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Special Report from the CDC: Provider knowledge and practices around driving safety and fall prevention screening and recommendations for their older adult patients, DocStyles 2019

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Abstract

Introduction: Falls and motor-vehicle crashes (MVCs) are leading causes of unintentional injury deaths among older adults (65+) in the United States. Injury prevention resources exist to help healthcare providers reduce fall and MVC risk among older adult patients. However, awareness of these resources among healthcare providers is unclear.

Methods: Questions were included in the 2019 DocStyles survey that assessed healthcare provider awareness of three injury prevention resources: (1) the American Geriatrics Society's (AGS's) Clinician's Guide to Assessing and Counseling Older Drivers, (2) the Clinical Assessment of Driving Related Skills (CADReS), and (3) the Centers for Disease Control and Prevention's (CDC) Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative. We also explored the circumstances and current practices for counseling older adult patients on fall prevention and driving safety.

Results: Only 20% of providers reported awareness of any of the injury prevention resources. Providers were more likely to report either screening for fall risk or unsafe driving when an older adult presented with a fall concern (74.5%) or driving concern or recent crash (85.1%), compared to annual screening for fall risk (67.7%) or driving safety (47.7%). More providers reported discussing the increased fall or MVC risk associated with patient medications, referring patient for driving fitness evaluations, or discussing alternative transportation options with the patient after adverse events or patient-initiated concerns compared to routine annual discussions.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jsr.2023.06.011>.

Conclusion: Healthcare gaps persist in the screening and assessment of older adult risk factors for falls and unsafe driving. Limited provider awareness of clinical resources related to preventing older adult falls and unsafe driving may be contributing to these healthcare gaps.

Practical Applications: Improving healthcare provider awareness of these resources could help them identify older adults at risk of a fall or MVC and promote injury prevention efforts in their clinical practices.

Keywords

Injury Prevention; Fall; Motor Vehicle Crash; Health Behavior; Clinician Guidelines

1. Introduction

Unintentional injuries are a leading cause of deaths among older adults (aged 65 and older) in the United States (CDC WISQARS). Falls and motor-vehicle crashes (MVCs) are among the leading contributors to these injuries, accounting for approximately 70% of unintentional injury deaths in 2020 with over 36,500 fall-related deaths and 4,200 MVC driver deaths (CDC WISQARS, 2023; CDC WONDER, 2023; National Center for Statistics and Analysis, 2023). In 2020, falls accounted for 73% of the over four million unintentional injury emergency department (ED) visits among older adults with another 149,000 of these ED visits due to MVCs (CDC WISQARS, 2023).

Older adults are at an increased risk for falls and MVCs partly due to age-related changes in vision, cognition, gait, strength and balance, and other psychomotor skills (Ambrose et al., 2013; Bergen et al., 2019; Depestele et al., 2020; Falkenstein et al., 2020; Fraade-Blanar et al., 2018; Freeman et al., 2007; Kakara et al., 2023; Mamikonian-Zarpas & Laganá, 2015; Reed-Jones et al., 2013; Yamashita et al., 2012). Healthcare providers can promote aging without injury, including reducing risk of falls and MVCs, among their older adult patients by screening and assessing for risk factors that can then be addressed through both effective clinical and community strategies. Existing injury prevention resources, such as the Centers for Disease Control and Prevention (CDC)'s Stopping Elderly Accidents Death and Injuries (STEADI) initiative and the American Geriatrics Society (AGS)'s Clinician's Guide to Assessing and Counseling Older Drivers, recommend annual screening of older adults (Eckstrom et al., 2021; Pomidor, 2019, Panel on Prevention of Falls in Older Persons, 2011). The STEADI initiative offers healthcare providers tools and resources to assist with routinely screening and assessing older adults for fall risk (STEADI, 2023). Similarly, the Clinical Assessment of Driving Related Skills (CADReS) found in the Clinician's Guide to Assessing and Counseling Older Drivers, offers healthcare providers tools to identify impairments in vision, cognition, and motor or sensory functions that may impact driving safety (Pomidor, 2019).

Primary care providers report a lack of training or familiarity with recommendations from national clinical guidelines as a barrier to incorporating fall prevention into their clinical practice (Jones et al., 2011). Additionally, less than half (45.6%) of primary care providers reported using a standardized fall-risk assessment when they assess their patients for fall risk factors (Mark et al., 2020). Many providers believe it is their responsibility to assess their

older adult patients' driving capabilities; however, they are not confident in their abilities to do so or unsure of how to address any potential driving concerns found during the assessment (Betz et. al., 2015; Savoie et al., 2022). Furthermore, providers may not know of effective prevention strategies to recommend for reducing fall risk or addressing driving concerns so they may not want to screen when they can't recommend effective interventions. The aim of this study was to explore healthcare providers' knowledge and practices around: (1) driving safety and fall prevention screening and (2) recommendations for their older adult patients based on screening results. We compare the differences in knowledge between healthcare provider types and awareness of existing clinical resources for reducing these two leading causes of unintentional injury.

2. Methods

2.1. Study design

This analysis used data from the 2019 DocStyles survey, a web-based survey commissioned by Porter Novelli Public Services and conducted by Sermo, a widely used medical survey and social media network platform site for physicians (Porter Novelli Public Services, 2019; Sermo, 2023). The Sermo's Global Medical Panel has approximately 350,000 U.S. health care providers, 50,000 of which regularly participate in survey research (Porter Novelli Public Services, 2019). This survey was fielded between October 3, 2019, and November 3, 2019. Respondents were pulled from Sermo's Global Medical Panel and verified with a double opt-in sign up process. Respondents were sampled based on how active they were in the past, with preference given to respondents who had not participated in the previous year. Participation was voluntary and respondents could leave the survey at any time. An honorarium of \$40–85 was given based on how many questions were answered. CDC licensed these data from Porter Novelli Public Services (PNPS). PNPS adheres to professional standards set forth by the Council of American Survey Research Organizations. Respondents are informed that their answers are used for market research, and they may refuse to answer any question. No personal identifiers are included in the data file that is provided to CDC.

The survey had a set quota of 1000 physicians, which included a mix of family practitioners (FP) and internists (IM), and additional quotas for 250 obstetricians or gynecologists, 250 pediatricians, and a combined 250 nurse practitioners (NP) or physician assistants (PA). Initial invitations were sent to 2,696 panelists with a response rate of 65%, resulting in 1,750 total responses. The survey was limited to providers who practiced in the United States, were actively seeing patients, had been practicing for three or more years, and worked in an individual, group, or hospital practice. For our study, we limited to primary care providers (FP, IM, NP/PA) and excluded other provider types including pediatricians and obstetricians or gynecologists. We also excluded providers who did not see patients older than 65 years or were working only in inpatient settings. The final sample size of 1,022 primary care providers included 390 FP, 439 IM, and 194 combined NP and PA (Sermo, 2023).

2.2. Survey instrument

The full survey included 158 questions, which took a median of 31–33 minutes to complete. Demographic information (age, sex, race, ethnicity) and provider/practice characteristics (provider type, years in practice, number of patients seen per week, percent of patients who were older adults, practice location, and an approximate annual household income of the majority of their patients) were collected.

2.3. Survey questions

Questions related to fall and motor-vehicle crash prevention were included in the survey. Providers were asked if they had heard of any of the three injury prevention resources: (1) CDC's Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative; (2) the American Geriatrics Society's Clinician's Guide to Assessing and Counseling Older Drivers; and (3) Clinical Assessment of Driving Related Skills (CADReS). Providers were asked about the circumstances under which they screen for either fall or unsafe driving risks, discuss medications that may contribute to fall or unsafe driving risks, refer patients for a driving fitness evaluation, and discuss alternative transportation options with their older adult patients. Responses for screening circumstances included if a patient has concerns about falling or driving safety, if a patient is experiencing medication side effects, a routine annual assessment, or other circumstances. A list of the questions and response choices is included in Supplemental Table.

2.4. Analysis

Percentages and 95% confidence intervals were calculated using SAS 9.4 for all demographic and fall- and driving safety-related variables. Due to smaller sample sizes, NP and PA were combined into a single category (NP/PAs). Continuous variables were transformed into categorical variables (provider age [<45 , 45], number of years practiced [<10 , $10-19$, 20], average number of patients seen per week [$1-99$, 100]). Categorical variables included race/ethnicity and patients' household income; categories were combined if they had fewer than 20 observations. As a result, categories used for analysis were non-Hispanic White, non-Hispanic Asian, and a category combining remaining race/ethnicity responses (Other). Categories for patient household income were grouped as $\$49,999$, $\$50,000-\$99,999$, and $\$100,000$. Other categories for practice-related questions were not presented because of small counts. Responses were not presented, and percentages were suppressed, when counts were less than 20 observations. Percentages were flagged as unstable if based on 20–49 observations or if there was a relative standard error (RSE) 30.

Two-way t-tests, calculated using Microsoft Excel, were used to compare awareness of resources and adherence to clinician's guidelines by provider type. Bivariate analyses were conducted to determine characteristics that may be associated with awareness of clinician resources. Chi-square tests were calculated using SAS 9.4. P-values less than 0.05 were considered statistically significant in all analyses.

3. Results

Table 1 describes provider and practice characteristics and compares characteristics by provider type. Among survey respondents, more NP/PA respondents were female (76.2%) compared to FPs (35.4%) and IMs (29.4%) (Table 1). More NP/PA respondents reported being under age 45 (50.3%) compared to FPs (36.7%) and IMs (29.6%). NPs/PAs reported seeing fewer patients per week (62.7% with 1–99 patients per week) compared to FPs (44.9%) and IMs (40.5%). More IMs and NPs/PAs reported over 50% of their patients were older adults (52.4% and 46.6%, respectively) than FPs (27.4%).

A higher proportion of FPs reported screening for fall risk annually (75.4%), compared to IMs (65.6%, $p < 0.05$) and NPs/PAs (57%, $p < 0.05$) (Table 2). More FPs (60.3%) reported discussing medications that might increase fall risk with their patients annually compared to IMs (51.0%, $p < 0.05$) and NPs/PAs (43.5%, $p < 0.05$). More healthcare providers reported discussing how their patient's medications may increase their risk of falling when the patient presents with a fall injury or concerns about falling (73.4%), reports experiencing side effects (68.6%), or when the patient is starting a new medication (68.9%) compared to on an annual basis (53.1%).

When discussing medications that might impair driving performance with their older adult patients, providers were more likely to report discussing medications when the patient presents with a concern about their driving or a recent crash (77.3%), reports side effects (67.4%), or was starting a new medication (74.5%) compared to annually (44.9%) (Table 2). FPs (50.3%) were more likely to discuss medications linked to unsafe driving annually compared to IMs (43.1%) or NPs/PAs (38.3%) ($P < 0.05$). Most providers referred older adult patients for driving fitness evaluations when the patient or family had concerns regarding driving safety or a recent motor-vehicle crash (79.4%), or the patient was showing vision, cognitive, or motor/sensory function problems that might affect the patient's driving (69.4%) compared with annually (20.0%). Most providers discussed alternative transportation options with their patient when the patient or family had concerns regarding driving safety or a recent motor-vehicle crash (86.0%), or the patient was showing vision, cognitive, or motor/sensory function problems that might affect the patient's driving (76.4%) compared with annually (24.0%) (Table 2).

Overall, awareness of clinician resources for fall and motor-vehicle crash prevention was low (20% or less) (Fig. 1). Awareness of CDC's STEADI initiative for fall prevention ranged from 17.1% to 20.2%, depending on provider type. Awareness of the AGS Clinician's Guide and CADReS ranged from 14.6% to 18.0% and 12.3% to 18.5%, respectively, depending on provider type.

4. Discussion

We found that about two thirds of providers in the DocStyles survey reported annually screening their older patients for fall risk and less than half reported annually screening their older patients for unsafe driving. Providers were more likely to screen and recommend interventions for fall risks and unsafe driving when their patients brought up concerns or

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after an adverse event had occurred, such as a fall injury or MVC. Screening for future fall or MVC risk only when a patient presents with a concern may miss many older adults that are at risk. Previous reports indicate that even when an older adult is concerned about a fall or unsafe driving, they may be reluctant to bring this up to their provider out of fear of losing their independence (Betz et al., 2016; Jones et al., 2011; Smith et al., 2015; Stevens et al., 2012).

Routine and recurring conversations with older adult patients about their risk of falls or MVCs are important for providers to identify older adults at risk and recommend effective ways to manage and reduce these risks (Betz et al., 2013; Betz et al., 2016). While a majority of older adults believe falls can be prevented, they often consider prevention efforts only as a form of hazard reduction, such as holding on to furniture, and not evidence-based strategies, such as medication management or Tai Chi (Henry et al., 2022; Yardley et al., 2006a). Older adults are often supportive of regular discussions about injury prevention with their providers before a serious event occurs, but they may be reluctant to initiate these conversations (Betz et al., 2013; Betz et al., 2016; Jones et al., 2011; Smith et al., 2015; Stevens et al., 2012). Healthcare provider led conversations with their older patients can help reinforce that injuries can be prevented, and individuals can manage risk factors without sacrificing their personal identity and autonomy (Yardley et al., 2006a).

The older adult population in the United States is growing and with it the burden of falls and MVC. In 2020, older adults represented approximately 42% of nonfatal emergency department visits for falls and 9% of nonfatal emergency department visits for motor-vehicle occupant unintentional injuries (CDC WISQARS, 2023). The health burden associated with falls and MVCs is expected to further increase as the older adult population is projected to increase from 56.4 million in 2020 to over 82 million in 2040 (CDC WONDER, 2023). The older populace are at an increased risk of falls and MVC due to chronic conditions, increased medication use, and age-related change that affects their physical ability and cognition (Ambrose et al., 2013; Depestele et al., 2020; Falkenstein et al., 2020; Fraade-Blanar et al., 2018; Freeman et al., 2007; Kakara et al., 2023; Mamikonian-Zarpas & Laganá, 2015; Meuleners et al., 2011; Monárrez-Espino et al., 2014; Reed-Jones et al., 2013; Yamashita et al., 2012).

Older adults trust that their healthcare providers will provide information on how to prevent a fall and ensure safe driving when they need it, and specific recommendations from a provider can influence adoption of prevention strategies (Betz et al., 2016; Dickinson et al., 2011; Yardley et al., 2006b). Healthcare providers can help their older adult patients manage their risk of falling and unsafe driving by performing regular screenings to determine their patient's risk, assessing the modifiable factors contributing to their patient's risk, and promoting effective strategies to reduce and manage those risk factors (Eckstrom et al., 2017; Fausto et al., 2021; Johnston et al., 2019). Resources like CDC's STEADI and AGS's Clinician's Guide, including CADReS, have been developed to help assist healthcare providers in implementing fall prevention and driver safety efforts into their practices.

Ensuring that healthcare providers feel confident in both assessing fall risk and recommending potential solutions that address their patient's specific risk factors is essential

to effective clinical fall prevention. The STEADI Algorithm, part of the STEADI initiative, highlights the steps for fall prevention efforts as screening for fall risk, assessing at risk older adults for modifiable risk factors, and recommending evidence-based strategies for each identified risk factor (STEADI, 2023). The STEADI's Coordinated Care Plan to Prevent Older Adult Falls provides a clinical framework for the integration and evaluation of fall prevention initiatives into primary care settings. STEADI-based fall prevention has been successfully implemented into the clinical workflow of various healthcare systems with screening, assessing, and intervening with older adult patients to prevent falls becoming a routine part of patient care (Casey et al., 2016; Eckstrom et al., 2017; Johnston et al., 2019). In one implementation, at-risk patients given a fall prevention plan of care based on their screening and assessment had 40% lower odds of fall-related hospitalizations compared with at-risk patients not given a fall prevention plan of care (Johnston et al., 2019).

It is important that healthcare providers also feel comfortable initiating driving safety conversations with their patients, including having knowledge and confidence in providing patients with useful strategies to maintain or improve driving safety and other forms of community mobility. The Clinician’s Guide to Assessing and Counseling Older Drivers is a collaborative effort between the American Geriatrics Society and the National Highway Traffic Safety Administration (NHTSA) (Pomidor, 2019). The purpose of the guide is to support healthcare providers in identifying and addressing driving challenges. The guide provides information about driving safety and challenges for older adults and an algorithm for screening patients, referring at-risk patients for further evaluation, and determining next steps as appropriate. The Clinical Assessment of Driving Related Skills (CADREs) is a screening resource included in the guide that can be used in office settings. Additionally, the American Geriatrics Society has a mobile app called Safe Older Drivers to assist providers in using the Clinician’s Guide with their patients (American Geriatrics Society, 2023).

Despite the availability of clinical resources to assist healthcare providers with fall and MVC prevention efforts for over 10 years, this study showed that a majority of providers were unaware of these resources. In our study, awareness of these resources ranged from 12% to 20%, depending on the specific resource and provider type. Jones et al., (2011) found that less than 10% of providers based their fall prevention on a clinical guideline, citing a lack of familiarity with national clinical guidelines as a common barrier (Jones et al., 2011). This is similar for driving safety practices with 69% of providers reported being unaware of the American Medical Association's guidelines on driving (Miller & Morley, 1993). Improving provider awareness of these resources is a clear step needed to help reduce older adult falls and motor-vehicle crashes.

For both fall prevention and driving safety, healthcare providers should follow up these screenings by assessing for risk factors that can be changed and providing recommendations for reducing patient risks. Significantly more providers reported having discussions with their older adult patients about planning (non-driving) transportation options or making referrals for a driving fitness evaluation when a medical concern that could inhibit their driving ability was present or when the patient brought up a recent crash or concern about their driving safety, compared to performing on an annual basis. This emphasizes a potential

need for providers to regularly initiate conversations with their patients about driving safety to ensure that these interventions are provided when needed.

Managing and optimizing older adults' prescribed medications is an important part of fall prevention and driver safety. Recent studies have found that older drivers use a median of seven medications (Hill et al., 2020) and that almost one-fifth use at least one potentially inappropriate medication (Li et al., 2019). Similarly, about one-fifth of older adults report using a medication that can increase their risk of falling, and most are unaware of fall risks associated with their medications (Haddad et al., 2019). Previous studies have noted that assessments for high-risk medications are a specific area in need of improvement for fall prevention care (Phelan et al., 2016). We found that roughly half of providers discussed the potential impacts of their patients' medications on falls (53%) and driving (45%) risk annually. Two-thirds or more of providers in our study reported discussing medications that might increase their risk of falling or impair their driving performance when the patient was starting a new medication, reported side effects for a currently prescribed medication, brought up concerns about falling or driving safety, or presented with a fall or recent crash.

Previous research has shown mixed results for providers discussing medications with their older adult patients as part of fall prevention. One study found over 80% of participating healthcare providers reported having discussions with most or all of their older adult patients about their prescribed medications (Smith et al., 2015). It is unclear how the discussions related to the patient's fall risk, as less than 40% of these providers reported screening for fall risk (Smith et al., 2015). Another study found that less than 20% of older adults on medications reported having talked with anyone in the past 12 months about medications that could increase their risk of falling, despite a majority reporting being open to changing their medications associated with increased fall risks if recommended by a healthcare provider (Haddad et al., 2019). It is important that these discussions include the older adult's risk of falling and how their medications may impact this risk. More research can contribute to a better understanding of facilitators and barriers for providers around patients' medication review for decreasing injury risk, and what is needed to motivate providers to have these conversations.

Provider practices (including screening for fall and unsafe driving risks, discussing patient risk factors and treatment strategies, and making referrals to address patient risk factors) all varied by the type of clinician and patient circumstances. It is unclear why differences between provider types exist. While one study concluded that nurses are well positioned to discuss age-related changes that could impact driving ability with their older adult patients, they also found several barriers that limited their ability to do so, including a lack of training on assessing risk factors, a lack of time for assessments and counseling, a lack of local transportation options, and a fear of negative reactions when introducing the topic (Savoie et al., 2022). These barriers were found to be consistent among other healthcare providers as well (Betz et al., 2015; Betz et al., 2013; Savoie et al., 2022).

Additional systematic differences between provider types in their training, scope of practice, or administrative policies may contribute to differences in clinical practice between provider types (Burns et al., 2018; Jones et al., 2011). CDC's STEADI and the AGS/NHTSA

CADReS initiatives provide training and tools for healthcare providers to screen, assess, and intervene with older adults to reduce driving and fall injuries. Medical school curriculums could be modified to include materials from these initiatives to provide training on effective methods for reducing older adult injury. Older patients have multiple competing healthcare priorities, so training might not be sufficient to increase integration of injury risk assessments and recommendations during office visits, given the limited time available. Members of the patient healthcare team other than the primary care provider (e.g., nurses, medical assistants) may be better able to perform parts of the screening, assessing, and intervening processes and might provide patient education on prescribed strategies. Also, injury prevention can be delivered in a variety of settings outside of the outpatient visit, including clinical (emergency departments, physical therapy visits) and non-clinical (health fairs, community health worker home visits) settings. Additional research is needed to understand the effectiveness and cost effectiveness of these different configurations for delivering prevention and how best to incentivize effective prevention configurations.

This study had several limitations. First, the DocStyles survey data cannot be generalized beyond the study's sample for several reasons: (1) individuals with high prior response rates were prioritized for inclusion and respondents who did not participate in the prior year's DocStyles survey were not included; (2) DocStyles is a paid survey through a specific survey platform which likely only reaches a specific subset of providers; and (3) related to the first two reasons, the survey is not weighted to an external (e.g., the United States) population of providers. Second, the study is reliant on the self-reported data of the survey respondents, meaning it is susceptible to recall and social desirability biases. Finally, the decision to merge the responses from NPs and PAs into one group may have resulted in an overestimation of the performance of one group and potentially an underestimate of the performance of the other group in the sample.

5. Conclusions

Many primary care providers are not screening their older adult patients for risks of falls and unsafe driving on an annual basis. Providers were most likely to provide recommendations related to fall prevention and unsafe driving when a related concern is brought up by the patient, their caregiver, or a family member during an office visit. Provider awareness of clinical resources related to fall and motor-vehicle crash prevention among older adults was generally similar among provider types, however, awareness of each resource was low. Future efforts to improve provider awareness of these resources may encourage providers to follow the guidance on falls and driving safety screenings and interventions and improve provider practices related to fall prevention and driving safety.

5.1. Practical applications

Among older adults, falls and unsafe driving continue to be leading causes of morbidity and mortality. Healthcare providers report low rates of regular and annual screenings and assessments of risk factors for falls and unsafe driving. The limited awareness of clinical resources related to the prevention of falls and unsafe driving found in this study highlights an important need to improve the ability and capacity of healthcare providers

to initiate these critical conversations in order to help improve adoption of effective injury prevention strategies. Increasing provider awareness and uptake of the current clinical tools and resources for older adult fall prevention and safe driving guidance could enable more patient provider discussions about injury risk reduction. Furthermore, this could increase the screening for and assessment of older adult falls and unsafe driving risk factors and the use of related evidence-based interventions, resulting in reduced morbidity and mortality.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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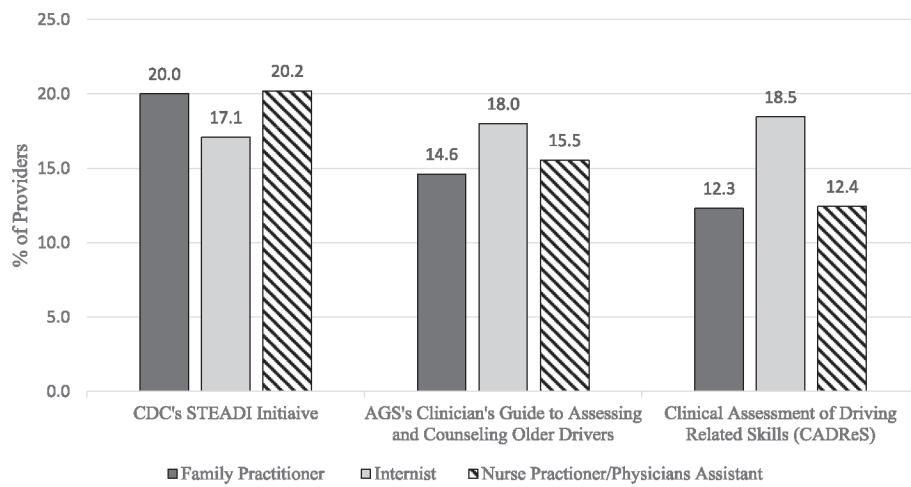


Fig. 1.

Percent of healthcare providers by type reporting awareness of clinician resources for fall and motor vehicle crash prevention among older adults, DocStyles 2019.

Provider and practice characteristics of primary care providers by type of provider, DocStyles 2019.

	Provider Type					
	All Providers (n = 1022)		FP ^I (n = 390)		IM ^I (n = 439)	
	% (95%CI ²)	% (95%CI ²)	% (95%CI ²)	% (95%CI ²)	% (95%CI ²)	% (95%CI ²)
Demographic Characteristics						
Sex						
Male	59.5 (56.5–62.5)	64.6 (59.9–69.4)	70.6 (66.3–74.9)	23.8 (17.8–29.9)		
Female	40.5 (37.5–43.5)	35.4 (30.6–40.1)	29.4 (25.1–33.7)	76.2 (70.1–82.2)		
Age						
<45	36.2 (33.3–39.2)	36.7 (31.9–41.5)	29.6 (25.3–33.9)	50.3 (43.2–57.3)		
45	63.8 (60.8–66.7)	63.3 (58.5–68.1)	70.4 (66.1–74.7)	49.7 (42.7–56.8)		
Race/Ethnicity						
White, non-Hispanic	67.8 (64.9–70.7)	70.0 (65.4–74.6)	59.0 (54.4–63.6)	83.4 (78.2–88.7)		
Asian, non-Hispanic	20.2 (17.7–22.6)	17.4 (13.7–21.2)	28.5 (24.2–32.7)	– ⁺		
Other, ³	12.0 (10.0–14.0)	12.6 (9.3–15.9)	12.5 (9.4–15.6)	– ⁺		
Provider/Practice Characteristics						
Number of Years in Practice						
< 10	19.9 (17.4–22.3)	18.7 (14.8–22.6)	15.5 (12.1–18.9)	32.1 (25.5–38.7)		
10–19	38.4 (35.4–41.3)	41.0 (36.1–45.9)	37.1 (32.6–41.7)	35.8 (29.0–42.5)		
20	41.8 (38.8–44.8)	40.3 (35.4–45.1)	47.4 (42.7–52.1)	32.1 (25.5–38.7)		
Average Number of Patients per Week						
1–99	46.4 (43.3–49.4)	44.9 (39.9–49.8)	40.5 (35.9–45.1)	62.7 (55.9–69.5)		
100	53.6 (50.6–56.7)	55.1 (50.2–60.1)	59.5 (54.9–65.1)	37.3 (30.5–44.1)		
Percentage of Patients seen Weekly who are Older Adults						
1–50%	58.2 (55.2–61.2)	72.6 (68.1–77.0)	47.6 (42.9–52.3)	53.4 (46.3–60.4)		
51–100%	41.8 (38.8–48.8)	27.4 (23.0–31.9)	52.4 (47.7–57.1)	46.6 (39.6–53.7)		
Practice Location						
West	20.2 (19.7–22.6)	21.5 (17.5–25.6)	19.8 (16.1–23.6)	18.1 (12.7–23.6)		
Midwest	22.0 (19.5–24.6)	22.6 (18.4–26.7)	20.5 (16.7–24.3)	24.4 (18.3–30.4)		

		Provider Type			
		All Providers (n = 1022)	FP ^I (n = 390)	IM ^I (n = 439)	NP/PA ^I (n = 193)
		% (95%CI ²)	% (95%CI ²)	% (95%CI ²)	% (95%CI ²)
Northeast		24.9 (22.2–27.5)	20.8 (16.7–24.8)	28.7 (24.5–32.9)	24.4 (18.3–30.4) ⁺⁺
South		33.0 (30.1–35.9)	35.1 (30.4–39.9)	31.0 (26.6–35.3)	33.2 (26.5–39.8)
Annual Household Income of Majority of Patients					
\$49,999		31.4 (28.6–34.3)	34.6 (29.9–39.3)	28.5 (24.2–32.7)	31.6 (25.0–38.2)
\$50,000–\$99,999		42.1 (39.0–45.1)	40.0 (35.1–44.9)	46.7 (42.0–51.4)	35.8 (29.0–42.5)
\$100,000		26.5 (23.8–29.2)	25.4 (21.1–29.7)	24.8 (20.8–28.9)	32.6 (26.0–39.3)

[†]Estimates based on less than 20 respondents are considered unreliable and are suppressed.

⁺⁺Estimates based on 20 to 49 respondents or RSE ≥ 30 are considered unstable and should be interpreted with caution.

^IProvider type abbreviated family practitioner (FP), internist (IM), and nurse practitioner or physician's assistant (NP/PA).

²95% Confidence Interval is abbreviated 95% CI.

³Non-Hispanic Black or African American, non-Hispanic Native Hawaiian or other Pacific Islander, non-Hispanic American Indian or Alaska Native, Hispanic, other race, and reported two or more races were combined into one category due to small n < 20 for each individual ethnicity/race.

Table 2

Provider reported circumstances for screening and assessment of older adults for falls and driving safety, DocStyles 2019.

Provider behaviors	Prevalence		T-test					
	Total (1022)	FP ^I (390)	IM ^I (439)		NP/PA ^I (193)		FP ^I - NP/PA ^I	IM ^I - NP/PA ^I
			% (95% CI ²)	% (95% CI ²)	% (95% CI ²)	% (95% CI ²)		
Circumstances for fall risk screening								
Present with fall concerns ³	74.5 (71.8–77.1)	72.6 (68.1–77.0)	76.1 (72.1–80.1)	74.6 (68.5–80.8)	0.2471	0.6000	0.6922	
Reports fall or fall injury	68.7 (65.8–71.5)	67.7 (63.0–72.3)	67.2 (62.8–71.6)	74.1 (67.9–80.3)	0.8797	0.1135	0.0837	
Annually	67.7 (64.8–70.6)	75.4 (71.1–79.7)	65.6 (61.2–70.1)	57.0 (50.0–64.0)	0.0021	<0.0001	0.0391	
Circumstances for medication discussion for fall risk								
Present with fall injury or fall concerns ⁴	73.4 (70.7–76.1)	73.6 (69.2–78.0)	76.5 (72.6–80.5)	65.8 (59.1–72.5)	0.3275	0.0513	0.0049	
Reports side effects	68.6 (65.7–71.4)	67.4 (62.8–72.1)	71.1 (66.8–75.3)	65.3 (58.6–72.0)	0.2577	0.6047	0.1469	
New medication	68.9 (66.0–71.7)	71.0 (66.5–75.5)	65.1 (60.7–69.6)	73.1 (66.8–79.3)	0.0705	0.6091	0.0506	
Annually	53.1 (50.1–56.2)	60.3 (55.4–65.1)	51.0 (46.4–55.7)	43.5 (36.5–50.5)	0.0076	0.0001	0.0825	
Circumstances unsafe driving screening								
Present with driving concerns or recent crash ⁵	85.1 (82.9–87.3)	86.4 (83.0–89.8)	86.6 (83.0–89.8)	79.3 (73.5–85.0)	0.9498	0.0268	0.0203	
Presents with medical concerns ⁶	77.9 (75.3–80.4)	79.5 (75.5–83.5)	77.0 (73.0–80.9)	76.7 (70.7–82.7)	0.3862	0.4386	0.9324	
Annually	47.7 (44.7–50.8)	51.0 (46.1–56.0)	47.6 (42.9–52.3)	41.5 (34.5–48.4)	0.3265	0.0294	0.1529	
Circumstances for medication discussion for unsafe driving risk								
Present with driving concerns or recent crash ⁵	77.3 (74.7–79.9)	77.4 (73.3–81.6)	80.0 (76.2–83.7)	71.0 (64.6–77.4)	0.3767	0.0895	0.0132	
Report side effects	67.4 (64.5–70.3)	70.5 (66.0–75.0)	67.2 (62.8–71.6)	61.7 (54.8–68.5)	0.3046	0.0316	0.1777	
New medication	74.5 (71.8–77.1)	79.0 (74.9–83.0)	68.1 (63.7–72.5)	79.8 (74.1–85.5)	0.0004	0.8190	0.0026	
Annually	44.9 (41.9–48.0)	50.3 (45.3–55.2)	43.1 (38.4–47.7)	38.3 (31.5–45.2)	0.0379	0.0066	0.2692	
Circumstances for driving fitness evaluation referral								
Present with driving concerns or recent crash ⁵	79.4 (76.9–81.8)	81.5 (77.7–85.4)	81.8 (78.2–85.4)	69.4 (62.9–75.9)	0.9296	0.0010	0.0005	
Presents with medical concerns ⁶	69.4 (66.5–72.2)	69.2 (64.6–73.8)	71.1 (66.8–75.3)	65.8 (59.1–72.5)	0.5637	0.4043	0.1860	
Annually	20.0 (17.5–22.4)	19.7 (15.8–23.7)	21.6 (17.8–25.5)	16.6 ⁺ (11.3–21.8)	0.5021	0.3574	0.1442	
Circumstance for discussion for alternative transportation options								
Present with driving concerns or recent crash ⁵	86.0 (83.9–88.1)	87.2 (83.9–90.5)	87.9 (84.9–91.0)	79.3 (73.5–85.0)	0.7450	0.0129	0.0046	

Provider behaviors	Prevalence				T-test			
	Total (1022)	FP ¹ (390)	IM ¹ (439)	NP/PA ¹ (193)	FP ¹ - NP/PA ¹	IM ¹ - NP/PA ¹		
	% (95%CI ²)	p	p	p	p			
Presents with medical concerns ⁶	76.4 (73.8-79.0)	77.7 (73.6-81.8)	76.8 (72.8-80.7)	73.1 (66.8-79.3)	0.7512	0.2171	0.3180	
Annually	24.0 (21.4-26.6)	25.4 (21.1-29.7)	23.9 (19.9-27.9)	21.2 ⁷ (15.5-27.0)	0.6251	0.2714	0.4633	

Bold p-values indicates significance of $p < 0.05$ for two-way t-test.

Refer to supplemental file for list of survey questions.

Provider responses for “Other circumstance not listed above” or “Never” were not reported. < 5% of providers responded “Never” for most of the questions except 97 providers (9.5%) reported never for “When does provider refer older adult patients for evaluation for driving fitness”.

⁷Estimates based on 20 to 49 respondents or RSE ≥ 30 are considered unstable and should be interpreted with caution.

¹Provider type abbreviated family practitioner (FP), internist (IM), and nurse practitioner or physician's assistant (NP/PA).

²95% Confidence Interval is abbreviated 95% CI.

³Combined “if patient has concerns about falling” and “if caregiver/family member has concerns about patient’s fall risk or a recent fall” responses.

⁴Combined “if patient has concerns about falling” and “if patient presents with a fall injury” responses.

⁵Combined “if patient has concerns about driving safety or reports recent motor vehicle crash” and “if caregiver/family member has concerns about patient’s driving safety or recent crash” responses.

⁶Vision, cognitive, or motor/sensory function problems that might affect driving.