

# Do drivers previously cited for risky driving bear more responsibility in two-vehicle crashes?



## Why investigate road collisions?

- Between 2009 and 2019, there were over **1.3 million** traffic collisions in Washington state involving nearly **1.7 million** different people.
- At least **35,300** of these collisions resulted in serious injury or death.

## How do we investigate road collisions?

- Law enforcement collect **routine crash information** including maneuvers attempted, risky driving behaviors, and road conditions at every crash.
- We used this to determine **crash responsibility** for drivers involved in crashes between 2009 and 2019.

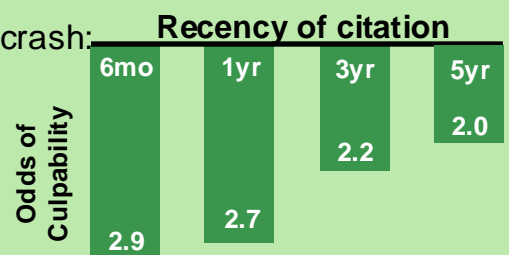
## What do we know about the drivers involved?

- **56%** of drivers in crashes where gender was recorded were **male** and the median driver age was **38**.
- **83%** of drivers likely had some responsibility for their collision.
- Less than **1 in 50** had a recent criminal citation related to risky driving (e.g., impaired, speeding, distracted).
- Less than **1 in 500** had multiple prior citations.

## Do traffic citations predict future crash responsibility?

**Yes!** Compared to **non-cited** drivers in the same crash:

- **Drivers cited for risky driving** within the last 6 months were **nearly 3 times as likely** to be responsible for their crash.
- The likelihood of crash responsibility decreased as time elapsed since last citation increased.



# Do drivers previously cited for risky driving bear more responsibility in two-vehicle crashes?



## Technical and supplemental information



### Part I: Study data and definitions

**Data:** We used the Traffic Records Integration Project (TRIP) dataset, which links Washington State Crash Report data to Administrative Office of the Courts (AOC) data of criminal traffic charges for adults involved in a multivehicle collision in Washington.

#### Driver responsibility ('culpability'):

Our culpability tool, adapted from (Brubacher, J., Chan, H. and Asbridge, M., 2012. Development and validation of a crash culpability scoring tool. *Traffic injury prevention*, 13(3), pp.219-229.), scored each crash in the crash reports according to seven factors:

- 1) Road type (for example, drivers were less culpable at intersections or when report noted road hazard).
- 2) Road surface and visibility (drivers were less culpable when roads were icy or report noted hazardous weather or road surface).
- 3) Vehicle condition (drivers were less culpable when vehicle condition was noted as a contributory factor).
- 4) Unsafe driving actions (drivers were more culpable when unsafe driving actions were noted).
- 5) Contributions from other parties (drivers were less culpable if other drivers in the collision committed unsafe driving actions).
- 6) Type of collision (many factors considered, including whether driver's vehicle was parked, unsafe pedestrian actions, loss of control prior to crash, etc.).
- 7) Driving task involved (drivers were less culpable when more challenging tasks such as avoiding a hazard in the road were involved).

Individual factor scores were then added to compute an overall culpability score, which was then used to categorize drivers as culpable, indeterminate, or not culpable.

#### Criminal traffic citation history:

For each driver involved in a collision, we searched linked criminal traffic citation date to count citations in the three years prior to the collision. For our main analysis, we removed administrative citations (e.g. driving without a license) from the dataset but counted behavioral (e.g. reckless driving) criminal traffic citations.

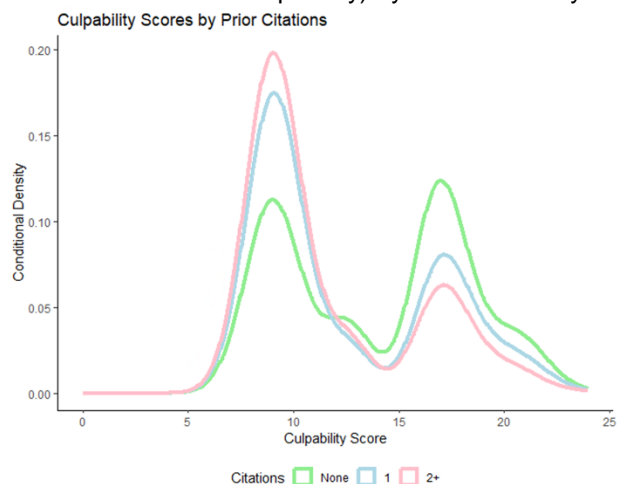
### Part II: Culpability in two-car crashes

**Two-car crashes:** We identified 304,871 two-car crashes involving 511,374 unique drivers between January 1, 2009 and December 31, 2019 where one driver's culpability score indicated they were culpable and the other driver's score did not.

**Citation histories:** Of the drivers involved in these crashes, 8,218 (1.6%) had been cited for a criminal traffic violation in the past three years, and 790 (0.2%) had been cited for more than one violation.

**Culpability scores:** In two-car crashes, 67% of drivers with a history of behavioral citation in the last 3 years were culpable whereas 49% of drivers without such a history were culpable.

**Figure:** Conditional density of culpability scores (lower score indicates more culpability) by citation history



Funding for TRIP and this study was provided by the Washington Traffic Safety Commission