and Hospital Resource Utilization:

Patients who were involved in crashes on 70+ MPH highways experienced significantly higher median hospital charges (Figure 2), more severe injuries (mean Injury Severity Score 8.23 vs. 4.92, Figure 3), and more time in medical care (Figure 4) compared to those injured on lower speed highways.

Fig 2. Median Hospital Charges

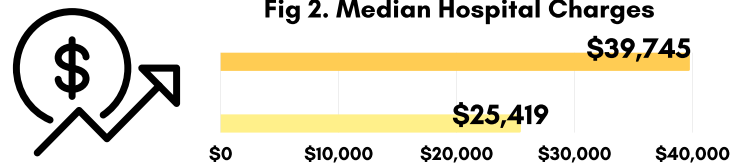
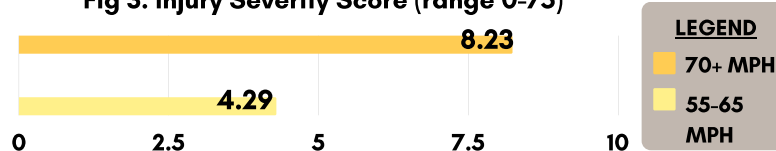
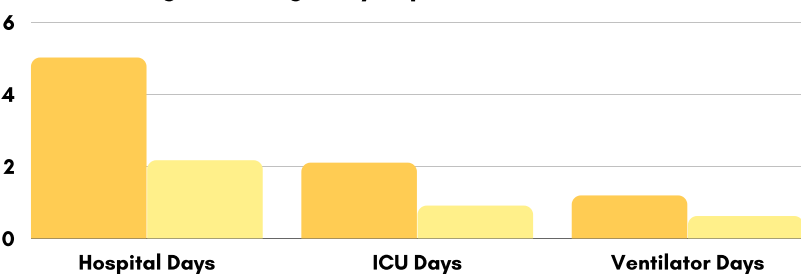


Fig 3. Injury Severity Score (range 0-75)



LEGEND
■ 70+ MPH
■ 55-65 MPH

Fig 4. Average Days Spent in Medical Care



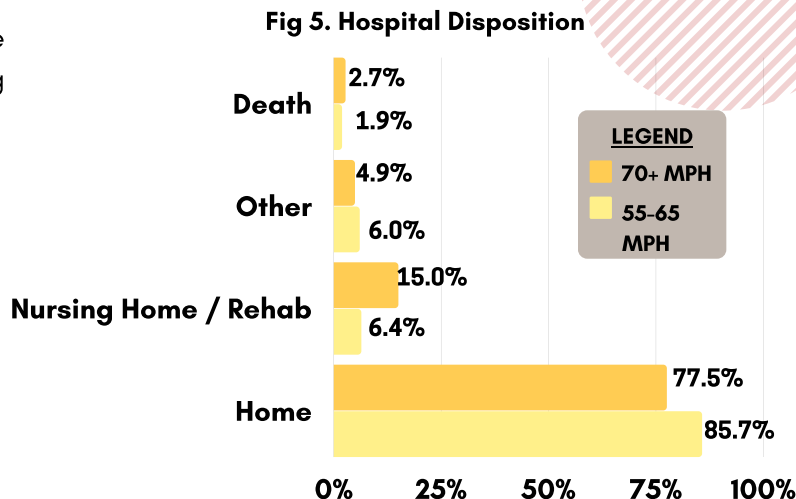
Nevada's highway speed limits vary throughout the state. In urban areas, speed limits are up to 65 miles per hour. In rural areas, speed limits can be set up to 80 miles per hour. The Nevada Department of Transportation maintains a map of the speed limits on the state-maintained highways and interstates, which can be viewed at www.dot.nv.gov/travel-info/maps/state-maps

Hospital Disposition Outcomes:

Patients injured on higher speed highways (70+ MPH) more frequently died from their injuries or required skilled nursing or rehabilitation after their stay in the hospital (Figure 5).

TREND in Focus References:

1. Speeding. National Highway Traffic Safety Administration. <https://www.nhtsa.gov/risky-driving/speeding>
2. Motor Vehicle Safety Issues: Speeding. National Safety Council. <https://injuryfacts.nsc.org/motor-vehicle/motor-vehicle-safety-issues/speeding/>
3. Nevada Fatal Crash Dashboard: Speeding Related Crashes. Nevada Office of Traffic Safety Zero Fatalities. <https://zerofatalitiesnv.com/>



Spotlight: Nevada's 81st Legislative Session

By Samantha A. Slinkard-Barnum, MPH

Nevada's 81st legislative session began on February 1st, 2021.

Our team has been hard at work providing ad hoc data analyses and legislative fact sheets to inform several traffic safety-related bill drafts for the state Senate and Assembly. We have been following several bill drafts in particular:

- AB79: Revises the requirement for a youth's driver's license
- AB118: Revises provisions governing transportation of children in motor vehicles
- SB170: Makes changes relating to off-highway vehicles
- SB183: Revises provisions relating to transportation

The current text for each of these bill drafts can be accessed through the Nevada Electronic Legislative Information System (NELIS), and we provide a brief overview of a few below.

AB79: This bill revises the number of hours of supervised experience young drivers aged 16 or 17 needs to complete before they may apply and test for a driver's license. It expands upon a bill passed during the 80th session (2019) which required that young drivers, if they are able, complete a hands-on defensive driving course before they receive their license. AB79 will require that young drivers complete the defensive driving class and a minimum of 50 hours of supervised driving OR at least 70 hours of supervised driving.

AB118: This bill modifies the laws pertaining to child restraint systems (i.e. car seats, booster seats, etc.) to better align with the American Academy of Pediatrics recommendations. We discussed those recommendations in TREND 8.4 (Sept. 2019). AB118 will increase age and height requirements, remove the weight requirement, and require that children ride in the back seat of a vehicle until they are thirteen years old. Our Co-PI, Dr. Chestovich, along with our other partners in traffic safety, provided an evidence-based testimony informing this bill.

Interested in getting involved in the Nevada legislative session?

You can read proposed legislation (via NELIS), join committee meetings virtually as a guest, and find other information about the legislative session at <https://www.leg.state.nv.us/>

SB170: This bill will make changes to the registration requirements for off-highway vehicles, such as dirt bikes or all-terrain vehicles, and more importantly, require children under 16 years old to wear a helmet when operating, using, or riding these vehicles.

SB183: As introduced, this bill initially proposed changes to speed limits and the use of bicycles (motorized and non-motorized) and electric scooters on Nevada roadways. The bill would have allowed increased speed limits in high occupancy vehicle (HOV) lanes up to 5 MPH over the posted speed limit, however this bill section has been removed. SB183 also proposes to prohibit the use of bicycles and scooters on roads with speed limits of 65 MPH or greater, and place a limit of two cyclists riding "abreast" (side by side) on the shoulder of a roadway.

Our team will be tracking these bills and any traffic-related bills that are introduced throughout the legislative session. Legislation to improve traffic safety is a vital piece of the puzzle to encourage safer driving behaviors and road design.



Dr. Paul Chestovich, Co-PI for our team, providing his testimony virtually for AB118. He provided data and medical information from a trauma surgeon's perspective and shared a story of a child he treated who was improperly restrained for their age and height at the time of the crash.

At Home with the Traffic Safety Research Team

DriveSafe, Don't Take a COVID Patient's Place Campaign Series

By Merika Charupoom and Emily Carter

As more people are advised to stay home amidst the pandemic, distinct traffic patterns began to emerge. Excessive speeding became more prevalent with lower traffic volume. Other dangerous behaviors observed during this period include distracted driving, impaired driving, and unbelted occupants. Our team created a social media campaign on these four driving behaviors as a way to help spread a message to save lives as well as hospital beds for COVID patients.

Nationally, data from the first half of 2020 indicates an increase in fatalities involving speeding as a factor. Speeding continues to be a major issue in traffic safety. Additionally, there is an increase in crash risk when the motor vehicle occupant is using a mobile device. Over the past couple of years, there had been an increase in fatalities involving a distracted driver. Nevada is one of 17 states that does not have all of the recommended distracted driving laws (source: <https://saferoads.org/roadmap-reports/>).

During the pandemic, there has been an increase in unrestrained motor vehicle fatalities nationally. Seat belt rates are much higher among states that have a primary seat belt law. The use of seat belts reduce the overall risk of injuries by 50%. Currently, Nevada has a secondary seat belt law, meaning law enforcement cannot pull-over a vehicle for an observed failure to wear a seat belt alone. Furthermore, impaired driving continues to be the leading cause of motor vehicle crashes.

It is important for all road users to be cautious when traveling. Planning ahead, remaining alert, and following the law are all good safety precautions to take which will help save lives as well as hospital beds for COVID-19 patients.

IT'S NOT JUST THE VIRUS, WE HAVE TO BE CONCERNED ABOUT...

SPEEDING

Covid-19 has taken the lives of hundreds of thousands of people in the U.S. alone. In addition to the obvious and direct effects of the virus, distinct traffic patterns began to emerge as many people stayed home.

Data from the first half of 2020 shows a dramatic increase in road user fatality rate where excessive speeding was a factor

In 2018, speeding killed 9,378 people

#DRIVESAFE. DON'T TAKE A COVID PATIENT'S PLACE

SOURCE: [HTTPS://SAFEROADS.ORG/ROADMAP-REPORTS/](https://saferoads.org/roadmap-reports/)

IT'S NOT JUST THE VIRUS, WE HAVE TO BE CONCERNED ABOUT...

DISTRACTED DRIVING

Nationally, crash risk increases as much as 4x higher when using a mobile phone while driving

- There is a 9.9% increase in fatalities and crashes that involve a distracted driver
- In 2019, 3,142 people were killed in crashes involving a distracted driver

DISTRACTED DRIVING LAWS

Nevada has 2 of 3 recommended distracted driving laws:

1. **All-Driver Text Messaging Restriction**: ban text messaging for all drivers
2. **Hand-held Cellphone Ban**: prohibits all drivers from using hand-held cellphones while driving

Nevada does **not** have the following recommended distracted driving law:

3. **Graduated Driver's Licensing (GDL) Cell Phone Restriction**: restrictions to help prevent distracted driving for newly licensed teens

#DRIVESAFE. DON'T TAKE A COVID PATIENT'S PLACE

SOURCE: [HTTPS://SAFEROADS.ORG/ROADMAP-REPORTS/](https://saferoads.org/roadmap-reports/)

Figure on the LEFT: Impaired Driving

Figures on the RIGHT: Speeding, Distracted Driving, and Seat Belts



@TrafficSafetyUNLV SOM

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@TrafficUNLV SOM

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IT'S NOT JUST THE VIRUS, WE HAVE TO BE CONCERNED ABOUT...

IMPAIRED DRIVING

In the U.S., an average of one alcohol-impaired driving fatality occurred every 50 minutes in 2019.

Drunk driving continues to be a leading cause of motor vehicle crashes

On the bright side:
Nevada has all 3 optimal impaired driving laws.

IMPAIRED DRIVING LAWS

- Ignition Interlock Devices for All Offenders**: a breathalyzer that is linked to a vehicle's ignition system prevents convicted alcohol impaired drivers from drunk driving.
- Child Endangerment Law**: creates a separate DUI penalty for people who drive under the influence with a child in the vehicle.
- Open Container Law**: bans the presence of open containers of any kind of alcoholic beverages in the passenger area of any motor vehicle (excluding transportation service vehicles) while on the road.

SOURCE: [HTTPS://SAFEROADS.ORG/ROADMAP-REPORTS/](https://saferoads.org/roadmap-reports/)

IT'S NOT JUST THE VIRUS, WE HAVE TO BE CONCERNED ABOUT...

SEAT BELTS

During the pandemic there has been an increase in unbelted motor vehicle occupant fatalities nationally

Lap-shoulder belts...

- reduce the risk of fatal injury to front seat car occupants by 45%
- reduce the risk of moderate-to-critical injuries by 50%

Belt use rates are higher in states with primary enforcement laws, which allow police to stop vehicles if a driver or passenger is observed not wearing a seat belt. Nevada is among 16 states with a secondary seat belt enforcement law.

SEAT BELTS SAVE LIVES

#DRIVESAFE. DON'T TAKE A COVID PATIENT'S PLACE

SOURCE: [HTTPS://SAFEROADS.ORG/ROADMAP-REPORTS/](https://saferoads.org/roadmap-reports/)

Staff Feature Merika Charupoom



Merika Charupoom is a Student Researcher engaged in Traffic Safety Research at the University of Nevada, Las Vegas (UNLV) School of Medicine since October 2020. Merika is currently an undergraduate at UNLV pursuing a bachelor's degree in Public Health and minor in Biological Sciences and Mathematics. With her

focus in Public Health, Merika was introduced to the traffic safety research team work in safety intervention and injury prevention. Merika's work includes being a co-social media manager, data analysis and visualization, and project presentations. Being born in Thailand, Merika aspires to become an Obstetrician and to serve her native community. Having worked with this team, Merika has developed an interest in research and social sharing. Outside of the UNLV Traffic Safety Research Team, Merika enjoys painting, embroidering, baking, visiting local museums, and spending time at home with her family and friends.

Our Current Projects

- Maintenance and expansion of our linked crash-trauma database. Recently expanded to include standalone traffic hospital discharge data for all of Nevada acquired from UNLV CHIA.
- Providing data to community organizations to inform legislation and injury prevention practices.
- Evaluation of a court-ordered pedestrian safety diversion class.
- Creation and piloting of an evaluation readiness assessment toolkit among behavioral traffic safety intervention and prevention programs.
- Various traffic injury research projects with UNLV School of Medicine faculty and students.
- Creation of injury prevention education materials for social media and print.

Our Team

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To see our full library of TREND newsletters, infographics, and other educational materials, visit:

<http://bit.ly/UNLVSOMTrend>

Should you have any questions about the content presented within this newsletter, please contact us at

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Let us know what you think and what you would like to see next! Scan the QR code to complete a quick survey.



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Our Data Partners

