

5/9/2022

Re: Comments in response to Docket No. NHTSA-2022-0036

To Whom It May Concern:

As a Professor at the University of Pennsylvania and Attending Physician and Scientific Co-Director of the Center for Injury Research and Prevention at Children's Hospital of Philadelphia (CIRP at CHOP), I submit these comments to Docket No. NHTSA-2022-0036. By way of background, CIRP has partnered with NHTSA on many issues related to highway safety, some of which were funded either regionally or through the State Highway Safety Grants: Pennsylvania, New Jersey and Ohio. We believe that these partnerships were a key component in determining data-driven policies and in evaluating programs.

With this background, I am responding to the following **QUESTION** with 4 recommendations.

How to reduce disparities, increase community participation, and implement the National Roadway Safety Strategy in NHTSA's annual formula grant program?

Recommendation 1: Prioritize and reduce disparities in child transportation safety

Road traffic **crashes** remain a **leading cause of child death and morbidity**. According to the CDC (https://www.cdc.gov/transportationsafety/child_passenger_safety/cps-factsheet.html#The-Problem), "in 2019, **608 child passengers age 12 and younger died in motor vehicle crashes**, and more than 91,000 were injured. Of the children 12 and younger who died in a crash (for whom restraint use was known), **38% were not buckled up.**" Further, **children are vulnerable road users, representing 1 in 3 pedestrian and bicyclist crash victims**. The good news is that evidence-based, evaluated interventions exist to both improve child safety practices (e.g., appropriate restraint use, helmet use, crossing behaviors) and infrastructure changes (e.g., Safe Routes to School). However, **disparities exist related to safety practices and infrastructure.**

- **Therefore, Traffic Safety Program funding should prioritize child traffic safety with evidence-based interventions, universally applied to address disparities in injuries and deaths.**

Citation: See appendix Wheeler-Martin KC, Curry AE, Metzger KB, DiMaggio CJ. Trends in School-Age Pedestrian and Pedalcyclist Crashes in the USA: 26 states, 2000-2014. *Injury Prevention.* 2019.

Recommendation 2: Prioritize young, novice driver safety, ensuring equitable, affordable access to high quality professional driver training

Despite implementation of Graduated Driver Licensing (GDL) laws in the 1990's, motor vehicle crashes remain a leading cause of death and injury for US adolescents. This is one of the most significant, yet preventable, public health problems facing US adolescents. GDL laws have reduced adolescent driver crash incidence principally through delaying licensure to older ages and restricting new driver exposure to higher-risk conditions (e.g., night-time driving), rather than by ensuring adequate skill at the time of licensure.

Even with GDL, crash involvement in the 1st 3 months following licensure is 8 times higher than during the last 3 months of the learner period when the teen driver must be accompanied by an adult passenger. Safe driving requires basic skills (e.g., vehicle control), as well as higher order tactical skills regarding mastery of the traffic situation (e.g., ability to detect and respond to hazards). Our team quantified that situational (rather than operational) driver errors accounted for 75% of crashes that occurred early in licensure and that newly licensed drivers commit more of these safety-critical driving errors than do those with experience. In addition, our colleagues found key individual risk factors for crash involvement: age and time since licensure, as well as sex and cognitive development. The Insurance Institute for Highway Safety found that police-reported crash rates are highest for 16-year-olds, and those ages 16-19 have 4 times the crash rate of drivers age 20 and older. Our prior studies found a relationship between age-related developing cognitive capacities and driving errors: Variability in the rate of cognitive development across adolescence predicts adolescent driver crashes.

New evidence from our Center showed an association between decreased crash rates and comprehensive driver licensing requirements (mandated driver education and training in the context of GDL) in Ohio, but few states require such training. In Ohio, which requires GDL and professional behind-the-wheel (BTW) training for licensure before age 18 (those >18, exempt from GDL and training), those licensed <18 years demonstrate lower crash rates, higher licensing exam pass rates, and safer performance on a validated virtual driving assessment (VDA) than those licensed at 18 years. By contrast, Pennsylvania and most other states have no professional training requirements for young drivers, which can largely be attributed to the negative results of a randomized controlled trial (RCT) of pre-licensure training in DeKalb in 1983.

Looking at 16- to 18-year-old license applicants in Ohio (a state with comprehensive driver licensing requirements ONLY for those under age 18), the odds of teens waiting until age 18 to take the license exam were 9.8 times higher for those from neighborhoods with low income and educational attainment when compared with those from high income and education Census tracts. A study from our center provides insights into disparities in licensure: At least one in three novice drivers wait until after turning age 18 to pursue getting licensed to drive, mostly for reasons related to opportunity, cost, and motivation.

- **Therefore, our research points to the need to refocus on efforts to ensure that all young drivers be subject to GDL and that there is equitable access to high quality, affordable preparation for safe driving to ensure young drivers enter licensure adequately prepared with the skills needed to avoid crashes. Further efforts are needed to address safe driving and transportation equity for adolescents with atypical development and/or medical conditions and those who receive traffic citations and crash.**

Citations: See Appendix.

Recommendation 3: Enhance academic-state highway safety program research partnerships through funding and data access

Achieving Highway Safety Goals, including reductions in disparities, requires three key elements: identifying the at-risk populations; implementing evidence-based solutions; and evaluation to determine future strategic plans. At CIRP, we have a long history of partnering with NHTSA in these three stages. However, **limited availability of funding and impediments to data access can limit such partnerships.**

- **Therefore, Highway Safety Program funding should incentivize states and territories to provide (a) access by academic researchers to state data (e.g., licensing, citation and crash) with appropriate protections in place and (b) support for analysis by academic researchers to identify trends and evaluate interventions.**

Citation: Carey ME, Anderson ED, Mansour R, Sloan J Curry AE. Missed Opportunities to Advance Knowledge on Traffic Safety: Accessibility of Driver Licensing and Crash Data for Scientific Research. *Accident Analysis and Prevention*. 2020 May;139:105500 (Epub 2020 Mar 18).

Recommendation 4: Review and implement the findings of a TRB-sponsored workshop regarding Research-to-Practice Barriers

In August 2018, CHOP hosted the Committee on Simulation and Measurement of Vehicle and Operator Behavior (AND30) Transportation Research Board (TRB) along with 30 researchers and practitioners as a Peer Exchange, or workshop, on “Research-to-Practice Barriers for Novice Driver Crash Countermeasures.” To address pain points of both groups, a key recommendation was to “create opportunities for scientists and practitioners to connect and network” for those with the ability to do so (such as NHTSA). The final report was submitted to--but was never published by--TRB, as intended. We submit this report for your consideration.

- **Therefore, we recommend review and publishing of the Final Report from the TRB workshop, “Research-to-Practice Barriers for Novice Driver Crash Countermeasures,” and encourage additional bidirectional exchanges to advance the implementation of evidence-based interventions and community/practitioner input into research agendas and study designs.**

Citation: See Appendix.

Feel free to contact Dr. Winston on behalf of CIRP for additional information – 215-590-3118.

Sincerely,



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APPENDIX

I. BACKGROUND ON NHTSA-CHOP Center for Injury Research and Prevention (CIRP) Collaborations

Below please find a few examples of successful NHTSA-CIRP collaborations. For the full listing of our child and adolescent transportation safety and equity portfolio, please visit <https://injury.research.chop.edu>.

Partners for Child Passenger Safety (<https://injury.research.chop.edu/child-occupant-protection/partners-child-passenger-safety-pcps>)

We identified the first cases of children who died from air bag-related injuries, worked with NHTSA to determine the injury mechanism and created a child-focused crash surveillance system, in partnership with State Farm Insurance, that resulted in dozens of peer-reviewed manuscripts, identified child passenger safety issues and informed policies, programs and regulations regarding child passenger safety. Nearly all booster seat laws, most federal motor vehicle safety standards and due care testing and the curriculum behind the child passenger safety technician curriculum were informed by our analyses in partnership with NHTSA.

- At-risk population identified: children in inappropriate restraints
- Interventions: laws, access and support in correct and appropriate restraint use for children
- Reducing child motor vehicle crash fatalities: despite increases in exposure/vehicle miles as passengers, the number of children who died in crashes was halved.
- Barriers (knowledge and access) identified as causes of disparities in appropriate restraint use: worked with NHTSA to develop and evaluate interventions to improve use
- Lesson learned: multi-sector partnerships ensured that the research responded to practitioner, community and policymaker needs and advanced the safety of children through evidence-based policies, programs, products and regulations.

New Jersey Safety and Health Outcomes (NJ-SHO) Data Warehouse (<https://injury.research.chop.edu/new-jersey-safety-and-health-outcomes-data-warehouse>)

This research tool is used to advance safety and health research and associated epidemiologic methods through novel administrative data linkages. Led by [Allison E. Curry, PhD, MPH](#), the research team developed a comprehensive data warehouse that includes the full licensing, citation, and crash history of every New Jersey driver between 2004 and 2018. Since 2017, the databases were updated with additional statewide databases maintained by the New Jersey Department of Health: birth certificates, death certificates, and hospital discharge data. Individual-level records from all databases were integrated using [large probabilistic linkage](#), supporting high-priority research questions on injury prevention.

By utilizing licensing, crash report, and traffic-related citations data, researchers were able to advance our understanding of drivers and their crashes, directly impact driver safety policy, and propose novel traffic safety methodologies. With the rich individual-

level data that spans the pre-injury period to the post-injury period for other injury mechanisms as well, the NJ-SHO Data Warehouse enables investigation of research questions that previously could not be addressed due to lack of appropriate data.

- At-risk populations identified: young novice drivers, especially those with atypical development (and need to balance crash risk with transportation equity)
- Disparities identified: identified license suspension disparities by race, ethnicity and income
- Validated New Jersey's GDL decal policy in disparities in licensure on reduction in crash rates in young probationary drivers
- Lesson learned: State Highway Safety Program Office cooperation regarding access to data and funding fueled analyses critical to policies and an infrastructure that has been leveraged for additional funding to support research. Currently, the NJ-SHO team under Dr. Curry received a National Safety Council Community Traffic Safety grant to use NJ-SHO to create community safety profiles.

Ohio – Ready, Test, Drive! (<https://governor.ohio.gov/media/news-and-media/governor-dewine-announces-statewide-launch-of-ohio-ready-test-drive>)

Virtual Driving Assessment program (<https://injury.research.chop.edu/research/teen-driving-safety/virtual-driving-assessment>)

Recognizing that adolescents (the highest risk drivers) go from their lowest lifetime risk of crashes when they have their permit to their highest lifetime risk of crashes when they receive their license, Ohio partnered with CHOP and CHOP-spin-out company, Diagnostic Driving, Inc., to develop and validate a virtual driving assessment as a way to safely and reliably evaluate performance in a simulated environment that could not be assessed as part of the road test. We developed the driving scenarios and events based on the leading causes of crashes (as determined from NHTSA's Motor Vehicle Crash Causation Survey). The virtual driving assessment (VDA) was incorporated in the licensing workflow in the Ohio Bureau of Motor Vehicles, and more recently, in driving schools, as a method for identifying driving performance deficits at the time of licensure and giving personalized feedback on ways to improve safe driving performance.

An added element of our partnership involved the creation of a linked dataset to validate the VDA and to provide insights regarding young driver policies. Via a Memorandum of Understanding, the Ohio Department of Public Safety provided CHOP with all licensing and crash data. Linkage and de-identification procedures at CHOP produced an analyzable linked dataset that includes licensing, crash, Census Tract Level indicators and where available, data from the VDA. (The VDA is now administered at the many Bureaus of Motor Vehicles and driving schools through funding from Ohio and the Highway Safety Office.)

- At-risk population identified: novice drivers, specifically those who delay licensure to age 18 or older.
 - In Ohio, drivers licensed at age 18 (who are exempt from GDL, driver education and training) are at highest risk for crashing in the first year of licensure and most likely to fail the road test.
 - Novice drivers from communities with low income and educational attainment were more likely to delay licensure (to age 18 or older), to

fail their road test and to crash in the first year of licensure than those from wealthier and more highly educated communities.

- Intervention identified:
 - Utilize the VDA to identify drivers with inadequate safe driving skills and provide personalized feedback. Evaluation underway.
- Lessons learned: Collaborations between a Highway Safety Office and academic research team demonstrate strong return on investment from NHTSA grant funding. This partnership fueled and accelerated the design, implementation and evaluation of a potential paradigm shift in highway safety: In this case, using a virtual driving assessment to identify drivers at risk for crashes before they crash.

II. RECENT SELECT PAPERS in which Highway Safety grants or partnerships were critical and demonstrate the success of such partnerships.

Description of CHOP-created NJ-SHO Data Warehouse

Citation: Curry AE, Pfeiffer MR, Metzger KB, Carey ME, Cook LJ. Development of the Integrated New Jersey Safety and Health Outcomes (NJ-SHO) Data Warehouse: Catalyzing Advancements in Injury Prevention Research. *Injury Prevention*. (Epub 2021 March 8).

Use of CHOP-created NJ-SHO Data Warehouse to demonstrate evidence of disparities in driver's license suspension

Citation: Joyce NR, Pfeiffer MR, Zullo AR, Ahluwalia J, Curry AE. Individual and Geographic Variation in Driver's License Suspensions: Evidence of Disparities by Race, Ethnicity and Income. *Journal of Transport and Health*. 2020 Dec;19:100933.

Use of CHOP-created NJ-SHO Data Warehouse to evaluate negative outcomes among at-risk populations (atypical development)

Citation: Curry AE, Yerys BE, Metzger KB, Carey ME, Power TJ. Traffic Crashes, Violations, and Suspensions Among Young Drivers With ADHD. *Pediatrics*. 2019 Jun;143(6):e20182305.

Citation: Curry AE, Metzger KB, Carey ME, Sartin EB, Huang P, Yerys BE. Comparison of Motor Vehicle Crashes, Traffic Violations, and License Suspensions Between Autistic and Non-Autistic Adolescent and Young Adult Drivers. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2021 Jul;60(7):913-923.

Description of our partnership between CHOP and Ohio to assess safe driving performance using the Virtual Driving Assessment

Citation: Winston EA, Romer D Kandadai, V and Winston FK. A Novel Health-Transportation Partnership Paves the Road for Young Driver Safety Through Virtual Assessment. *Health Affairs* (2020) 39(10).

Use of the CHOP-created Linked Ohio Database to Evaluate Policy

Benefits of comprehensive licensing in Ohio and identification of high-risk novice driver populations (licensed age 18 or older; from communities with low income and low educational attainment)

Citation: Walshe EA, Romer D, Wyner AJ, et al. Licensing Examination and Crash Outcomes Postlicensure in Young Drivers. *JAMA Network Open*. 2022;5(4):e228780. doi:10.1001/jamanetworkopen.2022.8780.

Use of the CHOP-Created Linked Ohio Database for Innovative Intervention

Creating Driver Classification System and demonstrated its ability to categorize drivers at the point of licensure

Citation: Walshe EA, Elliott MR, Romer D, Cheng S, Curry AE, Seacrist T, Oppenheimer N, Wyner AJ, Grethlein D, Gonzlaez AK and Winston FK. Novel Use of a Virtual Driving Assessment to Classify Driver Skill at the Time of Licensure. *Transportation Research Part F: Traffic Psychology and Behavior* (2022) 87: 313-326.