

Teaching Geriatric Assessment: Use of a Hybrid Method in a Family Medicine Clerkship

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Background and Objectives: *We addressed a lack of geriatric content in our third-year family medicine clerkship. Adding this content posed a challenge in that students are dispersed to clinical sites across New England. Our goal was to promote student skill in functional assessment of elderly patients.* **Methods:** *We used multiple formats: a workshop, a small-group case discussion, an online video, and an online discussion of a new geriatric case. Students were directed to use five assessment tools on actual patients in the office and on a home visit.* **Results:** *A total of 155 students participated in the new curriculum. Students completed a required home visit on an older patient and evaluated geriatric patients in an office setting. They performed the Mini-Mental State Exam (MMSE), Activities of Daily Living Scale (ADL), Instrumental Activities of Daily Living Scale (IADL), Geriatric Depression Scale (GDS), and Get-Up-and-Go tests in patients in both settings. There was significant improvement from before to after the clerkship in identification of the appropriate geriatric assessment tool to use (MMSE 86% to 96%; ADL/IADL 32% to 94%; GDS 71% to 94%, and Get-Up-and-Go 4% to 58%). Students evaluated the curriculum positively.* **Conclusions:** *We were able to successfully increase the correct selection of and document high rates of use of geriatric functional assessment tools in our third-year family medicine clerkship using a mixture of teaching methods.*

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The number of older adults in the United States is increasing. The number of Americans over 65 tripled from 1900 to 2004, and the number of Americans 85 and over increased 40 times in the same time period. In 2005, people over 65 years of age accounted for more than 25% of physician office visits, and between 1995 and 2005 there was a significant increase in visits made by persons 75 years and over, from 11.4% of all visits in 1995 to 13.4% in 2005.¹ While fellowship-trained geriatricians have an important role, most older adults receive primary care from family physicians and general internists.

Medical education has not kept pace in the training of physicians to care for an aging population. While more medical schools include geriatric content in their curricula, the educational hours and scope of content are limited.² This training gap has led to poor quality of

care. For example, though the prevalence of dementia reaches 30% in people over 85,³ clinicians often miss the diagnosis of dementia.⁴ Easy-to-use standardized tools have been developed that can increase diagnostic accuracy, but these are rarely put into practice because of perceived lack of time and training.⁵ It has been argued that mental status examinations should be as familiar as chest auscultation to primary care physicians.⁴

The historical emphasis of medical education has been on a model of acute care, suited to advances in infectious disease, traumatic injuries, and younger patients. In contrast, older individuals more often require management of multiple chronic diseases, as well as attention to functional status and quality of life issues.⁶ While the Family Medicine Curriculum Resource Project has included geriatrics competencies in their list of special topics,⁷ less than one third of family medicine clerkships have incorporated a formal geriatrics curriculum.⁸

To address this deficiency in our clerkship curriculum, we identified four areas that have a disproportional effect on the health and quality of life of older Ameri-

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cans: functional impairment, dementia, depression, and gait abnormalities. We then developed a geriatrics curriculum designed to teach students to assess patients for these conditions and incorporated it into our existing third-year clerkship at Boston University School of Medicine (BUSM).

Our students spend the majority of their time during the clerkship at clinical sites in geographically distant areas. This poses a challenge to the introduction of new curricula. Online asynchronous discussions have proven useful in continuing educational activities while our students are at remote clinical sites.^{9,10} In response to geriatric training deficits as well as national calls for increasing distance education,¹¹ we developed a hybrid model that links distance education to other didactic methodologies within the clerkship.

Methods

Program Development

Participants. The clerkship in family medicine is a required experience that enrolls about 20 students during each 6-week clerkship block and is comprised of didactic teaching activities delivered at the medical school and student placement in community preceptor offices throughout New England. Students spend 4 days per week with community preceptors and 1 day per week at the medical school. Prior to the introduction of this program, the clerkship did not have any curriculum addressing geriatric issues. There is no other geriatric training in the third year; the required geriatrics clerkship takes place in the fourth year.

Curriculum Goals. The goal of our curriculum was to promote student skill in functional assessment of the older patient. National guidelines for the care of geriatric patients now include recommendations for comprehensive medical, functional, and psychosocial assessments,¹² including depression screening, fall risk,¹³ and dementia screening.¹⁴ Based on these guidelines, objectives included improving student competence in screening for impaired cognition using the Folstein Mini-Mental State Examination (MMSE),¹⁵ the Clock Draw Test,¹⁶ and the Mini-Cog,¹⁷ screening for depression using the Geriatric Depression Scale (GDS),¹⁸ and assessment of impaired gait and fall risk using the Get-up-and-Go Test.¹⁹ We also included in the curriculum the widely used Katz Activities of Daily Living (ADL)²⁰ and Instrumental Activities of Daily Living (IADL) scales.²¹ Other goals of the curriculum, not reported in this paper, included competencies in medication review and home safety evaluation.

Methods of Instruction

Workshop. A mandatory 2-hour interactive group workshop on functional assessment was added to the first week of the clerkship at the medical school. To encourage interaction, students are divided into two

groups of eight to 10 each, with one faculty member per group. At the start of the workshop, students view "Geriatric Assessment and the Twenty-Minute Visit,"²² a short video demonstrating efficient methods of integrating geriatric assessment into the primary care office setting. Following the video, a faculty member reviews practical aspects of using the screening tools, as well as test performance characteristics and limitations of each tool. Students then practice using the tools on each other, while faculty observe, provide feedback, and facilitate class discussion of the interpretation of the results. Students are given written instructions on how to administer each assessment tool for their own reference. Materials from the Stanford Faculty Development Center's "Geriatrics in Primary Care" 2004 faculty development program were used in writing the faculty and student manuals.

Online Video of Simulated Patient. During week 3 of the 6-week clerkship, while located on sites around the state, students are required to view online a streaming video of a physician home visit to a simulated patient named Casimira Rivera. The 8-minute video was produced by clerkship faculty and was designed to demonstrate how cognitive and functional assessment is accomplished by a family physician during a geriatric home visit to a homebound patient. Students then must post a critique of the home visit to an online discussion board. They are asked to include a discussion of the results of any geriatric assessments tests observed being performed by the physician on the home visit, possible causes for the patient's reduced mobility, tests they would have ordered, and observations of interviewing techniques used. The discussion board posting must be completed during week 3 of the clerkship and is monitored by clerkship faculty who read, grade, and respond to student postings throughout the clerkship. Students participate while dispersed in their community preceptorships. The next week, students return to the medical school to meet in small groups with family medicine faculty to discuss the medical and social management of Casimira Rivera's functional problems.

Application to Real Patients. Application of this new curricular material to real patients is achieved by requiring students to screen at least two patients with five of the assessment tools (MMSE, GDS, ADL, IADL, and Get-Up-and-Go) in an ambulatory setting and during an actual home visit to a geriatric patient that students perform on their own. Students are required to post an entry to an online log each time they perform an assessment in the office. They are given a "Geriatric Home Visit Checklist" to complete, which includes a medication review as well as a home safety assessment. Students submit a written case report describing the home visit to their preceptor and course director.

Curriculum Organization. In total, students are engaged in the curriculum in week 1 (assessment workshop), week 3 (online video and discussion), and week 4 (small-group case-based discussion). In addition, they use the tools in the office and on a home visit, resulting in repeated contacts with the material during the 6-week clerkship.

This curriculum is coordinated with material presented during the subsequent fourth-year required clerkship in geriatrics. Family medicine faculty and faculty from the Division of Geriatrics in the Department of Internal Medicine worked together to reintroduce the same patient (Rivera) 1 year later. We produced another video in which the patient is found delirious in a hospital bed and a third video in which she is diagnosed with early dementia. Students are asked to build on the skills learned in the family medicine clerkship.

Program Evaluation

We used four methods to evaluate the geriatric curriculum. Competence in geriatric assessment was tested with a written case. Students were asked to evaluate the patient described in the case (an 84-year-old man with hypertension, anhedonia, and knee pain who presented to the office with increasing difficulty functioning in his home). Following a brief presentation of history and physical exam, they were asked “What additional history and/or physical exam data would you ask for? What assessment tools, if any, would you use?” The case was given before and after the clerkship, and the students were rated on correct identification of assessment tools. The validity of such a written case-based approach to clinical skills assessment has been established.²³

Actual use of the assessment tools with real patients was tracked using an electronic patient log that students completed while at their clinical sites. Completion of this Web-based log is required of all students during each clerkship in the third and fourth year and does not prompt or remind students to perform screening tests or other interventions on patients; it performs only a recording function.

Students were also instructed to identify a patient for a home visit during a clinic visit. They completed the home visit alone and followed written guidelines for the visit including a list of geriatric assessment tools to complete. An outline for how to format the written report was provided. Students were not otherwise prompted about screening tests to complete during the home visit.

Of a total of 155 students, 144 were able to perform the home visit

on a patient 60 years or older. Nine students did their home visit on a younger patient; two did not submit a case report as instructed. We reviewed the home visit case reports of the 153 students who submitted one for documentation of performance and discussion of the assessment tools.

We also asked the first two blocks of students, 44 in total, to evaluate the curriculum using seven items on a 5-point Likert scale and one open-ended question. Evaluation was approved by the BUSM Institutional Review Board.

Results

A total of 155 students participated in the new geriatrics curriculum. Eighty-six students were asked to complete pretests and posttests. Compared to baseline performance, there was significant improvement at clerkship end in the appropriate recommendation in the use of geriatric assessment tools on the written case (Table 1). The magnitude of change is significant enough to suggest to us meaningful improvement in knowledge. For example, only 31.5% of students were able to identify the ADL or IADL Scales as applied to the case before the clerkship, while 94% were able to recommend its use at the end.

The electronic log documented student performance of the screening tools in the office (Table 2). Most students performed the required assessment tools, with the exception of the IADL scale.

A review of home visit case reports demonstrated that the majority of students performed the required assessment tools during their home visit, with the exception of the Get-Up-and-Go (Table 3), and most of the students (78%) discussed and interpreted results of the assessment tools in the case reports. Thirty-eight patients (24.8%) had a GDS score of >5, which is a positive screen for depression. In 34 (89.5%) of these

Table 1

Change in Recommendation of Use of Screening Tool on Geriatric Curriculum Evaluation Written Case Study

	<i>Appropriate Recommendation of Screening Tool</i>		<i>P Value</i>
	<i>Before Clerkship n=86</i>	<i>After Clerkship n=86</i>	
Functional Assessment Screening Tool	<i>n (%) correct</i>	<i>n (%) correct</i>	
Activities of Daily Living or Instrumental Activities of Daily Living	34 (31.5)	81 (94.2)	<.05
Get-Up-and-Go	3 (3.5)	50 (58.1)	<.05
Mini-Mental State Exam	74 (86)	83 (96.5)	<.05
Geriatric Depression Scale or 2-question Depression Screen	61 (70.9)	81 (94.2)	<.05

Table 2

Self-Report of Performance of Geriatric Screening in Preceptor's Office: Electronic Student Log

Geriatric Assessment Tool	Total # of Assessments Performed (n=155)	% of Students Reporting Performing Tool
MMSE	119	77
GDS	130	84
ADL	120	77
IADL	48	31
Get-Up-and-Go	97	63

MMSE—Mini-Mental State Exam
 GDS—Geriatric Depression Scale
 ADL—Activities of Daily Living Scale
 IADL—Instrumental Activities of Daily Living Scale

Table 3

Geriatric Assessment Performed by Family Medicine Clerks on Home Visit

	# of Students n=153 # (%)
Age of home visit patient: Over 60 years	144 (94.1)
Functional assessment present in home visit case report:	
Medication review	144 (94.1)
Environmental assessment	145 (94.7)
Mini-Mental State Exam	101 (66.0)
Activities of Daily Living	118 (77.1)
Instrumental Activities of Daily Living	121 (79.1)
Geriatric Depression Screen	142 (92.8)
Get-Up-and-Go	75 (49.0)
Assessment tools discussed in case report	120 (78.4)

patients, students were able to integrate the score into patient management as evidenced in the case report. Four patients (2.6%) had a MMSE score of less than 20, indicating cognitive impairment. However, only two of these were discussed in the case report.

The curriculum was rated highly by the students (Table 4). The group workshop at the start of the clerkship received the highest ratings. Students agreed that the curriculum prepared them to provide care to the older patient in the outpatient setting.

Students were asked, "At what point did you feel most engaged in this curriculum?" Fifty percent responded that the home visit was the highlight, 70% patient contact, and 16% the home visit video. Many students commented that the use of the tools was engaging and, in the words of one, "brought it all home."

Discussion

The addition of a new geriatric curriculum to the third-year clerkship was successful in increasing competence in functional assessment of older patients. Students used the assessment tools frequently in the office and home visit settings. They were able to interpret the results and use them in the care of actual patients. Students rated the curriculum highly.

We believe that these successes were due to the use of interactive and engaging teaching methods, reinforcement of the curriculum by repeated contact throughout the 6-week clerkship, and culmination in the required use of the tools during a home visit. The tools we chose are extremely effective and easy to learn and use, and many students were able to appreciate their power in addressing the needs of patients.

A limitation in the curriculum, however, was the lack of training of the preceptors in the use of the assessment tools. Students noted that preceptors rarely used them in their clinical care. It follows that teaching the relevance of the tools may thus have been comprised and that opportunities for further reinforcement from the preceptors may have been lost. In addition, students were not directly observed using the assessment tools,

Table 4

Student Evaluation of Geriatrics Curriculum (n=44)

Evaluation Question	Agreement With Statement, Mean*
The geriatrics assessment workshop was well taught.	4.3
I was able to apply the skills I learned in the exercise.	4.2
The workshop prepared me to administer the MMSE.	4.1
The workshop prepared me to interpret the MMSE.	4.1
The on-line video of the home visit was an effective learning tool.	3.7
I was able to apply the skills I learned in the video/small-group discussion.	3.7
Geriatric content of the clerkship prepared me to better care for the older patient in the outpatient setting.	4.3

* 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

MMSE—Mini Mental State Examination

and we were not able to assess that they administered them correctly.

A limitation in the evaluation of the curriculum is lack of a control group of students who did not receive the curriculum. It is possible that the students would have acquired some of the geriatric competencies during the clerkship without our new curriculum, but in the absence of any formal curriculum in this area we doubt substantial learning would have occurred.

Our challenge was to add geriatric content to an already full curriculum. By focusing the geriatric curriculum on functional assessment and adding high-quality Web-based streaming video to our other established teaching methods, we were able to engage the students while they were located at distant clinical sites. By coordinating curriculum with the fourth-year geriatrics clerkship, we were able to teach basic skills that were reinforced and built upon in the following year.

Due to these successes, the curriculum has become a permanent addition to our highly rated third-year family medicine clerkship at Boston University. Future plans include incorporating the training of faculty preceptors in the use of geriatric assessment tools in our faculty development program.

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