Universal Behavioral Health Screening in Massachusetts Children on Medicaid: Preliminary Assessment

Judith Savageau, MPH (Univ of Massachusetts)
Jack Simons, PhD (MA Exec Ofc of Health and Human Services)
Georgianna Willis, PhD (Univ of Massachusetts)
Kathy Muhr, MEd (Univ of Massachusetts)
YouFu Li, MD, MPH (Univ of Massachusetts)
David Keller, MD (Univ of Colorado)

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Disclosure

- I, and my colleagues, have no conflicts of interest to disclose....
Overview

• Background
  • Prevalence
  • Unmet Needs
  • Consequences
  • Screening
• Children’s Behavioral Health Initiative (CBHI) - Overview
• Baseline Study: 2008
• Current Study: 2010 and 2012
  • Methods
  • Results
  • Discussion / Conclusion / Next Steps
• Children’s Behavioral Health Initiative - Statewide System of Care

Background: Prevalence of Mental Health Conditions in Children

• Point prevalence estimates range from 13%-22%
• Among children aged 2-17 years with a behavioral or mental health condition, 40% have two or more conditions
• Prevalence rates often vary by age of child, family income and insurance status
  • 1 in 5 (21%) low-income children (6 to 17 yrs) have mental health conditions (vs 6% in non-poor children)
Background: Unmet Mental Health Needs in Children

- Among children with mental health conditions, 79% did not receive mental health care in previous 12-month period...
  - 88% of Latino children have unmet mental health needs (vs 76% of white children)
- Similar national studies… 75% of children with mental health conditions had not received services in past year…
  - 80% blacks
  - 82% Hispanics
  - 72% whites

Background: Consequences of Mental Health Conditions

- Nearly 90% of children and adolescents who commit suicide have a mental health condition
- Approximately 50% of students (14+ yrs) with mental health conditions drop out of high school - the highest dropout rate of any disability group
- Children with mental health conditions miss as many as 18 to 22 school days a year
- Approximately 67% of youth in juvenile justice system have a diagnosable mental health condition
Background: What Constitutes Formal Screening?

- Universal use of standardized screening tool at scheduled well child primary care visits
- Identify children who may need further assessment or intervention
- Not a diagnostic process
- Includes tools with acceptable levels of false positives and false negatives

Background: Screening Children with Standardized Tools

- Many studies note very low rates of screening in primary care for BH conditions in children despite…
  - Clinical assessments alone missing BH issues that screening might have identified
  - Formal screenings foster increased communication between patients/families and primary care providers
  - Enhanced interviewing/screening fosters disclosure of concerns
Background: Screening Children with Standardized Tools

- **Primary care providers** (PCPs: MD, NP, PA) identify many challenges to screening:
  - Time
  - Reimbursement
  - Training
  - Confidence in ability to screen
  - Skills to effectively manage BH/MH issues
  - Resources for referral
  - Confidence in validity of screening tools
  - Fear of stigmatizing child with BH/MH diagnosis
  - Inability to effectively communicate with families

Background: Routine Screening

- Although **PCPs report challenges regarding screening and low rates of routine screening**…
  - Studies cite standardized screening effective in identifying developmental and behavioral conditions in children
  - Studies cite screening rate increases from 10-20% to 60-80% when routine screenings implemented in primary care practice
  - Studies cite provider feedback positive:
    - Ease and feasibility of implementation
    - Increased ability to identify children with BH conditions
Children’s Behavioral Health Initiative (CBHI)

• Created by the Executive Office of Health and Human Services (EOHHS):
  • Response to a class action law suit (known as Rosie D.) filed on behalf of MassHealth*-enrolled children under age of 21 with serious emotional disturbance (SED)
  • In 2008, MassHealth* required PCPs to:
    • offer standardized behavioral health screenings at all well child visits (WCVs) using a BH assessment tool (selected from a choice of approved tools)

• * MassHealth = Massachusetts Medicaid

Children’s Behavioral Health Initiative (CBHI)

• MassHealth requires mental health clinicians use a standardized behavioral health assessment tool (CANS: Child and Adolescent Needs and Strengths)
  • CBHI provides new or enhanced home and community-based behavioral health services
  • CBHI includes a large interagency effort to develop an integrated system of state-funded behavioral health services for children, youth and their families
Study Objectives

In 2008, UMass Medical School’s Center for Health Policy and Research (CHPR) conducted baseline study to examine extent of PCP screening prior to CBHI start. Current study sought to describe:

- Screening practices and referrals among MassHealth insured children after requirement of BH screening at well child visits (WCVs);
- Which screening tools used by PCPs to identify BH/MH conditions; and
- Utilization of services in follow-up to BH screening findings in primary care practices

Methods: Design and Sample

- Repeated cross-sectional study design
- Stratified random sample of 2000 MassHealth members for each of FY2010 and FY2012
- Stratified by age group:
  - 6 mo – 2 yrs
  - 3 – 5 yrs
  - 6 – 11 yrs
  - 12 – 20 yrs
- Same methodology used in baseline study in 2008
Methods: Data Sources

- Medical records reviewed for evidence of formal BH screening and referrals
- Claims data abstracted to identify BH services received

Methods: Chart Reviews

- Medical record reviews of all WCVs for each MassHealth member
- Number of members per practice determined location of review
- Reviews performed:
  - on-site within practices
  - ‘remotely’ through secure fax transmittal of chart notes
- Chart review and database development/management subcontracted to external vendor
Methods: Standardized Screening Tools

- MassHealth-approved BH screening tools include:
  - ASQ:SE: Ages and Stages Questionnaires: Social-Emotional
  - BITSEA: Brief Infant-Toddler Social and Emotional Assessment
  - CRAFFT: Screen for adolescent substance abuse
  - M-CHAT: Modified Checklist for Autism in Toddlers
  - PEDS: Parents’ Evaluation of Developmental Status
  - PHQ-9: Patient Health Questionnaire-9
  - PSC: Pediatric Symptom Checklist
  - Y-PSC: Pediatric Symptom Checklist – Youth
  - SDQ: Strengths and Difficulties Questionnaires

Methods: Vendor and Stakeholder Collaborations

- CHPR and chart review vendor worked closely to develop training manual for nurse abstractors
- Inter-rater reliability checks and quality over-reads were implemented/monitored throughout data collection
- Weekly meetings held with chart review vendor
- Monthly meetings held with MassHealth and EOHHS
Methods: Quality Assurance

- Inter-rater reliability:
  - 2 weeks prior to start of abstractions
  - 1- and 3-month time frames after abstractions began
- Quality over-reads:
  - 25% of all charts in first month
  - 10% of all charts overall; periodically throughout abstraction process
- 95% or better required of all QA activities

Methods: Pilot Test

- Identified a local primary care practice to pilot chart abstraction tool
- Identified practice that primarily used an EMR with some supplemental paper charts
- Abstracted 50 medical records of MassHealth-insured patients, representing all age groups
- 100% of medical records had documentation of formal BH screening
- Debriefed with practice’s Medical Director
Methods: Data Analysis Plan

- Data analyses performed:
  - **Univariate** – use of tools, results of screenings
  - **Bivariate** – factors related to formal screening vs surveillance/none (unadjusted)
  - **Multivariate** – factors related to formal screening vs surveillance/none (adjusted)

- **Claims analysis** – follow-up of positive screens for use of BH services; follow-up of those not screened
- **Repeated cross-section longitudinal review of screening practices and service utilization across 3 study cohorts**

Results: 2008 Baseline Study

- 2000 total members identified for chart review
- 1717 visits abstracted (of 1336 members)
- BH screening with standardized tool: 4.0%
  - Screened positive: 7.4% (67.6% no documentation in chart)
- Referral to BH: 1.3%
- Informal surveillance of BH issues: 81.8%
  - Screened ‘positive’: 13.7%
Results: 2008 Baseline Study

- Among those screened with standardized tool:
  - 11.8% received BH services (12.5% of these inpatient/ED)
- Among those with no screening noted in chart:
  - 17.7% received BH services received (11.5% of these inpatient/ED)
- Among those with positive screens:
  - 40% received BH services (0% of these inpatient/ED)

Results: Current Study Response Rates

- Medical record capture rates:
  - Among 4000 members, 3801 (95.0%) medical records obtained and abstracted
  - Among 5214 visits, 4967 (95.3%) WCVs abstracted
  - Medical records in various formats (approx.):
    - 2008*  2010  2012
    - EMR only:  19.5%  55.1%  59.2%
    - Partial EMR:  7.8%  7.7%  5.2%
    - Paper only:  34.3%  10.7%  9.1%
    - Faxed records:  38.4%  26.5%  26.5%

* 2008 baseline study used FY2007 data: 7/1/06-6/30/07
Results: Interim Analysis

- *4000 total members* identified for chart review
- Represents *5214 visits* (6 mo – 2 yrs have multiple visits; only 1 visit used for all other age groups)
- Current analysis represents:
  - 2010: 1175 children; 1540 WCVs
  - 2012: 1265 children; 1610 WCVs

### Demographic Characteristics of MassHealth Members

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>2010 N (%)</th>
<th>2012 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of members</td>
<td>1175</td>
<td>1265</td>
</tr>
<tr>
<td>Age group:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 mo – 2 yrs</td>
<td>311 (26.5%)</td>
<td>314 (24.8%)</td>
</tr>
<tr>
<td>3 – 5 yrs</td>
<td>295 (25.1%)</td>
<td>315 (24.9%)</td>
</tr>
<tr>
<td>6 – 11 yrs</td>
<td>290 (24.7%)</td>
<td>307 (24.3%)</td>
</tr>
<tr>
<td>12 – 20 yrs</td>
<td>279 (23.7%)</td>
<td>329 (26.0%)</td>
</tr>
<tr>
<td>Gender (Male)</td>
<td>597 (51.7%)</td>
<td>637 (50.8%)</td>
</tr>
<tr>
<td>Race (White)</td>
<td>377 (68.9%)</td>
<td>429 (66.8%)</td>
</tr>
<tr>
<td>Ethnicity (Hispanic)</td>
<td>247 (39.1%)</td>
<td>275 (39.1%)</td>
</tr>
<tr>
<td>Primary language (English)</td>
<td>654 (78.0%)</td>
<td>730 (77.8%)</td>
</tr>
<tr>
<td>Interpreter used at time of visit (Yes)</td>
<td>44 (3.7%)</td>
<td>54 (4.3%)</td>
</tr>
<tr>
<td>Plan type (Managed Care Org, plan)</td>
<td>812 (69.1%)</td>
<td>800 (63.2%)</td>
</tr>
</tbody>
</table>
### Results of Screenings at Primary Care WCVs

<table>
<thead>
<tr>
<th>Type of Screening</th>
<th>2010 N (%)</th>
<th>2012 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of WCVs</td>
<td>1540</td>
<td>1610</td>
</tr>
<tr>
<td>BH screenings:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal / standardized tool</td>
<td>1123 (72.9%)</td>
<td>1202 (74.7%)</td>
</tr>
<tr>
<td>Informal / surveillance</td>
<td>319 (20.7%)</td>
<td>349 (21.7%)</td>
</tr>
<tr>
<td>No screening or surveillance</td>
<td>98 (6.4%)</td>
<td>59 (3.7%)</td>
</tr>
<tr>
<td>Refused screening</td>
<td>17 (1.1%)</td>
<td>10 (0.6%)</td>
</tr>
<tr>
<td>Result of screening:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>170 (15.1%)</td>
<td>158 (13.1%)</td>
</tr>
<tr>
<td>Negative</td>
<td>953 (84.9%)</td>
<td>1044 (86.9%)</td>
</tr>
</tbody>
</table>

### Standardized Tools Used for BH Screenings

<table>
<thead>
<tr>
<th>MassHealth Approved BH Screening Tools</th>
<th>2010 N (%)</th>
<th>2012 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASQ</td>
<td>44 (3.9%)</td>
<td>57 (4.7%)</td>
</tr>
<tr>
<td>BITSEA</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CRAFFT</td>
<td>46 (4.1%)</td>
<td>56 (4.7%)</td>
</tr>
<tr>
<td>M-CHAT</td>
<td>159 (14.2%)</td>
<td>165 (13.7%)</td>
</tr>
<tr>
<td>PEDS</td>
<td>489 (43.5%)</td>
<td>497 (41.3%)</td>
</tr>
<tr>
<td>PHQ-9</td>
<td>11 (1.0%)</td>
<td>13 (1.1%)</td>
</tr>
<tr>
<td>PSC</td>
<td>377 (33.6%)</td>
<td>374 (31.1%)</td>
</tr>
<tr>
<td>Y-PSC</td>
<td>85 (7.6%)</td>
<td>104 (8.7%)</td>
</tr>
<tr>
<td>SDQ</td>
<td>0</td>
<td>2 (0.2%)</td>
</tr>
<tr>
<td>Tools Used in Non-English Languages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Among screens with standardized tools</td>
<td>119 (10.6%)</td>
<td>124 (10.3%)</td>
</tr>
</tbody>
</table>
### Positive Results of BH Screenings

<table>
<thead>
<tr>
<th>MassHealth Approved BH Screening Tools</th>
<th>2010 N (%)</th>
<th>2012 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASQ</td>
<td>1 (2.3%)</td>
<td>3 (5.3%)</td>
</tr>
<tr>
<td>BITSEA</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CRAFFT</td>
<td>2 (4.3%)</td>
<td>3 (5.4%)</td>
</tr>
<tr>
<td>M-CHAT</td>
<td>7 (4.4%)</td>
<td>6 (3.6%)</td>
</tr>
<tr>
<td>PEDS</td>
<td>89 (18.2%)</td>
<td>62 (12.5%)</td>
</tr>
<tr>
<td>PHQ-9</td>
<td>1 (9.1%)</td>
<td>1 (7.7%)</td>
</tr>
<tr>
<td>PSC</td>
<td>65 (17.2%)</td>
<td>62 (16.6%)</td>
</tr>
<tr>
<td>Y-PSC</td>
<td>11 (12.9%)</td>
<td>23 (22.1%)</td>
</tr>
<tr>
<td>SDQ</td>
<td>N/A</td>
<td>0</td>
</tr>
</tbody>
</table>

### Frequency of Behavioral Health Referrals

<table>
<thead>
<tr>
<th></th>
<th>2010 N (%)</th>
<th>2012 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals to BH services (regardless of screening results)</td>
<td>171 (11.2%)</td>
<td>194 (12.1%)</td>
</tr>
<tr>
<td>Referrals after screening positive</td>
<td>29 (17.1%)</td>
<td>20 (12.7%)</td>
</tr>
<tr>
<td>Referral provider noted in chart</td>
<td>23 (79.3%)</td>
<td>14 (70.0%)</td>
</tr>
<tr>
<td>Referrals after screening negative</td>
<td>142 (14.9%)</td>
<td>174 (16.7%)</td>
</tr>
</tbody>
</table>

Provider type: Mental Health
community mental health center, psychiatrist, psychiatric nurse, psychologist, social worker, school adjustment counselor, family counselor

Provider type: Medical
developmental/behavioral pediatrician, hearing specialist, vision specialist, neurologist, OT/PT/ST, surgical specialist, Early Intervention
### Factors Related to Standardized BH Screening: Bivariate/Unadjusted Analysis

<table>
<thead>
<tr>
<th>Demographic Factors (of ‘members’)</th>
<th>2010</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td>$X^2=1.86; p=.60$</td>
<td>$X^2=6.46; p=.09$</td>
</tr>
<tr>
<td>Gender</td>
<td>$X^2=0.89; p=.35$</td>
<td>$X^2=0.58; p=.45$</td>
</tr>
<tr>
<td>Race</td>
<td>$X^2=0.79; p=.37$</td>
<td>$X^2=0.35; p=.55$</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>$X^2=8.02; p=.005$</td>
<td>$X^2=2.48; p=.12$</td>
</tr>
<tr>
<td>Primary language</td>
<td>$X^2=0.68; p=.41$</td>
<td>$X^2=1.60; p=.21$</td>
</tr>
<tr>
<td>Plan type</td>
<td>$X^2=8.38; p=.004$</td>
<td>$X^2=12.44; p&lt;.001$</td>
</tr>
</tbody>
</table>

### Factors Related to Standardized BH Screening: Multivariate/Adjusted Analysis*

<table>
<thead>
<tr>
<th>Demographic Factors (of ‘members’)</th>
<th>2010</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity (Hispanic vs Non-Hispanic)</td>
<td>OR: 1.585 95% CI: 1.025-2.449</td>
<td>OR: .831 95% CI: .536-1.288</td>
</tr>
<tr>
<td>Plan type (MCO vs PCC)**</td>
<td>OR: 1.554 95% CI: 1.163-2.077</td>
<td>OR: 1.607 95% CI: 1.225-2.108</td>
</tr>
</tbody>
</table>

*Adjusted for age, gender, race and primary language

**MCO: Managed care plan; PCC: Primary care management model / fee-for-service plan
Discussion

• BH screening in primary care with standardized assessment tools has increased significantly since Rosie D remedy implementation
• Continue to be primary care visits without any indication of screening, but most have notes about surveillance
• Barriers to screening in primary care unlikely to have changed over time though reimbursement and training issues have been addressed in MA
  • MassHealth pays for use of a screener at time of WCV if PCP submits claim with modifier indicating whether potential BH need identified

Discussion

• When offered a choice of BH screeners, primary care providers chose simple one-page instruments
• Very few screens occurred with non-English screening tools despite tools being available in several languages
• Percent of positive screens consistent with the literature on prevalence of behavioral health conditions in children seen in primary care
• Referrals from primary care very low; many may occur outside well child visits
Discussion

• Few demographic differences observed among those screened/not screened in primary care settings
• Based on 2008 study…
  • Expect to find differences in use of BH services following screening among those with positive vs negative screens
  • Expect to find most BH services following screens provided on outpatient basis

Limitations

• Data incomplete:
  • Screenings not charted in the medical record
  • Medical records absent demographic data
  • Claims data also absent demographic information
  • Unpaid claims later reconciled/paid
  • Incorrect coding of WCVs
  • Definition of positive screen (e.g., clinical interpretation)
  • Referrals made outside of the primary care well visits
Next Steps

- Data cleaning of complete dataset (3801 members and 4967 visits); significant post-coding of open-ended responses
- Claims analysis identifying BH services among screened/not screened children:
  - Outpatient
  - Inpatient
  - Emergency room
- Longitudinal (repeated cross-sectional) analysis from 2008, 2010 and 2012

Conclusions

- Evidence suggests early intervention in child BH conditions results in better health outcomes
- To improve health outcomes, screening must be coupled with access to good training and resources for follow-up when children screen positive
- Primary care screening for early identification of BH conditions, however, not universal among pediatric providers
- Barriers persist to universal screening in primary care
- Non-linear relationship between visits, screening, referrals and services
Conclusions

• Significant increase in formal BH screening rates in primary care since 2008
• Behavioral health screening using standardized tools is well accepted by primary care providers in MA
• Unsure whether PCPs also screening for BH conditions among children insured outside of MassHealth

Well Child Screening: The System of Care Context

Children’s Behavioral Health Initiative (CBHI)
Jack Simons, PhD – Acting Director
Children’s Behavioral Health Initiative (CBHI)

- MA response to Rosie D. lawsuit and court order
- Effort by MA EOHHS to use court order to catalyze broad System of Care development beyond court order boundaries
- Main focus: services of MassHealth with strong collaboration from child-serving agencies within EOHHS
- MassHealth serves between 25-35% of children residing in MA
- Few residents of MA are uninsured

Children’s Behavioral Health Initiative (CBHI)

- In addition to well-child screening for BH conditions…
- CBHI created broad array of new home- and community-based services including:
  - Child-trained mobile crisis intervention teams supporting families up to 7 days
  - In-home family treatment teams, behavior therapy teams, and therapeutic mentoring
  - Broad access to child/family teams using high-fidelity Wraparound
  - Family Partners available in all levels of care, including outpatient
EPSDT: Early Periodic Screening Diagnosis and Treatment

- Rosie D. lawsuit invoked EPSDT provision of federal Medicaid law
- Provides strong entitlement to medical care for youth: birth – up to age 21 (regardless of adult services)
- All states must:
  - provide early and periodic screening for medical conditions including BH
  - provide diagnostic services for conditions disclosed by screening
  - provide treatment for diagnosed conditions
- States develop own periodicity schedules for WCVs

Contact Information

- Judy Savageau, MPH
  UMass Medical School Center for Health Policy and Research
  (508) 856-4333
  judith.savageau@umassmed.edu
- Jack Simons, PhD
  MA Exec Office of Health and Human Services
  (617) 573-1791
  jack.simons@state.ma.us
- CBHI information
  http://www.mass.gov/eohhs/gov/commissions-and-initiatives/cbhi/