Testing a New Care Model: Implementing a Virtual Driving Assessment in Primary Care

Shannon Kelleher, MPH

Maura Powell, MPH, MBA

Alexander K. Gonzalez, MS, MBA

Shukai Cheng, MS

Nicole Koepke, MSN, CRNP

Elizabeth A. Walshe, PhD

Jamillah Millner, MPH

Joshua C. Fischer

Colleen M. Schlotter

Flaura K. Winston, MD, PhD

Alexander G. Fiks, MD, MSCE

THE INNOVATION

Motor vehicle crashes are a leading cause of death for adolescents, and a leading cause of crashes is driver error.[1] Studies have quantified that 75% of young novice driver crashes are due to skill deficits (recognition, decision, or performance errors),[2] with reckless behaviors (eg, speeding, drunk driving) accounting for a small minority. Average crash rates are highest immediately after licensure, with 1 in 5 young new drivers crashing in the first year of licensure.[3] These findings suggest some young new drivers lack experience or skills to avoid crashes. Despite this elevated crash risk, evaluation of driving readiness has not been a standard component of preventive health care for adolescents.

To address this gap, we evaluated the implementation of the novel Virtual Driving Assessment (VDA) (**Supplemental Appendix**), which has been validated to predict crash outcomes,[4] in the primary care setting. The VDA is a 15-minute self-administered virtual driving test that assesses driving skills by safely exposing drivers to common, serious crash scenarios. Drivers receive an evidence-based, educational personalized feedback report identifying risks and areas for targeted practice. The program is funded by philanthropic support.

WHO & WHERE?

We integrated the VDA into adolescent preventive care at the time of the visit in a regional pediatric primary care network.[5] The VDA was available to all adolescents aged 15 years and older. The primary care setting was chosen because driving is a key adolescent developmental milestone, crashes are a leading cause of adolescent morbidity and

mortality,[1] and clinicians must sign off on permit forms in Pennsylvania, already linking driving initiation to primary care.

HOW?

We implemented the VDA from May 2021 through May 2023. With an initial group of 6 sites, we completed on-site observations to develop best practices for VDA workflow integration, staff training, and teen/parent engagement. We measured site-level metrics including total VDAs completed, percentage of preventative visits with a completed VDA, and, as gathered by a post-VDA survey, adolescent satisfaction. Nineteen total practices were included in the implementation following the initial pilot period. Virtual Driving Assessments were stationed either in the waiting room of a clinic or in a consult area.

LEARNING

Implementation Strategies

Based on feedback from stakeholders, several interventions were developed to increase awareness of the VDA. Reminder texts promoting the VDA were sent to eligible families ahead of scheduled preventative visits. Posters, designed with teen input, advertised the VDA in participating practices. Upon in-person visit check in, families received information about the VDA with instructions on how to complete the self-guided assessment and answers to common questions.

To support the integration of the VDA into visit workflow, we developed multiple approaches. Eligible patient rosters were e-mailed to practices weekly. The rosters were used during team huddles and posted in staff touch-down spaces to increase awareness of eligible adolescents. The implementation team met regularly with each practice clinical champion and manager to gather feedback, determine areas for improvement, and learn about successful strategies to increase VDA utilization. Practice profiles were sent to each site highlighting their metrics (**Supplemental Appendix and Figure**).

SUMMARY

We demonstrated that implementing a novel virtual driving assessment in adolescent primary care preventative visits is feasible and desired by adolescents. Our findings describe a model for integrating driving support into primary care to address a leading cause of family stress as well as adolescent morbidity and mortality. As the science develops, we expect the tool to provide increasingly tailored decision support to families to promote safe driving initiation.

Read or post commentaries in response to this article.

Supplemental materials (author affiliations, supplemental appendix and figure, key words, funding support, and references)

Corresponding author
Alexander G. Fiks
Children's Hospital of Philadelphia
4865 Market St
Philadelphia, PA 19139
fiks@chop.edu