

Results of the 2010 National Resident Matching Program: Family Medicine

Perry A. Pugno, MD, MPH, CPE; Amy L. McGaha, MD; Gordon T. Schmittling, MS; Ashley D. DeVilbiss Bieck, MPA; Philip W. Crosley, MBA; Daniel J. Ostergaard, MD

The results of the 2010 National Resident Matching Program (NRMP) reflect a small but promising increased level of student interest in family medicine residency training in the United States. Compared with the 2009 Match, 75 more positions (with 101 more US seniors) were filled in family medicine residency programs through the NRMP in 2010, at the same time that seven more positions were filled in primary care internal medicine (one more US senior), 14 fewer positions were filled in pediatrics-primary care (16 fewer US seniors), and 16 more positions were filled in internal medicine-pediatrics programs (58 more US seniors). Multiple forces including student perspectives of the demands, rewards, and prestige of the specialty; national dialogue about health care reform; turbulence in the economic environment; lifestyle issues; the advice of deans; and the impact of faculty role models continue to influence medical student career choices. Ninety-four more positions (90 more US seniors) were filled in categorical internal medicine. Fifty-seven more positions (29 more US seniors) were filled in categorical pediatrics programs. The 2010 NRMP results suggest that there is a small increase in primary care careers; however, students continue to show an overall preference for subspecialty careers. Despite matching the highest number of US seniors into family medicine residencies since 2004, in 2010 the production of family physicians remains insufficient to meet the current and anticipated need to support the nation's primary care infrastructure.

(Fam Med 2010;42(8):552-61.)

Family physicians are uniquely prepared to meet the health care needs of the American people as reports demonstrate that family physicians are prepared to deliver specifically what Americans say they want and need from a physician.¹ Family physicians are the only medical specialists who distribute themselves throughout America's communities in the same proportion as the population. The AAFP is dedicated to assuring that there is a well-trained family physician available for everyone in America who wants and needs one. The AAFP is committed to assuring high-quality, innovative education for medical students and residents that embodies the values and competencies of family medicine.²

The AAFP continues its Comprehensive Student Interest Initiative, which includes numerous projects to increase student awareness of and interest in family medicine. Student activity on campuses, in Family Medicine Interest Groups, and as student members of the AAFP, continues to grow each year. In 2010, student AAFP membership was 14,100, approximately one-fifth of all US medical students. The presence of departments of family medicine in all but 11 US medical schools, the establishment of required clinical clerkships in family medicine in more than 80% of medical schools, and increased opportunities for family medicine elective experiences have improved the environment of medical education.^{3,4}

Despite these student interest initiatives, sustained improvement in interest by US seniors remains elusive. While the 2010 increase in the number of US seniors choosing family medicine was the highest since 2004, the decade-long decline of US student interest in family medicine careers remains a concern. Student perceptions of the demands, rewards, and prestige of primary care specialties; market changes; lifestyle priorities;

From the director (Dr Pugno) and assistant director (Dr McGaha), Division of Medical Education; director, Division of Research and Information Services (Mr Schmittling); manager, Student Interest, Division of Medical Education (Ms Bieck), Medical Education data and information specialist (Mr Crosley); and vice president, Professional Activities (Dr Ostergaard), American Academy of Family Physicians, Leawood, Kan.

and the influence of medical school faculty continue to influence career choice. The national dialogue about health care reform included much recognition of the need for a strong family medicine workforce and improvements in the primary care infrastructure. However, there is no good data to clearly demonstrate how these policy discussions impacted students' specialty choices.

2010 NRMP Results: Family Medicine

Family medicine residency programs offered 2,630 first-year positions through the 2010 NRMP, an increase of 75 from 2009. On Match Day 2010, 2,404 of these positions were filled through the Match, an increase of 75 from 2009 for a fill rate of 91.4%, compared with 91.2% in 2009, 90.6% in 2008, 88.2% in 2007, 85.0% in 2006, 82.4% in 2005, and 78.8% in 2004 (Figure 1). A total of 101 more US seniors matched into family medicine residencies in 2010 as in 2009 (1,184 versus 1,083)^{5,6} (Figure 2).

Of those US seniors who successfully matched in 2010, 7.9% matched in family medicine, compared with 7.4% in 2009, 8.2% in 2008, 7.8% in 2007, 8.1% in 2006, 8.2% in 2005, and 8.8% in 2004. Of all participating US seniors in the 2010 NRMP, 7.4% matched in family medicine, compared with 6.9% in 2009, 7.7% in 2008, 7.3% in 2007, 7.5% in 2006, 7.7% in 2005, and 8.2% in 2004.^{5,6} In 2010, the Pacific region had the highest fill rate in family medicine (97.5%), while the East North Central region had the lowest fill rate in family medicine (83.4%)⁵ (Figure 3).

Figure 1

Family Medicine Positions Offered and Filled in March, 1998–2010

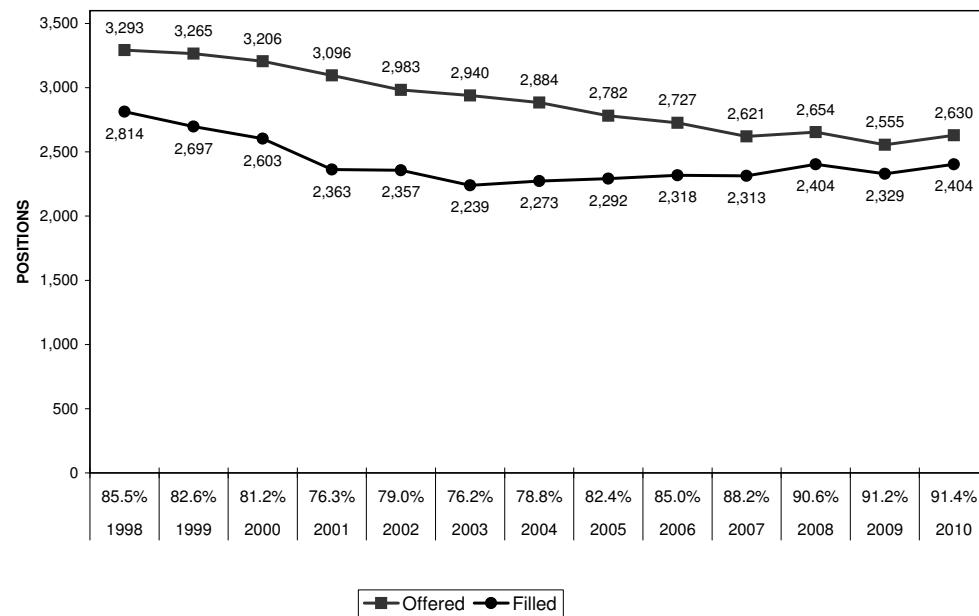
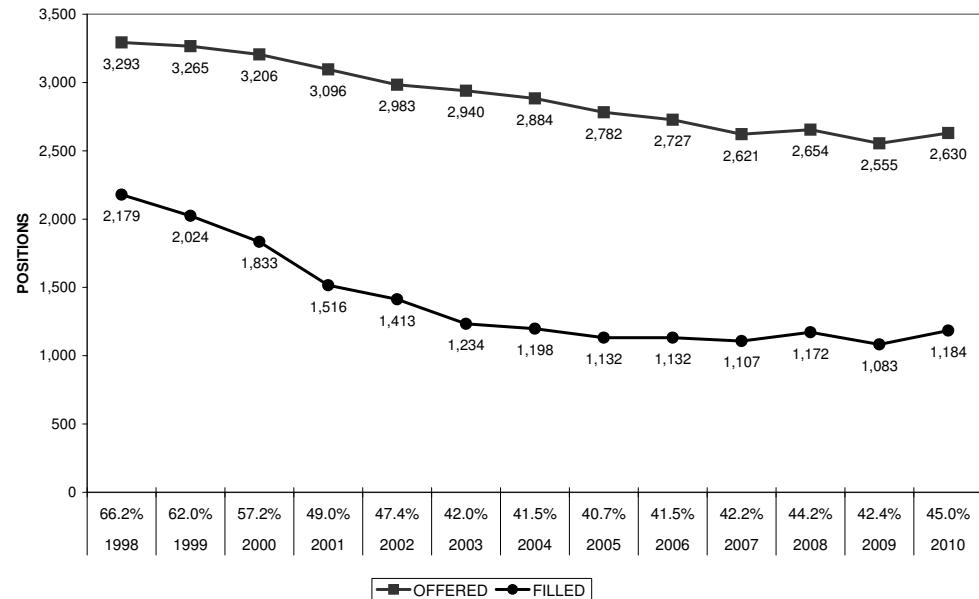


Figure 2

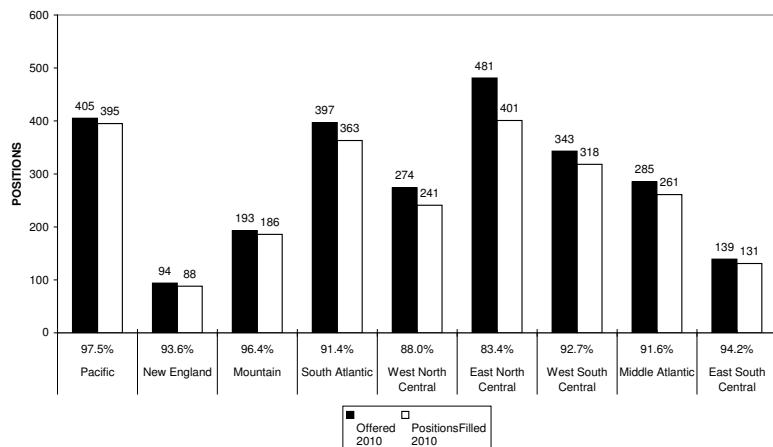
Family Medicine Positions Offered and Filled With US Seniors in March, 1998–2010



In addition to US MD seniors in 2010 who filled 45.0% of matched positions in family medicine, 1,220 other graduates matched in family medicine in 2010, compared with 1,246 in 2009, 1,232 in 2008, 1,206 in 2007, 1,186 in 2006, 1,160 in 2005, 1,075 in 2004, and

Figure 3

2010 NRMP Family Medicine Results by Regions



1,005 in 2003. These include 400 (482 in 2009) non-US citizens educated internationally (16.6%), 274 (244 in 2009) graduates of colleges of osteopathic medicine (11.4%), 440 (420 in 2009) US citizens educated internationally (18.3%), 85 (80 in 2009) physicians who graduated from US medical schools prior to 2009 (3.5%), 20 (12 in 2009) "fifth pathway" students (0.8%), and one (two in 2009) Canadian medical school graduate (0.04%).^{5,6}

Comparison With Other Disciplines

More US seniors matched in categorical internal medicine residencies, increasing by 90 from 2,632 in 2009 to 2,722 in 2010. Also, 11 fewer US seniors chose preliminary internal medicine positions (students who choose to complete 1 year of internal medicine before continuing in another specialty): 1,493 in 2010 compared with 1,504 in 2009, 1,471 in 2008, 1,491 in 2007, 1,469 in 2006, 1,526 in 2005, and 1,471 in 2004^{5,6} (Figure 4).

One more US senior chose a career in primary care internal medicine through the 2010 Match (156), compared with 2009 (155). Fifty-eight more US seniors chose combined internal medicine-pediatrics training in 2010 (299) compared with 2009 (241)^{5,6} (Figure 5). Thirty-six more positions were filled in 2010 (2,476) in pediatrics (all types) compared with 2009 (2,440), and the number of US seniors increased by 10 from 1,756 in 2009 to 1,766 in 2010. Categorical pediatrics programs matched 1,711 US seniors in 2010, 29 more than the 1,682 matched in 2009 (Figure 4). In 2010, 65 positions were offered in pediatric-primary care programs, down 14 from 79 in 2009, of which 30 were filled with US seniors, compared with 46 in 2009.^{5,6}

More international medical graduates (IMGs) continue to match in internal medicine (2,071 into categorical, preliminary, primary care, and internal medicine-pediatrics), compared with pediatrics (433) and family medicine (840). Similarly, among the matched IMGs, the percentage of non-US citizens is higher in internal medicine (72.5%) compared with pediatrics (66.1%) and family medicine (47.6%).⁵ Among the 24 major specialties of medicine, family medicine ranks fourth in the percentage of IMG residents (Figure 6). Compared with the 15 subspecialties of internal medicine, family medicine would rank ninth in the percentage of IMG residents (Figure 7).

July Fill Rate

Since 1987, more positions have been filled in family medicine residencies in July than are offered through the NRMP in March.

This July increase was due to program expansion between 1990 and 1998 and to the net addition of newly accredited programs that became ready to accept first-year residents (Figure 8). Since 1998, this difference is primarily due to the number of positions filled outside of the NRMP process. The previous highest July fill rate (98.7%) was in 1984, after which July fill rates decreased to 88.3% in 1991.⁶ The 2010 July fill rate in family medicine residencies was 99.7% (3,306 of 3,316), an increase of 32 positions offered and an increase of 103 positions filled compared with 2009, when the July fill rate was 97.5%.⁷

On July 1, 2010, 9,790 residents were training in 452 programs, an average of 21.7 per program compared with 9,747 (21.6 per program) in 2009, 10,042 (22.1 per program) in 2008, 10,085 (22.0 per program) in 2007, 9,997 (21.7 per program) in 2006, 9,780 (21.3 per program) in 2005, 9,825 (21.2 per program) in 2004, 9,995 (21.1 per program) in 2003, 10,130 (21.7 per program) in 2002, 10,262 (21.9 per program) in 2001, 10,503 (22.3 per program) in 2000, 8,513 (20.8) in 1994, and a nadir of 7,279 (19.1) in 1988. There are currently 3,306 first-year residents, an average of 7.3 per program compared with 3,203 (7.1 per program) in 2009, 3,307 (7.3 per program) in 2008, 3,204 (7.0 per program) in 2007, 3,429 (7.5 per program) in 2006, 3,282 (7.2 per program) in 2005, 3,275 (7.1 per program) in 2004, 3,329 (7.0 per program) in 2003, 3,360 (7.2 per program) in 2002, and 3,399 (7.2 per program) in 2001.⁷

Graduates of US allopathic medical schools filled 1,437 (43.4%) in July 2010, compared with 1,253 first-year positions (39.1%) in 2009, 1,391 (42.1%) in 2008, 1,387 (43.3%) in 2007, 1,535 (44.8%) in 2006, 1,463 (44.6%) in 2005, 1,520 (46.4%) in 2004, 1,607 (48.3%) in 2003, 1,812 (54.1%) in 2002, 1,926 (56.8%)

in 2001, 2,293 (66.3%) in 2000, 2,520 (71.3%) in 1999, 2,686 (75.2%) in 1998, 2,762 (77.5%) in 1997, and 2,765 (79.4%) in 1996.

Graduates of colleges of osteopathic medicine filled 599 first-year positions (18.1%) in July 2010, compared with 584 (18.2%) in 2009, 560 (16.9%) in 2008, 503 (15.7%) in 2007, 445 (13.0%) in 2006, 520 (15.8%) in

2005, 498 (15.2%) in 2004, 481 (14.4%) in 2003, 452 (13.5%) in 2002, 461 (13.6%) in 2001, 378 (10.9%) in 2000, 355 (10.0%) in 1999, and 232 (7.6%) in 1994.⁷ In 1981 the DO fill rate was 2%.^{5,6} This increase in osteopathic graduates selecting allopathic family medicine programs is expected given the recent increase in dually accredited residency programs from 26 in 2003 to 105 in 2010.⁸

In July 2010, 1,270 (38.4%) of the 3,306 first-year family medicine residents were IMGs, compared with 1,354 (42.3%) of the 3,203 in 2009, 1,348 (40.8%) in 2008, 1,296 (40.4%) in 2007, 1,443 (42.1%) in 2006, 1,299 (39.6%) in 2005, 1,257 (38.4%) in 2004, 1,241 (37.3%) in 2003, 1,087 (32.4%) in 2002, 1,001 (29.4%) in 2001, and 789 (22.7%) in 2000. A total of 499 (15.1%) first-year residents were non-US citizen IMGs, compared with 656 (20.4%) in 2009, 648 (19.6%) in 2008, 630 (19.7%) in 2007, 720 (21.0%) in 2006, 698 (21.3%) in 2005, 618 (18.9%) in 2004, 579 (17.4%) in 2003, 466 (13.9%) in 2002, 430 (12.6%) in 2001, and 351 (10.1%) in 2000. A total of 771 (23.3%) were US citizen IMGs, compared with 698 (21.8%) in 2009, 700 (21.2%) in 2008, 666 (20.8%) in 2007, 723 (21.1%) in 2006, 601 (18.3%) in 2005, 639 (19.5%) in 2004, 662 (19.9%) in 2003, 621 (18.5%) in 2002, 571 (16.8%) in 2001, and 438 (12.6%) in 2000.^{6,7} Interestingly, of the 430 IMGs (compared to 452 in 2009) who entered PGY-1 positions in family medicine residencies after the 2010 Match, 77% (compared with 61.5% in 2009) were US citizens. Factors affecting this difference are likely to be the continued challenges associated with non-citizens obtaining visas to train in the United States (Figure 9).

Figure 4

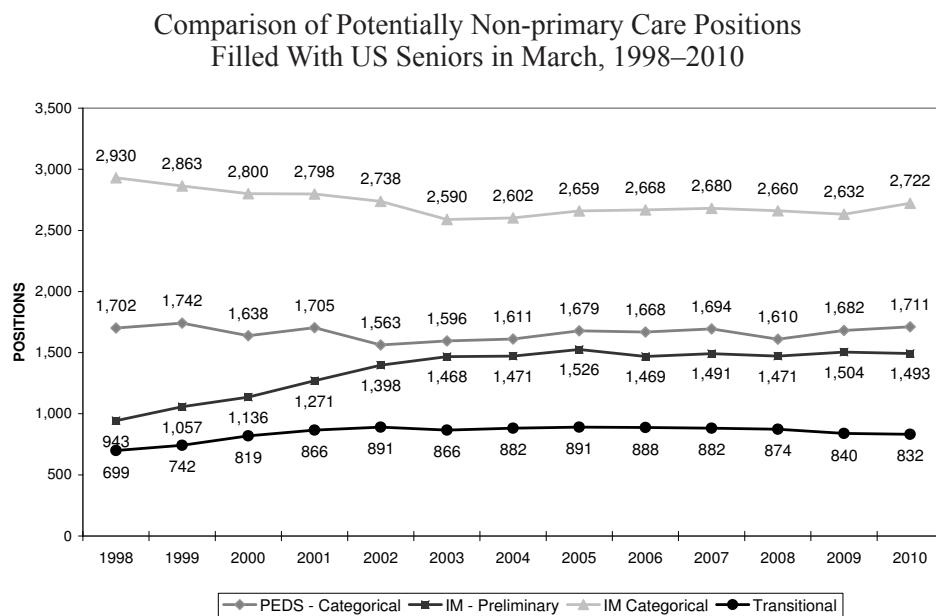
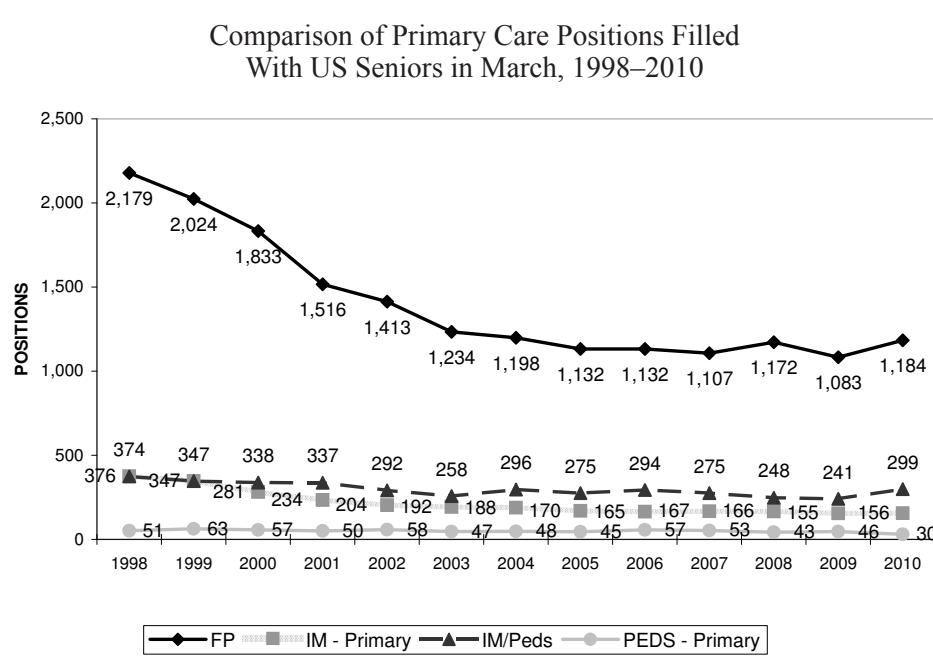


Figure 5

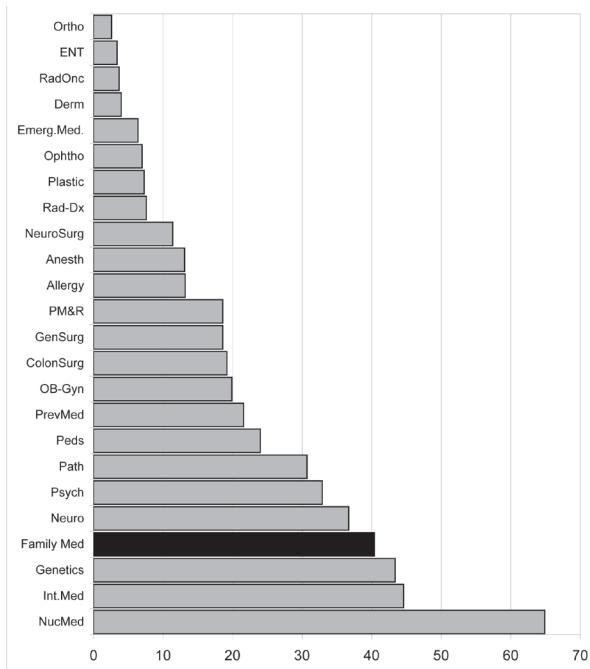


Discussion

The results of the 2010 Match represent the seventh year of increase in the percentage of positions filled in family

Figure 6

% IMGs in ACGME Residencies, December 1, 2008

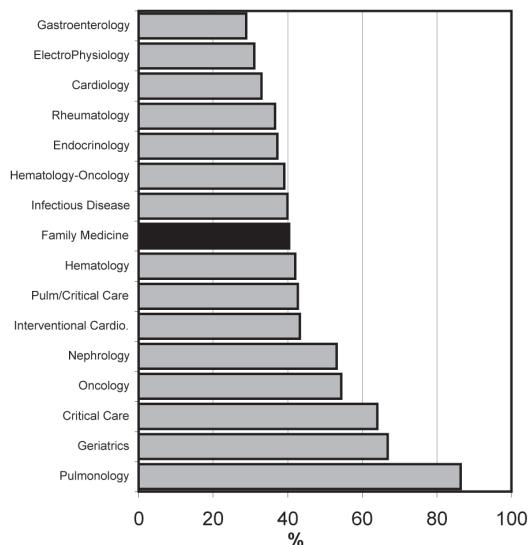


IMG—international medical graduate

ACGME—Accreditation Council for Graduate Medical Education

Figure 7

% IMGs in ACGME Residencies, December 1, 2008



IMG—international medical graduate

ACGME—Accreditation Council for Graduate Medical Education

medicine through the NRMP since 2003. Reviewing the Match performance of other specialties over the past decade suggests varying trends. For example, anesthesiology decreased from 163 US seniors in 1994 down to 43 in 1996. That trend reversed by increasing from 137 in 1999 to 626 US seniors in 2010. Diagnostic radiology matched 243 US seniors in 1996, dropped to 79 in 1997, increased to 135 in 2008, but again decreased to 120 in 2010.^{5,6}

Family medicine's primary care colleagues experienced a slight increase in interest in the 2010 Match. Internal medicine-primary care offered 12 more positions this year and, for the first time since 2006, increased in the number of positions filled (from 236 in 2009 to 243 in 2010) and increased in positions filled by US seniors (from 155 in 2009 to 156 in 2010). Combined internal medicine-pediatric residencies filled 16 more positions (355 in 2010 versus 339 in 2009), with 58 more US seniors (299 in 2010 versus 241 in 2009). In internal medicine categorical, 94 more positions were offered in 2010 compared with 2009 (4,999 versus 4,922), with a higher fill rate than in 2009 for total positions (99.0% versus 98.6%) and an increased rate of positions filled with US seniors (54.5% versus 53.5%).^{5,6}

In the 2010 Match, pediatrics showed varying trends in positions filled and those filled with US se-

niors. Pediatrics-primary care decreased its positions filled with US seniors from 46 in 2009 to 30 in 2010. Pediatrics-categorical increased in its overall positions filled in 2010 from the prior year (2,383 versus 2,326) and increased in the number of those positions filled with US seniors (1,711 versus 1,682).^{5,6}

Internal medicine-preliminary decreased its number of positions offered (1,863 versus 1,880), and decreased the positions filled (1,758 versus 1,791). There was a decrease in the number of positions filled with US seniors (1,493 versus 1,504). Consequently, for internal medicine-preliminary, the overall fill percentage decreased in 2010 (94.4% versus 95.3%) with a small increase in the percentage filled with US seniors (80.1% versus 80.0%). It is noteworthy that for transitional residency programs, one fewer position was offered this year compared with 2009 (980 versus 981) with more positions filled overall (945 versus 943) and fewer filled with US seniors (832 versus 840). The percentage of transitional year residencies filled with US seniors decreased from 85.6% in 2009 to 84.9% in 2010.^{5,6}

Controversy persists within the OB-GYN community between those who view the specialty as primary care and those who perceive a more surgical orientation. After 4 years of decreases from 1998 to 2001, and a slight increase in 2002, OB-GYN residencies in 2003 and 2004 experienced a decrease in positions filled with US seniors (743 in 2004 and 786 in 2003 versus 848 in 2002). This specialty has since then experienced an increase in the number of positions filled (1,130 in

2006, 1,149 in 2007, 1,151 in 2008, 1,179 in 2009, and 1,182 in 2010) and positions filled with US seniors (835 in 2006, 837 in 2007, 838 in 2008, 879 in 2009, and 915 in 2010) since 2004.⁵

Contributors to Recent Trends

Evidence-based Student Interest Initiatives

Numerous studies continue to attempt to identify and understand drivers of student interest in family medi-

cine.⁸ The AAFP continues to support evidence-based student interest activity programs to support communications and image of family medicine, admissions and pipeline programs, role models and mentors, and educational activities. Ongoing programs are continually evaluated, and new initiatives are being developed. Opportunities for collaboration should be actively pursued, including collaborations among medical student education faculty, FMIG faculty advisors, residency directors, department chairs, and family medicine organizations. Residency directors in particular may find opportunities for residents to serve as role models and mentors for young premedical and medical students.

Figure 8
Family Medicine Positions Offered and Filled in July, 1998–2010

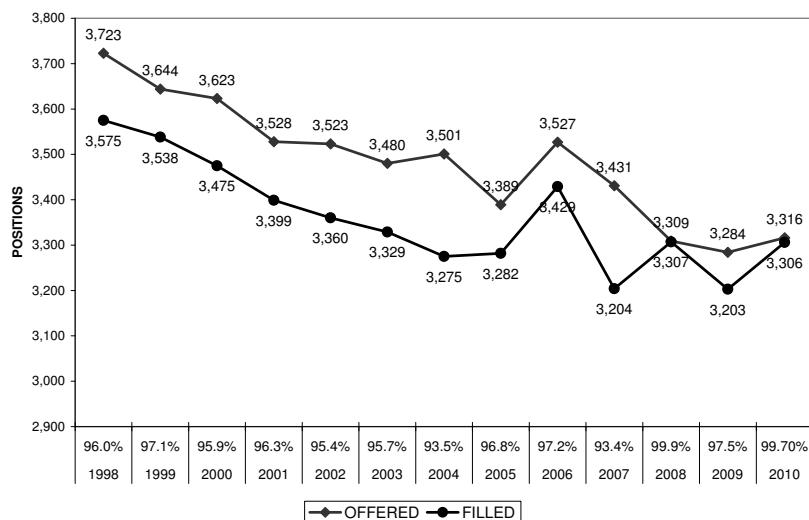
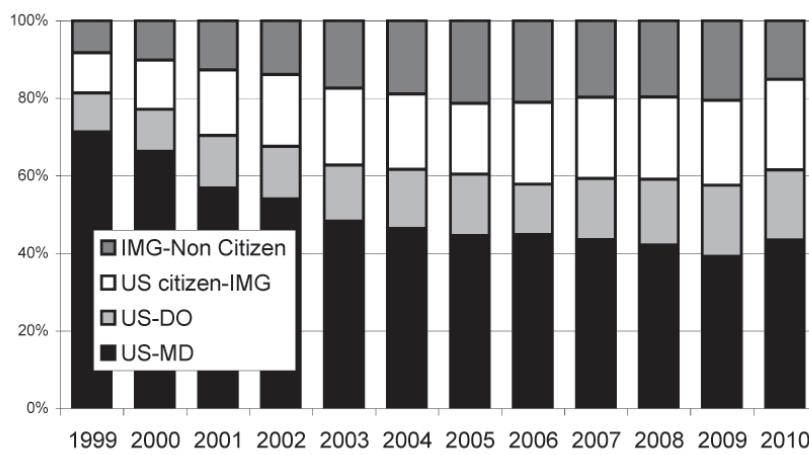


Figure 9
Family Medicine Resident Types—July



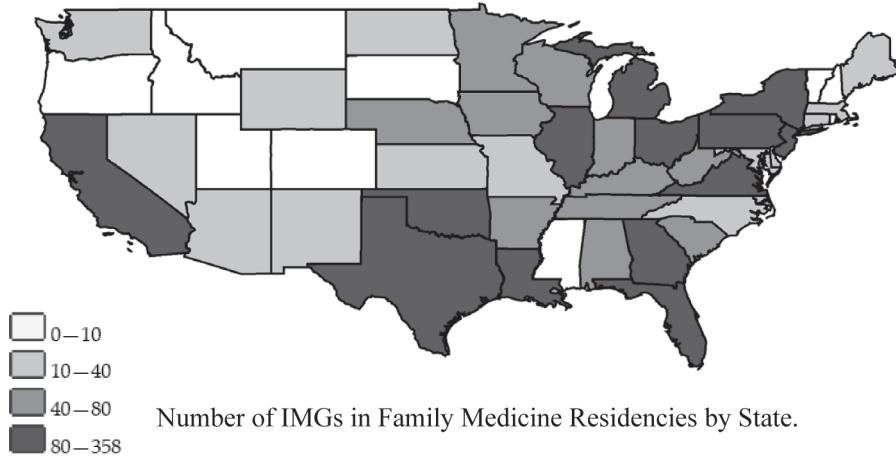
Perceptions of Medical Students

Multiple factors appear to steer students away from the choice of family medicine. Increasingly apparent is the perception by students that family medicine lacks the prestige of other specialties within academic health centers.^{1,9} Disparaging remarks made to medical students about an interest in family medicine by faculty and residents is a commonly cited experience.¹⁰ Medical students continue to be disproportionately discouraged from careers in family medicine by faculty and residents in other specialties. Seventy-two percent of third-year students identified family medicine as the specialty most often “bashed”¹¹. This is unfortunately aggravated by the experiences of some students who indicate that their third-year clerkships in family medicine lack some of the intellectual rigor and direct clinical experience of other core clerkships.³ This supports the misconception that being a family physician is “too easy” for the typically motivated medical student.³

At the other end of the spectrum, some medical students report concerns associated with family medicine because it is “too hard,” questioning physicians’ capacity to master the content needed to practice comprehensive, evidence-based medicine.^{1,9} This perspective has been exacerbated by the challenges of primary care practice in an environment of increased penetration of over-managed care and burdensome regulatory oversight. The extent to which practicing physicians

Figure 10

International Medical Graduates (IMGs) in Family Medicine Residencies
Distribution by State—National Census July 1, 2010



these potential applicants may be unwilling to even consider a career in medicine, thereby decreasing diversity in the workforce and exacerbating disparities in health care.¹⁶ Except for a few model programs that preferentially select students likely to enter rural or medically underserved areas of practice, medical school admission committees may be considering fewer applicants whose characteristics are associated with the selection of primary care careers, particularly family medicine. The effect of this pipeline drain may minimize the appearance of the actual impact of educational debt on medical student specialty choice.¹⁶⁻¹⁹

voice dissatisfaction can dissuade medical school graduates from choosing careers in primary care.¹⁰

International Medical Graduates

IMGs continue to represent a significant proportion of residents in family medicine (Figure 9) as well as in most other specialties (Figures 6 and 7). Presently in family medicine, those who are US citizens trained abroad outnumber those who are non-citizens (700 versus 656). The geographic distribution of IMGs in family medicine residencies varies substantially (Figure 10), with New York, Texas, Pennsylvania, and Illinois having the greatest concentrations. At the same time, the performance of IMGs on standardized tests for certification and licensure is undergoing detailed analysis.^{12,13} In addition, foreign schools are receiving greater attention by the federal government¹³ as the Association of American Medical Colleges (AAMC) proposes an expansion of medical schools in the United States, but GME positions remain “capped” by the Centers for Medicare and Medicaid Services (CMS).¹⁴

Medical Student Debt

As medical school indebtedness continues to escalate to an average of more than \$140,000 at graduation, consideration must be given to the motivation of the applicant pool toward primary care careers.¹⁵ This may be especially true from the perspective of older nontraditional students, minorities, or students from disadvantaged backgrounds, all of whom have been more likely to choose careers in family medicine. As a result of the perception of nearly insurmountable debt,

Infrastructure of Medical Schools

The infrastructure of US medical education continues to play a powerful role in determining how many graduates enter family medicine residencies. The presence of a well-funded department of family medicine and the number of faculty are correlated with a higher percentage of medical students entering family medicine residencies²⁰⁻²³ as well as internal medicine and pediatric residencies.²¹ One of the most important variables for predicting the proportion of students at a medical school who choose family medicine is the proportion of faculty who are family physicians.²¹ In 2010, 11 US medical schools remain without a department of family medicine. Similarly, the presence in the curriculum and the duration of a required clinical clerkship in family medicine are both correlated with more students choosing family medicine residencies, but as many as 13 LCME-accredited US medical schools still do not have required clinical clerkships in family medicine.²⁴⁻²⁷

Match Positions

In the year 2010, 75 more family medicine positions were offered compared with the previous year (2,630 versus 2,555). For 2010, there was an increase in the number of positions offered in July (3,316 in 2010 versus 3,284 in 2009). While the decline in the number of functioning family medicine programs seems to have stabilized (452 in 2010 compared with 451 in 2009, 455 in 2008, 458 in 2007, and 460 in 2006), threats to family medicine residency programs continue. Challenges include continued reductions in federal support

for GME through the Medicare program and other financial pressures. Such financial pressures have been identified as pivotal in the closure of many family medicine residencies over the past several years.²⁸ AAFP workforce policy, last adopted in 2009, demonstrates that this trend must be reversed if we are to produce an adequate family physician workforce to meet the nation's projected needs based on population growth, demographic factors, and health care utilization.²⁹

Income

The turbulence of the US health care environment and increasing student debt support the appearance of medical students selecting careers that provide them both economic and practice security.⁵ High Match percentages in diagnostic radiology, anesthesiology, and emergency medicine support trends toward physician practice with a high income coupled with predictable work hours and lifestyle.³⁰ For many students, the level of compensation within a discipline may serve as a proxy for the prestige and market demand for that specialty. While greater than \$152,000 per year on average, the current reported net income for family physicians remains significantly lower than for most other specialists.³¹

A growing body of evidence indicates that the widening income gap between primary care and specialty care negatively impacts student choice in primary care careers and that this imbalance threatens the development and maintenance of a healthy primary care base in the United States.³² Further analysis continues to support the link between specialty choice and salary, including a study highlighting the linear association between specialty income and high Match rates.³³ Four specific factors (patient volume, the Relative Value Scale Update process, the Medicare Sustainable Growth Rate (SGR) formula, and inequities in specialty care payment by private insurers) are identified as specifically contributing to the continued disparity.³² These issues must be addressed not only to attract more students to primary care careers but also to ensure the financial stability of the current primary care infrastructure of the nation. The most recent report by the Council on Graduate Medical Education (COGME) specifically recommends reimbursement changes to narrow this disparity.³⁴ Investments in the nation's primary care infrastructure will support patients' access to the kind of care that is most needed to prevent illness, intervene early, and avoid further disease and disability.

Workforce

The AAFP continues to focus efforts on analyzing the current generation of premedical and medical students, reflecting their interests and addressing their concerns.³⁵ The current number of family medicine residencies in 2010 stands at 452 family medicine residency programs with about 3,250 residents in each of the 3

years of training. This is still below the number of annual graduates required to achieve the projected family physician workforce needed for the nation.³⁴ Evidence is mounting that a health system built on a foundation of primary care is not only ideal in terms of patient care outcome,³⁶ but it is also what patients want.¹ Generalists make up fewer than 40% of total physicians, while family physicians represent 40% of generalist physicians in the United States.³⁷ However, family physicians are the most likely specialty to practice as generalists, as well as to serve rural and underserved populations.³⁸⁻⁴⁰ The distribution of family physicians and the staffing of community health centers that provide care to rural and underserved communities are negatively impacted by the workforce challenges of decreased student interest in family medicine.^{40,41} The 2009 AAFP Workforce Policy includes summary recommendations for strengthening the nation's primary care infrastructure, such as establishing a national health care workforce entity, shoring up support for programs like the National Health Service Corps, AHECs as training facilities, and Title VII funding for primary care education.²⁹

Value Proposition

It is a well-accepted concept that the United States needs more family physicians.⁴⁰ Notable among the findings of the national market research conducted in the Future of Family Medicine project are that people in America value what family physicians offer, namely a Patient-centered Medical Home (PCMH) wherein they experience a continuous relationship with a primary care physician.¹ Within that primary medical relationship, people want, expect, and value a set of services, including acute care, chronic care, disease prevention, care in the hospital setting, and primary mental health care. Family physicians are both prepared to deliver what people want, expect, and value and are satisfied with their abilities to deliver it. The discipline faces clearly identified challenges as it prepares for the next generation of care: clearly communicating the specialty of family medicine to the public, organizing individual practices into a recognized brand, challenging the disrespectful climate of academia, enhancing reimbursement, and communicating the attractiveness of a career in family medicine.

Conclusions

In 2010, more US seniors chose family medicine through the NRMP than at any time since 2004. Despite this year's promising positive trend in family medicine, internal medicine-primary care, and internal medicine-pediatrics combined, the percentage of US seniors choosing primary care specialties still remains alarmingly low. High Match rates in transitional residencies and preliminary internal medicine programs provide trainees with the opportunity to further observe the health care environment and to take advantage

of the career path options those preliminary training programs provide, with the overwhelming majority of those physicians ultimately choosing subspecialty careers. Some projections anticipate that the shortfall of primary care physicians for the aging adult population will be worse than originally projected as fewer internists are pursuing generalist careers, and family physicians will be increasingly important in the provision of this care.^{42,43}

Leaders in the business and health care fields are recognizing the importance of developing and implementing the PCMH model as the basis for improving health care delivery and access to primary care.⁴⁴ The AAFP, American Osteopathic Association, American Academy of Pediatrics, and the American College of Physicians have adopted the Joint Principles of the Patient-centered Medical Home, the elements of which include having a personal physician in a physician-directed medical practice, whole person orientation, coordination of care, quality and safety, and enhanced access. Important to the implementation of this model is addressing payment mechanisms to support coordination of care and follow-up. Family physicians are uniquely prepared to deliver just this kind of care within the Patient-centered Medical Home.⁴⁵

Over the past 13 years, 18,207 US seniors matched into family medicine residencies in spite of the often-negative influences from within and outside of the medical education environment. These students appear to be resistant to conflicting environmental messages and are clear in their commitment to serving the nation as family physicians. These are the physicians America needs.

The results of the 2010 Match provide further evidence of the challenges facing the discipline and the need for redoubled efforts to impact student interest in family medicine careers. This is a critical step in ensuring that everyone in the nation has access to a Patient-centered Medical Home with a family physician.

Corresponding Author: Address correspondence to Dr Pugno, American Academy of Family Physicians, 11400 Tomahawk Creek Parkway, Leawood, KS 66211. 913-906-6000. Fax: 913-906-6289. ppugno@aafp.org.

REFERENCES

- Future of Family Medicine Project Leadership Committee. The future of family medicine: a collaborative project of the family medicine community [online]. Ann Fam Med 2004;2(Suppl 1). www.annfammed.org/cgi/content/full/2/suppl_1/S3.
- American Academy of Family Physicians. 2006–2007 strategic plan. Leawood, Kan: American Academy of Family Physicians, 2007.
- American Academy of Family Physicians. Report of the Task Force on Student Interest. Leawood, Kan: American Academy of Family Physicians, 2000.
- Block SC, Clark-Chiarelli N, Peters AS, Singer JD. Academia's chilly climate for primary care. JAMA 1996;276:677-82.
- National Resident Matching Program. Results and data: 2010 Match. Washington, DC: National Resident Matching Program, May 2010.
- Pugno PA, McGaha AL, Schmittling GT, DeVilbiss A, Ostergaard DJ. Results of the 2009 National Resident Matching Program: family medicine. Fam Med 2009;41(8):567-77.
- American Academy of Family Physicians. American Academy of Family Physicians' residency census survey. Reprint No 150. Leawood, Kan: American Academy of Family Physicians, 2010.
- Campos-Outcalt D, Senf J, Kutob R. A comparison of primary care graduates from schools with increasing production of family physicians to those from schools with decreasing production. Fam Med 2004;36(4):260-4.
- Schafer S, Shore W, French L, Tovar J, Hughes S, Hearst N. Rejecting family practice: medical students switching to other specialties. Fam Med 2000;32(5):320-5.
- Devoe J, Fryer GE, Horgraves JL, Phillips RL, Green LA. Does career dissatisfaction affect the ability of family physicians to deliver high quality care? J Fam Pract 2002;51(3):223-8.
- Holmes D, Tumiell-Berhalter LM, Zayas LE, Watkins R. "Bashing" of medical specialties: students' experiences and recommendations. Fam Med 2008;40(6):400-6.
- Harik P, Claser B, Grabovsky I, Margolis M, Dillon G, Boulet J. Relationships among subcomponents of the USMLE Step 2 Clinical Skills Examination, the Step 1, and the Step 2 Clinical Knowledge Examinations. Acad Med 2006;81(10 Suppl):S21-S24.
- van Zanten M, Boulet J. Medical education in the Caribbean: variability in educational commission for foreign medical graduate certification rates and United States Medical Licensing Examination attempts. Acad Med 2009;84(10 Suppl):S13-S16.
- US Government Accountability Office. Report to Congressional Committees. Foreign medical schools: education should improve monitoring of schools that participate in the Federal Student Loan Program. GAO-10-412. Washington, DC: US Government Accountability Office, June 2010.
- Association of American Medical Colleges. Medical student education: costs, debt, and loan repayment facts. Survey of resident/fellow stipends and benefits. Washington, DC: Association of American Medical Colleges, October 2009.
- Bland CJ, Meurer LN, Maldonado G. Determinants of primary care specialty choice: a non-statistical meta-analysis of the literature. Acad Med 1995;70:620-41.
- Bowman MA, Haynes RA, Rivo ML, Killian CD, Davis H. Characteristics of medical students by level of interest in family practice. Fam Med 1996;28:713-9.
- Newton DA, Grayson MS, Whitley TW. What predicts medical student career choice? J Gen Intern Med 1998;13:200-3.
- The Robert Graham Center. Specialty and geographic distribution of the physician workforce: what influences medical student and resident choices? Washington, DC: The Robert Graham Center, March 2, 2009.
- McGaha AL, Schmittling GT, DeVilbiss AD, Pugno PA. Entry of US medical school graduates into family medicine residencies: 2008–2009 and 3-year summary. Fam Med 2009;41(8):555-66.
- Campos-Outcalt D, Senf J, Watkins AJ, Bastacky S. The effects of medical school curricula, faculty role models, and biomedical research support on choice of generalist physician careers: a review and quality assessment of the literature. Acad Med 1995;70:611-9.
- Kahn NB Jr. Medical schools can indeed produce family physicians. Fam Med 1996;28(6):439-40.
- Senf JH, Campos-Outcalt D, Watkins AJ, Bastacky S, Killian C. A systematic analysis of how medical school characteristics relate to graduates' choices of primary care specialties. Acad Med 1997;72:524-34.
- Campos-Outcalt D, Senf JH. A longitudinal, national study of the effect of implementing a required third-year family practice clerkship or department of family medicine on the selection of family medicine by medical students. Acad Med 1999;74(9):1016-20.
- Kassebaum DG, Haynes RA. Relationship between third-year clerkships in family medicine and graduating students' choice of family practice careers. Acad Med 1992;67:217-9.
- Coulehan J, Williams PC. Vanquishing virtue: the impact of medical education. Acad Med 2001;76:598-605.
- Liaison Committee on Medical Education. Functions and structure of a medical school. Accreditation and the Liaison Committee on Medical Education: standards for accreditation of medical education programs leading to the MD degree. Joint publication of the Association of American Medical Colleges (Washington, DC) and the American Medical Association (Chicago), 1993.

28. Gonzalez EH, Phillips RL, Pugno PA. A study of closure of family practice residency programs. *Fam Med* 2003;35(10):706-10.
29. Family Physician Workforce Reform as approved by the 2009 Congress of Delegates. Recommendations of the American Academy of Family Physicians. www.aafp.org/workforce. Accessed July 26, 2010.
30. Impact of increasing specialization and declining generalism in the medical profession. Reports of the American Medical Association, Council on Medical Education. Pages 262-5. www.ama-assn.org/ama1/pub/upload/mm/38/a-06cme.pdf. Accessed July 13, 2009.
31. American Academy of Family Physicians. Practice profile survey. Leawood, Kan: American Academy of Family Physicians, 2009.
32. Bodenheimer T. The primary care-specialty income gap: why it matters. *Ann Intern Med* 2007;146:301-6.
33. Ebell MH. Future salary and US residency fill rate revisited. *JAMA* 2008;300(10):1130-1.
34. Council on Graduate Medical Education. Twentieth report: advancing primary care. May 2010. <http://www.cogme.gov/20thReport/default.htm>. Accessed May 14, 2010.
35. McGaha AL, Garrett E, Jobe AC, et al. Responses to medical students' frequently asked questions about family medicine. *Am Fam Physician* 2007;76:99-106.
36. Starfield B, Shi L, Grover A, Macinko J. The effects of specialists supply on populations' health: assessing the evidence. *Health Aff* 2005;March 15. www.healthaffairs.org/cgi/content/abstract/hlthaff.w5.97.
37. Larson EB, Grumbach K, Roberts KB, Laine C. The future of generalism in medicine. *Ann Intern Med* 2005;142(8):suppl 19:689-90.
38. Green LA, Dodoo MS, Reddy G, et al. The physician workforce of the United States: a family medicine perspective. Washington, DC: Robert Graham Center, 2004. Available at www.graham-center.org/x570.xml. Accessed July 18, 2005.
39. The United States relies on family physicians, unlike any other specialty (Policy Center One-Pager #5). Washington, DC: American Academy of Family Physicians Robert Graham Center: Policy Studies in Family Practice and Primary Care, April 14, 2000.
40. Rosenblatt RA, Andrilla CH, Curtin T, Hart LG. Shortages of medical personnel at community health centers: implications for planned expansion. *JAMA* 2006;295:1042-9.
41. Forrest CB. Strengthening primary care to bolster the health care safety net. *JAMA* 2006;295:1062-4.
42. Colwill JM, Cultice JC, Kruse RL. Will generalist physician supply meet demands of an increasing and aging population? *Health Aff* 2008;27(3):w232-w241.
43. Hauer KE, Alper EJ, Clayton CP, Hershman WY, Whelan AJ, Woolliscroft JO. Educational responses to declining student interest in internal medicine careers. *Am J Med* 2005;118(10).
44. Primary care collaborative takes aim to change payment systems. www.aafp.org/online/en/home/publications/news/news-now/professional-issues/20080514pcpcc-proj-ctr.html. Accessed July 13, 2009.
45. Joint Principles of the Patient-centered Medical Home. American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Osteopathic Association (AOA). March 2007. www.medicalhomeinfo.org/Joint%20Statement.pdf. Accessed July 13, 2009.