Residency Education

Experience With an Optional 4-year Residency: The University of Arizona Family Medicine Residency

Patricia Lebensohn, MD; Doug Campos-Outcalt, MD, MPA; Janet Senf, PhD; Perry A. Pugno, MD, MPH, CPE

**Background and Objectives:** There has been declining interest by US medical students in the specialty of family medicine. Simultaneously, new data suggest that the length of training may be related to the decline in student interest. The new data have created a national debate over the appropriate length of training for family physicians. The Future of Family Medicine Report recommends conducting experiments with 4-year residency training programs. **Methods:** Since 1999–2000, the University of Arizona Family Medicine Residency Program has offered three fourth-year options: a fourth-year fellowship in sports medicine, an integrated third- and fourth-year experience in complementary and alternative medicine, and an option for a master’s in public health degree. Data on applications to the residency program have been monitored to measure the effect of these options on the applicant pool. **Results:** National Resident Matching Program statistics, and the interest in the program expressed by US graduates, have improved for the University of Arizona program during a time when national interest in family medicine has continued to decline. **Discussion:** While cause and effect cannot be proven, offering an additional year of training did not decrease interest in the University of Arizona program and may have increased interest. Experiments with 4-year training programs are not possible in all programs because graduate medical education funding only covers the 3 years needed to complete the requirements for specialty certification.

(Fam Med 2007;39(7):488-94.)

The specialty choice of graduating US medical students has moved progressively away from family medicine for a decade. In the 2006 National Resident Matching Program (NRMP), 1,123 US senior medical students matched in a family medicine residency program, which is just 8% of all US seniors who participated in the NRMP. This total represents 1,217 fewer than the high water mark of 1997. There were 2,307 family medicine residency positions filled through the NRMP in 2006, which was an increase of 32 over 2005, but since 50 fewer family medicine positions were offered, the proportion of positions filled in the Match increased from 82.4 to 85.1. However, the proportion of all family medicine residency positions filled at the start of the residency year, July 1, declined to 93.5% in 2004 from 95.7% in 2003 and from the traditional 96%+ of previous years. These trends are illustrated in Figures 1, 2, and 3.

To compensate for the decline in US seniors choosing family medicine, residency programs have accepted increasing numbers and proportions of osteopathic graduates and graduates of foreign schools. This latter group includes both US citizens who have graduated from a foreign medical school and foreign nationals (Table I).

To learn more about why declining numbers of US students were choosing family medicine, the American Academy of Family Physicians (AAFP) commissioned the “Arizona Study” in 2001. The Arizona Study, named after the home institution of the study team, was an investigation of 24 medical schools. Included in the study were family medicine department heads, family medicine faculty, and three cohorts of graduates in the primary care specialties of family medicine, internal medicine, pediatrics, and combined internal medicine-pediatrics. Results relevant to length and content of

From the Department of Family and Community Medicine, University of Arizona (Drs Lebensohn and Senf); University of Arizona Phoenix Campus (Dr Campos-Outcalt); and American Academy of Family Physicians, Leawood, Kan (Dr Pugno).
family medicine residency training indicated three key points:

First, medical students frequently hear negative comments by faculty, residents, and other students about family medicine, and these negative comments appear to be occurring more frequently. These negative comments reflect both a lack of respect for the specialty of family medicine and the belief that the comprehensiveness of the specialty makes it impossible to learn everything necessary to practice competently.1

Second, students appear to be concerned about the issue of achieving competence in the field of family medicine. Comments by a number of graduates indicated that the 3-year length of training was considered too short to learn all that is needed.2 Concerns about the clinical competence of family medicine faculty were directly related to lower proportions of students entering family medicine at the medical school.3

Third, many students who are interested in primary care in urban areas do not want to deliver babies or perform surgery. These students tend not to enter family medicine.3

The AAFP and seven other national family medicine organizations began data collection for the Future of Family Medicine Project in 2002. The currently available data that are the underpinnings for the report4 do not speak directly to the issues of competence and length of training. However, the
task force report pertaining to medical education recommended: “That, in the interest of promoting active experimentation in family medicine education, the relative merits of 3-year versus 4-year training programs be evaluated through a national experiment based in pilot programs approved by the ABFP and RRC-FP that will measure and report on learning, outcomes, costs, benefits, and disadvantages.”

This recommendation and the data from the Arizona Study have led to a national dialogue over the length and content of family medicine residency training. Saultz and David called for debate over increasing training to 4 years, citing among other reasons the increased content in the field of medicine, the decreased educational time available with newly established limits to resident duty hours, the evidence that a substantial minority of US students selecting family medicine.\(^6\) Tiemstra went a step further, suggesting that to “fix” family medicine residency training it was necessary to extend training to 4 years, eliminate the requirement for training in pregnancy care, and reduce the number of training positions.\(^7\) Responses to both these commentaries have indicated that there is support for an increase in training length\(^8,9\) and also opposition,\(^10-12\) including the position that residency training be reduced to 2 years by reducing the content.\(^13,14\) Others have argued that the absolute length is not the issue.\(^15,16\) One of the concerns of opponents of increasing the length of training is the possible loss of interest on the part of medical students, further reducing the proportion selecting family medicine.\(^10,13\)

Limited data exist on the likely effect of increasing family medicine residency training to 4 years or reducing it to 2 years. In 2000, Duane et al surveyed family medicine residency directors, first-year residents, and practicing family physicians due to take their first recertification examination.\(^17\) Virtually none of the respondents felt that 2 years was an optimal length (0.9% of residency directors, 2.5% of residents, and 0.6% of practicing physicians). A majority of all three groups felt that 3 years was optimal, but 27% of residency directors, 32% of residents, and 28% of practicing physicians favored extending training to 4 years. Most residents (65%) and physicians (62%) indicated that they

| Table 1

Percentage of US Family Medicine Residency Positions Filled by Type of Graduate |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>US allopathic graduates</td>
<td>66.3%</td>
<td>56.8%</td>
<td>54.1%</td>
<td>48.3%</td>
<td>46.4%</td>
<td>44.6%</td>
</tr>
<tr>
<td>US osteopathic graduates</td>
<td>10.9%</td>
<td>13.6%</td>
<td>13.5%</td>
<td>14.4%</td>
<td>15.2%</td>
<td>15.8%</td>
</tr>
<tr>
<td>International medical graduates (IMGs)</td>
<td>22.8%</td>
<td>29.6%</td>
<td>32.4%</td>
<td>37.3%</td>
<td>38.4%</td>
<td>39.6%</td>
</tr>
<tr>
<td>Foreign national IMG</td>
<td>10.1%</td>
<td>12.7%</td>
<td>13.9%</td>
<td>17.4%</td>
<td>18.9%</td>
<td>21.3%</td>
</tr>
<tr>
<td>US citizen IMG</td>
<td>12.7%</td>
<td>16.9%</td>
<td>18.5%</td>
<td>19.9%</td>
<td>19.5%</td>
<td>18.3%</td>
</tr>
</tbody>
</table>
would still have chosen a family medicine residency if it was 4 years in length. Another survey of the residents 2 years later found similar proportions indicating that they would have chosen a family medicine residency (63%) even if it were 4 years in length.18 Reasons for favoring a 4-year program included the breadth of the specialty, the unfavorable comparisons with other programs with more restricted content and equal or longer training requirements, and the new reduction in working hours, which effectively reduces the training time available in 3 years. A more recent study of applicants to family medicine residency programs found that 60% felt their interest in family medicine would not change if training involved a 4-year residency, and approximately 16% felt they would be more likely to select a 4-year family medicine residency.19

In this paper, we report our experience with three different 4-year options in family medicine residency training: a fourth-year fellowship in sports medicine, an integrated third- and fourth-year experience in complementary and alternative medicine, and an option for a master’s in public health degree.

Methods

In 1999–2000, the University of Arizona Family Medicine Residency was a traditional 3-year program with a somewhat unique emphasis on underserved populations. Unlike programs nationally, the residency fills primarily with US graduates, 95% in the past 8 years (Table 1). The residency is not dual accredited by the American Osteopathic Association for either 1 or 3 years of training, but the program accepts osteopathic applicants through the NRMP and has had four osteopathic residents in the past 8 years.

Although the program historically filled with high-quality US graduates through the NRMP, in 1999–2000 the program had the worst NRMP Match in its history, with only three of the eight positions filled through the NRMP and one of the three applicants who matched did not graduate from medical school. Several factors likely influenced this outcome, including a change in residency director, the move of the continuity clinic site, and the fact that residents were unhappy with new productivity expectations. The challenge of “scrambling” to fill the unfilled positions led the faculty to question not only the selection process of applicants but also what makes a residency attractive to competitive applicants.

In 2002, the early findings of the Arizona Study triggered discussions among program faculty about lengthening the residency training to 4 years as a way to address the concern of students about achieving competency in all areas of family medicine. Although there were just a few faculty members who saw potential benefits from lengthening the family medicine residency, the program director was in favor of trying this change. Most faculty members were concerned that a 4-year residency would be a less attractive option for US medical graduates. After several meetings there was agreement to explore options of lengthening the residency to 4 years by adding extra training to the core family medicine requirements. Three content areas were identified as possibilities; one was a traditional primary care sports medicine fellowship, the second a residency/master’s in public health combined program, and the third was a family medicine/integrative medicine residency. Each of these would be developed in a different format.

Sports Medicine Fellowship

A primary care sports medicine training program was created in collaboration with campus health at the University of Arizona. The fellowship is a traditional 12-month program after completion of the 3 years of family medicine training. Fellows have most of their activities at campus health and outpatient sites. They continue to have one or two continuity clinics per week at the family medicine center and participate in some of the teaching activities. This option is available for up to two residents each year, who must apply for a position by the middle of the third year of residency. This option was accredited in 2003.

Residency/Master’s in Public Health (MPH)

Some of the course work for the MPH is completed in years 2 and 3 of the residency during elective rotations or evening classes. In the fourth year, the resident finishes the required courses and the MPH internship. This program assures the completion of the family medicine requirements in 3 years. The fourth-year residents have three continuity clinics per week at the family medicine center. This option is available for up to two residents each year. Residents must apply to the college of public health by the middle of the first year of residency and, if accepted, will receive a tuition waiver because they are employees of the University of Arizona.

Family/Integrative Medicine Residency

In 2003, our residency was approached by the Program in Integrative Medicine at the University of Arizona to create a 4-year residency program in family medicine and integrative medicine. The Residency Review Committee for Family Medicine (RRC-FM) gave permission to extend the core requirements of the 3 years of family medicine into the fourth year as an official experimental 4-year program. A more detailed description of the program was published recently.20 This is the only option of the three that may require an additional year of training to complete the requirements for family medicine board certification. The additional year, however, does not receive graduate medical education (GME) funding because the additional training in

---

Methods

In 1999–2000, the University of Arizona Family Medicine Residency was a traditional 3-year program with a somewhat unique emphasis on underserved populations. Unlike programs nationally, the residency fills primarily with US graduates, 95% in the past 8 years (Table 1). The residency is not dual accredited by the American Osteopathic Association for either 1 or 3 years of training, but the program accepts osteopathic applicants through the NRMP and has had four osteopathic residents in the past 8 years.

Although the program historically filled with high-quality US graduates through the NRMP, in 1999–2000 the program had the worst NRMP Match in its history, with only three of the eight positions filled through the NRMP and one of the three applicants who matched did not graduate from medical school. Several factors likely influenced this outcome, including a change in residency director, the move of the continuity clinic site, and the fact that residents were unhappy with new productivity expectations. The challenge of “scrambling” to fill the unfilled positions led the faculty to question not only the selection process of applicants but also what makes a residency attractive to competitive applicants.

In 2002, the early findings of the Arizona Study triggered discussions among program faculty about lengthening the residency training to 4 years as a way to address the concern of students about achieving competency in all areas of family medicine. Although there were just a few faculty members who saw potential benefits from lengthening the family medicine residency, the program director was in favor of trying
integrative medicine is not required by the RRC-FM. This option needs to be selected by the beginning of the second year of training and is available for up to two residents each year.

All three options were first described to the residency applicants after they had applied in 2003–2004 but would not have affected the number of applicants in that year. The following-year applicants may have heard of these options by word of mouth before applying to the residency, but apart from a description on the University of Arizona Residency Web site, there was no publicity about the 4-year options.

Funding and Logistics

The most challenging aspects of having a 4-year residency are the funding and the flexibility required in the curriculum, particularly for the integrated programs (integrative medicine and MPH). Institutional financial support remained steady, allowing the program to fund the fourth-year positions by reducing the number of positions in the first 3 years.

We changed from an 8/8/8 program to a 6/6/6/6 program. The six spots in year 4 is a maximum, and the actual number is determined by the number of residents choosing one of the 4-year options. The number of fourth-year residents has increased from two in the fiscal year 2004–2005 to three in 2005–2006 and again to four in the current fiscal year. This residency configuration has been financially neutral for the institution because the University of Arizona is over the allowed GME cap, and there were already a number of unfunded residency positions.

Subsequent to this change, additional funding became available from a community collaboration that has allowed us to increase to an 8-8-8- program, with the actual number in year 4 determined by the number of residents choosing a fourth year (between three and six). Our curriculum has always been flexible because the residency is university based, with less service commitment than the average family medicine residency, allowing for 4 elective months and few call months in the second and third years.

Results

Table 2 presents NRMP results for the past 8 years, including the proportion from the top 10 ranked candidates matriculating in each year and the number on the rank list needed to fill all positions. Although the number of US applicants decreased through 2003–2004, the Match results began improving, and the number of applicants is now on the rise contrary to the stable number of applicants to family medicine programs nationally.

In 1999–2000, we had 497 total applicants, 172 US applicants, and we filled three out of eight positions with 52 applicants ranked. In 2003–2004, there were 219 total applicants and 62 US applicants, and we filled all seven positions going down to rank order number 14 out of 26 total applicants ranked. In 2005, we had outstanding Match results. All positions were filled with US graduates, we went down to rank number 24 out of 30 on our list, and five were from our top 11 applicants ranked. In 2006, the number of applicants increased again, the proportion from our top 10 remained steady, however, we filled only six of eight positions through the Match. This result may be due in part to the addition of the two extra positions at the last minute, when applicants and faculty had expected just six to be available.

The University of Arizona Residency has always ranked applicants in the order we want them, with no consideration for where we think they will rank us. See Figure 4 for a comparison of the number of US applicants nationally and to our program. In summary, when our 4-year options became available, the number of applications from US graduates increased, and we were more likely to obtain our top choices.

Discussion

The option of 4 years of training appears to have enhanced our recruitment efforts and NRMP results during a time period when the proportion of US graduates entering family medicine continued to decline. However, it may have been the content of one or more

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion of Matriculants From Our Top 10 Ranked Applicants</th>
<th>Rank of Last Matriculant</th>
<th>Proportion of Matriculants Who Are US Graduates</th>
<th>Total Applicants Ranked</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>0.50</td>
<td>*</td>
<td>100%</td>
<td>36</td>
</tr>
<tr>
<td>2005</td>
<td>0.57</td>
<td>24</td>
<td>100%</td>
<td>30</td>
</tr>
<tr>
<td>2004</td>
<td>0.57</td>
<td>14</td>
<td>86%</td>
<td>25</td>
</tr>
<tr>
<td>2003</td>
<td>0.57</td>
<td>15</td>
<td>100%</td>
<td>30</td>
</tr>
<tr>
<td>2002</td>
<td>0.13</td>
<td>30</td>
<td>87%</td>
<td>49</td>
</tr>
<tr>
<td>2001</td>
<td>0.25</td>
<td>52</td>
<td>100%</td>
<td>52</td>
</tr>
<tr>
<td>2000</td>
<td>0.25</td>
<td>*</td>
<td>87%</td>
<td>54</td>
</tr>
<tr>
<td>1999</td>
<td>0.13</td>
<td>61</td>
<td>100%</td>
<td>63</td>
</tr>
</tbody>
</table>

* Cannot be calculated because of failure to fill.
of these training options rather than the potential for additional training itself that was the draw.

Our experimental programs do not truly constitute a required 4-year program. They are 3-year programs with an optional fourth year to enhance training in selected areas. As such, they have not really addressed the need to provide more time in family medicine residencies to achieve competency in the enlarging area of core family medicine competencies. However, anatomically, fellows have indicated that the fourth year allows for integration of information previously learned, as well as learning new material, both specialized and more general. As more residents opt for and complete these options, we will conduct graduate surveys to measure the perceived benefit of them.

The most challenging aspect of creating 4-year programs has been related to funding. Full Medicare GME funding is not available for training beyond that required for board eligibility. In addition, institutional residency GME caps can result in a lack of funding for additional residents caused by an expanded number of years of training. We initially funded our state-supported program by decreasing the number of residents in the first 3 years, resulting in an unchanged total number of family medicine residents. Since the institution’s resident numbers already exceeded its cap, the lack of funding for our program’s fourth year was budget neutral. If 4 years of training were to be required by the RRC-FM, full Medicare funding for the additional residents would become available but presumably only if they fit within institutional caps.

Schedule inflexibility can also be a barrier to 4-year programs. Our program has minimal service requirements for our second- and third-year residents, allowing for a maximum number of electives and the ability to add evening and self-study courses to the curriculum. Programs with heavier on-call and service obligations would find this harder to achieve.

It is also unclear at this time how an additional year of training will affect residents who have received scholarships with service obligations, such as the National Health Service Corps. These scholarship programs usually require service to start upon completion of a standard residency program that qualifies residents for board eligibility. While one of our experimental options does not result in completion of all RRC-FM requirements until sometime in the fourth year, we are not sure how this will be interpreted by scholarship programs.
Conclusions

Our 4-year residency experiment has, we believe, enhanced our ability to recruit highly qualified US medical school applicants. It has proven to be a popular option and, contrary to the concerns of faculty, has increased, not decreased, interest in the residency on the part of US graduates.

Corresponding Author: Address correspondence to Dr Lebensohn, University of Arizona, Department of Family and Community Medicine, Family Practice Residency, 707 N. Alvernon Way Suite 101, Tucson, AZ 85711. 520-694-1607. plebenso@email.arizona.edu.

REFERENCES

9. Schwenk TL. Residency should be expanded to 4 years. Fam Med 2004;36(9):614-5.