

Graduate Follow-Up in the University of Wisconsin Family Practice Residency Programs

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Between June 30, 1973, and June 30, 1980, 100 family physicians completed their family practice residency training at the University of Wisconsin Medical School. Ninety-seven graduates completed an extensive 13-page mail survey. The primary purposes of the study were to measure the adequacy of the graduate's residency training program and to determine how well the graduates have done as family physicians. A majority of respondents considered themselves adequately prepared in most areas listed with a few noticeable exceptions. For example, 50 percent or more felt underprepared in fracture care, emergency surgery, and applying forceps for vaginal deliveries. For selected administrative and financial aspects of a practice, more than 60 percent felt underprepared. In general, the graduates were satisfied with the potential for practice growth as well as their current level of income. Regarding hospital privileges, between 85 and 93 percent of the graduates were very satisfied with the availability and extent of their privileges. Finally, all 100 graduates are board certified in family practice and at this writing none have changed into another specialty or intend to do so in the foreseeable future.

Ten years have passed since family practice residency training was introduced at the University of Wisconsin Medical School. Between June 30, 1973, and June 30, 1980, exactly 100 physicians (91 men, 9 women) finished the three-year family practice residency program training at this institution.

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Of these 100 family physicians, 39 (34 men and 5 women) were graduates of the University of Wisconsin Medical School. The other 61 (57 men and 4 women) were graduates from 36 other US medical schools.

The University of Wisconsin family practice residency programs were founded and funded by the state with the main purpose of supplying family physicians for rural Wisconsin. Seventy-four (66 men and 8 women) of the graduates currently practice in Wisconsin. Forty-six of these graduates (42 men and 4 women) practice in rural areas of Wisconsin. There were no foreign medical gradu-

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ates or minority group members among the family practice graduates. Two are graduates from US schools of osteopathic medicine.

Methods

The objectives of this study were fourfold:

1. To measure the adequacy of the graduates' residency training program in light of numerous clinical and nonclinical characteristics
2. To identify how well the graduates, especially those practicing in Wisconsin, have done as family physicians
3. To determine the factors that were critical to the graduates' ultimate practice site location and their current satisfaction with those critical factors
4. To compare the adequacy of University of Wisconsin's family practice residency training programs with those of the Universities of Minnesota,¹ New York,² Virginia,³ and Washington,⁴ as well as the average training program based upon nationwide reports.⁵⁻¹¹

The research design was a two-pronged approach to collect both quantitative and qualitative information in order to effectively accomplish the objectives of the study.

During the first week in January 1981, a sample of five residency graduates who were practicing in the Madison area served as the pretest for the 13-page questionnaire. The questionnaire contained the core information of the Minnesota, New York, Virginia, and Washington surveys as well as additional questions specific to unique features of the University of Wisconsin program.

On January 23, 1981, essentially the same pre-tested questionnaire was mailed to all 100 graduates of the program. Within two weeks, 45 questionnaires were returned, and a series of personal phone calls were made to the 55 nonresponding graduate physicians requesting them to complete the survey. The final response rate was an impressive 97 percent.

Based upon the pattern of responses to the first 45 questionnaires, an extensive personal interview questionnaire was designed. Subsequently, personal interviews ranging from 1 to 3.5 hours were completed with 39 of the graduates who were currently practicing in rural Wisconsin.

Table 1. Types of Practice by Setting (%)

	Rural	Urban	Total
Solo practice	24	9	16
Partnership of two family physicians	12	19	16
Single specialty group practice with more than two family physicians	21	19	20
Multispecialty group practice with one or more family physicians	36	17	25
HMO (health maintenance organization)	0	7	4
Full-time teaching at medical school	0	19	10
Emergency room work	0	7	4
Other activities	7	3	5
Total	100	100	100
Number of cases	42	54	96

Note: 99 percent confidence level

Results

Nature of Practice

Of the 100 graduates, 92 were engaged in active family practice, 5 in emergency room medicine, and 3 in other activities.

Of the 100 graduates, 28 have changed practice sites since they first went into practice. None who initially went into family practice, however, switched into another specialty. In fact, all 100 were (and still are) board certified in family practice.

There were significant differences among the graduates in the type of practice in which they were engaged, depending upon whether they were in a rural or an urban setting. Graduates in rural settings were more often involved in a multispecialty group practice or were solo practitioners. The major difference for urban-based, University of Wisconsin trained family physicians was their involvement in full-time teaching activities (Table 1).

The number of patient encounters during the week beginning January 19, 1981, are shown in

Table 2. Number of Weekly Patient Encounters

Location	Means	Medians
Office	91	90
Hospital	21	12
Emergency room	16	5
Nursing home	9	4
Patient's home	3	2
Total	140	113

Table 2. These findings were considered typical by 70 percent of the respondents and atypical by 30 percent. These numbers are close to the ones reported for the 2,000 family physicians surveyed by the American Academy of Family Physicians in 1978, and again in January and in April of 1980.^{10,11}

During the week shown, an average of four encounters resulted in patient hospitalization.

During the calendar year 1980, 73 percent of the graduates reported an average of 27 obstetric deliveries, whereas 23 percent of the graduates reported no deliveries. Only 2 percent of the graduates thought they had too many deliveries, 45 percent thought their number of deliveries to be about right, and 53 percent thought these to be too few.

Eighty-five percent of the graduates were on the active staff of at least one hospital, and the other 15 percent were either associate or courtesy staff members.

With respect to hospital privileges for medicine, obstetrics-gynecology, pediatrics, psychiatry, and general surgery, between 85 and 93 percent of the graduates were satisfied with the extent of their privileges. As one might expect, family physicians in rural settings have major privileges more often than do their urban counterparts. For example, 55 percent of the rural based practitioners have major obstetrics-gynecology privileges compared with only 22 percent of the urban based practitioners.

Availability of specialists in the community in which the graduate practiced was highest for radiology (75 percent) and lowest for oncology (47 percent). More than 90 percent of the graduates felt their needs were adequately met for urology, orthopedics, oncology, and pathology. Consult-

Table 3. Office Record System Utilization

System	Percent
Problem lists	94
Problem oriented medical records	92
Flow charts	74
Age and sex registry	18
Family trees (genograms)	16
Data retrieval system (eg, E-Book)	16
Family folders	15

ants in psychiatry were considered needed by 37 percent of all graduates, more so among those in rural based settings.

The medical records keeping systems that nearly all family practice graduates actively use in their practice were problem lists and problem oriented medical records. Table 3 illustrates the utilization of other systems.

Sixty-nine percent of the graduates were involved to some degree with teaching family practice residents, and 8 percent were involved with teaching medical students. Ten percent of the graduates were engaged in full-time teaching.

Factors in Selection of Practice Location

In the mail survey, graduates were asked to evaluate the importance of numerous factors in the selection of their present practice location. Later in the questionnaire they were also requested to indicate their current level of satisfaction for many of those same factors. Combining the ranking of priorities in practice selection criteria with the degree of satisfaction once established in their current practice, it was possible to establish the comparisons that are listed in Table 4.

Of the 39 graduates (equal to 39 percent of total number of graduates) interviewed at their rural practice site, availability of adequate hospital facilities, an opportunity to join an existing practice, and location near home town or family were mentioned as being most important in the selection of their practice site locations.

Table 4. Importance Ranking of Practice Selection Characteristics With Current Satisfaction Levels

Importance Rank*	Satisfaction Level**	Characteristics
1	VS	Coverage of patients when off duty
2	VS	Availability of adequate hospital facilities
3	VS	Availability of hospital privileges
4	S	Availability of office facilities
5	—	Spouse's location preference
6	S	Guaranteed time off from practice
7	VS	Accessibility to recreational activities
8	S	Potential for practice growth
9	VS	Size of community
10	—	Opportunities for joining existing practice
11	S	School system
12	S	Accessibility to cultural events
13	S	Climate
14	VS	Need for more physicians
15	S	Location near home town or family
16	—	Guaranteed income
17	S	Opportunity for teaching
18	S	Level of income
19	S	Location near family practice residency

*The importance ranks are based upon the percentage of graduates who perceived the characteristics as very important. For example, 74 percent felt "coverage of patients when off duty" was very important, whereas only 10 percent thought "level of income" was very important

**The scale was very satisfied, somewhat satisfied, satisfied, and not satisfied. Therefore, VS represents a distribution whereby 70 percent or more were very satisfied; S, between 50 and 69 percent were very satisfied; and SS less than 50 percent were very satisfied

Preparation for Practice

The graduates were asked to assess the extent to which they felt prepared for their present practice. Table 5 shows their responses to 60 items in terms of underprepared, adequately prepared, and overprepared, as well as whether or not each item was needed in their present practice.

Very few graduates perceived themselves as overprepared in any area. The maximum percentage in any one area considered as overprepared was 8 percent in counseling skills.

The majority of respondents considered them-

selves adequately prepared in most areas, with a few noticeable exceptions. Fifty percent or more of the graduates considered themselves underprepared in the following clinical areas:

1. Sixty-two percent felt underprepared in performing cesarean sections, but only 29 percent considered that they were in need of this skill
2. Fifty-two percent of the graduates considered themselves underprepared in emergency surgery, but here 59 percent of the respondents mentioned that they needed this skill
3. Fifty-seven percent felt underprepared in

Table 5. Preparation for Practice (%)

Subject Area	Underprepared	Adequately Prepared	Overprepared	Skills Needed in Present Practice	
				Yes	No
Cesarean section	62	36	2	29	71
Gynecologic medical management	18	79	3	95	5
Gynecologic surgical management	55	44	1	44	56
Office surgery	29	71	0	98	2
General surgery	41	58	1	45	55
Emergency surgery	52	48	0	59	41
Ophthalmology	33	66	1	93	7
Otolaryngology	13	86	1	95	5
Urology	19	80	1	93	7
Trauma	42	57	1	94	6
Fracture care	57	40	3	92	8
Tubal ligation	57	43	0	27	73
Stages of human development	26	74	0	86	14
Behavior disorders	19	76	5	99	1
Psychiatric disorders	31	66	3	98	2
Counseling skills	33	59	8	96	4
Assessing community health needs	57	42	2	73	27
Using community health resources	36	63	1	94	6
Exercising community leadership	69	31	0	70	30
Understanding hospital organization and function	64	36	0	85	15
Obtaining hospital privileges	26	73	1	81	19
Medical and local priorities	39	61	0	86	14
Relationship with other physicians	14	86	0	95	5
Legal aspects of family practice	58	42	0	88	12
Organization of practice	63	35	2	84	16
Personnel issues	61	39	0	85	15
Financial management and business records	80	19	1	79	21
Office management	74	24	2	85	15
Clinical records	21	74	5	93	7
Estate planning	90	9	1	81	19
Care of common clinical problems (eg, fatigue, headache, ill-defined complaints)	8	92	0	100	0
Providing health maintenance	18	78	4	93	4
Use of common drugs	6	94	0	100	0
Family structure and function	25	69	6	96	4
Psychosomatic problems	22	77	1	100	0

continued

Table 5. Continued

Subject Area	Underprepared	Adequately Prepared	Overprepared	Skills Needed in Present Practice	
				Yes	No
Psychosocial components of major medical illness	19	72	9	99	1
Proficiency in physician-patient relations	10	90	0	100	0
Personal and professional growth	28	72	0	99	1
Referral and consultation process	7	92	1	100	0
Arranging for continuing education	29	71	0	99	1
Allergy	27	72	1	100	0
Cardiology	11	89	0	100	0
Dermatology	27	73	0	100	0
Gastroenterology	7	93	0	97	3
Hematology	38	62	0	88	12
Infectious disease	10	90	0	99	1
Nephrology	40	59	1	84	16
Neurology	19	81	0	98	2
Pulmonary	10	90	0	98	2
Radiology	21	79	0	91	9
Rehabilitation	71	29	0	83	17
Rheumatology	28	72	0	94	6
Newborn care	21	79	0	94	6
Well-baby care and child development	8	88	4	94	6
Developmental disorders	56	42	2	85	15
Learning problems of childhood	59	40	1	83	17
Acute childhood illnesses	2	98	0	98	2
Chronic childhood illnesses	33	67	0	88	12
Uncomplicated delivery	3	94	3	88	12
Forceps delivery	51	47	2	87	13

fracture care, with 92 percent stating they needed this skill

4. Fifty-seven percent felt underprepared in performing tubal ligations, but only 27 indicated needing this skill

5. Fifty-one percent felt underprepared in applying forceps for vaginal deliveries, with 87 percent reporting need of this skill.

Fifty percent or more of the graduates felt underprepared in the following nonclinical subject areas:

1. Fifty-seven percent felt underprepared in assessing community health needs, with 73 percent needing this capability

2. Sixty-four percent felt inadequately prepared in understanding hospital organization and

function, with 85 percent of respondents needing this ability

3. Fifty percent felt underprepared in legal aspects of family practice, and 63 percent in organization of practice, with a corresponding 88 percent and 84 percent needing this knowledge

4. Sixty-one percent, 80 percent, 74 percent, and 90 percent, respectively, felt underprepared in personnel issues, business records, office management, and estate planning, with 85 percent, 79 percent, 85 percent, and 81 percent, respectively, reporting a need for these capabilities.

When the same 39 graduates in rural Wisconsin were asked in which practice areas they felt most underprepared, they most often mentioned acute fracture care and obstetrics, including forceps deliveries and high risk obstetrics.

Continuing Medical Education

Because of geographic location and relative isolation, problems with continued medical education are often voiced by family physicians practicing in rural areas. Of the 39 graduates practicing in rural Wisconsin, however, only four mentioned some unmet needs in the area of continuing medical education, while 35 were satisfied with their activities in this area.

Last, but not least, the bottom line is compensation for work. The same 39 graduates in family practice in rural Wisconsin were asked at the end of the interview about their net (before federal and state income taxes) annual income: (1) during their first year in practice, and (2) during their last complete calendar year (1980) in practice.

It is interesting to note that the average starting income was \$35,870, compared with the graduates' current income of \$59,958. (The starting incomes were *not* adjusted to 1980 dollars.)

Conclusions

This survey accomplished several results. It allowed for the reestablishment of contacts between faculty and graduates of the residency programs. Over the years, the faculty had lost contact with many of the graduates, and many of the graduates in turn felt somewhat abandoned by their mentors,

as well as having lost contact with their own peers. The personal visit by the faculty interviewer to the practice site of the graduates who practice in rural Wisconsin was a most gratifying experience for both parties.

The results reveal several areas of deficiencies in residency training, which are correctable without major revamping of the educational process.

The graduates are generally well-satisfied with their current practice, including the 28 percent who changed practice sites since they finished the residency. They all made their relocation move early in practice. None of the 100 graduates in practice as family physicians have changed into another specialty field or intend to do so in the foreseeable future.

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