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## Feature Article

## Geriatric Care Boot Camp Series: Interprofessional education for a new training paradigm

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## ABSTRACT

Interprofessional education of health care professionals caring for older adults is critical to address the unique needs of geriatric patients. An interprofessional education program – the Geriatric Care Boot Camp Series (“Series”) – was designed for health care professionals to fill this education gap. The program consisted of three half-day, intensive boot camps conducted over a one-year period. A total of 112 learners participated; more than half were nurses. Data analysis revealed statistically significant increases following each boot camp in attendees’ reported knowledge about caring for older adults; statistically significant increases in comfort caring for older adults were also seen among participants in two boot camps. Attendees found the interprofessional nature of the program beneficial and said they would attend a similar program again. The Series is easily replicable, appealing to the target audience, and fulfills the need to better educate health care professionals on caring for older adults.

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## Introduction

Recent literature demonstrates that geriatrics educators must change the way they educate health care professionals about caring for older adults. Instead of trying to train subspecialty geriatricians – “big ‘G’ Geriatricians” – educators should focus on training “little ‘g’ geriatrics” – throughout the health care workforce.<sup>1,2</sup> In turn, health care professionals in various fields will be competent to care for older adults.<sup>1,2</sup> This goal can and should be achieved through interprofessional education (IPE).<sup>3</sup> In IPE in the health professions, learners in more than one health profession learn together in an interactive manner to improve both collaborations between the professions and the well-being of patients.<sup>4</sup> Interprofessional collaboration ultimately improves patient safety, optimizes the use of each health care team member’s skills, and ensures quality health services are provided for patients.<sup>4</sup> Current research supports the need for continued exploration of the best methods of implementing IPE for health care professionals.<sup>5</sup> Documented challenges of implementing IPE include inconsistent levels of enthusiasm for IPE among different health professions,<sup>6</sup> as well as problems with scheduling, space, and funding.<sup>7</sup>

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In response to this need and related challenges, a Geriatric Care Boot Camp Series (“Series”) was developed, a series of 3 half-day, intensive continuing education programs on important topics in geriatric care. The pilot Geriatric Care Boot Camp from 2014 served as a model for the Series due to its success in increasing participants’ knowledge about and comfort in caring for older adults.<sup>8</sup> There were 44 attendees at the pilot boot camp with study analyses based on pre- and post- assessment survey responses from 43 of those attendees. Participants reported they were from a variety of health care professions; more attendees reported they were from nursing ( $n = 17$ , 39%) than from any other profession. Attendees’ self-reported changes in comfort caring for older adults and understanding of each of the 5 topics presented at the pilot boot camp (overview of geriatric patients, delirium/dementia, medication management/polypharmacy, palliative care, ethics) were statistically significant. Due to the success of the 2014 pilot program, Boot Camp 1 in the Series was a replication of this pilot. The creation and implementation of a series of boot camps stemmed from the intent to provide more than one half-day session of programming in order to better educate health care professionals about caring for older adults.

The primary objective of the Series was to increase the participating health care professionals’ knowledge about and comfort caring for older adults.

## Methods

The Series was a single group pre-test and post-test design, with all participants attending at least 1 of 3 half-day boot camps that

were conducted once over the course of approximately one year (Boot Camp 1 in October 2014, Boot Camp 2 in May 2015, Boot Camp 3 in November 2015) at a large academic medical center in the United States. The primary aim of the Series was to increase attendees' reported level of comfort in and knowledge about caring for older adults following their attendance at each boot camp. Secondary aims included assessment of whether attendees used or shared the information they learned, whether they found the interprofessional nature of the program to be beneficial, and whether they would attend a similar program again. The study received Institutional Review Board approval via expedited review.

### Sample

The target population for the Series was health care professionals at the institution from any field or specialty who care for patients over age 65; students and health care professionals from outside the institution were also permitted to attend. Participants were recruited via emails to university/medical center list serves and other email lists, flyers posted at the medical center, and word of mouth. Each individual who attended each boot camp was provided with a study information sheet and a pre- and post- assessment survey at the beginning of the boot camp. The information sheet explained how their survey responses would be used and participants were permitted to attend the boot camps even if they decided not to complete a pre- or post- assessment. Only 5 of the 112 (4%) total Series participants declined to fill out a pre- and post- assessment survey. More detail regarding survey response rate is provided in the Results section. The Department of Aging and Geriatric Research funded the Series to enable participants to attend each boot camp free of charge, with the goal to seek extramural funding for additional programming – including the time and effort of Series faculty – if the Series proved successful.

### Intervention

Each boot camp featured 5 sessions that were 30–45 min each. Experienced and knowledgeable professionals, including faculty, researchers, practitioners, and community educators, all with substantial experience working in their respective topic areas, presented each session. See Table 1 for the topics presented at each boot camp in the Series and the professions/specialties of the Series instructors. To provide an engaging interprofessional educational experience, these presenters used various formats to teach the audience, including traditional didactic lectures, multimedia presentations, hands-on activities, and interactive discussions. Didactic lectures followed by interactive question-and-answer periods enabled participants to learn not only from the presenters but also from each other. The overview of the geriatric patient, for example, included a simulation of sensory deprivation in older adults to teach participants how difficult it can be for older adult patients to see, hear, and sense texture.

Participants received a book or binder at each boot camp in the Series that included printed copies of the presenters' slides. One presenter – a pharmacist – disseminated and reviewed pocket cards on Beers Criteria<sup>9</sup> during the session on medication management/polypharmacy. Another presenter – a physician – disseminated and reviewed pocket cards on Guiding Principles for the Care of Older Adults with Multimorbidity in the session on palliative care.<sup>10</sup> Thus, participants left each boot camp with tangible information to easily reference later.

The Series curriculum was designed so participants could attend any or all of the boot camps; participants need not have attended an earlier boot camp in order to have sufficient knowledge to attend a later one. Each boot camp was accredited for continuing medical education and continuing nursing education credits.

**Table 1**  
Boot camps topics and presenters.

	Topic	Presenter Field/Specialty
Boot Camp 1	Overview of the geriatric patient	Nursing
	Understanding delirium and dementia	Medicine/Geriatrics
	Medication management/polypharmacy	Pharmacy
	Palliative care and the geriatric patient	Medicine/Geriatrics and Palliative Care
Boot Camp 2	Ethics	Bioethics/Law
	Importance of physical therapy with early ambulation	Physical Therapy
	Regaining independence in activities of daily living	Occupational Therapy
	Falls prevention in geriatric patients in the hospital	Medicine/Geriatrics
Boot Camp 3	Nutrition in the hospital	Nutrition and Dietetics
	Ethics	Bioethics/Law
	Transitions of care and the role of health care professionals	Medicine/Geriatrics and Palliative Care
	Medication reconciliation upon hospital discharge	Pharmacy
	Understanding post-acute care setting funding requirements	Nursing/Case Management
	Community resources and home care	Business
	Ethics	Bioethics/Law

### Measures

During each boot camp in the Series, participants completed a pre-assessment immediately before the program and a post-assessment immediately after. Each pre- assessment asked for attendee demographic information, including job title, degrees, major field of study, age range, prior geriatrics-specific education, and percent of patients over age 65. The pre-assessments also asked why participants chose to attend the boot camp and what their personal goals were they hoped to achieve by attending. The pre- and post- assessments asked participants to rate their comfort level caring for older patients and their understanding of each topic presented in each session. The questions listed in Table 2 asking about participant comfort and understanding of each topic presented are written as they appeared in each pre- and post- assessment for each of the boot camps. Each post- assessment asked whether attendees found the interprofessional nature of the boot camp participants and presenters to be beneficial, whether attendees met their own personal goals by attending the boot camp, and whether they would be interested in attending another boot camp in the future. The post- assessments also offered participants the opportunity to provide general feedback about the program and to identify topics in geriatrics they would like to see covered in future programming. A follow-up survey emailed to each participant one month after each boot camp asked the participants for information about their profession (job title, degrees, major field of study), what information they had used since the program, how they had used it, whether they shared the information they learned, what information they shared, and with whom they shared it. The pre- and post- assessments as well as the follow-up survey were used in the 2014 pilot study<sup>8</sup>; minor modifications were made to collect major field of study and percent of patients over age 65, the perceived benefits of the interprofessional nature of the program, and the reasons participants decided to attend each boot camp.

Pre- and post- assessments at each boot camp were linked by a survey number. To maintain anonymity, survey numbers were not linked to any participant names.

The data were recorded from the pre- and post- assessment, entered into Sigma Stat, and a Wilcoxon Signed Rank Test was run on each question to compare change in knowledge of and comfort in

**Table 2**

Pre- and post-assessments: knowledge and comfort.

Boot Camp 1: Fundamentals of Geriatric Care (N = 35 of 39 participants; 87% response rate)				
Question	Pre-	Post-	Change	p-value
How comfortable are you caring for geriatric patients? <sup>a</sup>	3.94	4.27	0.33	0.003
I have an understanding of how to generally care for geriatric patients. <sup>b</sup>	3.77	4.44	0.68	<0.001
I have an understanding of how to care for geriatric patients with delirium or dementia. <sup>b</sup>	3.31	4.32	1.01	<0.001
I have an understanding of how to address medication management issues that exist for geriatric patients. <sup>b</sup>	3.17	4.28	1.11	<0.001
I have an understanding of the ethical issues that may arise when caring for geriatric patients. <sup>b</sup>	3.54	4.47	0.93	<0.001
I have an understanding of the palliative care issues that exist when caring for geriatric patients. <sup>b</sup>	3.67	4.35	0.68	<0.001
Boot Camp 2: Geriatric Care in the Hospital (N = 24 of 27 participants; 89% response rate)				
Question	Pre-	Post-	Change	p-value
How comfortable are you caring for geriatric patients? <sup>a</sup>	4.25	4.42	0.17	0.25
I have an understanding of falls prevention in geriatric patients. <sup>b</sup>	4.13	4.58	0.45	0.027
I have an understanding of importance of physical therapy with early ambulation in geriatric patients. <sup>b</sup>	4.29	4.83	0.54	0.008
I have an understanding of regaining independence in activities of daily living in geriatric patients. <sup>b</sup>	4.46	4.79	0.33	0.008
I have an understanding of nutrition in the hospital for geriatric patients. <sup>b</sup>	4.17	4.61	0.44	0.016
I have an understanding of the ethical issues that may arise when caring for geriatric patients. <sup>b</sup>	4.13	4.58	0.45	0.002
Boot Camp 3: Transitions of Care in Geriatric Care (N = 45 of 46 participants; 98% response rate)				
Question	Pre-	Post-	Change	p-value
How comfortable are you caring for geriatric patients? <sup>a</sup>	3.87	4.32	0.43	0.003
I have an understanding of transitions of care and the role of the health care professionals with geriatric patients. <sup>b</sup>	3.59	4.60	1.01	<0.001
I have an understanding of medication reconciliation upon hospital discharge with geriatric patients. <sup>b</sup>	3.55	4.48	0.93	<0.001
I have an understanding of post-acute care setting funding requirements for geriatric patients. <sup>b</sup>	2.73	4.09	1.36	<0.001
I have an understanding of community resources and home care for geriatric patients. <sup>b</sup>	3.22	4.59	1.37	<0.001
I have an understanding of the ethical issues that may arise in transitions of care for geriatric patients. <sup>b</sup>	3.43	4.49	1.06	<0.001

<sup>a</sup> 1–5: 1 = very uncomfortable; 2 = uncomfortable; 3 = neither uncomfortable nor comfortable; 4 = comfortable; 5 = very comfortable.

<sup>b</sup> 1–5: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree.

caring for geriatric patients after attending the boot camp. Only those surveys with complete pre- and post- assessment data were included in these analyses and reported in the Results below. The mean values ± SEMs are reported in the data tables.

## Results

### Demographics

Thirty-nine participants attended Boot Camp 1; 27 participants attended Boot Camp 2; 46 participants attended Boot Camp 3 ( $n = 112$  total attendees). Five of the 112 attendees (1 from Boot Camp 1, 2 from Boot Camp 2, and 2 from Boot Camp 3) returned neither a pre- nor a post- assessment, representing a 96% overall response rate ( $n = 107$  of 112 total). Boot camp participants were from a variety of health professions, with more than half ( $n = 58$ ) reporting they were nurses. Of the 27 Boot Camp 2 attendees, 18 (67%) reported they were nurses and 24 (89%) reported having had experience/training in geriatrics. Boot Camp 1 ( $n = 14$  of 39, 36%) and Boot Camp 3 ( $n = 26$  of 46, 57%) had comparatively fewer nurses in attendance and fewer individuals reporting exposure to geriatrics training ( $n = 22$  of 39 attendees, 56% and 34 of 46 attendees, 74%, respectively). The institution's NICHE program<sup>11</sup> was actively engaged in recruiting participants for Boot Camp 2; thus, the higher percentage of nurses who attended that program may be attributable to the targeted marketing to professionals in the field. The lower number of attendees at Boot Camp 2 overall, however, may be due to the focus on inpatient rather than outpatient care. Less than 5% of Series attendees ( $n = 5$ ) reported they were students; their data were not analyzed separately and they are included as members of the fields in which they reported being students. The fields of the 5 attendees who responded to neither the pre- nor the post- assessment are identified as not reported. See Fig. 1.

Nearly half ( $n = 55$ , 49%) of attendees reported more than half of their patients are over age 65 and 46% ( $n = 52$ ) of attendees reported their own age range as 50+. Participants most frequently reported their reason for

attending the program was that it was relevant to their work. The second most frequently reported reason was that the topics looked interesting.

### Pre- and post-assessments: knowledge and comfort

Frequency and percent of responding participants in each boot camp is reported in Table 2. Pre/post analyses were performed using only those respondents who submitted both a pre- and post- assessment, slightly lowering the overall response rate to 93% ( $n = 104$  of 112 total).

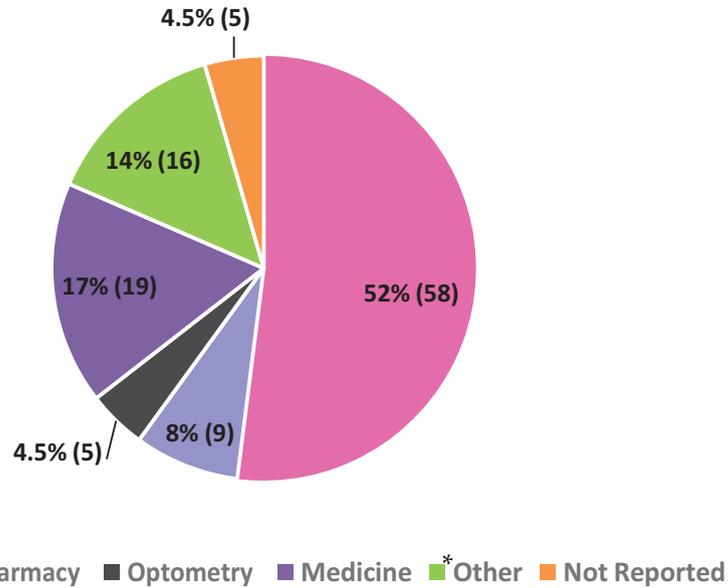
Changes in participants' understanding of each topic presented at each boot camp were statistically significant (all  $p$ -values <0.05). See Table 2. Additionally, changes in overall comfort level caring for geriatric patients were statistically significant for participants in Boot Camp 1 and Boot Camp 3; however, these changes were not statistically significant for participants in Boot Camp 2.

### Post- assessments and follow-up surveys: quality and utility of the Series

Table 3 summarizes the number of respondents to questions from the post-and follow-up assessments addressing quality of the boot camp and their responses. Ninety-six percent ( $n = 97$  of 101 responding) and 97% ( $n = 98$  of 101 responding) respectively agreed or strongly agreed the interprofessional nature of the audience and the interprofessional nature of the presenters at each boot camp were beneficial.

Of the 112 Series participants, 90% ( $n = 101$ ) responded to a post-assessment question asking whether they would be interested in attending a future geriatric care boot camp. All of them said "yes".

A total of 37 respondents completed follow-up surveys one month after each respective boot camp (16 from Boot Camp 1; 9 from Boot Camp 2; 12 from Boot Camp 3). This number represents 1/3 of the total boot camp participants; of these respondents, the majority reported applying the information learned in the boot camp to their own professional activities. The majority of respondents also reported sharing information learned at the boot camp with others (in particular, with nurses). See Table 3. Follow-up survey responses also indicated the topic(s) from each boot camp that attendees most frequently applied to their own



\*"Other" professions included administration, geriatric care management, occupational therapy, physical therapy, psychology, research coordination, social work, teaching, and other students/faculty

Fig. 1. Attendees by field (N = 112).

professional activities were delirium and dementia (Boot Camp 1, n = 9), physical therapy and nutrition (Boot Camp 2, n = 8), and community resources and home care (Boot Camp 3, n = 10).

**Discussion**

Interprofessional geriatrics education is essential for the delivery of optimal health care.<sup>3</sup> Recent scholarship has noted the importance of geriatrics education throughout the workforce, not simply in medicine – thus the focus on teaching little 'g' geriatrics rather than focusing on educating big 'G' Geriatricians.<sup>1,2</sup> Because many of the challenges noted in implementing interprofessional education exist in the implementation for student (i.e. degree-seeking) learners,<sup>12–14</sup> IPE on little 'g' geriatrics should occur not merely in a traditional classroom setting for students but also in continuing education for various health care professionals. The Series results indicate this programming is a way to achieve this goal.

The high percentage of Series attendees who reported finding the interprofessional nature of the program to be beneficial and who reported an interest in attending another boot camp indicates that health care professionals may continue to be receptive to the Series model of interprofessional continuing education on geriatric care. This positive reception appears to be key regardless of an individual's exposure to the practice of or training in geriatrics. For example, Boot Camp 1 and Boot Camp 3 attendees reported statistically significant changes in comfort caring for older patients while those at Boot Camp 2 did not. Boot Camp 2, with 67% of its attendees reporting they were from the nursing field, had the highest rate of attendance of nurses among all three boot camps in the Series. Thus, while the Series was appealing to nurses, they may be well-versed in care of older patients already and thus have the least incremental benefits in increasing their comfort caring for older patients. However, even this highly experienced group gained content knowledge from Boot Camp 2 as evidenced by a statistically significant increase in their

**Table 3**  
Post- and follow-up assessments: quality and use of information.

Instrument type	Boot Camp 1	Boot Camp 2	Boot Camp 3
<b>Post-assessment</b>			
Interprofessional nature was beneficial	N = 35 Strongly agree or agree = 31 (89%)	N = 23 Strongly agree or agree = 23 (100%)	N = 43 Strongly agree or agree = 43 (100%)
Interprofessional presenters were beneficial	N = 35 Strongly agree or agree = 32 (91%)	N = 23 Strongly agree or agree = 23 (100%)	N = 43 Strongly agree or agree = 43 (100%)
Achieved personal goals	N = 35 Yes = 35 (100%) No = 0 (0%)	N = 23 Yes = 22 (97%) No = 0	N = 41 Yes = 40 (98%) No = 1 (3%)
Would attend another boot camp	N = 35 Yes = 35 (100%)	N = 23 Yes = 23 (100%) Inconclusive (answered yes and no) = 1 (4%)	N = 43 Yes = 43 (100%)
<b>Follow-up</b>			
Applied info learned to own professional activities	N = 16 Yes = 11 (69%) No = 5 (31%)	N = 9 Yes = 9 (100%) No = 0	N = 12 Yes = 11 (92%) No = 1 (8%)
Shared information learned with others	N = 14 Yes = 11 (79%) No = 3 (21%)	N = 7 Yes = 6 (86%) No = 1 (14%)	N = 11 Yes = 10 (91%) No = 1 (9%)

understanding of the topics presented. The high rate of attendance of nurses in the Series, the statistically significant increase in their understanding of the topics presented at each boot camp, and the high rates of satisfaction attendees reported about the boot camp indicate that nurses may again be well represented among attendees if the Series is replicated and benefit from the education.

As previously described, the half-day, interprofessional format distinguishes this Series from other boot camps. Further research indicates another novel aspect of the Series is the consistent integration of sessions on ethical issues in geriatric care. These sessions were interactive, led by a bioethicist, and enabled participants to share their various approaches to ethical problem-solving in patient care, approaches which frequently vary depending on the health profession in which one works. Perhaps most distinctively, the ethics sessions were last on each boot camp agenda, case-based, and conducted while participants ate lunch. Case-based learning is an effective method of teaching in the health professions as it enables “deeper learning”; moreover, relevant literature confirms its benefits for interprofessional and continuing education.<sup>15</sup> The Presidential Commission for the Study of Bioethical Issues recently documented the importance of “deliberative discussions” in ethics education and reinforced the value of these discussions in continuing education.<sup>16</sup> Additionally, it is both anecdotally discussed and reported in the literature that providing food helps with attendance at continuing education programs.<sup>17</sup> Thus, the format for ethics discussion implemented throughout the Series fosters an environment for open and honest discussion that enables participants to apply the knowledge they just gained to real cases with ethical questions.

### Limitations

The single group design means the Series was not compared to other education programs to measure its effectiveness against other IPE. Thus, it cannot be concluded that the Series is better than any other IPE program. Participant changes in knowledge were based on self-reported understanding of the topic rather than a test of content knowledge which means that actual knowledge may not have increased. Follow-up surveys did not measure actual application of the information learned or shared; instead, what information participants used or shared is based on participant self-report.

### Conclusion

There needs to be a paradigm shift in the delivery of geriatrics education, shifting from the idea of training many “big ‘G’ Geriatricians” to the model of training health professionals on “little ‘g’ geriatrics”.<sup>1,2</sup> The Series represents a model of continuing education for training little “g” geriatrics throughout the healthcare team caring for older adults. It is easily replicable, improves learners’ (self-reported) knowledge about and comfort in caring for older adults, and based on the reported interest of participants in attending another similar program as well as the benefits they perceived of the interprofessional nature of the program, is likely to be well-received by health care professionals at other institutions. Further research is needed to ascertain what health profession would benefit most from the Series; we also suggest additional research to establish whether the Series surpasses other IPE interventions to teach health care professionals about geriatric care.

### Conflict of interest

The authors have no conflicts of interest to disclose.

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### Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.gerinurse.2019.05.010.

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