

Effect of Length of Medical Certification on Safety

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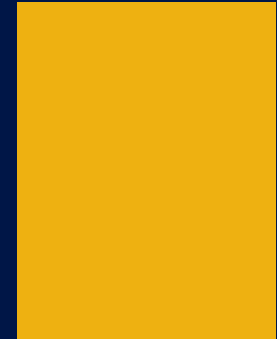
U.S. Department of Transportation
Federal Motor Carrier Safety Administration

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ANALYSIS,
RESEARCH, &
TECHNOLOGY
FORUM

VIRTUAL EVENT



Study Goal

Assess the relationship between duration of commercial motor vehicle (CMV) driver medical certification and driver safety performance by:



Collecting Historical Medical Examiner's Certificate (MEC), Crash, and Inspection Violation Data



Estimating Prevalence of MEC Lengths

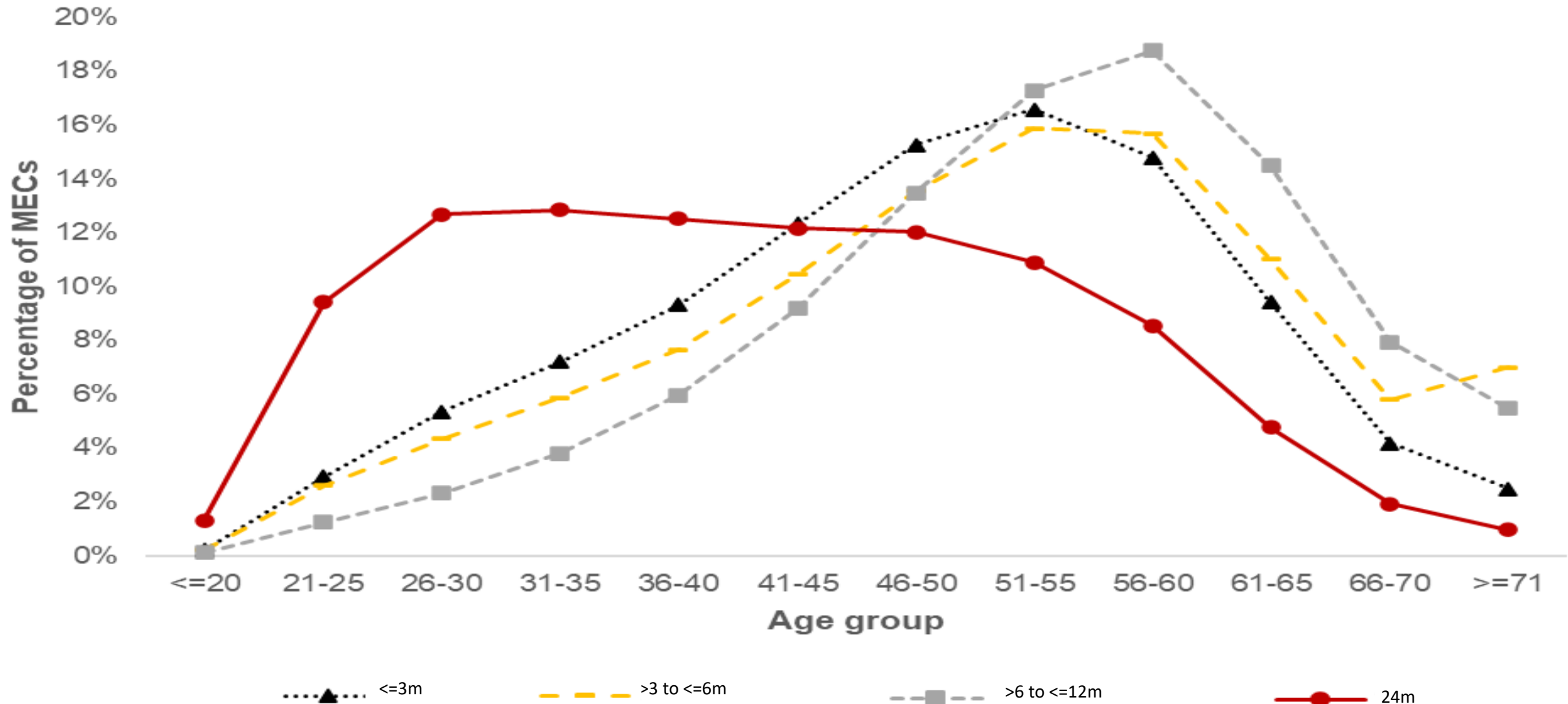


Analyzing Relationship of MEC Length and Crashes/Violations

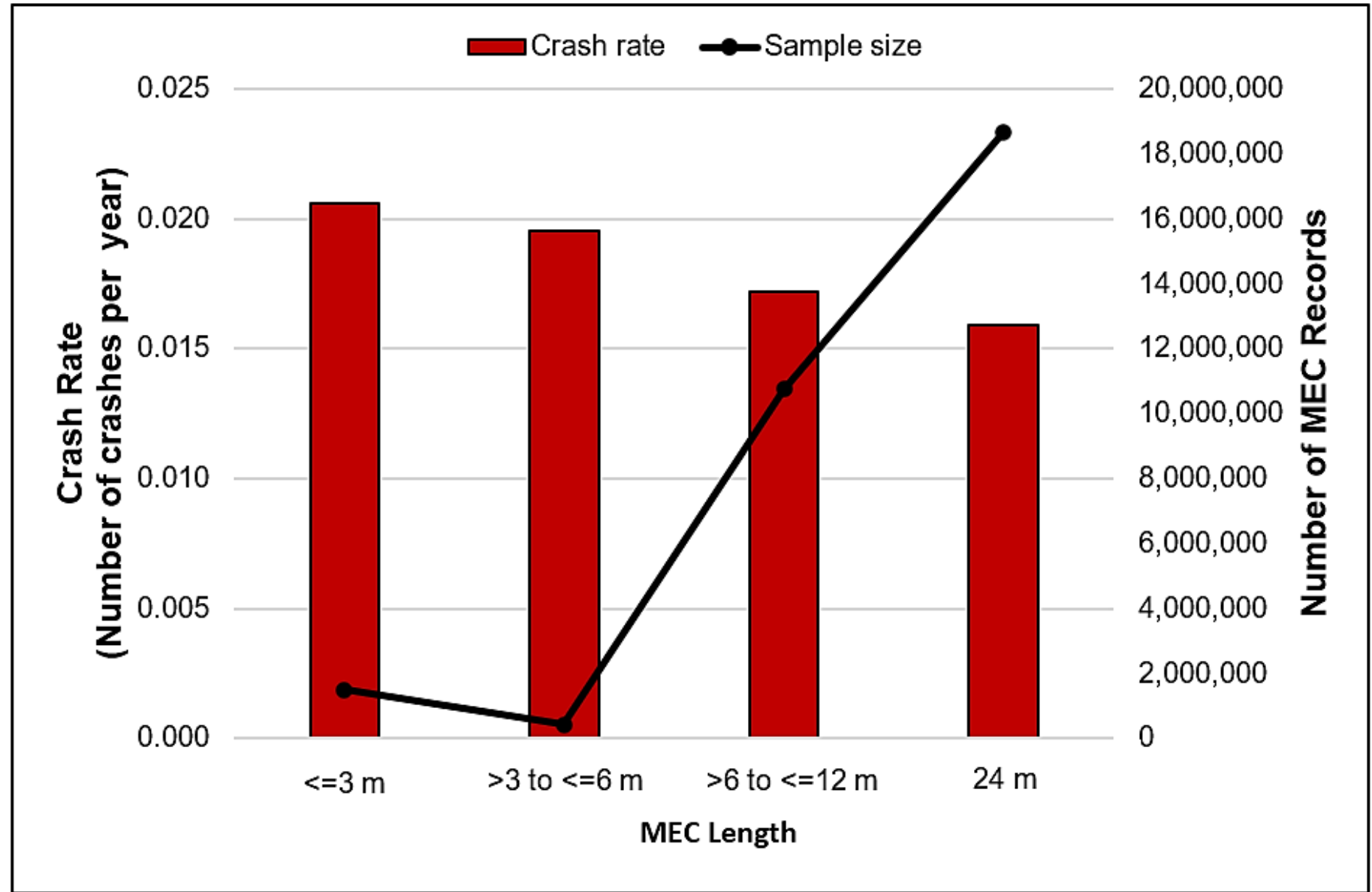
Approach

- National Registry of Certified Medical Examiners (NR)
 - Includes information from MECs and the CMV Driver Medical Examination Results
 - No medical data per se
- Motor Carrier Management Information System (MCMIS)
 - Crashes - Towaway, injury with medical treatment, and fatality
- Same identifiers: last name, first name, DOB, driver's license state and number
- Data from January 1, 2014, to September 30, 2020
- Evaluated with negative binomial model

Length of Medical Certification by Age Group



Crash Results Snapshot



Crash Relative Risk (RR) Results for CDL Sample

- Shorter MEC lengths showed significantly higher RR compared to 24 m for nearly all age groups

Age Group	All Crashes RR for ≤ 3 m	All Crashes RR for $>3 - \leq 6$ m	All Crashes RR for $>6 - \leq 12$ m
Age 21–25	1.20	1.14	0.91
Age 26–30	1.12	1.24	0.93
Age 31–35	1.29	1.23	0.98
Age 36–40	1.38	1.25	1.03
Age 41–45	1.25	1.30	1.05
Age 46–50	1.33	1.22	1.06
Age 51–55	1.36	1.25	1.07
Age 56–60	1.31	1.23	1.11
Age 61–65	1.42	1.36	1.14
Age 66–70	1.56	1.12	1.13
Age 71+	1.43	0.83	1.12

24 m is the reference group, significant estimates are bolded.

Conclusions

- CMV driver medical examination process is working
- Overall, the longer the MEC length, the lower the risk of a crash
- Premature to report drivers with short-term MEC lengths are more likely to have a crash than drivers with a 24-m MEC length
- Future study planned to explore further
- Limitations of the study
 - Driving/work status unknown unless in crash
 - Medical conditions/treatment unknown
 - MCMIS crash data does not indicate whether the driver was at fault for the crash
- Report: <https://rosap.ntl.bts.gov/view/dot/66620>
- Research Brief: <https://rosap.ntl.bts.gov/view/dot/66621>

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