The Occupational Transformation Of The Mental Health System

Growing use of psychotropic medications is changing the workforce mix in mental health care.

by Richard M. Scheffler and Paul B. Kirby

ABSTRACT: The mental health workforce has changed dramatically since the mid-1970s. Nonphysician providers, particularly psychologists and clinical social workers, have become a much larger share of the workforce. While the supply of psychiatrists has been relatively stable, there has been a dramatic increase in the supply of psychologists and social workers. Changes in clinical practice, combined with the continued expansion of managed care into mental health, will largely determine the future composition and supply of the mental health workforce.

THE U.S. MENTAL HEALTH WORKFORCE has undergone dramatic and fundamental changes. In this paper we highlight important trends in the composition and distribution of this workforce in the past two decades. We examine three professions that many consider the core of this workforce: psychiatrists, psychologists, and clinical social workers. We combine data from multiple sources to create a broader picture of the mental health workforce than previous studies have done.

We first present data on trends in the aggregate supply of these three professions, then we examine the association of per capita income at the state level with provider distribution at the state level. We also briefly describe the regional and urban/rural distribution of providers. Next we outline trends in income received by mental health providers, and we provide a context for all of these trends by discussing the diffusion and growth of managed mental health care. As a case study, we analyze workforce trends in California, which has been on the leading edge of developments such as managed care. We conclude with a discussion of issues for future research that will affect mental health workforce trends in the future, with a particular focus on changing roles in clinical practice for the different mental health professions.

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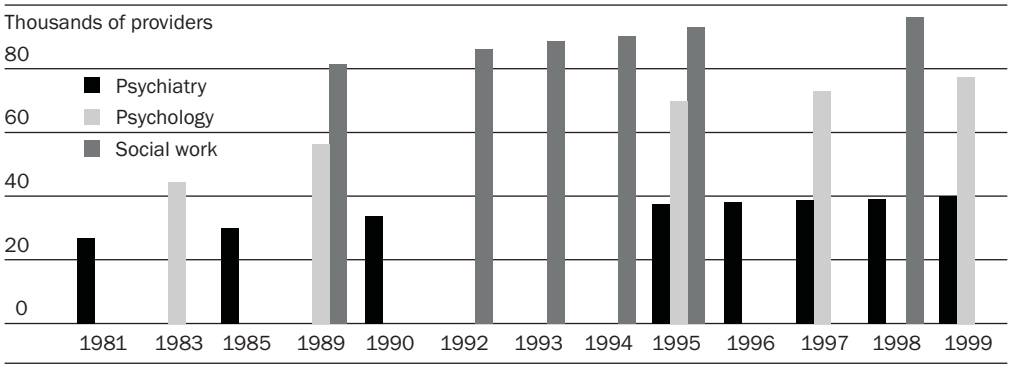
Aggregate Workforce Supply

In 1999 there were 38,940 psychiatrists (including child psychiatrists) engaged in patient care.[1] In that same year there were 77,456 clinically trained psychologists. In 1998 there were 96,407 clinically trained social workers.[2] Treating these three professions as a unified population of mental health providers, we find that during the 1995–1999 period, this population was on average composed of 45 percent social workers, 36 percent psychologists, and 19 percent psychiatrists.

It should be noted at the outset that determining the number of clinical social workers actually engaged in mental health care is difficult. Some analysts have estimated that up to 65 percent of all mental health services are provided by clinical social workers.[3] A 2000 survey by the National Association of Social Workers (NASW) finds that 39 percent of responding NASW members reported mental health as their primary practice area (the largest response category). Other practice areas cited in the survey included child welfare/families (8 percent) and school social work (6 percent), both areas that could overlap considerably with mental health care; 14 percent cited multiple categories.[4] The 39 percent figure for mental health, therefore, could understate the percentage actually engaged in mental health care provision; the true figure might be closer to 50 percent. Given that the NASW suspects that the actual population of practicing social workers is at least twice that of its membership, the 96,407 figure could reasonably approximate the number of clinical social workers in mental health.[5]

Looking at workforce growth in recent years, we see dramatic changes. The most striking observation is the slowing of growth in the number of psychiatrists relative to the other professions, beginning in the mid-1990s (Exhibit 1). Psychiatrists have a unique role in the mental health marketplace, in part because of their training in psychopharmacology. Nonetheless, it is clear that psychologists and social workers are increasingly the largest component of the workforce. From

EXHIBIT 1
Mental Health Workforce, By Discipline, Selected Years 1981–1999



SOURCES: Bureau of Health Professions, Area Resource File; and R.W. Manderscheid and M.J. Henderson, eds., *Mental Health, United States, 2000* (Rockville, Md.: U.S. Department of Health and Human Services, 2000), chap. 20.
NOTE: Missing data are due to irregular data collection for all three series.

1990 through 1999, for example, the number of psychiatrists increased by 15.2 percent, compared with a 37 percent increase in psychologists in 1989–1999 and a 17.9 percent increase in social workers from 1989 to 1998. During 1995–1999 the number of psychiatrists increased by 3.3 percent, compared with 10.9 percent for psychologists, and 6.8 percent for social workers (1994–1998).[6] (Again, it is important to note the measurement problems with social workers, which we believe result in greatly understated figures.)

The data on trainees for each discipline provide further evidence of this shift. The number of psychiatric residencies was flat during the 1990s, at just over 6,000 in each academic year. The number of full- and part-time students in doctoral psychology programs surged, from 16,853 in the 1989–90 academic year to 28,782 in 1994–95, before falling back to 23,088 in 1997–98 (still a 37 percent increase over 1989–90). The number of students in master's of social work (MSW) programs also grew sharply, from 27,430 in 1989–90 to 35,338 in 1996–97 (a 29 percent increase).[7] These changes in trainee programs will undoubtedly heighten these changes in the occupational mix of providers in the future.

While the overall trend among psychiatrists has been one of very slow growth, this masks an important shift in psychiatric specialization. The number of child psychiatrists has increased much more rapidly than that of those treating only adults. The period 1990–1999 saw a 40.7 percent increase in child psychiatrists, compared with a 10.8 percent increase in psychiatrists treating only adults.[8] Looking at rates per 100,000 population, child psychiatrists increased 28.4 percent, from 1.50 in 1990 to 1.92 per 100,000, while psychiatrists treating adults grew much more slowly—2.2 percent—from 12.09 to 12.36 per 100,000.[9]

Trends In Workforce Distribution

Turning to the spatial distribution of the mental health workforce, we present state-level data on the association between per capita income and the supply of each profession. We also briefly note other distributional characteristics of the workforce: distribution by region and by urban/rural status.

Arraying the states by per capita income in a single year, we observe an income gradient in the supply of each profession. While space limitations do not permit us to show graphs of these gradients, Exhibit 2 presents the data in tabular form.[10] The exhibit shows the rates of psychiatrists, child psychiatrists, psychologists, and social workers per 100,000 population, in all states and the District of Columbia. For each profession, the income gradients show a strong positive association between state per capita income and supply of mental health providers.[11]

We also examined the distribution of psychiatrists (including child psychiatrists) by census region and by urban/rural areas.[12] Comparing rates of psychiatrists per 100,000, the Northeast consistently had roughly twice as many psychiatrists of both types as any of the other three regions (West, South, and North Central) during 1975–1999. However, the South and North Central regions, which

EXHIBIT 2
Mental Health Providers Per 100,000 Population, Arrayed By State Per Capita Income

State	Income per capita	Psychiatrists	Child psychiatrists	Psychologists	Social workers
MS	$15,853	5.2	0.6	9.5	18.3
WV	16,477	7.2	1.0	9.8	22.4
AR	16,904	6.6	0.7	12.0	11.2
LA	16,912	10.4	1.5	10.6	36.2
MT	17,151	6.9	1.3	19.8	26.7
NM	17,261	10.8	2.3	24.1	29.7
SD	17,562	6.9	1.1	17.9	20.4
OK	17,646	6.9	0.6	14.5	22.3
ND	17,769	9.5	2.2	20.4	25.5
ID	17,841	4.8	1.2	12.3	25.3
KY	18,093	8.0	1.7	13.7	25.0
UT	18,185	6.6	1.3	21.4	32.8
AL	18,189	6.0	1.0	12.0	18.0
SC	18,795	9.9	1.9	10.7	19.5
WY	19,134	5.7	0.6	28.8	29.4
TN	19,393	8.3	1.3	20.1	21.7
ME	19,533	13.9	2.7	30.9	52.9
NE	19,613	7.8	1.9	17.1	20.9
TX	19,617	7.4	1.6	12.7	18.9
IA	19,674	5.6	1.3	16.1	24.4
MO	19,936	8.5	1.4	27.5	29.0
AZ	20,275	8.4	1.3	20.2	25.6
NC	20,307	10.1	1.7	18.4	27.8
IN	20,397	6.7	1.0	22.0	34.7
KS	20,506	10.5	2.3	19.2	39.4
VT	20,625	23.8	2.6	76.0	47.5
PA	20,880	14.2	2.2	42.1	34.2
OR	20,940	10.2	1.5	29.3	32.4
OH	21,003	9.1	1.5	30.1	27.7
GA	21,154	9.2	1.3	17.5	18.6
WI	21,271	9.5	1.8	23.1	30.4
HI	21,525	14.6	3.7	31.0	55.7
FL	21,557	9.1	1.3	19.1	23.2
RI	21,688	18.2	2.7	31.5	67.2
NV	21,989	5.8	0.8	12.8	19.8
MI	22,168	9.8	1.6	20.3	53.0
AK	22,660	8.5	1.0	22.0	127.6
CA	22,711	13.5	1.7	28.9	21.5
WA	22,973	10.5	1.5	23.8	26.7
IL	23,104	11.0	1.5	24.2	40.5
MN	23,198	9.2	1.6	65.6	25.7
DE	23,305	11.1	1.5	34.8	34.5
NY	23,389	25.7	3.5	53.3	72.1
NH	23,844	14.0	2.1	36.4	43.7
VA	23,975	11.6	2.0	21.8	30.4

EXHIBIT 2
Mental Health Providers Per 100,000 Population, Arrayed By State Per Capita Income (cont.)

State	Income per capita	Psychiatrists	Child psychiatrists	Psychologists	Social workers
CO	$24,049	11.9	2.4	37.7	32.1
MD	25,614	20.2	3.9	34.6	49.9
MA	25,952	27.4	4.1	66.8	82.5
NJ	27,006	14.4	1.9	29.3	51.6
DC	28,659	49.8	6.8	200.0	243.5
CT	28,766	22.6	4.0	35.5	66.8

SOURCES: Bureau of Health Professions, Area Resource File (psychiatrist and child psychiatrist data are from 1999); R.W. Manderscheid and M.J. Henderson, eds., *Mental Health, United States, 2000* (Rockville, Md.: U.S. Department of Health and Human Services, 2000), chap. 20 (psychologist data are from 1999 and social worker data from 1998); and U.S. Census Bureau, Census 2000 (state per capita income and population figures used for authors' calculations).
NOTE: States are listed in order of lowest per capita income to highest.

had the fewest psychiatrists per capita in 1975, had the highest percentage growth in psychiatrists over the same period. Looking at metropolitan status, we find that while the distribution of the psychiatric workforce has remained overwhelmingly urban, there has been a modest shift away from the largest urban areas.[13]

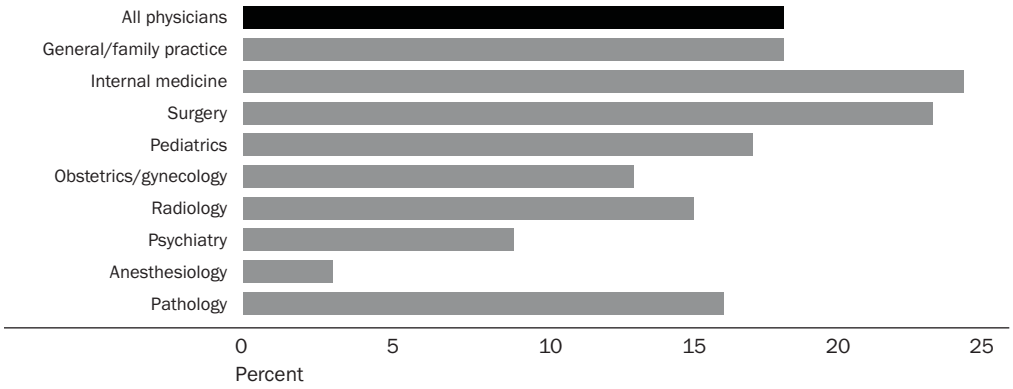
Income Trends In The Mental Health Workforce

An important indicator of the demand for any profession is its members' income. Economic theory suggests that rising incomes for a profession indicate shortages in the labor market, while stagnant or falling incomes indicate an oversupply. A comparison of psychiatrists' income with that of other physicians shows that psychiatrists have consistently earned less than other physicians. In 1982 they had the third-lowest mean net income among physicians; only general/family practitioners and pediatricians earned less. By 1996 psychiatric incomes had fallen to last place among physicians. Psychiatric incomes have followed the trend of most physician categories, falling from their peaks in the early 1990s.[14] During 1982–1998 psychiatrists' mean incomes saw the second smallest increase among physician categories (Exhibit 3).

Psychologists' income has been measured biannually, in the American Psychological Association (APA) Salary Survey, beginning in 1981. The APA's salary reports provide data on a wide variety of job classifications, including research, academic, and administrative positions. We focus on its findings for psychologists providing direct clinical and counseling services. For clinical psychologists, the median reported income rose from $56,000 in 1995 to $72,000 in 2001. For counseling psychologists, it increased from $50,000 in 1995 to $66,500 in 2001.[15]

The incomes of social workers in mental health work are not measured systematically and regularly. In 2000 the NASW conducted its first Practice Research Survey. The survey, which sampled 2,000 NASW regular members, found that the

EXHIBIT 3
Percentage Increase In Mean Physician Income, By Specialty, 1982–1998



SOURCE: American Medical Association, *Physician Socioeconomic Statistics,* 1999 and 2000–2002 editions.

median income of full-time social workers whose primary practice area was mental health was $47,340.[16] An earlier assessment concluded that the incomes of social workers engaged in mental health work greatly increased, compared with those of psychiatrists and psychologists, in the 1990s.[17]

The income figures presented here are not adjusted for differences in hours worked. There is some evidence that psychiatrists work more hours than psychologists. Surveys by the American Medical Association show that psychiatrists reported working a mean of 50.2 hours per week in 1998.[18] Similar national data are not available for psychologists; however, research on psychologists in California indicates a mean of 41.6 hours per week.[19] Data on hours worked by clinical social workers are not available. While differences in hours worked would obviously mitigate differences in income, it remains clear that psychologists are a considerably less expensive segment of the mental health workforce than psychiatrists.

The Spread Of Managed Mental Health Care

These income trends, in conjunction with changes in workforce composition, suggest that future growth in the mental health workforce will be weighted toward the lower-cost professions of psychology and clinical social work. The general consensus is that these trends are reinforced by the increased penetration of managed care.[20] Our view is that this claim is persuasive. Here we briefly present recent trends in adoption of managed care in mental health.

The most profound trend of the past decade or so in mental health care is the much greater enrollment in managed care programs among the population having insurance. The total enrollment in behavioral health programs (the term often used by provider organizations to refer to mental health care) rose from 70.4 million covered lives in 1993 to 169.1 million in 2000.[21] This is higher than the enrollment in managed care in the non–mental health sector.

We can assess the extent of psychiatrists' participation in managed care. As Exhibit 4 indicates, the percentage of psychiatrists who have any managed care contracts has roughly tripled, rising from 21 percent in 1985 to 61 percent in 1995, an increase proportionate to that observed among all physicians (28 percent and 80 percent, respectively). Meanwhile, Exhibit 5 shows that the mean share of psychiatrists' revenue composed of managed care contracts rose from 4.5 percent in 1987 to 44.1 percent in 1998, compared with a jump from 13 percent to 52 percent for all physicians over this same period.[22] Clearly, psychiatrists have entered the world of managed care to an extent comparable to physicians generally.[23]

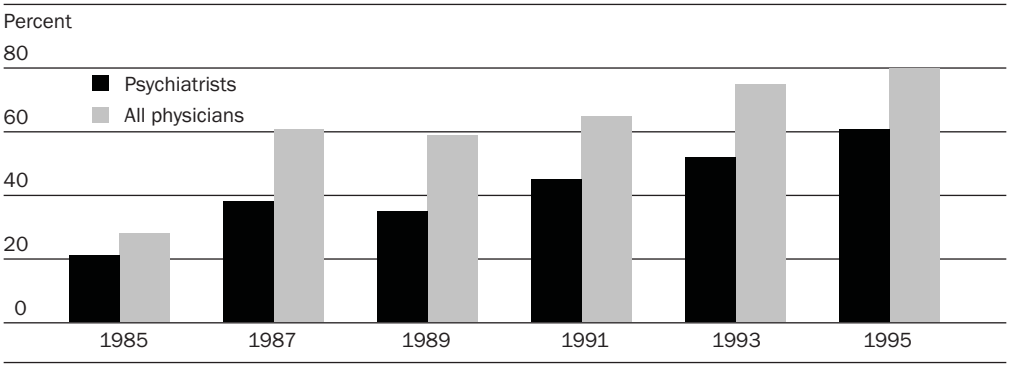
Unfortunately, we cannot make a similar assessment of the impact of managed care on psychologists and social workers nationally. The APA has conducted national surveys of its members' perceptions of the impact of managed care on incomes and clinical practice; however, it does not attempt to measure the extent of psychologists' participation in managed care.[24] Similarly, the NASW's membership surveys have not specifically addressed the issue.

Managed Care And Workforce Trends In California

Finally, we turn to a case study of California. Because California has consistently led the nation in adoption of managed health care, the state is particularly useful as an illustration of the staffing models in mental health organizations under managed care.[25] More broadly, because it has such diversity of racial/ethnic composition, population density, and income, California is a good choice for a more detailed, county-level assessment of these trends. We present basic data on the mental health provider mix of two managed care organizations in California, and we make comparisons with the state as a whole and with selected counties.

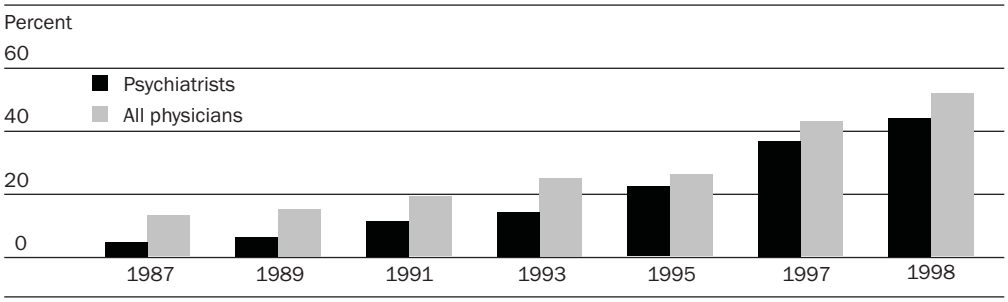
The distribution of California's mental health workforce by profession is similar to that of the nation as a whole. In 2002 social workers made up 45 percent and

EXHIBIT 4
Percentage Of Psychiatrists And All Physicians Having Any Managed Care Contracts, Selected Years 1985–1995



SOURCE: American Medical Association, Socioeconomic Monitoring System Survey, various years.

EXHIBIT 5
Mean Percentage Of Revenue From Managed Care Contracts, Psychiatrists And All Physicians, Selected Years 1987–1998



SOURCE: American Medical Association, Socioeconomic Monitoring System Survey, various years.

psychologists, 40 percent, of the state's workforce, while psychiatrists made up 15 percent (again considering only these three professions).[26] California has somewhat more psychologists and fewer psychiatrists compared with the nationwide distribution reported at the beginning of this paper.

To assess managed care staffing patterns, we obtained data from two large organizations. We obtained data on staffing by discipline for the California operations of a major nationwide managed behavioral health care carve-out plan (1999 and 2001), and for the Northern California operations of a major health maintenance organization (HMO) (2002), which is heavily concentrated on the West Coast.

Although there are some minor differences in their reporting terminology, the two managed care organizations are broadly similar to each other and to the state as a whole. The HMO reported a 2002 staffing mix for Northern California of 20 percent psychiatrists, 34 percent psychologists, 34 percent licensed clinical social workers, and 12 percent other (which includes nurse practitioners, registered nurses, clinical nurse specialists, clinical managers, and certain unlicensed providers, such as addiction counselors). The carve-out provider reported its network composition for only the three core professions. In 1999 its provider network in California consisted of 17 percent psychiatrists, 35 percent psychologists, and 48 percent social workers; for 2001 the network was 16 percent psychiatrists, 33 percent psychologists, and 51 percent social workers.

The carve-out provider supplied specific counts of provider network members for the three professions, and counts of plan membership, for the state. It is important to note that the carve-out plan's provider figures represent only the percentages of each profession participating in the plan's network. However, our source at the carve-out plan informed us that the proportions of network providers do roughly reflect the actual proportion of services supplied to plan members by each profession.[27] We can, therefore, estimate provider-mix ratios per 100,000 covered lives in the plan, using the provider network counts, and compare these with ratios of all providers per 100,000 people in the general population. Examining some

of the state's most populous counties (three in the Los Angeles area and three in the San Francisco Bay area), we observe that the carve-out plan's provider-mix ratios are either similar to or higher than those in the general population, for psychiatrists, psychologists, and clinical social workers (Exhibit 6).

Discussion And Recommendations For Future Research

Our review of recent trends suggests some observations about the occupational composition of the mental health workforce. Psychologists and clinical social workers now represent a much larger portion. Evidence from training programs suggests that these trends will continue, perhaps even accelerate. This depends, however, on the future of clinical practice in mental health.

A common conception of psychiatrists' evolving role in the mental health system is that they increasingly serve as "medication managers." A recent study shows the profound impact of recent psychopharmacological advances on mental health services: the percentage of respondents to national medical expenditure surveys reporting psychotherapy visits to physicians (of all specialties) increased from 48.1 percent in 1987 to 64.7 percent in 1997, while the percentage of respondents receiving psychotropic medications nearly doubled (from 31.5 percent in 1987 to 61.5 percent in 1997).[28] Looking specifically at depression, one of the most common psychiatric diagnoses, another recent study has found that, among people receiving outpatient psychotherapy for depression, the percentage being prescribed psychotropic medications grew from 44.6 percent to 79.4 percent between 1987 and 1997. At the same time, the mean number of psychotherapy visits per year declined for this group, from 12.6 visits in 1987 to 8.7 in 1997.[29]

These trends suggest a noticeable, although not dramatic, shift in psychiatric practice away from traditional talk therapy and toward medication monitoring.

EXHIBIT 6
Comparison Of Providers Per 100,000 People In Carve-Out Plan And General Population, Selected California Counties, 2001

	Psychiatrists		Psychologists		Clinical social workers	
County	Carve-out plan providers per 100,000 members	County providers per 100,000 population	Carve-out plan providers per 100,000 members	County providers per 100,000 population	Carve-out plan providers per 100,000 members	County providers per 100,000 population
Alameda	27.0	17.0	65.3	68.8	119.8	71.6
Los Angeles	26.7	14.7	54.0	37.4	73.5	39.6
Orange	24.6	12.3	50.3	38.1	67.6	35.0
San Bernardino	16.2	8.4	43.9	16.3	43.2	24.9
San Francisco	61.3	57.3	108.7	103.8	94.1	101.2
Santa Clara	19.8	16.2	21.4	36.1	34.1	40.0

SOURCES: Carve-out plan data were supplied confidentially. California county data are from Bureau of Health Professions, Area Resource File; and California Department of Consumer Affairs.

NOTE: California county psychiatrist data are from 1999.

This latter role need not be carved in stone; managed care does, however, appear to encourage it.[30] Yet it is also plausible that advances in psychopharmacology drive changes in training and practice. As new-generation medications for depression, schizophrenia, and other conditions have proved considerably more effective than their predecessors were, psychiatric training and practice could naturally show an increased emphasis on psychopharmacology.[31] At the same time, as primary care physicians become more comfortable prescribing new medications that are well tolerated for common conditions (such as selective serotonin reuptake inhibitors, or SSRIs, for depression), psychiatry could have incentives to specialize in still newer medical treatments for less common conditions (such as atypical medications for schizophrenia).[32]

The possible extension of prescribing privileges to nonphysicians is critically important here. As of 2002 thirteen states had introduced legislation granting psychologists some prescriptive privileges. New Mexico passed legislation in early 2002 allowing psychologists to prescribe medications independently after receiving special training and working for two years under the supervision of a physician.[33]

If psychologists gain widespread prescribing privileges, we would expect less demand for psychiatrists, since the latter are higher-cost providers. Alternatively, demand for psychiatrists could actually grow if demand for psychotropic medications increases along with their effectiveness and social acceptance. Already, there is anecdotal evidence of unmet demand for psychiatrists in managed behavioral health care organizations.

Clearly, workforce demand is shaped by such public policy issues as prescribing privileges. The ways that the different professions define their own roles in mental health care provision will similarly affect future workforce needs. One likely scenario is that psychiatrists will increasingly see themselves as specialists in the biomedical and neurological aspects of mental illness. In this role they might provide oversight for psychologists who prescribe, rather than direct medication monitoring of patients. At the extreme, psychiatry as a profession could eventually lose all interest in nonmedical therapeutic interventions, although this is unlikely in the short term.

Similarly, psychologists and clinical social workers could move up the skill ladder. Should prescribing privileges become widespread, psychologists could come to resemble the psychiatrists of an earlier era, providing patients a combination of medication and psychotherapy. Clinical social workers, in turn, could in the future play a similar role to that of today's psychologists—as providers of extended nonmedical psychotherapy. In the future, other professions, such as marriage and family therapists, could play a larger role in mental health.

A final relevant development is the spread of the team model of primary care. Managed care plans have extensively used this approach, in which patient visits are mainly with primary care physicians, with practitioners from other disciplines

brought in as needed. This team approach was pioneered in closed-panel HMOs but is spreading more broadly, particularly in the area of chronic disease management.[34] These primary care teams might have little need for psychiatrists: Psychologists, better trained in psychopharmacology, could assist the primary care physician in managing medications, while clinical social workers could provide counseling. Psychiatrists might play only a broad supervisory role in this setting. This, indeed, was the case in a recent trial of a team model for treatment of depression in the elderly.[35]

Work on the distribution and incomes of psychiatrists, psychologists, and social workers should continue, aided by better and more frequent data collection on clinical social workers. In particular, we need to be able to clearly identify which social workers are actually engaged in mental health practice and to obtain income data on this group. Future research on the mental health workforce should also focus on continuing developments in the managed care model, new treatment patterns for specific mental health conditions, changes in the regulatory environment affecting the scope of practice for the various professions, and how all of these changes affect the way each profession defines its roles.

The authors thank Harold Alan Pincus and the reviewers for their helpful and constructive comments.

NOTES

1. Bureau of Health Professions, Area Resource File (ARF). The American Medical Association (AMA) reports somewhat higher figures: 40,731 clinically active psychiatrists for 1998. For the data analysis in this paper, we have exclusively used the ARF figures.
2. R.W. Manderscheid and M.J. Henderson, eds., *Mental Health, United States, 2000* (Rockville, Md.: U.S. Department of Health and Human Services, 2000), chap. 20. The figure for social workers is the number of members of the National Association of Social Workers (NASW) with master's or doctoral degrees. The NASW estimates the actual number of practicing social workers to be at least twice this figure.
3. M. Gibelman and P. Schervish, *Who We Are: A Second Look* (Washington: NASW Press, 1997).
4. NASW, Practice Research Network, Practice Research Survey 2000, "Practice Area, PRN 1, 3, 2000," www.socialworkers.org/naswprn/area.pdf (4 April 2003).
5. See Note 2.
6. ARF (psychiatrist data); and Manderscheid and Henderson, eds., *Mental Health, United States, 2000* (psychologist and social worker data).
7. Manderscheid and Henderson, eds., *Mental Health, United States, 2000.*
8. ARF.
9. Population figures are from the Census Bureau; psychiatrist counts are from the ARF. For all calculations of providers per 100,000 population, the total population (adults and children) was used.
10. The graphs are available from the authors on request; send e-mail to rscheff@uclink.berkeley.edu.
11. Variation around the income gradient lines for psychiatrists and psychologists largely fits the regional patterns discussed earlier. For example, northeastern states typically have rates of these professions above the gradient line. There is no regional pattern of variation for social workers. For all professions, the District of Columbia is the most notable outlier, with vastly higher numbers of providers per 100,000 population than any state. Several of the District's unique characteristics can account for this, including the presence of federal psychiatric facilities and the access of federal employees to mental health coverage that is relatively generous compared with that of the private sector generally.
12. Because of data limitations, data on regional and metropolitan/nonmetropolitan distribution over time are available only for psychiatrists and child psychiatrists. Detailed findings are available from the authors.

13. We analyzed metropolitan distribution using the U.S. Department of Agriculture Economic Research Service's rural-urban continuum code for the practice location of each psychiatrist; these data are a component of the ARF. Details and results of this analysis are available from the authors.
14. AMA, *Physician Socioeconomic Statistics*, 2000–2002 editions (Chicago: AMA, various years). In 1998 the mean net income of psychiatrists was $146,800, compared with $205,400 for all physicians (in 2000 dollars).
15. American Psychological Association, *Salaries in Psychology* (Washington: APA, 1995 and 2001).
16. NASW, Practice Research Network, Practice Research Survey 2000, "Social Work Income 2, PRN 1, 6, 2002," www.socialworkers.org/naswprn/income2.pdf (10 February 2003).
17. R.M. Scheffler, S.L Ivey, and A.B. Garrett, "Changing Supply and Earning Patterns of the Mental Health Workforce," *Administration and Policy in Mental Health* 26, no. 2 (1998): 85–99.
18. AMA, Socioeconomic Monitoring System Survey, 1998.
19. D.P. Pingitore et al., "Comparison of Psychiatrists and Psychologists in Clinical Practice," *Psychiatric Services* 53, no. 8 (2002): 977–983.
20. See R.M. Scheffler, "Managed Behavioral Health Care and Supply-Side Economics," *Journal of Mental Health Policy and Economics* 2, no. 1 (1999): 21–28, for a discussion of this issue.
21. Open Minds, *Yearbook of Managed Behavioral Health Market Share in the United States, 2000–2001* (Gettysburg, Pa.: Open Minds, 2001).
22. AMA, Socioeconomic Monitoring System Survey, various years.
23. One effect of increased managed care participation is on fee discounting. Psychiatrists with half or more of patients in managed behavioral health care plans report a much higher percentage of patients receiving fee discounts, compared with psychiatrists with no patients in managed care plans. R.M. Scheffler et al., "Managed Care Fee Discounts in Psychiatry: New Evidence," *Journal of Behavioral Health Services and Research* 27, no. 2 (2000): 215–226.
24. In recent survey research on psychologists in California, more than 60 percent reported receiving payment from managed care plans. D.P. Pingitore et al., "Professional Psychology in a New Era: Practice-Based Evidence from California," *Professional Psychology: Research and Practice*, 32, no. 6 (2001): 597–606.
25. For example, National Center for Health Statistics, *Health, United States, 2002* (Hyattsville, Md.: DHHS, 2002), reports that 53.4 percent of California's population was enrolled in HMOs in 2001. Massachusetts had the second-highest percentage, 44.3 percent, while the national average was only 27.9 percent.
26. The data on psychologists and social workers are for 2002 and come from the California Department of Consumer Affairs, which compiles licensure data. Data on psychiatrists are available for 1999 only, from the ARF, but since the psychiatric workforce size nationally has been stable, we feel justified in using these 1999 data in calculating the 2002 ratio of the three professions. All figures for psychiatrists in this section include child psychiatrists.
27. Our source suggests that clinical social workers and psychiatrists provide a slightly higher proportion of patient services than those professions' representation in the provider network would indicate.
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