CLINICAL PRACTICE

Don't Fall for That: A Residency Curricular Innovation about Fall Prevention

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Perm J 2020;24:19.058

E-pub: 12/06/2019

https://doi.org/10.7812/TPP/19.058

ABSTRACT

Introduction: Amid a growing geriatric population and rise in frailty-related morbidity, fall prevention represents an opportunity to improve patient outcomes and reduce health care costs. Traditional lectures on geriatric content have had limited impact on physician behaviors; however, use of multimodal teaching can be more effective in building knowledge and skills.

Objective: To develop a novel, engaging fall prevention program to empower internal medicine residents to identify and manage patients at risk of falls and fall-related injuries.

Methods: Two 20-minute multimodal workshops were created: 1) a classroom session with a video depicting a fall scenario, a team exercise ("Where's the Fall Risk?") and review of the American Geriatrics Society Beers Criteria; and 2) a small-group session reviewing a screening algorithm, case study, physical examination maneuvers, and patient resources.

Innovation: The first workshop included a 5-minute Kaiser Permanente video depicting an older couple whose travel plans are upended by a fall and how they modify their home and lifestyle, a competitive game in which trainees identify fall hazards, an overview of Beers Criteria, and Medical Knowledge Self-Assessment Program questions to apply knowledge to practice. The second workshop, held in small groups before clinic, included a discussion of the Centers for Disease Control and Prevention's fall prevention screening algorithm, review of a case, and education on how to properly perform the Timed Up and Go test.

Conclusion: Fall prevention remains an important yet undertaught topic for trainees and practicing physicians. These brief multicomponent workshops can be easily implemented and adapted for all clinical learners.

INTRODUCTION

By 2060, the number of adults aged 65 years and older is estimated to double to more than 98 million and account for one-fourth of the US population.[1] With this increase comes the need for more geriatrics-trained health care practitioners to identify and prevent adverse health outcomes in our older adult population. Although geriatrics competencies are increasingly becoming a part of medical training, educational barriers persist, including lack of time, shortage of geriatrics-trained educators, stigma against older adults, and low learner interest.[2] The engagement of faculty and residency program leadership, the commitment to geriatrics education, and the incorporation of on-site clinical teaching are key factors in the adoption of effective geriatrics programs.[3,4]

Of the geriatric competencies, fall prevention education remains a major concern that is undertaught in medical education. Every year, 1 in 4 older adults reports a fall or fall-related injury, resulting in serious morbidity, loss of independence, or death.[5] The American Geriatrics Society and the British Geriatrics Society estimate that 24% of falls can be prevented.[6] Since 2011, the US Affordable Care Act has provided Medicare beneficiaries with a free annual examination, which requires a review of individual functional level and safety (fall risk assessment), along with provision of personal prevention plan services.[7,8] However, during busy clinical practice with competing priorities, fall risk assessment is often overlooked.

Previous studies have shown that conventional methods for teaching geriatric content have been less effective and that multifaceted approaches improve student perceptions and confidence in geriatric practice.[9] More geriatric education has also been shown to increase interest in geriatrics.[4] The course described in this article was developed by a resident physician (DL) in collaboration with key program faculty (NT, JL) to close the educational gap by incorporating multiple learning modalities, improve workflow, and provide resources for physicians in training.

METHODS

This project began as a resident-led quality improvement program that identified a gap in fall prevention education through a root cause analysis of low fall risk screening rates in the outpatient clinic. The curriculum addressing this gap was developed for internal medicine residents at Kaiser Permanente (KP) Oakland Medical Center in CA, 1 of 21 medical centers in KP Northern California. Nationally, KP is a large integrated health care delivery system with 8 Regions across the country, serving an estimated 12 million members.[10] The goal of this educational program was to improve residents' understanding of fall prevention, encourage faculty involvement and mentorship, provide on-site clinical teaching, and introduce national and regional fall prevention resources.

This course was structured as two 20-minute workshops, with the first session held in the classroom setting using interactive exercises and the second session held in the resident clinic. We used publicly available resources from the KP Health Engagement and Wellness Services Web site (https://healthengagement.kaiserpermanente.org/)[11] and the Centers for Disease Control and Prevention (CDC) Stopping Elderly Accidents, Deaths & Injuries (STEADI) program (www.cdc.gov/steadi/).[12] The workshops are detailed in the next section.

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Keywords: curricular innovation, fall prevention, geriatrics, medical education, screening

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INNOVATION

Workshop 1: Interactive Workshop in Classroom

The first workshop provided an introduction to fall prevention for resident physicians using multiple methods of learning. This workshop started with a 5-minute video clip of an older couple whose travel plans were upended by a fall. Participants watched as the couple modified their home, wardrobe, and lifestyle to prevent future falls (http://healthengagement.kaiserpermanente.org/wellness-topics/healthy-aging/preventing-falls).[13] Residents then formed teams to compete in a competitive and interactive game titled, "Where's the Fall Risk?" (https://pogoe.org/productid/21999).[14] Teams were given a total of 5 minutes to identify as many common fall hazards in the home setting (eg, shoes, stairs, cords) and countermeasures (eg, handrails for the stairs) as possible. After a group discussion and show-and-tell of the identified hazards, prizes were awarded to the team with the highest number of fall risks identified.

Workshop participants then learned about the 2015 American Geriatric Society Beers Criteria,[15] which educate health care practitioners on medications that are potentially inappropriate for older adults and whose prescribing should be assessed. Pocket cards with a list of these medications were provided to residents during this training session. The final portion of this workshop was a review of polypharmacy and fall prevention using multiple-choice questions from the American College of Physicians Medical Knowledge Self-Assessment Program (MKSAP) 17, an internal medicine certification preparation resource.[16] Please see the Sidebar: Resources Used in Fall Prevention Workshop 1—Interactive Workshop in Classroom for a complete list of Web site links used in this workshop.

Workshop 2: Small-Group Workshop in the Clinic

The second workshop was designed to reinforce and extend the classroom learning by teaching a practical approach to fall prevention, with the goal of anchoring knowledge and applying clinical skills. The workshop was implemented during the weekly preclinic conference in the resident physician clinic and was facilitated by primary care attending physicians to provide real-world experience and mentorship for residents. The small groups were composed of 2 clinic attending physicians and up to 5 residents. The group started by reviewing the robust patient education (www.cdc.gov/steadi/patient.html) and provider materials (www.cdc.gov/steadi/materials.html) available through the CDC STEADI Web site.[12] Residents reviewed fall risk screening modalities for older adults, which include the "Stay Independent" brochure and the "Algorithm for Fall Risk Screening, Assessment, and Intervention,"[17] and then applied this to a CDC case study.[12] A laminated version of the STEADI pocket guide for providers,[18] with information regarding screening methods and interventions, was given to residents to help facilitate workflows. Key questions for fall risk screening based on the CDC algorithm[12] included the following: 1) "Have you fallen in the past year? If yes, how many times? Were you injured?"; 2) "Do you feel unsteady when standing or walking?"; and 3) "Do you worry about falling?" Answering "yes" to any of these questions prompted further evaluation and interventions.

Residents subsequently watched and performed the Timed Up and Go test (https://youtu.be/BA7Y_oLElGY),[19] a physical examination maneuver to assess gait, strength, and balance problems. To better understand local resources for patients, participants reviewed the available information on the KP Health Engagement and Wellness Services Web site with a focus on the "Preventing Falls" section (http://healthengagement.kaiserpermanente.org/wellness-topics/healthy-aging/preventing-falls).[13] The Web site has patient handouts, including a checklist for fall prevention in the home, osteoarthritis exercises, general information about bone health, and a link to local classes and health coaching. The small-group setting allowed for discussion of individual questions and sharing of best practices. The practical skills learned during this session were then used by trainees during their clinic appointments to screen older adults for falls.

Resources Used in Fall Prevention Workshop 1—Interactive Workshop in Classroom

"Preventing Falls" video. Kaiser Permanente. Health Engagement and Wellness Services[1]: www.healthengagement.kaiserpermanente.org/wellness-topics/healthy-aging/preventing-falls

Interactive Game: "Where's the Fall Risk?" Kaiser Permanente Oakland Medical Center. Portal of Geriatrics Online Education[2]: www.pogoe.org/productid/21999

American Geriatrics Society (AGS) 2015 Beers Criteria Didactic.[3] AGS Beers Criteria Pocket Card. 2019[4]: www.geriatricscareonline.org/ProductAbstract/2019-ags-beers-criteria-pocketcard/PC007

Medical Knowledge Self-Assessment Program (MKSAP 17), General Internal Medicine Board review, Geriatric Medicine, Questions 47 and 160 (no longer available for purchase from American College of Physicians Web site)

DISCUSSION

The geriatric population is expected to grow exponentially during the next 4 decades.[1] The risk of falls and subsequent fracture in this population is high. Given the shortage of geriatricians, educational programs to teach core geriatric principles to all health care practitioners and build interest among trainees is pivotal for ensuring quality health care. The educational program described in this article introduced fall prevention to resident physicians using multiple learning modalities to foster confidence and efficiency in patient screening and

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evaluation. The intent was to improve awareness of important screening tools while providing care for older adults with complex comorbidities that often drive the busy clinic visit.

The response to the program was overwhelmingly positive through standard anonymous course feedback and the novel curriculum was embraced by both residents and faculty. This type of program introduces residents to fall screening skills they can use in clinical practice, while providing attending physicians the opportunity to review quick physical examination maneuvers, screening tools, and local resources. The highlights of this interactive program included the gamification of "Where's the Fall Risk?"[14] as well as a review of publicly available resources for practitioners and patients, including the convenient CDC STEADI provider pocket guide for quick review[18] and mastering quick screening maneuvers such as the Timed Up and Go.[19]

These teaching sessions are now incorporated as a core component of the KP Oakland Medical Center's internal medicine residency curriculum for subsequent years. This curriculum can be easily implemented at other training programs as part of academic didactic sessions (eg, addressing osteoporotic fracture prevention or geriatric health). For the busy primary care practitioner, these workshops can be adapted into a single 20-minute session with the focus on the screening algorithm, physical examination maneuvers, and health care practitioner and patient resources. The development of the workshops into a single session can ultimately serve as a refresher for the already practicing primary care practitioner.

Key to the successful development of this program was the focus on trainee-faculty partnership, in which the course was designed from a peer trainee's perspective with faculty input. Multiple teaching methods were used to augment learning, including the creation of a fall prevention game. Previous studies have shown that the use of games can improve learner retention of information.[20,21] "Where's the Fall Risk?"[14] was developed specifically for this course to help trainees not only to learn about and to teach patients the potential hazards in patients' homes but also to think critically about how to mitigate the dangers of the fall risk. Medical residency training programs may want to consider similar approaches to trainee education in which trainee-faculty partnerships can create novel curricular workshops that will equip future internists and family practice physicians to address important geriatric and medical health concerns that are patient centered.

There were some limitations to the implementation of the course. Not all trainees were available to attend 1 or both of the workshops because of their clinical duties and personal schedules. Additionally, this program was developed as part of our core education program and thus was not implemented or examined in the context of educational research. Future research might include objective measures such as reduction in patient falls and fracture events, an increase in physician access to online resources, trends in physical therapy referrals over time, and the development of a tracking tool for performing fall screenings that can be managed regionally.

A major strength of the program was the ability to engage all trainees in a relaxed and interactive setting where they could master key resources, learning points, clinical tools, and practical office-based skills relating to the care of older patients. As health care for older adults moves toward a greater team-based approach, this educational program can also be adapted for nonphysician learners.

CONCLUSION

Educating and creating interest in geriatric medicine for future generations of physicians is vital to help care for the rising older adult population. The use of multiple teaching methods is an important educational approach that maximizes content retention and enhances interest and confidence. This fall prevention education toolkit can be easily incorporated into residency training and further adapted as an efficient best practice in primary care with the goal to screen for and prevent falls.❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

Acknowledgments

The authors would like to thank the internal medicine residents at Kaiser Permanente Oakland Medical Center in Oakland, CA, for their support of this education program. We also thank Nirmala Ramalingam, MPP, for her thoughts and perspectives about the manuscript.

Kathleen Louden, ELS, of Louden Health Communications performed a primary copy edit.

Resources Used in Fall Prevention Workshop 2—Small-Group Workshop in Clinic

Discussion—Centers for Disease Control and Prevention (CDC) Stopping Elderly Accidents, Deaths & Injuries:

STEADI Provider Pocket Guide[1]: www.cdc.gov/steadi/pdf/STEADI-PocketGuide-508.pdf

Algorithm for Fall Risk Screening, Assessment, and Intervention, including screening questions[2]: www.cdc.gov/steadi/pdf/STEADI-Algorithm-508.pdf

Case study: Mrs Booker ("a low-risk patient who has come in for a wellness visit")[3]: www.cdc.gov/steadi/pdf/STEADI-CaseStudy1-MsBooker-508.pdf

Physical examination—Timed Up and Go test[4]: https://youtu.be/BA7Y_oLEIGY

Kaiser Permanente Health Engagement and Wellness Services. "Preventing Falls" resources[5]: http://healthengagement.kaiserpermanente.org/wellness-topics/healthy-aging/preventing-falls

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Author Contributions

David R Lee, MD, MBA; Joan C Lo, MD; and H Nicole Tran, MD, PhD, contributed to the design and implementation of this educational program and the drafting of the manuscript. All authors approved the final version for publication.

How to Cite this Article

Lee DR, Lo JC, Tran HN. Don't fall for that: A residency curricular innovation about fall prevention. Perm J 2020;24:19.058. DOI: https://doi.org/10.7812/TPP/19.058

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