Turning Data Into Action: Using Data to Drive Service, Program and Policy Decisions In Children's Behavioral Health Services In Maine

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Turning Data Into Action: The Goals

- Review key state-level administrative data sources and strategies for developing and using data to evaluate specific service and system level questions and issues
- Review three examples of collaborative studies that were used to examine service, cost, and individual child/family outcomes and discuss key findings and how the results were used to guide system/service change efforts
- Discuss key ingredients for successfully using data to drive targeted service and system change efforts

Children's Behavioral Health Services In Maine

Highlights

Children's Behavioral Health Services: Guiding Principles

1. Services based on the family's and child's ***strengths***
2. ***Families*** are full participants in all aspects of planning and delivery of services
3. Children have access to a ***comprehensive array*** of services that meet the child's physical, emotional, educational and social needs
4. Children receive ***individualized*** services guided by an individualized service plan (ISP)
5. Children receive services in the ***least restrictive, most normative environment*** that is clinically possible
6. Children receive ***integrated services*** with linkages between agencies
7. ***Early identification and intervention*** for children with emotional problems should be promoted
8. Children are ensured ***smooth transitions to adult service systems*** as they reach maturity
9. The ***rights*** of children should be protected and effective advocacy efforts for emotionally disturbed children and youth be promoted
10. Children receive services ***without regard to race, religion, national origin, sex, physical disability or other characteristics*** and services should be ***sensitive and responsive to cultural differences***

Children's Behavioral Health Services: Target Populations

- **Children with Emotional and/or Behavioral Disorders**
- Children with Developmental Disabilities or Severe Developmental Delays
- Children with Mental Retardation or Autism

Children's Behavioral Health Services: The Service Array

- Emergency/Crisis Resolution Services
- Targeted Case Management
- Outpatient Services
  - **Outpatient Psychotherapeutic Assessment and Treatment**
  - **Outpatient Medication Assessment and Treatment**
- In-Home Treatment Services
  - **Home and Community-Based Treatment**
  - **Children's Assertive Community Teams (ACT)**
- Day Treatment Services
- Children's Habilitation Services
- Out of Home Residential Treatment Services (PNMI)
- Inpatient Psychiatric Hospital Treatment
  - **Community Hospital Psychiatric Units**
  - **Psychiatric Inpatient Hospitals**

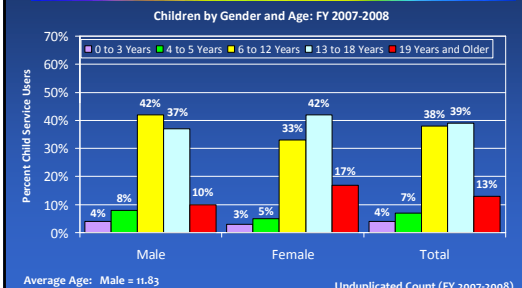
Study 1: The Big Picture

Examining Public Mental Health Service Use and Costs Among Children & Adolescents in Maine

Study Purpose

- Develop methodology to accurately identify and extract MaineCare paid claims for children and youth diagnosed with mental health and/or substance abuse challenges and specifically members that used one or more of the identified Core Children's Mental Health Services
- This analysis specifically focuses on the characteristics of children and youth receiving Children's Behavioral Health Services and examines MaineCare (Medicaid) service use patterns and expenditures over a two-year study period

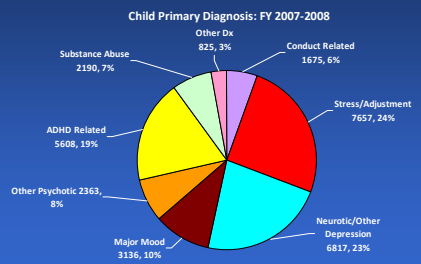
Children and Youth: Age and Gender



Average Age: Male = 11.83
Female = 13.25
Total = 12.47

Unduplicated Count (FY 2007-2008) N = 30,271

Children and Youth: Primary Diagnosis



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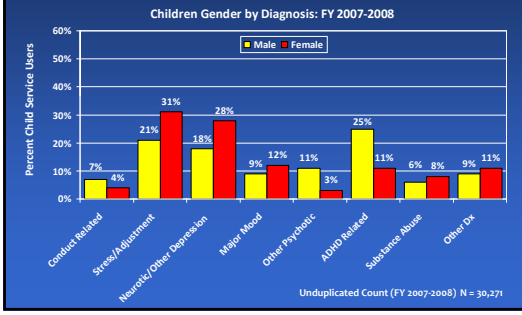
Children and Youth: Diagnosis By Gender



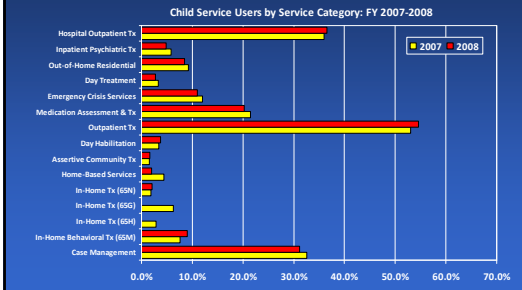
Unduplicated Count (FY 2007-2008) N = 30,271

Children and Youth: Comparison of Children With and Without Child Welfare Experience

Gender	Child Welfare	Non-Child Welfare
Females	46.0%	44.9%
Males	54.0%	55.1%
Age		
0 to 3 Years	8.3%	3.1%
4 to 5 Years	8.4%	6.5%
6 to 12 Years	32.1%	38.7%
13 to 18 Years	46.3%	38.1%
19 to 21 Years	4.9%	13.7%
Mean Age (Years)*	11.62	12.55
Diagnostic Category		
Conduct Related	5.0%	5.6%
Stress/Adjustment*	42.4%	23.7%
Neurotic/Depressive*	19.2%	22.8%
Major Mood	9.7%	10.4%
Other Psychotic*	4.7%	8.1%
ADHD Related*	14.0%	18.9%
Substance Abuse*	3.5%	7.6%

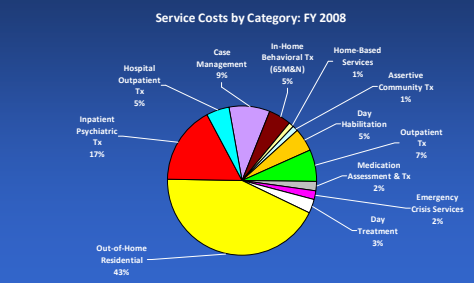
* P < .05

Children and Youth: Service Array and Utilization



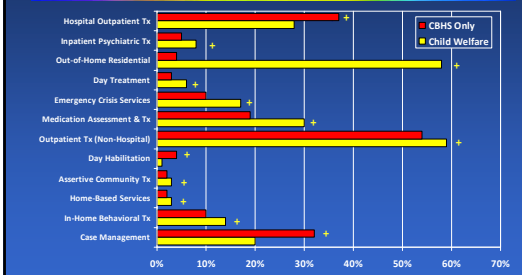
Unduplicated Count (2007) N = 21,520
Unduplicated Count (2008) N = 22,712

Children and Youth: Service Costs



Total Expenditures (FY2008) = $216,650,340

Mental Health Service Use: Comparison of Children with and without Child Welfare Experience



Unduplicated Count (2008) N = 22,712
Child Welfare N = 1,817
CBHS Only N = 20,895

Summary of Results

- A total of 30,271 children received a core MaineCare mental health service during the two-year study period – 21,520 in FY 2007 and 22,172 in FY 2008 – accounting for 14.5% of eligible children in 2007
- Most children (77%) were between the ages of 6 and 18 years with more males represented in the younger age groups and more females in older age groups
- Most common diagnoses were: Stress/Adjustment (24%), Neurotic/Other Depression (23%), and ADHD related (19%)
  - Males were more likely to receive Conduct, ADHD, and Other Psychotic related diagnoses
  - Females were more likely to receive Stress/Adjustment and Mood Related diagnoses
- Inpatient Psychiatric Hospital and Out-of-Home Residential Treatment accounted for 60% of the overall mental health expenditures in FY 2008 and represented 13% of child service users
- Children in the Child Welfare system were more likely to use inpatient psychiatric, residential, medication management, outpatient, crisis intervention, in-home behavioral, and Children ACT services
- Most frequently used services in 2007 and 2008 included: Outpatient-Clinical Services (53%, 54%), Targeted Case Management (33%, 31%), Hospital Related Outpatient Treatment (36%) and Medication Assessment & Treatment (21%, 20%)

Study II: Results of a Pre-Post Study of Service and Cost Outcomes

Exploring Children's Assertive Community Treatment (ACT) & Home and Community-Based Treatment Services (HCT)

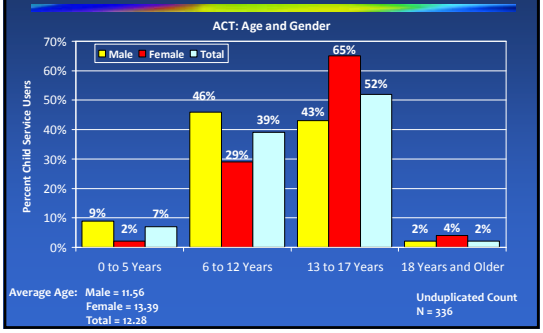
Study Purpose

- Explore MaineCare mental health service use and expenditure trends for children and youth enrolled in Children's Assertive Community Treatment (ACT) and Home and Community-Based Treatment Services (HCT)
- Compare changes in mental health service use and costs pre and post enrollment in service between ACT and HCT
- Develop a descriptive profile of child and youth users of these services

ACT/HCT Study Target Services

- Children's Assertive Community Treatment
- Home & Community-Based Treatment
- Outpatient Clinical Treatment
- Emergency Crisis Resolution Services
- Outpatient Medication Assessment and Treatment
- Out-of-Home Residential Treatment Services
- Hospital Inpatient Treatment
  - Community Hospital Psychiatric Units
  - Psychiatric Inpatient Hospitals
- Hospital Emergency Room Services for MH Reason

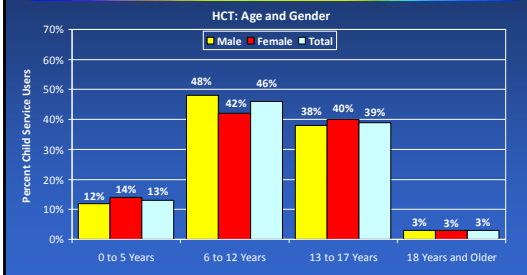
Children and Youth: Age and Gender



Average Age: Male = 11.56, Female = 13.39, Total = 12.28

Unduplicated Count N = 336

Children and Youth: Age and Gender



Average Age: Male = 11.08, Female = 11.26, Total = 11.15

Unduplicated Count N = 1,953

ACT/HCT Study Period: Service Use

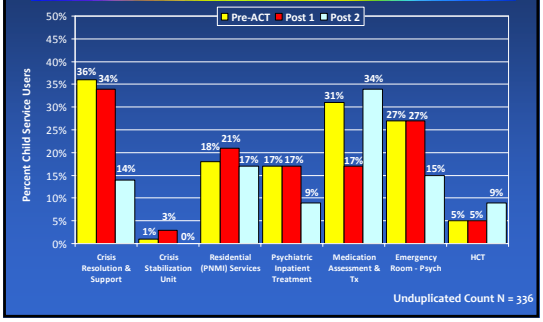
ACT Services

- 336 children received treatment during the study period
  - No ACT services received for 6 months pre-treatment
  - 2 post treatment time periods created:
    - Months 1 to 6 (Post 1)
    - Months 7 to 12 (Post 2)
- 253 children received and left ACT Treatment during first 6 months post treatment with an average length of treatment of 3.83 months

HCT Services

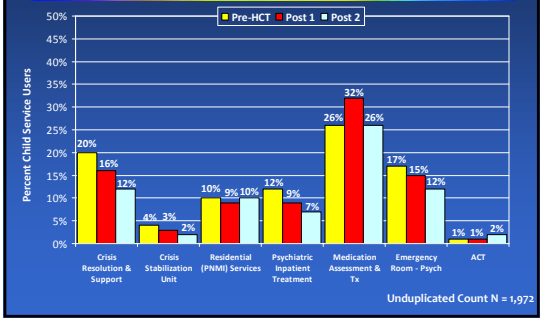
- 1,972 children received treatment during the study period
  - No HCT services received 6 months pre-treatment
  - 2 post treatment time periods created:
    - Months 1 to 6 (Post 1)
    - Months 7 to 12 (Post 2)
- 1,091 children received and left HCT Treatment during first 6 months post treatment with an average length of treatment of 3.33 months

ACT Pre-Post Service Use: Selected Mental Health Services



Unduplicated Count N = 336

HCT Pre-Post Service Use: Selected Mental Health Services



Unduplicated Count N = 1,972

HCT and ACT Study Users: Pre-Post Average Costs

Services	HCT (n=1,972)			ACT (n=336)		
	Pre-Entry (6 mos.) to Tx: Avg. Cost per HCT User	Post HCT (1-6 mos.) to Tx: Avg. Cost per HCT User	Post HCT (7-12 mos.) to Tx: Avg. Cost per HCT User	Pre-Entry (6 mos.) to Tx: Avg. Cost per ACT User	Post ACT (1-6 mos.) to Tx: Avg. Cost per ACT User	Post ACT (7-12 mos.) to Tx: Avg. Cost per ACT User
ACT Services	$41	$29	$111	$0	$9,192	$1,094
HCT Services	$0	$4,894	$1,525	$131	$45	$219
Crisis Resolution & Support	$268	$205	$148	$471	$563	$212
Crisis Stabilization Unit	$113	$99	$49	$29	$93	$11
Residential (PNMI) Services	$3,070	$1,731	$3,036	$5,221	$3,391	$5,019
Inpatient Psychiatric	$3,462	$2,854	$2,156	$4,175	$4,780	$2,614
Emergency Room - Psychiatric	$50	$45	$36	$84	$89	$49
Medication Assessment & Tx	$157	$189	$116	$148	$40	$119
All Mental Health Services	$10,319	$13,441	$9,571	$12,430	$19,571	$11,345

Results: ACT/HCT Mental Health Service Use

- Compared to HCT participants, ACT service users were significantly more likely to use:
  - Crisis Resolution and Support Services
  - Residential (PNMI) Services
  - Inpatient Psychiatric Services
  - Emergency Rooms for MH Reason
  - Medication Assessment and Treatment Services

ACT/HCT Results: ACT/HCT Pre-Post Service Use

- Among ACT users, the use of:
  - Inpatient Psychiatric Treatment, Crisis Intervention, and Emergency Rooms decreased between pre and post study periods, while
  - Use of residential treatment did not decrease significantly between pre-post study period
- Among HCT users, similar to ACT, the use of:
  - Inpatient Psychiatric Treatment, Crisis Intervention and Emergency rooms decreased between pre and post study periods, while
  - Use of residential treatment did not decrease significantly between pre-post study period

Study Results: Cost of Services

ACT Cost Summary

- Overall ACT service costs for ACT study users (n=336) for the 12-month post treatment period was $3,456,097 with an average per child cost of $10,286
- Overall mental health service costs (including ACT) for ACT study users over the 12-month post treatment period was $10,387,834 with a per user cost of $30,916 – nearly 3x the annual cost of the overall CBHS service group at $11,175

HCT Cost Summary

- Overall HCT service costs for HCT study users (n=1,972) for the 12-month post treatment period was $12,658,100 with an average per HCT user cost of $6,419
- Overall mental health service costs (including HCT) for HCT Study users over the 12-month post treatment period was $45,380,000 with a per user cost of $23,012 – nearly 2x the annual cost of the overall CBHS service group at $11,175

Study III: Exploring Services, Costs, and Outcomes

Influence of Trauma on Service Use, Costs and Outcomes for Children with Emotional and Behavioral Challenges

Study Hypotheses

- Child and youth trauma survivors will be more likely to:
  - Use and will use more high-cost psychiatric inpatient, crisis stabilization, and residential treatment services
  - Use and will use more public mental health services and supports at higher expense
  - Use and will use more general health/medical services at higher expense
  - Exhibit less functional improvement as a result of services received

Study Sample: Selection Criteria

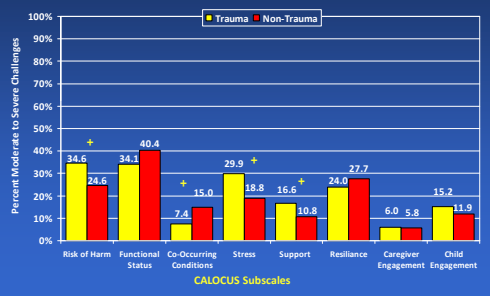
- Sample of 492 children and adolescents enrolled in Targeted Case Management Services in FY 2000 and FY 2001
- Study sample was divided into two groups:
  1. Identified trauma experience group (n=227)
  2. Non-trauma experience group (n=265)
- All study participants were enrolled in Targeted Case Management Services for at least 12 months with functional and/or behavioral assessments completed at baseline at 6 months and 12 months
- All study participants were active Medicaid recipients with at least some mental health service use during FY 2000 or FY 2001

Children and Youth: Comparison of Children With and Without Trauma Experience

	Trauma	Non-Trauma
Gender		
Females	32.6%	29.8%
Males	67.4%	70.2%
Age		
Under 10 Years	27.3%	17.7%
10 to 12 Years	24.2%	28.3%
13 to 15 Years	29.1%	22.6%
15 years and Older	19.4%	31.3%
Mean Age (Years)*	11.78	12.54
Diagnostic Category		
Adjusted Related Disorder	4.8%	3.4%
Conduct/Opposition Disorders	20.7%	24.5%
Anxiety Disorders (non-PTSD)**	0.9%	5.3%
Post-Traumatic Stress Disorder	27.3%	0.0%
ADHD/ADD**	16.3%	27.5%
Bipolar Illness/Affective Psychosis	13.7%	15.5%
Depression	13.7%	18.1%
Psychosis	1.3%	3.8%
Substance Abuse	6.6%	7.9%
Other	1.3%	1.9%

* P < .05
** P < .01

Trauma and Non-Trauma Groups: Comparison of Baseline Behavioral/Functional Profiles CALOCUS Subscales



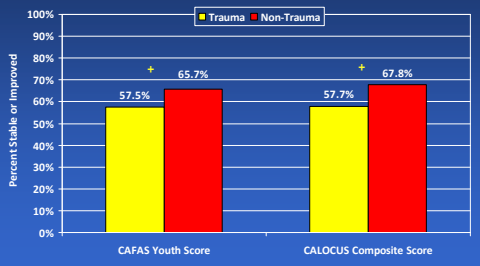
+ Groups differ significantly, p < .05

Trauma and Non-Trauma Groups: Comparison of Mental Health Service Use

Service Area	Trauma Identified (n=227)	Non-Trauma (n=265)	Odds Ratio
Crisis Outreach	56.4%	44.9%	1.59**
Crisis Residential	13.7%	7.2%	2.05*
Inpatient Psychiatric Services	41.9%	30.6%	1.63**
Residential/Group Treatment Services	31.3%	21.9%	1.62*
Out-of-Home Treatment	59.9%	43.8%	1.92**
Outpatient/Clinical Services	76.7%	67.9%	1.55*
Medication Management	61.7%	47.9%	1.75**
Substance Abuse Treatment	10.1%	9.8%	1.04
Behavioral Health Pharmacy	84.6%	84.5%	0.97
Targeted Case Management	100.0%	100.0%	
In-Home Behavioral Services	58.6%	52.8%	1.26
Intensive Home-Based Services	26.9%	20.0%	1.47
Community Support Services	27.3%	21.9%	1.34
Day Treatment Services	6.6%	4.5%	1.49
MR/DD Services	1.8%	3.8%	0.46

** Odds ratio significant, p < .01 * Odds ratio significant, p < .05

Trauma and Non-Trauma Groups: Comparison of Behavioral/Functional Change Between Baseline and 12 Months



+ Groups differ significantly, p < .05

Results Summary: Service Use, Expenditures, Outcomes

Child and youth trauma survivors:

- Were significantly more likely to use high-end mental health services, including: inpatient psychiatric hospitalization, residential/group treatment, and crisis intervention services at significantly higher cost
  - 1.92 times more likely to use out-of-home treatment
  - 1.55 times more likely to use outpatient mental health treatment services
  - 1.75 times more likely to use medication management services
  - 1.61 times more likely to use and used more emergency department services
- Used more targeted case management services at significantly higher expense
- Used outpatient-clinical and medication management services at significantly higher cost
- Had 75% higher health service expenditures and 51% higher overall treatment expenditures
- Were significantly less likely to exhibit behavioral/functional stability or improvement over the study period

Than children and youth without a trauma history

Key Ingredients: Turning Data into Action

- Access to data and analytic capacity to use it effectively
- Ability to link administrative data sets, for example:
  - Child welfare data
  - Medicaid paid claims data
  - Child functional outcome data
- Standard methods for extracting data and identifying service populations, grouping services/procedures, etc.
- Understand stakeholder/user needs and the service system context
- Partnerships with State child serving offices, family and/or stakeholder organizations, and policy makers
- Involve stakeholders in all aspects of the evaluation, such as:
  - Planning/design
  - Analysis
  - Interpretation of the results
- Create multiple forums/venues for feedback, review and discussion of data focused topics
- Provide consultation and technical assistance on the appropriate use and interpretation of the data to drive quality improvement
- Organizational support and culture for using data

Children's Behavioral Health Services: Data Driven Policy & Service System Initiatives

- Contract established with Administrative Services Organization for MaineCare Behavioral Health Services since December 2007
- Development and implementation of a Trauma-Informed System of Care (THRIVE Initiative) and implementation System of Care Principles statewide
- Implementation of two trauma-specific evidence-based treatments in THRIVE SOC, including: TF-CBT and Child Parent Psychotherapy
- Target resources to increase the use of effective, intensive community-based treatments and reduce the use of high cost, out-of-home treatment
- Initiation of Child Steps, an evidence-based mental health research project in three Maine clinics to evaluate the effectiveness of manualized clinical interventions and use of "family partners" for children ages 8 to 14
- Mental health screening of all children who have contact with Child Welfare System
- Enhance the role of families and youth at all levels of CBHS program operations, including: policy development, quality improvement activities and training

Contact Information

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