A National Survey of Family Medicine Residency Education in Geriatric Medicine: Comparing Findings in 2004 to 2001

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Background and Objectives: We compared findings from this 2004 survey with our 2001 survey to determine progress in family medicine residency programs’ efforts to better train residents to care for America’s aging population. Methods: A survey was mailed and made available on-line to all 470 family medicine residency directors in the United States. Results: The response rate was 71%. Ninety-six percent of family medicine residencies have a required geriatrics curriculum, compared to 92% in 2001. There was a significant increase in the number of required lecture hours in geriatrics in 2004 as compared to 2001. Since 2001, the median number of MD geriatrics faculty per program has nearly doubled from .5 full-time equivalent (FTE) to .9 FTE. Conflicting time demands with other curricula was ranked as the most significant barrier to geriatrics education in both 2004 and 2001. However, in 2001, the attitude of residents was listed as a significant barrier by 32.1% of the program directors as compared to just 3.6% in 2004. Conclusions: Family medicine educators are continuing to improve the training of residents to provide state-of-the-art care for the aging population. Faculty must take advantage of this period of experimentation in residency education to identify best practices for geriatrics education.

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Family physicians can anticipate that in 2020 at least 30% of their outpatient practices, 60% of their hospital practices, and 95% of their nursing home and home care practices will involve the care of individuals ages 65 and older. Well-trained family physicians, along with general internists and geriatricians, are essential to provide primary care to the future generation of older adults. Today’s family medicine residents need focused training that imparts the attitudes, knowledge, and skills required to provide superior geriatric care.

In 2001, the Association of Directors of Geriatric Academic Programs (ADGAP) conducted the Longitudinal Study of Training and Practice in Geriatric Medicine, a national survey of geriatrics education in family medicine residency programs, to determine geriatric education efforts and trends. At that time, 92% of family medicine residency programs reported required geriatric medicine training. The extent of this curriculum varied widely among residency programs.

This 2004 study reports on a comprehensive, national, follow-up survey of current efforts and trends in geriatric education in family medicine residencies. The results are compared to the previous survey to see what, if any, changes have occurred in family medicine residency programs to better meet the training challenges of teaching residents to care for the growing aging population.

Methods

This study was a cross-sectional survey of program directors (PDs) of family medicine residency programs that are accredited by the Accreditation Council for Graduate Medical Education (ACGME). As of October 1, 2004, there were 470 family medicine residency programs listed on the ACGME Web site. A survey was mailed and made available on-line to the 470 PDs of family medicine residency programs accredited by the ACGME. Osteopathic residency programs are not
accredited by the ACGME and were not included in this study.

This survey is part of the ADGAP Longitudinal Study of Training and Practice in Geriatric Medicine. The Office of Geriatric Medicine and the Institute for the Study of Health at the University of Cincinnati are responsible for the study. As part of the study, PDs in family medicine residency programs were initially surveyed in the fall of 2001. The findings from the current survey (fall 2004) are compared with the results of the survey conducted in 2001. The University of Cincinnati Institutional Review Board-Social and Behavioral Sciences has approved this project. The survey was cosponsored by the Association of Family Medicine Residency Directors (AFMRD).

Survey Instrument

Experts in geriatric medicine and survey methodologists edited the original survey used in 2001 to develop the 2004 version of the survey. The 20-question survey asked the PDs about eight general areas of their residency program. These areas included general program information such as the number of residents and types of fellowship programs; required geriatric experiences, including the number of clinical days and sites of required geriatric experiences; if elective geriatric experiences were offered and if so, how many residents completed the elective; faculty resources such as the number of physicians teaching geriatrics and the number of faculty with a certificate of added qualifications (CAQ) in geriatrics; anticipated changes in geriatrics curriculum time over the next 3 years; and an open-ended question about the best aspects of their program. The PDs were also asked to rate barriers, which included attitudes of faculty and residents, insurance and reimbursement constraints, and availability of clinical sites to implementing their geriatric curriculum, as well as to rate the importance of eight clinical areas in their program’s curriculum. The revised survey was pretested by four family medicine residency PDs.

The 2004 survey was very similar to the survey tool in 2001, so that comparative data could be analyzed. A question about Residency Review Committee (RRC) geriatric requirements in family medicine was eliminated from the 2001 survey, and additional areas were asked about regarding barriers to implementing a geriatric medicine curriculum and important curriculum areas. Responses to questions related to time spent in didactic and clinical instruction were changed from intervals of time to an open-ended response. These responses were recategorized back to intervals for comparison with the 2001 data.

Procedures

In October 2004, a copy of the survey was mailed to the 470 PDs. On the same date, the survey was made available on-line; it was housed on a secure server and password protected to prevent unauthorized access. The PDs could choose to complete and return the mailed survey or complete the on-line survey. Reminder e-mails were sent 9 days after the initial mailing and to nonrespondents 16 and 23 days after the initial mailing. A second copy of the survey was mailed to nonrespondents at 35 days after the initial mailing, and reminder e-mails were sent at 2 and 23 days. Postcards were sent 21 days after this second mailing.

Secondary Data

Twice each year, the American Academy of Family Physicians (AAFP) compiles data on family medicine residency programs regarding program structure (ie, community based, community based and medical school affiliated, community based and medical school administered, medical school based, and military programs). The ACGME gathers information regarding the number of residents in each program and their medical school affiliations. Data from these two sources were used to compare respondents to nonrespondents and for other analyses.

Statistical Methods

Means and medians and standard deviations (SDs) or ranges were used to describe continuous data, including the number of physician faculty in a program dedicated to geriatrics or with a CAQ. Categorical data, such as time spent in geriatric clinical settings or lecture hours, were described using frequencies and percentages. Differences in proportions (for example, differences between respondents and nonrespondents by census regions and program structure) were tested using chi-square tests ($\chi^2$). T tests were used to compare means for two groups of cases, such as number of residents in programs that responded to the survey compared with programs that did not respond to the survey. Analyses were performed using SAS version 8.2 and SPSS version 12. Probability values ($P$ values) of .05 or less were considered significant.

Results

The survey response rate was 71%, with 332 of 470 programs responding (Table 1). Sixty-nine percent (n=228) of the PDs completed the survey on-line. Respondents and nonrespondents did not differ by census region ($\chi^2=4.79, P=.188$) (Northeast, Midwest, South, and West regions) nor program structure ($\chi^2=3.32, P=.505$) (community based, community based and medical school affiliated, community based and medical school administered, medical school based, and military programs). Using ACGME data, the responding programs were slightly larger than the nonresponding programs (23 residents versus 21 residents, $t=-2.84, P=.005$). When the mean number of residents actually reported in our survey was used for this comparison, however, no significant difference in program size
was found (22 residents versus 21 residents, \( t = -1.68, P = .094 \)).

**Characteristics of the Responding Programs**

There was a mean of 22 (median = 21) residents in the programs, with a range from 1 to 75 residents. Seventeen percent (n = 55) of the programs indicated that they offered fellowship training in geriatric medicine. A mean of .4 (SD = 1.0) (median 0, range 0 to 8) graduated residents had entered a geriatric fellowship program, either at the same institution or another institution in the 3 years from 2002 to 2004. In 2004, 16 (8%) of the training programs offered a second- or third-year elective track in geriatrics.

**Geriatric Medicine Curriculum**

In 2004, 96% of programs (n = 315) required geriatric clinical experience for all residents (13 programs [4%] did not). In 2001, 92% of family medicine residency programs had required geriatric medicine training. Of those programs that required a clinical experience in geriatrics, 16% (48) required 0–12 half days, compared to 15% in 2001; 34% (106) required 13–24 half days, compared to 30% in 2001; 24% (72) required 25–36 half days, while 33% did in 2001; and 26% (78) required 37 or more half days, an increase from 22% in 2001. There was no significant difference between the amount of reported half days required as a clinical experience in geriatrics in 2004 and 2001. The number of half days in 2004 ranged from 0 to 264, with a median of 24 half days and a mean of 31 half days. Of the 13 programs that did not require a geriatric clinical experience for all their residents, nine offered an elective geriatric experience.

In 2004, the median numbers of hours of lecture and seminar time dedicated to geriatric medicine was 36 hours (mean = 53) (range from 0 to 340 hours), with 10% (33) requiring 0–12 hours, the same as in 2001; 23% (73) from 13 to 24 hours, compared to 42% in 2001; 21% (66) from 25 to 36 hours, similar to the 26% in 2001; and 46% (145) required 37 hours or more, in contrast to just 21% in 2001. There was a significant increase in the number of required lecture hours in 2004, as compared to 2001 (\( \chi^2 = 49.74, P < .0001 \)).

In 2004, family medicine residency programs depended on nursing home (97%), home care (88%), hospice (72%), and ambulatory care experiences precepted by a geriatrician (71%) as training sites for geriatrics. However, training also occurred at a variety of other sites, including assisted living (46%), hospital-based skilled nursing facilities (44%), outpatient geriatric assessment centers (43%), senior centers (28%), an acute care for the elderly (ACE) unit or other geriatric inpatient unit (23%), and on geriatric inpatient consultation services (18%). Except for geriatric inpatient consultation team experiences (42% in 2001), these diverse sites of training were similar to the 2001 survey findings.

In 2004, family medicine residency geriatric training experiences were most frequently offered in a longitudinal format. For example, nursing home rotations were longitudinal in 90% of the programs, block format in 24%, and 14% using both formats. Block rotations were more common with geriatric inpatient consultation teams (67%), outpatient geriatric assessment (80%), and senior centers (68%). In 2001, programs reported similar use of block and longitudinal training.

When asked to project whether their geriatric education curriculum time would change over the next 3 years (July 2004–June 2007), directors anticipated substantial increases (8%), modest increases (43%), no change (48%), and modest decreases (1%). This was similar to what was reported in 2001.

**Table 1**

| Size and Organizational Type of Responding and Nonresponding Family Medicine Residency Programs |
|---|---|---|
| **Residents in each program**<sup>*</sup> | Responding Programs \( n = 332 \) | Nonresponding Programs \( n = 138 \) |
| **Program organizational type**<sup>**</sup> | | |
| Community based | 22.0 (8.6) | 20.6 (8.8) |
| Community based and medical school affiliated | 203 (61.5%) | 72 (54.1%) |
| Community based and medical school administrated | 63 (19.1%) | 28 (21.1%) |
| Medical school based | 40 (12.1%) | 18 (13.5%) |
| Military | 10 (3.0%) | 5 (3.8%) |

* Data presented as mean and standard deviation; Student’s \( t \) test: \( P = .094 \)
** Frequency missing = 7. Data presented as number and percent; \( \chi^2 = 3.32, P = .505 \).

**Faculty Resources**

In 2004, there was a total of 428 full-time equivalent (FTE) physician faculty (family medicine and internal medicine) available to teach geriatrics at the 332 responding residency programs and an additional 99 FTE faculty available from other health care professions. The median number of physician faculty per program was .9 FTE with a range of 0 to 40 FTE faculty. A total of 227
programs (68%) had at least one ABFM/ABIM-certified geriatrician on the faculty. Of the 105 programs without a certified geriatrician on faculty, 72 reported at least one faculty member with specific training in geriatric medicine.

Of faculty with CAQs, 64% received their CAQ through the practice pathway; the remaining 36% received their CAQ after completing a geriatric medicine fellowship. Most programs (78%) reported using a multidisciplinary and/or interdisciplinary approach (ie, a team of physicians and other nonphysician health care workers such as a social worker, physical therapist, and/or pharmacist) to teach geriatrics in one or more training venues. Seventy-one percent of the PDs reported that residents were taught by nonphysician geriatric specialists such as nurses or social workers on a home visit or a nurse practitioner in a nursing home in the absence of a physician.

Since 2001, the median number of reported FTE physician faculty per program has nearly doubled from .5 FTE to .9 FTE. Although the number of physician faculty in 2004 with a CAQ increased slightly, 32% of programs reported that they did not have a faculty member with geriatrics certification, compared with 23% in 2001 (Table 2).

<table>
<thead>
<tr>
<th>Faculty</th>
<th>2004</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTE MD faculty dedicated to geriatrics*</td>
<td>.9 (range 0–40)</td>
<td>.5 (range 0–13)</td>
</tr>
<tr>
<td>Number of MD faculty with CAQs*</td>
<td>1.0 (range 0–12)</td>
<td>1.0 (range 0–12)</td>
</tr>
<tr>
<td>Number of MD geriatrics faculty (CAQs and faculty with expertise in geriatrics)*</td>
<td>2 (range 0–20)</td>
<td>2 (range 0–15)</td>
</tr>
<tr>
<td>MD faculty with CAQs after fellowship training**</td>
<td>174 (36%)</td>
<td>112 (25%)</td>
</tr>
<tr>
<td>Programs with no MD faculty with CAQs**</td>
<td>105 (32%)</td>
<td>72 (23%)</td>
</tr>
</tbody>
</table>

FTE—full-time equivalent
CAQs—certificate of added qualifications
SD—standard deviation
* Data presented as median (range) and mean (SD)
** Data presented as number and percent

since the last comprehensive survey of geriatric medicine education in family medicine residency programs. At that time, 92% of the family medicine residency programs reported that they had a required geriatric medicine curriculum, as
compared to 96% in the current survey. A previous study in 1988 by Reuben et al found that 80% of family medicine programs had a geriatrics curriculum. A geriatrics medicine curriculum has been required in all family medicine residency programs throughout this period, and it remains unclear why 13 of the reporting programs still report no required training.

Similar to our results in 2001, we again found a wide variability in the amount of clinical and didactic time required in specific geriatrics training by family medicine residency programs. The number of available, trained geriatrics faculty also varies among programs. These variations, coupled with the decline in the percentage of physician faculty with a geriatric medicine board certification, are a concern, especially when one realizes that in 2002, 23% of all ambulatory visits to family physicians were by patients 65 years and older. Since few family physicians pursue fellowship training in geriatric medicine, their formal training in the care of older adults ends when they complete their residency program. Well-trained family physicians are essential to provide primary care to the future generation of older adults. Due to the variability in content time and availability of trained geriatrics faculty, some family medicine residents may not be receiving optimal training for their future practices.

**Curriculum**

While it was remarkable that 26% of the programs required geriatric medicine clinical training exceeding 36 half days (the equivalent of 1 to 2 months of curriculum time) in 2004, 16% of the programs had 12 half days or less of clinical training (less than one-half month over the 3-year training program). This variability in the extent of time devoted to specific geriatric medicine training is essentially unchanged from 2001. Similar variability was found among programs that required didactic training, although there was a significant increase in the number of required lecture hours in 2004 compared to 2001.
Current Family Medicine RRC requirements state that there must be experiences with older patients in the hospital, family practice center, long-term care facility, and the home. Only 7% of the PDs listed lack of geriatric training sites as a barrier, and it is now common for family medicine residency programs to use multiple sites for geriatrics training.

Faculty
The formal training of the certified physician faculty teaching in family medicine residency programs is increasing (36% of the physician faculty with CAQs in 2004 had completed fellowship training, compared to 25% in 2001). Of concern is that 32% of the programs in 2004 compared to 23% of the programs in 2001 had no faculty with CAQs. It may be that programs with existing certified faculty found it easier to recruit additional certified faculty.

It is nonetheless encouraging that the number of physician FTEs dedicated to geriatrics medicine teaching is increasing. This increase in FTEs is the result of more family medicine or internal medicine faculty with an interest in and/or additional training in geriatrics rather than to the availability of more certified geriatricians. This dichotomy may be why the availability of faculty is still seen as a significant barrier by 21% of responding PDs.

Since 2003, RRC requirements for internal medicine residency programs have required that a certified geriatrician or a physician who possesses qualifications judged by the RRC to be acceptable must coordinate the geriatric curriculum and clinical experience. Family medicine does not have this RRC requirement.

Trends and Barriers
While resident and faculty attitudes regarding geriatric medicine were noted as a significant barrier in 2001, this was not the case in 2004. It appears that the demographic imperative of an aging population is now acknowledged by trainees and trainers. PDs continue to rank geriatrics training as important compared to other curriculum areas.

In both 2004 and 2001, the most significant barrier cited to improving geriatric medicine training was an
overcrowded curriculum. Modernization of family medicine residency curriculum remains unfinished business. Curriculum restructuring to acknowledge the importance of chronic disease management, team care, long-term care, and a decline in family medicine participation in obstetrics and hospital care, especially in urban areas, would contribute to training that will be more closely aligned with future practice. Family medicine educators must continue to balance the need to train residents for state-of-the-art care of an aging population against other traditional curricular areas. The Future of Family Medicine report provides few specifics for enhanced care of the older adults in the New Model of Practice but does acknowledge the impact of an aging society and the increasing burden of chronic disease.9 Geriatrics educators within family medicine must take advantage of the call for a period of educational experimentation as an opportunity to identify best practices for geriatric education for all future family physicians.

Limitations

The potential biases of survey research must be noted when interpreting our results. In this study, surveying all family medicine residency programs in the United States eliminated selection bias, but respondent bias remains a possibility. Although 71% of all respondents responded, the remaining 29% may have been less invested in their geriatrics programs and may have weaker geriatric medicine curricula. However, given the strong response rate, the fact that there was no difference in the size and organizational type between the respondents and nonrespondents, and that only residency directors’ responses were solicited, we believe our results are applicable to family medicine residency training in general.

Conclusions

Since 2001, many family medicine residency programs have continued to commit significant curriculum time to geriatric medicine training. Longitudinal experiences predominate, and more physician faculty time has been dedicated to geriatrics teaching. The amount of training in geriatrics received by family medicine residents continues to vary widely across programs. Competing curriculum demands and the need for more trained faculty remain the significant barriers to further expansion of geriatric training. The finding that most programs are anticipating stable or increased geriatrics curricula over the next 3 years is encouraging. Looking ahead, questions to be addressed to ensure the best geriatric medicine training for family medicine residents include the following:10 First, what geriatric competencies are appropriate for all family medicine residents upon completion of training? Second, can residents develop an understanding for the unique nature of care in different settings, the subtleties of how living and receiving care in these settings influence medical care, and the patient’s experience of health and illness, if they don’t participate in care at many of these sites? Third, how can programs increase the trainees’ openness to learning from other health care professions and expand interdisciplinary training experiences? Fourth, how can programs influence the trainees’ attitudes toward providing care to older adults? Finally, are geriatrics needed to teach? Do all family medicine faculty currently have the skills and desire to integrate geriatrics into their teaching?

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References

8. Accreditation Council for Graduate Medical Education Residency Review Committee common program requirements. Available at www.acgme.org/acWebsite/RRC_120/120_prIndex.asp. Accessed June 1, 2005.