

# County-Level Estimates of Mental Health Professional Supply in the United States

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**Objective:** This study compiled national county-level data and examined the geographic distribution of providers in six mental health professions and the correlates of county-level provider supply. **Methods:** Data for six groups—advanced practice psychiatric nurses, licensed professional counselors, marriage and family therapists, psychiatrists, psychologists, and social workers—were compiled from licensing counts from state boards, certification counts from national credentialing organizations, and membership counts from professional associations. The geographic distribution of professionals was examined with descriptive statistics and a national choropleth map. Correlations were examined among county-level totals and between provider-to-population ratios and county characteristics. **Results:** There were 353,398 clinically active providers in the six professions. Provider-to-population ratios varied greatly across counties, both within professions and overall. Social workers and licensed professional counselors were the largest groups; psychiatrists and advanced practice psychiatric nurses were the smallest. Professionals tended to be in urban, high-population, high-income counties. Marriage and family therapists were concentrated in California, and other mental health professionals were concentrated in the Northeast. **Conclusions:** Rural, low-income counties are likely candidates for interventions such as the training of local clinicians or the provision of incentives and infrastructure to facilitate clinical practice. Workforce planning and policy analysis should consider the unique combination of professions in each area. National workforce planning efforts and state licensing boards would benefit from the central collection of standardized practice information from clinically active providers in all mental health professions. (*Psychiatric Services* 60: 1315–1322, 2009)

Of approximately \$100 billion spent annually on U.S. mental health care, about 70% pays for the labor of mental health professionals (1). Yet we lack valid and reliable workforce data, and aca-

demic research rarely focuses on the mental health workforce (2). A workforce crisis currently affects diverse areas—recruitment, retention, training and technical assistance, compensation, career advancement, and geo-

graphic distribution (2)—making the need for comprehensive workforce data even more critical.

Various workforce reports can be found in the literature, but none provides a detailed national picture of the mental health professions. Prior studies have described the characteristics, needs, and practice patterns of the national mental health workforce and compared the professions (3; also unpublished documents: “Practitioner Research Network: Summary of Initiative and Findings,” Substance Abuse and Mental Health Services Administration [SAMHSA], Center for Substance Abuse Treatment [CSAT]; “Practitioner Services Network II Initiative: Summary of Findings,” SAMHSA, CSAT, 2003), discussed how rural workforce needs have been and could be addressed (4), assessed the effects of licensure laws on workforce availability (5), examined cross-sectional data on individual professions (6–9), and conducted within-state, small-area analyses (10,11). This study built on this literature by compiling national county-level data to examine the geographic distribution of providers in six mental health professions and the correlates of county-level provider supply. Our main goal was to present profiles that would be useful for workforce planning at local, state, and national levels. A secondary goal was to provide information about the availability and comprehensiveness of existing workforce data to the research and practice communities. Further information is provided in two companion articles in this issue exploring

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county-level need for and shortages of mental health professionals in the United States (12,13).

## Methods

### *Data sources*

Because this study was part of a project involving the designation of shortage in the mental health profession (14), which is a responsibility of the Health Resources and Services Administration (HRSA), we used HRSA's definition of "mental health professionals": advanced practice psychiatric nurses, licensed professional counselors, marriage and family therapists, psychiatrists, psychologists, and social workers. Although other professionals and nonprofessionals contribute significantly to mental health services, these six groups constitute a majority of mental health professionals, and information about them is critically important for mental health policy and planning. Our goal was to count clinically active providers (specifically, those who are actively engaged in the diagnosis and treatment of mental disorders) rather than the larger population of clinically trained providers (those who have been trained at the master's or doctoral level to perform these functions).

We explored several potential data sources (see below). Their advantages and disadvantages are summarized in a table available as an online supplement to this article at [ps.psychiatryonline.org](http://ps.psychiatryonline.org). The typical tradeoff is between coverage (for example, national scope or inclusion of multiple professions) and identification of the correct group of providers. The Bureau of Labor Statistics has employer-reported data on psychiatric nurses, family therapists, psychiatrists, psychologists, and social workers, but these data are limited by aggregation to the state or metropolitan statistical area (MSA) level, lack of information on professional degree, failure to distinguish among professions, and exclusion of self-employed providers.

Census data and the Area Resource File (15) are easily accessible national data sets that contain counts of nurses, psychologists, and social workers. However, they do not cover areas with populations under 50,000,

indicate professional degree, or distinguish between clinical and other specialties.

For most professions, state licensing data would yield the best counts of clinically active providers, because licensure is usually required for clinical practice and is not trivial to maintain. However, licensing data are difficult to obtain because they are not centrally collected, are often confidential, and are maintained by state boards, many of which have few resources. Also, licensing data are not standardized, may not include provider specialty, and may include the same individual in multiple professions or states.

Certification and professional association membership data are national in scope but yield undercounts of clinically active providers because membership is voluntary and certification is not required for most professions and states (especially where licensure is required). Also, membership data often do not indicate provider specialty.

Licensing, certification, and especially membership data include some inactive practitioners, who generally cannot be distinguished from clinically active providers. Licensing data may be less affected by this limitation because of renewal and continuing education requirements. Most data sets from any source lack consistent, up-to-date information on practice locations, do not incorporate multiple practice locations, and do not distinguish between home and work addresses.

### *Data collection*

Considering the data source characteristics, we preferred licensing data where available, then membership data, then certification data. Therefore, we combined licensing counts from state boards, certification counts from national credentialing organizations, and membership counts from professional associations, always choosing the most preferred data source available for a given state and profession. These data were difficult to obtain but allowed us to estimate with reasonable accuracy the number of clinically active providers in each profession at the county level. Also,

we were able to use some multistate licensing data previously assembled by others.

Even when counts were available at the zip code level, they were aggregated to the county level because a zip code could be associated with either a practice location or a home address, likely making the county-level counts a less error-prone approximation of practice locations. Aggregation also made the counts comparable across professions, because counts of marriage and family therapists were not available below the county level. Furthermore, whereas zip codes were designed for mail delivery, county boundaries are a meaningful basis for mental health service planning, which is often done for counties or county groups. Although zip code areas are often nested within counties, this is not always the case; therefore, a table of approximate zip-to-county conversions was used.

For nurses we used psychiatric nursing certification data provided in 2003 by the American Nurses Credentialing Center. Zip-level counts were generated and were converted to county-level counts by using the table of approximate zip-to-county associations. Membership data were not used for nursing because the American Nurses Association does not record specialty and the American Psychiatric Nurses Association has data for only a subset of psychiatric nurses.

For licensed professional counselors, the American Counseling Association (ACA) provided licensing information for 38 states. For the other 13 states, certification data from the National Board of Certified Counselors Web site were used. Zip-level counts were converted to county-level counts.

Similarly, for marriage and family therapists, the American Association of Marriage and Family Therapists provided county-level counts based on licensing data where available (26 states) and on clinical membership otherwise (25 states).

For psychiatrists, data from the American Medical Association's (16) Physician Masterfile in regard to individual general psychiatrists were used. Residents and those not treat-

ing patients were excluded, and office (versus home) address was used where available. Zip-level counts were converted to county-level counts.

For psychologists, the American Psychological Association (APA) provided data sufficient to generate zip-level counts of licensed clinically active members, which were converted to county-level counts.

For social workers, the National Association of Social Workers (NASW) provided zip-level counts of members at the master's level (M.S.W.); these were converted to county-level counts.

The University of North Carolina's Public Health Institutional Review Board determined that this study did not require board approval.

### Data management

Data cleaning and validity checks were performed, and the data were scaled to match the best available state-level counts. Data cleaning began with the exclusion of inactive, suspended, and nonclinical providers and the correction of discrepancies between address components. County-level counts from multiple sources were compared where possible (for example, for counselors, National Board for Certified Counselors certification counts versus

ACA licensing counts; for marriage and family therapists, 2006 membership versus 2003 membership and licensing counts; for social workers, NASW membership counts versus approximate licensing counts provided by the Center for Health Workforce Studies at the State University of New York at Albany). State-level counts were compared across professions. As a further check, state-level counts were compared with those in *Mental Health, United States, 2004* (17). For psychology and social work, state totals were also compared with state-level counts collected from state licensing boards.

Comparisons between databases were made with correlations, plots, and regression diagnostics (such as residual plots and influence statistics). Discrepancies and extreme counts were investigated and were corrected where possible. For example, when NASW state totals for social workers were initially compared with state-level licensing counts, the correlation was .95, with the NASW membership total amounting to about 57% of the state licensing count on average (as expected), but diagnostic analysis suggested further investigation of counts for five states, resulting in the correction of two errors in the state licensing data. Similarly, when the state totals for mar-

riage and family therapy were compared to *Mental Health, United States, 2004* counts, diagnostic data suggested further investigation of counts for three states, resulting in the correction of one error from the *Mental Health, United States, 2004* chartbook (for New Hampshire) through consultation via the state licensing board's Web site.

For professions requiring multiple data sources, the cleaned counts were scaled so that state totals matched the best available state-level counts of clinically active providers. For counselors we used state-level counts from the ACA's annual survey of state licensing boards where available (47 states). In the other four states, we inflated by 3% the state-level counts from *Mental Health, United States, 2004* (17). (On average the ACA counts exceeded the chartbook counts by 3%. We assumed that the ACA counts, which were more recent, reflected real increases in the number of licensees.) For marriage and family therapists we scaled membership counts to match *Mental Health, United States, 2004* (except for New Hampshire, as mentioned above) because the state-level counts in the chartbook reflect a consensus among experts.

Because membership data yield undercounts, the psychology counts

**Table 1**

Data source selected by provider type

Provider type	Data type	Data source <sup>a</sup>	Correlation with MHUS 2004 counts <sup>a</sup>	Scaling at the state level
Advanced practice psychiatric nurse	Certification	American Nurses Credentialing Center, 2003	1.00	NA
Licensed professional counselor	Licensing	American Counseling Association, 2005–2006 (38 states)	.98	ACA 2006 (47 states)
	Certification	National Board of Certified Counselors, 2006 (13 states)	.59	MHUS 2004 × 1.03 (4 states) <sup>b</sup>
Marriage and family therapist	Licensing	American Association of Marriage and Family Therapists, 2003 (26 states)	1.00	MHUS 2004
	Membership	American Association of Marriage and Family Therapists, 2006 (25 states)	.90	
Psychiatrist	Membership	American Medical Association, 2005	1.00	NA
Psychologist	Membership	American Psychological Association, 2006	.97	Estimate × 1.896 <sup>c</sup>
Social worker	Membership	National Association of Social Workers, 2006	1.00	NA

<sup>a</sup> MHUS 2004, *Mental Health, United States, 2004* (3). The New Hampshire marriage and family therapist count was corrected from 785 to 66.

<sup>b</sup> For counselors, state-level counts from the ACA's annual survey of state licensing boards were used where available (47 states). In the other four states, the state-level counts from *Mental Health, United States, 2004* (19), were inflated by 3%.

<sup>c</sup> The initial estimate was multiplied by the estimated ratio of licensed clinically active psychologists to licensed clinically active American Psychological Association members based on data provided by the American Psychological Association and estimates reported in *Mental Health, United States, 2004*.

were increased by a factor of 1.896, which is the estimated ratio of licensed clinically active psychologists to licensed clinically active APA members based on APA data and on estimates reported in *Mental Health, United States, 2004*. Social work membership counts required no scaling because only 52% of licensed social workers were specialized in mental health (8), and we estimated that our counts represented approximately that proportion of licensed social workers. Table 1 summarizes the data sources used for each profession, the results of comparison with the chartbook, and the scaling factors used. In most cases our data source was the same as that used in the chartbook; slight deviations from a perfect correlation were due to our use of more recent data where available.

### Statistical analysis

The geographic distribution of professionals was examined with descriptive statistics and a national choropleth map. County-level counts for the six professions were correlated with each other. Provider-to-population ratios (based on 2006 population) were correlated with the 2006 population and with county characteristics based on census 2000 data: population density (population per square

mile of total area), MSA status (1 if a county is in an MSA, otherwise 0), rurality (2003 Rural-Urban Continuum Code, which ranges from 1 to 9, with 1 indicating the most urban and 9 the most rural), frontier status (1 if population density is less than 7, otherwise 0), indicator variables for census region (Northeast, Midwest, South, or West), per capita income, and percentage of population in poverty. Several variables related to population size and to density were included because theory did not suggest a preferred indicator. The District of Columbia was included as one of 3,140 counties and one of 51 states.

### Results

Figure 1 and Table 2 summarize the county-level distribution of the 353,398 mental health professionals. [Figure 1 can be viewed in closer detail as an online supplement to this article at [ps.psychiatryonline.org](http://ps.psychiatryonline.org).] Table 2 classifies counties into three groups on the basis of the Rural-Urban Continuum Code. The concentration of providers (per 10,000 population) varied greatly across counties, both within professions and overall. For every profession, the highest concentrations of providers were in metropolitan areas, especially in the Northeast and West, and the

lowest concentrations were in rural areas. Rural counties that were not adjacent to metropolitan areas typically had slightly lower concentrations of providers than did other rural counties, based on comparisons of median provider-to-population ratios (Table 2).

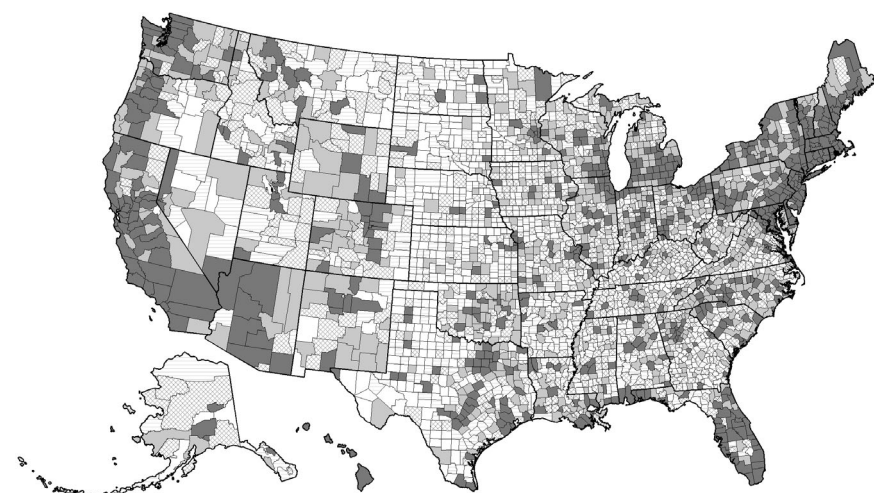
We were interested in describing the extent to which providers in different mental health professions were distributed similarly across the country. Table 3 shows correlations among county-level counts. When all counties were included (values above the diagonal), most of the associations were strong. Marriage and family therapists stood out as the exception. Because over half of marriage and family therapists were in California, the correlations were reexamined with California excluded. Here (values below the diagonal in Table 3) the marriage and family therapist counts were much more strongly associated with the others.

The correlations between provider-to-population ratio and county-level characteristics (Table 4) showed, not surprisingly, that providers in each profession—especially psychiatrists, psychologists, and social workers—tended to be concentrated in high-population and urban areas. This was true even when taking into account characteristics such as county area (in the case of population density and frontier status) or adjacency to metropolitan areas (in the case of MSA status and rurality).

The clearest regional effect was the concentration of providers in the Northeast, which was strongest among social workers and weak to nonexistent among licensed professional counselors and marriage and family therapists. For each profession there was a weak negative association between provider-to-population ratio and percentage of population in poverty ( $r = -.06$  to  $-.22$  with California included), and there was a moderate positive association between provider-to-population ratio and per capita income ( $r = .25$  to  $.52$  with California included). The correlations for marriage and family therapists ( $r = -.06$  and  $.28$ , respectively) and licensed professional counselors ( $r = -.09$  and  $.25$ , respectively) were

**Figure 1**

Number of mental health professionals, by county, among counties with mental health professionals<sup>a</sup>



<sup>a</sup> Shading (from light to dark, indicating first to fourth quartiles, respectively) is intended to convey an overall pattern of need. [For finer detail, this map is available as an online supplement to this article at [ps.psychiatryonline.org](http://ps.psychiatryonline.org).]

smaller than those for other professions. For marriage and family therapists, excluding California counties had the effect of lowering the correlations between provider-to-population ratio and population (from .18 to .10) and between provider-to-population ratio and per capita income (from .28 to .22), in addition to changing the correlations with regional variables. In general, marriage and family therapists, counselors, and psychiatric nurses appeared to be less concentrated in higher-income urban areas, compared with providers in the other three professions.

## Discussion

We identified about 350,000 clinically active mental health providers in six professions. Social workers and licensed professional counselors formed the largest groups; psychiatrists and advanced practice psychiatric nurses constituted the smallest. Marriage and family therapists are unique in that 54% of them are located in California, but otherwise there were fairly strong positive associations among county-level provider counts across the six professions.

Providers in all six groups tended to be in urban, high-population, high-income counties; aside from marriage and family therapists they were concentrated in the Northeast. Based on our descriptive results, much of the variation in provider location is probably explained by region, county-level income variables, and variables related to population size and density. The unique distribution of marriage and family therapists is likely largely a result of the concentration of marriage and family therapy graduate programs in California.

However, there are a few notable differences in geographic distribution among the professions. For example, social workers were especially concentrated in the Northeast. Also, psychiatrists, psychologists, and social workers had especially similar distributions across counties and were more heavily concentrated than the other professions in population-dense, metropolitan, higher-income counties. A partial explanation may be that these three professions serve consumers with greater average

**Table 2**

Distribution of mental health professionals among 3,140 counties<sup>a</sup>

Region and provider type	Providers per 10,000 population				
	Median	Maximum	M	SD	Count
Metropolitan (N=1,089)					
Advanced practice psychiatric nurse	.2	5.0	.3	.5	7,952
Licensed professional counselor	3.3	27.7	4.2	3.8	86,256
Marriage and family therapist	.7	60.4	1.4	3.4	47,026
Psychiatrist	.7	13.1	1.0	1.3	32,102
Psychologist	1.1	29.7	1.9	2.6	56,715
Social worker	2.4	35.3	3.4	3.6	91,200
All professions	9.7	99.3	12.4	10.9	321,251
Rural					
Adjacent to metropolitan area (N=1,061)					
Advanced practice psychiatric nurse	.0	3.7	.2	.4	509
Licensed professional counselor	1.9	36.0	2.8	3.6	8,338
Marriage and family therapist	.0	20.3	.7	1.5	1,987
Psychiatrist	.0	11.1	.4	.9	1,433
Psychologist	.0	15.3	.6	1.3	2,055
Social worker	1.1	26.1	1.7	2.2	5,219
All professions	4.7	51.5	6.4	6.5	19,541
Not adjacent to metropolitan area (N=990)					
Advanced practice psychiatric nurse	.0	10.8	.1	.5	280
Licensed professional counselor	1.8	32.4	3.3	4.5	5,700
Marriage and family therapist	.0	16.3	.6	1.6	1,145
Psychiatrist	.0	9.1	.4	.8	927
Psychologist	.0	14.6	.7	1.7	1,414
Social worker	1.0	17.4	1.7	2.3	3,140
All professions	4.3	58.2	6.9	7.8	12,606
All counties (N=3,140)					
Advanced practice psychiatric nurse	.0	10.8	.2	.5	8,741
Licensed professional counselor	2.5	36.0	3.5	4.0	100,294
Marriage and family therapist	.1	60.4	.9	2.4	50,158
Psychiatrist	.0	13.1	.6	1.1	34,462
Psychologist	.0	29.7	1.1	2.0	60,185
Social worker	1.5	35.3	2.3	2.9	99,559
All professions	6.1	99.3	8.6	9.1	353,398

<sup>a</sup> Counties are categorized according to 2003 Rural-Urban Continuum Codes. The minimum is not listed as a statistic because its value is zero in every case. Totals may appear inexact because of rounding error.

severity of illness and that areas with higher population density have the resources to provide services to these consumers. Other contributing factors may be the locations of graduate programs for each profession, the unique history of each profession, and the fact that psychiatry, clinical psychology, and clinical social work are relatively older professions. However, the weaker associations for other professions (Tables 3 and 4) may also be due in part to the facts that multiple data sources were used for counseling and psychology and older certification data were used to count nurses.

The variation in size among the professions is important. For example, psychiatrists and nurses had the

smallest numbers by far, and many members of the psychiatry profession are reaching retirement age (3). Aside from a negligible number of psychologists, only psychiatrists and some nurses can prescribe psychotropic medications. Assuming that prescription medication continues to be a key component of mental health treatment, factors such as these will need to be included in careful workforce planning to maintain or increase the supply of prescribers (for example, by expanding these professions or extending prescriptive authority more widely). Also, each profession's relative size (along with variables such as professional status and income) is likely to affect its level of influence on county, state, and federal policy. This

**Table 3**Correlations among county-level provider counts, with and without California counties<sup>a</sup>

Provider type	Advanced practice psychiatric nurse	Licensed professional counselor	Marriage and family therapist <sup>b</sup>	Psychiatrist	Psychologist	Social worker
Advanced practice psychiatric nurse	—	.62	.27	.68	.75	.80
Licensed professional counselor	.61	—	.33	.62	.67	.67
Marriage and family therapist <sup>b</sup>	.61	.78	—	.59	.63	.43
Psychiatrist	.71	.62	.62	—	.96	.91
Psychologist	.80	.68	.66	.95	—	.93
Social worker	.80	.66	.62	.92	.94	—

<sup>a</sup> Correlations above the diagonal include all counties; those below the diagonal exclude California counties.<sup>b</sup> Values above the diagonal differ substantially from those below.

should be considered by policy makers interested in balancing consumer needs with the wants of professional stakeholders.

### Limitations

This study has limitations that deserve mention, including several involving study scope. We excluded pastoral counseling, clinical sociology, and psychosocial rehabilitation, which account for over 5,000 providers certified for clinical work (17–19). We also excluded providers with lower levels of licensure or certification, primary care practitioners, and peer providers. Ideally each provider population and its unique role and focus (such as prescribing versus psychosocial therapy, an individual versus a systems approach, and adult versus child clientele) would be considered

in workforce assessment and planning. Provider supply is considered in the absence of information about need, demand, or typical utilization or about the breadth and quality of services—all important factors in workforce planning. Finally, we have only approximated practice locations and have not accounted for travel across county boundaries.

There are also data quality limitations. Licensing data would be preferred, but licensing is not required for all professions, and for the licensed professions we did not have the resources and authorization necessary to obtain data from all states. Therefore we combined eight data sets, each of which probably has different sources of random error and systematic bias. The determination of practice location was subject to error. We did not always

have information about clinical specialty or clinically active status; because this information was not available for social workers and their job responsibilities vary widely, this issue affects our counts for that profession especially. We believe that we adjusted our psychology and social work estimates appropriately by using national scaling factors, but at the county level, random error makes our counts for these professions unstable, especially for counties with small populations. This limits the utility of the data for local workforce planning. Finally, our provider counts do not reflect important information related to provider availability, such as service sector (public or private), hours worked per week, and hours per week in direct contact with clients.

The correlations presented here

**Table 4**Correlations between number of mental health care providers per 10,000 population and county characteristics<sup>a</sup>

Provider type	Population	Population density	Metropolitan statistical area	Frontier county <sup>b</sup>	Rurality	Region <sup>c</sup>				Per capita income	Percentage of population in poverty
						NE	MW	S	W		
Advanced practice psychiatric nurse	.12	.08	.23	-.21	-.08	.26	-.07	-.08	.33	.33	-.15
Licensed professional counselor	.09	.04	.18	-.18	-.06	.08	-.12	-.06	.19	.25	-.09
Marriage and family therapist <sup>d</sup>	.18	.08	.18	-.17				-.09	-.06	.22	.28
Marriage and family therapist (excluding California) <sup>d</sup>	.10	.08	.17	-.16				-.06		.07	.22
Psychiatrist	.27	.34	.34	-.32	-.17	.24	-.10	-.04	.42	.49	-.12
Psychologist	.26	.26	.35	-.31	-.10	.27	-.05	-.15	.09	.52	-.18
Social worker	.24	.26	.34	-.31	-.11	.42	-.07	-.21	.09	.52	-.22
Population (for comparison)	1.00	.34	.38	-.34	-.12	.14	-.08	-.06	.08	.33	-.09

<sup>a</sup> Correlations shown are those with  $p < .05$ . Population is based on 2006 census estimates; other county characteristics are based on 2000 census data.<sup>b</sup> Counties with fewer than seven people per square mile<sup>c</sup> Represented as a set of indicator variables (0–1) for the Northeast (NE), Midwest (MW), South (S), and West (W)<sup>d</sup> Correlations are shown with and without California because most marriage and family therapists are in California.

should be interpreted with caution. Some of the variables involved are dichotomous (MSA status, regional variables, and frontier status), and the others have distributions that are skewed or that otherwise deviate from normality. In particular, our measure of rurality is not strictly a ratio-level variable. Also, our analysis did not control for the clustering of counties within states. In a thorough investigation of the relationships between provider count and county characteristics, these issues would need to be addressed, perhaps in part through the use of a nonlinear random-effects model. Nonetheless, Pearson correlations serve the purpose of this study by providing a simple summary that broadly describes the geographic distribution of mental health professionals.

### Implications

We compiled, cleaned, and calibrated data from national certification, state licensure, and national professional association membership records in order to develop a comprehensive, current, nationwide county-level profile of the mental health professional workforce. Despite the limitations discussed above, these data yield simple but valuable descriptive information and allowed us to discuss some of the data gaps and issues that need to be addressed in order to facilitate mental health workforce planning. One reasonable inference from our data is that rural, low-income counties have relatively few mental health professionals and therefore are likely candidates for interventions such as the training of local clinicians or the provision of incentives and infrastructure to facilitate clinical practice. Another is that there is important geographic variation in the relative contribution of each mental health profession to the total pool of providers. (The concentration of marriage and family therapists in California is an extreme example.) Workforce planning and policy analysis should consider the unique combination of professions in each area.

It is difficult to tease out the relationships between provider counts and population-related variables. For example, provider-to-population ra-

tios for some professions had a weaker relationship with population density than with MSA status or rurality, even though all three of these population-related variables were correlated. Understanding these complex relationships may require more in-depth investigation, such as single-state analyses of geographic distribution or qualitative analyses of each profession's practice patterns and location preferences.

The limitations of our data highlight important national data needs. National workforce planning efforts would benefit from the central collection of standardized practice information from clinically active providers in all mental health professions, including specific practice information such as location, specialty, service sector, hours worked per week, and hours per week in direct contact with clients. In addition to simplifying the assembly of national small-area data, centralized data collection could provide state boards with more efficient mechanisms and improved reporting, help state and local governments to identify underserved areas, increase the efficiency of state-level workforce planning, and potentially serve as a mechanism for representative surveys of practitioners.

### Conclusions

Rural, low-income counties have the fewest mental health professionals per capita, and these counties would be appropriate targets for interventions such as the training of local clinicians or the provision of incentives and infrastructure to facilitate clinical practice. Because there is substantial variation across counties in the proportion of mental health professionals belonging to each profession, workforce planning and policy analysis should consider the unique combination of professions in each area. National workforce planning efforts and state licensing boards would both benefit from the central collection of standardized practice information from clinically active providers in all mental health professions.

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## ***Psychiatric Services* Invites Submissions by Residents and Fellows**

*Psychiatric Services* has introduced a continuing series of articles by trainees in order to highlight the academic work of psychiatric residents and fellows and to encourage research by trainees in psychiatry.

Submissions should address issues in the planning and delivery of psychiatric services in any setting, including those of special interest or concern to trainees. Submission of original research is encouraged. Literature reviews will be considered only if they are mentored or coauthored by a senior scholar in the field.

Joshua L. Roffman, M.D., is the editor of this series. Prospective authors—current residents and fellows—should contact Dr. Roffman to discuss possible submissions. He can be reached at Massachusetts General Hospital, 149 13th St., Rm. 2656, Charlestown, MA 02129 (e-mail: [jroffman@partners.org](mailto:jroffman@partners.org)).

All submissions will be peer reviewed, and accepted papers will be highlighted in the issue in which they appear.