CHILDREN AND FAMILY RESEARCH CENTER

MENTAL HEALTH SERVICE USE FOR CHILDREN IN FOSTER CARE IN ILLINOIS

Theresa J. Early, Ph.D.

Douglas D. Mooney, Ph.D.

March 13, 2002

This paper was supported in part by the
Children and Family Research Center, School of Social Work
University of Illinois at Urbana-Champaign
which is funded in part by the
Illinois Department of Children and Family Services

Executive Summary

Children in foster care are at increased risk of mental health problems, likely resulting from not only the maltreatment they have experienced but also from separation from home, separation from family, and continuing disruptions. In turn, mental health problems among children in foster care have been associated with more negative placement outcomes, such as longer overall stays in foster care increased placement instability, and less likely reunification with birth family. Among the barriers to foster children receiving mental health care is a lack of routinely-implemented screening procedures to determine which children need care. Further, even when such procedures exist to identify needs for health care in general, mental health care needs may go unnoticed. Illinois has such a system in HealthWorks, implemented in 1995.

This report is an effort to document the extent of mental health service use for children in foster care in Illinois, the types of services used, the mental health diagnoses assigned to children using services, and the differences in rates of service receipt for various groups of foster children. Data for the study were obtained from the Children and Family Research Center, an independent research organization created jointly by the University of Illinois at Urbana-Champaign and the Illinois Department of Children and Family Services (DCFS). The data analyzed included the Illinois Medicaid Paid Claims Longitudinal Database linked with the DCFS Integrated Database, both of which are maintained by the Chapin Hall Center for Children at the University of Chicago.

For this study, we define "children who received mental health services" by identifying claims which were billed for recognizable mental health diagnoses. To further examine the actual mental health services received, we examined procedures that are clearly mental health treatments. This report describes mental health service use for children who first entered the foster care system during calendar year 1997.

In 1997, 7,416 children experienced a first entry into the Illinois child welfare foster care system. Of these, 17.49 percent (n=1,297) received one or more Medicaid services for a mental health diagnosis. While it is likely that some of these children received mental health services that were not billed to Medicaid, based on services reimbursed through Medicaid, children in this cohort are likely underserved for mental health problems, as previous studies indicate mental health problems warranting attention occur in between one-half and two-thirds of children in foster care. Previous studies also have identified higher rates of mental health service utilization in foster care populations than here.

This mental health service-using subset of the 1997 cohort differs in several ways from the cohort overall. Although the cohort is evenly distributed across the genders, the mental health subpopulation has a larger proportion of males. This gender distribution is not surprising, as males are often overrepresented for children's mental health services. The group who received mental health services is, on average, older than the 1997 entry cohort. Racial group representation is also quite different for the mental health population, with African Americans greatly underrepresented and whites substantially overrepresented.

A little more than one-quarter of the diagnoses assigned to children who received services were affective disorders. Significant proportions of the diagnoses assigned included ADHD and conduct disorders (about one in five diagnoses fell into each of these categories), and "other mental conditions" and oppositional disorders (more than one in 10 diagnoses in each). Not surprisingly, the patterns of diagnoses differ by gender, with greater proportions of diagnoses assigned to males falling into the ADHD and conduct disorders categories, and greater proportions of diagnoses assigned to females falling into the affective disorders, anxiety disorders, oppositional, and other mental conditions categories.

The epidemiological literature has not identified vastly different patterns of occurrence of mental health disorders among different racial groups, but racial differences in patterns of diagnoses and service use are observed both in these data and in the literature. Oppositional disorders were applied most disproportionately, with white children overrepresented and African American and Hispanic children underrepresented at a rate of almost 2:1. Attention-deficit/Hyperactivity disorders were the next most disproportionately applied, in the same pattern of overrepresentation of white children and underrepresentation of African American and Hispanic children. The only category of disorders applied in proportions mirroring the mental health racial distribution as a whole was Conduct Disorders. Oppositional disorders and ADHD, in particular, were applied disproportionately to white children. It is unknown whether these disparities result from what is acceptable to different communities or racial groups, different sites of diagnosis, or some other factor.

Comparisons with the epidemiological and clinical data lead to the conclusion that children in the 1997 foster care entry cohort are underserved for specific mental health problems as well as for mental health problems in general. Diagnoses of ADHD are about one-fourth to one-half of what would be expected for clinical samples. ADHD is underidentified in boys, in particular, in this cohort. In terms of anxiety disorders, girls are diagnosed only within the range expected for community samples and boys at less than half of what would be expected in a community sample. Since some anxiety disorders are a common consequence of both sexual abuse and severe physical abuse, it is very likely that there are many children in this cohort whose symptoms are not recognized. Alternatively, these children may be receiving services that are not captured in the Medicaid data.

The system changes of the HealthWorks implementation were intended to speed identification and treatment of medical, vision, dental, developmental and mental health problems. In terms of how quickly children begin receiving mental health services, only 28 percent had services within 30 days of entering care. This proportion probably should be higher, if the screening and evaluation mechanisms are working properly. Different groups of children experienced very different lengths of time to the first mental health service, with white children receiving services much earlier than the average and African American children and children in relative foster placements receiving services much later.

The most frequently billed category of services was in-patient and residential care, accounting for almost one in five services, but received by a relatively small proportion of children (14 percent). Conversely, diagnostic interviews accounted for a relatively small proportion of the services billed, but was the service provided to the most individual children (41 percent). Case management, although relatively infrequently provided, was received by almost one in five children.

As a rough measure of the appropriateness of the first service from the perspective of early identification and treatment, we examined the first services received to determine whether children are first being seen in community-based or more restrictive settings. Almost one in five children received their first mental health service in a restrictive (inpatient, residential) or fairly restrictive (office at a hospital) setting. Hispanic children were seen first in restrictive settings at a rate of more than double that of the mental health population as a whole and children in kinship care were first seen in restrictive settings at a rate of about one-and-one-half times that of the whole population. White children were most frequently seen in community-based and less frequently seen in restrictive settings.

Perhaps earlier identification and treatment of problems, especially for the groups of children who were most frequently first seen in restrictive settings, would help shift service use more toward community-based services. However, it is heartening to note that the vast majority of children receiving services did so in community-based settings.

Mental Health Service Use for Children in Foster Care in Illinois Final Report

Children in foster care are at increased risk of mental health problems, likely resulting from not only the maltreatment they have experienced but also from separation from home, separation from family, and continuing disruptions. Various studies have indicated a higher rate of healthcare utilization for children in foster care than other children receiving Medicaid (Bilaver, Jaudes, Koepke & Goerge, 1999), a higher rate of mental health problems for children in foster care than other children receiving Medicaid (Halfon, Berkowitz & Klee, 1992a, 1992b; Takayama, Bergman & Connell, 1994), and a substantially higher rate of mental health problems for children in foster care than children in the general population (see Pilowsky, 1995, and Landsverk & Garland, 1999, for reviews). Various studies report from 35 percent to 85 percent of children entering foster care have significant mental health problems, compared with rates of 11 percent to 25 percent among community samples (Leslie, Landsverk, Ezzet-Lofstrom, Tschann, Slymen & Garland, 2000). Stein, Evans, Mazumbar and Rae-Grant (1996) report prevalence of mental health problems among children in foster care to be similar to prevalence among clinical populations.

Mental health problems among children in foster care have been associated with more negative placement outcomes, such as longer overall stays in foster care (Horwitz, Simms & Farrington, 1994), increased placement instability (Newton, Litrownik & Landsverk, 2000), and less likely reunification with birth family (Landsverk, Davis, Ganger, Newton & Johnson, 1996).

The Literature on Prevalence of Mental Health Problems

The epidemiological and clinical literature indicates rates of various disorders among child and adolescent populations. Depressive disorders occur at rates of about 2-5 percent in community samples, from 10-50 percent in psychiatric settings, and increase with age (Schwartz, Gladstone & Kaslow, 1998). Rates of depressive disorders also are affected by a sex/age interaction, with higher rates in males prior to puberty but double the rate in females versus males by age 15. Attention-deficit and hyperactivity disorders are among the diagnoses most frequently given to children referred for mental health care, with prevalence rates in clinic and special education settings of around 50-60 percent (Whalen & Henker, 1998). In community samples, the prevalence among school age children is about 5 percent. Boys with the disorder outnumber girls by as much as 9:1, with this gender disparity tending to be greater in clinic rather than community samples. Conduct disorders have a prevalence in community samples of 6-16 percent for boys and 2-9 percent for girls (Kaplan & Sadock, 1998), with prevalence increasing by age, particularly for females (Frick, 1998). Oppositional disorders occur in community samples of children of all ages at a rate of 5- 7 percent (Frick, 1998), although epidemiological studies of preschool and early school-age children find characteristics of these disruptive behaviors in 7-25 percent of community samples (Campbell & Ewing, 1990; Crowther, Bond & Rolf, 1981). Anxiety disorders in children have a community prevalence of 6-18 percent and a clinical prevalence of 30-50 percent (Silverman & Ginsburg, 1998).

Treatment of Children's Mental Health Problems

Although mental health problems among children in foster care have been amply documented, the extent to which children in foster care receive mental health services has been less widely studied (see Halfon, Berkowitz & Klee, 1992 and Takayama, Bergman & Connel, 1994 as exceptions). Among the barriers to foster children receiving mental health care is a lack of routinely-implemented screening procedures to determine which children need care (Dale, Kendall & Schultz, 1999). Further, even when such procedures exist to identify needs for health care in general, mental health care needs may go unnoticed.

As a response to demands for better oversight of the health of children served by the child welfare system, Illinois HealthWorks was implemented in 1995 (Goerge, Bilaver, Jaudes, Masterson & Catania, 1997). HealthWorks uses a network of medical service providers who have agreed to accept as patients wards of the state for screening and ongoing service provision. HealthWorks also prescribes performance of a health screening within 24 hours of a child coming into care and a more comprehensive evaluation, under the guidelines of the Early and Periodic Screening Diagnosis and Treatment (EPSDT) program, within 21 days of an order of temporary custody. Both the initial health screening and the comprehensive evaluation include mental health and behavioral dimensions.

This report is an effort to document the extent of mental health service use for children in foster care in Illinois, the types of services used, the mental health diagnoses assigned to children using services, and the differences in service use by various population groupings (gender, race/ethnicity, placement type). Similar to the studies by Halfon et al. (1992) and Takayama et al. (1994), this study used existing data from administrative datasets to identify mental health services use for this population.

Method

Data for this study were obtained from the Children and Family Research Center, an independent research organization created jointly by the University of Illinois at Urbana-Champaign and the Illinois Department of Children and Family Services (DCFS). The data analyzed included the Illinois Medicaid Paid Claims Longitudinal Database linked with the DCFS Integrated Database, both of which are maintained by the Chapin Hall Center for Children at the University of Chicago. Since foster children in Illinois are categorically eligible for Medicaid, it is likely that mental health services they receive are billed to Medicaid. However, it is likely that some of these children receive mental health services that are not billed to Medicaid. The extent that this occurs is not known. The Medicaid claims data identifies paid medical claims for eligible individuals. The DCFS Integrated Database contains records of child welfare events, such as placements, as well as case status variables, such as reason for case opening and closure. The two data sources are linked using several pieces of information common to both sources. This process yields a high probability of a match at the individual level. Further description of the datasets is available in (Chapin Hall Center for Children at the University of Chicago, 2000; and Illinois Department of Children and Family Services).

Each record in the Medicaid dataset identifies a paid claim and includes a variety of information that establishes eligibility of the patient (e.g., Medicaid identification number, ICD-9 diagnosis code) for the service (given as a procedure code, using systems such as ICD-9, CPT , HCPCS, and state-defined codes). From the list of all ICD-9 diagnoses potentially included in the Medicaid data, we identified a subset of diagnoses that are consistent with DSM-IV diagnoses typically treated in the mental health system, excluding diagnoses indicating conditions such as mental retardation and substance abuse. For this analysis, we define ‘children who received mental health services’ by identifying claims which were billed for these recognizable mental health diagnoses. The

subgroup of the population identified in this manner is compared to the population as a whole for some of the analyses reported here.

To further examine the actual mental health services received, additional analysis was required. In all, 291 different procedures were billed on claims with recognizable mental health diagnoses. Upon inspection of this list of procedures, it appears that some are more clearly mental health treatments than others (e.g., 'psychiatric clinic' is clearly a mental health service but 'X-ray exam of chest' is not). Therefore, the description of *services* here will be limited to those on claims billed with recognizable mental health diagnoses that are also recognizable mental health treatment procedures.

This report includes Medicaid paid claims through August 18, 1999 and describes mental health service use for children who first entered the foster care system during calendar year 1997. The 1997 cohort was chosen for several reasons. First, screenings and evaluations of the foster care population had been implemented in FY 1995, so mental health problems of children entering care in 1997 should have been identified through these mechanisms. Note that this is not intended as an evaluation of the effectiveness of HealthWorks, but rather using a period of time well after implementation of HealthWorks when it is assumed that screening should be happening. Second, as much as two years may elapse between service provision and appearance of a paid claim in the Medicaid data, so 1997 cases are the most recent cases for which data may be assumed to be fairly complete in the Medicaid database (Goerge, et al. 1997).

The analysis excluded cases that were open less than 7 days (i.e., essentially unfounded) and cases that were opened for the reason of providing adoption assistance. Further, a small number of cases are deleted from some analyses because of invalid dates of service in the Medicaid data (e.g., cases that had one or more services for a mental health diagnosis that indicated an earlier end of service date than beginning of service date).

Results

This section will first discuss a description of the 1997 cohort, a description of the mental health service-using subset of that cohort, and differences between the subset and the cohort as a whole. Next, mental health service use will be described, including a discussion of the services themselves and the diagnoses for which children received services.

General Description of the Population

In 1997 (calendar year), 7,416 children experienced a first entry into the Illinois child welfare foster care system. These children were nearly equally distributed between male and female genders (see Table 1 for demographic characteristics). Four in 10 children who entered care were three years old or younger. Another 40 percent of the children were between ages three and 12. Racially, a little less than two-thirds were identified as African American, a little more than one-fourth as white, less than one percent as Hispanic, less than one percent Asian, Native American and unknown together, and almost two percent "other race/ethnicity". Neglect accounted for the majority of case openings, with abuse as the next most frequent reason cases were opened, accounting for about one in five cases. Sexual abuse accounted for less than two percent of case openings, and parent/child or child behavior problems accounted for almost three percent. The remaining 11.4 percent of cases were opened for other reasons or the reason was coded as missing.

Table 1				
Population Demographics				
Cases First Opened in 1997			Rec'd Mental Health Services	
	n	%	n	%
Gender				
Female	3704	49.95	547	42.17
Male	3705	49.96	749	57.75
Unknown	7	.09	1	.08
Age				
Under 3	3191	43.03	176	13.57
3-6	1224	16.50	202	15.57
6-9	1003	13.52	221	17.04
9-12	750	10.11	205	15.81
12-15	761	10.26	325	25.06
15-18	482	6.50	168	12.95
18+	5	.07	0	0
Race				
African American	4705	63.44	691	53.28
Asian	21	.28	4	.31
Hispanic	500	6.74	91	7.02
Native American	5	.07	0	0
Other	135	1.82	9	.69
Unknown	24	.32	4	.31
White	2026	27.32	498	38.4
Reason for Case Opening				
Abuse	1617	21.8	247	19.04
Neglect	4931	66.49	765	58.98
Parent/child or Child Behavior Problems	206	2.77	105	8.09
Sexual abuse	115	1.55	29	6.94
Other/missing	844	11.38	151	11.64
* The original coding scheme was collapsed to reflect the most generalizable reasons for opening a case				

Children with Mental Health Diagnoses

Of the children who first entered foster care in 1997, 17.49 percent (n=1,297) received one or more Medicaid paid services for a mental health diagnosis. This subset of the 1997 cohort differs in several ways from the cohort overall (again, see Table 1 for demographics). Although the cohort is evenly distributed across the genders, the mental health subpopulation has a larger proportion of males (57.75 percent males, 42.17 percent females). The mental health subgroup is older than the cohort as a whole, with the average age at case opening being 5.57 years for the cohort, versus 9.28 years for the group of children who received mental health services (See Table 2). Racial group representation is also quite different for the mental health population, with African Americans greatly underrepresented and whites substantially overrepresented. Although almost 64 percent of the caseload newly admitted in 1997 were African Americans, only 53 percent of the mental health population were African Americans. Conversely, only 27 percent of the caseload were white, but 38 percent of the mental health population were white. Among the mental health population, the gender distribution roughly holds across racial groups except among the smallest groups (Asian and "other" in which females are overrepresented and "unknown" in which males are overrepresented).

Finally, the mental health population differs from the caseload as a whole in terms of the reason for the case being opened. Understandably, children whose cases were opened for reasons of sexual abuse and parent/child or child behavior problems are overrepresented in the group that received mental health services, and children whose cases were opened for reasons of abuse and neglect are underrepresented. Children whose cases were opened because of neglect are particularly unlikely to have received mental health services. All of the differences described above between the caseload as a whole and the mental health service-using subset are highly statistically significant as illustrated in Table 2.

Table 2: Comparison of Composition of 1997 Cohort and Mental Health Subpopulation			
	Chi-Square	df	Significance
Gender	29.8332	2	< .001
Race	90.3065	6	< .001
Reason for case opening *	203.6239	4	< .001
	T-test	df	Significance
Age at entry to care	23.63	8711	< .0001
Mean for cohort = 5.57			
Mean for mh = 9.28			
* The original coding scheme was collapsed to reflect the most generalizable reasons for opening a case.			

Because of the level of specificity of diagnosis, numerous different codes are used to make small differentiations (e.g., specifying relative severity, single episode vs. recurrent, etc.). Although these differentiations are useful clinically, more general classifications of disorders generally are used for research purposes (see, e.g., Brandenburg, Friedman & Silver, 1990). Therefore, the diagnosis codes used in the Medicaid claims data were collapsed to the following 10 categories: Organic Mental Conditions; Affective Disorders; Anxiety Disorders; Schizophrenic Disorders; Pre-adult Diagnoses; Attention Deficit/Hyperactivity Disorders; Conduct Disorders; Personality Disorders; Oppositional Disorders; and Other Mental Conditions. In the remainder of the report, "diagnosis" refers to this categorization.

Most of these categories are fairly self-explanatory since they correspond with major categories of mental disorders described in the Diagnostic and Statistical Manual (APA, l994). Several bear a further description. Organic Mental Conditions is no longer a category in the DSM; instead, disorders that would have been characterized previously as such are now coded according to the presumed cause (e.g., ‘due to a medical condition’ or ‘substance induced’). Pre-adult Diagnoses here includes disorders typically seen only in young children, such as Separation Anxiety Disorder, and other general behavioral disorders seen in young children, excluding specific oppositional, conduct, and attentional/activity disorders. Finally, Other Mental Conditions includes disorders that are

primarily neurological (e.g., Tourettes), or related to eating (e.g., Eating Disorder NOS) or elimination (e.g., Enuresis).

Using the above coding scheme and Medicaid records with valid service dates, children received an average of 1.6 diagnoses each, ranging from a high of six to a low of one. The median number of diagnoses under which services were billed was one, so a majority of the children may be assigned to a single diagnostic category. To explore the frequency with which different diagnoses are applied, we computed the total number of diagnoses (see Table 3). Since a number of children had services billed for multiple diagnoses, the total number of diagnoses (2,032) exceeds the total number of children with valid Medicaid records (1,284).

Table 3: Count of Total Diagnoses by Gender

Diagnostic Category	Female		Male		Total	
	Freq.	%	Freq.	%	Freq.	%
Organic Disorders	5	.60	5	.42	10	.49
Affective Disorders	248	29.92	272	22.63	520	25.59
Schizophrenia	36	4.34	49	4.08	85	4.18
Anxiety Disorders	53	6.39	41	3.41	94	4.63
Preadult Diagnoses	3	.36	7	.58	10	.49
Other Mental Conditions	117	14.11	126	10.48	244	12.01
ADHD	103	12.42	290	24.13	393	19.34
Conduct Disorders	152	18.34	287	23.88	439	21.60
Oppositional	99	11.94	113	9.40	212	10.43
Personality Disorders	13	1.57	12	1.00	25	1.23
TOTAL	829	100	1202	100	2032	100

A little more than one-quarter of the diagnoses are affective disorders. Significant proportions of the diagnoses assigned included ADHD and conduct disorders (about one in five diagnoses fell into each of these categories), and ‘other mental conditions’ and oppositional disorders (more than one in 10 diagnoses in each). Not surprisingly, the patterns of diagnoses differ by gender, with greater proportions of diagnoses assigned to males falling into the ADHD and conduct disorders categories, and greater proportions of

diagnoses assigned to females falling into the affective disorders, anxiety disorders, oppositional, and other mental conditions categories. In general, males are diagnosed with ADHD and conduct disorders more frequently than are females, and females are diagnosed with more affective and anxiety disorders than are males (Olendick & Hersen, 1998).

Although the epidemiological literature has not identified vastly different patterns of occurrence of mental health disorders among different racial groups, the diagnoses assigned to children who received mental health services reveal different patterns for different races (see Table 4). Oppositional disorders were applied most disproportionately, with white children overrepresented and African American and Hispanic children underrepresented at a rate of almost 2:1. Attention-deficit/Hyperactivity disorders were the next most disproportionately applied, in the same pattern of overrepresentation of white children and underrepresentation of African American and Hispanic children. Other Mental Conditions were diagnosed disproportionately more frequently among African American and Hispanic children and less frequently among white children. The only category of disorders applied in proportions mirroring the mental health racial distribution as a whole was Conduct Disorders.

Table 4: Count of Total Diagnoses by Race						
Diagnostic Category	African American		Hispanic		White	
	Freq.	%	Freq.	%	Freq.	%
Organic Disorders	5	.49	2	1.56	3	.35
Affective Disorders	252	24.85	35	27.34	224	25.87
Schizophrenia	46	4.54	3	2.34	36	4.16
Anxiety Disorders	43	4.24	5	3.91	46	5.31
Preadult Diagnoses	5	.49	3	2.34	2	.23
Other Mental Conditions	155	15.29	29	22.66	54	6.24
ADHD	187	18.44	17	13.28	187	21.59
Conduct Disorders	235	23.18	29	22.66	170	19.63
Oppositional	77	7.59	5	3.91	128	14.78
Personality Disorders	9	.89	0	0.0	16	1.85
TOTAL	1014	100	128	100	866	100

Time to First Mental Health Service

The system changes of the HealthWorks implementation were intended to speed identification and treatment of medical, vision, dental, developmental and mental health problems. In the cohort of children who first entered care in 1997, the average length of time between entry into foster care and the first Medicaid billed mental health service was 234 days, ranging from 0 days (i.e., children who received Medicaid mental health services prior to entering the foster care system) to 880 days. Half of the children who received mental health services began receiving them within 153 days, and one-quarter within 30 days.

Although gender differences in average time to first service are small (242 days for girls, 228 days for boys), racial differences in the time to first service are striking. Among the three largest groups represented, the average for Hispanic children is the most similar to the overall average (229 days for Hispanic children vs. 234 overall). White children received mental health services on average more than two months earlier and African American children received services almost two months later (160 days for white children, 288 days for African American children). The average time to first service is also quite different for groups of children in different types of foster placements. Children in placements with relatives (kinship care) on average first received mental health service

326 days after entering care, compared to children in all other types of foster placements who first received mental health services 215 days after entering care. The average for children in kinship care is more than three months later than the overall average time until the first service.

Services Billed for Mental Health Diagnoses

In all, 20,732 procedures were billed with mental health diagnoses. The average number of services for mental health diagnoses was 19.7 per child, although half of the children received seven or fewer services. The number of services children received ranged from one to 152. It is likely that some of these children received mental health services that were not billed to Medicaid. The extent to which this was true is unknown.

The large list of mental health procedures was collapsed into 17 categories to aid in interpretation of the types of services received. These categories and the proportion of procedures billed for that category are in Table 5. About 9 percent (1,866) of claims were for procedures that are not readily recognized as mental health services (e.g., services other than psychotherapies, case management, crisis intervention, etc.). The most frequently billed category of services was in-patient and residential care, accounting for almost one in five services. Substantial numbers of services also were billed for two 'comprehensive service' types, mental health and rehabilitation, each accounting for more than one in 10 services. Individual therapy also accounted for more than one in 10 services. Diagnostic interviews were provided nearly as frequently as case management, accounting for only around four percent of services each.

Table 5: Types of Services Across All Claims		
Type of service	**Frequency**	**Percentage of all Services**
In-patient/residential	4,579	22.1
DCFS Comprehensive Rehab	4,136	19.9
DCFS Comprehensive Mental	3,544	17.1
Health Therapy--individual	3,321	16.0
Case management	1,035	5.0
Office visits @ hospital	1,090	5.3
Diagnostic interviews	995	4.8
Stabilization	966	4.7
Evaluation/Management	894	4.3
Consultation	711	3.4
Medication management	579	2.8
Emergency/crisis	567	2.7
Therapy--family	551	2.7
Treatment planning	218	1.1
Therapy--group	151	0.7
Partial hospitalization	40	0.2
Non-mental health procedures	1,866	9.0

In the previous analysis, a single individual is represented as many times as he or she received any service. Further analysis at the individual level reveals a very different picture of service use (see Table 6). Although the service most frequently paid for was in-patient or residential, only 14 percent of the children who received mental health services had in-patient or residential care. Conversely, diagnostic interviews accounted for a relatively small proportion of the services billed, but was the service provided to the most individual children (41 percent). Case management, although relatively infrequently provided, was received by almost one in five children.

In a rational system, the first mental health service an individual would receive would be a diagnostic interview of some type, to determine eligibility for services, the type of problem the individual has (e.g., the diagnosis), and type of services required. Without such assessments, a diagnosis may be based on very limited information. However, sometimes individuals may have sudden, severe problems that necessitate use of emergency or crisis services. These types of services often are provided in community-based as well as in-patient settings. Some caregivers (including foster parents) might first

consult a primary care doctor, which would result in an evaluation that would not be described as a diagnostic interview. The preference is for all services to be provided in the least restrictive environment possible, but some children are not seen for mental health problems until the condition is so severe that it warrants hospitalization.

Table 6: Types of Services Received by Individual Children

Type of service	Frequency	Percentage of Children Who Received
In-patient residential	179	13.94
DCFS Comprehensive Rehab	133	10.36
DCFS Comprehensive Mental	125	9.74
Health Therapy--individual	466	36.29
Case management	229	17.83
Office visits @ hospital	305	23.75
Diagnostic interviews	530	41.28
Stabilization	109	8.49
Evaluation/Management	358	27.88
Consultation	187	14.56
Medication management	166	12.93
Emergency/crisis	251	19.55
Therapy--family	141	10.98
Treatment planning	131	10.20
Therapy--group	49	3.82
Partial hospitalization	23	1.79
Non-mental health procedures	92	7.17

Since diagnostic interviews occurred for less than half of the children who received mental health services, we examined the first services received to determine whether children are first being seen in community-based or more restrictive settings. This is a rough measure of the appropriateness of the first service from the perspective of early identification and treatment before intensive, expensive services are necessary.

Table 7 summarizes the first services received. For 246 of the children (19 percent), the first service was a diagnostic interview. An additional 169 (13 percent) of children were first seen for an evaluation by a medical doctor, probably in a primary care setting of some type. A total of 141 children (11 percent) received emergency/crisis, consultation, or stabilization as a first service. These types of services usually are community-based services, in which it is not uncommon for an individual to present with

Table 7: First Service Received by Gender						
Type of Service	Female		Male		Total	
	Freq.	%	Freq.	%	Freq.	%
Diagnostic interviews	115	21.18	131	17.68	246	19.16
Office visits @ hospital	93	17.13	118	15.92	211	16.43
Non-mental health procedures	84	15.47	119	16.06	203	15.81
Evaluation/Management	64	11.79	105	14.17	169	13.16
Therapy--individual	36	6.63	50	6.75	86	6.70
Emergency/crisis	46	8.47	39	5.26	85	6.62
DCFS Comprehensive Rehab	15	2.75	35	4.72	50	3.89
DCFS Comprehensive Mental Health	17	3.13	29	3.91	46	3.58
In-patient/residential	22	4.05	21	2.83	44	3.43
Case management	15	2.76	23	3.01	38	2.96
Consultation	13	2.39	24	3.24	37	2.88
Stabilization	7	1.29	12	1.62	19	1.48
Medication management	2	0.37	14	1.89	16	1.25
Treatment planning	4	0.74	10	1.35	14	1.09
Therapy--family	7	1.29	6	0.81	13	1.01
Therapy--group	3	0.55	3	0.40	6	0.47
Partial hospitalization	0	0.00	1	0.13	1	0.08
Total	543	100.00	741	100.00	1284	100.00

problems warranting a mental health diagnosis but who has previously not had mental health treatment. The two 'comprehensive services' categories (mental health and rehabilitation) also may include diagnostic interviews that are not billed separately. About seven percent of children received one of these services as the first mental health service. At the other end of the service continuum, some 3.5 percent of the children experienced in-patient hospitalization or residential care as their first mental health service. An additional 16 percent had the first service at an office visit at a hospital. Thus, almost one in five children received a first mental health service in a restrictive (in-patient, residential) or fairly restrictive (office at a hospital) setting. It should be noted that services in restrictive settings are not necessarily unwarranted, but in a system that *is* attempting to comprehensively identify health and mental health needs of children on the front-end, this may be a large proportion of first services to be delivered in restrictive

settings. The number of children whose first service for a mental health diagnosis was a non-mental health procedure was almost as great as the number whose first service was a diagnostic assessment (n = 203, 16 percent).

Both racial and gender differences are observed in first service received (see Table 7 for gender differences, Table 8 for racial differences). The most frequently provided first service for both African American and white children was a diagnostic interview, received by 20 percent of each of these groups of children. Hispanic children, on the other hand, were overwhelmingly first seen in an office visit at a hospital (46 percent). A slightly larger proportion of girls had a diagnostic interview as a first service (21 percent of girls and 18 percent of boys).

Table 8: First Service Received by Race

Type of Service	African American		Hispanic		White	
	Freq.	%	Freq.	%	Freq.	%
Diagnostic interviews	136	19.94	9	10.00	100	20.20
Office visits @ hospital	120	17.60	41	45.56	44	8.89
Non-mental health procedures	113	16.57	9	10.00	78	15.76
Evaluation/Management	84	13.32	9	10.00	74	14.95
Therapy--individual	52	7.62	1	1.11	32	6.46
Emergency/crisis	28	4.11	5	5.56	52	10.51
DCFS Comprehensive Rehab	23	3.37	3	3.33	22	4.44
DCFS Comprehensive Mental Health	23	3.37	3	3.33	20	4.04
In-patient/residential	35	5.13	3	3.33	5	1.01
Case management	18	2.64	3	3.33	17	3.43
Consultation	19	2.79	1	1.11	16	3.23
Stabilization	7	1.03	1	1.11	11	2.22
Medication management	6	0.88	1	1.11	9	1.82
Treatment planning	6	0.88	1	1.11	7	1.41
Therapy--family	6	0.88			7	1.41
Therapy--group	5	0.73			1	0.20
Partial hospitalization	1	0.15				
Total	682	100	90	100	495	100

Some differences in the first service also are noted for children in kinship care arrangements (see Table 9). More children in kinship care first received a diagnostic interview than the .group as a whole (23 percent of children in kinship care vs. 19 percent of all children). However, a substantially greater proportion of children in kinship care were first served in in-patient or residential settings than were children as a whole (8 percent of children in kinship care vs. 3 percent of all children).

Table 9: First Service Received by Kinship Care/Non-kinship Care

Type of Service	Kinship Care		All Other Placements		Total	
	Freq.	%	Freq.	%	Freq.	%
Diagnostic interviews	51	22.57	195	18.43	246	19.16
Office visits @ hospital	45	19.91	166	15.69	211	16.43
Non-mental health procedures	34	15.04	169	15.97	203	15.81
Evaluation/Management	29	12.83	140	13.23	169	13.16
Therapy--individual	18	7.96	68	6.43	86	6.70
Emergency/crisis	13	5.75	72	6.81	85	6.62
DCFS Comprehensive Rehab	4	1.77	46	4.35	50	3.89
DCFS Comprehensive Mental Health	2 0.	88	44	4.16	46	3.58
In-patient/residential	19	8.41	25	2.36	44	3.43
Case management	2	0.88	36	3.40	38	2.96
Consultation	2	0.88	35	3.31	37	2.88
Stabilization	1	0.44	18	1.70	19	1.48
Medication management	2	0.88	14	1.32	16	1.25
Treatment planning	1	0.44	13	1.23	14	1.09
Therapy--family	3	1.33	10	0.95	13	1.01
Therapy--group			6	0.57	6	0.47
Partial hospitalization			1	0.09	1	0.08
Total	226	100	1058	100	1284	100

As far as the restrictiveness of setting of the first service, Hispanic children were seen first in restrictive settings at a rate of more than double that of the mental health population as a whole and children in kinship care were first seen in restrictive settings at a rate of about one-and-one-half times that of the whole population (see Table 10). White children were most frequently seen in community-based and less frequently seen in restrictive settings, by about 20 percent and 50 percent, respectively. A slightly greater proportion of girls than boys were first seen in both less restrictive (e.g., diagnostic interviews, emergency/crisis, comprehensive services, consultation or stabilization) and more restrictive (services at a hospital, including in-patient/residential) than boys.

Table 10: Setting of First Mental Health Service

	Community-based[1]		Restrictive[2]		Other[3]	
	Freq.	%	Freq.	%	Freq.	%
Total MH	652	50.78	256	19.94	376	29.28
Females	277	51.01	115	21.28	151	27.81
Males	375	50.61	140	18.89	226	30.50
African American	322	47.21	156	22.87	204	29.91
Hispanic	31	34.44	44	48.89	15	16.67
White	295	59.60	49	9.90	151	30.50
Kinship	102	45.13	64	28.32	60	26.55
Non-kinship	550	51.98	192	18.15	316	29.87

[1] Includes first services of diagnostic assessment, evaluation/management, emergency/crisis, consultation, stabilization, comprehensive mental health, and comprehensive rehabilitation.
[2] Includes first services of in-patient/residential, office visits at hospital, and partial hospitalization.
[3] Includes first services in other specialty mental health settings as well as all non-mental health procedures.

Discussion

This report is a first look at mental health treatment for children in foster care in Illinois, using Medicaid data to explore service use. Less than 20 percent of the children who first entered care in 1997 had received services for a mental health diagnosis by August 1999, although studies indicate that mental health problems warranting attention occur in the majority of children in foster care. The 20 percent figure underrepresents the true percentage because it leaves out children who may have received mental health services that were not billed to Medicaid. It is not possible to accurately determine the extent to which this occurs.

Previous studies have identified higher rates of mental health service utilization in foster care populations than here. In Washington state, Takayama, Bergman, and Connell (1994) found a rate of utilization of 25 percent of children eight years old and younger. In California, Halfon, Berkowitz, and Klee (l992a; 1992b) found mental health utilization for children in foster care 15 times greater than that of all children eligible for Medicaid. Also in California, Garland, Landsverk, Hough and Ellis-Macleod (1996) found mental health service utilization by 56 percent of children within the first eight months of placement in foster care. The exception is Glisson (1994, 1996), which indicated only 14 percent had been referred for mental health services. In comparison to most other studies, it seems that the 1997 cohort of Illinois foster children was underserved for mental health problems.

A large proportion of children who entered care are three years old or younger. Only about 14 percent of these children received any mental health services. However, mental health service use in general is much more common for older children, as assessment and treatment are better understood. Of children and adolescents older than three years of age, almost 27 percent received mental health services. Although still

lower than estimates of need, this proportion is more in line with other studies of utilization.

The gender difference of a greater proportion of males receiving services is not surprising. Males are often overrepresented for mental health services. This gender distribution held, for the most part, across racial groups, also as expected. Consistent with the findings of Garland, Landsverk, Hough and Ellis-Macleod (1996), it is also to be expected that a greater proportion of children whose cases were opened because of sexual abuse would receive mental health services. What is more surprising, perhaps, is that more of the children whose cases were opened because of sexual abuse did not receive mental health services of some type. Perhaps these children receive interventions that are not billed to Medicaid.

Comparisons with the epidemiological and clinical data presented earlier confirm that the children in this entry cohort are underserved for specific mental health problems as well as for mental health problems in general. For instance, diagnoses of ADHD are about .one-fourth to one-half of what would be expected for clinical samples. Further, boys with ADHD usually outnumber girls by about 9:1, but here outnumber girls diagnosed with these disorders by only 2:1, meaning that ADHD is underidentified in boys, in particular, in this cohort. In terms of anxiety disorders, girls are diagnosed only within the range expected for community samples and boys at less than half of what would be expected in a community sample. Since Post-Traumatic Stress Disorder, an anxiety disorder, is a common consequence of both sexual abuse and severe physical abuse, it is very likely that there are many children in foster care whose symptoms are not recognized.

The racial differences observed in proportions of children served with various disorders is, unfortunately, consistent with previous studies. Some evidence exists that various mental disorders are diagnosed with different frequencies according to race and sex. For instance, in one study of diagnoses applied to adolescents who were hospitalized,

African American males were more commonly diagnosed with schizophrenic spectrum disorders than were African American females or Caucasian females and males (DelBello, Lopez-Larson, Soutullo & Strakowski, 2001). In the same study, significantly more African Americans were diagnosed with conduct disorder than were Caucasians, and Caucasians were diagnosed with alcohol use disorders and major depression more frequently than African Americans were. Similarly, African American adolescents discharged from a state psychiatric hospital in South Carolina had fewer mood, anxiety and substance abuse diagnoses but significantly more organic/psychotic diagnoses (Kilgus, Pumariego & Curfe, 1995). As DelBello et al. noted, further investigation would be necessary to determine whether these differences in diagnosis represent actual differences in rates of illnesses or other factors.

Racial differences in treatment, as well as diagnosis, also have been noted in the literature. African American children and adolescents with depression, recruited from both the mental health system and the community, received treatment less frequently than Caucasians (Wu, Hoven, Cohen, Liu, Moore, Tiet, Okezie, Wicks & Bird, 2001). However, treatment differences by race or ethnicity are not universally detected. In a study in a primary care setting, race and ethnicity were not associated with any differences in prescribing of psychotropic medications, counseling, referral, or recognition of psychosocial problems (Kelleher, Moore, Childs, Angelilli & Comer, 1999).

Among children in the child welfare system, one study found Caucasian children were significantly more likely to get mental health services, per caregiver report, than were African American or Hispanic children, controlling for severity of problems, type of maltreatment experiences, age and gender (Hough, Garland & Reynolds, 1995, cited in Garland & Besinger, 1997). Garland and Besinger (1997) found that court referrals and orders for mental health services for children in foster care differed for children of

different racial/ethnic groups, with Caucasian youth more likely to receive court orders for therapy than African American and Hispanic youth.

In the current analysis, oppositional disorders and ADHD, in particular, were applied disproportionately to white children, and Other Mental Disorders assigned more frequently to African American and Hispanic children. It is unknown whether these disparities result from what is acceptable to different communities or racial groups, ethnic or racial bias in applying diagnostic categories, different sites of diagnosis, or some other factor. Unlike the works cited above, African American children were not over-identified for schizophrenia and conduct disorders relative to white children.

In terms of how quickly children begin receiving mental health services, only 28 percent had services within 30 days of entering care. This proportion probably should be higher, if the screening and evaluation mechanisms are working properly. On the other hand, since children often are developmentally incapable of verbally reporting on their emotional states, their mental health problems are most frequently identified based on observations over time by caregivers or teachers. Therefore, even if timely screening procedures are in place, it may take longer for foster parents to learn of emotional or behavioral problems that should be reported and treated. In any case, the time to first service is greatly improved for the 1997 cohort over the 1996 cohort, in which the average time to first service was 468 days, the median 420, and only 10 percent within 35 days.

For African American children and children in kinship care arrangements, the time to first service is considerably greater than for children as a whole, white children, and children in non-relative placements. It is unknown whether these disparities represent group differences in help-seeking behavior, differential access to services, differences in interpretation of behavioral indicators, or some other combination of factors. However, since children in kinship care are disproportionately first seen in restrictive settings, it

may be that family members are more tolerant of disturbing behavior until it reaches a critical or dangerous point.

There is likely some unanalyzed confounding of African American race and kinship care. Although the majority (77 percent) of children in kinship care in this cohort are African American, the majority (71 percent) of African American children are in non-relative foster care. Further multivariate analysis is required to explore the extent to which this type of confounding is an issue.

It is heartening that the vast majority of children receiving services did so in community-based settings. On the other hand, it is somewhat disturbing that the greatest number of services provided was in-patient or residential. Consistent with previous studies, relatively few children account for this most intensive level of service (14 percent had in-patient or residential care). Perhaps earlier identification and treatment of problems, especially for the groups of children who were most frequently first seen in restrictive settings, would help shift service use more toward community-based services.

Further analysis is necessary to examine whether children who have mental health problems, represented here by receipt of mental health services, experience different outcomes from foster care than children who are not identified with such problems. Further research, involving additional data collection, would be necessary to determine whether the differences in rates of service represent differences in mental health problems for the various groups analyzed.

References

American Psychological Association (1994). *Diagnostic and Statistical Manual of Mental Disorders. Vol. 4.*Washington, DC.

Bilaver, L.A., Jaudes, P.K., Koepke, D. & Goerge, R.M. (1999). The health of children in foster care. *Social Service Review*, pp. 401-417.

Brandenburg, N., Friedman, R.M. & Silver, S.E. (1990). The epidemiology of childhood psychiatric disorders: Prevalence findings from recent studies. *Journal of the American Academy of Child and Adolescent Psychiatry*, 29, 76-83.

Campbell, S.B. & Ewing, L.J. (1990). Follow-up of hard-to-manage preschoolers: Adjustment at age 9 and predictors of continuing symptoms. *Journal of Child Psychology and Psychiatry*, 31, 871-889.

Chapin Hall Center for Children at the University of Chicago (2000). *Illinois Medicaid Paid Claims Longitudinal Database Codebook, Version 1.0*. Chicago, IL.

Crowther, J.K., Bond, L.A., & Rolf, J.E. (1981). The incidence prevalence, and severity of behavior disorders among preschool-age children in day care. *Journal of Abnormal Child Psychology*, 21, 5-18.

Dale, G., Kendall. J.C. & Schultz, J.S. (1999). A proposal for universal medical and mental health screenings for children entering foster care. In P.A. Curtis, G. Dale, Jr. & J.C. Kendall (Eds.), *The Foster Care Crisis: Translating Research Into Policy and Practice* (pp. 175-192). Lincoln. NE: University of Nebraska Press.

DelBello, M.P., Lopez-Larson, M.P.. Soutullo. C.A. & Strakowski, S.M. (2001). Effects of race on psychiatric diagnosis of hospitalized adolescents: A retrospective chart review. *Journal of Child and Adolescent Psychopharmacology*, 11, 95-103.

Frick, P.J. (1998). Conduct disorders. In T.H. Olendick & M. Hersen (Eds.), *Handbook of Child Psychopathology (3rd ed.)* (pp. 213-237). New York: Plenum.

Garland, A.F. & Besinger, B.A. (1997). Racial/ethnic differences in court referred pathways to mental health services for chi1dren in foster care. *Children and Youth Services Review*, 19, 651-666.

Garland, A.F., Landsverk, J.A., Hough, R.L., & Ellis-Macleod, E. (1996). Type of maltreatment as a predictor of mental health service use in foster care. *Child Abuse and Neglect*, 20, 675-688.

Glisson, C. (1994). The effects of services coordination teams on outcomes for children in state custody. *Administration in Social Work*, l8, 1-23.

Glisson, C. (1996, June). Judicial and service decisions for children entering state custody: The limited role of mental health. *Social Service Review*, 70*,* 257-281.

Goerge, R., Bilaver, L., Jaudes, P.K., Masterson, J. & Catania, C. (1997). *Health Status of Children in Foster Care in Illinois Report*. Chicago, IL: Chapin Hall Center for Children.

Halfon, N., Berkowitz, G. & Klee, L. (1992a). Children in foster care in California: An examination of Medicaid reimbursed health services utilization. *Pediatrics*, 89, 1230-1237.

Halfon, N., Berkowitz, G. & Klee, L. (1992b). Mental health service utilization by children in foster care in California. *Pediatrics*, 82, 1238-1244.

Horwitz, S.M., Simms, M.D. & Farrington, R. (1994). Impact of developmental problems on young children's exits from foster care. *Journal of Developmental and Behavioral Pediatrics*, 15, 105-110.

Illinois Department of Children and Family Services (2000). *Integrated Database Case Book*. Chicago, IL: Chapin Hall Center for Children at the University of Chicago.

Kaplan, H.I. & Sadock, B.J. (1998). Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences. *Clinical Psychiatry* (8th ed.). Baltimore, MD: Williams and Wilkins.

Kelleher, K.J., Moore, C.D., Childs, G.E., Angelilli, M.L & Comer, D.M. (1999). Patient race and ethnicity in primary care management of child behavior problems: A report from PROS and ASPN. *Medical Care*, 37, 1092-1104.

Kilgus, M.D., Pumariego, A.J. & Cuffe, S.P. (1995). Influence of race on diagnosis in adolescent psychiatric inpatients. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 67-72.

Landsverk, J., Davis, I., Ganger, W., Newton, R. & Johnson, I. (1996) Impact of child psychosocial functioning on reunification from out-of-home care. *Children and Youth Services Review*, 18, 447-462.

Landsverk, J. & Garland, A.F. (1999) Foster care and pathways to mental health services. In P.A. Curtis, G. Dale, Jr. & Kendall, J.C. (Eds.) *The Foster Care Crisis: Translating Research into Policy and Practice* (pp. 193-210) Lincoln, NE: University of Nebraska Press.

Leslie, L.K., Landsverk, J., Ezzet-Lofstrom, R., Tschann, J.M., Slymen, D.J. & Garland, A.F. (2000). Children in foster care: Factors influencing outpatient mental health service use. *Child Abuse and Neglect*, 24, 465-476.

Newton, R.R., Litrownik, A.J. & Landsverk, J.A. (2000) Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse and Neglect*, 24, 1363-1374.

Olendick, T.H. & Hersne, M. (Eds.) (1998). *Handbook of Child Psychopathology* (3rd Ed.). New York: Plenum.

Pilowsky, D. (1995). Psychopathology among children placed in family foster care. *Psychiatric Services*, 46, 906-910.

Schwartz, J.A.J., Gladstone, T.R.G. & Kaslow, N.J. (1998). Depressive disorders. In T.H. Olendick & M. Hersen (Eds.), *Handbook of Child Psychopathology* (3rd Ed.) (pp. 269-289). New York: Plenum.

Silverman, W.K. & Ginsburg, G.S. (1998). Anxiety disorders. In T.H. Olendick & M. Hersen (Eds.), *Handbook of Child Psychopathology* (3rd ed.) (pp. 239-268). New York: Plenum.

Stein, E., Evans, B., Muzumbar, R. & Rae-Grant, N. (1996). The mental health of children in foster care: A comparison with community and clinical samples. *Canadian Journal of Psychiatry*, 41, 385-391.

Takayama, J.I., Bergman, A.B. & Connell, F.A. (1994) Children in foster care in the state of Washington: Health Care utilization and expenditures. *Journal of the American Medical Association*, 271, 1850-1855.

Whalen, C.K. & Henker, B. (1998). Attention-deficit/hyperactivity disorders. In T.H. Olendick & M. Hersen (Eds.), *Handbook of Child Psychopathology* (3rd ed.) (pp. 181-212). New York: Plenum.

Wu, P., Hoven, C.W., Cohen, P., Liu, X., Moore, R.E., Tiet, Q., Okezie, N., Wicks, J. & Bird, H.R. (2001). Factors associated with use of mental health services for depression by children and adolescents. *Psychiatric Services*, 52, 189-195.