Length and Content of Family Practice Residency Training

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Background: **Family practice residency programs are based largely on a model implemented more than 30 years ago. Substantial changes in medical practice, technology, and knowledge necessitate reassessment of how family physicians are prepared for practice.**

Methods: **We simultaneously surveyed samples of family practice residency directors, first-year residents, and family physicians due for their first board recertification examination to determine, using both quantitative and qualitative methods, their opinions about the length and content of family practice residencies in the United States.**

Results: **Twenty-seven percent of residency directors, 32% of residents, and 28% of family physicians favored extending family practice residency to 4 years; very few favored 2- or 5-year programs. There was dispersion of opinions about possible changes within each group and among the three groups. Most in all three groups would be willing to extend residency for more training in office-based procedures and sports medicine, but many were unwilling to extend residency for more training in surgery or hospital-based care. Residents expressed more willingness than program directors or family physicians to change training. Barriers to change included disagreement about the need to change; program financing and opportunity costs, such as loss of income and delay in debt repayment; and potential negative impact on student recruitment.**

Conclusion: **Most respondents support the current 3-year model of training. There is considerable interest in changing both the length and content of family practice training. Lack of consensus suggests that a period of elective experimentation might be needed to assure family physicians are prepared to meet the needs and expectations of their patients. (J Am Board Fam Pract 2002;15:201–8.)**

In 1966, the Willard Report[1] proposed recommendations for a future educational program in family medicine. Thirty-five years later, family practice residency programs are still largely modeled on the report's recommendations that were initially implemented in 1969. In the interval, changing population demographics, advances in technology, and an explosion in medical knowledge have dramatically changed the practice of medicine. As the evolution of medicine continues, family practice training programs face new challenges as they prepare physicians to provide the highest quality medical care at the frontlines of medicine in the information age.[2]

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Since the publication of the Willard Report, family practice leaders have reexamined residency training and proposed recommendations for preparing future family physicians.[3–11] These recommendations typically recognize that the core principles of excellence in family practice remain constant, but they question the reliance on the original training model to prepare family physicians adequately. In 1986, the Society of Teachers of Family Medicine Task Force on Training Residents for the Future recommended that such areas as in-hospital training should receive less emphasis, whereas other areas of training, including community-oriented primary care, disease prevention, and geriatrics, should receive more emphasis.[3] In 1990, a Delphi study surveyed a panel of family practice experts, who anticipated that changes in medicine would necessitate family medicine residents developing further competencies in managing the medical care of patients, in health promotion and disease screening, in geriatrics, and in computer use and data management. Surgical and hospital pro-

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cedures, complex inpatient care, and obstetrics in nonrural areas were cited as competencies that could be de-emphasized.[4] At the end of the 1990s the Association of Family Practice Residency Directors led a discipline-wide review of the content and methods of family practice residencies and made recommendations concerning organizational, clinical, and community competencies.[5]

In 1988, Ferentz et al[6] first posed the question about extending family practice residency training to 4 years, given the breadth of clinical knowledge family physicians must master. They asked residents, residency directors, and family physicians about their willingness to complete a fourth year to receive additional training in different areas. They also asked respondents for their view of the greatest barrier to a 4-year training program. Recently a study of practicing family physicians reported that almost one fourth expressed concerns about the appropriateness of the scope of care expected of them.[12] Given concerns about the scope of family practice and the preparedness of family practice residency graduates, an investigation into prevailing views about the length and content of residency programs was considered timely.

The purpose of this investigation was to assess whether there is a need to change the current structure of family medicine training programs and the potential barriers to change, if this need existed. Specifically, we wanted to determine (1) the optimal length of training for family physicians, (2) those factors that encourage and discourage a change in length of training, and (3) specific residency content areas family physicians, first-year residents, and program directors would like to increase or decrease.

Methods

Current and past residency lists maintained by the American Academy of Family Physicians (AAFP) were used to define national lists of family practice residency directors, family practice residents, and family physicians due for their first board recertification examination in the year 2000 (herein respectively referred to as program directors, residents, and family physicians). All 14 directors of military family practice residencies were included, and a random selection of 116 of the 464 residency directors of family practice programs was also drawn and surveyed, giving a total of 130 surveyed directors. All 997 first-year family practice residents in the programs of the sampled residency directors were also surveyed. This number represents approximately one third of all first-year residents matriculating in the United States in the year 2000. First-year residents were surveyed shortly after beginning family practice training, before their views could be affected by having completed a large portion of their residency. In addition, a modified form of the survey was sent to a random sample of 535 of the 2,693 family physicians who were due for their first board recertification examination in the year 2000.

Three similar versions of a 2-page, self-administered questionnaire were developed, modeled in part after the survey used by Ferentz et al.[6] Each version was pilot-tested on a small sample of each of the three study groups and revised. Final questionnaires were mailed in July 2000 to the family physicians in practice, and in August to family practice residency directors and family practice residents. Combinations of additional mailings, fax transmissions, e-mails, and telephone calls such that at least three contacts were made with each potential respondent resulted in response rates of 87% (113 of 130) of program directors, 54% (533 of 997) of first-year residents, and 63% (339 of 535) of 1,993 graduates. All questionnaires received by 31 January 2001 were used in the analysis.

The questionnaires included closed questions to collect demographic data, information on whether post-residency training was intended or pursued, and respondents' views on the optimal length of residency training. The questionnaires specifically asked whether change to a 4-year family practice program was favored and for an indication of willingness to complete a fourth year to receive more training in a variety of settings and subject areas. Open-ended questions asked respondents to list factors that would lead them to favor a change in length of training or continue with a 3-year program, and to list barriers they perceived to changing to a 4-year program. Data were entered into a computer database at the headquarters of the American Academy of Family Physicians in Kansas City and analyzed at The Robert Graham Center in Washington, DC. Descriptive statistics were first computed for all variables, and bivariate analyses using the chi-square test assessed relations between demographic characteristics and whether respondents favored a change in residency length.

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Table 1. Characteristics of Respondents.

Characteristic	Program Directors (n = 113)	First-year Residents (n = 533)	Family Physicians (n = 339)
Mean age in years (range)	46 (32–64)	30.5 (23–58)	40 (34–59)
Sex (% male)	76.1	40.9	66.3
Residency program (%)			
Community-based	Not	72.2	77.9
University-based	available	17.3	17.1
Military		9.8	4.4
Residency setting (%)			
Urban	Not	48.4	53.1
Suburban	available	39.4	38.9
Rural		10.5	7.1
Post-residency training* (%)			
Yes	50.4	22.5	16.5
No	47.8	36.1	81.1

*For program directors and family physicians, responses indicate the percentage who had undertaken further formal training after completing family practice residency. For residents, responses indicate their intention to undertake further training.

Three of the authors (LG, SD, and RG) made an immersion-crystallization analysis of responses to open-ended questions, at first independently to define themes in responses. Following this independent analysis, all three investigators debated the definition and appropriateness of themes and established a thematic analysis through consensus. These results were then compared with a similar independent analysis by another author (MD) and finalized.

Results

Respondents

Characteristics of respondents and their residencies are shown in Table 1. Nearly one third (32%) of program directors had held that position for 2 years or less, and a further 18% had been a program director for 10 years or more. Almost all directors (96%) had completed family practice residency themselves, and slightly more than one half of the directors completed additional training after their family medicine residency.

Most (75%) resident respondents completed medical school in 2000, 80% were younger than 35 years of age, 60% were married, and 30% had children. Twenty-five percent had less than $25,000 in educational debt, 35% had debts of $25,000 to $99,900, and 38% had $100,000 or more of educational debt. Twenty-three percent planned to pursue further training after their family practice residency, 41% were undecided, and 36% had no plans for training beyond their current 3-year program.

Although only 7% of physician respondents had been trained in rural residency programs, 27% practiced in rural locations. All states, the District of Columbia, large cities such as New York City, and small towns were represented in the sample.

Length of Training

Table 2 shows that most respondents in all surveyed groups agreed that 3 years is the optimal length for family practice residency programs. Approximately one quarter of current program directors and first-year residents indicated that 4 years is the optimal length of family practice training, whereas less than one fifth of the family physicians believe 4 years is optimal. There was almost no support for a 2-year program or for one of 5 years or longer.

More respondents in all three groups reported that they favored extending training to 4 years than responded that 4 years was the optimal length of

Table 2. Percentage of Respondents Choosing Optimal Length of Training.

Respondents	2 Years	3 Years	4 Years
Program directors (n = 113)	0.9	74.5	24.5
Residents (n = 533)	2.5	74.9	22.6
1993 graduates (n = 339)	0.6	82.0	17.3

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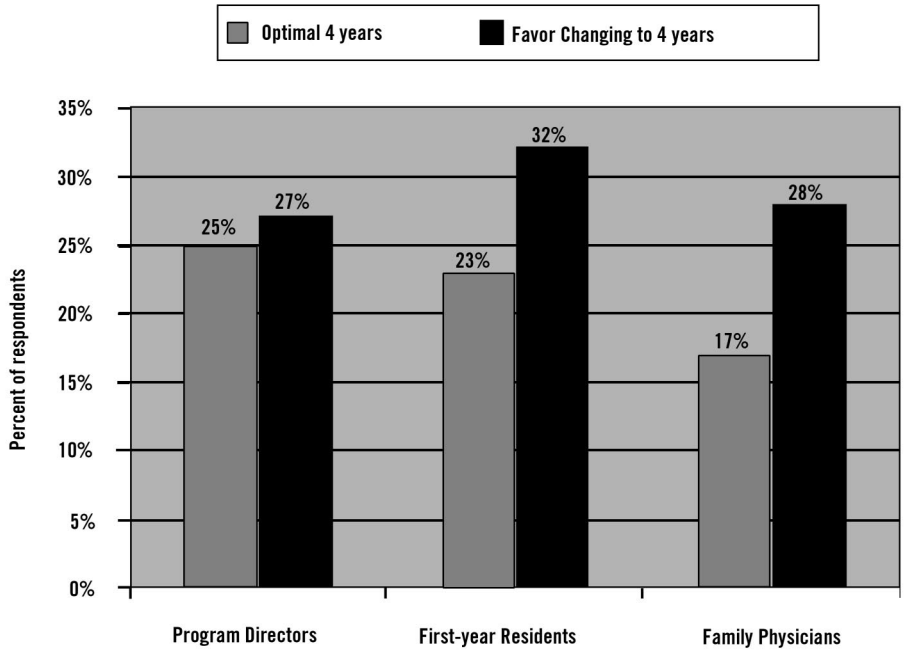

Figure 1. Discrepancy between views of optimal length and support for change to 4-year family practice residency programs.

training, as shown in Figure 1. When asked to estimate how many of their residents would not have chosen family practice if the residency length had been 4 years, 17 (15%) program directors did not respond. Of the remainder, 51% thought they would lose at least one half of their residents. By contrast, most family physician and resident respondents indicated that they would still have chosen to complete a residency in family medicine if the program length was 4 years (62% of physicians and 65% of current residents). Residents' opinions about extending family practice training to 4 years were not statistically associated with their having children, their age, level of debt, or the type of residency in which they trained.

Factors Favoring Current 3-Year Training Model

Residents most frequently stated that the current 3-year model is a sufficient length of time to provide a basic foundation and adequate exposure to inpatient and outpatient medicine. A fourth year might not provide additional benefit, and fellowship options exist for those who wish to have more training. They also favored the current model for its similarities to the residency programs of internal medicine and pediatrics and expressed concerns that increasing the length of training might decrease the number of medical students who choose family practice. Economic reasons were also frequently mentioned, including difficulties in repaying debt and the lower earning potential in family medicine. They cited the lifestyle of a resident and the likelihood of burnout as other factors that led them to favor 3 years.

Program directors largely agreed with their residents and added more resource constraints (eg, space, faculty, staff, and clinical opportunities) that favor continuing 3-year residencies. They also suggested opportunities to enhance the efficiency and effectiveness of training within the 3-year model (eg, by using simulators, competency-based curricula) if there were greater flexibility in accreditation requirements. Accommodating nontraditional residents could be harder with longer training periods, and some noted that declining opportunities for their graduates favored 3 years to avoid wasting additional training for services their graduates will not provide.

The family physicians shared many of the views of residents and program directors. Most believed 3 years adequately prepared them for practice, and they were concerned that increasing the length would adversely affect recruitment. They were also skeptical that a fourth year of training would be

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done well and favored getting into practice where "the first year is better training that the last year of residency."

Factors Favoring Change to a 4-Year Training Model

The broad scope of family practice and the amount of knowledge it requires led residents to favor changing to a 4-year model, assuming a genuine increase in both the depth and breadth of training and good teaching. Many residents also favored an additional year if it offered the opportunity to do more procedures or if they could gain additional experience in such areas as maternity care, child care, and adult medicine. Many residents would support changing to a 4-year model if the fourth year were used to decompress the entire residency, and residents were permitted increased flexibility in how the additional time was used. Residents also favored a fourth year if they thought it would lead to a competitive workplace advantage, eg, a broader scope of practice, additional certifications, or more income. A few residents reported there were no factors that led them to favor a change to 4 years, and few supported increasing the length of residency to garner more respect from others.

Program directors described the same factors as favorable as did residents and added the reversal of perceived barriers if there was a demonstrated need for longer training, increased student demand, subspecialty support, available funding, similar length of training for internal medicine or pediatrics, and requirements for licensure or accreditation. They also cited additional certification(s) for residents, assurance of hospital privileges, and differentiation from other primary care clinicians as important factors that, if achieved, would benefit residents and thus favor extending training.

The family physicians agreed that more breadth and depth in such areas as maternity care, procedures, and subspecialty medicine, as well as additional skills responding to practice needs (eg, practice management), would lead them to favor a fourth year. Tangible, competitive advantages after residency were important, such as a smaller jump into independent practice, solidified scope of practice, and better pay. They also thought a fourth year would be appealing if it were elective, allowing residents to focus on areas of interest or possibly have training tracks follow a core curriculum.

Barriers to Changing to a 4-Year Training Model

Residents described as barriers opportunity costs in terms of lost income and delay of debt repayment, the view that a fourth year would be another year of abuse, unwillingness of residents to do a fourth year, inadequate clinical opportunity and financing within residency programs, tradition, and a lack of need in the first place. Program directors described as barriers educational constraints in terms of space, clinical opportunity, and support of subspecialty clinicians; insufficient money for both the program and the residents; lack of a proven need for a fourth year; and difficulty recruiting medical students into an unsatisfying role. Family physicians described as barriers personal and financial strains of further delaying getting on with life, lack of need, lack of later payoff from the further training, loss of residents to other specialties, and lack of funding for the fourth year.

Areas with Perceived Need for More Training

As shown in Table 3, first-year residents in general were willing to extend training in many areas, especially in office-based procedures, sports medicine, emergency medicine, and in the care of children and infants, adolescents, and women, including maternity care. They differed from their directors most obviously in their perceived need for more training in emergency medicine, adult medicine, and maternal and children's health. Program directors were generally satisfied with training as it is, but many preferred to expand time spent in the family practice center, community private practices, and home care and nursing home settings. They were additionally willing to expand training in office-based procedures and in caring for adolescents and older people. Program directors would also favor extending training if their residents could receive more education in information systems, leadership, and practice management. Most family physicians in practice, in agreement with residents and program directors, would have been willing to complete a fourth year only for additional training in office-based procedures.

Areas with Training Perceived as Sufficient or Excessive

Many respondents in all three groups were unwilling to do a fourth year for more training in general surgery or hospital-based care. Program directors were generally satisfied with training as is, but ap-

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Table 3. Percentage of Program Directors, First-year Residents, and Family Physicians Willing and Not Willing to Extend Training to 4 Years to Have More Training in Selected Settings and Content Areas.

Settings and Content Areas	Willing or Prefer More			Not Willing or Prefer Less		
	Program Directors	Residents	1993 Graduates	Program Directors	Residents	1993 Graduates
Setting						
Hospital	20.4	32.2	24.2	38.1	43.2	49.3
Family practice center	58.3	39.8	28.6	2.7	30.0	46.6
Community private practice	56.2	45.6	31.0	5.3	27.4	42.8
Community health center	36.9	35.9	23.9	2.7	31.1	51.3
Nursing home	50.0	15.6	11.5	5.3	53.7	67.0
Home care	56.4	15.9	10.0	3.5	51.0	66.1
Subspecialty office	28.4	48.7	27.1	25.7	26.5	43.1
Ambulatory surgical center	36.1	45.4	30.4	10.6	29.3	40.7
Content area						
Behavior and mental health	49.1	33.0	23.5	4.4	38.9	47.2
Adult medicine	18.6	43.4	30.7	6.2	27.2	41.9
Maternity care	33.6	52.7	33.9	12.4	25.9	43.1
Women's health	46.4	57.4	33.6	3.5	20.5	34.5
Adolescent medicine	61.6	52.4	31.3	1.8	20.5	38.6
Care of children and infants	33.6	57.7	37.8	4.4	20.5	34.8
Older patient care	57.3	43.9	32.7	1.8	26.5	38.3
General surgery	9.0	26.2	22.7	31.0	47.8	48.7
Genitourinary tract disorders	18.3	29.7	20.6	8.0	35.6	53.4
Eye disorders	24.1	29.7	22.4	10.6	37.7	50.7
Ear, nose, throat disorders	21.6	35.9	24.5	6.2	33.6	50.4
Musculoskeletal disorders	46.8	49.9	34.5	2.7	23.5	38.6
Sports medicine	49.1	58.5	44.2	5.3	19.9	26.5
Care of the skin	44.1	50.8	34.2	1.8	22.0	38.9
Emergency care	23.2	58.4	39.2	4.4	17.8	31.6
Office-based procedures	62.5	66.3	55.8	0.0	15.2	19.5
Community medicine	34.2	39.9	24.2	7.0	29.5	49.9
Health promotion and prevention	40.2	42.0	24.5	4.4	29.3	46.9
Information systems	61.6	25.6	24.2	0.0	44.1	43.7
Practice management	51.8	35.6	32.4	4.4	33.8	38.3
Research	42.9	14.8	13.0	11.5	61.5	62.2
Teaching and education	40.9	34.7	22.7	2.7	34.9	43.4
Leadership	55.0	27.0	19.5	0.0	43.2	47.2

proximately one quarter of them preferred that their residents spend less time in subspecialty offices. Residents and family physicians most obviously differed from program directors in their unwillingness to do a fourth year to spend more time in family practice centers, community health centers, nursing homes, and home care settings or to receive more training in research, teaching, leadership, or information systems. Most family physicians were not willing to extend residency to receive more training in eye, ear, nose, and throat topics or genitourinary disorders. Many family physicians were unwilling to extend training in most of the listed areas.

Discussion

Most responding family practice residency directors, first-year family practice residents, and family physicians approaching their first recertification believed that the current 3-year model of family practice residency is appropriate. Significant minorities of first-year residents (32%), program directors (27%), and family physicians (28%), how-

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ever, favor adding a 4th year of training. Ferentz et al reported similar results in 1988, when 34% of third-year residents, 20% of program directors, and 32% of family physicians favored extending training to 4 years.[6] Almost no one wanted to reduce training to 2 years or extend it to 5 or more years.

More than one half of program directors themselves did additional training of some sort after family practice residency, as did about one sixth of the responding family physicians, suggesting that their own practical experience might underlie their responses in favor of extending training. About one fourth of first-year residents definitely plan further training after their 3-year residency.

There was general agreement among all the groups that they would favor extending training to 4 years only if there were a genuine increase in the breadth and depth of experience. All three groups agreed that the low pay of residency coupled with student indebtedness, the potential negative impact on recruitment, and a lack of demonstrated need are barriers to lengthening family practice residency. This last viewpoint conflicts to some extent with a substantial proportion of respondents in each category perceiving a need for extended training beyond the current 3-year residency.

There were topics in which all three groups agreed that family physicians needed more training – specifically, office-based procedures and sports medicine. Family physicians in practice seemed to express the most satisfaction with the current length and content of family medicine training as evidenced by their lack of willingness to extend residency to receive more training in content areas other than procedures and sports medicine. More than one half the residents were willing to complete a fourth year to receive additional training in the care of infants and children, adolescent medicine, women's health, maternity care, skin care, and emergency care.

These stated preferences are similar to findings by Ferentz et al, who reported that residents and recent graduates were willing to extend residency to receive more training in pediatrics, obstetrics, gynecology, and orthopedics.[6] Also, more than one half of the directors in our survey preferred their residents receive more training in the care of older patients, the area most frequently mentioned by the directors in the Ferentz et al study. In neither our study nor the Ferentz et al study did program directors specify extensive areas or amounts of time that could be reduced to make way for program additions. The persistence of these findings 15 years later raises questions about how and whether family practice residencies are responding to the educational needs of future family physicians.

Our findings also uncovered areas of disagreement among the three groups we surveyed. For example, more than one half of the residents from our study would be willing to extend the residency to receive more training in emergency medicine. In contrast, less than one fourth of their program directors would have preferred their residents receive more training in this area. Many program directors preferred that their residents receive more training in home care, nursing home care, information systems, research, and leadership, areas infrequently mentioned by residents or family physicians.

The results of these surveys reaffirm the high priority family physicians place on their breadth of training and on pragmatic solutions. We did not find either widespread dissatisfaction or a sense of urgency to revise family practice training, but all three groups had ideas about improving training. Overall, the opinions of those surveyed suggest that change is possible, but there is doubt that it is worth the trouble. Likely conflicts to be expected in extending family practice training include disagreement that longer training is necessary, concerns about the cost (lost income, delay in debt repayment, and funding for a fourth year), and fears about the negative impact on recruitment, with a potential loss of up to one third of medical students selecting family medicine. Similar concerns were reported 15 years ago in the Ferentz et al study, with the five barriers most frequently mentioned being resources, appeal to residents and potential applicants, the additional time commitment, the feeling that the additional year is not necessary, and decisions about what the curriculum should include.[6]

Repeated comments in this survey revealed an assumption that less training is good enough for primary care and family practice. Some respondents suggested reducing the scope of family practice training to comport with reduced scopes of service, thereby creating relatively large portions of the current residency model for redeployment. No comments conveyed the impression of enthusiasm for 4-year programs to establish the premier training program for primary care. There was a lack of responses framed in some manner other than the current model of family practice training, eg, envi-

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sioning new ways to link training and practice, new collaborations with other disciplines, or cutting across the traditional organization of medical school, residency, and continuing medical education. Perhaps our survey did not invite such commentary or discouraged it. Alternatively, family physicians might be trapped in an established mental model, compromising a collective ability to make a leap forward to establish superior family practice training programs for the information age.

The strengths of this study are the contemporaneous sampling of three critical groups and the completeness of reporting by respondents. Its most important weakness is the less than ideal response rates from residents and physicians. The program directors' response rate was excellent, however, and the response rates for residents and family physicians exceed most current experience with similar surveys. Caution should be taken when generalizing the results to all residents and family physicians.

Further research could include reassessing the opinions of the first-year residents from this study during their third year to determine how their residency training affected their opinions. A survey of medical students could determine how a change in the length or content of family medicine programs would impact their career choices. Increasing residency length could lead to fewer medical students selecting family medicine, but medical students might choose other specialties because they believe family medicine residency training is not adequate to prepare them for practice. Research could also focus on how current requirements for residency training could be implemented with greater efficiency and on the feasibility of selected revisions of training.

Conclusions

Although there is considerable interest among matriculating family practice residents, their program directors, and family physicians approaching their first recertification to increase some aspects of family practice training, they disagreed about exactly what changes are needed and doubted that length of training should be increased or can be achieved now. Program directors, residents, and practicing family physicians all have ideas about changes that could be made to improve family practice training. A substantial number of program directors, residents and practicing family physicians favor extending family practice training or have already completed or intend to seek additional training. A subset of this group might be well positioned to elect to pilot test models of extended residency training that family practice should consider at this juncture in its history.

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