Increasing Older Driver Evaluations in the Primary Care Setting

Coleen Ju, BSN, RN

Oregon Health & Science University School of Nursing

Submitted to: Mandy McKimmy, DNP, FNP-C, Project Chair

March 3, 2023

This paper is submitted in partial fulfillment of the requirements for

the Doctor of Nursing Practice degree.

Abstract

Driving a vehicle plays a vital role in an older individual's sense of independence and is often a ubiquitous aspect of modern life (Bahrampouri et al., 2021; Makizako et al., 2018). However, sensory, cognitive, and musculoskeletal changes associated with aging often alter an individual's ability to safely navigate the vehicle and the road (Carr, 2000; Dattoma, 2017; Hill et al., 2019). Currently, no universal screening tool or guideline addresses older driver evaluations in the clinic setting (Bahrampouri et al., 2021; Toups et al., 2022). This Doctor of Nursing practice quality improvement project outlines the implementation and subsequent effect of providing older driver evaluation tools in two OHSU primary care clinics. Utilizing the Institute for Healthcare Improvement's Model of Improvement, this quality improvement project aimed to increase the number of older driver evaluations and provider comfortability in the primary care setting. Analysis of ICD-10 code usage post-intervention showed an overall increase in the number of visits associated with the code for driver safety issues. Additionally, results from the post-intervention survey showed an increased proportion of providers reporting high comfortability in older driver evaluations. Interventions developed for this quality improvement project can be further utilized and adapted for other primary care concerns.

Keywords: Aging, driver, elder, safety, assessment, evaluation, guideline, primary care

Problem Description

According to information gathered by the World Health Organization's World Report on Road Traffic Injury Prevention Summary, older individuals involved in a motor vehicle crash are more likely to be killed or seriously injured due to generally decreased resiliency in older age (n.d.). Recent fatality findings show that in 2019, US death rates from motor vehicle crashes increased substantially amongst males and females beginning at ages 75-79 (IIHS, n.d). As the global population continues to increase in average age, the safety of older drivers will become a global concern. While every individual experiences the aging process uniquely, with aging, comes various mental and physical changes, ranging from visual disturbances to mobility limitations. These changes can significantly alter an individual's ability to navigate a vehicle on the road safely; therefore, evaluating and intervening with aging drivers must be a crucial component of a geriatric exam (Arms, 2016; Rapoport et al., 2019).

While some literature focuses on the aspects of driver evaluation, there is yet to be one universally adopted screening tool to determine driver safety (Bahrampouri et al., 2021; Toups et al., 2022). Additionally, current literature detailing the role of the primary care provider (PCP) and evaluation of the older driver is varied in what domains are utilized in the assessments (Carr et al., 2000; Dattoma, 2017; Hill et al., 2019; Marottoli, 2000). Further contributing to inconsistent older driver evaluation is the paucity of standardized NP curriculum that adequately covers the concerns of older drivers, leaving providers ill-equipped to address the needs of this growing population (Arms, 2016).

Available Knowledge

Available driver assessment tools vary depending on the resource used; however, there is a clear overlap concerning features that garner older driver assessment. Three separate studies

conducted between 2000 and 2019 have resulted in unique strategies for evaluating the aging driver. Nevertheless, there was a clear emphasis on physiological change that may alert driver safety concerns (Carr, 2000; Dattoma, 2017; Hill et al., 2019). Carr (2000), through the American Academy of Family Physicians, states concern regarding the older driver's safety and following assessment components, including evaluation of driving history, medication review, and physiologic variables that impact driving capabilities. Similarly, the information presented by Hill et al. (2019) listed five key domains when assessing driver fitness. These domains included driver cognition, vision, physical function, medical comorbidities, and medications. Research conducted by Dattoma (2017) broke down driver assessment into a four-step system that included screening and observation, clinical assessment, evaluation of the screening and clinical assessment of driving-related skills, and discussion of the results of a comprehensive driving evaluation. Within the screening and observation step, clinicians were advised to assess for sensory changes, cognitive decline, and difficulty in a patient's ability to complete activities of daily living (ADL). Current literature regarding driver assessment provides practitioners with a general background in what characteristics to be attentive to when caring for aging patients who continue independently operating their vehicles. However, there remains a lack of clinical practice guideline that asserts a protocol for standardized evaluations.

Developing clinical guidelines for driver assessment and provider training would be beneficial in ensuring aging drivers continue to navigate the roads safely for the community's well-being and their own (Arms, 2016; Bahrampouri et al., 2021; Rapoport et al., 2019).

Available knowledge was gathered through the PubMed database. The searches were limited to English-language articles published between 2000 and the present. Keywords utilized include aging, older, elderly, geriatric, driver, driving, safety, assessment, evaluation, guideline,

primary care clinic, primary care provider, family medicine, and internal medicine. The articles used include systematic reviews, cross-sectional studies, community-based cohort studies, and expert-created recommendations.

Rationale

Findings from the recent AAA Longitudinal Research on Aging Drivers (LongROAD) study highlighted a need for primary care providers to have the difficult conversation of driving cessation with patients. Out of the 2990 participants of the LongROAD study, only 17.3% reported ever having a driver safety discussion with either their family or health care provider. Those who had discussions with providers were more likely to be given additional education, follow-up visits to monitor health status, and medical treatment (Betz et al., 2019). Developing clinical guidelines and tools to stratify the process of discussing driver safety with older adults may increase rates of driving cessation, referrals to driver rehabilitation services, and treatments to optimize mobility and cognition (Hill et al., 2019).

Two Oregon Health & Science University (OHSU) primary care clinics aimed to increase rates of older driver evaluation and assessment by developing provider education materials and simplifying the assessment process through pre-made Smart Phrases in EPIC. By implementing clinic tools for older driver evaluation, providers at both OHSU primary care clinics were more apt to have these conversations with individuals who present concerning changes that may alter their ability to drive a vehicle safely. Additionally, the successful adoption of this clinical tool provided sufficient evidence to encourage other OHSU clinics to utilize the same or similar tools for older driver evaluation.

The development of this quality improvement (QI) project utilized the Model of Improvement (MFI) from the Institute for Healthcare Improvement (IHI, 2022). This tool was

used due to its flexibility and ability to create rapid results when correctly applied (Picarillo, 2018). The project methods and findings were also reported using the Standards for Quality Improvement Reporting Excellence: SQUIRE 2.0 guidelines. Compared to other publication guidelines, SQUIRE 2.0 guidelines were designed to "apply across the many approaches used for systematically improving the quality, safety, and value of healthcare" (Ogrinc et al., 2016). Applying the MFI and SQUIRE 2.0 guidelines effectively set this QI project up for primary care settings.

Specific Aims

Prior to the implementation of this QI project, OHSU primary care clinics at Marquam Hill and Orenco Station did not have a provider-focused clinical tool for older driver evaluation and assessment. Over twelve weeks, this quality improvement project aimed to create a 50% increase in the number of providers who reported feeling “extremely comfortable” talking to at-risk adults about driver safety via a post-intervention survey.

Additionally, this QI project aimed to create a 50% increase in the number of patient encounters associated with the ICD-10 code Z91.89 for driver safety concerns.

Methods

Context

The two OHSU primary care clinics provide a wide range of services, from geriatric to gender-affirming care. The OHSU Primary Care Clinic on Marquam Hill focuses on internal medicine and geriatric care; therefore, they see only the adult population. In contrast, the Hillsboro Medical Center Primary Care Clinic at Orenco Station (an OHSU partner clinic) has internal and family medicine providers. Therefore, they see patients of all ages. Both clinics currently use EPIC Systems to manage their electronic medical records.

Interventions

Interventions for this quality improvement project consisted of primary care provider (PCP) education, the development of an older driver assessment Smart Phrase for EPIC system, and pre- and post-intervention PCP surveys. Primary care provider education was delivered through a prepared PowerPoint presentation via an all-provider Webex meeting for each clinic. Educational materials included information regarding clinical signs that should elicit further evaluation of older driver safety, institutional resources for patients requiring additional assessment, and encouragement to use the ICD 10 code Z91.89 for driver safety concerns.

The utilization of Smart Phrases has been shown to increase adherence to specific guidelines and protocols (Vranian et al., 2022). Therefore, to simplify the older driver evaluation process, two Smart Phrases were developed to provide guidance when charting a visit that consists of an older driver assessment. Both Smart Phrases were created in collaboration with two OHSU geriatricians with an established history of counseling older individuals on driving cessation. One Smart Phrase provided clinicians with a visit flow from identifying risks, assessing for deficits, and referring to necessary specialists. The second Smart Phrase was comprised of varying patient resources in order to provide clinicians with a simple list to offer patients.

Lastly, a pre- and post-intervention survey was distributed to all clinic providers at the OHSU primary care clinic at Marquam Hill and Orenco Station. The pre-intervention survey included questions regarding comfortability and experience with older driver evaluations. The post-intervention survey included questions regarding confidence with older driver evaluations after exposure and utilization of the intervention tools.

This intervention had a time limit of three months. Therefore, we did not utilize the Plan-Do-Study-Act (PDSA) model for intervention adjustments.

Measures

There were two outcome measurements for this quality improvement project. The first measurement consisted of the number of providers who reported high comfortability in performing older driver evaluations. Data for this measurement was compiled through comparisons between pre- and post-intervention survey results. The surveys were administered to all primary care providers at the Marquam Hill and Orenco Station OHSU clinics via the Qualtrics survey system.

Before the QI intervention, there was an EPIC chart review from visits that took place three months before intervention implementation to determine the number of visits that included ICD-10 code Z91.89. The second measurement was the total number of patient visits that included an ICD-10 code of Z91.89 during the three months of intervention. This second number was compared with the initial chart review to determine the percent increase in ICD-10 code usage.

Analysis

This quality improvement project occurred over three months at two primary care clinics. Evaluation of this QI project utilized both quantitative and qualitative data analysis. Quantitative data regarding ICD-10 code usage was collected over three months before the intervention and for three months post-intervention. Qualitative data regarding provider comfort with older driver evaluation was assessed by comparing pre- and post-intervention survey answers.

Ethical Considerations

Providers at the primary care clinics were informed of this quality improvement project through an all-provider meeting and subsequent emails. Providers were offered the pre- and post-intervention survey; responses were confidential, and participation was not mandatory. Additionally, all educational materials made were applicable and appropriate for use with all older persons. No sensitive patient information was used in this QI project. Both clinical sites gave consent for participation by signing a letter of support. Lastly, this project was submitted to the OHSU Investigational Review Board (Study #00024522) and determined to be non-human research on August 2, 2022.

Results

Provider Education Attendance

The initial steps of this intervention involved thoughtful coordination with two clinical site chairs, one at each primary care clinic, to discuss unique clinic needs, possible restrictions, and overall goals. Ultimately, it was agreed upon that disseminating information regarding older driver safety, and assessment would best be done through a PowerPoint presentation to clinicians. Due to scheduling conflicts, this PowerPoint was presented to each clinic on separate dates. There were 42 individuals in attendance during the meeting with Clinic #1 and 18 individuals in attendance during the meeting with Clinic #2.

Pre-Intervention Survey

Before starting the educational PowerPoint, all attendees were sent a link to a pre-intervention survey. This survey aimed to gauge provider comfort with assessing older drivers and identify key barriers to evaluation. Ultimately, only 7.41% of respondents reported themselves as "extremely comfortable" talking to at-risk adults about driver safety. The top three reported barriers to completing driver safety evaluations included: insufficient training regarding

driver evaluations, insufficient visit time, and concerns of harming the patient-provider relationship.

Initial ICD-10 Code Usage

The initial EPIC chart review covered the three months prior to the provider education session respective to each clinic. Between the two clinics, this review identified 68 visits associated with ICD-10 code Z91.89 for driver safety issues in the three months before the intervention. This number was used as our baseline visit number for post-intervention comparisons.

Post-Intervention Survey

Three months after the education session, providers from both clinics were sent a link to a post-intervention survey. Of those that responded, 23.08% reported themselves as "extremely comfortable" talking to at-risk adults about driver safety. The top three reported barriers in the post-intervention survey include insufficient visit time, lack of patient resources, and concerns about harming the patient-provider relationship.

Final ICD-10 Code Usage

Visits conducted throughout the three-month intervention period were reviewed, and 82 visits were associated with ICD-10 code Z91.89 for driver safety issues.

Discussion

Summary

This quality improvement project aimed to increase older driver safety evaluations in the primary care setting. Literature supported the belief that a lack of provider awareness and insufficient resource availability prevented providers from effectively assessing at-risk patients (Arms et al., 2016; Bahrampouri et al., 2021; Rapoport et al., 2018; Toups et al., 2022). Through

this project, educational material, provider resources, and patient resources were created in an effort to increase driver evaluations. Feedback from those involved in this intervention was generally positive, with supportive buy-in from both clinics. The qualitative and quantitative information gathered from this project show an increase in provider-reported comfortability with assessment and an increase in the number of visits associated with ICD-10 code usage for driver safety issues.

Interpretation

Positive results of this quality improvement project's interventions were evidenced by the 211.47% increase in the percentage of providers who reported feeling "extremely comfortable" with talking to at-risk drivers through a post-intervention survey and the 20.59% increase in the number of visits associated with the driver safety issue ICD-10 code.

This project's impact on the people involved was interpreted through the qualitative information gathered in the post-intervention survey. When asked if this project's education session and driver evaluation Smart Phrase were helpful, 84.62% of respondents responded in the affirmative.

While this project's scope was narrow and limited to one patient concern, the ramifications of increasing older driver safety evaluations are far-reaching. Identifying at-risk individuals makes these drivers more likely to undergo additional assessments or receive necessary interventions (Toups et al., 2022).

Limitations

The scope of this quality improvement project was limited to the patients seen over the three-month intervention period, and it was not feasible to ensure a large number of patients that

presented with at-risk concerns for driver safety. Therefore, this project did not have a set number of patients available for intervention.

There were limitations with the survey design, implementation, and response rate. The survey was not designed to have anonymous identifiers for each survey response; therefore, a post-intervention survey response cannot be linked to an individual's pre-intervention responses to assess for change. Additionally, providers were asked to fill out the pre-intervention survey during the education session, whereas the post-intervention survey link was sent via email. This difference in delivery could account for the decrease in post-intervention responses.

Conclusions

Recommendations

This quality improvement project can be implemented in other primary care clinic settings and conducted by both future DNP students and practicing providers. Additionally, the methods utilized in this project can also be adjusted to cover various topics and are not limited to older driver evaluation.

Should the continuation of this project elicit a significant increase in the number of individuals deemed unfit to drive, it may be imperative to further educate additional clinic staff on the next steps and available patient resources.

Acknowledgments

The author would like to acknowledge the two primary care clinics and subsequent providers that cooperated throughout this project. Additional appreciation is extended to Dr. Robin Brown, MD, and Dr. Emily Morgan, MD, for acting as site mentors and to Bryanna De Lima, MPH, CPH, for conducting the EPIC data collection needed for this project. Lastly, this

author would like to extend great appreciation to project chair Dr. Mandy McKimmy, DNP, FNP-C, for her support and continued guidance.

Other Information

Funding

This DNP project was supported, in part, by the Frances Price Estate Fund through the OHSU Foundation and the Hartford Center of Gerontological Excellence at OHSU.

References

Arms, T. (2016). The NPs role of assessing and intervening with older adult drivers. *Nursing research and practice*, *2016*, 3254857. https://doi.org/10.1155/2016/3254857

Bahrampouri, S., Khankeh, H. R., Hosseini, S. A., Mehmandar, M., & Ebadi, A. (2021). Introducing practical tools for fit to drive assessment of the elderly: A step toward improving the health of the elderly. *Journal of education and health promotion*, *10*, 463. https://doi-org.liboff.ohsu.edu/10.4103/jehp.jehp_1644_20

Betz, M. E., Villavicencio, L., Kandasamy, D., Kelley-Baker, T., Kim, W., DiGuiseppi, C., Mielenz, T. J., Eby, D. W., Molnar, L. J., Hill, L., Strogatz, D., Carr, D. B., Li, G., & on behalf of the Long, R. R. T. (2019). Physician and family discussions about driving safety: Findings from the LoNGROAD study [Article]. *Journal of the American Board of Family Medicine*, *32*(4), 607-613. https://doi.org/10.3122/jabfm.2019.04.180326

Carr, D. B. (2000). The older adult driver. *American family physician*, *61*(1), 141–148.

Dattoma, L. L. (2017). Evaluation of the older driver. *Primary care*, *44*(3), 457–467. https://doi.org/10.1016/j.pop.2017.05.003

Hill, L., Pignolo, R. J., & Tung, E. E. (2019). Assessing and counseling the older driver: A concise review for the generalist clinician. *Mayo Clinic proceedings*, *94*(8), 1582–1588. https://doi.org/10.1016/j.mayocp.2019.03.023

Fatality facts 2020: Older people. IIHS. (n.d.). Retrieved August 19, 2022, from https://www.iihs.org/topics/fatality-statistics/detail/older-people#population-and-mileage-rates

Makizako, H., Shimada, H., Hotta, R., Doi, T., Tsutsumimoto, K., Nakakubo, S., & Makino, K. (2018). Associations of Near-Miss Traffic Incidents with Attention and Executive

Function among Older Japanese Drivers. *Gerontology*, *64*(5), 495–502. https://doi-org.liboff.ohsu.edu/10.1159/000486547

Marottoli, R. A. (2000). The physician's role in the assessment of older drivers. *American family physician*, *61*(1), 39–42.

Ogrinc, G., Davies, L., Goodman, D., Batalden, P., Davidoff, F., & Stevens, D. (2016). SQUIRE 2.0 (Standards for QUality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process. *BMJ quality & safety*, *25*(12), 986–992. https://doi-org.liboff.ohsu.edu/10.1136/bmjqs-2015-004411

Picarillo, A. P. (2018). Introduction to quality improvement tools for the clinician. *Journal of Perinatology*, *38*(7), 929-935. https://doi.org/10.1038/s41372-018-0100-4

Rapoport, M. J., Chee, J. N., Carr, D. B., Molnar, F., Naglie, G., Dow, J., Marottoli, R., Mitchell, S., Tant, M., Herrmann, N., Lanctôt, K. L., Taylor, J. P., Donaghy, P. C., Classen, S., & O'Neill, D. (2018). An international approach to enhancing a national guideline on driving and dementia. *Current psychiatry reports*, *20*(3), 16. https://doi.org/10.1007/s11920-018-0879-x

Toups, R., Chirles, T. J., Ehsani, J. P., Michael, J. P., Bernstein, J. P. K., Calamia, M., Parsons, T. D., Carr, D. B., & Keller, J. N. (2022). Driving Performance in Older Adults: Current Measures, Findings, and Implications for Roadway Safety. *Innovation in aging*, *6*(1), igab051. https://doi.org/10.1093/geroni/igab051

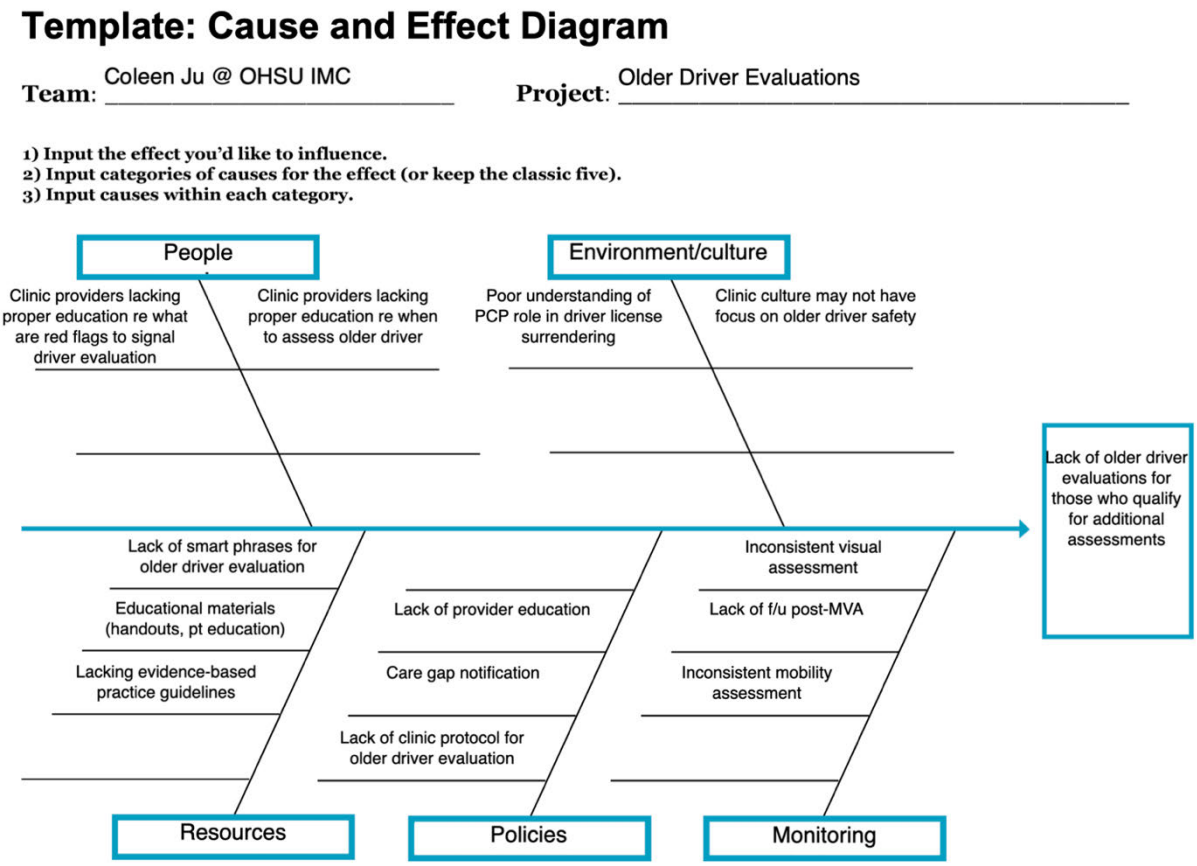
Vranian, S. C., Jr., Shah, M. K., Dudas, A. A., Wolf, B. J., Burke, M. D., Selassie, M. A., & Hillegass, M. G. (2022). Implementation of a Smart Phrase to Improve Documentation and Compliance With the CDC Guideline for Prescribing Opioids for Chronic Pain: A Quality Improvement

Initiative. *American Journal of Medical Quality*, *37*(3), 278-279.

https://doi.org/10.1097/jmq.0000000000000047

Appendices

Appendix A: Cause and Effect Diagram



Appendix B: DNP Project Timeline

DNP Project Timeline

Spring 2022 Dates: 3/28/22- 6/10/22
Summer 2022 Dates: 6/27/22-9/9/22
Fall 2022 Dates: 9/26/22-12/9/22
Winter 2023 Dates: 1/9/23-3/24/23

	June	July	Aug	Sep	Oct	Nov	Dec	Jan-Mar
Finalize and submit DNP proposal (703A)	X							
Submit for IRB approval	X							
Complete IRB determination		X						
Distribute provider pre-intervention survey		X						
Presentation to clinic #1				X				
Presentation to clinic #2					X			
Distribute provider post-intervention survey							X	X
EPIC data collection and analysis							X	X
Write final sections of DNP paper (703B)							X	X
Present final dissemination to cohort and faculty (703B)								X
Provide thank you gift to participating clinics								X

Appendix C: IRB Letter of Determination

NOT HUMAN RESEARCH

August 2, 2022

Dear Investigator:

On 8/2/2022, the IRB reviewed the following submission:

Title of Study:	Increasing Older Driver Evaluations in the Primary Care Setting
Investigator:	Mandy McKimmy
IRB ID:	STUDY00024522
Funding:	None

The IRB determined that the proposed activity is not research involving human subjects. IRB review and approval is not required.

Certain changes to the research plan may affect this determination. Contact the IRB Office if your project changes and you have questions regarding the need for IRB oversight.

If this project involves the collection, use, or disclosure of Protected Health Information (PHI), you must comply with all applicable requirements under HIPAA. See the HIPAA and Research website and the Information Privacy and Security website for more information.

Sincerely,

The OHSU IRB Office

Appendix D: Clinic #1 Letter of Support

Letter of Support from Clinical Agency

Date: *15 June, 2022*

Dear *Coleen Ju*,

This letter confirms that I, *Dr. Emily Morgan MD,* allow *Coleen Ju* (OHSU Doctor of Nursing Practice Student) access to complete her DNP Final Project at our clinical site. The project will take place from approximately *July 2022* to *March 2023*.

As previously discussed through meetings with Coleen Ju, this DNP Final Project will aim to increase older driver evaluations in the primary care setting of our clinic. The age of drivers continues to increase as the population ages and this puts increase risk for fatal accidents in the community. For this reason, it is imperative that primary care clinics begin to develop clinic practice guidelines to address older driver evaluations and assessment. Throughout this project, Coleen aims to increase primary care provider (PCP) awareness and comfortability with addressing the needs of older drivers. Additionally, through the dissemination of education pieces and resources, Coleen also hopes to increase the usage of ICD-10 code Z91.89. PCP comfortability will be evaluated through pre- and post-intervention survey responses. These surveys will be anonymous and participation is not mandatory. Data from Epic will only consist of ICD-10 code usage before, during and after the project implementation. No patient information will be collected. All data will be stored on password protected devices. This OHSU primary care clinic agrees to provide Coleen will access to clinic space when necessary. Additionally, she will have the opportunity to participate in an all-provider meeting so as to present her educational pieces as well as the pre- and post-intervention surveys. I, Dr. Emily Morgan, will help contact clinic providers if reminders for survey responses are necessary. Coleen has my support in conducting this project at this clinic and I will be a point of contact for any providers who have questions regarding the project.

During the project implementation and evaluation, *Coleen Ju* will provide regular updates and communicate any necessary changes to the DNP Project Preceptor.

Our organization looks forward to working with this student to complete their DNP project. If we have any concerns related to this project, we will contact *Coleen Ju* and *Dr. Mandy McKimmy DNP FNP-C.*

Regards,

DNP Project Preceptor (Name, Job Title, Email, Phone): Dr. Emily Morgan, M.D., Primary Care Provider, mogranem@ohsu.edu

_____ 6/15/2022

Signature Date Signed

Appendix E: Clinic #2 Letter of Support

Letter of Support from Clinical Agency

Date: *15 June, 2022*

Dear *Coleen Ju*,

This letter confirms that I, *Dr. Robin Brown MD,* allow *Coleen Ju* (OHSU Doctor of Nursing Practice Student) access to complete her DNP Final Project at our clinical site. The project will take place from approximately *July 2022* to *March 2023*.

As previously discussed through meetings with Coleen Ju, this DNP Final Project will aim to increase older driver evaluations in the primary care setting of our clinic. The age of drivers continues to increase as the population ages and this puts increase risk for fatal accidents in the community. For this reason, it is imperative that primary care clinics begin to develop clinic practice guidelines to address older driver evaluations and assessment. Throughout this project, Coleen aims to increase primary care provider (PCP) awareness and comfortability with addressing the needs of older drivers. Additionally, through the dissemination of education pieces and resources, Coleen also hopes to increase the usage of ICD-10 code Z91.89. PCP comfortability will be evaluated through pre- and post-intervention survey responses. These surveys will be anonymous and participation is not mandatory. Data from Epic will only consist of ICD-10 code usage before, during and after the project implementation. No patient information will be collected. All data will be stored on password protected devices. This OHSU primary care clinic agrees to provide Coleen will access to clinic space when necessary. Additionally, she will have the opportunity to participate in an all-provider meeting so as to present her educational pieces as well as the pre- and post-intervention surveys. I, Dr. Robin Brown, will help contact clinic providers if reminders for survey responses are necessary. Coleen has my support in conducting this project at this clinic and I will be a point of contact for any providers who have questions regarding the project.

During the project implementation and evaluation, *Coleen Ju* will provide regular updates and communicate any necessary changes to the DNP Project Preceptor.

Our organization looks forward to working with this student to complete their DNP project. If we have any concerns related to this project, we will contact *Coleen Ju* and *Dr. Mandy McKimmy DNP FNP-C.*

Regards,

DNP Project Preceptor (Name, Job Title, Email, Phone): Dr. Robin Brown, M.D., Primary Care Provider, browrobi@ohsu.edu

_____ 6/30/22

Signature Date Signed

Appendix F: Provider-facing Smart Phrase

At-Risk Driving Assessment

Identify: *yes to any of the following, continue to assessment*

1. History red flags to trigger driving assessment:
    - Have others expressed concerns about your driving? {yesno:28646}
    - Do you ever get lost while driving? {yesno:28646}
    - Have you received any traffic violations or warnings in the past 2 years? {yesno:28646}
2. Cognitive impairment {yesno:28646}
3. Functional decline (ADLS/IADLS) {yesno:28646}
4. Severe visual impairment (macular degeneration, glaucoma, retinopathy, cataracts) {yesno:28646}
5. Focal deficits to strength, sensation, flexibility, coordination {yesno:28646}

Assess: *Abnormal findings should trigger referral*
Cognitive testing: (MoCA or SLUMS); *the following findings are validated measures that pt will not pass driving skills test:*

- MoCA score of ≤ 18
- Abnormal clock draw

Visual acuity: acuity no worse than 20/70 in best eye
MSK exam:

- Neck ROM
- Upper Extremity ROM
- Ankle ROM

Neuro exam:

- Strength of upper and lower extremities
- Sensation of upper and lower extremities

Refer:
Mandatory Reporting to DMV: *for severe and irreversible impairments*

- Printable form at: https://www.oregon.gov/odot/Forms/DMV/7230fill.pdf

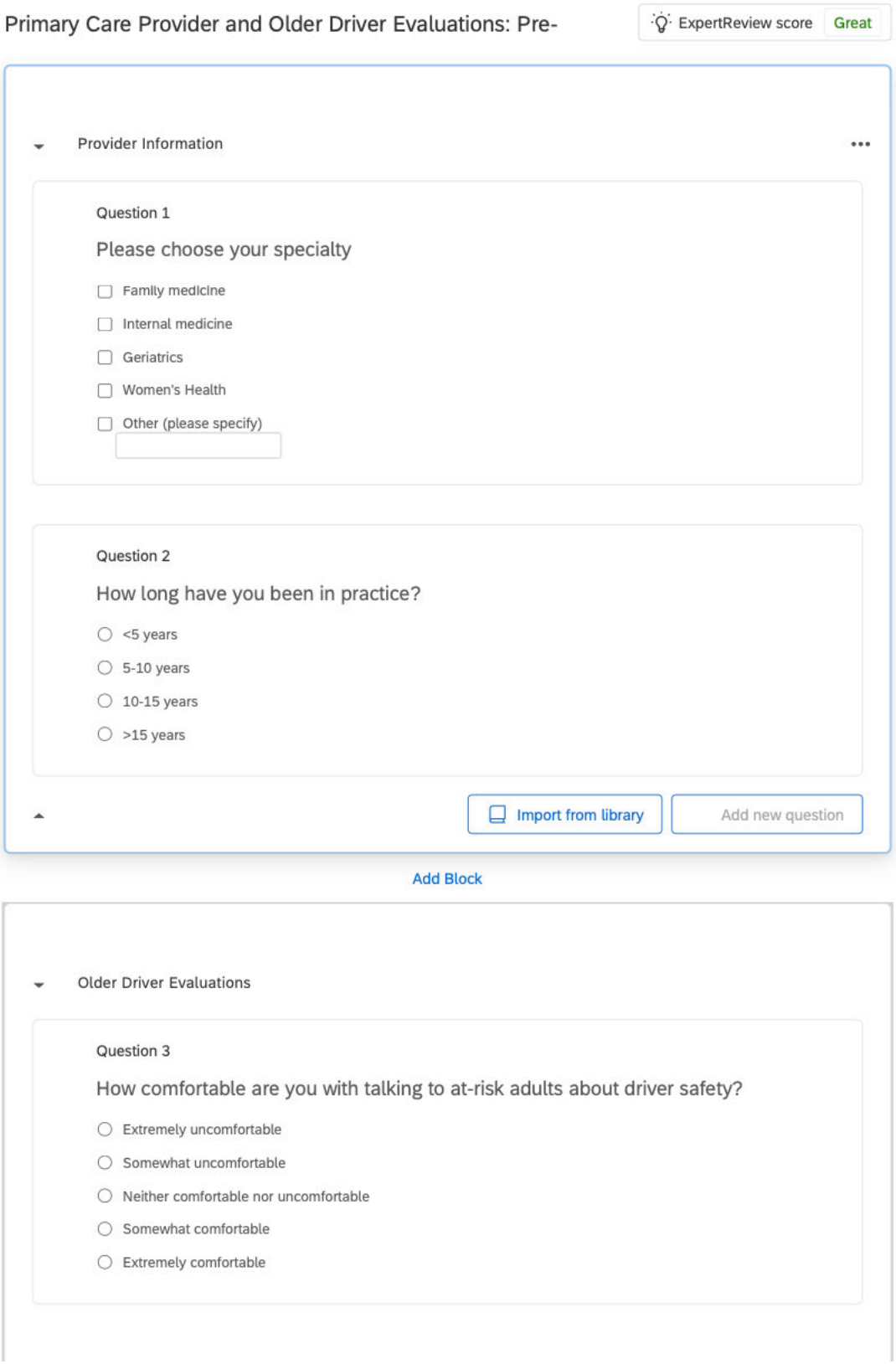
Referral to OT for driving assessment
Referral to ophthalmology for comprehensive visual assessment
Geriatric consult
Social work for resources

Appendix G: Patient Resource Smart Phrase

Resources:

- Patient resources
  - Self-assessment tools:
    - AAA Drivers 65 Plus: Check Your Performance
      - https://exchange.aaa.com/wp-content/uploads/2021/03/Driver-65-Plus.pdf
  - Alternative transportation:
    - TriMet LIFT Application: https://trimet.org/lift/application.htm
    - Ride connection: https://rideconnection.org
  - DMV Quit Driving Form (voluntary driving cessation):
    - https://www.oregon.gov/ODOT/Forms/DMV/7206Afill.pdf
- Private Drivers Evaluations:
  - OHSU OT
  - Providers can be found through ADED.net (National Association of Driver Rehabilitation Specialists)
  - Greg Hammerly at www.greatnwdrivers.com for driving lessons, driving assessments, adaptive equipment assessments
- Patient education
  - AAA Senior Driving Resources
    - https://exchange.aaa.com/safety/senior-driver-safety-mobility/evaluate-your-driving-ability/
  - AARP Driving Safety Resources
    - https://www.aarp.org/auto/driver-safety/info-2013/warning-signs-unsafe-driving.html
  - The Hartford Center: Driving Safety
    - https://www.thehartford.com/resources/mature-market-excellence/driving-safety
  - Older Adult Driver Initiative: Plan for the Road Ahead
    - https://www.planfortheroadahead.com
  - American Geriatrics Society: Driving Safety for the Older Adult
    - https://www.healthinaging.org/driving-safety

Appendix H: Pre-Intervention Survey



Question 4

How often do you talk to patients about at-risk driver safety?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Usually
- ○ Always

Question 5

Have you ever used the following ICD-10 code for driving assessment: Driving safety issue Z91.89?

- ○ No
- ○ Yes

Question 6

What are some barriers to completing at-risk driver evaluations? (Select all that apply)

- ☐ Insufficient visit time
- ☐ Insufficient training regarding driver evaluations
- ☐ Unclear with PCP role in driver evaluation
- ☐ Lack of pt resources for safe driving
- ☐ No access to referral system
- ☐ Concerns for harm to pt-provider relationship

Question 7

Are you interested in learning more about at-risk driver evaluations?

- ○ No
- ○ Yes

▲ Import from library Add new question

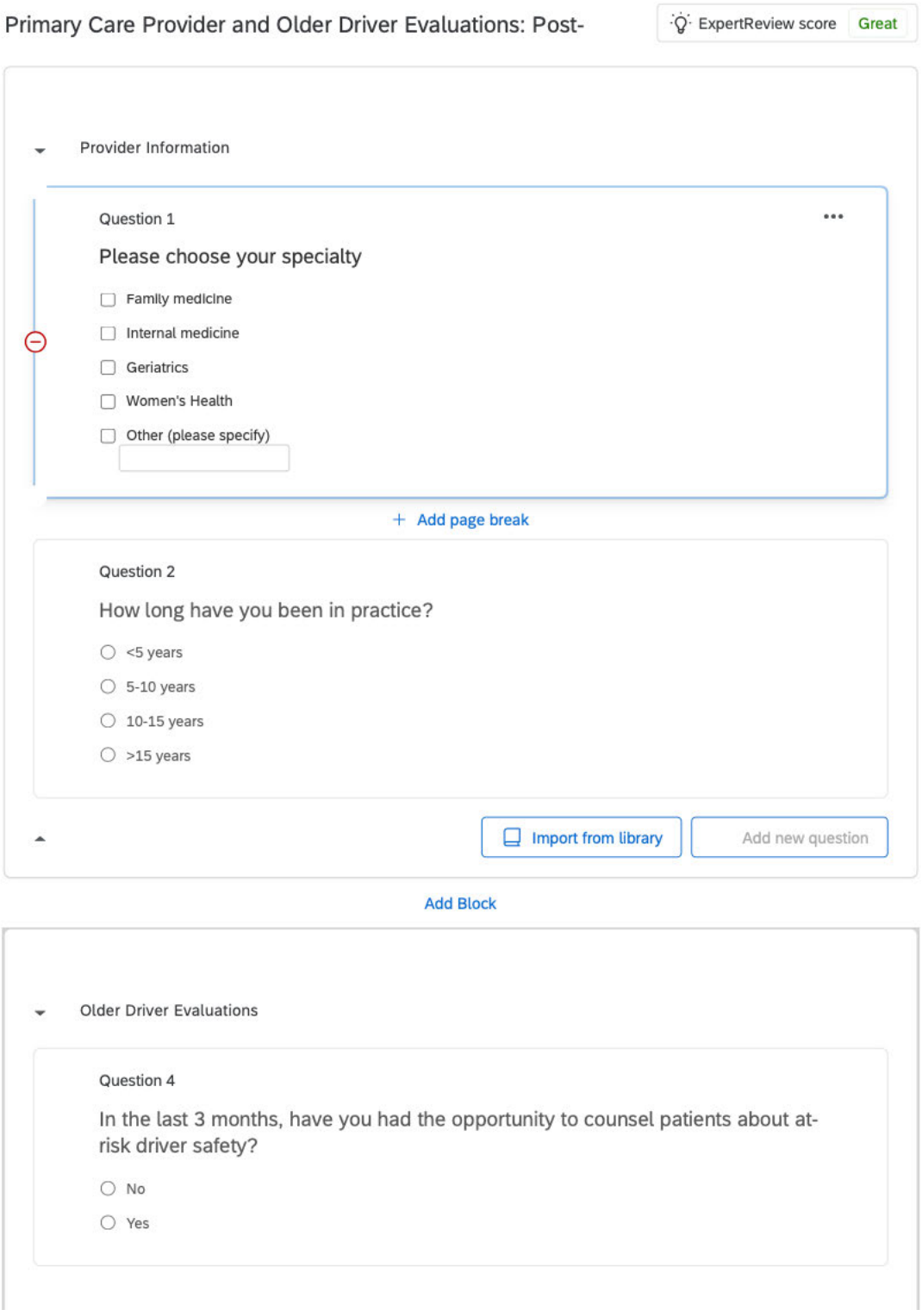
Add Block

End of Survey

We thank you for your time spent taking this survey.

Your response has been recorded.

Appendix I: Post-Intervention Survey



Question 5

In the last 3 months, have you used the following ICD-10 code for driving assessment: Driving safety issue Z91.89?

- ○ No
- ○ Yes

Question 7

Did you find the driver safety provider education and smart phrases helpful?

- ○ No
- ○ Yes

Question 3

Now after the provider education, how comfortable are you with talking to at-risk adults about driver safety?

- ○ Extremely uncomfortable
- ○ Somewhat uncomfortable
- ○ Neither comfortable nor uncomfortable
- ○ Somewhat comfortable
- ○ Extremely comfortable

Question 6

What are some barriers you continue to face when completing at-risk driver evaluations? (Select all that apply)

- ☐ Insufficient visit time
- ☐ Insufficient training regarding driver evaluations
- ☐ Unclear with PCP role in driver evaluation
- ☐ Lack of pt resources for safe driving
- ☐ No access to referral system
- ☐ Concerns for harm to pt-provider relationship

Import from library | Add new question

Add Block

End of Survey

We thank you for your time spent taking this survey.

Your response has been recorded.

Appendix J: ICD-10 Code Usage

Figure 1

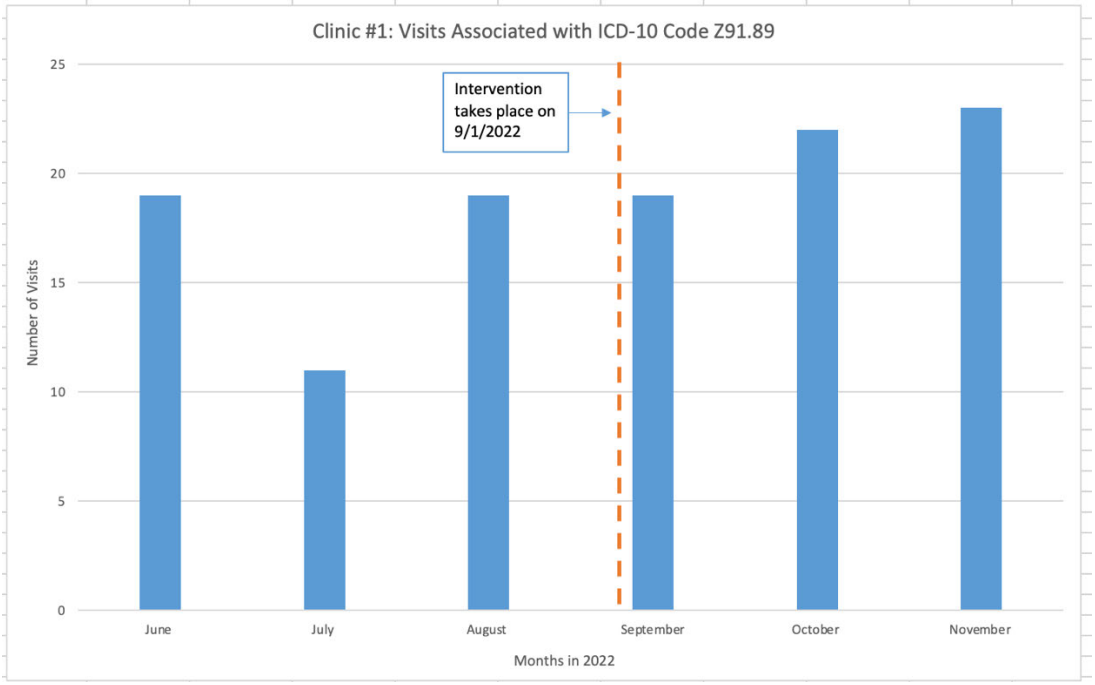


Figure 2