Practice Location as a Function of Medical School and Residency Location: Implications for Resident Selection

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Numerous studies have documented an association between the state in which a physician practices and prior education in that state. To determine whether this relationship exists for recent family practice residency graduates, 95 randomly selected programs in which residents completed training in 1979 were surveyed to obtain information regarding practice location and medical school location for their graduates. Seventy-nine percent of physicians completing residency and medical school in the same state also practiced in that state. Of those completing residency in a state other than that of their medical school, 43 percent stayed in the state of their residency to practice, and 22 percent returned to the state of their medical school. An analysis of the impact that a policy restricting house staff positions to in-state students would have on physician supply for the state reveals that only about 10 percent more physicians would be expected to start practice in a state if such a policy were implemented.

Implicit in state financial support provided to many family practice residency programs is the expectation that these programs will supply family physicians for the state. Consequently, many programs preferentially select graduates of medical schools in their own state, hoping to enhance the likelihood that graduates will remain in the state to practice. This policy would appear to be logical as multiple studies have reported an association between the state in which a physician practices and prior education in that state.[1-6] To predict the net potential benefit to a state of preferentially selecting in-state applicants, however, one must compare physicians who complete all their training within the state with those who complete only a portion of their training in the state. There are few studies available that allow this comparison.

Yett and Sloan,[7] in their study of United States medical school graduates entering practice in 1966, provided helpful data. They demonstrated that the probability of a physician locating in a state correlates directly with the number of previous contacts with the state (ie, birth, medical school, internship, and residency). For example, physicians who completed medical school, internship, and residency in one state were more likely to practice in that state than those who completed only residency. In addition, the more recent the contact with the state, the more likely the physician was to practice there. Thus, physicians whose only contact with a state was their residency were more likely to practice there than those whose only contact was medical school.

Similar trends were found in studies done at the University of Missouri and the University of

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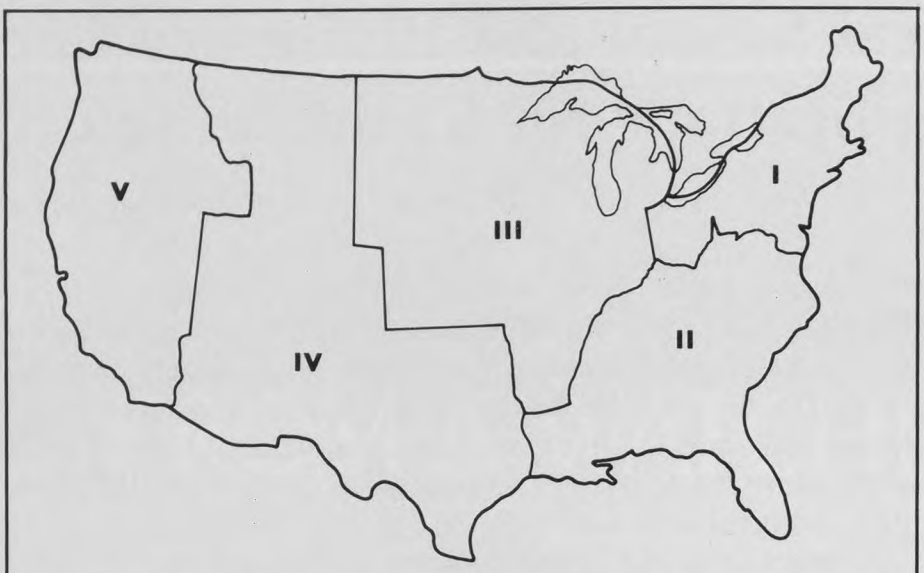

Figure 1. Geographic areas of the United States (Alaska and Hawaii included in region V)

Texas Southwestern. Cullison and Colwill, in an unpublished survey of 472 University of Missouri graduates practicing in 1973, found that 70 percent of those who completed residency in Missouri also practiced there. Of those who left the state for their residency, approximately one third returned to Missouri to practice and one third practiced in the state where they completed their residency. Stefanu et al[8] reviewed 467 physicians who completed some aspect of their training at one of the hospitals affiliated with the University of Texas Southwestern between 1955 and 1969. Of those who completed both medical school and their residency in Texas, 87 percent practiced in Texas. Of those who completed medical school and their internship in Texas but left for residency, 43 percent returned to practice in Texas. Of those who attended medical school in a state other than Texas, but then completed their residency in Texas, 46 percent stayed in Texas to practice.

All of the above studies involved physicians trained prior to 1970, when most family physicians were not residency trained. To determine whether residency-trained family physicians follow a similar pattern, a survey of family practice residency programs in which residents completed training in 1979 was conducted.

Methods

The United States was divided into five geographic areas (Figure 1). One third of the community-based and one third of university-based family practice residency programs in each area were randomly selected for sampling. A questionnaire seeking information on the practice location and the medical school of each of the 1979 graduates was sent to the residency director of each of the 95 selected programs. Eighty-six programs with a total of 480 residency graduates in 1979 responded. Foreign medical graduates, residents not entering practice, residents for whom locations were not known, and residents in a military residency were excluded, leaving a study sample of 400 residency graduates.

Results

Results of the survey are tabulated in Table 1. Summary findings of retention rates, defined as the probability that a physician's practice location will be in a certain state based upon previous contacts with that state, are given in Figure 2. Seventy-nine percent of physicians completing both medical school and residency in the same state established practice in that state. Of those who did their postgraduate training in a different state, 43 percent started practice in the state of their residency and 22 percent returned to the state of their medical school for their initial practice location.

Graduates of state and private medical schools,

Table 1. Practice Location as a Function of Medical School and Residency Location

Groups	n	R=M*	P=R=M* No. (%)	R≠M*	P=R≠M* No. (%)	P=M≠R* No. (%)
Type of medical school						
State	297	156	125 (80)	141	58 (41)	36 (25)
Private	103	41	30 (73)	62	30 (48)	8 (13)
Type of residency						
Community hospital administered	255	112	90 (81)	143	63 (44)	29 (20)
University administered	145	85	65 (76)	60	25 (42)	15 (25)
Geographic area of residency						
Area I	102	50	34 (68)	52	22 (42)	10 (19)
Area II	87	38	34 (89)	49	18 (37)	12 (24)
Area III	137	74	57 (77)	63	24 (38)	16 (25)
Area IV	34	18	15 (83)	16	7 (44)	3 (19)
Area V	40	17	15 (88)	23	16 (70)	3 (13)
Total	400	197	155 (79)	203	88 (43)	44 (22)

*M=State of medical school, R=State of residency, and P=State of initial practice location

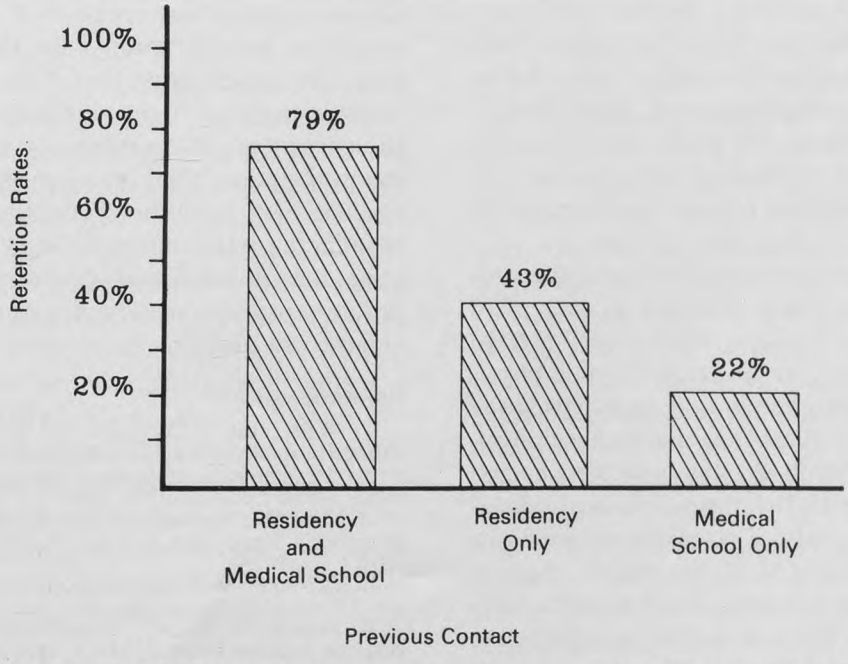

Figure 2. Percent residency graduates starting practice in state based on previous contact with state

university-based and community-based residencies, and the five geographical areas were compared. The following statistically significant differences were found ($P < .05$): graduates of state

medical schools who left the state for residency had a 25 percent probability of returning to the state of their medical school to practice, whereas those from private medical schools had only a 13 percent probability. Since students from state medical schools were far more likely to be residents of the state, this difference probably reflects stronger ties to the state for this group. Also, physicians completing medical school and residency in different states had a 70 percent probability of staying in the state of their residency to practice if they completed residency on the West Coast, in contrast to 43 percent for the group as a whole. This difference is not surprising and is in keeping with the general migration of physicians to the West Coast. No other statistically significant differences among geographic areas, residencies, or medical school types were found ($P < .05$).

Discussion

This survey suggests that family practice residency graduates do tend to locate in states in which they have received all or part of their medical education. The implications of these data for individual residency programs are that a residency program is more likely to have its graduates practice in the state if it selects graduates from medical schools within the state. However, when predicting the total number of new physicians in a state, physicians who attend medical school within the state, leave for residency, and then return for practice must also be included.

To elaborate on this point, consider the program that has 10 positions available in each of 10 consecutive years. If all residents were selected from medical schools in the state, 79 new physicians would start practice in that state during the 10-year period. This number excludes those physicians starting practice in the state who have had no previous contact with the state's medical education system. Conversely, if no residency positions were filled by graduates of the state's medical schools, then of the 100 graduates who came from out of state for residency, 43 would be expected to stay to start practice. Of the 100 graduates who then leave the state for residency, 22 would be expected to return, for a total of 65 new physicians for the state. This is a difference of only 14 from the 79 expected when all positions are filled by in-state graduates. If the program gives no particular preference to in-state applicants, a mixture of in-state and out-of-state graduates would still be expected. In the sample of family physicians who completed training in 1979, 50 percent completed their residency in the same state as their medical school. With a 50-50 split, the number of new physicians would be expected to be halfway between the figures for the extremes. This would be 72, only 7 less than if all the residents had come from the state. Thus, the expected increase in new physicians in the state created by a shift to a policy of exclusively accepting in-state graduates is relatively small, approximately 10 percent.

There are, of course, theoretical disadvantages to restricting house staff positions to in-state medical school graduates. Some feel that limiting the diversity of personal and educational backgrounds of residents in the program is detrimental to the educational environment and leads to further undesirable "inbreeding" of practitioners in the region. Further, heavy recruitment of one's own medical school graduates may limit the breadth of educational opportunities available to them.

It is possible that the small sample size used in this study may mask regional differences. An individual state reviewing its own data over several years may get different results. However, in aggregate, the data suggest that if the goal of the residency program is to provide impressive data about the percentage of its residency graduates practicing in the state, then giving preference to in-state students will likely be productive. But if the goal is to increase the number of new physicians in the state, then giving preference to in-state students is not very productive. The net increase in new physicians will probably be relatively small.

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