

AAIM Perspectives

AAIM is the largest academically focused specialty organization representing departments of internal medicine at medical schools and teaching hospitals in the United States and Canada. As a consortium of five organizations, AAIM represents department chairs and chiefs; clerkship, residency, and fellowship program directors; division chiefs; and academic and business administrators as well as other faculty and staff in departments of internal medicine and their divisions.

Assessing Resident Attitudes and Confidence after Integrating Geriatric Education Into a Primary Care Resident Clinic



John P. Moriarty, MD,^a Barry J. Wu, MD,^{a,b} Eileen Blake, MPH,^c Christine M. Ramsey, PhD,^d
Chandrika Kumar, MD,^b Stephen Huot, MD, PhD,^a Andrea Rink, RN,^b Lisa M. Walke, MD, MSHA^b

^aDepartment of Internal Medicine, Section of General Internal Medicine; ^bDepartment of Internal Medicine, Section of Geriatrics, Yale School of Medicine, New Haven, Conn; ^cYale New Haven Health System, Conn; ^dYale Center for Medical Informatics, New Haven, Conn.

KEYWORDS: Geriatrics; Medical education - graduate; Medical education curriculum development/evaluation; Primary care

Funding: This work was supported by an award from the Health Resources and Services Administration Geriatric Workforce Enhancement Program to Yale University School of Medicine (U1QHP28745) and, in part, by a grant from the Claude D. Pepper Older Americans Independence Center at Yale University School of Medicine (#P30AG021342 National Institutes of Health/National Institute on Aging).

Conflicts of Interest: The authors confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

Authorship: The authors confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us. We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property.

Requests for reprints should be addressed to John P. Moriarty, MD, Yale School of Medicine, 1450 Chapel Street, Private 318, New Haven, CT 06511.

E-mail address: john.moriarty@yale.edu

INTRODUCTION

Novel approaches to training health care professionals in geriatric practice and principles are needed to improve the health of an expanding aging population. In *Retooling for an Aging America: Building the Health Care Workforce*,¹ the Institute of Medicine highlighted the need for more geriatrics-trained health care providers. Despite vigorous efforts, challenges remain in expanding the number of physicians with geriatrics specialty training.² An opportunity exists to improve the geriatrics training of generalists in caring for older adults. Recent data suggest the medical education community needs to do more^{3,4} to improve the training of internal medicine residents in geriatric principles to better prepare the future generalist workforce.

Current Accreditation Council for Graduate Medical Education requirements for internal medicine training in geriatrics are minimal and include only a requirement for “an assignment in geriatric medicine.”⁵ These experiences are generally discrete 1-month rotations within the subspecialty of geriatrics. The impact of these

experiences in helping residents acquire sustained improvement in geriatric knowledge, skills, and attitudes is not clear.^{6,7} The Society of General Internal Medicine has called for a collaborative approach to education between internal medicine and geriatrics.⁸ Integrating geriatric education longitudinally into resident training may be more successful than distinct geriatric experiences.^{9,10} One proposed intervention is to have geriatric specialists train generalists in the components of geriatrics that are essential to primary care.¹¹ This change could be accomplished at the resident level by integrating geriatricians into internal medicine didactic and clinical programs in a resident primary care clinic.

In 2015, Yale School of Medicine and its community partners were selected for a 3-year Geriatric Workforce Enhancement Program (GWEP) award through the Health Resources and Services Administration Bureau of Health Workforce. GWEP aims to improve the quality of health care provided to older Americans by changing clinical training environments into integrated geriatric and primary care delivery systems.¹² The Yale GWEP, titled the Connecticut Older Adult Collaboration for Health (COACH), strives to build a diverse, multidisciplinary workforce equipped with the knowledge, skills, and attitudes to meet the unique care needs of older adults. In this article, we describe a COACH program that integrates a geriatrics curriculum into the core internal medicine residency curriculum and immerses geriatrics point-of-care teaching into a resident primary care clinic.

SETTING AND PARTICIPANTS

The project site was the continuity clinic of the Yale Primary Care Residency Program. In this hospital-based urban clinic, residents care for a diverse population of adult patients, 19% of whom are over the age of 65 years. In each academic year, residents spend 20 to 24 weeks on ambulatory rotations. The core of this time includes 3 4-week ambulatory immersion blocks per year, with 8 to 10 residents participating in each block. Within each ambulatory block, residents attend 3 or 4 half-day continuity clinics per week as well as subspecialty clinics and scheduled didactics. These ambulatory immersion blocks were the target of the curricular intervention. Primary care faculty members are the preceptors for continuity clinic, with each attending having 3 to 4 residents assigned to them for a half-day session.

PROGRAM DESCRIPTION

The intervention included both a curricular and an experiential component. The curricular model was developed through an iterative process involving geriatrics faculty, primary care faculty, residents, and clinic staff. Study authors met with focus groups to develop educational and patient care principles for the program. Themes that emerged included a need for geriatric education to be integrated into the residents' longitudinal primary care clinic; care and education to remain patient-centered; a desire for collaborative learning across disciplines; and ensuring efficient patient flow remained a priority. The geriatric teaching focused on COACH's geriatric core content: mobility assessment, cognitive assessment, appropriate medication management, Alzheimer's disease and related

dementias, and patient preferences about goals of care.

The curricular intervention for the residents included a didactic component consisting of a 30-minute small-group lecture on one of the core geriatric topic areas delivered at the beginning of each 4-week immersion block by a single geriatric attending. These lectures were interactive, focusing on knowledge content and skill delivery. Preceding each small-group teaching activity, residents would receive background material. The core topic lectures were repeated twice during the course of the year.

The experiential component consisted of embedding 1 of 4 geriatric attendings in the continuity clinic for one half-day a week over the course of the academic year. During the clinical experiential component, residents evaluated patients independently first and subsequently presented the patient to the generalist attending, preferably in the examination room with the patient present. The geriatric attending was added to this interaction for patients over the age of 65 years. Priority was given to patients at increased risk for emergency department utilization or hospitalization according to the Elder Risk Assessment.¹³ Elder Risk Assessment data were included in the clinic electronic patient care board and was visible to the clinical staff. The geriatric attending co-preceptor schedule was known in advance so residents could plan for appropriate future visits. The geriatric attending goals were to supplement the care plan with geriatric skills not addressed by the resident or generalist attending and, when appropriate, reinforce the didactic curriculum for an individual immersion block. For example, if the didactic topic for the immersion block was cognitive assessment, the geriatric attending would

PERSPECTIVES VIEWPOINTS

- Enhancing geriatric training of internal medicine residents is crucial to meet the needs of an aging population.
- Current models of geriatric training in residency are not meeting this need.
- Integrating geriatric didactic and point-of-care clinical instruction in a resident continuity clinic can improve resident attitudes and skills in caring for geriatric patients.

focus observations, feedback, and teaching on cognitive assessment including formal cognitive testing such as a mini-cog. The generalist attending remained the attending of record for the visit. The study group met with key stakeholders over the course of the experiential intervention to debrief and adjust teaching strategies.

PROGRAM EVALUATION

In December 2015, residents received a baseline survey with selected questions from the University of California at Los Angeles Geriatrics Attitude Scale, a reliable and validated instrument that measures attitudes toward older people and about care of geriatric patients among primary care residents.¹⁴ The study team selected a subset of questions based on program relevance and the need to keep the survey length manageable. Additional survey questions about confidence performing skills in relation to the core COACH topics supplemented the validated questions. We repeated the surveys every 6 months to assess change.

Residents were asked to rate their level of agreement with 11 statements related to their attitudes and confidence in treating geriatric patients on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) prior to and after exposure to COACH. To evaluate change in resident attitudes and confidence in treating geriatric patients, we grouped the Likert-scale responses into binary categories: strongly disagree/disagree/neutral and agree/strongly agree. We examined resident attitudes and confidence by calculating the frequency and percentage of participants who agreed/strongly agreed with each statement. To examine change in attitudes and confidence after exposure to COACH, we used McNemar's test of equality for paired data. We present data from the first 18 months (December 2015-June 2017) of this program. All statistical analyses were conducted using SAS software version 9.4 (SAS Institute, Cary, NC).

Table 1 presents the baseline characteristics of the primary care residents. Most of the residents (83%) who provided patient care in this clinic and participated in the program completed the survey at least once. Participants included residents from all 3 years. Approximately 90% of the residents completed a geriatrics rotation at some time during their medical training prior to this project.

Resident self-ratings of attitudes toward, and confidence in, treating geriatric patients prior to and after exposure to COACH are displayed in **Table 2**. After participating in COACH, fewer residents agreed with the statement that medical care for the elderly uses up too many resources ($P = .03$). Other attitudes toward older adults remained positive.

Resident self-rated confidence in treating geriatric patients prior to and after COACH are displayed in **Table 3**. After COACH, resident confidence in ability improved significantly for managing patients with cognitive

Table 1 Demographics of Participants

Characteristics	Residents
Total eligible, n	63
Total unique respondents, n	52
Total respondents prior to and after COACH, n	31
Years of training	
1	13
2	8
3	10
Not answered	0
Prior Geriatrics rotation, n	28

COACH = Connecticut Older Adult Collaboration for Health.

impairment ($P = .01$), conducting mobility assessments ($P < .01$), providing medication management ($P < .01$), conducting goals of care discussions ($P < .01$), and managing and treating patients with Alzheimer's or related dementias ($P = .01$). Resident confidence in the ability to conduct assessments of geriatric patients with cognitive impairment showed a trend in improvement, but did not reach statistical significance.

Initial suggestions for improving the intervention included schedule formatting changes that maximized the number of older patients scheduled on days the geriatric attending was present for clinical teaching and ensuring this schedule is predictable for residents, patients, and scheduling staff. Efforts to enhance the number of interactions between residents and geriatricians on a given half-day included notifying the generalist and geriatric attendings in advance of the older patients to be seen and reviewing this list at a preclinic huddle with the residents, staff, and attendings.

DISCUSSION

Integration of geriatric didactic teaching and point-of-care clinical instruction in an ambulatory longitudinal clinic improved primary care resident attitudes about the care of geriatric patients and how confident they felt about their geriatric skills. Statistically significant changes occurred in attitudes about the amount of resources needed to care for geriatric patients, confidence in providing cognitive and mobility assessments, medication management and goals of care discussions, and confidence in managing persons with cognitive impairment or dementia.

Prior studies evaluating resident geriatric knowledge and attitudes involved discrete block rotations and demonstrated either no difference in attitudes and a positive impact on knowledge⁶ or a positive impact on both attitudes and knowledge.¹⁵ Our model is unique in that it evaluated resident education in a longitudinal primary care environment. Theoretical benefits of this model include the opportunity for longitudinal follow-up of patients with direct ongoing care responsibility by the residents and attendings. In addition, this model involved relatively few resources, requiring only 4

Table 2 Primary Care Residents' Attitudes Toward Treating Geriatric Patients Prior to and After COACH (N = 31)

	Pre-COACH	Post-COACH	P-Value
	Disagree/Neutral (vs Agree) n (%)	Disagree/Neutral (vs Agree) n (%)	
I would rather see younger patients than geriatric patients	28 (90.3)	24 (77.4)	.10
Medical care for the elderly uses up too much human and material resources	23 (74.2)	28 (90.3)	.03
As people grow older they become less organized and more confused	21 (67.7)	23 (74.2)	.53
Taking a medical history from a geriatric patient is frequently an ordeal	20 (64.5)	17 (54.8)	.26
Treatment of chronically ill geriatrics patients is hopeless	30 (96.7)	31 (100)	> .99

COACH = Connecticut Older Adult Collaboration for Health.

Table 3 Primary Care Residents' Self-Rated Confidence in Treating Geriatric Patients Prior to and After COACH (N = 28)

	Pre-COACH	Post-COACH	P-Value
	Agree (vs Disagree/Neutral) n (%)	Agree (vs Disagree/Neutral) n (%)	
I Feel Confident in My Ability to:			
Conduct assessments of geriatric patients with cognitive impairment	20 (71.4)	25 (89.3)	.13
Manage geriatric patients with cognitive impairment	13 (46.4)	22 (78.6)	.01
Conduct mobility assessment for geriatric patients	11 (39.3)	23 (82.1)	.001
Provide medication management for geriatric patients	16 (57.1)	26 (92.9)	.002
Conduct goals of care discussions with geriatrics patients	20 (71.4)	27 (96.4)	.008
Manage and treat patients with Alzheimer's or related dementias	10 (38.5)	19 (73.1)	.01

COACH = Connecticut Older Adult Collaboration for Health.

half-days a month, 0.1 full-time equivalents of geriatric teaching time, and limited material costs. Based upon Association of American Medical Colleges salary data, at the 50th percentile it would cost approximately \$17,800 to support 0.1 full-time equivalent for an assistant professor in geriatrics at a northeastern medical school to participate in this educational model. Thus, our model is feasible even in resource-limited settings.

There are a few limitations to our study. One, our study involved a single site and a program with access to geriatric faculty. Two, while improvements in attitudes and confidence are beneficial, they do not necessarily translate into improved clinical skills or improved patient outcomes.

Meeting the needs of all patients, regardless of age, will require health care professionals, especially generalists, to receive training in basic geriatric primary care. Integrating geriatric education into a primary care residency clinic effectively improved resident attitudes toward geriatric patients and confidence in the skills needed to provide essential care. Future studies that evaluate the proficiency of geriatric clinical skills delivered in patient care settings are warranted to ensure that optimal care is available to all older adults.

ACKNOWLEDGMENTS

The authors would like to thank Leo M. Cooney, Jr., MD, and Richard Marottoli, MD, for serving as geriatric

attending co-preceptors and the staff and patients of the Saint Raphael's Adult Primary Care Center.

References

1. Institute of Medicine, Committee on the Future Health Care Workforce for Older Americans. *Retooling for an Aging America: Building the Health Care Workforce*. Washington, DC: National Academies Press; 2008.
2. West CP, Dupras DM. General medicine vs subspecialty career plans among internal medicine residents. *JAMA*. 2012;308(21):2241-2247.
3. Wenger NS, Solomon DH, Roth CP, et al. The quality of medical care provided to vulnerable community-dwelling older patients. *Ann Intern Med*. 2003;139(9):740-747.
4. Lynn LA, Hess BJ, Conforti LN, Lipner RS, Holmboe ES. Clinic systems and the quality of care for older adults in residency clinics and in physician practices. *Acad Med*. 2009;84:1732-1740.
5. Accreditation Council for Graduate Medical Education. Program requirements for graduate medical education in internal medicine. Available at: <http://www.acgme.org/Specialties/Program-Requirements-and-FAQs-and-Applications/pfcatid/2/Internal%20Medicine>. Accessed September 21, 2016.
6. Lindberg MC, Sullivan GM. Effects of an inpatient geriatrics rotation on internal medicine residents' knowledge and attitudes. *J Gen Intern Med*. 1996;11(7):397-400.
7. Warshaw GA, Bragg EJ, Thomas DC, Ho ML, Brewer DE. Are internal medicine residency programs adequately preparing physicians to care for the baby boomers? A national survey from the association of directors of geriatric academic programs status of geriatrics workforce study. *J Am Geriatr Soc*. 2006;54(10):1603-1609.

8. Chang A, Fernandez H, Cayea D, et al. Complexity in graduate medical education: a collaborative education agenda for internal medicine and geriatric medicine. *J Gen Intern Med.* 2014;29(6):940-946.
9. Williams BC, Warsaw G, Fabiny AR, et al. Medicine in the 21st century: recommended essential geriatrics competencies for internal medicine and family medicine residents. *J Grad Med Educ.* 2010;2(3):373-383.
10. Thomas DC, Leipzig RM, Smith LG, Dunn K, Sullivan G, Callahan E. Improving geriatrics training in internal medicine residency programs: best practices and sustainable solutions. *Ann Intern Med.* 2003;139(7):628-634.
11. Boulton C, Counsell SR, Leipzig RM, Berenson RA. The urgency of preparing primary care physicians to care for older people with chronic illnesses. *Health Aff (Millwood).* 2010;29(5):811-819.
12. Health Resources & Services Administration (HRSA). HRSA Health Workforce. Geriatrics. Available at: <https://bhw.hrsa.gov/grants/geriatrics>. Accessed September 21, 2016.
13. Crane SJ, Tung EE, Hanson GJ, Cha S, Chaudhry R, Takahashi PY. Use of an electronic administrative database to identify older community dwelling adults at high risk for hospitalization or emergency department visits: the elders risk assessment index. *BMC Health Serv Res.* 2010;10:338.
14. Reuben DB, Lee M, Davis JW, et al. Development and validation of a geriatric attitudes scale for primary care residents. *J Am Geriatr Soc.* 1998;46(11):1425-1430.
15. Maurer MS, Costley AW, Miller PA, et al. The Columbia cooperative aging program: an interdisciplinary and interdepartmental approach to geriatric education for medical interns. *J Am Geriatr Soc.* 2006;54(3):520-526.