Analysis of Health Service Areas: Another Piece of the Psychiatric Workforce Puzzle

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Planning for development of a national or regional psychiatrist workforce that is the appropriate size must consider numerous issues. They include the dynamics of workforce distribution, effects of managed care, reduction in potential residency slots, participation of international medical graduates, apathy toward the field of psychiatry, service area variations, and increased interest in allied mental health professions, along with the burgeoning global burden of psychiatric illness. This paper examines the application of two benchmark standards for the number of psychiatrists needed per 100,000 population—the standard developed by the Graduate Medical Education National Advisory Committee and the Average Requirement Benchmark—to the supply of psychiatrists in Georgia in 1996 by county and by health service regions, which are geographical units based on health care utilization patterns of Medicare and Medicaid recipients. Areas with a surplus or deficit of psychiatrists are identified. The findings provide contextual evidence of a surplus of psychiatric physicians in the most populous areas of the state, given a substantial presence of health maintenance organizations. The state's less populated rural areas may potentially benefit from a redistribution of the psychiatrist workforce. The authors recommend continued refinement of models to estimate psychiatric workforce needs and suggest development of a comprehensive model that uses needs-based, demand-based, and benchmarking approaches. (*Psychiatric Services* 49:956–960, 1998)

Requirements for the size and distribution of the physician workforce continue to evoke significant concern and debate. Health policy makers and planners clearly need to identify the types of physicians that are required and the geographic areas where the requirements are greatest. However, research on this issue has produced conflicting results (1–15).

Prediction of workforce needs in psychiatry is particularly complicated due to the complexity of the interrelated factors that influence projections. These factors include the epidemiology of mental illnesses, the distribution and supply of practitioners, the effects of managed care, varying definitions of a full-time practitioner and average workload, the accuracy of population projections, the availability of allied health professionals, employment of international medical graduates, and variations in interest in psychiatry as a specialty among physicians in training (16).

The issue of psychiatric workforce requirements is particularly relevant to the delivery of mental health care in rural areas because the effects of an undersupply of psychiatrists are likely to be felt first in those areas. This paper reports an analysis of the distribution of psychiatrists in Georgia, a predominantly rural state, in 1996.

Several studies sponsored by government and private agencies have addressed the complex issue of psychiatric workforce needs. The results have varied widely, from predicting a significant psychiatrist oversupply to predicting an undersupply (11–14). Several models for estimating workforce requirements exist, each with its strengths and weaknesses. In a meta-analysis of research on the physician workforce conducted between 1980 and 1990, Feil and colleagues (13) noted five primary models for estimating requirements. These models were of three types—needs based, demand based, and benchmark based. Factors considered in these models included patients' diagnoses and treatment needs, the number of psychiatrists a system could afford, data from other countries, the number of full-time-equivalent staff needed for a given system, and the percentage increase or decrease of staff needed to supply the corresponding demands.

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Needs-based planning typically estimates the frequency of disease and compares those estimates with the projected number of physicians available to treat that frequency of disease (1). Panels of experts estimate the number of physicians needed in any given specialty to treat disease according to its incidence and prevalence. Needs-based planning is limited, however, by its inability to react quickly to advances in technology and by the complexity of many medical problems.

Demand-based planning projects future estimates based on the current level of utilization of physicians. This method is limited, because it fails to take into account that use of medical resources increases as the supply of those medical resources increases (1,2). This method also assumes that the current relationship between supply and demand provides adequate care.

Benchmarking, which provides estimates of the number of physicians needed stemming from a standard based on actual use of physicians in a particular health plan or geographical area, is seen as possessing inherent advantages over needs-based and demand-based planning (17).

In reviewing these various models and their potential utility for examining the psychiatric workforce needs for the state of Georgia, it became clear that no current single model adequately addressed all of the salient variables. Because benchmarking is seen to have certain advantages over other approaches, we chose to use this method to examine psychiatric physician workforce needs. To gain a broader view of the issue, our analysis used two benchmark standards that represent different assumptions about the future of health care delivery—the benchmark developed by the Graduate Medical Education National Advisory Committee (GMENAC) (18) and the Average Requirement Benchmark (1), which is based on the utilization patterns of selected health maintenance organizations.

A total of 84.4 percent of the psychiatrists in Georgia practice in Metropolitan Statistical Areas (MSAs). An MSA is an area of contiguous counties that contains at least one city

Five Papers on Psychiatry in Rural Areas: An Introduction

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Poor access to health care services for rural populations has been a difficult and long-standing problem. The twin conditions of shortages of trained providers and the stigma of mental illness have made the provision of mental health services in rural areas a particularly difficult challenge.

The paper beginning on page 956 and the four papers that follow are based on presentations given at a symposium on rural psychiatry held on March 14, 1997, to mark the opening of a center for rural mental health at Mercer University School of Medicine in Macon, Georgia. The major mission of the medical school is to train primary care physicians to care for patients in underserved rural communities. The recent growth of interest in rural psychiatry coincided with the medical school's decision to establish the center for rural mental health as a joint program of the medical school's departments of community science and psychiatry. The center's purpose is to conduct research and evaluation and provide education to improve the level of access and care of those in need of mental health services in rural and underserved areas of the southeastern United States.

The first paper, on planning the future size of the psychiatrist workforce, discusses methods for determining whether a geographic area has a surplus or a shortage of psychiatrists and how such workforce issues may affect mental health services for rural areas. If managed care continues to shift from specialties to generalists for the provision of services, the number of psychiatrists in training will be markedly reduced, and the delivery of care in rural areas may be adversely affected. On the other hand, a surplus of psychiatrists might benefit currently underserved rural areas if it encourages movement of psychiatrists into those areas. Whether the future brings an under- or oversupply of psychiatrists, the bulk of psychiatric care in rural areas will be provided by nonpsychiatrists. Thus it is important to ensure that family practice physicians and other primary care practitioners are well trained in psychiatry.

The second paper, on psychiatric patients and their families, is an account of the problems faced by patients and family members living in rural areas. This paper also highlights the impact of managed care on mental health services, focusing on its effects in the public sector.

The third paper, on rural telepsychiatry, describes how gaps in delivery of mental health care can be filled by modern technology. It is now possible for the individual psychiatrist to operate a telemedicine system from a personal computer. These advances mean a saving in time that used to be spent commuting between office and television studio. In addition, the psychiatric consultant and caregivers and patients in remote areas can communicate much more rapidly and conveniently.

The fourth paper reviews what is known about collaboration between primary care and psychiatry in rural areas. The fifth paper offers an international perspective on the role of the psychiatrist in rural psychiatry. ♦

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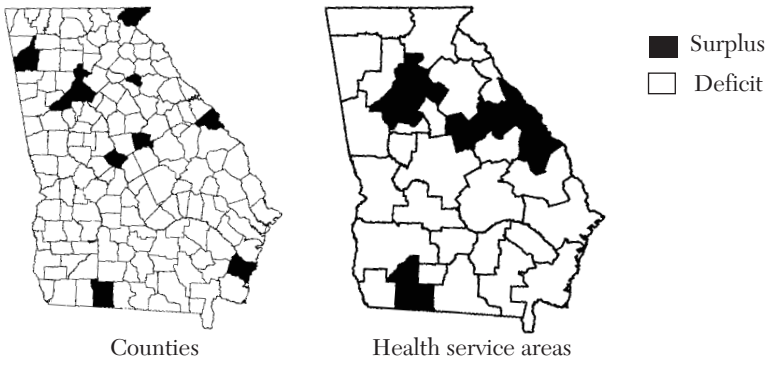
Figure 1

Counties and health service areas in Georgia with a surplus or deficit of psychiatrists, based on the Graduate Medical Education National Advisory Committee (GMENAC) standard, 1996[1]



[1] The GMENAC standard is 15.4 psychiatrists per 100,000 population.

with a population over 50,000 and whose territory is interrelated both economically and socially. Of Georgia's 159 counties, only 54 contain psychiatric physician practices (19). We calculated and compared estimates of the psychiatric physician workforce using both county and health service area boundaries. Georgia's health service areas were adapted from the 1991 Vital and Health Statistics Report prepared by the Department of Health and Human Services (20). This report identified health service areas using a hierarchical cluster analysis of 1988 Medicare data showing which high-level tertiary care hospitals that offer both cardiac and neurological treatment are utilized by Medicare and Medicaid recipients. We viewed health service area boundaries as potentially providing a more accurate picture of health care utilization patterns than county political boundaries. The health service areas also suggest the potential markets for future HMO penetration.

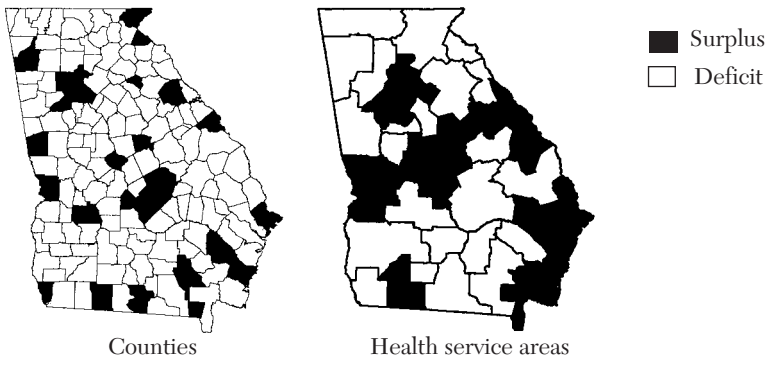
Methods

The GMENAC standard of 15.4 psychiatrists per 100,000 population, which is considered liberal in this era of managed care, and the Average Requirement Benchmark of 8.1 per 100,000 population were used to assess the projected need for psychiatrists according to county and health service area boundaries. The Average Requirement Benchmark represents an average of benchmark rates ranging from the high GMENAC standard of 15.4 psychiatrists per 100,000 population to the low benchmark of 3.8 per 100,000 found in a proposals by Kaiser Permanente (3,21). Many researchers have indicated that the proliferation of HMOs will affect the need for physicians (11,17,22). In addition, current health reform proposals project that a majority of Americans will be enrolled in some form of managed care by the turn of the century. Therefore, it seemed logical to apply benchmark standards that are currently in use by these organizations (11,8–14,16,17,22–26). Given the wide variety of benchmarking standards, the Average Requirement Benchmark provides a useful tool for health planners in considering the possible consequences of managed care for the psychiatric workforce.

Using data from *The Dartmouth Atlas of Health Care in the United States (17),* we calculated the number of psychiatrists in 1996 for each county and health service area in Georgia. The GMENAC standard of 15.4 psychiatrists per 100,000 population and the Average Requirement Benchmark of 8.1 psychiatrists per 100,000 population were applied to both the counties and the health service areas, and the surpluses or deficits in each location were determined.

Figure 2

Counties and health service areas in Georgia with a surplus or deficit of psychiatrists, based on the Average Requirement Benchmark, 1996[1]



[1] The Average Requirement Benchmark of 8.1 psychiatrists per 100,000 population represents an average of the Graduate Medical Education National Advisory Committee standard and standards from psychiatrist staffing models of three health maintenance organizations.

Results

Four maps of Georgia were created, two using county boundaries and two using health service area boundaries. Figures 1 and 2 show application of the GMENAC and Average Requirement Benchmark standards to the counties and health service areas.

Figure 1 shows the results of applying the GMENAC standard. Using the GMENAC standard of 15.4 psychiatrists per 100,000 population, 149 of Georgia's 159 counties had a deficit of psychiatrists, and only ten had a surplus. Using the GMENAC method, four health service areas showed a surplus of psychiatrists and the remaining 27 had a deficit.

Table 1

Psychiatric workforce needs in Georgia based on the standard of the Graduate Medical Education National Advisory Committee (GMENAC) and the Average Requirement Benchmark, by counties and health service areas, 1996

Standard		Counties				Health service areas			
Model name	N psychiatrists per 100,000 population	Need	N	Population	% of total population	Need	N	Population	% of total population
GMENAC	15.4	Surplus	10	1,975,313	27	Surplus	4	2,774,353	38
		Deficit	149	5,233,859	73	Deficit	27	4,434,819	62
		All counties	159	7,209,172	100	All areas	31	7,209,172	100
Average Requirement Benchmark	8.1	Surplus	25	3,307,248	46	Surplus	8	3,911,756	54
		Deficit	134	3,901,924	54	Deficit	23	3,297,416	46
		All counties	159	7,209,172	100	All areas	31	7,209,172	100

Figure 2 provides a graphical representation of the Average Requirement Benchmark applied to Georgia's counties and health service areas. Using the Average Requirement Benchmark of 8.1 psychiatrists per 100,000 population, the number of counties with a surplus increased to 25, and 134 counties had a deficit. When the Average Requirement Benchmark was applied to the health service areas, the number of surplus areas increased to eight, with 23 remaining in the deficit range.

Table 1 provides a synopsis of the effects of applying the GMENAC and Average Requirement Benchmark standards to the counties and health service areas. Of interest is the difference the service area definition makes in the percentage of the population in areas of surplus or deficit. Applying the GMENAC standard on a county-by-county basis resulted in a distribution of 27 percent of Georgia's population in areas of surplus and 73 percent in areas of deficit. When the Average Requirement Benchmark was applied county by county, the percentage of the population in areas of surplus jumped to 46 percent, with the remaining 54 percent of the population in areas of deficit. Correspondingly, when health service areas were used as the units of measure, the GMENAC standard yielded 38 percent in surplus areas and 62 percent in deficit areas. When the Average Requirement Benchmark was applied to areas, 54 percent of the state's population was in a surplus area, and 46 percent was in a deficit area.

Thus when the Average Requirement Benchmark, which represents a moderate HMO penetration, was used, as much as 54 percent of the state's population was in an area with too many psychiatrists. Consequently, psychiatrists in surplus areas may be encouraged to relocate to more rural areas where no surplus was evident.

Discussion and conclusions

The application of the Average Requirement Benchmark and the more liberal GMENAC standard to health service areas should be viewed as yet another piece of the workforce puzzle. Along with previous research, these results may lead to a better understanding of this complex issue. Applying the two benchmark standards—one liberal and one moderate—to two types of service areas shows how wide the differences between workforce projections can be.

As for the state of Georgia, the results of this analysis show how the service area designation (counties or health service areas) and standard used (GMENAC standard or Average Requirement Benchmark) affects calculation of the need for psychiatric physicians. On the negative side, psychiatrists in surplus areas may be forced to relocate. On the positive side, the state's rural areas may potentially benefit from a redistribution of this workforce.

With few exceptions, the majority of recent studies have reported evidence of a physician oversupply, based on their underlying assumptions. The familiar phrase "It all depends on how you look at it" seems strikingly applicable when assessing projections for the psychiatric workforce. As Jay Scully, M.D., former director of the American Psychiatric Association's office of education, has stated, projections for the future depend on the model used to predict workforce needs (14). On the one hand, the approach for estimating the number of psychiatrists that comes closest to doing what is right for patients is the approach based on their needs (12). However, when one moves from the idealistic to the realistic, current utilization patterns and the potential influence of managed care must be considered. Clearly, a significant difference is seen in the workforce need for psychiatric physicians depending on the underlying assumptions, including both the calculations used and the boundaries of the geographic areas to which they are applied.

Some have suggested that given the limitations of current forecasts and the difficulties in improving on them, policy may have to be driven by more practical considerations, such as how many physicians we can afford (13). Perhaps the answer lies not in arguing over which study is correct, but rather in seeing the results of each model as an important piece of the overall puzzle to which new models and estimates can be added, bringing us closer to an understanding this complex subject.

Future research may usefully explore the development of a new comprehensive model that incorporates the strengths of needs-based, demand-based, and benchmarking approaches. This new model may be capable of weighting the elements included in calculations, resulting in a

more accurate methodology for psychiatric workforce projection. In addition, researchers may wish to consider the development of an outcomes-based model for workforce projections. Developers of such a model would need to determine what types of outcomes should result from addressing the psychiatric burden of illness and then determine how many psychiatrists would be needed to accomplish this task.

Clearly, a major issue facing researchers in this area is the lack of a gold-standard workforce projection methodology. Researchers should continue their efforts to develop such a methodology. Perhaps then all the necessary pieces of this complicated puzzle will be brought into place and the stage will be set for addressing tomorrow's psychiatric workforce needs. ♦

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