

UTILIZATION OF PUBLIC MENTAL HEALTH SERVICES BY CHILDREN WITH SERIOUS EMOTIONAL DISTURBANCES

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ABSTRACT: The Integrated Database (IDB) was created to provide a broad picture of the use of state-funded mental health (MH) and substance abuse (SA) services. Assembled separately for three states (Delaware, Oklahoma, and Washington), the IDB links client-level and service-level data maintained by the state MH, SA, and Medicaid agencies. This study used the IDB to examine public MH services for children with serious emotional disturbances (SED) in 1996. Children with SED represented 9% to 22% of all children with MH service use. Between one half and two thirds of children with SED received psychotropic medication; 20% to 40% had a MH inpatient or residential stay. Medicaid was the primary funder of MH services for children with SED; only 2% to 12% of children with SED received services solely through the state MH agency.

KEY WORDS: adolescents; children; Medicaid; public mental health services; SED; serious emotional disturbances.

According to the Surgeon General's report on mental health (U.S. Department of Health and Human Services, 1999), there are 6 million to 9 million children and adolescents in the United States with serious emotional disturbances (SED); this represents 9% to 13% of all children. The system for delivering mental health services to children and their families is described as "complex, sometimes to the point of inscrutability—a patchwork of providers, interventions, and payers." Much of the complexity can

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be attributed to multiple pathways into treatment and multiple funding streams for services (U.S. Department of Health and Human Services, 1999).

Medicaid is the single largest payer for health services for children and adolescents, covering 21.6% of the population under 18 years of age (Rosenbaum, 2002). Medicaid is also recognized as a major source of funding for mental health and related support services for children (Ringel & Sturm, 2001; Buck, 2001). One recent study of insurance coverage and mental health service use for children with SED found that “services use was much more likely to occur with public (Medicaid) insurance coverage than either private or no insurance,” although that study also observed considerable unmet need even for youths with SED (Burns et al., 1997).

Medicaid is the primary payer of public MH services at the state and local levels; however, only limited information is available regarding this spending and its role in the overall public system. Regular comprehensive reports on MH services spending are not produced by any state Medicaid agency, and federal policy does not require such reporting. Further, the literature shows only a few studies that have examined MH services within one or more states. Recent studies have generally found that users of MH (and substance abuse treatment) services account for 7% to 13% of Medicaid enrollees, and that mental health and substance abuse (MH/SA) services account for 7% to 11% of Medicaid expenditures (Buck, Teich, Bae, & Dilonardo, 2001; Larson et al., 1999; Wright, Smolkin, & Bencio, 1995).

No one agency has comprehensive data on the full spectrum of publicly supported mental health and substance abuse treatment services.

In addition, there is only limited information about other aspects of state-based public spending. A substantial proportion of this spending comes from State Mental Health Authorities (SMHAs). SMHAs controlled \$16 billion in mental health services expenditures in 1997; 29% of this came from Medicaid (Lutterman, Hired, & Poindexter, 1999). However, little detail is available about where this spending went, other than broad categories of services. More importantly, information about the overlap of this spending with that from Medicaid also is not available.

Recently, a project that combines data from Medicaid with data from state MH and substance abuse authorities has provided us with an opportunity to better understand state-based public MH services spending. The Integrated Database Project, as it is called, is based on service records from the states of Delaware, Oklahoma, and Washington. Coffey and associates (2001) provide details concerning the creation of this database and the initial findings from its analysis.

The Integrated Database (IDB) has the potential to provide valuable new information about patterns of utilization and financing of state-supported MH services. One such area is the treatment of children and adolescents with SED. This group is generally considered a high-priority population for the receipt of public mental health services, particularly for those services provided through SMHAs. However, many such individuals qualify for Medicaid coverage due to their psychiatric disability. Using the IDB, this study examines the sources of support for children and adolescents with SED and their utilization of state-supported services, regardless of source.

METHOD

The IDB consists of information on MH and SA clients for all behavioral health and physical health services that they received either through Medicaid or state MH or SA agency programs during 1996–1998, although the current analysis is based only on 1996 data. Data from state MH and SA authorities include all persons who received clinical treatment services from these programs. For Medicaid data, diagnostic and/or other indicators of MH or SA treatment were used to identify MH or SA users. In addition to service and cost information, the database includes information on demographics, client history, Medicaid eligibility, diagnoses, and providers. Specifics on the way that each state's MH services are organized and funded, and details about the databases from which the IDB is created, are described by Coffey and associates (2001).

Although the following analysis presents results for each of the three states, the intent is not to make interstate comparisons; rather, the purpose is to provide a more complete picture of how individual states organize and finance services. State programs for delivering MH/SA programs differ along many dimensions. These multi-dimensional differences make it impossible to ascribe any particular finding across the states to a specific underlying factor.

Selection Criteria for the SED Population

The analyses presented here focus on mental health services delivered to a subset of individuals in the IDB who are under age 18 and who are identified as having serious emotional disturbances. Two types of criteria had to be met in order for an individual to be included in the analyses. First, the individual must have had one of the following as his or her most frequent primary diagnosis (numbers in parentheses denote International Classification of Diseases [ICD-9-CM] diagnosis codes):

- Schizophrenia (295)
- Major Depression (296.2, 296.3)

- Psychoses (297, 298, 299) and Affective Psychoses (296.0, 296.1, 296.4–296.99)
- Childhood disorders—Attention Deficit Disorder (ADD) (314.00–314.01)
- Childhood disorders—Other (307, 312–313, 314, 314.02–314.99)

In addition, the individual's records for 1996 had to have one or more of the following indicators of disability or high service use:

- Medicaid-eligible due to disability (SSI)
- Fifteen or more days of care in an inpatient or residential and/or long-term care facility
- Number of Medicaid outpatient services at the 90th percentile or greater of the total child MH population for the state (Delaware=33, Oklahoma=26, Washington=12)
- Number of MH agency community services at the 90th percentile or greater of the total child MH population outpatient records for the state (Delaware=55, Oklahoma=54, Washington=43)

Across the three states, for ages 0 to 17, the proportion of MH youth clients in the database who met the diagnostic criterion and also met one of the additional eligibility or utilization criteria was 22.4% in Delaware, 16.3% in Oklahoma, and 8.8% in Washington (Table 1). Virtually all of the children in the SED group were eligible for Medicaid for at least some portion of the year: The proportion of children with SED who had no Medicaid eligibility was 1.5% in Delaware, 10.3% in Oklahoma, and 0.4% in Washington. The proportion of the SED group who qualified for Medicaid on the basis of disability ranged from 36.7% in Oklahoma to 53.1% in Delaware, and 55.3% in Washington. In two of these states, about two thirds of the younger children in the SED group (12 and under) qualified for Medicaid on the basis of disability (data not shown).

One important limitation of the data should be noted. In Washington State, outpatient claims for the SMHA and Medicaid clients managed by the SMHA do not contain a diagnosis code; therefore, children with one of the designated diagnoses who used only outpatient services during the year would not have been included in the study group of children with SED. As a result, SED children in Washington may be undercounted.

RESULTS

Males account for about three quarters of the individuals in the SED group in all three states (Table 2). The average age in this group was 12.0

TABLE 1
Children (ages 0–17) Meeting Selection Criteria for SED Analyses

	<i>Delaware</i>	<i>Oklahoma</i>	<i>Washington</i> ⁴
<i>Diagnosis</i>			
Schizophrenia	15	91	53
Major depression	128	1,219	713
Psychosis	182	458	605
Childhood disorders—ADD	1,280	4,822	7,223
Childhood disorders—other	1,369	7,629	3,556
Any SED diagnosis	2,974	14,219	12,150
<i>Additional Selection Criteria</i> ¹			
Disabled	659	2,049	1,877
Medicaid or state inpatient/ residential care ≥15 days	445	1,318	483
Medicaid outpatient services ≥90 th percentile ²	398	3,097	1,145
Agency community services ≥90 th percentile ³	99	1,242	844
Total in SED Group	1,191	5,361	3,209
Total Mental Health Users	5,314	32,881	36,425
SED as a Percentage of Total Mental Health Users	22.4%	16.3%	8.8%

¹Selection criteria are set separately for each state and age group. A child or adolescent must have a primary diagnosis of schizophrenia, major depression, affective or other psychosis, or childhood disorders (Attention Deficit Disorder [ADD] or other childhood disorders). In addition, the child must meet one of the following criteria: 1) ≥15 days of long-term care/residential or inpatient care; 2) disabled status based on Medicaid Basis of Eligibility, excluding mentally retarded or developmentally disabled youth; 3) total Medicaid outpatient service records ≥90th percentile of the total Medicaid population outpatient records (DE=33, OK=26, WA=12); and 4) total state mental health agency records ≥90th percentile of the state total mental health agency outpatient records (DE=55, OK=54, WA=43). Individuals may meet more than one of the criteria and can be reported in more than one category.

²Medicaid outpatient services include any services with a mental health primary diagnosis or procedure. Services may include anything (e.g., transportation, day care). Pharmacy is not included.

³Agency services range from minutes to multiple months.

⁴The mental health agency in Washington does not include diagnosis on their outpatient records. Consequently, Washington youths with serious emotional disturbances (SED) may be undercounted.

years in Delaware, 11.9 years in Oklahoma, and 11.0 years in Washington. The youngest children comprised only a small percentage of the SED group; approximately 95% of the children in the SED group were between the ages of 6 and 18. Between one half and three quarters of the children in the SED group were Caucasian. The proportion of African Americans varied from 6.9% to 40.3%, while children from other minorities represented only a small percentage of the SED group.

TABLE 2
Demographic Characteristics of Children with SED (1996)

	<i>Delaware</i> <i>N=1,191</i>		<i>Oklahoma</i> <i>N=5,631</i>		<i>Washington</i> <i>N=3,209</i>	
	<i>Number</i>	<i>%¹</i>	<i>Number</i>	<i>%¹</i>	<i>Number</i>	<i>%¹</i>
<i>Age</i>						
0–5 years	72	6.0	304	5.4	210	6.5
6–12 years	514	43.1	2,390	42.4	1,832	57.0
13–17 years	605	50.7	2,667	40.2	1,167	36.1
<i>Gender</i>						
Male	916	76.9	3,818	71.2	2,354	73.4
Female	275	23.1	1,543	28.8	855	26.6
<i>Race/Ethnicity</i>						
White	623	52.3	3,591	67.0	2,354	80.3
Black	480	40.3	1,128	21.0	221	6.9
Native American	1	0.1	529	9.9	84	2.6
Asian	0	0.0	11	0.2	20	0.6
Hispanic	64	5.4	102	1.9	74	2.3
Pacific Islander	0	0.0	0	0.0	2	0.0
Other/Unknown	23	1.9	0	0.0	232	7.2

¹Percentages represent the proportion of the total number of children with SED (serious emotional disturbances) in that state.

Across the three states, between 20% and 40% of children in the SED group had an inpatient stay in a community hospital, a state hospital, or a residential treatment setting, through either Medicaid or the SMHA (data not shown). Table 3 indicates that the proportion of children in the SED group who had an inpatient stay in a community hospital was between 14.3% and 27.1%; the median number of days of care in community hospitals ranged from 19 to 38. There is no state psychiatric inpatient unit for children in Delaware; all state-sponsored inpatient care for children and adolescents is provided in residential treatment centers. In Oklahoma and Washington, 1.8% and 3.7% of children in the SED group, respectively, had an inpatient stay in a state facility; median annual days of care was 38 in Oklahoma and 124 in Washington.

There was no indication of inpatient hospitalizations for children under the age of 6 in state facilities in any of the three states (data not shown). Between 4% and 11% of these youngest children (ages 0–5) had a stay in a community hospital; median annual days of care for these stays ranged

TABLE 3
Utilization of Mental Health Services by Children with SED (1996)

State	N	<i>Inpatient Hospital–Mental Health (Community Hospital)</i>		<i>Inpatient Institution–Mental Hospital (State Hospital)</i>			<i>Medicaid Residential or Long-Term Care</i>			<i>Agency Residential</i>			<i>Outpatient/Community Services</i>		
		% of SED Pop.	Days of Care/Yr (Median)	N	% of SED Pop.	Days of Care/Yr (Median)	N	% of SED Pop.	Days of Care/Yr (Median)	N	% of SED Pop.	Days of Care/Yr (Median)	N	% of SED Pop.	Days of Care/Yr (Median)
DE	170	14.3	36.5	0 ¹	0	0	274	23.0	121	111	9.3	139	1,001	84.0	41
OK	1,451	27.0	38.0	95	1.8	37.7	0 ²	0	0	98	1.8	35	5,304	98.9	58
WA	570	17.8	19.0	118	3.7	124.5	N/A ³	N/A	N/A	N/A	N/A	N/A	3,173	98.9	18

¹All state-sponsored inpatient care for children and adolescents in Delaware is provided in residential treatment centers; there is no state psychiatric hospital inpatient unit for children.

²Medicaid in Oklahoma does not cover overnight residential treatment services for children and adolescents.

³Data for Medicaid and state agency residential treatment services in Washington are not collected at the state level and, therefore, are not available.

from 20 to 36. For children ages 6 to 12, the rate of inpatient stays in community hospitals ranged from 10% to 23%. As might be expected, adolescents (ages 13–17) had the highest rate of inpatient hospitalization: between 20% and 33% had a stay in a community hospital (data not shown).

Table 3 shows that 23% of children in the SED group in Delaware had a residential and/or long-term-care stay under Medicaid, and 9% had a residential stay under the SMHA. Medians for annual days of care were 121 and 139, respectively. In Oklahoma, Medicaid does not cover residential inpatient services for children and adolescents; however, 1.8% of children in the SED group had a residential stay through the SMHA, for which the median annual days of care was 35. Data for Medicaid and state agency residential treatment services are not collected at the state level in Washington and, therefore, were not available.

While only about 1% of children ages 0 to 12 used Medicaid residential and/or long-term care services in Delaware, 44% of the adolescents used these services, and the median for annual days of care was 123 (data not shown). For children ages 6 to 12, the median days of care was 68 under Medicaid and 54 under the SMHA. However, for adolescents (ages 13–17) in residential settings, median annual days of care was 123 under Medicaid and 149 under the SMHA (data not shown).

Outpatient service records captured in the database include a wide range of services, such as day treatment, individual therapy, and medication reviews. A single service record may represent a 15-minute visit, a 2-hour group or family therapy session, or a week or month of intensive non-residential services. It should be noted that, while it is possible to count such service records, the implications of such counts are not clear, and meaningful comparisons of the number of service records as a measure of service intensity thus cannot be made.

The Integrated Database has the potential to provide valuable new information about patterns of utilization and financing of state-supported mental health services.

In Oklahoma and Washington, virtually all children in the SED group (99%) had records indicating some use of outpatient or community services; however, in Delaware, this percentage was slightly lower (84%). Almost all the younger children (ages 0–12) had records of outpatient service use in Delaware, but only 69% of adolescents had any evidence of outpatient service use (data not shown). This may be related to the relatively high proportion of older children (ages 13–17) in Delaware (44%) who had a stay in a residential and/or long-term care facility and were not using outpatient services during those stays.

Table 4 displays the proportion of the study group who received MH services solely through the Medicaid program, through programs solely supported by the MH agency, or both. The “both” category also includes those who received Medicaid services administered by the MH agency, if the record of such services appeared in the databases of both agencies. Table 4 shows that, across the three states, Medicaid was the only payment source for MH services for one half to two thirds of the children with SED. Most of the remainder received at least some MH services supported by Medicaid. The state MH agency was the sole source of payment for only a small proportion of children with SED in all three states.

Data on psychotropic medication in the IDB are available only for children receiving services through Medicaid or both Medicaid and the SMHA; no information on psychotropic medication is available for children receiving services only through the SMHA. Therefore, data in Table 5 represent only the percentages of children with SED who had some Medicaid use. In all three states, about two thirds of children with SED (Medicaid-only or Medicaid/SMHA) received some type of prescription psychotropic medication. Also, in all three states, about one quarter of the children with SED who received psychotropic medication were given more than one type of medication during the year, and a slightly higher proportion of children received more than one psychotropic medication of the same drug type. The type of medication most frequently given to children in the SED group was stimulants; the second most frequently given was anti-depressants.

TABLE 4
Source of Support for Children with SED (1996)

<i>State</i>	<i>Medicaid Only</i>		<i>State Mental Health Agency Only</i>		<i>Medicaid and State Mental Health Agency</i>	
	<i>N</i>	<i>Percentage of SED Population</i> ¹	<i>N</i>	<i>Percentage of SED Population</i>	<i>N</i>	<i>Percentage of SED Population</i>
Delaware	800	67.2	26	2.2	365	30.7
Oklahoma	2,991	55.9	616	11.5	1,744	32.6
Washington	1,202	37.5	62	1.9	1,945	60.6

¹Percentages represent the proportion of the total number (*N*) of children with serious emotional disturbances (SED) in that state.

TABLE 5
Number of Children with SED Using Psychotropic Medication (1996)

	<i>Delaware</i> (<i>N=1,165</i>)		<i>Oklahoma</i> (<i>N=4,735</i>)		<i>Washington</i> ¹ (<i>N=3,147</i>)	
	<i>N</i>	<i>%</i> ²	<i>N</i>	<i>%</i> ²	<i>N</i>	<i>%</i> ²
<i>Psychotropic Drug Type</i> ³						
Antidepressants	214	18.3	1,769	37.3	917	29.1
Antipsychotics	156	13.3	737	15.5	230	7.3
Barbiturates	2	0.1	12	0.3	10	0.3
Benzodiazepines	24	2.0	83	1.7	90	2.8
Lithium	37	3.1	115	2.4	162	5.1
Other anxiolytics, sedatives/ hypnotics	114	9.7	451	9.5	186	5.9
Stimulants	583	50.0	1,881	39.7	1,515	48.1
More than 1 psychotropic medication type ⁴	288	24.7	1,446	30.5	770	24.4
More than 1 psychotropic medication ⁵	335	28.7	1,673	35.3	962	30.5
Total with psychotropic medications	732	62.8	3,076	64.9	2,116	67.2

Note: Data on prescription medication use is available only for Medicaid. Only children using services paid for by Medicaid or by both Medicaid and the State Mental Health Authorities (SMHA) are included; i.e., children using services only through the SMHA are excluded from this table.

¹The mental health agency in Washington does not include diagnosis on their outpatient records. As a result, children with serious emotional disturbances (SED) may be undercounted in Washington.

²Percentages represent the proportion of the total population of children in that state who are Medicaid-eligible children with SED.

³Drug types are based on the REDBOOK classification system.

⁴This includes users who had more than one prescription psychotropic drug type within the calendar year.

⁵This includes users who had more than one prescription psychotropic drug within the calendar year, regardless of drug type.

DISCUSSION

State and local governments manage a substantial proportion of funds for treatment of mental health disorders for children and adolescents with SED. Multiple agencies are often involved in treating the same clients, and data on the same children and adolescents are, therefore, maintained in multiple data systems. No one agency has comprehensive data on the full spectrum of publicly supported MH and SA treatment services.

The Substance Abuse and Mental Health Services Administration initi-

ated the Integrated Database Project 5 years ago to address this situation. The project represents an effort to combine Medicaid, state mental health, and state substance abuse agency data for three states. This article has presented findings related to a subset of persons with records in the IDB for 1996: children whose diagnosis and disability or service use indicates SED. Some of these children and adolescents also may have used substance abuse services; however, the analysis in this article focused only on their utilization of mental health services.

These findings should be used and interpreted with caution. Although some of the findings appear to be fairly consistent across the three states, we do not know to what degree this may represent the experience of other states. Further, the difficulty of creating the IDB from individual and heterogeneous data files means that there are areas of missing data or other anomalies. Nevertheless, the IDB represents the best current source of information for understanding the characteristics and interaction of state MH services provided through MH and Medicaid agencies.

There are significant shortcomings in current systems for planning and assessing public mental health services for children with serious emotional disturbances.

While all the findings of this study contribute to our understanding of the treatment of children and adolescents with SED, several are particularly worth noting. First, while the study shows that public mental health services for children with SED can be characterized as a system shared between the Medicaid and MH agencies, it is clear that Medicaid plays a dominant role. Further, only about half of the children with SED receiving Medicaid qualify through disability-related eligibility categories. Only a very small number of children with SED in all three states received services solely through the state MH agency. These findings underscore the importance of efforts to incorporate Medicaid data and policies into state MH planning and administration.

These results also provide some insight into the importance of inpatient and residential psychiatric care for the population of children with SED in the public sector. While virtually all of these children used multiple outpatient services, these data suggest that inpatient and residential treatment continue to play an important role for children with SED. Finally, it is worth noting that, as might be expected for this population, the data indicate relatively high use of psychotropic medication. Depending on the state, up to two thirds of this population received a psychotropic medication, and about one third received more than one type of such medication. This suggests that detailed data on prescribing patterns for this population

are particularly important in assessing the adequacy and quality of services.

Overall, these findings suggest significant shortcomings in current systems for planning and assessing publicly supported MH services for children with SED. Despite the demonstrated importance of Medicaid-supported services for this group, no state Medicaid agency now produces statistics or program reports that would provide a basis for assessing its effectiveness for these or other children with MH needs. Similarly, state mental health plans rarely address Medicaid issues, and state mental health planning councils have no authority to review Medicaid policies that affect MH services for children with SED, or other groups. Addressing these areas, among others, has the potential to improve the planning and coordination of services for children with SED and others who primarily depend on Medicaid for their services.

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