

# Mental Health Treatment Expenditure Trends, 1986–2003

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**Objective:** This study determined spending on mental health treatment in the United States over time by provider and payer relative to all health spending. **Methods:** Estimates were developed to be consistent with the National Health Expenditure Accounts. Numerous public data sources were used. **Results:** Mental health treatment expenditures grew from \$33 billion in 1986 to \$100 billion in 2003. In real 2003 dollars, spending per capita on mental health treatment rose from \$205 to \$345. The average annual nominal total mental health growth rate was 6.7%. In comparison, total health care expenditures increased by 8.0%. As a result of the slower growth rate of mental health expenditures compared with all health spending, mental health fell from 8% of all health expenditures in 1986 to 6% in 2003. Total national health spending increased by approximately \$1.175 trillion from 1986 to 2003; of this, 6% is attributed to an increase in mental health spending. The mix of services has changed, with more care being provided through prescription drugs and in outpatient settings and less in inpatient settings. Payer mix has also shifted, with Medicaid taking a more prominent role. **Conclusions:** Spending on mental health treatment has increased over the past decade, reflecting increases in the number of individuals receiving mental health treatment, particularly prescription drugs and outpatient treatment. Changes in payer and provider mix raise new challenges for ensuring quality and access. (*Psychiatric Services* 58:1041–1048, 2007)

Mental health treatment is delivered in many forms, including prescription drugs, medication management, psychotherapy, rehabilitation counseling, inpatient stays, and residential care. It is delivered by a wide variety of professionals, including psychiatrists, general medical doctors, nurses, psychologists, and social workers, in a broad array of settings—offices, clinics, hospitals, and nursing homes.

Funding sources for care are diverse. They include federal, state, and local governments as well as private insurance and self-payments.

In recognition of the value of calculating spending on mental health treatment in the United States, the Substance Abuse and Mental Health Services Administration (SAMHSA) has been directing the development of estimates of mental health treatment expenditures on a regular basis over the

past ten years. Spending figures have been published periodically and typically describe trends over a ten-year time span (1–3). Total mental health expenditures are presented, as well as expenditures by payer type, provider type, and type of setting and service. Expenditures are compared with all health care spending, thus allowing one to track changes in mental health expenditures relative to all health care, as well as to determine what proportion of total health care dollars are allocated to mental health services.

In this article, we present the latest estimates of spending as well as an analysis of long-term trends from 1986 to 2003 in order to increase understanding of the evolution of spending for mental health treatment over much of the past two decades by provider type, setting, and payer.

## Methods

The approach taken to estimate national mental health spending is designed to be consistent with the National Health Expenditure Accounts (NHEA). The NHEA constitute the framework from which the estimates of spending for all health care are constructed by the Centers for Medicare and Medicaid Services.

Two basic methods are used to estimate mental health treatment expenditures, depending on provider or service type. The first method relies on SAMHSA's national surveys of specialty mental health and substance abuse organizations. The Survey of Mental Health Organizations (SMHO), formerly called the Inventory of Mental Health Organizations,

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and the National Survey of Substance Abuse Treatment Services (N-SSATS), formerly referred to as the Uniform Facilities Data Set, cover services provided by specialty psychiatric and substance abuse hospitals, specialty psychiatric and substance abuse units in general hospitals, multiservice mental health organizations, and specialty substance abuse centers. Surveys are not available for some of the 1986–2003 years. Missing years of data were therefore projected or imputed on the basis of facility characteristics, such as size, geographic location, and ownership (details of the imputation methods are available from the author).

The second method carves out spending on mental health from the NHEA. Services and providers not fully covered in the N-SSATS or SMHO but covered in the NHEA include general hospitals (excluding psychiatric specialty units), physicians, other professionals (such as social workers, psychologists, and nurses), retail prescription drugs, nursing homes, and home health agencies. Estimates for these services are based on NHEA estimates of total spending by provider and payer. The proportion of total spending allocated to mental health is estimated with public-use, nationally representative, provider-based data collections, such as the National Ambulatory Medical Care Survey and the Nationwide Inpatient Sample (NIS) Healthcare Cost and Utilization Project. Estimates of allocations to mental health generally involve first determining the proportion of total service utilization (for example, inpatient days) that is associated with a primary mental health diagnosis, then adjusting for differences in average charges and cost sharing between mental health and all health. In most cases, the provider-based surveys identify only the primary expected source of payment. To identify the secondary payers, the Medical Expenditure Panel Survey (MEPS) is used to determine the share paid by the primary payer and the share paid by every other payer across all the provider types. The two methods—the NHEA method and the SAMHSA method—are integrated by adding up expenditures by provider and payer after accounting for duplication across data sources.

To define mental health disorders, we relied on diagnostic codes found in the *International Classification of Diseases, 9th Revision (ICD-9-CM)* for “mental disorders” (codes in sections 290 through 319). We excluded from these codes diagnoses related to substance dependence and addiction (including tobacco) (codes 291, 292, and 303–305), developmental delays (code 315), and psychic factors associated with disease classified elsewhere (code 316). We included pregnancy complications mainly related to mental disorders (code 648.4) but excluded “cerebral degenerations” (for example, Alzheimer’s disease, code 331.0) and several other codes related to dementia, as well as mental retardation. The allocation to mental health is based on principal or primary diagnoses. [A full list of diagnosis codes is available in an online supplement to this article at [ps.psychiatryonline.org](http://ps.psychiatryonline.org).]

The diagnostic categories selected generally reflect what payers consider to be mental health conditions. They exclude costs not directly related to treatment, such as disability-related costs. They also exclude expenditures for conditions that are neither mental health nor substance abuse conditions but that are caused by mental health and substance abuse problems, such as complications from intentional injuries.

Prescription drug expenditures are considered to be a form of mental health treatment if the medication’s primary indication is for a mental health disorder. More detailed information on the methods employed can be found elsewhere (4).

## Results

### *Mental health spending versus all health, 1986–2003*

As shown in Table 1, mental health treatment expenditures in the United States grew from \$33 billion in 1986 to \$100 billion in 2003. In 2003 dollars adjusted for inflation by using the gross domestic product deflator, spending per capita on U.S. mental health treatment rose from \$205 to \$345.

Table 2 shows the average annual nominal mental health expenditure growth rate (6.7%) and the growth rate of total health care expenditures (8.0%). Growth in mental health expenditures was below growth in all

health expenditures for most years of the study period. As a result of the slower growth rate of mental health, mental health expenditures fell from 8% of all health expenditures in 1986 to 6% of all health expenditures in 2003 (data not shown). Total health spending increased by approximately \$1.175 trillion from 1986 to 2003; of this amount, 6% could be attributed to an increase in mental health spending (calculated from data in Table 1).

### *Trends in services*

There was a large shift over the time period away from expenditures on inpatient mental health treatment and toward retail psychoactive prescription drugs. From 1986 to 2003 inpatient spending on mental health treatment fell from 41% of total mental health expenditures to 24%, and retail psychoactive prescription drug expenditures grew from 7% to 23% (Table 1).

As Figure 1 shows, prescription drug spending contributed 31% to the total change in mental health expenditures from 1986 to 2003. Outpatient expenditures contributed 33%; inpatient expenditures, 16%; and residential expenditures, 12% (data not shown). The proportion of spending increases attributed to each service was determined by calculating the total spending increase of each service type from 1986 to 2003 and dividing by the total mental health spending increase from 1986 to 2003.

Spending for mental health medications grew more rapidly than spending for all medications combined (14.9% on average annually, compared with 12.5% overall) (Table 2). As a result, mental health medication expenditures increased as a share of all retail prescription medication expenditures, rising from 9% to 13% (data not shown). The growth in expenditures for psychoactive prescription drugs was particularly rapid through the latter half of the 1990s (Table 2). From 1996 to 2000 pharmaceutical expenditures grew by more than 20% each year. Around this period, a number of new antidepressants and antipsychotic medications came on the market (for example, olanzapine, 1996; mirtazapine, 1996; quetiapine fumarate, 1997; venlafaxine, 1997; and citalopram, 1998) and existing medications were

**Table 1**

Expenditures by provider (\$, in millions) and percent distribution (%) of expenditures for mental health and all health care, 1986–2003<sup>a</sup>

Provider and service	1986		1989		1992		1995		1998		2001		2003	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
<b>Mental health providers</b>														
Total	33,125	100	43,023	100	50,926	100	61,763	100	67,370	100	86,638	100	100,321	100
General hospitals	5,469	17	7,291	17	8,599	17	11,125	18	11,569	17	13,435	16	15,927	16
Specialty units	3,038	9	5,479	13	5,946	12	7,953	13	6,599	10	6,450	7	6,568	7
Nonspecialty units	2,432	7	1,813	4	2,653	5	3,171	5	4,970	7	6,985	8	9,359	9
Specialty hospitals	8,251	25	10,278	24	11,733	23	11,473	19	10,032	15	11,166	13	11,673	12
All physicians	3,753	11	5,365	12	6,608	13	8,261	13	9,065	13	11,464	13	13,748	14
Psychiatrists	2,681	8	4,027	9	4,406	9	5,924	10	6,156	9	8,190	9	9,802	10
Nonpsychiatrists	1,072	3	1,338	3	2,202	4	2,337	4	2,909	4	3,275	4	3,946	4
Other professionals <sup>b</sup>	3,099	9	4,048	9	4,577	9	5,191	8	5,452	8	6,886	8	8,370	8
Free-standing nursing homes	4,754	14	5,023	12	5,660	11	5,261	9	4,832	7	5,653	7	6,234	6
Free-standing home health	113	<1	183	<1	305	1	592	1	669	1	677	1	823	1
Multiservice mental health organizations	3,916	12	5,583	13	7,290	14	10,260	17	11,384	17	12,480	14	13,143	13
Retail prescription drugs	2,191	7	2,995	7	3,706	7	5,754	9	10,475	16	19,217	22	23,259	23
Insurance administration	1,579	5	2,256	5	2,449	5	3,847	6	3,891	6	5,659	7	7,145	7
Mental health services <sup>c</sup>	29,355	89	37,773	88	44,772	88	52,162	84	53,004	79	61,761	71	69,917	70
Inpatient	13,502	41	17,100	40	18,807	37	21,010	34	18,924	28	20,849	24	24,080	24
Outpatient	9,054	27	12,742	30	15,819	31	20,167	33	22,743	34	27,867	32	31,082	31
Residential	6,799	21	7,931	18	10,146	20	10,985	18	11,337	17	13,045	15	14,755	15
All health care: total	439,201	100	598,691	100	797,126	100	957,628	100	1,112,638	100	1,373,809	100	1,614,223	100
General hospitals	165,423	38	213,504	36	285,577	36	328,184	34	363,594	33	429,476	31	496,623	31
Specialty hospitals	12,518	3	15,791	3	16,690	2	15,396	2	14,932	1	16,951	1	19,243	1
All physicians	99,562	23	141,944	24	189,721	24	220,534	23	256,830	23	315,052	23	369,746	23
Other professionals <sup>b</sup>	9,737	2	15,233	3	22,185	3	28,555	3	35,496	3	42,640	3	48,507	3
Free-standing nursing homes	33,508	8	45,673	8	62,304	8	74,574	8	89,486	8	101,243	7	110,797	7
Free-standing home health	6,388	1	10,238	2	18,170	2	30,529	3	33,575	3	33,660	2	40,009	2
Retail prescription drugs	24,290	6	34,758	6	48,224	6	60,779	6	87,271	8	140,805	10	179,204	11
All other personal and public health	65,825	15	86,248	14	110,907	14	138,580	14	166,508	15	203,080	15	230,382	14
Insurance administration	21,950	5	35,302	6	43,348	5	60,497	6	64,946	6	90,902	7	119,712	7

<sup>a</sup> In nominal dollars. Source: Substance Abuse and Mental Health Services Administration spending estimates, 2007

<sup>b</sup> Includes psychologists, counselors, and social workers

<sup>c</sup> Excludes spending for retail prescription drugs and insurance administration

used for new indications (for example, paroxetine for panic disorder and antipsychotics for mania) (5).

The latest three years of data suggest that mental health pharmaceutical spending growth may be moderating. From 2001 to 2003 spending on mental health drugs grew by an average of 10% annually, slightly slower than the average annual growth in spending for all medications (Table 2).

Inpatient mental health treatment expenditures increased at an average annual rate of 3.5% from 1986 to 2003 (Table 2). The lowest growth occurred from 1995 to 1998, when growth in inpatient expenditures was negative (average annual rate of –3.4%). This is the period when managed care is thought to have had its largest effects. Man-

aged care plans achieved significant cost reductions primarily by limiting inpatient psychiatric utilization and negotiating lower prices.

#### *Public and private payer trends*

Overall, the mix in public and private mental health payers did not change much from 1986 to 2003. In the late 1980s through the mid-1990s, growth in public spending outpaced growth in private spending. This growth trend reversed from the mid-1990s to 2003. As shown in Table 3, from 1986 to 1995 spending by all combined public payers grew from 54% of total mental health expenditures to 62%, then the public-payer share of mental health spending fell to 58% in 2003. Mental health spend-

ing grew more slowly than all health spending within most payer categories. As a result, mental health expenditures fell as a percentage of most of the major payers (calculated from data in the tables).

#### *Private insurance trends*

Mental health private insurance expenditures as a percentage of all private insurance expenditures fell from 5.3% to 4.0% between 1986 and 2003 (calculated from data in the tables). Trends in mental health private insurance expenditures tracked trends in private insurance expenditure for all health care but at slightly slower growth rates. During the 1980s insurance payment for mental health was still largely on a fee-for-service basis

**Table 2**

Average annual growth rates in expenditures by providers and services for mental health and all health care, 1986–2003 (in percentages)<sup>a</sup>

Provider and service	1986–1989	1989–1992	1992–1995	1995–1998	1998–2001	2001–2003	1986–2003
<b>Mental health providers</b>							
Total	9.1	5.8	6.6	2.9	8.7	7.6	6.7
General hospitals	10.1	5.7	9.0	1.3	5.1	8.9	6.5
Specialty units	21.7	2.8	10.2	–6.0	–.8	.9	4.6
Nonspecialty units	–9.3	13.5	6.1	16.2	12.0	15.8	8.2
Specialty hospitals	7.6	4.5	–.7	–4.4	3.6	2.2	2.1
All physicians	12.6	7.2	7.7	3.1	8.1	9.5	7.9
Psychiatrists	14.5	3.0	10.4	1.3	10.0	9.4	7.9
Nonpsychiatrists	7.7	18.1	2.0	7.6	4.0	9.8	8.0
Other professionals <sup>b</sup>	9.3	4.2	4.3	1.6	8.1	10.3	6.0
Free-standing nursing homes	1.9	4.1	–2.4	–2.8	5.4	5.0	1.6
Free-standing home health	17.7	18.5	24.7	4.2	.4	10.3	12.4
Multiservice mental health organizations	12.5	9.3	12.1	3.5	3.1	2.6	7.4
Retail prescription drugs	11.0	7.4	15.8	22.1	22.4	10.0	14.9
Insurance administration	12.6	2.8	16.2	.4	13.3	12.4	9.3
<b>Mental health services<sup>c</sup></b>	8.8	5.8	5.2	.5	5.2	6.4	5.2
Inpatient	8.2	3.2	3.8	–3.4	3.3	7.5	3.5
Outpatient	12.1	7.5	8.4	4.1	7.0	5.6	7.5
Residential	5.3	8.6	2.7	1.1	4.8	6.4	4.7
<b>All health care: total all providers</b>	10.9	10.0	6.3	5.1	7.3	8.4	8.0
General hospitals	8.9	10.2	4.7	3.5	5.7	7.5	6.7
Specialty hospitals	8.1	1.9	–2.7	–1.0	4.3	6.5	2.6
All physicians	12.5	10.2	5.1	5.2	7.0	8.3	8.0
Other professionals <sup>b</sup>	16.1	13.4	8.8	7.5	6.3	6.7	9.9
Free-standing nursing homes	10.9	10.9	6.2	6.3	4.2	4.6	7.3
Free-standing home health	17.0	21.1	18.9	3.2	.1	9.0	11.4
Retail prescription drugs	12.7	11.5	8.0	12.8	17.3	12.8	12.5
All other personal and public health	9.4	8.7	7.7	6.3	6.8	6.5	7.6
Insurance administration	17.2	7.1	11.8	2.4	11.9	14.8	10.5
<b>Gross domestic product price deflator</b>	3.3	3.2	2.2	1.6	2.0	1.9	2.4

<sup>a</sup> Growth rates were calculated in nominal dollars not adjusted for inflation. Source: Substance Abuse and Mental Health Services Administration spending estimates, 2007

<sup>b</sup> Includes psychologists, counselors, and social workers

<sup>c</sup> Excludes spending for retail prescription drugs and insurance administration

and included some benefit restrictions on the intensity of care, such as limitations on inpatient days and outpatient visits and relatively high copayments. By the mid-1980s employers were reporting large increases in mental health expenditures (6). Although the SAMHSA spending estimates data do not cover the early 1980s, they reveal that from 1986 to 1989, private insurance expenditures on mental health grew rapidly (10.7% annually) but by less than private insurance expenditures on all health care (15.1% annually) (Table 4).

Employers responded to mental health cost concerns by enrolling employees in managed behavioral health plans. Partly as a result of these cost-containment efforts, growth in private insurance spending

on mental health treatment was very slow in the early 1990s. For 1998–2003 mental health private insurance expenditures grew more rapidly, primarily because of increases in spending on mental health prescription drugs (Table 4).

#### *Out-of-pocket spending*

From 1986 to 1995 out-of-pocket payments fell as a percentage of total mental health expenditures—from 18% to a low of 12%—and then grew to 14% of total mental health spending in 2003 (Table 3). For all health expenditures, out-of-pocket payments fell from 23% in 1986 to 14% in 2003. The trend difference between mental health out-of-pocket spending and that for all health stems from the rapidly rising spending on prescription

drugs (which are a larger share of mental health spending than of all health spending) and the increasing copayments required by insurers to control soaring drug costs. Trends in out-of-pocket payments are affected by cost-sharing levels for particular services, the mix of services, the mix of payers, and the number of uninsured individuals.

#### *Medicaid*

Among the payers for mental health treatment, Medicaid grew in importance, increasing from 16% of total mental health expenditures in 1986 to 26% in 2003 (Table 3). In 1986 other spending by state and local governments was the largest source of payment for mental health care (26% of total mental health dollars) (Table 3).



By 2003 Medicaid had supplanted other state and local government payments as the single largest payer for mental health care (Table 3).

From 1986 to 2003 Medicaid was the fastest-growing mental health payer, increasing at a 9.9% average annual rate (Table 4). However, growth in Medicaid expenditures on all health care increased even faster, causing mental health Medicaid expenditures to fall from 12% of all Medicaid expenditures in 1986 to 10% in 2003 (calculated from data in Table 3).

#### Other public payers

Mental health spending remained a relatively constant share of all Medicare expenditures (2% to 3%) from 1986 to 2003 (calculated from data in the tables). As a share of other federal spending, which includes federal block grants, and spending by the Department of Veterans Affairs and Department of Defense, mental health expenditures fell from 10% to 5%. As a percentage of other state and local expenditures, mental health spending fell from 23% to 20%.

#### Provider trends

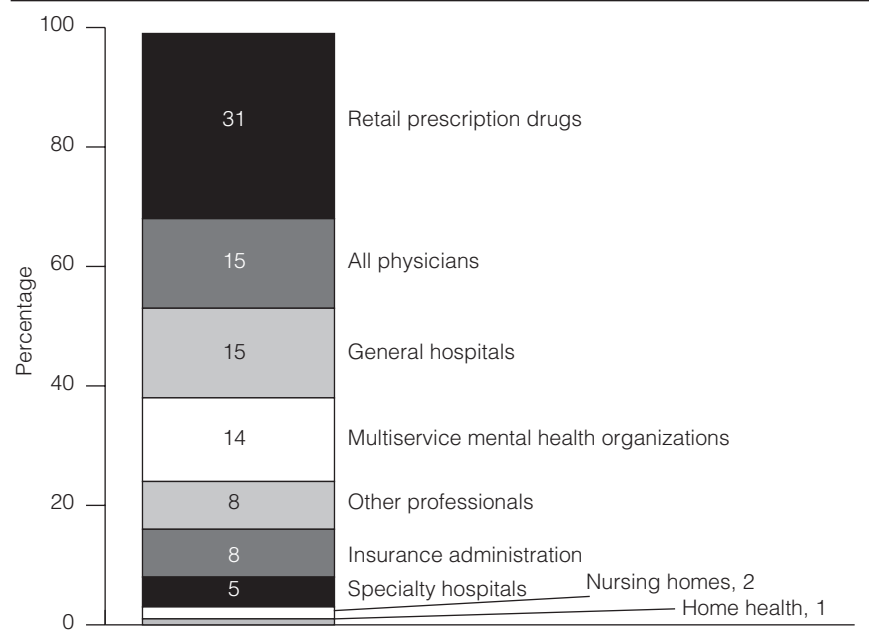
In total, mental health spending grew by \$67 billion between 1986 and 2003 (in nominal dollars not adjusted for inflation). As Figure 1 shows, prescription psychoactive drug expenditures contributed the most to this increase (31%), followed by general hospitals (15%), physicians (15%), and multiservice mental health organizations (14%). The percentage contribution to the change in spending is a function of both the overall level that a provider contributes in the base year as well as the growth rate of spending over the period. This implies that a provider share that grew relatively slowly but made up a large portion of mental health expenditures in the base year may contribute more to overall mental health spending changes than one that grew rapidly but constituted a very small portion of the total at the start of the period.

#### Hospital care

As Table 1 shows there has been a general decline in the proportion of mental health expenditures directed toward hospitals, particularly specialty hospitals. Specialty hospital expenditures fell

**Figure 1**

Percentage contribution of providers to the increase in mental health spending from 1986 to 2003



from 25% of total mental health expenditures in 1986 to only 12% in 2003.

Over this period psychiatric hospital spending experienced an average growth rate of 2.1% annually (Table 2). According to data from *Mental Health, United States, 2002*, the number of inpatient admissions to private psychiatric hospitals rose from about 235,000 in 1986 to 529,000 in 2000, and the number of outpatient visits rose from 132,000 to 358,000 (7). In contrast, state and county psychiatric hospitals witnessed a continuous decline both in admissions (from 333,000 in 1986 to 218,000 in 2000) and in outpatient visits (from 68,000 to 55,000) (7).

#### Physicians and other independent professionals

The share of mental health spending going to physicians increased slightly, from 11% of total mental health expenditures in 1986 to 14% in 2003 (Table 1). Expenditures for physician mental health treatment grew by 7.9% annually (Table 2). Underlying this growth was a significant increase in the number of office visits to mental health physicians, from 26 million in 1986 to 40 million in 2002 (based on data from the National Ambulatory Medical Care Survey [www.cdc.gov/nchs]). Psychiatrist and other

physician mental health expenditures both separately grew by about 8% annually between 1986 and 2003. In 2003 psychiatrists accounted for 10% of expenditures, whereas other physicians accounted for 4%.

Mental health spending for services provided by other independently practicing professionals, such as social workers, psychologists, and nurses, grew by about 6% annually (Table 2). Other professionals made up 9% of total mental health expenditures in 1986 and 8% in 2003.

#### Nursing homes

Free-standing nursing homes constituted 14% of total mental health spending in 1986 and only 6% in 2003 (Table 1). Mental health expenditures in nursing homes grew by 1.6% annually (Table 2), falling in inflation-adjusted terms. This decline in expenditures is consistent with other analyses that have revealed that the number of residents in nursing homes with a primary diagnosis of mental illness has been declining, particularly among residents under age 65, those with severe mental illness, and those without comorbid physical illnesses (8). In this SAMHSA study, we defined nursing home expenditures on mental health on the basis of the primary

**Table 3**

Payers' expenditures (\$, in millions) and percent distribution (%) of expenditures for mental health and all health care, 1986–2003<sup>a</sup>

Type of payer	1986		1989		1992		1995		1998		2001		2003	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
<b>Mental health</b>														
Total all payers	33,125	100	43,023	100	50,926	100	61,763	100	67,370	100	86,638	100	100,321	100
Total private payers	15,393	46	19,547	45	20,234	40	23,179	38	25,442	38	34,108	39	42,013	42
Out of pocket	6,033	18	7,037	16	7,214	14	7,308	12	8,845	13	11,782	14	14,311	14
Private insurance	7,068	21	9,598	22	10,143	20	12,858	21	14,385	21	19,795	23	24,311	24
Other private	2,292	7	2,912	7	2,877	6	3,014	5	2,213	3	2,531	3	3,390	3
Total public payers	17,732	54	23,476	55	30,692	60	38,584	62	41,927	62	52,530	61	58,308	58
Medicare	1,915	6	2,690	6	3,733	7	5,967	10	6,686	10	7,084	8	7,343	7
Medicaid <sup>b</sup>	5,320	16	6,820	16	10,843	21	14,042	23	16,906	25	23,110	27	26,391	26
Other federal <sup>c</sup>	2,047	6	2,384	6	2,468	5	2,943	5	2,729	4	3,088	4	3,525	4
Other state and local	8,451	26	11,582	27	13,648	27	15,632	25	15,606	23	19,248	22	21,049	21
All federal <sup>d</sup>	6,939	21	8,953	21	13,012	26	17,312	28	19,239	29	23,789	27	26,419	26
All state <sup>e</sup>	10,794	33	14,523	34	17,680	35	21,273	34	22,688	34	28,741	33	31,889	32
<b>All health</b>														
Total all payers	439,201	100	598,688	100	797,126	100	957,630	100	1,112,638	100	1,373,810	100	1,614,222	100
Total private payers	259,441	59	360,615	60	456,044	57	520,923	54	615,550	55	754,202	55	892,564	55
Out of pocket	103,103	23	125,803	21	145,923	18	146,405	15	175,571	16	201,986	15	230,483	14
Private insurance	134,604	31	205,356	34	273,837	34	329,624	34	384,701	35	496,648	36	600,594	37
Other private	21,734	5	29,456	5	36,284	5	44,894	5	55,278	5	55,568	4	61,487	4
Total public payers	179,760	41	238,073	40	341,082	43	436,707	46	497,088	45	619,608	45	721,658	45
Medicare	76,829	17	101,137	17	136,299	17	183,313	19	208,772	19	248,817	18	283,104	18
Medicaid	45,363	10	61,939	10	108,187	14	144,037	15	171,523	15	223,673	16	268,629	17
Other federal	21,311	5	25,838	4	34,198	4	38,848	4	41,867	4	55,942	4	65,672	4
Other state and local	36,257	8	49,159	8	62,398	8	70,509	7	74,926	7	91,176	7	104,253	6
All federal <sup>d</sup>	123,531	28	162,208	27	238,454	30	308,338	32	350,311	31	436,557	32	507,480	31
All state <sup>e</sup>	56,229	13	75,865	13	102,628	13	128,369	13	146,777	13	183,051	13	214,178	13

<sup>a</sup> In nominal dollars. Source: Substance Abuse and Mental Health Services Administration (SAMHSA) spending estimates, 2007

<sup>b</sup> The State Children's Health Insurance Program (SCHIP) total national health accounts spending was \$6.6 billion in 2003. SCHIP spending for mental health and substance abuse services was estimated at \$1.1 billion, or about 1% of total mental health and substance abuse spending. In this table SCHIP is distributed across Medicaid, other federal, and other state and local categories, depending on whether SCHIP was run through Medicaid or as a separate state SCHIP program.

<sup>c</sup> SAMHSA block grants to state and local agencies are part of government spending listed under "other federal." In 2003, block grants amounted to \$385 million for mental health and \$1.227 billion for substance abuse.

<sup>d</sup> Includes federal share of Medicaid

<sup>e</sup> Includes state and local share of Medicaid

diagnosis at the time the nursing home diagnosis was extracted from the patient's chart. In addition, we excluded spending on Alzheimer's disease and other dementias.

### Multiservice mental health organizations

Multiservice mental health organizations are free-standing mental health specialty providers other than hospitals, such as clinics and residential centers. In 2003 a total of 13% of mental health dollars went to multiservice mental health organizations (Table 1). Mental health spending at these facilities grew by 7.4% annually (Table 2). From 1986 to 2000 the number of multiservice mental health organizations de-

clined slightly, from about 2,600 to 2,500. However, the number of outpatient visits to these clinics increased by 35%, to more than 2.8 million visits in 2000 (7).

### Discussion

This analysis found that in inflation-adjusted 2003 dollars, spending per capita on mental health treatment rose from \$205 to \$345 from 1986 to 2003, which raises the obvious question: what are we getting for our growing investment? The conclusion by multiple authors is that much of the growth in mental health expenditures reflects a significant increase in the number of people receiving treatment for mental illness (9–11,12–15). For example, in the National Comorbidity Survey

Replication, Kessler and colleagues (13) found that among those with a serious mental disorder, the percentage receiving treatment rose from 24% in 1990–1992 to 41% in 2001 (13).

The increase in access has been driven in part by the growing use of pharmacotherapy, which was stimulated by improved insurance coverage for prescription drugs and the development of new psychoactive medications. This has also been accompanied by increases in outpatient treatment. Offsetting this increase has been a decline in inpatient and institutional care, such as that provided in nursing homes, psychiatric units of general hospitals, and psychiatric hospitals.

Although psychoactive medications have provided a relatively cost-effective

**Table 4**Average annual growth rates in expenditures by payer for mental health and all health care, 1986–2003 (in percentages)<sup>a</sup>

Type of payer	1986–1989	1989–1992	1992–1995	1995–1998	1998–2001	2001–2003	1986–2003
<b>Mental health</b>							
Total all payers	9.1	5.8	6.6	2.9	8.7	7.6	6.7
Total private payers	8.3	1.2	4.6	3.2	10.3	11.0	6.1
Out of pocket	5.3	0.8	.4	6.6	10.0	10.2	5.2
Private insurance	10.7	1.9	8.2	3.8	11.2	10.8	7.5
Other private	8.3	–.4	1.6	–9.8	4.6	15.7	2.3
Total public payers	9.8	9.3	7.9	2.8	7.8	5.4	7.3
Medicare	12.0	11.5	16.9	3.9	1.9	1.8	8.2
Medicaid <sup>b</sup>	8.6	16.7	9.0	6.4	11.0	6.9	9.9
Other federal <sup>c</sup>	5.2	1.2	6.0	–2.5	4.2	6.8	3.2
Other state and local <sup>c</sup>	11.1	5.6	4.6	–.1	7.2	4.6	5.5
All federal <sup>d</sup>	8.9	13.3	10.0	3.6	7.3	5.4	8.2
All state <sup>e</sup>	10.4	6.8	6.4	2.2	8.2	5.3	6.6
<b>All health care</b>							
Total all payers	10.9	10.0	6.3	5.1	7.3	8.4	8.0
Total private payers	11.6	8.1	4.5	5.7	7.0	8.8	7.5
Out of pocket	6.9	5.1	.1	6.2	4.8	6.8	4.8
Private insurance	15.1	10.1	6.4	5.3	8.9	10.0	9.2
Other private	10.7	7.2	7.4	7.2	.2	5.2	6.3
Total public payers	9.8	12.7	8.6	4.4	7.6	7.9	8.5
Medicare	9.6	10.5	10.4	4.4	6.0	6.7	8.0
Medicaid	10.9	20.4	10.0	6.0	9.3	9.6	11.0
Other federal	6.6	9.8	4.3	2.5	10.1	8.3	6.8
Other state and local	10.7	8.3	4.2	2.0	6.8	6.9	6.4
All federal <sup>d</sup>	9.5	13.7	8.9	4.3	7.6	7.8	8.7
All state <sup>e</sup>	10.5	10.6	7.7	4.6	7.6	8.2	8.2
Gross domestic produce price deflator	3.3	3.2	2.2	1.6	2.0	1.9	2.4

<sup>a</sup> In nominal dollars. Source: Substance Abuse and Mental Health Services Administration (SAMHSA) spending estimates, 2007<sup>b</sup> The State Children's Health Insurance Program (SCHIP) total national health accounts spending was \$6.6 billion in 2003. SCHIP spending for mental health and substance abuse services was estimated at \$1.1 billion, or about 1% of total mental health and substance abuse spending. In this table SCHIP is distributed across Medicaid, other federal, and other state and local categories, depending on whether SCHIP was run through Medicaid or as a separate state SCHIP program.<sup>c</sup> SAMHSA block grants to state and local agencies are part of government spending listed under "other federal." In 2003, block grants amounted to \$385 million for mental health and \$1.227 billion for substance abuse.<sup>d</sup> Includes federal share of Medicaid<sup>e</sup> Includes state and local share of Medicaid

tive method for people to obtain relief from their symptoms—and in many cases to achieve recovery—the increase in medication use and the volume of mental health treatment provided in general does not address the question of whether the treatment being provided is appropriate and meets quality guidelines (10,11). Some recent data suggest that access and quality concerns are still prevalent. For example, a recent SAMHSA survey found that 8.3 million adults reported having unmet needs for treatment for mental health problems in the past year; of these, nearly half reported that cost or insurance issues posed a barrier to receiving treatment (16). Since 1998 out-of-pocket spending on mental health treatment has been growing at more than 10% a year, outpacing the growth rate of

out-of-pocket spending for all health care, largely as a result of the growth in prescription drug use and prescription drug cost-sharing rates.

As more mental health care has shifted into communities and away from inpatient and institutional settings, the need for adequate monitoring and coordination across systems and time has grown. The National Committee for Quality Assurance reported that in this regard the quality of mental health care remained as poor in 2005 as it was several years before; many patients taking antidepressants still do not receive appropriate monitoring, and many individuals hospitalized for mental illness do not receive follow-up care (17). Analyses of MEPS data found that from 1996 to 2001 the percentage of persons who received psychotropic

drugs in the absence of any ambulatory mental health visits during the year increased from 26% to 34% of psychotropic drug users (10). Contributing to the lack of monitoring may be the fact that more patients are receiving care from primary care physicians, who may not have adequate incentives to routinely schedule medication maintenance visits (18,19).

A second key finding from the SAMHSA analysis is that more of public mental health treatment is being funded by Medicaid and proportionately less by state budgets. As the report of the New Freedom Commission highlighted (20), increasingly, "most resources for people with serious mental illnesses (e.g., Medicaid) are not typically within the direct control or accountability of the administrator of the State mental health sys-

tem. For example, depending on the State and how the budget is prepared, Medicaid may be administered by a separate agency with limited mental health expertise. Separate entities also administer criminal justice, housing, and education programs, contributing to fragmented services.” In response to these identified issues, the New Freedom Commission recommended the development of a comprehensive state mental health plan that would create a partnership among federal, state, and local governments as well as consumers and families (20).

The SAMHSA spending estimates provide the only global view of mental health treatment spending. One must turn to other sources of data on disease epidemiology, treatment utilization, access, and quality to understand the likely drivers and consequences of the spending trends. These spending estimates also must be understood in light of their limitations. The estimates depend on the underlying data sources, which are subject to uncertainties in reporting as well as missing observations. For example, mental health treatment is identified often by coding from medical records, which may be inaccurate. Similarly, for prescription drugs the study assumed that all drugs with a primary psychiatric indication are used to treat psychiatric disorders. Because of the complex way in which multiple years of data from multiple sources are compiled, it is not possible to calculate an exact confidence interval around the spending estimates.

One way to gain confidence in the estimates is to compare them with other data sources. In addition to the NHEA, the other main source of data on national mental health spending and trends is the MEPS (9–11). In general, MEPS analyses have revealed trends similar to those presented here. MEPS has an advantage over the NHEA in that data are collected at the person level; thus spending trends can be parsed into trends in the percentage of the population using services, the intensity of use, and the price of services. Although MEPS data are useful for confirming trends, MEPS totals may diverge from the NHEA because MEPS underestimates hospital expenditures and expenditures on other large events, ex-

cludes institutionalized populations, and is based on self-reported diagnoses rather than provider-documented diagnoses (10,21).

## Conclusions

This article presents estimates of mental health treatment expenditure for 1986 through 2003. This is the first time that these data have been presented as a series and that data from 2002 and 2003 have been described. We found that mental health expenditures have grown and changed dramatically in their composition over the past 17 years. Spending per capita has increased, and complementary data show that more people are now receiving mental health services. The mix of services has changed—more care is now provided through prescription drugs and in outpatient settings and less in inpatient settings. Payer mix has also shifted, with Medicaid taking a more prominent role. These changes raise new challenges for ensuring quality and access.

## Acknowledgments and disclosures

This work was funded by a contract from the Substance Abuse and Mental Health Services Administration. The views expressed do not necessarily reflect the opinions of the Substance Abuse and Mental Health Services Administration or the Department of Health and Human Services.

The authors report no competing interests.

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