The American Transportation Research Institute has updated its Crash Predictor Model, the organization announced July 31.

The CPM looks at the statistical likelihood of future truck crashes based on certain behaviors – including violations, convictions or previous crashes – by using data from more than 435,000 U.S. truck drivers over a two-year period. Crashes, convictions and violations in 2013 were used to try to predict crashes in 2014.

This third edition of the CPM includes the impact of age and gender on the probability of crashes. It also features average trucking industry costs for six types of crashes and their severity. ATRI states that its decision to update the CPM for the first time in seven years was the result of “major changes in the industry’s safety and operational landscape.”

ATRI, the research arm of the American Trucking Associations, issued a press release highlighting some of its key findings from its latest update. Among them:

- A commercial motor vehicle operator with a prior violation for reckless driving or failure to yield the right of way had double the chances of getting into a future crash than a driver who had never been cited for either violation.
- Previous crashes translated to a 74 percent greater likelihood of a future collision.
- Women drivers were safer than men in “every statistically significant safety behavior.”

“The gender analysis findings demonstrate the value of industry efforts to recruit and retain more female truck drivers,” the report states. “Continuing to make the truck driving profession more accessible to women has the potential to improve industry safety as well as mitigate the impacts of driver shortage.”

ATRI lists states that “have proven track records of maximizing their enforcement resources while minimizing their share of the nation’s truck crashes.” Indiana leads the way, followed by New Mexico, Washington, California and Maryland.

The first CPM was issued in 2005 in partnership with the Commercial Vehicle Safety Alliance and the Upper Great Plains Transportation Institute at North Dakota State University. It was updated in 2011 because of “changes in the regulatory environment, industry practices, safety technology adoption and changing enforcement strategies.”

Convictions for certain violations have remained indicators of future crashes across all three editions (2005, 2011 and 2018): improper lane or location; reckless, careless, inattentive or negligent driving; and improper or erratic lane changes.

“While ‘marginal’ carriers may pressure drivers into unsafe behaviors, driver behavior is ultimately what can mitigate or exacerbate crash risk,” the report states. “Utilizing driver-related historical data also allows safety stakeholders to assess drivers regardless of their tenure at any one fleet.”