

Research Implications of the National Study of the Content of Family Practice

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The need to monitor and evaluate the content of practice is a critical part of any medical discipline if that discipline is to attempt to improve its services. Despite prior studies having shown a remarkable consistency in the rank order of family practice content profiles,¹ there exists important variation within classifications and between regions. The University of Washington analysis of the University of Southern California's Medical Activities and Manpower Project (USC/MAMP data) is an excellent example of what can be achieved through well-conducted national surveys. This study contains a wealth of useful information concerning the practice of family medicine in the late 1970s. It provides a national cross-sectional view of family practice that can be used to highlight significant changes as the discipline matures. This is particularly important today since family practice is changing steadily, and the implications of and actions taken because of these changes must be based on the best available data rather than on impressions or anecdotes.

Study Methods

One of the major strengths of this study is the detailed attention given to its methods. The authors are to be commended for their efforts in developing and using sound methodological procedures in addressing the study's objectives. In more than one instance, the methods used represent innovative and useful techniques for the field of family practice research.

Perhaps the single most exciting new method-

ological contribution is the development of the diagnostic classification clusters. This clustering of detailed diagnostic categories, designed to minimize the effects of idiosyncrasies in coding and to be compatible with the major ambulatory coding schemes, has many potential applications. The clusters are meaningful, relevant, and readily constructed from other classification codes. They also have been shown to compare well across different study populations (eg, the age-sex comparisons for the top 25 clusters are remarkably similar for the National Ambulatory Care Survey). Such consistency enhances confidence in the validity and generalization of the findings. Moreover, the clusters provide a far more parsimonious description of patient encounters, and they are easily interpreted. As their use becomes more widespread, future studies will be able to evaluate practice site differences more reliably. Such evaluations could identify important site characteristics, which would be extremely useful as feedback to residency training programs, enabling them to better prepare physicians for practice in rural areas, inner city locations, and groups. Also, in future studies of this nature, it would be very useful and important to examine more closely the variations in diagnostic clusters within a particular region.

The study also contains additional methodological strengths. In particular, the efforts to assess the reliability and representativeness of the information are especially noteworthy. This was done in two ways. First, the comparison of respondents and nonrespondents on selected items permitted the identification of important differences. These differences were then used to weight the responses of several subgroups in which underresponding occurred. Second, the separate Battelle reliability study of 600 survey participants also provided valuable information regarding the reliability of specific items. This degree of reliability checking,

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which is not common, provided very useful information as to which items were more likely to be the most trustworthy. For example, it was found that one of the less reliable items concerned the reporting of certain diagnostic or therapeutic procedures. Information such as this clearly needs to be considered in the evaluation of the findings.

Another methodological strength of the project concerns the efforts to address the validity of the USC/MAMP survey data by correlating it with the National Ambulatory Medical Care Survey (NAMCS) results. The year-round NAMCS study, using a nearly identical sampling frame and incorporating similar questions, achieved a 78 percent response rate. Assuming such results to be more representative, a comparison with the MAMP data provides a form of empirical validity. The high degree of correspondence between the two studies speaks well for the validity of the MAMP findings.

In the analysis of the data, several points deserve further emphasis. First, the decision to use a weighted analysis to adjust for unequal sampling fractions and differences in response rates is a sound statistical strategy. This approach holds the best promise of providing reasonably good estimates of the true population parameters. With the sampling scheme selecting disproportionately more "self-identified" family physicians and group practitioners and with the need to take into account the poor response rate of self-identified general practitioners, particularly those in solo practice and in the Northeast, a weighted analysis is necessary if population estimates are desired.

Second, the statistical analysis of these data was not only appropriate to the task; a non-technical emphasis also was given to communicating the findings. Although basically a descriptive study, the more complicated weighted mean analysis and the important findings of the regression analyses are clearly presented. In addition, the authors were well aware of the potential for spurious findings and of the many possible sources of bias. They stressed appropriate cautions in interpreting the results. For example, they cautioned that non-respondents may differ in important but unknown ways, and that data collected in 1977 may neither be interpreted the same nor be as representative as data collected in 1982.

Next, the specific analyses comparing residency-trained family physicians with the others provided an initial opportunity to examine and

contrast the new breed of family physician. These analyses set the stage for further in-depth analyses of the important themes identified. Finally, the use of tracer conditions, to control for some differences in physician-patient mix, is also a noteworthy procedure. This allows comparison among different subgroups of physicians, such as their use of specific tests and procedures, without the potentially confounding effects of case mix.

Importance of Findings

One of the important findings to emerge from this study is a documentation of the extent to which regional studies, such as the Virginia Study, are likely to be limited. Representative national studies provide a much better benchmark against which to make comparisons. This study places in better perspective the strengths and limitations of regional data. Moreover, it helps to better understand and to more appropriately use information collected regionally. This study, in providing a national profile, clearly demonstrates that one of the important factors in the national profile is regional differences. Regional differences were found to be as predictive of what physicians do as the level of training they received.

The comparisons between the NAMCS, MAMP, and the Virginia data are enlightening. They show the rank order of diagnoses to be similar for the more frequent diagnoses, but the estimates of the frequency of the various diagnoses often differ. This may be a reflection of the first two surveys having used principal diagnoses only, whereas the Virginia Study used up to five diagnoses for each encounter. The Virginia Study, employing a sample of 92 residents and 36 practicing family physicians, was based on a different sampling strategy. This strategy used different collection procedures and analyzed the data collected several years earlier. The clustering of the MAMP data, even with the poor response rate, mirrors very well the content of family practice nationally as measured by NAMCS. The Virginia data, on the other hand, appears less representative of family practice nationally. However, it should be pointed out that one of the strongest features of the Virginia Study is the study covered the entire year for two years, not just a three-month sample period.

Several of the study's major findings bear

further emphasis. The finding that family physicians' patients are likely to reflect the characteristics of the community in which they practice is a fundamental one. A greater responsibility is therefore placed on the residency training programs to equip residents with skills that will enable them to assess the needs of the community (ie, to make a community diagnosis). In so doing, the resident will have a better understanding of the problems likely to be seen as well as of the ways in which they can be met.

That about 50 percent of both ambulatory and inpatient encounters can be described in terms of 14 to 15 clusters is another significant finding. However, the content of the clusters differs markedly, indicating a different profile is seen in the office than in the hospital. For example, diabetes, ischemic heart disease, and pregnancy were the only clusters to appear in the top 10 listings of both ambulatory and inpatient encounters. Also, the differences observed between the diagnostic clusters of recent residency graduates and nongraduates are striking, possibly reflecting the effects of residency training.

That almost 100 percent of the residency-trained physicians admitted patients to hospitals and that inpatient encounters accounted for 23 percent of all patient encounters lend credence to the point made in the Millis report that the family physician should be called a "primary physician."² The work of such primary physicians is mainly in primary care, but it also involves a great deal of secondary care and, rarely, even some participation in tertiary care.

One of the more interesting results to emerge indicates that residency-trained family physicians generally tended to spend more time with patients and to work an average 3.3 hours longer per week. Such results suggest the following issues. First, can physicians who see patients for a longer period of time on each encounter deal more effectively with their problems? Second, can they cope with the same number or even a greater total number of patients than physicians who see each patient on numerous occasions for a short period of time? Both issues are worthy of future research. Finally, in order for the family physician to maintain a high standard of medical care, even when dealing with poor people, the mechanism of reimbursement needs to be systematically evaluated. In this respect, the work by Abramson et al³ on the cost

benefits of a type of health maintenance organization among Medicaid recipients has important implications for family practice.

Another important aspect of these findings concerns the considerable differences that were observed among geographic regions. These interregional differences merit further investigation. Some of the factors that seem to be contributing to the differences include variations in the sampling frame response rates, differences in the incidence and prevalence of the conditions seen, differences in socioeconomic status, differences in the amount of training, differences in age distribution, and differences in breadth of practice (eg, obstetrics and surgery).

Of the five most frequent clusters in outpatient family practice, the general medical examination, soft tissue injuries, and acute sprains and strains seem most likely to receive inadequate emphasis within residency training programs. Also, that certain conditions do not appear in the top 25 clusters despite being common suggests that residents are not being trained to recognize or to record as principal diagnoses early signs and symptoms (eg, problems with alcohol). These impressions are also worthy of additional study to assess their validity.

Finally, the global summary description of the total sample (ie, physicians were older, had little postgraduate education, were located in rural settings, and were almost totally male), does not fit recent residency graduates. This difference in physician characteristics is likely to have a significant impact on the field as more residency-trained physicians replace older general practitioners.

Implications for Research

One of the most important issues raised by this research is the need to periodically evaluate the new breed of family physicians. The data presented here clearly indicate that the residency-trained family physician is different from the older general practitioner. Thus, the impact of residency-trained physicians is likely to be quite different from that of the general practitioner in terms of many parameters of practice. These differences were observed in the type of patient seen, in diagnostic and therapeutic procedures used, inpatient mix, the practice of obstetrics, prenatal care, productivity, location, and practice

setting. Many of the issues raised areas of concern that will need prospective evaluation in order to provide evidence that the new breed has established its own distinctive pattern of health care delivery.

The research implications of this study are quite profound. Many exciting issues were raised, but only a few are presented here to illustrate the broad implications involved. One of the most intriguing questions concerns the extent to which residency graduates continue to practice as they were trained. As they get older and gain experience, will they become more like the older general practitioner in this study? Related to this issue are the many ways in which residency-trained physicians differ from non-residency-trained physicians. In particular, they were found to spend more time with patients, report more counseling, practice more obstetrics, care for more complex medical problems in the hospital, use fewer injections, and use more complex diagnostic procedures than their older colleagues. In short, they appear to be practicing as they were trained, and this practice style appears to differ from that of the non-residency-trained physician. Added to these variations in practice style are the differences in physician characteristics (ie, the new breed are likely to be younger, residency trained, and board certified, to practice in family practice groups, to serve in rural and urban underserved areas, and increasingly to be female). Each of these new elements in its own right provides interesting questions for future research. For example, future studies need to monitor closely the relationship between the sex of the patient and the sex of the physician. As more women enter the practice, the trend that female physicians have a greater proportion of female patients has important implications for future projections of services. One way of coping with this trend might be to develop single specialty groups with a mixture of male and female physicians. This would allow family members to choose different family physicians within the practice for their care. Care for the family will then always be provided by the practice, but not necessarily from the same physician. In one sense, the family can have its "personal practice" and the individual can have a personal physician as well. Similarly, longitudinal studies of recent graduates need to be conducted to reaffirm and assess the impact of lower productivity on manpower projections.

In addition to research on women physicians and productivity, studies are needed to evaluate the success of counseling and the emphasis on caring for psychosocial problems. To what extent are psychosocial issues being addressed? What are they, and how successfully are they managed? Current data show a high inpatient encounter rate—23 percent among general practitioners. Is this likely to continue, and will the nature of inpatient encounters change? Should residency training for different inpatient problems be increased?

The study findings also reinforce and support the concept of the sentinel practice. Such sentinel practices could be located in the major regions and designed to examine many of the variables found significant in this study. In addition, such practices could be encouraged to use computerized data records instead of the three-day logs. This is one of the strengths of the Virginia Study. Some of the variables to be examined might include urban, suburban, and rural practice location, socioeconomic status, infant mortality, physician-population ratio, type of practice, and extent of residency training. Sentinel practice centers could also be formed in which cooperation and integration between practicing physicians and academic centers would be encouraged to better ensure a comprehensive community outreach of sentinel practice.

Specific in-depth studies are also a natural extension of this kind of study. For example, how residency-trained family physicians manage obesity (the study shows that they spend less time with their obese patients), or how they approach the area of prevention are only two examples of studies that could provide very insightful data in areas of specific emphasis.

The impact of the single-specialty group practice on the quality and efficiency of services provided also deserves further evaluation, since this form of practice appears to be growing in popularity.

It would have been fascinating to have been able to compare residency graduates and non-graduates in terms of the types of family data that are routinely collected and the ways in which they are used in practice. In the future, it would also be important to examine, in some detail, various aspects of family pathology.

The results of this project also have important implications for future studies of this type. In particular, meaningful comparisons could be made

between residency-trained family physicians and non-residency-trained or board-certified physicians, over time, to monitor the changes that occur in their practices. This could be done by grouping residents by the year of graduation to evaluate changing trends in the training programs as well.

Another important research activity would be to examine, in more detail, variation among regions. A number of relevant dimensions could be examined, including diagnostic cluster differences, the practice of obstetrics, the management of obesity and psychosocial problems, inpatient medicine, and various residency-trained vs non-residency-trained physician comparisons, such as the periodic health examination.

Further methodological comparisons also are warranted. One important analysis using existing data could ask a subsample to record up to five diagnoses per encounter (Virginia model) and then to record again for the principal diagnosis only (NAMCS and USC/MAMP model) and compare the resulting outcome clusters. An analysis of the similarities and differences would enable a better standardization of the cluster methodology.

The use of tracer conditions could also have been expanded to include tracer characteristics (ie, comparing types of individuals in addition to diseases). An example of this approach might be to determine how physicians manage children in the first year of life, or how they manage expectant couples.

Further Implications

Many of the significant implications for family practice have already been discussed in the preceding sections. Nevertheless, it is stimulating and instructive to review some of the major themes that have been identified. The University of Washington analysis of the MAMP data has definitely provided the discipline with enhanced capabilities for monitoring and evaluating practices. This improved capability should increase the ability to provide important feedback to practices and residency training programs. Data from studies such as this form the basis against which one can compare and extend various facets of training programs (eg, by further emphasizing geriatrics, inpatients, obstetrics, etc). This study also provides a better understanding of the type of criteria needed to evaluate how well residency training has

prepared residents to meet the needs of the communities in which they will be practicing. Moreover, there is the need that studies of this type be repeated for new residency graduates to determine what is lacking in their training and how their practices evolve with increasing experience and age.

From an epidemiological perspective, the implications for family practice are exciting. This type of study has the potential to document variations in the prevalence and incidence of common conditions. The sentinel practice concept, in particular, can extend this documentation to reflect major changes in areas relevant to family practice. The methods developed here, combined with the distribution of the sentinel practices, could provide the basic data from which the epidemiology of specific conditions could be derived. This could also include the identification of risk factors in areas not likely to be included in other primary care studies, but considered areas of special emphasis in family practice. Also, given the diagnostic clusters developed for this study, representative groups of physicians, practices, or tracer characteristics could be identified and compared using the clusters. Furthermore, a particular region could be selected for more in-depth study, and the results fed back into the local training programs.

Overall, the implications of this study for research in family medicine and family practice are far-reaching. The methodology and findings of this study have generated a multitude of important questions and issues for future research. Interestingly, it has expanded rather than narrowed the role that nonacademic practicing physicians are likely to play in such future research efforts. If these collaborative efforts take root, the impact on family practice is likely to be profound. This study will be considered a keystone study in family practice.

References

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