

# Trends In Mental Health Cost Growth: An Expanded Role For Management?

Traditional mental health services are simply not sharing in the vigorous growth of the health care sector in the United States.

by **Richard G. Frank, Howard H. Goldman, and Thomas G. McGuire**

**ABSTRACT:** Mental health spending attracts attention from payers and policymakers. Historically, the public sector paid directly for a good deal of care, and special institutions and rules governed private-sector spending. During 1971–2002, spending on mental health care grew at much lower rates than spending on other health care. In recent years, the delivery and financing of mental health care have come to look more like those for general health care. We show that in spite of this convergence, important differences remain between general health and mental health care in patterns of spending growth. [*Health Affairs* 28, no. 3 (2009): 649–659; 10.1377/hlthaff.28.3.649]

**H**EALTH CARE SPENDING ACCOUNTS FOR 16.2 percent of gross domestic product (GDP), and the trend is up.<sup>1</sup> The recent financial crisis and subsequent contraction of national income will certainly impel this percentage even higher. Forecasts of health care costs as a share of national income will appear even more alarming as GDP growth rates are revised downward in response to the worldwide financial crisis in 2008. Health care spending is less income-driven than most other goods and services.<sup>2</sup> Thus, as GDP falls, the growth in the share of national income going to health care is likely to exceed recent forecasts.<sup>3</sup>

It is especially notable in this policy climate that growth in mental health care costs has not tracked growth in health care costs overall. While the share of national income going to health care has been growing, the share going to mental health held steady at about 1 percent of national income for thirty years up through 2002.<sup>4</sup> This important fact leads to several follow-up questions: Has the stability in mental health share been maintained in recent years? Has the overall stability in growth masked shifts within the category of mental health care spending? What has been the pattern of cost growth within major insured population

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groups (Medicare, Medicaid, private health insurance)? What has been the pattern of cost growth by type of care (inpatient, drug, outpatient, and other)? Finally, what are the implications of these patterns for managing health and mental health cost growth?

Our approach to answering these questions builds on earlier work in two ways. First, we disaggregated cost trends for major population groups by type of insurance and sector of care such as inpatient care, drugs, and outpatient care. Second, growth in spending per capita can be driven by changes in the average characteristics of the people under treatment as well as by the performance of the “health care system.” We were interested in drawing lessons about policy from the analysis of mental health spending, and we therefore adjusted for population characteristics to identify the system’s contributions to spending changes.

Factors associated with health spending growth are receiving increasing attention in the health services research literature. Advances in medical technology are generally regarded as being the proximate factor influencing growth in costs.<sup>5</sup> However, this leaves open the question of the relationship of changes in technological capacity to policy regarding the regulation and financing of care. This paper compares trends in health and mental health, and it examines differences in the regulatory and payment environments. We seek links between payment policy and cost growth. We begin by reporting data on the important trends in mental health spending and contrasting those data with data on health spending.

### **Mental Health Spending In Historical Perspective**

Richard Frank and Sherry Glied combined several data sources and found that patterns for health and mental health care spending growth between 1970 and 2003 were fundamentally different.<sup>6</sup> Exhibit 1 from their work shows that over this thirty-three-year period, spending on health care grew twice as fast as spending on mental health care. Said another way, health care costs grew at two to three percentage points above GDP, whereas mental health costs grew only in proportion to GDP.<sup>7</sup> However, the growth rates of health and mental health care costs were very similar over the 2000–2002 period, raising a question of whether the growth will remain in parallel (Exhibit 1).

A number of factors may explain slower historical growth of mental health costs. First, mental health care has been purchased by a different mix of payers than general health care. In 1971, state mental health authorities used general funds to pay for 30 percent of mental health care.<sup>8</sup> States subject to balanced budget restrictions face more pressure to keep spending in line with revenues, which roughly track national income. Second, private insurance and Medicare have required much higher levels of cost sharing for mental health services than for general medical care since the 1960s.<sup>9</sup> Expansion in coverage for mental health has been accompanied by adoption of managed behavioral health care (MBHC) arrangements that have effectively controlled spending and spending growth, more

**EXHIBIT 1**  
**U.S. National Health And Mental Health Spending, Selected Years 1970–2003**

	1970/71	1990/91	2000/01	2003
Nominal health spending (billions)	\$74.9	\$714.0	\$1,353.6	\$1,732.4
Nominal mental health spending	\$8.96	\$48.9	\$85.4	\$100.3
Health spending as percent of GDP	7.0%	12.3%	13.8%	15.8%
Mental health spending as percent of GDP	0.84%	0.82%	0.84%	0.91%

**SOURCES:** D.S. Levine and D.R. Levine, *The Cost of Mental Illness 1971*, NIMH Report Series B, no. 7 (Rockville, Md.: ADAMHA, 1975); T.L. Mark et al., "Mental Health Treatment Expenditure Trends, 1986-2003," *Psychiatric Services* 26, no. 4 (2007): 1118–1128; T.L. Mark et al., *National Estimates of Expenditure for Mental Health and Substance Abuse Treatment 1991–2001*, Pub. no. SMA 05-3999 (Rockville, Md.: SAMHSA, 2005); and Centers for Medicare and Medicaid Services, National Health Expenditures Data, Historical Tables, [http://www.cms.hhs.gov/NationalHealthExpendData/02\\_NationalHealthAccountsHistorical.asp](http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp).

**NOTE:** GDP is gross domestic product.

than compensating for any growth in demand resulting from improvements in insurance coverage.<sup>10</sup> Third, during 1971–2003, public and private payers reduced the role of costly inpatient psychiatric care by payment and managed care policies. The supply of psychiatric beds fell dramatically, from more than 500,000 in 1970 to fewer than 200,000 in 2000.<sup>11</sup> Finally, much of mental health care was a low-technology service during 1970–1985. Outpatient treatment relied on fifty-minute visits for psychotherapy and on drug therapies developed in the 1950s and 1960s.<sup>12</sup>

Mental health cost growth was not constant throughout this thirty-year time frame. During the late 1980s, mental health spending greatly outpaced growth in income.<sup>13</sup> This period of rapid spending growth was spurred by growth in outpatient mental health care and residential (including inpatient) care for children and adolescents. Partly in response, the 1990s witnessed development of the MBHC industry, which used effective strategies for limiting inpatient psychiatric care.<sup>14</sup> Managed care brought down admission rates in public- and private-sector programs, especially for adolescents and people with substance abuse.<sup>15</sup> Private psychiatric hospitals' revenues fell by roughly a third between 1992 and 1998.<sup>16</sup> Managed care plans also assembled "networks" of outpatient providers with much lower average numbers of visits per patient treated.<sup>17</sup> The earnings of psychiatrists and psychologists actually fell during the early 1990s.<sup>18</sup> Remarkably, during this period, managed care plans did more than limit cost growth—they enforced an absolute reduction in spending related to mental health care.<sup>19</sup>

More recently, managed care networks have been loosened in response to pressure from providers and consumers.<sup>20</sup> Excess capacity had been wrung out of the inpatient sector, and to a lesser extent out of the outpatient sector, shifting bargaining power away from managed care plans. Hospitals and other providers formed inclusive networks of their own to check the divide-and-conquer strategies of the managed care industry. The economic fortunes of private psychiatric hospitals have improved since 2000.<sup>21</sup>

In another long-term trend, private insurance and Medicaid have come to dominate financing of mental health care, making payment policy in mental health more like that in health care. Beginning in the late 1980s, mental health care delivery experienced a period of major technological change; a range of expensive and innovative pharmaceutical products were launched.<sup>22</sup> These products dramatically altered the treatment of major mental disorders such as depression, bipolar disorder, anxiety disorders, attention deficit hyperactivity disorder (ADHD), and schizophrenia. In the last years reviewed by Frank and Glied, 2001–2003, mental health spending growth exceeded historical averages at 17 percent over two years. More recent data can tell us whether convergence of growth rates between mental health and health care persists.

### Study Data And Methods

■ **Data.** Data for the analyses reported below are from the Medical Expenditure Panel Survey (MEPS), an annual survey of health care use and spending based on a representative sample of the noninstitutionalized American public, from the period 1996–2006.<sup>23</sup> We made some exclusions for missing data, leaving us with a total of 327,000 person-years over the full time period. In the payer-specific analyses, we required a person to be classified as being covered by the identified payer for the entire year. In some statistical analyses, we used personal characteristics and geographic region as adjusters.<sup>24</sup>

Health spending includes spending for all inpatient and outpatient care; prescription drugs; office care provided by physicians and other professionals; and all spending on outside tests, consults, and procedures, regardless of payer (including out-of-pocket spending). It excludes spending for routine dental care, contacts and eyeglasses, nursing home care (both through an agency and personal), additional equipment (such as for crutches, although diabetes equipment is counted as health spending), and nonmedical treatments. We subtracted mental health spending from health spending, to avoid any definitional relationship between the two. When we refer to “health spending,” we mean health spending as defined above, less mental health spending. We identified mental health spending by diagnosis, “primary reason for visit,” or provider specialty according to the setting of care. We identified specific medication use as mental health spending when a drug is indicated exclusively for treatment of a mental disorder or when a drug that might be used for several conditions is associated with a diagnosis code for a mental disorder. We classified health and mental health spending as inpatient spending, prescription drug spending, and all other spending. Inpatient spending includes the physician services associated with the episode.

■ **Analyses.** Using the Consumer Price Index (CPI) All-Items, we constructed spending indices for both health and mental health care, to compare spending growth. We set the index value to 100 for the base year of 1996 for all series, to enable comparisons. Regression-based adjustments were used to account for spending

growth attributable to changes in the underlying characteristics of the population, such as age, sex, health status, and race/ethnicity.

Analyses of spending growth based on household surveys such as MEPS yield systematically different results than are found in national health accounts data.<sup>25</sup> A household survey misses people in institutions—hospitals, prisons, or nursing homes—who have higher spending levels, on average; institutionalized populations include a large share of people with severe and persistent mental illnesses (schizophrenia and bipolar disorder), who have high spending levels.<sup>26</sup>

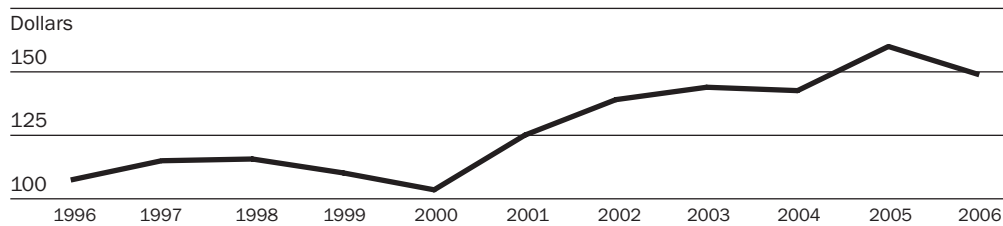
### Recent Trends In Health Versus Mental Health Spending

In 2006, per capita spending for mental health care in our sample was estimated to be \$148.56; for health care (excluding mental health), it was \$2,631.64. Notably, drug spending accounts for 26 percent of per capita spending for health care, while it is fully 51 percent for mental health care. Inpatient care in mental health, historically a large part of mental health spending, accounted for only 16 percent of the total in 2006.<sup>27</sup>

In 1996, per capita mental health spending averaged \$108.03 and remained relatively flat through 2000, when it was \$104.25—a net decrease in real spending (Exhibit 2). After 2000, spending increased, reaching an inflation-adjusted \$148.56 in 2006. The picture of general health spending (not including mental health) is much the same in the aggregate. Inflation-adjusted per capita spending was flat from 1996 through about 2000 at around \$1,800, and then began an ascent.<sup>28</sup> Mental health in our data accounted for 5–6 percent of total health spending—a figure that is somewhat lower than those found in estimates from health accounts.<sup>29</sup>

We analyzed overall spending growth by payer, after adjusting spending by a set of characteristics of the covered population. Shifts in population by region, urban location, ethnicity, age, and other factors are known to influence health and mental health spending, but our interest is in time trends purged of these effects.<sup>30</sup> Adjusters included age, race/ethnicity, sex, region of the country, an indicator for residence in a Metropolitan Statistical Area (MSA), measures of health and mental health status, and a set of dummy variables for each year.

#### EXHIBIT 2 U.S. Mental Health Spending Per Capita, 1996–2006



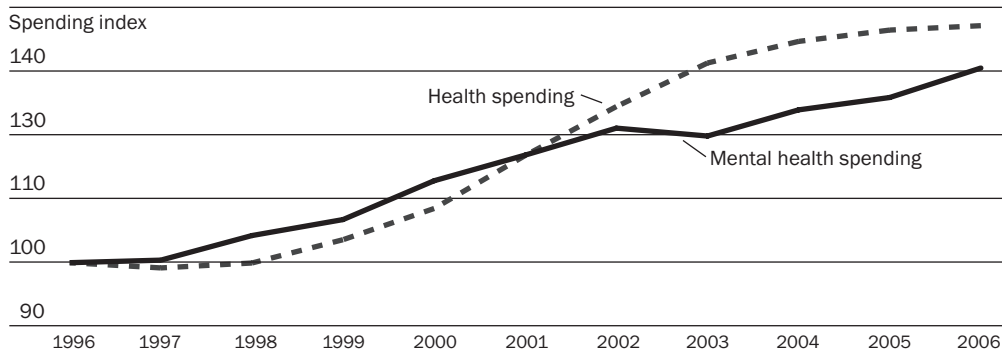
SOURCE: Medical Expenditure Panel Surveys, 1996–2006.

Growth in per capita health and mental health spending was similar until 2002, whereupon health care spending outpaced mental health care spending (Exhibit 3). We found considerable heterogeneity in spending growth patterns across the three payer groups represented in these data. The rate of growth in mental health spending attributable to the delivery system in privately insured populations outpaced that for health care (Exhibit 4). However, spending growth for health care exceeded that for mental health in both Medicare and Medicaid. Medicaid, in particular, evidenced much more rapid growth in spending per capita (attributable to system factors) in health compared to mental health (Exhibit 5). Specifically, the spending index for Medicaid mental health spending stood at 104.61 in 2006, indicating that after general economywide inflation and population factors were adjusted for, Medicaid spending was flat during this time period. The Medicaid health spending index, by contrast, was 144.44 in 2005.<sup>31</sup>

Exhibit 6 displays more heterogeneity in growth rates (also adjusted for demographic factors) among types of expenditures. The most striking result is the dramatic expansion of spending on prescription drugs for all payer groups. During this ten-year period, per capita spending on psychotropic drugs tripled. Spending growth for such drugs was most pronounced for people covered by Medicare and Medicaid, who are more likely than those covered by private insurance to be severely and persistently mentally ill. Exhibit 6 also documents the continuing decline in spending on inpatient psychiatric care, although rates differ somewhat by payer population.<sup>32</sup>

Finally, other mental health care (largely outpatient services) was level over the eleven-year period 1996–2006. This is true for all payers except Medicare, which experienced some increases in spending early in the period, followed by a decline.

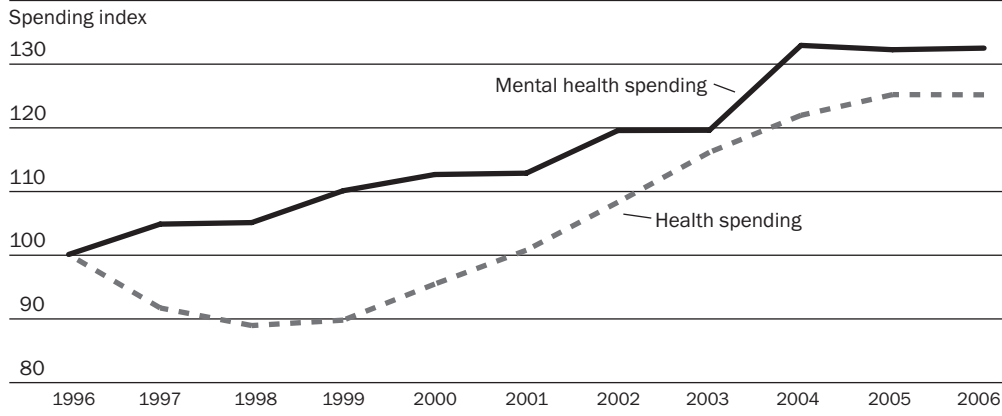
**EXHIBIT 3**  
**Growth In U.S. Health And Mental Health Spending (Indexed To 1996), 1996–2006**



**SOURCE:** Medical Expenditure Panel Surveys, 1996–2006.

**NOTES:** Spending index constructed through regression analysis, available in the online appendix at <http://content.healthaffairs.org/cgi/content/full/28/3/649/DC1>. 100 represents mean spending in 1996 for each group. Regression included sex, race/ethnicity, region of the country, Metropolitan Statistical Area (MSA) status, health and mental health self-reported status, and age as controls. Reported values are the regression analysis coefficients on each year, with 1996 normalized at 100 as a three-year average.

**EXHIBIT 4**  
**Growth In U.S. Health And Mental Health Spending (Indexed To 1996) Among The Privately Insured, 1996–2006**



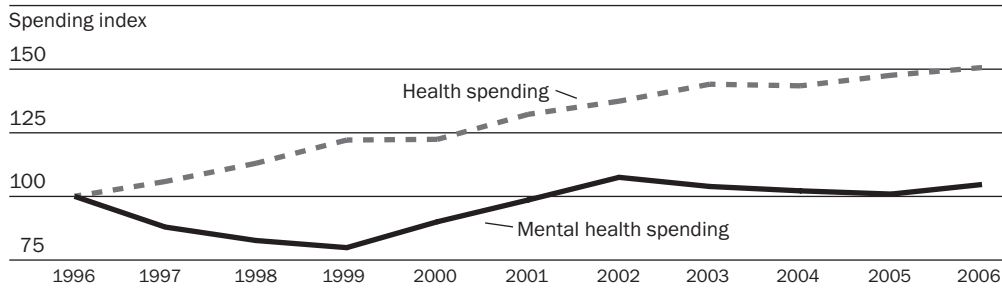
**SOURCE:** Medical Expenditure Panel Surveys, 1996–2006.

**NOTES:** Spending index constructed through regression analysis, available in the online appendix at <http://content.healthaffairs.org/cgi/content/full/28/3/649/DC1>. 100 represents mean spending in 1996 for each group. For regression details, see Exhibit 3 notes.

**Discussion**

Prescription drug spending is the key driver of spending growth in mental health care, an observation consistent with the view that technological change is responsible for cost growth in health care. New drugs are the main force for technological change in mental health care. Since the late 1980s, the pharmaceutical industry has introduced a range of new products for treating most of the major mental disorders. The 1980s saw the introduction of Trazadone, Wellbutrin, and Prozac for treatment of depression, followed by a host of other products in the selective serotonin reuptake inhibitor (SSRI) and serotonin-norepinephrine re-

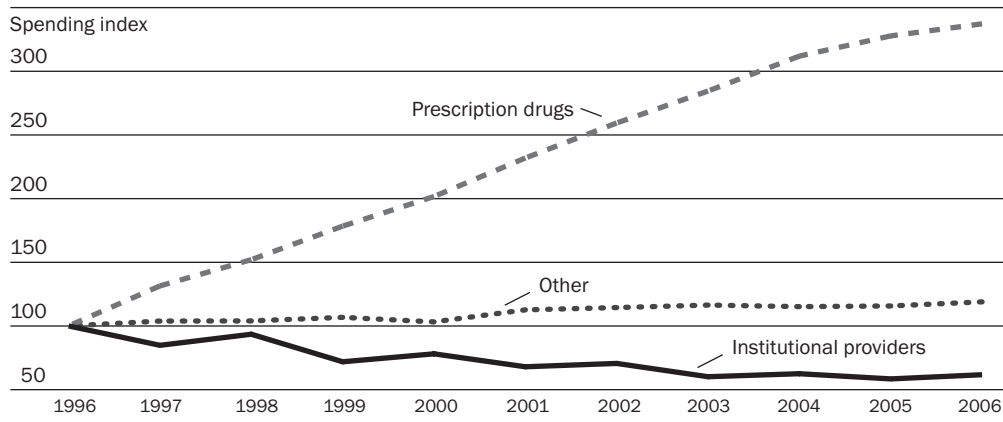
**EXHIBIT 5**  
**Growth In U.S. Health And Mental Health Spending (Indexed To 1996) In Medicaid, 1996–2006**



**SOURCE:** Medical Expenditure Panel Surveys, 1996–2006.

**NOTES:** Spending index constructed through regression analysis, available in the online appendix at <http://content.healthaffairs.org/cgi/content/full/28/3/649/DC1>. 100 represents mean spending in 1996 for each group. For regression details, see Exhibit 3 notes.

**EXHIBIT 6**  
**Growth In U.S. Mental Health Spending (Indexed To 1996), By Sector, 1996–2006**



**SOURCE:** Medical Expenditure Panel Surveys, 1996–2006.

**NOTES:** Spending index constructed through regression analysis, available in the online appendix at <http://content.healthaffairs.org/cgi/content/full/28/3/649/DC1>. 100 represents mean spending in 1996 for each group. For regression details, see Exhibit 3 notes.

uptake inhibitor (SNRI) classes of antidepressants. These drugs carried a lower risk of overdose, easier dosing, and more tolerable side effects.<sup>33</sup> This led primary care doctors to be more comfortable using the new drugs. As a result, considerable growth in use of antidepressants has come from primary care prescribers.

For bipolar disorder, new mood stabilizers expanded the treatment options beyond lithium. Finally, the so-called atypical antipsychotic medications beginning with clozapine (launched in 1989) expanded the available treatments for schizophrenia and, in some cases, bipolar disorder. In total, dozens of newly patented psychotropic drug products entered the market over the period 1987–2006. Many were “blockbuster” drugs with sales of more than a billion dollars per year, and these billions appear in our summaries of spending growth.<sup>34</sup>

Any backlash notwithstanding, managed care has kept a grip on the traditional targets of mental health spending: hospitalization and outpatient care. Spending on these sectors in real terms has been virtually flat or declining for all payers during a time of general growth in health care spending. This finding may explain the dismal view of the mental health care sector that is frequently expressed by mental health professionals. Traditional mental health services are simply not sharing in the vigorous growth of the health care sector in the United States.

It is important to keep in mind that we reported cost trends per person covered, not per person treated. Growth in spending on psychotropic drugs need not imply increasing costs per person treated. Indeed, other research on access to and use of mental health care establishes that the number of people treated expanded rapidly over this period and that much of this increase was from treatments that rely primarily on drugs.<sup>35</sup> The overall effectiveness of mental health care for treating depression, bipolar disorder, and schizophrenia has been rising at least as rapidly as

costs.<sup>36</sup> We did not take account of outcomes in any way in the analyses presented. Ultimately, spending growth can be evaluated only in light of any increase in the value delivered by the growth. Expanding the number of people treated for illnesses for which much disease goes untreated is likely to be a productive change. On a per patient basis, the expanded role of prescription drugs may have increased the effectiveness of spending on mental health care.

On the other hand, the data in the aggregate are also consistent with managed care's doing its job too narrowly, keeping a lid on outpatient and inpatient care while encouraging a shift of treatment costs to drugs. The most prevalent form of managed care in mental health is a specialized carve-out plan responsible for traditional mental health costs.<sup>37</sup> The costs of prescription drugs are typically not part of the costs managed by these carve-out plans. As a result, employers and other payers do not hold them responsible for drug cost growth. Carve-outs thus have incentives to limit the use of inpatient and outpatient services and to shift costs to prescription drugs.

Insurance coverage for prescription drugs has expanded throughout the health sector.<sup>38</sup> Psychotropic drugs have generally been covered on par with agents treating other types of illnesses.<sup>39</sup> Thus, trends in technology, insurance arrangements, and the organization of payment and delivery all favor the expanded reliance on prescription drugs in the treatment of mental illnesses. The data on spending growth show the power of this set of forces.

Cost growth in health care is likely to preoccupy health policy for the foreseeable future, as the financial crisis forces the public and private sectors to tighten their belts. Historical data suggest that general health and mental health spending have been propelled by different factors, possibly calling for differences in the design of policies to deal with cost growth.

Our analysis is consistent with the view that technological change is responsible for spending growth for both health and mental health services. What differs between the sectors is that technological change in mental health relies more on the introduction of new drugs. This is partly due to the underlying science of mental health care, but it may also stem from incentives created by policy decisions in the public and private sectors.

As Burton Weisbrod pointed out many years ago, the direction of innovation in health care can be influenced by basic incentives in payment systems.<sup>40</sup> Management of mental health care under public and private insurance has focused on controlling the use and cost of the traditional mental health sector made up of specialty inpatient and outpatient mental health care. This has meant controlling fees, strictly limiting admission to inpatient facilities, and reducing the duration of outpatient mental health care. The design of managed care in mental health has left prescription drug usage, often handled by non-mental health practitioners, largely outside of management. This may be a key factor behind the patterns of mental health spending growth documented here.

The degree to which the current emphasis on controlling the costs of inpatient and outpatient mental health care affects the cost-effectiveness of mental health spending requires more investigation. Limiting treatment expansion primarily to psychotropic medications is not consistent with evidence-based treatment of many major mental disorders such as bipolar disorder and schizophrenia. Policy-makers may wish to explore aligning the incentives in managed care plans in mental health to direct equal attention to all forms of spending.

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**NOTES**

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2. The RAND Health Insurance Experiment, for example, found income elasticities of demand for health care to be around 0.2, meaning that a 1 percent increase in income would be associated with a 0.2 percent increase in demand. As long as the income elasticity is less than 1, a fall in income will be associated with an increase in share going to health. See J. Newhouse, *Free For All? Lessons from the RAND Health Insurance Experiment* (Cambridge, Mass.: Harvard University Press, 1993).
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12. See Frank and Glied, *Better but Not Well*, chap. 3.
13. K.R. Levit et al., "Future Funding for Mental Health and Substance Abuse: Increasing Burdens for the Public Sector," *Health Affairs* 27, no. 6 (2008): w513–w522 (published online 7 October 2008; 10.1377/hlthaff.27.6.w516).
14. R. Sturm, "Tracking Changes in Behavioral Health Services: How Have Carve-Outs Changed Care?" *Journal of Behavioral Health Services Research* 26, no. 4 (1999): 360–371.
15. R.G. Frank and T.G. McGuire, "Savings from a Medicaid Carve-Out for Mental Health and Substance Abuse Services in Massachusetts," *Psychiatric Services* 48, no. 9 (1997): 1147–1152.
16. Foley et al., "Highlights of Organized Mental Health Services in 2002."
17. C.A. Ma and T.G. McGuire, "Costs and Incentives in a Behavioral Health Carve-Out," *Health Affairs* 17, no. 2 (1998): 53–69.
18. Frank and Glied, *Better but Not Well*, 87, Note 2.

19. Sturm, "Tracking Changes in Behavioral Health Services."
20. D. Mechanic, "The Managed Care Backlash: Perceptions and Rhetoric in Health Care Policy and the Potential for Health Care Reform," *Milbank Quarterly* 79, no. 1 (2001): 35–54; and R.J. Blendon et al., "Understanding the Managed Care Backlash," *Health Affairs* 17, no. 4 (1998): 80–94.
21. E. Hutchins, "The Private Psychiatric Inpatient Market: An Analysis of Its Volatile Trends" (Working Paper, Department of Health Policy and Management, Columbia University, June 2008).
22. Tami Mark and colleagues also note a recent rise in spending associated with new prescription drugs. See T.L. Mark et al., "Mental Health Treatment Expenditure Trends, 1986–2003," *Psychiatric Services* 58, no. 8 (2007): 1041–1048.
23. We used two of MEPS data sets. The first is the Full-Year Consolidated Data Set, which includes information on individual demographics, health insurance status in all twelve months, self-reported health and mental health status in each round of collection, spending for the year, and the source(s) of payment for that spending. In a companion file, the second data set includes the same individuals but breaks spending down further into spending per health event (as defined by a provider/observation interaction), allowing for the separation of a year's spending into its component parts. These events include hospital inpatient stays, hospital outpatient visits, emergency room care, prescriptions, and office-based visits.
24. Details of our data selection and variable definitions are available in an appendix, online at <http://content.healthaffairs.org/cgi/content/full/28/3/649/DC1>.
25. J.E. Triplett, "What's Different about Health? Human Repair and Car Repair in National Accounts and National Health Accounts," in *Medical Care Output and Productivity*, ed. E. Berndt and D. Cutler (Chicago: University of Chicago Press, 2001).
26. Health accounts rely more on supply-side rather than demand-side data. In general, provider reports tend to be more complete, except for the category of out-of-pocket spending.
27. It is important to note that psychotropic drugs have been affected by patent expirations and entry by generics, as has the market for prescription drugs generally. However, antidepressants began to lose patent protection in 2001, which was on the early side of the wave of patent expiration. Antipsychotics remain largely on patent, with the exception of Risperidone. On balance, psychotropic drugs reflect overall industry patterns of patent loss.
28. See Appendix Exhibit 1 in the online appendix, as in Note 24.
29. Levit et al., "Future Funding for Mental Health and Substance Abuse."
30. Regression results are available in the online appendix, as in Note 24.
31. The Medicare-specific graph appears as Appendix Exhibit 2 in the online appendix; *ibid*.
32. The inpatient spending estimates should be interpreted cautiously, because MEPS tends to underreport inpatient psychiatric use and spending. Graphs showing payers by service are available as Appendix Exhibits 2–5 in the online appendix; *ibid*.
33. These drugs have also dramatically changed the effectiveness of treating anxiety disorders.
34. It is worth noting that the period after 2001 was one in which a number of new antidepressants lost patent protection and faced intense price competition, resulting in lower costs per prescription. Nevertheless, a number of new atypical antipsychotic drugs were launched, and few have lost patent protection.
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