Physicians' Views of Medical Practice in Nonmetropolitan Communities

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THE DECREASE in the number of physicians and allied health professionals in the rural counties of the nation has become a matter of concern to physicians located in these counties as well as to the general public (*1*, *2*). Trends in the United States toward urbanization as well as specialization in medical practice have resulted in a concentration of physicians in larger cities. The maldistribution of physicians in certain areas has deprived some rural communities of immediate access to medical care.

The distribution and availability of health manpower for rural medical service areas is of continuing concern to the American Medical Association Council on Rural Health. With this problem in mind, the council surveyed a random sample of physicians practicing in nonmetropolitan areas of the nation during 1967 with a questionnaire entitled "Medical Practice in Small and Large Communities." The physician sample was selected in cooperation with the American Medical Association Department of Survey Research.

Some background information on the physicians sampled as well as their perceptions of selected professional and social aspects of their practices are reported here.

Method

The population studied, defined on the basis of information available in AMA records, included all physicians in private practice who resided in nonmetropolitan counties of the United States. Preliminary calculations suggested that a sample size of about 2,500 would be adequate for the study. With the use of the AMA's "master file" and a set of random numbers in the range of 1 to 50,000, a sample of 2,468 physicians was selected.

Data were obtained by means of a questionnaire which called for completion of 71 multiple-choice items divided into three headings: (*a*) background information, (*b*) medical practice organization, and (*c*) factors associated with practice and community.

Four mailings of the questionnaire were made during the summer and fall of 1967. By the termination date, December 1967, 1,975 questionnaires had been received, a response of 80 percent. Of those received, 122 were excluded because of incomplete or inconsistent answers or because the physician was not in active practice at the time. The remaining 1,853 questionnaires were analyzed in accordance with the objective of the survey.

For purposes of analysis of the data, counties or communities were grouped according to relative population density. One classification of counties used was that developed by the Public Health Service which categorizes nonmetropol-

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itan counties as follows: (*a*) adjacent to metropolitan areas, (*b*) isolated semirural (which contains an incorporated place of 2,500 or more), and (*c*) isolated rural. A comparison of the distribution of all physicians practicing in nonmetropolitan areas (*3*), of the selected sample of physicians, and of the usable representative responses in the three county group categories showed no significant deviations from the selected sample.

Findings

Because of the tendency of physicians, like other professionals, to settle in urban areas and because of the problems in communication and transportation experienced by rural dwellers, rural people, particularly those in the isolated areas, have only about one-half the access to physicians and other health resources that the rest of the nation has. In 1967, less than 15 percent of the physicians in private practice were located in nonmetropolitan areas of the nation (*4*). The distribution of physicians in the sample by county group classification is shown in table 1. The trend toward urbanization is evident here, as nearly one-half of the physicians practiced in counties adjacent to metropolitan areas and only 6 percent were located in the isolated rural counties.

Family backgrounds of physicians. More than one-third of the physicians, regardless of size of community in which they practiced, reported that their fathers were professional men. The fathers of 15 percent were physicians. The highest percentage of physicians whose fathers were farmers were practicing in towns with less than 2,500 people, and this percentage decreased as the size of the community in which they practiced increased.

Physicians practicing in counties adjacent to metropolitan areas were more likely to be sons of white-collar workers than those practicing in rural areas. Nearly one-fourth of the physicians located in isolated rural counties were sons of farmers.

Location in the early years. Results of studies in New York, Kentucky, Missouri, and Washington have indicated that physicians who practice in small towns are more likely to have a rural than an urban background (*5–8*). Hassinger, in a study of the background and community orientation of rural and urban physicians in Missouri, found that rural physicians had predominantly rural backgrounds and that metropolitan physicians generally had urban locations during their youth (*6a*). Thus, we might hypothesize that physicians who practice in small towns are likely to have a rural background. Physicians were asked to indicate the size of the community in which they primarily resided until 18 years of age. They answered the same question for their wives.

Table 1. Distribution of 1,853 physicians in private practice in nonmetropolitan areas, by county group classification, 1967

County group classification	Number	Percent
Adjacent to metropolitan areas	836	45
Isolated semirural [1]	913	49
Isolated rural	104	6
Total	1,853	100

[1] Contains an incorporated place of 2,500 or more.

Nearly one-half (49 percent) of the physicians who were practicing in towns of less than 2,500 were reared in a small town. The same percentage (49 percent) of the physicians practicing in nonmetropolitan cities of 25,000 or more were reared in cities of that size (table 2).

A chi-square analysis of the data, arranged according to community size, was used to test the null hypothesis that there is no relationship between size of place where the physician practices and size of place where he was reared. The test was significant at the 0.001 level ($x^2=193.89$, d.f.$=9$, $P<0.001$). In addition, the same relationship was found for the physician's wife ($x^2=113.56$, d.f.$=9$, $P<0.001$). Statistically then, this rejects the null hypothesis of independence and suggests that there is a relationship or degree of dependency with respect to the variable of size of place where the physician was reared.

The extent to which this relationship holds true in an era of rapid social change is subject to continued empirical investigation, particularly among young physicians. Nevertheless, the results of this and other studies seem to indicate that physician recruitment for rural areas

would be enhanced if more young men with rural backgrounds were encouraged to enter the medical profession as family physicians (*9*).

Selecting a location for practice. Career locations involve personal choices. As a person advances in his career, the choices become more and more his own. Physicians seem to have greater control over choice of locations for practice than members of most other occupations. The profession is an independent one and demand for services is high in all areas.

The questionnaires revealed that the physicians practicing in nonmetropolitan areas were not geographically mobile from their first practice locations. At least 63 percent of the physicians had not moved from their original practice location. This percentage was consistent regardless of community size. A more detailed breakdown in nonmetropolitan areas shows that about one-fourth of the physicians in nonmetropolitan areas had practiced 20 years or more in the same place.

Physicians were asked what factors influenced them to come to their present location. The reasons most commonly mentioned were the best opening available when ready to practice and geographic preference. These two considerations accounted for about one-half of the responses. Involved in the perception of the best opening was the availability of medical facilities, including hospitals and pharmacies, in the community area. Family and friends were another major influence and were particularly important in the isolated rural counties. Some of the physicians in these counties undoubtedly returned to practice in their hometown or adjoining community or at the location of a friend.

Physicians were also asked how they decided upon their present practice location. More than 25 percent indicated that they are practicing in the town where they grew up or in a neighboring community. An additional 25 percent said that friends helped them decide on their present location. These two factors accounted for more than half of the responses to this question.

Older physicians appear to have had an influence in helping to find a practice location for younger ones; 7 to 9 percent of the respondents reported that association with older physicians influenced their decision in finding their practice location.

Communities which contacted medical association placement services had some success in obtaining physicians. Four to 11 percent of the physicians indicated they found their location through the assistance of the AMA and State medical association placement services. This procedure was particularly evident in the isolated rural counties where communities had had difficulty in recruiting physicians since World War II.

Location of internship and residency was reported by 9 to 10 percent of the physicians in the most populated rural counties as the basis for selecting their practice location. Other influences reported by physicians in selecting a location included private placement services, basis of own selection through investigation, medical needs of community, military service location, State health agency contacts, assistance from medical practice groups, and specialty organization services.

The responses regarding selection of a place to practice indicate that the location of medical services is largely a function of supply and demand, particularly in the more populated rural

Table 2. Relationship of size of community where reared to size of community where practicing among 1,823 [1] physicians in nonmetropolitan areas, 1967 (in percentages)

Size of community where reared	Size of community where practicing			
	Less than 2,500 (N=296)	2,500–9,999 (N=477)	10,000–24,999 (N=466)	25,000 or more (N=584)
Less than 2,500	49	27	19	21
2,500–9,999	14	34	23	16
10,000–24,999	9	10	23	14
25,000 or more	28	29	35	49

[1] Data were incomplete in 30 of the questionnaires.

counties. However, in many rural areas of the nation, the supply of physicians has not kept pace with demand (*10*). Physicians generally are independent practitioners who make decisions about the location of their practice on the basis of assessment of opportunity. Once a physician establishes a practice, however, he is unlikely to move. Thus, the redistribution of physicians tends to occur when young physicians entering practice decide to locate in larger centers rather than to replace physicians in small towns who have retired. A maldistribution of physicians, therefore, has been developing gradually for the past several decades in the more rural areas.

Factors associated with practice and community. The distribution of physicians by community size according to year of graduation from medical school points up the accelerating influence of urbanization during the past few decades in attracting young physicians to locate in larger centers of population (*5b*). The average age for physicians located in communities of less than 25,000 was 50 whereas it was 46 for those in communities of 25,000 or more.

The impact of the growth and development of group or clinic practice is one factor which merits consideration. Among the respondents, 58 percent were engaged in solo or individual practice, 17 percent in group medical practice, 9 percent in a full-time salary arrangement, 8 percent in other combinations of group or partnership arrangements, and 8 percent in combinations of salary, group, or individual practice.

The percentage of physicians engaged in group medical practice in nonmetropolitan areas is somewhat higher than for all U.S. physicians (*11*). Group medical practice is viewed as one possible means of attracting physicians to rural areas.

Table 3. Reaction to factors associated with medical practice among 1,837 [1] physicians practicing in nonmetropolitan areas, by county group classification, 1967 (in percentages)

Aspects of medical practice and rating	Counties adjacent to metropolitan areas (N=825)	Isolated semirural counties (N=908)	Isolated rural counties (N=104)	Chi-square value	Level of significance
Opportunity for professional growth:					
Asset	54	57	31	43. 80	0. 001
No concern	25	21	21		
Liability	21	22	48		
Access to continuing medical education programs:					
Asset	52	48	32	20. 11	. 001
No concern	21	20	20		
Liability	27	32	48		
Hours of practice:					
Asset	45	42	26	20. 35	. 001
No concern	31	31	34		
Liability	24	27	40		
Medical facilities:					
Asset	80	83	55	47. 04	. 001
No concern	6	6	10		
Liability	14	11	35		
Availability of consultative services:					
Asset	74	76	54	40. 76	. 001
No concern	13	9	10		
Liability	13	15	36		
Facilities for handling emergencies:					
Asset	66	68	51	33. 17	. 001
No concern	18	18	14		
Liability	16	14	35		
Distance to hospital:					
Asset	72	76	54	64. 20	. 001
No concern	16	18	14		
Liability	12	6	32		

[1] Data were incomplete in 16 of the 1,853 questionnaires.

A characteristic of a professional career is that public and private lives are interrelated to such an extent that it becomes difficult to separate them. This is true among physicians as evidenced by the responses in the study of those practicing in nonmetropolitan areas. The fact that many physicians do not retire indicates the congruence of professional and private life.

Respondents to the questionnaire were asked to rate 18 statements regarding medical practice on a 5-point range of response alternatives as follows:

1. Is among the best-liked aspects of my practice and living in the community.
2. Is an important asset.
3. Is of little or no concern.
4. Is a liability.
5. Is among the least-liked aspects of my practice and living in the community.

For purpose of analysis the five response categories were condensed into a 3-point continuum ranging from "asset" to "no concern" to "liability."

Of the respondents in the isolated rural counties, 48 percent said that lack of "opportunities for professional growth" and "limited access to continuing medical education programs" were liabilities in their practice. In the more populated rural counties, 21 and 27 percent respectively cited these two factors as liabilities (table 3).

Although the liability rating for these two aspects of the physician's life was of considerable concern among all physicians in the sample, the major concern was in the isolated rural counties. Thus, it would seem that the limited opportunity for professional growth and access to continuing medical education programs in the isolated rural counties would tend to make it difficult to recruit young physicans for such areas.

With the increasing number of patients, greater demand for services, and more complex diagnostic and therapeutic procedures, the need for easy access to continuing medical education programs is of paramount concern to all physicians.

Five other factors in which there was a significant difference between the rating of respondents in the more populated rural counties and the isolated rural counties were (*a*) hours of practice, (*b*) medical facilities available, (*c*) consultative services available, (*d*) facilities for handling emergencies, and (*e*) distance to hospital.

Factors associated with medical practice which most physicians perceived as assets included (*a*) wide range of experiences in medical practice, (*b*) the feeling of being wanted and needed, (*c*) providing health education, (*d*) treating and advising the patient in all his health problems, (*e*) status in the medical profession, (*f*) the need for self-reliance in practice, (*g*) knowing patients well, (*h*) satisfaction with accomplishments, (*i*) knowing the families of patients, and (*j*) opportunities for professional medical leadership.

Eighty-four percent of the respondents indicated that they were active participants in their local medical societies. Participation was about the same in all of the nonmetropolitan areas.

Respondents were asked to rate 15 statements regarding community living on the 5-point range of response alternatives described previously. Of the physicians located in the isolated rural counties, 56 percent indicated that limited cultural advantages were a liability factor in their communities. About one-fourth of the physicians in the other rural counties gave a similar response.

Other factors pertaining to community living which were of considerable concern included limited availability of education facilities, restricted social activities, lack of a growing and thriving community, and lack of personal privacy for the physician and his family. About one-third of the physicians practicing in the isolated rural counties perceived these four factors as liabilities in their community life.

Factors concerning community life which were generally considered desirable included opportunity for community leadership, development of close and lasting friendships, good family relationships, geographic location, and avocational opportunities such as hunting and fishing.

Satisfaction with community practice. Physicians were asked to express their feelings about living in their present locations by checking one of five response categories ranging from entirely satisfied to entirely dissatisfied. In addition, respondents were asked to indicate which aspects

they liked and disliked about their communities. In the more populated rural counties, 35 percent of the physicians said that they were entirely satisfied with life in their communities. Only 19 percent gave a similar response in the isolated rural counties; in these counties 28 percent were not satisfied with living conditions as opposed to 11 percent in the larger counties. The difference in satisfaction ratings among the three county group classification categories was significant ($\chi^2=32.70$, d.f.$=4$, $P<.001$).

The respondents who liked rural practice and living did so because of the feeling that rural people were friendly and dependable, which resulted in close personal ties with the people (*12*). They also listed as assets geographic location, climate, less traffic and confusion, and the advantages of schools and other institutions. The last advantage was true particularly for those located in university towns.

Most of the reasons given for not being satisfied with their present location centered around community limitations in the more rural areas, such as cultural and social factors, shortage of physicians and allied health personnel, lack of educational facilities, and inadequate living conditions.

Physicians were generally satisfied with their medical practice. A higher percentage of dissatisfaction, 19 percent, was indicated by the physicians located in the more rural counties as compared with the counties adjacent to metropolitan areas. With the exception of the isolated rural counties, physicians seemed well-satisfied to practice in nonmetropolitan areas.

Physicians were asked to indicate their wives' feelings about living in their communities. According to the husbands' perceptions, a higher percentage of the physicians' wives were not as well-satisfied with community life as were their husbands. More than one-third of the physicians located in isolated rural counties indicated that their wives expressed dissatisfaction with community life.

Summary and Conclusion

The responses to a questionnaire of 1,853 physicians practicing in nonmetropolitan areas in 1967 indicated that a significant relationship exists between size of place where the physician practices to size of place where he was reared. Smalltown physicians and their wives had predominantly smalltown backgrounds, and physicians in nonmetropolitan cities of 25,000 or more were generally from cities of that size.

Factors which influenced physicians to come to their present locations are obviously complex. Physicians may be influenced by some particular individual characteristic (liked the town when driving through) or by situational factors (war, depression). But certain patterns did emerge. The most frequently mentioned influences were best opening when ready to practice, geographic preference, and family and friends. In finding a location, either hometown preference or suggestion of friends was most often listed, followed by place of internship nearby as well as assistance of State and AMA physicians' placement services.

Access to continuing medical education programs and opportunities for professional growth were of concern to physicians in the sample, particularly to those practicing in isolated rural counties. They also viewed hours of practice, medical facilities and personnel available, and emergency medical facilities as problems. They and their families missed the cultural and social opportunities found in urban areas.

On the whole, the physicians in rural America indicated satisfaction with their community life and medical practice. However, there was more dissatisfaction with community life and practice in the isolated rural counties (28 percent) than in the more populated nonmetropolitan counties (11 percent).

Implications for medical school admission committees suggest the importance of giving consideration to admitting more medical students with a rural background. In addition, medical schools, hospitals, and other agencies, in cooperation with medical societies, should study new methods of making available continuing medical education programs for physicians practicing in rural communities.

REFERENCES

(*1*) Parker, R. C., Jr., Rix, R. A., and Tuxill, T. G.: Social, economic, and demographic factors affecting physician population in upstate New York. New York State J Med 69: 760, Mar. 1, 1969.

(2) MacQueen, J. C.: A study of Iowa medical physicians. J. Iowa Med Society 68: 1135, November 1968.
(3) American Medical Association: Distribution of physicians, hospitals, and hospital beds in the U.S. Department of Survey Research, Chicago, 1966, vol. 1, p. 17.
(4) American Medical Association: Distribution of physicians, hospitals, and hospital beds in the U.S. Department of Survey Research, Chicago, 1967, p. 14.
(5) Parker, R. C., Jr., and Tuxill, T. G.: The attitudes of physicians toward small community practice. J Med Educ 42: (a) 327-344; (b) 331, April 1967.
(6) Hassinger, E. W.: Background and community orientation of rural physicians compared with metropolitan physicians in Missouri. University of Missouri Research Bulletin 822. Columbia, 1963, (a) p. 37.
(7) Peterson, G. R.: A comparison of selected professional and social characteristics of urban and rural physicians in Iowa. Thesis. University of Iowa Graduate College, Iowa City, 1967, pp. 59-65.
(8) Aldrich, R. A.: Higher education's responsibility for meeting rural health needs. AMA's 21st National Conference on Rural Health. Chicago, March 1968. Mimeographed.
(9) Harrell, G. T.: Rural and small town practice—future training and role of the family physician. AMA's 22nd National Conference on Rural Health. Chicago, March 1969. Mimeographed, p. 12.
(10) Fahs, I. J., and Peterson, O. L.: Towns without physicians and towns with only one—a study of four States in the upper midwest, 1965. Amer J Public Health 58: 1200-1211, July 1968.
(11) American Medical Association: Survey of medical groups in the U.S. Department of Survey Research, Chicago, 1965, p. 6.
(12) Yamamoto, K.: Satisfaction of Pennsylvania physicians with rural medical practice. Thesis. Pennsylvania State University Graduate School, University Park, 1957, pp. 68, 69.

Tearsheet Requests

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Programs to Train New Types of Research Workers in Administration, Organization, and Delivery of Health Services

Three new programs for research fellowships, training grants, and research scientist development awards, to train research workers in the administration, organization, and delivery of health services, have been announced by the National Center for Health Services Research and Development.

The Center hopes to encourage new approaches and new methods of improving existing health services through these training awards.

Both pre- and post-doctoral fellowships are available under the plan. Physicians, nurses, dentists, pharmacists, psychologists, sociologists, lawyers, anthropologists, statisticians, economists, epidemiologists, and others in similar disciplines can apply.

Training grants are available in three areas: health services research which includes the social and behavioral sciences in the health services (psychology, sociology, anthropology, political science, epidemiology, economics, law, and history); health education; biostatistics (mathematics of systems analysis and measurement of health systems); systems management and operations research, engineering in health services; computer science (computer and information sciences), and scientific communications systems; and administration and management sciences (including public administration).

Deadlines for receiving applications for fellowships and research scientist development awards are January 2, April 1, and October 1, 1970. Deadlines for receiving applications for training grants are February 1, June 1, and October 1, 1970.

Further information may be obtained from the Office of Research Training, National Center for Health Services Research and Development, 8120 Woodmont Avenue, Bethesda, Md. 20014.

Members of the Medical Assistance Advisory Council

Donald C. Smith, M.D., professor of maternal and child health and chairman of the department of health development at the University of Michigan School of Public Health, has been appointed chairman of the Medical Assistance Advisory Council.

Dr. Smith is one of the original members of the Council, which advises the Secretary of Health, Education, and Welfare on administrative policy for Medicaid. He succeeds Rashi Fein, Ph.D., of Harvard University, as chairman.

Seven new appointees to the Council are:

John Affeldt, M.D., medical director, Los Angeles County Department of Hospitals, and a consultant in rehabilitation, who is experienced in delivering a wide variety of medical care and services and in developing medical facilities.

Roy E. Christensen, president and chairman of the board of Beverly Enterprises, Pasadena, Calif., and a member of the Secretary's Task Force on Medicaid and Related Programs.

Mrs. Dorothy M. DiMascio, sergeant at arms of the National Welfare Rights Organization, Washington, D.C., and a member of the Citizens' Board of Inquiry into Health Services in America.

Miss Margaret E. Mahoney, executive associate, Carnegie Corporation, New York City, and a member of the Secretary's Task Force on Medicaid and Related Programs and former program officer on the UNESCO Relations Staff of the Department of State.

David O. Maxwell, secretary of administration and budget, Commonwealth of Pennsylvania, and former insurance commissioner of Pennsylvania and chairman of the Governor's Council for Human Services.

Elmer M. Smith, M.D., director of the Bureau of Medical Services, Iowa State Department of Social Services, and former member of a special technical advisory committee for the Social Security Administration.

Phillip D. Weaver, M.D., chief of radiology, Weld County General Hospital, Greeley, Colo., and former member of a special Social Security Administration advisory committee on provider participation.

Continuing members are:

Thomas W. Georges, Jr., M.D., Pennsylvania Secretary of Health, who is presently on leave of absence from the faculty of Temple University School of Medicine.

Sam Grais, pharmacist, St. Paul, Minn., and former president of the National Association of State Health and Welfare Conference and Planning organizations.

Kenneth J. Holmquist, hospital administrator, St. Paul, Minn., and a preceptor in the Program in Hospital Administration of the University of Michigan.

Amos N. Johnson, M.D., Garland, N.C., former president of the American Academy of General Practice and participant in the White House Conference on Health in 1965.

Marcel Learned, partner in the firm of Ernst & Ernst, Boise, Idaho, and specialist in hospital auditing procedures and in the fiscal and management areas of health care institutions.

Rev. Robert J. McEwen, S.J., chairman of the department of economics, Boston College, who has conducted research studies in depth on the economic problems of consumers.

Louis Rolnick, national director, Welfare and Health Benefits Department, International Ladies Garment Workers Union, New York City, who is responsible for policy and coordination of more than 50 welfare and health funds associated with the ILGWU.

Maynard I. Shapiro, M.D., former president of the American Academy of General Practice and director of the Department of Physical Medicine and Rehabilitation of Jackson Park Hospital, Chicago.

George W. Slagle, M.D., Battle Creek, Mich., a private practitioner and consultant to the Battle Creek Health Center.

Eddie G. Smith, D.D.S., Washington, D.C., a practicing dentist and a member of the Urban League and the NAACP.

Miss Faustina Solis, project director of the Farm Worker's Health Services, California State Department of Public Health, and faculty member of the School of Public Health, University of California, Berkeley.

Edward Walker, president of the American Nursing Home Association and specialist in problems associated with nursing home pharmacies.

George K. Wyman, commissioner, New York State Department of Social Services, a career welfare administrator who has served in Federal, State, and local posts.