

## Practices and Perceptions of Family Practice Residency Directors toward International Medical Graduate Applicants: A National Survey

Wanda C. Gonsalves, M.D.<sup>\*</sup>, Alan Stevens Wrightson, M.D.,<sup>†</sup> Margaret M. Love, Ph.D.<sup>‡</sup>  
Laura J. Torbeck, Ph.D.<sup>‡</sup>

<sup>\*</sup>Medical University of South Carolina  
Charleston, South Carolina

<sup>†</sup>University of Kentucky College of Medicine  
Lexington, Kentucky

<sup>‡</sup>Indiana University  
Indianapolis, Indiana

**Abstract - Purpose** - International Medical Graduates (IMGs) are increasingly filling Family Medicine residency positions. (1) To what extent are residency programs recruiting and accepting IMG applicants? (2) What are program directors' perceptions of IMG applicants? (3) What program characteristics are associated with their practices and perceptions?

**Methods** - A 2002 national survey of Family Medicine program directors assessed program demographics and directors' recruiting practices and perceptions regarding IMG applicants.

**Results** - Although 88% of respondents would rank IMG applicants, only 40% agreed that they would perform as well as U.S. graduates. Programs with IMG faculty were more likely to have IMG residents ( $p < 0.01$ ). Program directors with IMG faculty or more IMG residents reported more positive perceptions of IMG residents' performance ( $p \leq 0.01$ ).

**Conclusion** - More experience with IMGs, such as having IMG faculty or higher numbers of IMG residents, is associated with recruitment of IMG residents and may contribute to more positive beliefs about their performance.

**Key Words:** International Medical Graduates, Graduate Medical Education, Family Medicine Residents, Recruitment

International medical graduates (IMGs) are physicians who have graduated from medical schools in countries other than the U.S., Canada, and Puerto Rico. IMGs represent one fourth of both the physician workforce and the graduate medical education population.<sup>1,2</sup> Between 1988 and 2001, there has been a 35% decline of U.S. medical graduates that fill Family Practice residency programs through the National Resident Matching Program, with only 42% of positions filled by U.S. graduates in 2003.<sup>3</sup> In spite of declining interest by U.S. students in Family Practice, the percentage of residency positions filled in July by first year residents has remained relatively stable, because more IMG applicants are filling those "after match" positions. Therefore, a growing percentage of family practice residents are IMGs.<sup>4</sup> Recent articles have looked at the attrition rates<sup>5</sup>, quality<sup>1</sup>, performance,<sup>6,7</sup> and the relationship of performance to match status of IMGs;<sup>6</sup> however, no articles have studied program directors' practices and percep-

tions toward recruiting, interviewing, ranking, and matching IMGs by family practice residency directors.

We wanted to determine residency directors' practices and perceptions regarding IMG resident applicants. The purpose of this study was to establish: 1) the extent to which programs are accepting IMGs, 2) what factors are associated with those practices, 3) what are the perceptions of program directors concerning IMGs and their success in residency, and 4) what factors are associated with those perceptions.

### Method

We developed and administered a survey about practices and perceptions of Family Medicine Residency program directors as they pertain to recruiting, interviewing, and hiring of international medical graduates (IMGs). This survey was reviewed and

---

The authors were all at the University of Kentucky College of Medicine when this research was conducted.

approved by the University of Kentucky Medical IRB.

Additional items and open-ended comments are not analyzed and presented in this paper.

**Survey Instrument** - The 42-item survey included six items about program demographic characteristics: type of residency (university, community, and/or other), location of the program (rural, suburban, and/or urban), size of the program, year the program began, the number of IMGs in the program and at what level (PGY1, 2, or 3), and whether the program has IMGs on faculty. "Type" and "location" characteristics were not defined for the respondents.

Program directors also rated 13 comments related to practices (five items) and perceptions (eight items) with regards to recruiting, interviewing, matching, and hiring IMG resident applicants. (See Table 3 for items.) The four-point Likert scale responses were strongly disagree, disagree, agree, and strongly agree. The four-point scale was intended to discourage respondents from avoiding a directional response.<sup>8</sup> One additional item, "I consider the clini-

**Table 1**  
**Program Demographic Characteristics: Survey Respondents vs. all 2001 Programs**

Characteristic	Survey Respondents (n=162)*		All 2001 Programs <sup>†</sup> (n=462) <sup>†</sup>	
	n	(%)	n	(%)
<b>Location</b>				
Rural only	17	(10.9)	48	(10.4)
Rural and urban or suburban	8	(5.1)	87	(18.8)
Suburban only	64	(41.0)	100	(21.6)
Suburban and urban	1	(0.6)	59	(12.8)
Urban only	66	(42.3)	156	(33.8)
n/a	not reported	12	(2.6)	
Total	156	(100.0)	462	(100.0)
<b>Size -- Number of residents per year</b>				
<=3	0	(0.0)	1	(0.2)
4-6	65	(40.1)	201	(43.5)
7-9	52	(32.1)	165	(35.7)
10-12	33	(20.4)	72	(15.6)
>=13	12	(7.4)	23	(5.0)
Total	162	(100.0)	462	(100.0)
<b>Year residency began</b>				
1966-70	15	(9.6)	45	(9.7)
1971-75	57	(36.3)	178	(38.5)
1976-80	40	(25.5)	97	(21.0)
1981-85	7	(4.5)	18	(3.9)
1986-90	7	(4.5)	23	(5.0)
1991-95	18	(11.5)	61	(13.2)
1996-00	13	(8.3)	40	(8.7)
Total	157	(100.2)	462	(100.0)
<b>Has IMG faculty</b>				
Yes	53	(32.9)	not reported	
No	108	(67.1)	not reported	
Total	161	(100.0)		

\* The number of respondents for each question varies due to missing data.

† 462 programs overlapped between the 466 mailing labels purchased from the AAFP and the 485 programs listed in the AAFP 2001 Directory of Family Practice Residency Programs.<sup>9</sup>

**Table 1 (continued)**  
**Program Demographic Characteristics: Survey Respondents and all 2001 Programs**

Survey Respondents			All 2001 Programs <sup>10</sup>		
Type (n=162)	n	(%)	Type (n=466) <sup>10</sup>	n	(%)
University (U)	36	(22.2)	Medical school based	62	(13.3)
U/Com. or U/Com./Other	8	(4.9)	Com. based, med. sch. administered	92	(19.7)
Community (Com.)	110	(67.9)	Com. based, med. sch. affiliated	267	(57.3)
			Com. based, unaffiliated	31	(6.7)
Other	8	(5.0)	Military	14	(3.0)

cal skills assessment portion of the ECFMG examination,” was excluded from analyses because new policies require this examination in order to qualify for a U.S. residency, so the item no longer provides a useful comparison across programs.

**Survey Administration** - The four-page survey was mailed to the directors of all U.S. residency programs listed in the 2001 American Academy of Family Physicians (AAFP) Directory of Family Practice Residency Programs.<sup>9</sup> Two sets of 466 mailing labels were purchased from the AAFP. A cover letter described the survey and its purpose. Surveys were mailed in January of 2002 and were followed by a reminder postcard, which also invited recipients to request a new copy of the survey if needed. Responding was anonymous. Directors were invited to return their surveys by mail, in prepaid envelopes, or by fax.

**Data Analysis** - Likert scale ratings were categorized as agreement (“Strongly Agree” and “Agree”) and disagreement (“Strongly Disagree” and “Disagree”). Analyses were conducted on complete data for each analysis. Quantitative data were analyzed using Microsoft Access and SAS. Descriptive statistics summarized demographic characteristics. Chi-square and Fisher’s exact tests were used for categorical data analyses. Given the large number of analyses performed, we determined that a p-value of  $\leq 0.01$  was needed to be considered statistically significant. However, we will describe results between 0.01 and 0.05 for the benefit of the reader.

In analyses relating program demographic characteristics to practices or perceptions, we did not include the 16 programs described as a combination of community and university or as “other.” Their cell sizes were small yet characteristics too different to justify combining. Likewise, in comparative analyses we include programs described as only urban, only suburban, and any combination that included rural. This excluded the unique survey identified as urban-suburban from location analyses. In analyses relating

founding year to directors’ practices and perceptions, the founding year was operationalized two ways: program age as three levels (0-5, 6-10, and  $\geq 11$  years of age) and founding year as seven levels of five year groupings (per Table 1); patterns of significance at  $p \leq .01$  were the same for either strategy.

Because of anonymous responding, the program demographic characteristics could not be compared between responding and nonresponding programs. Comparisons could be made between respondent demographics and demographics of all programs listed in the directory and for which we received mailing labels (overlap n=462). Breakdown by program structure is available on the AAFP website.<sup>10</sup> Other demographics could be tallied from the AAFP 2001 Directory of Family Practice Residency Programs.<sup>9</sup> However, survey respondent self-report is being compared to information as tracked by the AAFP, so there may be some differences due to differing methodologies. “Urban” on the survey is compared to the sum of “urban” and “inner city” in the AAFP directory.<sup>9</sup> Comparisons of structure are very rough because the format of the survey items are different than the directory format. Specifically, survey responses could be “community,” “university,” and/or “other,” whereas the AAFP tracked “community-based, unaffiliated”; “community-based, medical school affiliated”; “community-based, medical school administered”; “medical school based”; and “military program.”

## Results

**Program Demographics** - Of the 466 surveys mailed to Family Practice Program Directors, 162 were returned, yielding a response rate of 35%. A review of the program demographic characteristics can be found in Table 1. The responding programs represented a wide range of sizes and ages, and the distribution of number of residents per year and year founded correspond closely to that of all 2001 programs.<sup>9</sup> Eleven percent were rural only compared to

**Table 2**  
**Number and Percent of Programs having IMG Residents and Relation to having IMG Faculty**

	Programs		Have IMG Faculty	
	Number	Percent	%No	%Yes
<b>Have IMG residents</b>	n=161		p=0.006	
No	33	20.5	87.5	12.5
Yes	128	79.5	62.5	37.5
<b>Number of IMGs in program</b>	n=151		p=0.010	
0	33	21.9	87.5	12.5
1-3	37	24.5	70.3	29.7
>=4	81	53.6	58.0	42.0
<b>Percent of residents that are IMGs</b>	n=151		p=0.004	
0	33	21.9	87.5	12.5
1-25	64	42.4	70.0	30.0
26-50	29	19.2	62.1	37.9
51-75	21	13.9	42.9	57.1
76-100	4	2.6	25.0	75.0

**Note:** Having IMG faculty was the only demographic characteristic statistically significantly associated with having IMG residents or the number or percent of IMG residents (per text). The number of respondents for each question varies due to missing data.

10% of all 2001 programs; 16% were “any rural” (rural alone or in combination with urban and/or suburban), compared to 29% of all programs).<sup>9</sup> About one third had international medical graduates (IMGs) as faculty in their program. The majority of programs described themselves as community based, some of which were “university” or affiliated/administered by a medical school (73% of respondents, compared to 83% of all 2001 programs<sup>10</sup>).

**Acceptance of IMGs** - Eighty percent of programs have IMGs and over 50% have four or more IMGs in their programs. However, IMGs account for more than half of the residents in only 16% of the programs. (See Table 2.) The mean percent of residents in a program who are IMGs is 24.5% (SD 24.4%, range 0.0%-91.7%).

Table 2 shows the relation between having IMG faculty and having IMG residents. At  $p \leq 0.01$ , the presence of IMG faculty was associated with having IMG residents and a higher number and presence of IMG residents. As the number and percent of IMG residents in a program increases, so does the likelihood that the program has IMG faculty. Other program demographic characteristics were not associated

with having IMG residents or the number and percent of IMG residents.

**Practices of Program Directors and Associated Factors** - Table 3 shows program practices toward recruiting and accepting IMGs. More than 87% of program directors agreed that they will consider (89%), interview (92%) and rank (88%) IMG applicants for their program. However, agreement drops to about 50% when certain conditions are added (i.e. 48% “only if they meet higher standards” and 52% “to complete the complement of residents”).

The only program demographic characteristic significantly associated with these responses was whether the program already had IMG residents. At  $p < 0.01$ , programs with IMG residents were significantly more likely to agree they will consider, interview, and rank IMGs than were programs without IMG residents. (See Table 4.) Program demographic characteristics were not significantly associated with agreement that certain conditions needed to be met to recruit, interview, or rank IMGs ( $p > 0.10$  for each).

Three program demographic characteristics approached significance ( $p < 0.05$  but  $> 0.01$ ) in ranking IMG applicants: type, location, and having IMG faculty. Community programs were more likely to rank

IMGs than were university programs (100% and 87%, respectively;  $p=0.04$ ). Rural and urban programs were more likely to rank IMGs than were suburban programs (95.8%, 91.5%, and 79.0%, respectively;  $p=0.05$ ). Finally, programs with IMG faculty were more likely to rank IMGs than were programs without IMG faculty (96.1% and 84.2%, respectively;  $p=0.03$ ).

**Perceptions of Program Directors Concerning IMGs and Associated Factors** - Table 3 shows program directors' perceptions about IMG residents. Program directors were more likely to agree with "negative" statements than with "positive" statements about IMG residency applicants. The data suggest that approximately 70% of program directors agreed with statements comparing IMGs negatively to U.S. graduates. Conversely, only 33%-40% agreed with more positive statements. With regard to difficulties if they arise, 80% of program directors agreed that difficulties are mainly due to educational differences in educational background.

Having IMG faculty and having a larger number of IMG residents were positively associated with program directors' perceptions. Program directors with IMG faculty were more likely than program directors without IMG faculty to agree that IMG residents perform as well as their North American counterparts (56.9% vs. 31.2%, respectively;  $p=0.004$ ). (See Table 4 in the Appendix) Programs with zero, one to three, and four or more IMG residents responded significantly differently as to whether IMGs require remediation, perform as well, or will practice in underserved areas ( $p<.01$  for each). Specifically, program directors with four or more IMG residents were least likely to agree the IMG residents required more remediation, and most likely to agree the IMG residents perform as well and are more committed to practicing in underserved areas. Program directors with few IMG residents (one to three) were most likely to agree the IMG residents required more remediation and least likely to agree the IMG residents were more committed to practicing in underserved areas.

**Table 3**  
**Practices and Perceptions of Program Directors toward Recruiting IMG Residents**

Practices	Percent Agree or Strongly Agree
• I will consider IMGs for my program.	89.0
• I will interview IMGs for positions in my residency.	92.2
• I will rank IMGs for Match Day.	87.8
• I will consider IMGs for my program only if they meet higher standards.	48.3
• If IMGs were recruited and matched in my residency program, it would be to complete the complement of residents.	51.7
Perceptions	
• IMGs do less well on national licensing examinations than graduates of U.S. and Canadian medical schools.	70.7
• IMGs require more remediation than their U.S. & Canadian counterparts.	71.0
• In general, IMGs perform as well as U.S. & Canadian graduates in my program.	40.0
• IMGs are more committed to practicing in underserved areas, either in the U.S. or in their country of origin, than are U.S. and Canadian graduates.	32.9
• If difficulties arise with IMGs, they are mainly due to...	
...problems with the English language.	22.2
...educational differences experienced in medical school.	79.7
...cultural issues experienced by the residents.	38.1
...lapses in expected professional behavior	19.3

**Table 5**  
**Relation between IMG Residents and Program Directors' Attributions about Difficulties\***  
**Percent responding "agree" or "strongly agree" for  $p < 0.05$  but  $> 0.01$ †**

	<i>If problems arise with IMGs, they are mainly due to...</i>	
	<i>Cultural issues experienced by the residents</i>	<i>Lapses in expected professional behavior</i>
<b>Have IMG residents</b>	p=.04	p=.07
No	61.1	35.0
Yes	34.2	16.9
<b>No. of IMG Residents</b>	p=.04	p=.01
0	61.1	35.0
1-3	42.9	29.7
≥4	29.9	11.5

\*Problems with the English language and educational differences in medical school were not statistically significant at  $p < 0.05$  in any bivariate analyses, so are not included in the Table.

†Chi square analysis of the distribution.

At the  $p < 0.01$  level, program demographic characteristics were not associated with attributions about types of difficulties with IMG residents. However, some p values were between  $p < 0.01$  and  $p < 0.05$  and therefore deserve summary here. Compared to programs without IMG residents, programs with IMG residents were less likely to attribute difficulties in residency to cultural differences. Also, programs with a larger number of IMG residents were less likely to attribute difficulties in residency to cultural differences or to lapses in professional behavior. (See Table 5.)

### Discussion

The majority of U.S. Family Practice residency programs have international medical graduates (IMGs) as residents. Our data showed that on average, the respondents to our survey had 25% IMG residents in their program. This is comparable to 2001 national match data that 24% of family medicine positions filled were IMGs.<sup>11</sup> Interestingly, IMGs are recruited into residencies in almost equal fashion no matter the type, location, size, and beginning year of each residency. A program demographic that did, however, distinguish programs and their willingness to accept IMGs was whether residencies have IMG residents and faculty. Having IMG faculty

increases the likelihood that a residency program will have IMG residents. Perhaps IMG faculty members are more willing to promote educational opportunities for those desiring U.S. residency training. Another explanation might be that IMG faculty might increase the cultural sensitivity of other faculty toward IMG applicants. Although 89% of residency directors will consider, interview, and rank IMGs, when we questioned program directors about practices that were more conditional, they were not as positive. In fact, over 50% of residency directors agreed that they would consider IMGs *only if they meet higher standards or to complete the complement of residents*. Furthermore, one in 10 program directors will not consider IMG applicants.

It was apparent that program directors believe IMGs do not perform as well as U.S. and Canadian graduates, nor are more committed to practicing in underserved areas. Program directors perceive that when difficulties arise with IMGs, the main reason is due to educational differences experienced in medical school. Are these perceptions unfounded and rooted in a climate of cultural ignorance and insensitivity, creating a system whereby IMG residents are not as likely to succeed? In terms of performance, studies have reported that IMGs do less well on licensing exams.<sup>1,12,13,14</sup> However, since the addition of the

clinical skills assessment (CSA) in July 1998 for Educational Commission for Foreign Medical Graduate (ECFMG) certification, there has been a decrease in the number of IMG applicants and an improvement in scores, yet still lower when compared to US graduates.<sup>1</sup> A true comparison of U.S. and IMG applicants will soon be available since U.S. graduates are now required to take a similar exam. Along these same lines, several studies have tried to predict the successful performance of IMGs.<sup>7,15,16</sup> A recent study assessing the relationship of residency performance by match status showed that IMGs recruited after the match performed less well and required more remediation than U.S. graduates recruited after the match.<sup>6</sup> Additionally, IMGs, compared to their U.S. counterparts, are terminated more frequently and have higher attrition rates.<sup>5</sup> Thus, the literature suggests that our survey respondents' reservations about IMG applicants have some foundation in IMG residents' performance. In regards to practicing in underserved areas, further studies are needed to determine the extent that IMGs practice in underserved areas compared to U.S. graduates; although one study by Salsberg and Nolan (2000) reported that 15% of J visa physicians are planning to practice in HPSAs compared with 5% of USMGs.<sup>17</sup> The majority of graduating IMG residents, however, remains in the U.S. after finishing residency training instead of returning to their country of origin.<sup>4</sup>

The presence of IMG residents and the presence of IMG faculty were the only program demographic characteristics statistically associated with both the practices and perceptions toward IMG resident applicants. The presence of IMGs in a residency program may impact the practices of considering, interviewing and ranking IMGs. Those programs that reported having IMGs on faculty accepted IMGs into their programs with greater frequency than those that do not. Those programs with more IMG residents ( $\geq 4$ ) looked more favorably on IMG performance than those with fewer IMG residents (1-3). On the flip side, programs with IMG faculty and more IMG residents may be more willing to consider and accept IMGs because they are less competitive and know they have to consider IMGs in order to fill all of their spots. Their practice of looking favorably on IMG performance then may be a result of necessity.

Residency programs with few IMGs may benefit from those programs that look more favorably on IMG performance to glean what resources, experiences, or specialized curriculum the programs might have in place that allow them to feel more positively towards IMGs. Most IMGs, like most U.S. graduates, have skills and knowledge that can be developed,

especially if the appropriate knowledge deficiency can be identified and the appropriate educational methodologies are implemented. Additionally, having programs that enhance the IMGs adaptation to the US health care system would be useful. Once program directors adopt these educational methodologies, perhaps the practices and perceptions of residency directors toward IMGs could become more positive overall.

There were several limitations of this study that prevented us from gaining a complete understanding of the practices and beliefs of residency directors. First, there was only a 35% response rate by the Family Medicine program directors to our survey, which may limit generalizability. Nevertheless, their responses represented a broad range of program demographic characteristics and directors' practices and perceptions. Moreover, the distribution of some demographic characteristics corresponded closely to that of all 2001 programs. For others, such as location, it cannot be determined whether differences are due to response format or to actual program differences. Second, the rating scales were not previously validated. However, reputable guidelines for questionnaire construction were followed,<sup>8</sup> and systematic patterns of responding were discerned. Third, the survey asked the program directors to self-report what they do, which may or may not be what they actually do. Therefore, their reports may reflect their attitudes more than their practices; however, both are important. Finally, our findings describe associations and not causality, so further study is warranted to determine the direction of influence – and possibly bidirectional influence – between variables.

It is possible that the number of U.S. graduates with an interest in Family Medicine will continue to decline and the number of IMGs in Family Medicine residencies will continue to increase. A future study would be to survey those residencies that have a higher number of IMGs and determine what educational methodologies they have in place to appropriately train IMG residents. It may be the case that tailored educational methodologies do not exist and that the programs simply have more experience with IMG residents and are more culturally sensitive. Whatever the secret may be for these programs, the remaining Family Medicine residencies would surely benefit from their experiences.

### Acknowledgements

This study was supported in part by grant 1 D22 HP 00036 from the Health Resources and Services Administration (HRSA) and grant 1 P20 HS11845

from the Agency for Healthcare Research and Quality (AHRQ). We thank Julia Luan, MS, for assistance with statistical analyses, Leann Ashby for assistance with data entry and data management, and Janice Thomas for assistance with survey administration; all from the University of Kentucky. We also thank Mark E. Geesey, MS, from the Medical University of South Carolina, for his editorial assistance.

## References

1. Whelan GP, Gary NE, Kostis J, Boulet JR, Hallock JA. The changing pool of international medical graduates seeking certification training in US graduate medical education programs. *JAMA*. 2002;288(9):1079-1084.
2. National Resident Matching Program 2002 Match Data.
3. National Resident Matching Program 2003 Match Data.
4. Koehn NN, Fryer GE Jr, Phillips RL, Miller JB, Green LA. The increase in International Medical Graduates in Family Practice Residency Programs. *Fam Med*. 2002;34(6):429-435.
5. van Zanten M, Boulet JR, McKinley D, Whelan GP. Attrition rates of residents in postgraduate training programs. *Teaching and Learning in Medicine*. 2002;14(3), 175-177.
6. Blonski J, Rohm S. Relationship of residency performance to match status and US versus international graduate status. *Fam Med*. 2003; 35 (2): 100-104.
7. Gayed NM. Residency directors' assessments of which selection criteria best predict the performances of foreign-born foreign medical graduates during internal medicine residencies. *Acad Med*. 1991; 66:699-701.
8. Dillman DA. Writing questions. In: *Mail and Internet Surveys: The Tailored Design Method*. 2<sup>nd</sup> ed. New York: Wiley; 2000: 32-78
9. American Academy of Family Physicians. *2001 Directory of Family Practice Residency Programs*. Kansas City: AAFP; 2001.
10. American Academy of Family Physicians. Facts about Family Practice. Table 118. Family practice residency programs by structure: 2001-2002. Available at: <http://www.aafp.org/x920.xml>. Accessed July 18, 2004.
11. American Academy of Family Physicians. Facts about Family Practice. Match 2001. Graph 1. Family Medicine positions offered & filled with U.S. Seniors in March 1992-2004. Available at <http://www.aafp.org>. Accessed 1/06/2005
12. Mick SS, Comfort ME. The quality of care of international medical graduates: how does it compare to that of U.S. medical graduates? *Med Care Res Rev*. 1997; 54:379-413.
13. Rhee SO, Lyons TF, Payne BC, Moskowitz SE. USMGs versus FMGs. Are there performance differences in the ambulatory care setting? *Med Care*. 1986; 24:248-58.
14. Saywell RW Jr, Studnicki J, Bean JA, Ludke RL. A performance comparison: USMG-FMG house staff physicians. *Am J Public Health*. 1980; 70:23-8.
15. Part HM, Markert RJ. Predicting the first-year performances of international medical graduates in an internal medicine residency. *Acad Med*. 1993; 68:856-8.
16. Borowitz SM, Saulsbury FT, Wilson WG. Information collected during the residency match process does not predict clinical performance. *Arch Pediatr Adolesc Med*. 2000; 154:256-60
17. Salsberg E, Nolan J. The posttraining plans of international medical graduates and US medical graduates in New York State. *JAMA*. 2000; 283:1749-50.

## Correspondence

Wanda C. Gonsalves, M.D.  
Medical University of South Carolina  
Department of Family Medicine  
295 Calhoun Street.  
PO box 250192  
Charleston, S.C. 29425

Phone: (843) 792-6687  
Fax: (843) 792-3598  
Email: [gonsalvw@musc.edu](mailto:gonsalvw@musc.edu)

## Appendix

**Table 4. Relation between select program demographics\* and program directors' recruiting practices and perceptions toward IMGs: Percent responding "agree" or "strongly agree". Chi square analysis of the distribution.**

	<i>Practices</i>			<i>Perceptions</i>			
	<i>Will consider</i>	<i>Will inter-view</i>	<i>Will rank</i>	<i>Do less well on licensing exams</i>	<i>Require more remediation</i>	<i>Perform as well</i>	<i>More committed to practicing in underserved areas</i>
<b>Have IMG residents</b>	p<0.0001†	p<0.0001†	p<0.0001†	p>0.10	p>0.10	p>0.10	p>0.10
No	64.3	63.0	56.5	79.2	78.3	26.3	35.0
Yes	94.4	98.4	93.5	68.8	70.2	41.6	32.8
<b>No. of IMG Residents</b>	p<0.0001†	p<0.0001†	p<0.0001†	p>0.10	p=0.003†	p=0.01†	p=0.001†
0	64.3	63.0	56.5	79.2	78.3	26.3	35.0
1-3	89.2	97.2	85.7	80.6	91.4	25.0	8.8
≥4	97.5	98.8	97.4	67.5	61.3	50.6	45.0
<b>Have IMG faculty</b>	p=0.09	p=0.098	p=0.03	p>0.10	p=0.07	p=0.004†	p>0.10
No	86.3	90.0	84.2	71.1	75.8	31.2	34.1
Yes	96.2	98.1	96.1	69.2	61.5	56.9	31.4

\* Location, type, size, and year residency began were not statistically significant at  $p \leq 0.01$  in any bivariate analyses, so are not included in Table.

†  $p \leq 0.01$ , the criterion for statistical significance for this study