

USE OF EMERGENCY DEPARTMENTS
FOR MENTAL HEALTH CARE
FOR CONNECTICUT'S CHILDREN

A RISING TIDE



REPORT ONE: CHILDREN
ENROLLED IN HUSKY A

January 2007

Prepared by:

Human Services Research Institute,
Cambridge, MA

Virginia Mulkern, Ph.D.

Barbara Raab, BA

Deborah Potter, MA

For the Child Health and Development
Institute of Connecticut, Inc.

Funded by the Connecticut Department
of Children and Families



Child Health and Development
Institute of Connecticut, Inc.
www.chdi.org

A RISING TIDE

USE OF EMERGENCY DEPARTMENTS FOR MENTAL HEALTH CARE FOR CONNECTICUT'S CHILDREN

REPORT ONE: CHILDREN ENROLLED IN HUSKY A

The Child Health and Development Institute of Connecticut is a not-for-profit organization dedicated to the mission that children in Connecticut who are disadvantaged have access to and make use of a comprehensive, effective, community-based health and mental health care system.

The Human Services Research Institute develops policies and undertakes research, development, and evaluation projects in the fields of developmental disabilities, physical disabilities, mental health, and child welfare.

For additional copies, call 860.679.1519
or visit www.chdi.org or www.state.ct.us/dcf



Child Health and
Development Institute
of Connecticut, Inc.

Table of Contents

Introduction.....	1
Method.....	5
Trends in the ED Visit Rate: 2002-05.....	5
Are Children Connected to the Service System Prior to ED Visits?.....	8
Are Children Connected to the Service System Following ED Visits?.....	13
Service Connections Preceding and Following ED Visits.....	16
Multiple ED Visits.....	18
Summary.....	20
Conclusion.....	22

List of Tables

Table 1: Number of ED visits with a Primary Psychiatric Diagnosis, by Fiscal Year.....	6
Table 2: Number of ED Visits, by Age and Fiscal Year.....	6
Table 3: Number of ED Visits, by Gender and Fiscal Year.....	7
Table 4: Number of ED Visits by Diagnostic Category and Fiscal Year.....	7
Table 5: Number of Days Between ED Visits; Most Recent Service Contact, by Fiscal Year.....	8
Table 6: Total Days of Service Contact Six Months Prior to Visit, by Fiscal Year.....	9
Table 7: Number of Days Since Most Recent Service Contact, by Service Type.....	10
Table 8: Number of Days Since Most Recent Service Contact, by Age.....	11
Table 9: Total Days of Service Contact Prior to ED Visit, by Age.....	12
Table 10: Percent of ED Visits with Prior Service Contact, During the Preceding Six Months, by Gender.....	12
Table 11: Number of Days Between ED Visit and Subsequent Service Contact, by Fiscal Year.....	13
Table 12: Total Days of Subsequent Service Contact by Fiscal Year.....	14
Table 13: Percent of ED Visits with Subsequent Service Contact During the Following Six Months, by Age.....	15
Table 14: Total Days of Subsequent Service Contact, by Age.....	16
Table 15: Connection to the Service System Prior to and Following ED Visits, by Year.....	17
Table 16: Connection to the Service System Prior to and Following ED Visits, by Age.....	17
Table 17: Number of Children with Multiple ED Visits in a 6-Month Period, by Fiscal Year.....	19
Table 18: Number of Children with Multiple ED Visits in a 6-Month Period, by Age.....	19

A RISING TIDE: USE OF EMERGENCY DEPARTMENTS FOR MENTAL HEALTH CARE FOR CONNECTICUT'S CHILDREN

Report One: Children Enrolled in HUSKY A

Introduction

Pressures on hospital emergency departments (EDs) are mounting all over the country as the ranks of the uninsured swell and access to routine and preventive care diminishes.^{1,2,3,4} One important component of this increased demand is the disproportionate role played by childhood psychiatric emergencies.^{5,6}

National estimates using the National Hospital Ambulatory Medicare Care Survey (NHAMCS) indicate that, on average, 433,551 pediatric ED visits occurred each year from 1993 to 1999 for behavioral health care.⁷ More recent data from the same source (2002) suggest that the number of annual ED visits for all diagnoses increased nationally by 23% between 1992 and 2002.⁸ The continued and increasing need has led the American Academy of Pediatrics and the American College of Emergency Physicians to issue a policy statement calling for increased mental health resources for children and adolescents.⁹

The reasons for this escalation in ED visits among children with mental health issues are related to both the growth in the numbers of such children and adolescents as well as the paucity of treatment services and supports to meet their needs. Research has indicated that children and adolescents are the fastest growing segment of the population with mental health disorders,¹⁰ especially among those who are non-white, teenage, female and living either in the Northeast or Midwest.⁷ Children and adolescents with mental health disorders, however, are among the least likely to receive routine care. Approximately 20% of children between 9 and 17 years of age have some type of diagnosable psychiatric disorder¹¹ and between 9% and 13% have a "serious emotional disturbance".^{10,12} Often, these children also exhibit dangerous behaviors (either homicidal or suicidal).^{10,13} Given the "zero-tolerance policies" adopted by many school systems, any indication of aggression may result in psychiatric intervention, further taxing an already burdened emergency health care system.^{6, 14}

Despite these rates, relatively few children with mental health needs are receiving services. By some reports, only 20% of children who are emotionally disturbed receive treatment^{10,15}, while other sources cite a higher rate of 30%¹⁶. A variety of factors account for the fact that relatively few children and adolescents with mental health disorders receive care.¹⁷ First, there has been a noted decrease in both inpatient (pediatric) psychiatric beds⁵ and other community-based mental health services for children and adolescents. In addition, many communities have no psychiatrists – a fact that is exacerbated by the shortage of psychiatrists who have received training in pediatric psychiatry.¹⁸ Similarly, the training of emergency department physicians in pediatric care is limited.¹⁹

Further, the “rationing” of care as a consequence of managed care and other insurance restrictions has played a role in funneling children with psychiatric crises to the hospital ED. For those children who do receive care, the presence of private insurance coverage has been noted as an important factor associated with whether children and adolescents are able to gain access to inpatient or outpatient services.²⁰ As the numbers of uninsured children and children on public assistance (Medicaid) have both increased, emergency departments have become the treatment venue of last resort for both behavioral and physical health concerns.^{6, 21}

Hospital emergency departments have few mechanisms for regulating this demand since Federal law prohibits treatment facilities from refusing care for “walk-ins.” Therefore, children who seek treatment in the ED are on occasion held for hours or even days before a suitable bed in a treatment facility is found.²² As a result, since the ED is one of the most expensive settings in the hospital, high costs are incurred while waiting for approved treatment placement.¹⁰ Nonetheless, despite the growing evidence of a national crisis²³, little has been done to develop strategies going forward.^{22, 24}

The state of Connecticut is no exception to this national trend and has experienced similar difficulties. The Connecticut Hospital Association reported that ED visits across all Connecticut population groups increased by 15% between 1995 and 2004.¹ Of particular concern in Connecticut has been the use of emergency care financed by public funds. Connecticut Voices for Children has reported on ED visits for all diagnoses made by children and youth enrolled in

¹ CHIME Data Fact Sheet: Emergency department utilization, September, 2005.

HUSKY A. Their report suggests that between 2002 and 2004, ED visits by children and youth enrolled in HUSKY A increased by 25%. They also note that enrollment increased by 22% during this same period.² In 2002, testimony in support of Connecticut Senate Bill 249 (supporting increases in appropriations for mental health services for children) detailed pediatric psychiatric use of EDs in the state. The presentation also noted that the volume of ED visits had increased and that some children and adolescents who were released from emergency care had been waiting for follow-up placements for up to 16 days. More recently, several hospitals are reporting that the problems of managing children with mental health problems in the EDs persist and are creating a serious crisis. Given the recent authorization of the next phase of Connecticut Community KidCare through the Behavioral Health Partnership, this is an opportune time to conduct a more in-depth look at ED child and adolescent admissions, since they are an emerging and important indicator of the effectiveness of the mental health service system in the state in serving this population.

The Connecticut children's behavioral health care system, like state systems around the country, is seriously overextended. Not only are community support services often insufficient to keep children in their communities, but hospital-based care and services following discharge are insufficient. In order to address this troubling phenomenon, the following analysis seeks to both track the numbers of ED admissions of children for psychiatric emergencies in the state and to determine to what extent these children and families are either known to the system or become identified for services following admission.

It is important to investigate not only what happens in the ED once the child is admitted, but also the familial, community and treatment precursors to and antecedent events following the ED visit. The Urgent Matters Project^{3,4} has conceptualized this as an "input/throughput/output" model. Understanding the volume and distribution of ED visits across the state is one part of this complex phenomenon (the "throughput"). Other factors, however, round out an understanding of why and how children make their way to emergency departments during psychiatric crises, placing incident and outcome data in a broader context. Factors such as those related to community support prior to the ED visit (the "input" or "front end") and to discharge planning and follow-up services in the community (the "output" or "back end") provide

² Connecticut Voices for Children. Emergency care for children in HUSKY A: CY 2004. January, 2006.

a more complete understanding of why and how hospital emergency departments are being used in the state and how current adverse trends can be reversed.

This report is the first of a three-part investigation into emergency department use by children and youth with psychiatric diagnoses in Connecticut. The three component studies include:

1. Analysis of Department of Social Services (DSS) data on ED visits made by children and youth enrolled in HUSKY A between 2002 and 2005;
2. Analysis of the volume and distribution of visits to Connecticut emergency departments between 2001 and 2005 using data from the CHIME database maintained by the Connecticut Hospital Association;
3. A qualitative study based on interviews with parents of children who have used emergency departments for mental health issues and with ED staff who provide care for these children.

This report examines emergency department visits coded with a primary psychiatric diagnosis made by children and youth enrolled in the HUSKY A program between 2002 and 2005. The data were used to provide a longitudinal snapshot of the ED visits themselves, of service use prior to the ED visit, and of service use after the ED visit.

The study focused on four questions:

1. What are the trends in use over time (between 2002 and 2005) by children enrolled in HUSKY A who receive behavioral health services in the ED?
2. Are the children and youth who use emergency departments connected to the behavioral health service system in the six months prior to their ED visits?
3. Are children who use emergency departments connected to follow-up behavioral health care in the six months following ED visits?
4. How many children enrolled in HUSKY A make multiple visits to emergency departments and are there demographic differences between those who make multiple visits and those who do not?

It should be noted that these data reflect service use in years prior to the implementation of the Behavioral Health Partnership. It will be important to monitor these trends going forward as the

Partnership implements new services and strategies intended to divert children and youth from EDs.

Method

This analysis used data from a behavioral health extract of administrative services data supplied by the Connecticut Department of Social Services. The study period was state fiscal years 2002 through 2005. Emergency department visits included in the analysis met the following criteria: (1) A primary ICD-9-CM diagnosis code between 290.0 – 314.9 (from the International Classification of Diseases – Ninth Edition); and (2) UB-92 revenue codes 450, 456, 459 (from Uniform Billing forms for claims payments). HUSKY enrollment data for the same period were used to identify children and youth with six-month continuous eligibility for those analyses that examined service use before and after ED visits.

Trends in the ED Visit Rate: 2002-05

ED use among HUSKY A children with primary psychiatric diagnoses reflects the general upward trend in ED use nationally. As Table 1 suggests, there was a sizable increase from 3,007 to 4,135 (approximately 38%) in the number of psychiatric ED visits made by HUSKY A enrolled children between 2002-05. This increase is considerably higher than the 23% increase during 1992-2002 cited in the 2002 National Hospital Ambulatory Medical Care Survey, which examined ED visits for all diagnoses. The greatest increases from one year to the next were seen in two time periods: between 2002-03 (13.5%) and 2004-05 (20.3%). The rate of ED visits per 1,000 enrollee months also increased during the period, though considerably more slowly. The rate of ED visits per 1,000 enrollee months increased from 1.35 in 2002 to 1.60 in 2005; an increase of 18.5% which does not account for the full 37.5% increase in ED visits. This suggests that about half of the increase in the ED visit rate over time is due to an increase in the number of covered months and one-half is due to an increase in the rate at which children enrolled in HUSKY present at the EDs.

Table 1: Number of ED Visits with a Primary Psychiatric Diagnosis, by Fiscal Year

Visit Rate	State Fiscal Year				
	2002	2003	2004	2005	Total 2002-05
Number of Visits	3,007	3,412	3,437	4,135	13,991
Percent Change		13.5%	0.7%	20.3%	37.5%
Member Months	2,223,526	2,431,158	2,497,949	2,583,184	9,735,817
Visits/1,000 Enrollee Months	1.35	1.40	1.38	1.60	
Percent Change Visits/1,000 Enrollee Months		3.7%	-1.4%	15.9%	18.5%

Tables 2 and 3 present the breakdown of visits by age and gender, respectively. Over all years, youth age 13 through 15 accounted for the greatest proportion of visits, ranging from 32.4% of visits in 2002 to 37.1% in 2005. Not surprisingly, the youngest children accounted for the smallest proportion of visits; in all years, approximately 12% of all visits were made by children less than nine years of age. Males accounted for 51% of visits vs. 49% for females, and this remained relatively constant across all years.

Table 2: Number of ED Visits, by Age and Fiscal Year

Age at ED visit	State Fiscal Year				
	2002	2003	2004	2005	Total 2002-05
Under 9	380 12.6%	427 12.5%	443 12.9%	495 12.0%	1,745 12.5%
9 thru 12	762 25.3%	890 26.1%	865 25.2%	946 22.9%	3,463 24.8%
13 thru 15	974 32.4%	1,193 35.0%	1,194 34.7%	1,533 37.1%	4,894 35.0%
16+	891 29.6%	902 26.4%	935 27.2%	1161 28.1%	3,889 27.8%
Total	3,007 100.0%	3,412 100.0%	3,437 100.0%	4,135 100.0%	13,991 100.0%

Table 3: Number of ED Visits, by Gender and Fiscal Year

Gender	State Fiscal Year				
	2002	2003	2004	2005	Total 2002-05
Female	1,468 48.9%	1,726 50.8%	1,669 48.7%	1,982 48.1%	6,845 49.1%
Male	1,534 51.1%	1,672 49.2%	1,755 51.3%	2,135 51.9%	7,096 50.9%
Total	3,002 100.0%	3,398 100.0%	3,424 100.0%	4,117 100.0%	13,941 100.0%

Table 4 displays the primary discharge diagnoses associated with ED visits over time. Diagnoses related to mood disorders were most prevalent, accounting for close to one-third of all visits. The prevalence of mood disorders increased from 27.2% of all visits in 2002 to 33.1% of all visits in 2005. Attention deficit and conduct disorders were the second most prevalent diagnoses, accounting for approximately one-quarter of all visits. This set of diagnoses decreased from 28.9% of all visits in 2002 to 22.4% in 2005. Primary diagnoses of substance-related disorders accounted for approximately 8% of visits.

Table 4: Number of ED Visits by Diagnostic Category and Fiscal Year

Diagnostic Category	State Fiscal Year				
	2002	2003	2004	2005	Total
Adjustment disorders	231 7.7%	243 7.1%	238 6.9%	260 6.3%	972 6.9%
Anxiety disorders	440 14.6%	518 15.2%	554 16.1%	709 17.1%	2,221 15.9%
Attention-deficit/conduct/disruptive behavior disorders	870 28.9%	866 25.4%	783 22.8%	928 22.4%	3,447 24.6%
Mood disorders	817 27.2%	1,065 31.2%	1,127 32.8%	1,368 33.1%	4,377 31.3%
Substance-related disorders	270 9.0%	275 8.1%	275 8.0%	304 7.4%	1,124 8.0%
Other	379 12.6%	445 13.0%	460 13.4%	566 13.7%	1,850 13.2%
Total	3,007 100.0%	3,412 100.0%	3,437 100.0%	4,135 100.0%	13,991 100.0%

Are Children Connected to the Service System Prior to ED Visits?

This section examines the degree to which children who use the emergency department for psychiatric crises are connected to the system of care prior to these episodes.

As Table 5 suggests, over one-third (37.9%) of ED visits were made by children who were not active within the service system at any time during the six months preceding the ED visit. This rate declined from 42.3% in 2002 to 36.3% in 2005. The converse of this is that the majority of HUSKY children visiting the ED with psychiatric diagnoses were known to the system at some time during the six months preceding their visit. In 2005, 28.0% of ED visits were preceded by a behavioral health contact in the week before the ED visit, up from 23.9% in 2002. Forty-five percent of ED visits in 2005 were preceded by at least one contact within the 30 days preceding the visit. The comparable figure for 2002 was 38.1%.

Table 5: Number of Days Between ED Visit and Most Recent Service Contact, by Fiscal Year*

Number of Days Since Most Recent Service Contact	State Fiscal Year				
	2002	2003	2004	2005	Total 2002-05
No Prior Contact	1,047 42.3%	1,087 37.3%	1,092 36.9%	1,277 36.3%	4,503 37.9%
1-7 days	593 23.9%	787 27.0%	760 25.7%	984 28.0%	3,124 26.3%
8-30 days	353 14.2%	511 17.5%	498 16.8%	610 17.4%	1,972 16.6%
31-60 days	167 6.7%	197 6.8%	225 7.6%	216 6.1%	805 6.8%
61-180 days	318 12.8%	332 11.4%	386 13.0%	428 12.2%	1,464 12.3%
Total	2,478 100.0%	2,914 100.0%	2,961 100.0%	3,515 100.0%	11,868 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period preceding the visit

Table 6 examines the intensity of the service connection prior to ED visits for those children who had any contact with the system in the six months preceding the ED visit. Nearly half of the visits made to emergency departments by children who had any prior six-month connection were made by children who appear to have had fairly frequent connections to the system. In 2005, 51.5% of such visits were made by children who had 13 or more days on which they received some behavioral health service in the six months preceding the ED visit. This is up slightly from 47.6% in 2002.

Table 6: Total Days of Service Contact Six Months Prior to Visit, by Fiscal Year*

Total Days of Service Contact	State Fiscal Year				
	2002	2003	2004	2005	Total 2002-05
1 -3	336 23.6%	369 20.4%	390 21.1%	475 21.3%	1,570 21.5%
4-6	167 11.7%	213 11.8%	213 11.5%	216 9.7%	809 11.1%
7-9	127 8.9%	190 10.5%	184 9.9%	199 8.9%	700 9.6%
10-12	115 8.1%	135 7.5%	155 8.4%	192 8.6%	597 8.2%
13 or more	678 47.6%	900 49.8%	910 49.1%	1,151 51.5%	3,639 49.7%
Total	1,423 100.0%	1,807 100.0%	1,852 100.0%	2,233 100.0%	7,315 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period preceding the visit

Table 7 displays by service type the length of time between the most recent service contact and the ED visit aggregated across all four years. Of those ED visits preceded by any outpatient visit, 44.9% of the service contacts occurred within the week preceding the ED visit. Of particular note, however, is that for 46.8% of ED visits preceded by an inpatient episode, the inpatient visit was from 2-6 months earlier with no intervening service prior to the ED visit. Although the number of visits in this instance is not high (N=312), this represents a high percent of all visits that were preceded by inpatient episodes and may suggest the need for more intensive follow-up for children discharged from inpatient settings.

Table 7: Number of Days Since Most Recent Service Contact, by Service Type*,**

Number of Days Since Most Recent Service Contact	Type of last service		
	Inpatient	Outpatient	Total
1-7 days	113 17.0%	3,011 44.9%	3,124 42.4%
8-30 days	142 21.3%	1,830 27.3%	1,972 26.8%
31-60 days	99 14.9%	706 10.5%	805 10.9%
61-180 days	312 46.8%	1,152 17.2%	1,464 19.9%
Total	666 100.0%	6,699 100.0%	7,365 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period preceding the visit

**All fiscal years combined

As Table 8 suggests, older children appear to be less frequently connected to the service system prior to visiting the ED for behavioral health care than are younger children. In more than half (51.8%) of ED visits by youth age 16 and older, there was no service contact within the six months preceding the ED visit. The comparable figure for visits by youth ages 13 through 15 was 39.4%. Younger children tend to be most often connected, though only 29.2% of visits for youth under 9 years of age and 25.9% of visits for youth ages 9 through 12 occurred without some service contact in the preceding six months.

Table 8: Number of Days Since Most Recent Service Contact, by Age*,**

Number of Days Since Most Recent Service Contact	Age at ED visit				
	Under 9	9 thru 12	13 thru 15	16+	Total
No prior contact	444	789	1,625	1,645	4,503
	29.2%	25.9%	39.4%	51.8%	37.9%
1-7 day	522	1,090	977	535	3,124
	34.3%	35.8%	23.7%	16.8%	26.3%
8-30 days	302	612	694	364	1,972
	19.9%	20.1%	16.8%	11.5%	16.6%
31-60 days	101	226	277	201	805
	6.6%	7.4%	6.7%	6.3%	6.8%
61-180 days	152	330	551	431	1,464
	10.0%	10.8%	13.4%	13.6%	12.3%
Total	1,521	3,047	4,124	3,176	11,868
	100.0%	100.0%	100.0%	100.0%	100.0%

*Includes only those visits for children continuously enrolled for the 6-month period preceding the visit

**All fiscal years combined

Older children were also slightly less likely to receive frequent service contacts prior to their ED visits (Table 9). More than half of all ED visits made both by those younger than 9 (52.8%) and those ages 9-12 (56.7%) were most likely to have been preceded by service contact on 13 or more days. For those visits by children ages 13 through 15 and those 16 and older, fewer than half were associated with these more intensive service contacts (46.4% and 42.5% respectively).

Table 9: Total Days of Service Contact Prior to ED Visit, by Age*,**

Total Days of Service Contact	Age at ED visit				
	Under 9	9 thru 12	13 thru 15	16+	Total
1-3	224 20.8%	407 18.0%	549 22.2%	390 25.9%	1,570 21.5%
4-6	114 10.6%	205 9.1%	294 11.9%	196 13.0%	809 11.1%
7-9	94 8.7%	192 8.5%	277 11.2%	137 9.1%	700 9.6%
10-12	75 7.0%	172 7.6%	206 8.3%	144 9.5%	597 8.2%
13 or more	568 52.8%	1,280 56.7%	1,150 46.4%	641 42.5%	3,639 49.7%
Total	1075 100.0%	2,256 100.0%	2,476 100.0%	1,508 100.0%	7,315 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period preceding the visit

**All fiscal years combined

Visits made by girls with continuous enrollment in HUSKY appear to be slightly less likely than those made by boys (59.6% vs. 64.7%) to have involved a prior service contact (Table 10). Differences in the length of time between the ED visit and prior services and in the intensity of services prior to the ED visit did not vary by gender.

Table 10: Percent of ED Visits with Prior Service Contact During the Preceding Six Months, by Gender*,**

Prior Service	Gender		
	Female	Male	Total
Visits with prior service contact	3,443 59.6%	3,920 64.7%	7,363 62.2%
Visits with no prior service contact	2,338 40.4%	2,142 35.3%	4,480 37.8%
Total	5,781 100.0%	6,062 100.0%	11,843 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period preceding the visit

**All fiscal years combined

Are Children Connected to the Service System Following ED Visits?

This section contains analyses of data documenting service use following a child's visit to the ED.

First, as Table 11 suggests, the majority of ED visits were followed up with at least one service contact during the subsequent six months. In all years examined, however, about one-quarter of ED visits were not followed up with some service contact. The proportion of visits with no follow-up during the subsequent six months decreased slightly from 24.4% in 2002 to 22.7% in 2005. Nearly half (46.5%) of all visits were followed by a service contact within one week of the visit. In 2002, 59.7% of visits were followed by a service contact within one month. By 2005, this figure had increased to 64%.

Table 11: Number of Days Between ED Visit and Subsequent Service Contact, by Fiscal Year*

Number of Days Until Subsequent Service	State Fiscal Year				
	2002	2003	2004	2005	Total 2002-05
No subsequent service contact	616 24.4%	638 22.1%	683 23.8%	785 22.7%	2,722 23.2%
Same day (inpatient only)* *	275 10.9%	249 8.6%	247 8.6%	365 10.6%	1,136 9.7%
1-7 days	877 34.8%	1,091 37.9%	1,044 36.5%	1,299 37.6%	4,311 36.8%
8-30 days	353 14.0%	462 16.0%	478 16.7%	545 15.8%	1,838 15.7%
31-60 days	180 7.1%	183 6.4%	178 6.2%	197 5.7%	738 6.3%
61-180 days	222 8.8%	258 9.0%	234 8.2%	268 7.7%	982 8.4%
Total	2,523 100.0%	2,881 100.0%	2,864 100.0%	3,459 100.0%	11,727 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period following the visit

** Same-day visits for inpatient were counted when this information was available. In most cases, ED visit data are not available when a child is admitted directly from an ED to an inpatient unit in the same hospital.

Finally, for those visits in which there was at least one follow-up service contact, the frequency of subsequent service use increased from 2002 to 2005 (Table 12). The majority of ED visits

with any follow-up service contact between 2002 and 2005 were followed by 13 days or more of service contact during the subsequent six months. In 2002, 59.1% of all ED visits with any follow-up were followed by this intensive level of service contact and by 2005, the proportion had increased to 63.3%.

We find considerably higher levels of service utilization during the six months following the index ED visit compared to the six-month period prior to the visit: For the entire set of ED visits under consideration (pooled over five years), the mean days of contact prior to and following the index ED visit were 8.4 and 17.4, respectively. That is, the typical patient had more than twice as many days of contact during the six months after the index visit than s/he did during the same length of time preceding the index visit.

Table 12: Total Days of Subsequent Service Contact by Fiscal Year*

Total Days of Service Contact	State Fiscal Year				Total
	2002	2003	2004	2005	
1-3	285 15.0%	322 14.4%	286 13.1%	355 13.3%	1,248 13.9%
4-6	182 9.6%	225 10.0%	182 8.3%	233 8.7%	822 9.1%
7-9	165 8.7%	185 8.2%	169 7.8%	200 7.5%	719 8.0%
10-12	143 7.5%	168 7.5%	140 6.4%	191 7.2%	642 7.1%
13 or more	1121 59.1%	1343 59.9%	1,403 64.4%	1,687 63.3%	5,554 61.8%
Total	1,896 100.0%	2,243 100.0%	2,180 100.0%	2,666 100.0%	8,985 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period following the visit

Similar demographic patterns were found in service use following the ED visit as were documented with service use prior to the ED visit (Table 13). Fewer ED visits by older children were followed by subsequent service contacts as compared to younger children. Approximately 85% of ED visits by younger children (both those younger than 9 and those between 9 and 12) were followed by subsequent services. Subsequent service use by older children occurred far less often. Seventy-four percent of ED visits by young teenagers (ages 13 to 15) and 64.9% of visits by older teenagers (age 16+) were followed by a service contact within the six months following the ED visit.

Table 13: Percent of ED Visits with Subsequent Service Contact During the Following Six Months, by Age*,**

Subsequent Service Contact	Age at ED visit				Total
	Under 9	9 thru 12	13 thru 15	16+	
Visits with no subsequent service contact	234 14.7%	421 13.5%	1,115 26.0%	952 35.1%	2,722 23.2%
Visits with subsequent service contact	1,363 85.3%	2,705 86.5%	3,174 74.0%	1,763 64.9%	9,005 76.8%
Total	1,597 100.0%	3,126 100.0%	4,289 100.0%	2,715 100.0%	11,727 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period following the visit

**All fiscal years combined

Furthermore, visits by younger children were more apt to be followed by an intensive level of service than were those by older children (Table 14). Almost three-quarters (72.9%) of the ED visits made by the youngest children with any follow-up care were followed by 13 or more days of service contact. In comparison, only 47.8% of the ED visits made by those 16 or older received this level of follow-up care. In fact, one-fifth (21.6%) of ED visits by these older children were followed by three or fewer service contacts within the subsequent six months.

Table 14: Total Days of Subsequent Service Contact by Age*,**

Total Days	Age at ED visit				
	Under 9	9 thru 12	13 thru 15	16+	Total
1-3	125 9.2%	282 10.4%	462 14.6%	379 21.6%	1,248 13.9%
4-6	97 7.2%	184 6.8%	316 10.0%	225 12.8%	822 9.1%
7-9	70 5.2%	169 6.3%	295 9.3%	185 10.5%	719 8.0%
10-12	74 5.5%	178 6.6%	263 8.3%	127 7.2%	642 7.1%
13 or more	987 72.9%	1,888 69.9%	1,839 57.9%	840 47.8%	5,554 61.8%
Total	1,353 100.0%	2,701 100.0%	3,175 100.0%	1,756 100.0%	8,985 100.0%

*Includes only those visits for children continuously enrolled for the 6-month period following the visit

** All fiscal years combined

Subsequent service contacts occurred slightly less frequently for females (74.7%, n=4256) than males (79.0%, n=4731) among those continuously enrolled in the HUSKY program during the six months following the ED visit. There were only minor differences between males and females in length of time between the ED visit and in subsequent service intensity.

Service Connections Preceding and Following ED Visits

This section of the report examines the service connections for children and youth receiving services *both* prior to and following their visits to the ED.

More than half the visits across all years were for children who had some connection to the service system both before and after the ED visit; this proportion increased from 52.8% in 2002 to 59.6% in 2005 (Table 15). Only a small proportion (5.4 to 7.6%) of visits was for children who had received services before the ED visit but did not continue to receive services afterwards. Furthermore, the number of children who had no service contacts either before or after their ED visit decreased slightly between 2002 and 2005. While 18.6% of ED visits in 2002 were made by children with no service connection either before or after the visit, this proportion decreased slightly to 15.5% in 2005.

Table 15: Connection to the Service System Prior to and Following ED Visits, by Year*

Service in Prior and Subsequent 6-month period	State Fiscal Year				
	2002	2003	2004	2005	Total
Both pre- and post-visit	1,130 52.8%	1,459 58.4%	1,463 57.1%	1,838 59.6%	5,890 57.3%
Pre- not post-visit	128 6.0%	134 5.4%	195 7.6%	196 6.4%	653 6.3%
Post- not pre-visit	485 22.7%	495 19.8%	481 18.8%	572 18.6%	2,033 19.8%
Neither pre- nor post-visit	398 18.6%	410 16.4%	425 16.6%	477 15.5%	1,710 16.6%
Total	2,141 100.0%	2,498 100.0%	2,564 100.0%	3,083 100.0%	10,286 100.0%

*Includes only those visits for children continuously enrolled for the 6-month periods prior to and following the ED visit

Older children appear to be among those with consistent lack of ties to services both before and after the ED visit (Table 16). More than one-quarter (27.4%) of visits for those 16 and older had no service contact in the period identified, except for their ED visit.

Table 16: Connection to the Service System Prior to and Following ED Visits, by Age*,**

Service in Prior and Subsequent 6 month period	Age at ED visit				
	Under 9	9 thru 12	13 thru 15	16+	Total
Both pre- and post-visit	973 68.4%	1,965 69.9%	1,968 52.7%	984 42.4%	5,890 57.3%
Pre- not post-visit	38 2.7%	136 4.8%	301 8.1%	178 7.7%	653 6.3%
Post- not pre-visit	244 17.2%	472 16.8%	796 21.3%	521 22.5%	2,033 19.8%
Neither pre- nor post-visit	167 11.7%	239 8.5%	668 17.9%	636 27.4%	1,710 16.6%

*Includes only those visits for children continuously enrolled for the 6-month periods prior to and following the ED visit

**All fiscal years combined

Finally, ED visits by females were slightly more likely (18.3%, n=907) than those by males (14.9%, n=791) not to be connected with previous or subsequent service contacts.

Multiple ED Visits

The HUSKY data were also used to identify children with *multiple* visits to the ED during the study period. Here, the unit of analysis is the individual child, not the ED visit as above.

Table 17 shows the number of children with single and multiple ED visits. The first ED visit within a year was taken as the index visit, and all subsequent ED visits over the following six months were counted. Over the four-year study period (2002-05), multiple ED visits made by children within a six-month period have declined. In 2002, 78.2% of the children had no subsequent ED visit. By 2005, this proportion had increased to 80.9%. For those who did have subsequent visits, the number of visits also decreased slightly, as shown in the table below.

Children with multiple ED visits utilized more services than those with single visits both before and after the index ED visit. On average, children with multiple visits had service contacts on 12.9 days during the six months prior to the index ED visit; children with a single visit had service contacts on 7.1 days. In terms of service contacts following the ED visit, children with multiple ED visits averaged 30.3 days of service contact within the next six months; children with single visits averaged 13.2 service days.

Patients for whom the index visit was the only one during the fiscal year, had, on the average, 6 (3 outpatient and 3 inpatient) more days of contact during the six months following the ED visit than they did during the six months before. Among patients who had more than one ED visit during the fiscal year, the index visit added a total of 17 contact days (7 outpatient and 10 inpatient).

Table 17: Number of Children with Multiple ED Visits in a 6-Month Period, by Fiscal Year*

Number of Subsequent ED visits: 6 months	Year: First ED Visit				
	2002	2003	2004	2005	Total
None	1,712 78.2%	1,600 77.5%	1,523 80.0%	1,658 80.9%	6,493 79.1%
1	316 14.4%	310 15.0%	261 13.7%	272 13.3%	1,159 14.1%
2	92 4.2%	101 4.9%	74 3.9%	81 4.0%	348 4.2%
3	42 1.9%	30 1.5%	26 1.4%	27 1.3%	125 1.5%
4 or more	28 1.3%	24 1.2%	20 1.1%	12 .6%	84 1.0%
Total	2,190 100.0%	2,065 100.0%	1,904 100.0%	2,050 100.0%	8,209 100.0%

*Unduplicated count of children with 6-month continuous eligibility following ED visit

Younger children were the most likely to return to the ED for another visit during this timeframe (Table 18). Twenty-three percent of children in the youngest age group and 25.4% of those ages 9 through 12 had multiple ED visits. This is in contrast to youth ages 16 and older where only 15.7% had multiple ED visits.

Table 18: Number of Children with Multiple ED Visits in a 6-Month Period, by Age*,**

Subsequent ED visits	Age at ED visit				Total
	Under 9	9 thru 12	13 thru 15	16+	
No	837 76.9%	1,420 74.6%	2,243 78.6%	1,993 84.3%	6,493 79.1%
Yes	252 23.1%	483 25.4%	611 21.4%	370 15.7%	1,716 20.9%
Total	1089	1,903	2,854	2,363	8,209

*Unduplicated count of children with 6-month continuous eligibility following ED visit

**All fiscal years combined

There were no gender differences in the likelihood that subsequent ED visits occurred. About 20% of both males and females with an ED visit experienced a subsequent ED visit.

Summary

This report presents data on emergency department visits made by children and youth covered by Connecticut's HUSKY A program. The analysis includes all ED visits made between 2002 and 2005 by children with a primary psychiatric diagnosis.

Trends in ED visits over time

Connecticut hospitals witnessed a considerable increase in the number of psychiatric-related ED visits by children and youth enrolled in HUSKY A from 2002 to 2005. Over this period of time, ED visits rose 37.5%. This is somewhat higher than the national visit rate increase of 23% for all ages for all diagnoses over the decade 1992 through 2002. About half of this increase is likely due to the increased number of people enrolled in HUSKY A (as measured by enrollee months) and half to the actual increase in the rate of visits. Children, ages nine and younger, accounted for only 12% to 13% of visits across all years. More than half of all visits were made by youth ages 13 and older. Visits were divided equally between males and females. Diagnoses related to mood disorders were most prevalent, accounting for close to one-third of all visits, followed by attention deficit and conduct disorders, accounting for close to one-quarter of all visits.

Connection to care prior to ED visits

The majority of visits (64% in 2005) to EDs by children with behavioral health disorders were preceded by some contact with the service system during the prior six months. In 2005, slightly more than one-quarter of visits were preceded by a recent behavioral health service occurring during the week before the visit to the ED. Forty-five percent of ED visits were preceded by at least one contact within the 30 days preceding the visit. Furthermore, among visits preceded by any behavioral health service contact, approximately half were made by children who had 13 or more days of service contact within the preceding six months. Clearly, some emergency department visits by children who are actively in treatment are unavoidable. However, the high percentage of visits by children who are known to the service system, many of whom had relatively extensive contact, suggests a need to examine whether and how providers are working with children and families to develop crisis plans that might divert some portion of these ED visits.

Older youth appear to be less tightly connected to the service system prior to ED visits. More than half (52%) of visits made by youth 16 and older were made by those who had received no behavioral health service within the prior six months.

In nearly one-half (47%) of visits preceded by an inpatient episode, the inpatient visit was from 2-6 months earlier with no intervening service prior to the ED visit. Although the number of visits in this instance is not high (N=312), it may suggest the need for more intensive follow-up efforts for children discharged from inpatient settings.

Connection to care following ED visits

Emergency department visits represent critical events that provide an opportunity for follow-up interventions. In all years, over three-quarters of these visits were followed up by at least one service contact. More than 45% of visits were followed by a service contact either on the same day or within one week. In 2005, 64% of visits were followed by a service contact within one month. This is up from 60% of visits in 2002. The majority of visits for which there was any follow-up service contact were followed by an intensive level of service. In 2005, 63% of visits were followed by service delivered on 13 or more separate days following the ED visit. This is an increase of more than 59% observed in 2002. While not large, these changes over time do suggest some progress in the system's follow-up responsiveness to children's psychiatric crises. As with services preceding ED visits, visits by older youth were less apt to be followed up by service contacts, and older youth were less likely to receive frequent follow-up services.

Children with no connection either before or after ED visits

Over half of the ED visits were made by children who had some connection to the service system both prior to and following the visit, and this proportion increased from 53% in 2002 to 60% in 2005. Visits by older children were more likely to be characterized by lack of consistent ties to the service system both before and after the ED visit. Among youth 16 or older, more than one-quarter of ED visits were neither preceded nor followed by service contacts within six months.

Children with multiple ED visits

Over the study period (2002-05), multiple ED visits made by children within a six-month period have declined. In 2002, 78% of the children had no subsequent ED visit, and by 2005 this proportion had increased to 81%. The number of subsequent visits also decreased slightly. Younger children were more likely to experience multiple ED visits across all years than were older children.

Conclusion

This study of the use of hospital emergency departments for children with psychiatric conditions who are enrolled in HUSKY A substantiates that the reliance on EDs has increased over time and provides some information about the characteristics of these children. It also tells us that for the majority of children, the ED visit is not an isolated event. Most children were known to the mental health service system at some time during the six months preceding their ED visit, with half of those having fairly frequent contact, and the majority had contact with the mental health system soon after their visit to the ED. Of greatest concern are those who, before coming to an ED, had no intervening care following an inpatient hospitalization, as well as those children who had no follow-up contact within six months after an ED visit.

The children who use the ED on multiple occasions also appear to be heavier utilizers of mental health services both before and after the ED visit, suggesting the need for more effective and comprehensive crisis planning that includes alternatives to the use of the ED when their problems escalate. The forthcoming studies in this series will provide information about how the experience with visits by children in the HUSKY program compares with visits to the ED by all children across the state and, through interviews with caregivers and providers, a better understanding of why the ED is being used as part of the continuum of care for mental health.

Endnotes

- ¹ Lehrer, J. 2005. Restructuring the ER: The News Hour with Jim Lehrer Interview PBS broadcast on June 7, 2005. Available at http://www.pbs.org/newshour/bb/health/jan-june05/er_6-07.html Accessed November 16, 2005.
- ² McCraig, L. F. & Burt C. W. 2004. "National Hospital Ambulatory Medical Care Survey: 2002 Emergency Department Summary." Advance Data, No. 340, March 18, 2004. Available at www.cdc.gov/nchs/data/ad/ad340.pdf. Accessed November 16, 2005.
- ³ Wilson, M. J., Siegel, B & Williams, M. 2005. "Perfecting Patient Flow: American's Safety Net Hospitals and Emergency Department Overcrowding." Prepared by the Urgent Matters Project for the National Association of Public Hospitals and Health Systems. Available online at http://www.urgentmatters.org/reports/NAPH_Perfecting_Patient_Flow.pdf.
- ⁴ Wilson, M. J. & Nguyen, K. 2004. Bursting at the Seams: Improving Patient Flow to Help America's Emergency Departments. George Washington University Medical Center. September 2004. Available online at www.urgentmatters.org. Accessed on November 14, 2005.
- ⁵ Christodulu, K., Lichetestein, R., Weist, M, et al. 2002. "Psychiatric emergencies in children." Pediatric Emergency Care, vol. 18: 268-270.
- ⁶ Thomas, L. E. 2003. "Trends and shifting ecologies: Part 1." Child and Adolescent Psychiatric Clinics North America, vol. 12:599-611.
- ⁷ Sills, M. R. & Bland, S. D. 2002. "Summary statistics for pediatric psychiatric visits to US Emergency Departments, 1993-1999." Pediatrics, vol. 110 (4): 40-44.
- ⁸ McCraig, L. F. & Burt C. W. 2004. "National Hospital Ambulatory Medical Care Survey: 2002 Emergency Department Summary." Advance Data, No. 340, March 18, 2004. Available at www.cdc.gov/nchs/data/ad/ad340.pdf. Accessed November 16, 2005.
- ⁹ American Academy of Pediatrics (AAP) and American College of Emergency Physicians (ACEP). 2006. "Pediatric mental health emergencies in the emergency medical services system." Pediatrics, vol. 118 (4):1764-1767.
- ¹⁰ Haugh, R. 2003. "A crisis in adolescent psych." Hospitals & Health Networks, January, vol. 77 (1):38-41.
- ¹¹ Schaffer, D., Fischer, P., Dulcan, M. K. et al. 1996. "The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): description, acceptability, prevalence rates, and performance in the MECA Study. Methods for the Epidemiology of Child and Adolescent Mental Disorders Study." Journal of the American Academy of Child and Adolescent Psychiatry, vol. 35: 865-877.
- ¹² Friedman, R., Katz-Leavy, J., Manderscheid, R., & Sondheimer, D. 1996. "Prevalence of serious emotional disturbance in children and adolescents." In Manderscheid, RW, and Sonnenschein MA (editors), Mental Health, United States. Washington, DC: US Government Printing Office: 77-112.
- ¹³ Olfson, M., Gameroff, M. J., Marcus, S. C., Greenberg, T., & Shaffer, D. 2005. "Emergency treatment of young people following deliberate self-harm." Archives of General Psychiatry, vol. 62: 1122-1128.
- ¹⁴ Other data, however, suggest that increases in emergent pediatric visits are not due primarily to either psychoses or suicide attempts, but rather non-urgent complaints which could be addressed in other treatment settings (e.g. Sills and Bland, 2002).
- ¹⁵ NIMH 1999 online at <http://mentalhealth.samhsa.gov/publications/allpubs/KEN95-0000/>.
- ¹⁶ Surgeon General's Report on Mental Health, 1999.
- ¹⁷ Pumariega, A. J. & Winters, N. C. 2003. "Trends and shifting ecologies: Part II." Child and Adolescent Psychiatric Clinics North America, vol. 12: 779-793.
- ¹⁸ Fenton, W., James, R. & Insel, T. 2004. "Psychiatry residency training, the physician-scientist, and the future of psychiatry." Academic Psychiatry, vol. 28(4): 263-266.
- ¹⁹ Santucci, K.A., Sather, J. & Baker, M. D. 2003. "Emergency medicine training programs' educational requirements in the management of psychiatric emergencies: Current perspective." Pediatric Emergency Care. 19(3):154-156, June 2003.
- ²⁰ Pottick K., Hansell, S., Gutterman, E., et al. 1995. "Factors associated with inpatient and outpatient treatment for children and adolescents with serious mental illness." Journal of the American Academy of Child and Adolescent Psychiatry, vol. 34: 425-433.
- ²¹ Grove, D. D., Lazebnik, R., & Petrack, E. M. 2000. "Urban Emergency Department utilization by adolescents." Clinical Pediatrics, vol. 39 (8): 479-483.

²² Santiago, L. I., Tunik, M. G., Foltin, G. L. & Mojica, M. A. 2006. "Children requiring psychiatric consultation in the Pediatric Emergency Department: Epidemiology, resource utilization, and complications." *Pediatric Emergency Care*, vol. 22 (2): 85-89.

²³ A range of health policy initiatives, including JCAHO's standard (LD.3.15) to address overcrowding and the "Urgent Matters" project funded by the Robert Wood Johnson Foundation, have been instituted in an attempt to understand and address ED use. See for example: Focus on Five: Strategies for Implementing the New Patient Flow Standard. Joint Commission Perspectives on Patient Safety. 2005;5:11. Available at <http://www.ihi.org/NR/rdonlyres/C320B6A2-2881-4DC6-8B58-3E9BCD5EC9EA/0/FiveStrategiesFlow.pdf>.

²⁴ Milner K. & Katz, D. M. 2002. "The state of child and adolescent emergency psychiatric services." *Journal of the American Association for Emergency Psychiatry*, vol. 8:5-9.

FOR ADDITIONAL COPIES OF THIS REPORT, CALL 860.679.1519 OR

**visit our website:
www.chdi.org**



Child Health and
Development Institute
of Connecticut, Inc.

270 Farmington Avenue
Suite 367
Farmington, CT 06032

860.679.1519
chdi@adp.uchc.edu
www.chdi.org