

Virtual driving assessment shows feasibility, validity, efficiency as part of licensing

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Researchers from Children's Hospital of Philadelphia (CHOP) and the University of Pennsylvania's Annenberg Public Policy Center have demonstrated the feasibility of incorporating a virtual driving assessment system into the driver's licensing process in Ohio. In a report published today in *Health Affairs*, the researchers also assessed the validity of the tool in identifying likely on-road test failure while providing

personalized feedback regarding skills that need improvement to keep drivers safe.

Adolescents face a variety of health risks, yet [motor vehicle crashes](#) remain the leading cause of adolescent mortality and injury in the United States, with the peak risk immediately after obtaining a driver's license. One out of every five deaths between the ages of 16 and 19 in the United States in 2018 was caused by a motor vehicle crash. Therefore, the time when adolescents are getting their driver's licenses is a [critical point](#) for a safety intervention aimed at reducing risk and ultimately preventing these crashes.

The new report describes the success of a program implemented by CHOP, the State of Ohio, and Diagnostic Driving, Inc., a CHOP spin-out company utilizing virtual technology to expose [drivers](#) to the most common serious potential crash scenarios under safe simulated conditions.

Based on 4,643 paired virtual driving assessments and on-road test results conducted by the Ohio Bureau of Motor Vehicles (OBMV), researchers found that the technology was not only valid, feasible and efficient, but also advanced safe driving, with applicants receiving personalized automated feedback to identify their safety-critical skill deficits.

"The success of these partnerships demonstrates the effectiveness of the innovative work being done to keep children safe," said Flaura K. Winston, MD, Ph.D., founder and scientific director of the Center for Injury Research and Prevention (CIRP) at CHOP, one of the founders of Diagnostic Driving, Inc., and co-author of the analysis. "We believe the work we have done in Ohio could serve as a foundational model for the future of driving safety, where personalized virtual assessments beyond the on-road examinations are a gold standard in preparing adolescents

prior to obtaining their licenses."

The report also addresses how the COVID-19 pandemic has emphasized the need for virtual driving assessments going forward. States adopted a variety of strategies to amend the typical licensing process to accommodate social distancing and reduce backlogs. However, many of these strategies involved even less exposure to safety-critical situations during a modified driving exam, potentially licensing a large number of unsafe new drivers.

Additional studies have shown that many parents and guardians are underprepared to offer guidance to adolescent drivers for safe and independent driving. The challenges of 2020 have revealed a critical need to be able to assess new drivers safely without relying on traditional classroom and behind-the-wheel instruction.

"This partnership has shown that implementing a successful intervention for improving driver safety can be widely deployed and remain cost-effective," said Elizabeth Walshe, Ph.D., a research scientist at CIRP, a fellow at the Annenberg Public Policy Center (APPC) of the University of Pennsylvania, and co-author of the analysis. "Translational research is still needed to improve how we can truly help as many adolescents as possible prepare, but the strength of this program has established a road map for us to know where that research needs to go."

The authors recommend the following immediate, short-term, and longer-term opportunities for virtual driving assessment:

- as a complete replacement for or in conjunction with the limited road testing due to contact restrictions during the current or future emergent situations (e.g., COVID-19 pandemic)
- as a screening/pre-test model to identify underprepared drivers and to ensure consistency in evaluations (e.g., with 3rd party

testing)

- as a strategy for providing systematic feedback and coaching regarding safe driving skill deficits to the applicant, the applicant's family and their driving school.

More information: Walshe et al, "A Novel Health-Transportation Partnership Paves The Road For Young Driver Safety Through Virtual Assessment." *Health Aff*, online October 5, 2020. [DOI: 10.1377/hlthaff.2020.00802](https://doi.org/10.1377/hlthaff.2020.00802)

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