

# Family Physician Consultation/Referral Patterns

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**Abstract:** Family physicians, regardless of training, board certification, or practice setting, more commonly consult or refer to internal medicine subspecialists than to general internists. The primary reason is need for a consultant with technical (procedural) skill. In the case of pediatric referrals, family physicians more commonly refer to general pediatricians than to pediatric subspecialists. Physicians who use pediatric subspecialists more when both are available, however, do so because of the need for a consultant with technical skill. Large numbers of internal

medicine and pediatric residents are choosing subspecialties, thereby increasing availability of these subspecialties. At the same time, there is a documented need for an increased number of primary care physicians. Family physicians, general internists, and general pediatricians all need to be trained; however, because the breadth of training of the family physician prepares this practitioner to provide comprehensive primary care in a broad variety of settings, there should be an emphasis on training this specialist. (JABFP 1988; 1:106-11.)

Many authors have written about family physician consultation and referral patterns. Most have addressed the frequency of referrals to other specialists and subspecialists. These studies have documented that family physicians, regardless of geographic region or practice type, provide definitive care for 95–98 percent of patient problems.<sup>1-5</sup> Several studies have determined which specialists and subspecialists family physicians consult or refer to most commonly.<sup>1,4,6,7</sup> In cases of internal medicine and pediatric referrals, however, no study has considered whether family physicians show any preference in referral patterns to other general specialists (i.e., general internists, general pediatricians), to subspecialists, or if there are significant differences (assuming the availability of both).

upon when assistance is needed regardless of the extent of responsibility assumed by the consultant or the setting of care. The rationale for this study pertains to the importance of family practice residency training and its relation to appropriate types and numbers of other specialists and subspecialists trained in the United States.

## Methods

An evaluation instrument (questionnaire) was developed, and a pilot study was conducted to test for reliability and validity. Fifteen family physicians representative of the proposed study group participated in the pilot project. Duration of practice experience ranged from less than 5 years to more than 25 years. The physicians varied as to training and board certification status, and they practiced in diverse organizational settings in communities of various sizes.

## Problem Statement

We hypothesized that family physicians consult or refer to subspecialists more frequently than to general internists and general pediatricians and that this is particularly true of residency-trained family physicians. Both adult and pediatric referrals were examined. No effort was made to distinguish consultation from referral, and in this study the words are used interchangeably. The intent was to determine whom the family physician calls

We requested permission from the Research Committee of the American Academy of Family Physicians to survey active members in the North Central United States. The study was approved, and a 10 percent randomized computer sampling of active members ( $n = 506$ ) in North Dakota, South Dakota, Nebraska, Minnesota, and Iowa received the questionnaire. The physicians were questioned regarding residency training and board certification. Other information solicited included community population, practice organization, hospital accessibility, availability of general specialists (other than family physicians) and subspecialists, and specialists/subspecialists consulted. With refer-

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**Table 1. Physician/Community Demographics.**

Community Population	No. of Physicians	Percent
≤5,000	103	29
5,001–25,000	106	30
25,001–100,000	63	18
100,001–250,000	25	7
>250,000	53	15
Total	350	99

ence to internal medicine and pediatric referrals, data were obtained to determine whether the respondents exhibited any preference in referral patterns for general specialists (i.e., general internists and pediatricians) or subspecialists. Family physicians more commonly using subspecialists were queried as to the reason(s). Several possible responses were provided, including a blank for "other," with the response to be specified.

Questionnaires were returned by 69.2 percent of the respondents, which is an acceptable response rate for studies using questionnaires.<sup>8</sup> The chi-square test ( $P = 0.05$ ) was used for statistical comparisons.

## Results

### Demographics

Of the 350 respondents, 52 percent were residency trained, and 85 percent were board certified; 51 percent were both residency trained and board certified; 1 percent were residency trained but not board certified; 34.6 percent were board certified but not residency trained; and 13.4 percent were neither residency trained nor board certified. Fifty-nine percent of physicians practiced in communities with populations fewer than 25,000 (Table 1). Table 2 presents physician/practice organization. The majority, 52 percent, practiced

**Table 2. Physician/Practice Organization.**

Practice Type	No. of Physicians	Percent
Solo	47	13
Family practice group	181	52
Multispecialty group	87	25
Full-time academic	12	3
Other	23	7
Total	350	100

in family practice groups. Hospitals were located in the communities of 91 percent of the respondents. Ninety-four percent of physicians without hospitals in their communities admitted and cared directly for patients in hospitals in another community. The hospitals were within 30 miles of the physician's office in more than 90 percent of cases. Consultant availability is shown in Table 3.

### Internal Medicine Referrals

Physicians were asked, "At present, when you require adult medicine consultations, and if both are available, do you more commonly refer to or consult a general internist, a subspecialist in the organ system involved (e.g., gastroenterologist), or do you use both about equally?" Eighteen percent referred to a general internist more commonly, 59 percent referred to a subspecialist, and 23 percent used both about equally. The major reason cited by family physicians more commonly referring to subspecialists was that subspecialists have "the necessary technical (procedural) skills required for diagnosis and/or treatment" (83 percent). The next most frequent responses were "because of my training" (70 percent), and "because of my experience" (68 percent), "I believe that the knowledge the subspecialist offers is of greater value to me and my patients." Only 7 physicians noted reasons other than the listed choices.

### Board Training/Certification

Three groups of physicians were compared. One group included *residency-trained physicians* regardless of board certification; the second, *nonresidency-trained/board-certified physicians*; and the third, *nonresidency-trained and nonboard-certified physicians*. In all three groups, the family physicians consulted or referred to internal medicine subspecialists more commonly than to either general internists or to both equally when available (Table 4). There is, however, a significant difference between the groups, with residency training enhancing the likelihood of the physician referring to the subspecialist ( $\chi^2 = 19.56$ ,  $df = 4$ ,  $P = 0.0006$ ).

### Practice Organization

The physicians were categorized according to practice organization to determine if this influences referral patterns. As shown in Table 5, fam-

**Table 3. Consultant Availability.**

Location	General Internist, General Pediatrician (Percent)	Internal Medicine Subspecialist (Percent)	Pediatric Subspecialist (Percent)
Within community	67	50	38
Within 0-30 miles	48	30	23
Within 31-60 miles	38	39	30
>60 miles	14	31	47

ily physicians in all practice settings more commonly used internal medicine subspecialists. This was also true for the subgroup of residency-trained physicians (Table 6).

#### *Pediatric Referrals*

Patterns differed in response to the question, "At present, when you require pediatric consultations, and if *both are available*, do you more commonly refer to or consult a general pediatrician, a subspecialist in the organ system involved (e.g., pediatric gastroenterologist), or do you use both about equally?" More than half referred to a general pediatrician more commonly (57 percent), 23 percent referred to a subspecialist, and 20 percent used both about equally. The same three groups were again compared based upon the training and board certification status of the referring family physicians (Table 7). All groups referred more commonly to general pediatricians, and although there are no statistically significant differences between the groups ( $\chi^2 = 8.311$ ,  $df = 4$ ,  $P = 0.0808$ ), the pattern is more pronounced of the nonresidency-trained and nonboard-certified group of physicians. Physicians who more commonly referred to pediatric subspecialists did so for the same reasons found with internal medicine consultations. The most frequent reason was the subspecialist's technical skills (83 percent), fol-

lowed by the family physician's training (65 percent) and experience (65 percent).

#### **Discussion**

Family physicians in this study, regardless of training, board certification, or practice setting, more commonly refer to internal medicine subspecialists than to general internists. The pattern is particularly true of residency-trained family physicians and more likely in the case of nonresidency-trained/board-certified family physicians compared with nonresidency-trained and nonboard-certified family physicians.

The reason most frequently given (83 percent) for this referral practice is the need for a consultant with technical (procedural) skill. In a study of 1,284 cases, Goodman and Guy reported no referrals to general internists, and 103 of 122 cardiology referrals were for needed procedural skills.<sup>9</sup>

The second most common reason is the training of the referring physician. Seventy-nine percent of residency-trained physicians selected this response compared with 55 percent of nonresidency-trained physicians (board certified or not). Residency programs have improved the training of family doctors. This training provides more cognitive knowledge and supervised experiences than earlier "traditional" training (1-year internship). Brock reported no significant difference in

**Table 4. Family Physician Referral Pattern to General/Subspecialist Internists.**

	General Internist (Percent)	Subspecialist (Percent)	Both Equally (Percent)
Residency trained	12	69	19
Nonresidency trained/ Board certified	18	54	28
Nonresidency trained/ Nonboard certified	34	36	30

**Table 5.** Family Physician Referral Pattern to General/Subspecialist Internists by Practice Setting.

Practice Type	General Internist (Percent)	Subspecialist (Percent)	Both Equally (Percent)
Solo	17	52	31
Family practice group	11	66	23
Multispecialty group	28	48	24
Full-time academic	9	82	9
Other	42	47	11

the referral rate of physicians with "traditional" versus "family medicine" residency training.<sup>6</sup> In that 1977 study, however, only 6 of 39 physicians had completed residency training. When referral is necessary, the knowledge and skills of the subspecialist may be more valuable to the residency-trained family physician. Recently trained family physicians also might have had more contact with subspecialists during the course of their training, thereby influencing referral practices. We believe these are the main reasons for the statistical differences between the residency-trained and nonresidency-trained physician groups. Longer established referral patterns, more likely in the case of older nonresidency-trained physicians, probably also play a role.

The difference in the rate of referral to subspecialists between nonresidency-trained/board-certified family physicians and nonresidency-trained and nonboard-certified family physicians is interesting (Table 4). Does this difference reflect the influence of mandatory board recertification, which requires ongoing continuing medical education and demonstrated cognitive expertise? This would be an appropriate research question for a subsequent study.

As to the differences between internal medicine and pediatric referrals, we can only speculate. There are fewer pediatric subspecialists in the North Central states (Table 3), and we believe that they have been practicing for shorter periods of

time in most communities. Referral patterns to general pediatricians therefore have been well established. There is reason to believe, however, that as more pediatric subspecialists become available, referral patterns similar to those for internal medicine will emerge.

An important fact that supports such a trend for the future is the large number of physicians in pediatric training choosing to subspecialize.<sup>10</sup> This has been the case in internal medicine for some time, with 58 percent of residents entering subspecialties yearly during 1981-1983.<sup>11</sup> Petersdorf stated that when the figures are adjusted for those individuals who have been trained in medical subspecialties but failed the subspecialty board examinations, "approximately 70 percent of internists are now certified or trained in one of the subspecialties."<sup>12(p 85)</sup>

### Conclusion

Because this study sampled family physicians (members of the American Academy of Family Physicians [AAFP]) only in the North Central states, larger studies may be necessary to determine if the findings are consistent nationwide.

There is a documented need to train more primary care physicians relative to subspecialists.<sup>13-15</sup> There are at present 384 family practice, 442 general internal medicine, and 236 general pediatric residency programs. In July 1986, these programs

**Table 6.** Residency-Trained Family Physician Referral Pattern to General/Subspecialist Internists by Practice Setting.

Practice Type	General Internist (Percent)	Subspecialist (Percent)	Both Equally (Percent)
Solo	16	67	17
Family practice group	7	75	18
Multispecialty group	16	60	24
Full-time academic	16	67	17
Other	36	55	9

**Table 7.** Family Physician Referral Pattern to General/Subspecialist Pediatricians.

	General Pediatrician (Percent)	Subspecialist (Percent)	Both Equally (Percent)
Residency trained	52	27	21
Nonresidency trained/ Board certified	58	24	18
Nonresidency trained/ Nonboard certified	73	7	20

offered PGY-1 positions for 2,506, 6,995, and 2,130 residents, respectively.<sup>16</sup> We suggest the numbers should be higher for family practice. Other educators may argue for increased numbers of general internists and general pediatricians relative to family physicians. This seems inappropriate, however, especially for the rural U.S. where doctor shortages still exist.<sup>17</sup> We do not envision the day when the smaller communities of rural America will have a general internist, general pediatrician, general surgeon, general obstetrician/gynecologist, and general psychiatrist. Even if this were to occur, appropriate physician back-up and cross-coverage would pose difficulties.<sup>13</sup> The need for family physicians, however, is not restricted to rural America. Rakel noted there is a great need for family physicians in urban areas as well, particularly the inner city.<sup>18</sup> He observed that in urban areas, primary care is often provided "by physicians trained to do something else."

Christiansen, et al. have proposed a combined family practice-internal medicine residency, and Geyman, as well, offered this as an option for training a larger proportion of primary care physicians.<sup>13-14</sup> Friedman acknowledged that a combined program seems logical but believed it is not necessary or politically practical.<sup>15</sup> He instead has encouraged sharing the unique strengths of both disciplines to improve primary care training.

We propose the need for an increased proportion of family physicians (as generalists), and an appropriate number of subspecialists, in lieu of large numbers of all three general specialists. General internists and pediatricians should be trained; however, there should be a shift in the balance in favor of training family physicians. This seems logical at a time when more primary care physicians are needed and when large numbers of internal medicine and pediatric residents are choosing subspecialization. Family physicians are using subspecialists when consultation/referral is required for their adult patients, and the same pat-

tern is likely to occur with time in the case of pediatric consultations/referrals. The breadth of the family physician's training prepares him/her to provide comprehensive primary care to unselected patients (regardless of age, sex, or organ system) with unselected problems and to provide this care in a broad variety of settings (rural to the inner city).

To meet this challenge, our residency programs must produce quality family physicians who possess the necessary knowledge and skills for practice and who are imbued with the wisdom to know when other specialty help is needed. This other specialty help includes the general internist, general pediatrician, and subspecialists of all types.

The authors wish to thank Gary R. Leonardson, Ph.D., and Loren G. Jarratt, Ed.D., for their assistance in research design and data analysis.

## References

1. Geyman JP, Brown TC, Rivers K. Referrals in family practice: a comparative study by geographic region and practice setting. *J Fam Pract* 1976; 3: 163-7.
2. Metcalfe DHH, Sischy D. Patterns of referral from family practice. *J Fam Pract* 1974; 1:34-8.
3. Morgan S, Folse R, D'Elia G. Referral patterns of family physicians and surgeons in a nonmetropolitan area of Illinois. *J Fam Pract* 1979; 8: 587-93.
4. Moscovice I, Schwartz CW, Shortell SM. Referral patterns of family physicians in an underserved rural area. *J Fam Pract* 1979; 9:677-82.
5. Schmidt DD. Referral patterns in an individual family practice. *J Fam Pract* 1977; 5:401-3.
6. Brock C. Consultation and referral patterns of family physicians. *J Fam Pract* 1977; 4:1129-37.
7. Hansen JP, Brown SE, Sullivan RJ Jr, Muhlbaier LH. Factors related to an effective referral and consultation process. *J Family Pract* 1982; 15: 651-6.
8. Henry RC, Zivick JD. Principles of survey research. *Fam Pract Res J* 1986; 5:145-57.
9. Goodman BW, Guy L. Clinical consultation from a

- university family medicine teaching unit. *Fam Med* 1983; 15:123-8.
10. Budetti PP. The impending pediatric "surplus": causes, implications, and alternatives. *Pediatr* 1981; 67:597-606.
  11. Schleiter MK, Tarlov AR. National study of internal medicine manpower: VIII. Internal medicine residency and fellowship training: 1983 update. *Ann Intern Med* 1983; 99:380-7.
  12. Petersdorf RG. The physician's education—generalist versus specialist. In: Warren JV, Trzebiatewski GL, eds. *Medical education for the 21st century*. Columbus: Ohio State University College of Medicine, 1985:81-98.
  13. Christiansen RG, Johnson LB, Boyd GE, Koepsell JE, Sutton K. A proposal for a combined family practice—internal medicine residency. *JAMA* 1986; 255:2628-30.
  14. Geyman JP. Training primary care physicians for the 21st century: alternative scenarios for competitive vs. generic approaches. *JAMA* 1986; 255:2631-5.
  15. Friedman RH. Family practice and general internal medicine: what kind of cooperation makes sense? *JAMA* 1986; 255:2644-6.
  16. Crowley AE, ed. 1986-1987 directory of residency training programs. Chicago: American Medical Association, 1986:92-5.
  17. Amundson LH. Family physician needs for South Dakota—1990. *SD J Med* 1981; 34:27-34.
  18. Rakel RE. The battle for turf. *The Female Patient* 1984; 9:21.

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