Research on Older Adults' Mobility: 2023 Meeting Summary Report

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Technical Report Documentation Page

1. Report No. DOT HS 813 457	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Research on Older Adults' Mobility: 2023 Meeting Summary Report		5. Report Date June 2023
		6. Performing Organization Code
7. Authors Tia Mastromatto, Tatiana Quiñones, Loren Staplin		8. Performing Organization Report No.
9. Performing Organization Name and address TransAnalytics, LLC The Atrium, Suite 100 127 S. 5th Street Quakertown, PA 18951		10. Work Unit No. (TRAIS)
		11. Contract or Grant No. DTNH2216D00016/693JJ920F000193
12. Sponsoring Agency Name and Address National Highway Traffic Safety Administration 1200 New Jersey Avenue SE Washington, DC 20590		13. Type of Report and Period Covered Meeting Summary Report
		14. Sponsoring Agency Code NPD-320

15. Supplementary Notes
Dr. Kathy Sifrit was the NHTSA COR-TO on this project.

16. Abstract

On January 8, 2023, a hybrid meeting to spotlight research on older adults' mobility (ROAM) was held both virtually via Zoom and in-person in Washington, DC. The meeting date was timed to coincide with the Transportation Research Board's annual meeting. Under NHTSA sponsorship, this ROAM meeting provided a multi-disciplinary forum where interested parties could share information of completed research, report the progress of ongoing studies, and highlight priorities for future work. Participants included physicians and other medical professionals, occupational therapists and certified driver rehabilitation specialists, State Department of Motor Vehicle officials, mobility service providers, public health practitioners, experts on automated vehicle/advanced driver assistance systems, and other academic and private sector research professionals. ROAM 2023 included a general session and seven breakout sessions devoted to topics related to older adults' mobility, including the safety implications of limited-term license renewal policies, transportation options for rural and small communities, crashes involving older pedestrians, taxonomy and terms for stakeholders, promoting older driver safety to various State agencies and providers, a national volunteer driver center, safety implications of older drivers' vehicle choices, and the CarFit educational program. Participants expressed satisfaction that the ROAM meeting agenda was complementary to TRB offerings and appreciation for the opportunity to continue to gather and share information.

17. Key Words older, aging, driver, mobility, independence, medical, fitness to drive, licensing, automation, advanced driver assistance, alternative transportation, transportation options	18. Distribution Statement This document is available to the public from the National Highway Traffic Safety Administration, National Center for Statistics and Analysis, crashstats.nhtsa.dot.gov.

19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 14	22. Price

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

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Introduction

This report highlights key points in the presentations and discussion during a 1-day research on older adults' mobility (ROAM) meeting held January 8, 2023. This was a hybrid meeting held both virtually via Zoom and in-person in Washington, DC, timed to coincide with the 2023 Transportation Research Board (TRB) annual meeting. The ROAM participants presented findings from recently concluded projects, ongoing research, and planned projects related to older adults' mobility. The ROAM 2023 meeting included a 30-minute general session followed by seven 30-minute breakout sessions (see agenda in Appendix A). The meeting supported equity in traffic safety research by discussing disparities in safe mobility options for older adults and people with medical conditions and explored ways to enhance their safe mobility.

General Session

The general session was devoted to attendee introductions. It opened with a welcome message from Loren Staplin, PhD, the principal investigator on this initiative and moderator of this session. He reiterated the purpose of this meeting, which was to provide an avenue for former Safe Mobility for Older Persons committee (ANB60) members to continue to collaborate for the benefit of older adults' mobility research. The platform was then passed to Kathy Sifrit, PhD, who represented the National Highway Traffic Safety Administration (NHTSA) as the contract manager of this initiative. She said NHTSA's goal for this group was to provide a forum for researchers and others interested in the safe mobility of older people to discuss potential, planned, ongoing, and recently completed projects, as a complement to the recently formed TRB older driver subcommittee (ACH60[2]), a subcommittee under the TRB Standing Committee on Vehicle User Education, Training, and Licensing (ACH60).

Next, attendees introduced themselves and briefly commented on their current research interests and activities as they related to older adults' mobility. The first to speak were those present in the room; next, virtual participants introduced themselves first based on location (countries other than the United States) and then alphabetically by last name.

Some of the areas of interest among attendees focused on overall driving performance and safety and issues related to older adults' mobility. After introductions, participants engaged in informal conversation with others attending in person, or in randomly assigned breakout groups of four to five virtual participants.

Topics addressed through presentations and discussions included license restrictions and the transition to driving cessation, and the impact of licensing policies on safety and mobility. Attendees were also interested in the effect of dementia and other medical conditions and chronic illness on older adults' mobility. Keeping older adults safely on the road for as long as possible was a recurrent research theme, with many attendees interested in interventions to maintain mobility such as driver education and rehabilitation, and whether advanced technologies may enhance older adults' driving safety.

Finally, several attendees mentioned resources of interest to the older driver research community:

- Clearinghouse for Older Road User Safety (ChORUS) – A centralized, user-friendly, and dynamic source of information about highway safety for aging drivers, passengers, pedestrians, and cyclists. www.roadsafeseniors.org
- The National Aging and Disability Transportation Center (NADTC) – A program that promotes the availability and accessibility of transportation options that meet the needs of older adults, people with disabilities, and caregivers. www.nadtc.org
- CarFit Virtual Workshops – An in-depth look at several key aspects involved in getting a proper fit in your vehicle. www.car-fit.org
- Rides in Sight – A comprehensive, up-to-date database of senior transportation options nationwide. https://ridesinsight.org
- The 55+ Driver Safety program sponsored by the Georgia Department of Public Health – Resource that provides presentations and educational sessions to professionals, community organizations, older adults, caregivers, and others across many disciplines to foster partnerships, collaboration, increase of knowledge about 55+ driver safety and available resources. https://dph.georgia.gov/node/306/55-driver-safety-education

Breakout Sessions

Participants from the general session were offered seven half-hour topic-driven presentations. Virtual attendees received links to access each session; recipients could join a single session or several sessions, according to their level of interest. Each speaker provided an email address so attendees could request a copy of the presentation slides.

Breakout Session 1: Safety Implications of Limited-Term License Renewal Policies for Drivers With Vision Disorders

This presentation prepared by Ainsley Mitchum, PhD, from the California Department of Motor Vehicles (CA DMV) research and development, was a follow-up to a set of preliminary analyses presented at ROAM 2022; the presentation was delivered by Bayliss Camp, PhD, branch chief.

Summary

This presentation built on research presented at 2022 ROAM , reporting on a project to assess the effect of vision impairment in the aging driver population on driving safety from the perspective of a State licensing agency. The study explored whether drivers identified to the CA DMV as having progressive vision disorders had greater crash risk than other drivers. A re-analysis of the earlier research question found that drivers with impaired vision were significantly more likely to be involved in a crash during the 2-year period prior to license renewal compared to drivers with average vision in the same age range. A new analysis explored if drive test outcomes accurately classified higher-risk drivers. These results showed that drivers with impaired vision with a limited-term license who failed a drive test at renewal (first attempt) had an elevated crash risk when compared to those who passed the drive test at renewal. The findings suggest that current CA DMV procedures for processing driver license renewals of people with diagnosed progressive vision disorders are sorting drivers into higher-risk versus lower-risk groups.

Discussion

The drive test data presented were from a driver's first attempt; the presenter confirmed that drivers were permitted three attempts at this drive test and that most drivers renewed successfully. An attendee asked about the graphs presented that showed declines in crash risk from ages 60 to 80, regardless of group, and Camp hypothesized that this was due to a decrease in exposure (e.g., less driving due to lifestyle changes like retirement) but stated that the DMV doesn't have the data to draw a firm conclusion. Another attendee asked if crash risk was analyzed by type of vision condition, and Camp said no because those data are not as easily accessible and could not be analyzed with that level of granularity. There was a discussion about the best types of visual screening, and Camp stated that the CA DMV used the static visual acuity chart but is exploring other methods of identifying drivers with vision conditions. Finally, an attendee asked if the results were as expected, and Camp said yes, noting that researchers had hypothesized the direction of the effect but not the effect size.

Breakout Session 2: FTA Integrated Mobility Innovation Project Preliminary Survey Results on Transportation Services in Rural and Small Communities

This presentation by Aaron Meuser, a research associate at ITN*America*, updated a research plan presented at ROAM 2022.

Summary

These are the preliminary results from an internal evaluation of ITN*America's* cooperative agreement with the Federal Transit Administration (FTA) for the Integrated Mobility Innovation Project (ITN*Country*). The evaluation is still in the early stage, but preliminary results provide evidence for some of the transportation challenges rural communities face. The purpose of this evaluation was to identify changes in available transportation options for older adults, people with special mobility needs, people without bank accounts, and low-income riders, to identify changes in the efficient and effective use of social capital and volunteer labor for transportation, and to understand the extent to which technology was associated with these factors within the demonstration project sites. Data sources included surveys and structured interviews, community profiles, and quantitative data from the ITN*Rides* database. Structured stakeholder interviews identified community mobility challenges including limited access to public transportation due to location and economic conditions, and barriers such as limited resources and use that prevented communities from adopting traditional public transportation solutions. Rider responses to the first round of surveys showed a potential gap between perceived importance and satisfaction with four mobility considerations: availability, accessibility, affordability, and convenience. Other survey responses suggest that riders primarily relied on personal over public transportation options. The next steps are second and third rounds of surveys that will include data on service satisfaction, the collection of quantitative data from the ITN*Rides* database, and an evaluation of innovative payment programs that encourage community engagement and program sustainability.

Discussion

The first discussion point noted that residents in rural areas and communities do not always have access to broadband connections. An attendee asked if this impacted their ability to use the ITN*Country* service. Meuser responded that stakeholders acknowledged this during the survey and that the second survey will include questions to riders about their access to and use of computers and cellphones. He noted that riders and volunteer drivers did *not* need access to broadband to engage with the service and that the service could be accessed by standard telephone; only the ride coordinator needed to access broadband, and there was usually a broadband location somewhere within the community. The remaining questions were about the type of survey and number of sites and participants. The survey was sent electronically to those riders who provided email addresses. If a rider did not have an email address, they were mailed the survey. Meuser noted that the number of responders was different for each question and clarified that there were 29 rider responders, but not every rider answered every question; this represented an 18.7% response rate across all communities. Finally, an attendee asked how many communities were involved in the study. There were 8 communities, which were all new to ITN*America* (i.e., not current affiliates), although some were existing nonprofit transportation services.

Breakout Session 3: Older Pedestrian Crashes in the United States.

This presentation was prepared by Gudmundur F. Ulfarsson, Ph.D., from the University of Iceland, based on findings reported in Kim, S., and G. F. Ulfarsson, 2019: Traffic safety in an aging society: Analysis of older pedestrian crashes. *Journal of Transportation Safety & Security, 11(3)*: 323–332. DOI: 10.1080/19439962.2018.1430087.

Summary

This research analyzed GES police-reported crash data from the years 2012–2013 that included 408 pedestrians age 65 or older, an established vulnerable road user group. While these data were nationally representative, the details of each crash were broadly described. Results showed that older women were overrepresented compared to younger women, and that older adults overall had a higher share in fatalities than the younger group. Across all ages, most pedestrians involved in crashes were male. Predictors of older pedestrian crashes included street crossing, left-turning vehicles, minivan or SUV vehicles, parking areas or driveways, darkness, and summertime. Recommendations based on this research to enhance older adult pedestrian safety include improved safety at street crossings such as markings, reduced speed, lighting, reduced crossing distance, and increased visibility; improved safety against turning vehicles at intersections such as relocating crosswalks to increase visibility of pedestrians and vehicles, better protected turns and pedestrian movements via signal coordination and midway pedestrian warning signal to drivers; improved safety for parking lot and driveway design like well-defined pedestrian pathways that are visible or protected by barriers; and avoiding designs with vegetation or structures that cause blind spots and blind turns.

Discussion

One participant noted that the data showed that like older drivers, older pedestrians were more active during the day; Ulfarsson confirmed this observation. Another participant noted the slight differences in numbers of crashes for the four U.S. regions examined (Northeast, Midwest, South, and West) and asked if these differences were in proportion to population differences; Ulfarsson said that the proportions were slightly different, but similar. Finally, one attendee asked if Ulfarsson thought that repealing jay-walking laws would have a negative effect on older pedestrian safety. Ulfarsson noted that older adults are generally very careful as both pedestrians and drivers, so he did not anticipate that being a safety issue for them.

Breakout Session 4: TRB eCircular 211 – Taxonomy and Terms for Stakeholders in Senior Mobility; and a Summary of Demonstration Project for Promoting NHTSA Highway Safety Program Guideline No. 13 (Older Driver Safety)

This presentation was prepared by Anne Dickerson, PhD, OTR/L, from East Carolina University.

Summary

There were two parts to the presentation, the first part was on the update of the TRB eCircular 211, *Taxonomy and Terms for Stakeholders in Senior Mobility*, launched in 2016 under the auspices of the former Committee on Safe Mobility of Older Persons (ANB60). The objective of the eCircular remains to provide consistent definitions of terms and a shared understanding among stakeholders who provide services to older adults or carry out research on older adult drivers or driving services, and to operationalize terms for service providers. The *Taxonomy* update process included an anonymous 2019 survey of ANB60 members and others working in this area, three expert committees engaged in completing revisions based on the 2019 survey, and another survey in 2020 to view and comment on the proposed changes. Changes were made to the titles of three categories in the TRB eCircular, the number of terms was increased for each section, and references for most of the terms have been added or updated.

The second part was on a demonstration project for NHTSA on Promoting Guideline No. 13 - Older Driver Safety - in North Carolina. This project addressed four categories: driver licensing

(medical review unit); medical providers; law enforcement; and social and aging service providers. Results indicated that States could improve their ability to address medically at-risk drivers by expanding services to include driving fitness evaluations, by teaching occupational therapy generalists and driving instructors to address driving using a newly developed curriculum. For social and aging service providers, the project developed two 2-minute videos promoting behavioral change through planning for a transition from independent driving to alternative transportation, as well as a dedicated website for transportation planning by clinicians and older adults: https://planfortheroadahead.com. Improvements to the medical reporting form were developed for law enforcement, a major referral source for reporting at-risk drivers in North Carolina, including greater specificity for officer observations; the improved form was adopted by the State Highway Patrol in 2019 and by other law enforcement and EMS organizations. Finally, education was provided to healthcare providers about the new comprehensive driving evaluation, the medical review unit process, and needs for improving older driver safety. A video was created to support EMS workers who interact with potentially at-risk older drivers, and to assist them in using the reporting form.

Discussion

The length of this session did not allow time for extended discussion. One attendee asked how they could see the proposed changes to the taxonomy; Dickerson responded that this document is currently under review in the TRB system and is expected to be published soon.

Breakout Session 5: Announcing America's Volunteer Driver Center

This presentation was prepared by Katherine Freund, president, ITN*America*.

Summary

This presentation announced a new project, *America's Volunteer Driver Center* (AVDC), a national volunteer driver recruitment public information campaign funded by a cooperative agreement with the Federal Transit Administration (FTA). Awarded in November 2022, AVDC will complement a suite of community-based nonprofit transportation services developed by ITN*America* and accessible online. These include:

- ITN*Rides*, an enterprise application for community transportation providers on the Salesforce platform;
- Rides in Sight, an up-to-date, searchable database of transportation options throughout the United States for older adults and people with special mobility needs, and;
- Community in the Cloud, an online learning center for volunteer training for people who want to start transportation services in their community and for existing transportation providers who want to get on the ITN*Rides* platform.

Planning steps for AVDC include:

- a scan of the business environment with technical support by the CDC including a review of the literature, public information campaigns, and public policy issues;
- a technology plan including website design with portals for volunteers seeking information on opportunities and training and nonprofit transportation providers seeking trained volunteer drivers;
- a leadership roundtable with representatives from all three sectors of the economy— business, government, and philanthropy;
- and preparation of a summary report to the Secretary of Transportation.

Intended impacts include an increased supply of volunteer drivers, improved access to social determinants of health, improved safety, and enhanced sustainability of non-profit, community-based transportation programs.

Discussion

The discussion began with a question on the project timeline; Freund said this is a 23-month planning project; the environmental scan should be finished in the next 6 months, and the panel recruitment has started. An attendee asked if the vetting and training of volunteer drivers is part of the project or beyond its scope. Freund replied that will be determined during the planning process, but believed it can and should be done nationally to be effective. Next, a participant stated that most volunteer drivers are themselves older drivers and it would be great to bring in younger people (i.e., college students) as volunteers; another attendee mentioned that many schools have sociology programs and volunteerism programs that could be good places for this campaign. Freund noted that for ITN*America* the mean age of drivers was 64, and the mean age of riders was 80. She said that another goal of the project is to create an advisory board for stakeholders (i.e., volunteer drivers, transportation providers, and experts in the field) to provide guidance when building the web portals for the volunteer driver qualifications. Another participant asked if there were any way to incentivize volunteers; Freund noted that transportation credits and reimbursement for fuel have been offered in the past, but at their organization most volunteers drive for altruistic reasons—though research to help understand reasons for volunteerism would be beneficial. Finally, a participant asked about insurance for the volunteer drivers; Freund said those challenges will be included in the environmental scan.

Breakout Session 6: Safety Implications of Older Drivers' Vehicle Choices

This presentation was prepared by Aimee Cox, a research associate at the Insurance Institute for Highway Safety.

Summary

Vehicle crash protection has improved significantly over the last 10 years due to improvements in crashworthiness and crash avoidance technologies. Recent research shows older drivers drive older vehicles even though newer vehicles provide better protection from injuries and fatalities for drivers 65 and older. The research presented here sought to understand these vehicle choices by older drivers, which deprived this cohort of the increased safety benefits of newer vehicles, along with older drivers' attitudes and perceptions of vehicle safety features. A survey of 900 participants ages 35 to 54, 70 to 79, and 80+, showed that the oldest drivers had the oldest vehicles; older drivers were less likely to express a need for safety features with the exception of reverse camera/backup sensors; driving patterns were associated with vehicle age in that those who drove less frequently tended to drive older vehicles; and older drivers of newer vehicles reported higher income. Next, the research team analyzed over 1.5 million crash-involved vehicles of drivers 35 to 54 and 70+ years old. Analysis showed that older drivers' crash-involved vehicles were more likely to be older, relative to those of middle-aged drivers, and were more likely to be lighter vehicles (i.e., passenger vehicles) and less likely to have safety features when not included as standard equipment, placing these older drivers at increased risk of fatality. The analysis also showed an estimated reduction of up to 8% in older driver fatalities if they drove the same vehicles as middle-aged drivers. Key takeaways included informing older drivers

of rapid improvements in vehicle safety, which are found in later model used vehicles, and how these features translate to fatality reductions.

Discussion

An attendee first asked if seat belt use was examined in this study; Cox responded that it was not but noted that seat belt use generally increases with age. A participant then asked about maintenance and reliability of advanced vehicle features and if they are known to stop working over time. The presenter noted this is an area that needs more research, and the current study did not investigate whether the vehicles or safety features were working as intended at the times of the crashes.

Breakout Session 7: CarFit Through the Pandemic and Beyond

This presentation was prepared by Elin Schold-Davis, OTR/L, from the American Occupational Therapy Association (AOTA).

Summary

The CarFit program (www.car-fit.org) was created in a partnership of AOTA, AAA, and AARP. It provides education to older drivers on the purpose, function, and fit/adjustment of vehicle safety features to help older drivers achieve seating positions that allows vehicle safety features to protect them while allowing them to see above the steering wheel and comfortably reach the steering wheel, pedals, and other vehicle controls. The program is non-compulsory and serves as a means to distribute community-specific information about transportation resources. CarFit has expanded from the United States to Canada, Australia, and New Zealand. In-person CarFit events are conducted by trained volunteers who review the driver's fit in their personal vehicles and explain how they driver can make adjustments to improve their fit. Post-COVID, CarFit has developed a virtual model that uses a modified checklist to accommodate the virtual format. The virtual model includes a live format in which a trained volunteer delivers the presentation and drivers can ask questions. A recorded format is available to drivers in the United States that they can view anytime for free at the CarFit website. Scheduled live question and answer booster sessions are available for drivers to attend virtually.

Discussion

One participant asked if employers had expressed interest in ensuring their drivers fit properly in work vehicles. Schold-Davis did not know the answer to that specifically but noted that CarFit is interested in research on the outcome of being improperly fit in a vehicle. An attendee asked if there was feedback on a new CarFit question about vehicle technology. Schold-Davis responded that vehicle technologies and features are not uniform across all vehicles, and often differ in the ways drivers interact with them. A new checklist item was added to ask if the driver was aware of the features in their vehicle, but training CarFit volunteers to explain how to safely use different vehicle technologies across different vehicles presents another level of challenge.

Appendix A: ROAM 2023 Agenda, January 8, 2023

General Session

10:00-11:30 a.m.: Announcements & self-introductions

Breakout Sessions *[30 minutes each including Q&A]*

1. Safety Implications of Limited-Term License Renewal Policies for Drivers With Progressive Vision Disorders; Bayliss Camp for Ainsley Mitchum (CA DMV Research & Development Branch) - update on 2022 presentation *[Noon – 12:30 p.m.]*

2. FTA Integrated Mobility Innovation Project Preliminary Survey Results on Transportation Services in Rural and Small Communities; Aaron Meuser, ITNAmerica - update on 2022 presentation *[12:40 – 1:10 p.m.]*

3. Older Pedestrian Crashes in the United States, Gudmundur F. Ulfarsson (University of Iceland) *[1:20 – 1:50 p.m.]*

4. TRB Circular 211- Taxonomy and Terms for Stakeholders in Senior Mobility; and a Summary of Demonstration Project for Promoting NHTSA Highway Safety Program Guideline No. 13 (Older Driver Safety], Anne Dickerson (East Carolina University) *[2:00 – 2:30 pm]*

5. Announcing America's Volunteer Driver Center, Katherine Freud, (ITNAmerica) *[2:20 – 3:10 pm]*

6. Safety Implications of Older Drivers' Vehicle Choices, Aimee Cox, Insurance Institute for Highway Safety *[3:20 – 3:50 p.m.]*

7. CarFit Through the Pandemic and Beyond, Elin Schold-Davis, AOTA *[4:00 – 4:30 p.m.]*

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