The “Stuck Kids” Problem

Assessment of the Children’s Mental Health System in Massachusetts

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This Policy Analysis Exercise reflects the views of the authors and should not be viewed as representing the views of Children’s Behavioral Health Initiative, nor those of Harvard University or any of its faculty.
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EXECUTIVE SUMMARY

The “Stuck Kids” Problem
Children’s Behavioral Health Initiative (CBHI) engaged us to understand how youth flow through the mental health system in Massachusetts, and why some youth do not flow smoothly despite available resources. Specifically, they were interested in two points where youth remain longer than medically necessary while awaiting their next placement: Emergency Departments and acute psychiatric units. Colloquially, this has become known as the “stuck kids” problem.

Methodology
We evaluated the stuck kids problem using both qualitative and quantitative data.

- **Qualitative Analysis:** We interviewed a total of 33 experts, including professionals from state agencies and health care facilities across Massachusetts.
- **Quantitative Analysis:** We analyzed data on providers across the care continuum to characterize the stuck kids problem and identify trends in who becomes stuck.

Key Findings
Stuck kids are an indication of underlying problems in the behavioral health system. As one interviewee described, they are the “canary in the coal mine” indicating that youth are not getting the care that they need along the mental health continuum. Key findings include:

Characteristics of the Stuck Kids Problem
- **Focus on a Subset of the Problem:** The Children Awaiting Resolution and Discharge (CARD) Report, which is used as a key measure of stuck kids, does not capture the full magnitude of the problem. We conservatively estimate that the stuck kids problem is over two times larger than this report suggests.

System of Care
- **Repeat Admissions:** There is a small number of youth who cycle between placements and become stuck multiple times throughout the year.
- **Inadequate Outpatient Care:** Outpatient care is often viewed as the backbone of a functioning mental and behavioral health system. However, inadequate outpatient care was the most frequently cited systemic issue leading to stuck kids. Interviewees described long wait times and poor quality due to lack of coordination and provider experience.
- **Increasing Acuity:** Most providers perceived a recent increase in patient acuity, and many attributed it to the success of CBHI. CBHI has kept many youth in the community, leaving only the most complex, challenging youth in acute settings. Providers do not feel equipped to accommodate this strong concentration of acute patients.

Quality
- **Lack of Quality Outcomes Measurement:** Issues cited by interviewees included a lack of outcome-based quality measurements, inconsistent quality evaluation in different segments of the care continuum, and limited accountability for outcomes.
• **Inadequate Quality of Services:** Many interviewees believed that youth became stuck because the efficacy of services was lacking. Providers felt that both high acuity and complex youth were not well-served by either acute or community-based services.

**Payment**

• **Low Payment Rates:** Most interviewees who identified payment as an issue said that the payment rates were inadequate to support high quality care or to retain experienced staff.

• **Misaligned Payment Structures:** Both state agency and provider interviewees reported that the structure of payments, including fee-for-service and payment from fragmented funding sources, incentivized poor care and prevented them from doing their job well.

**Leadership**

- **Interagency cooperation:** Siloing was an issue raised by every state agency. State agencies expressed a desire to focus on youth and families and not on dividing payments.

- **Provider Communication:** There is frequently a communications gap between what is intended on a state level and what is understood by clinical practitioners.

- **Lack of High-Level Engagement:** While some key stakeholders send high-level representatives to committee meetings focusing on stuck kids, others either fail to send a representative or send a representative that lacks formal decision-making authority.

**Recommendations**

**Short-Term**

- Measure the full scope of the stuck kids problem by developing a system to track and report stuck kids with all insurance plans across the full mental health continuum.

- Engage Secretary Marylou Sudders to make stuck kids a priority and ensure that high-level leadership from key stakeholders is at the table.

**Mid-Term**

- Develop predictive analytics to identify youth at risk of getting stuck and intervene early.

- Focus on repeat admissions and high-utilizers. Develop complex-care management interventions for high-utilizing youth such as for aggression or placement instability.

- Expand quality measurement to include all providers and emphasize care coordination and functional outcomes. Report performance to providers, encourage sharing of best practices, and develop accountability for the efficacy of services.

**Long-Term**

- Pool state agency funding for children’s for mental health services from the youth-serving agencies that frequently require funding negotiations. This would avoid cost-sharing negotiations between state agencies and allow flexible resource allocation.

- Engage in conversations on the movement of MassHealth toward Global Payments and Accountable Care Organizations. Behavioral Health will likely play a pivotal role in these new models and it presents an opportunity to ensure that such structures support the goals of the Children’s Behavioral Health Initiative.
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CHILDREN’S BEHAVIORAL HEALTH INITIATIVE

Children’s Behavioral Health Initiative (CBHI) is an interagency initiative of the Massachusetts Executive Office of Health and Human Services. Its mission is to expand and strengthen community-based services for youth with behavioral health needs.

CBHI was created following the 2006 class action lawsuit, Rosie D. v. Romney, in which eight plaintiffs (aged 5 to 16) sued the state of Massachusetts for violating the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) provisions of the Medicaid Act. Under the EPSDT mandate, state Medicaid programs are required to address both the physical and mental health issues of beneficiaries. The state was found to have provided inadequate early detection and home-based treatment for youth with emotional or mental health needs. As a result, Massachusetts was directed to comply, and CBHI was formed to ensure compliance.

CBHI has led efforts to provide standardized screening and assessment for all children and adolescents with Medicaid (MassHealth) and expand community treatment for youth with severe emotional disturbance (SED). Services provided by CBHI are described in Appendix B. As Director of CBHI, Emily Sherwood coordinates these initiatives and regularly meets with the Rosie D. court monitor to share CBHI’s progress. While CBHI remains under the supervision of the court monitor, there are limits to how and what CBHI can change, as mandated by the terms of the settlement. Appendix C provides an overview of key terms.

CBHI engaged us to understand how youth flow through the mental health system and why some youth do not flow smoothly despite the many resources available. Specifically, they were interested in points on the continuum where youth remain longer than medically necessary while awaiting a next placement or services. Colloquially, this is known as the “stuck kids” problem.

MENTAL HEALTH CONTINUUM OF CARE

A broad range of services is available along the mental health continuum. Children and adolescents flow through the continuum differently depending on their diagnosis, family situation, and state agency involvement. This section provides an overview of how the mental health continuum is designed to meet the health needs of young people through community based, crisis, and acute psychiatric care.

**Community Based**

Outpatient and Wraparound Services are provided in outpatient clinics or in the home setting. Pediatricians screen all children and adolescents for behavioral health concerns and focus on prevention and developmental guidance. If a youth needs behavioral health services, providers see them on a regular basis in the clinic or at home to focus on creating therapeutic partnerships and building emotional skills like resiliency and adaptive coping strategies.

Residential Services are provided to youth in the child welfare system or those living outside of the home. Youth may live in foster homes, group homes, or residential schools for a few months.
or for longer-term placement. These services are tailored to youth who may have severe behavioral disturbances or social situations that make them unable to reside at home.

**Transitional Care** services are for youth in state custody through the Department of Children and Family Services (DCF) who are clinically stable, but require care beyond what is available in the outpatient or residential settings. If a youth is in DCF custody but is awaiting a long-term placement, they may receive care in a Transitional Care Unit (TCU) until a foster home or residential school is found. A youth who needs additional services may also go to a STARR (Short-term Assessment and Rapid Reunification) program while providers determine an appropriate placement.

**Crisis**

Youth are in crisis when they are at high risk of harming themselves or others or cannot be safely maintained in their current living situation. If a youth or caregiver feels unsafe, they will call the Mobile Crisis Intervention (MCI) team or go directly to an Emergency Department (ED). If possible, the MCI team will evaluate the youth in the community. The team will work with caregivers to stabilize the youth and determine appropriate next steps including a community-based support plan or proceeding to acute care. If a youth is in the ED, the MCI team will do a clinical evaluation and search for an acute placement if it is needed.

**Acute Psychiatric Care**

If a youth needs acute treatment, including 24 hour clinical supervision and a staff that can change and administer medications, they will go to an Inpatient unit or Community Based Acute Treatment (CBAT) program. The inpatient unit is a more contained environment with more frequent psychiatric consultation. Both settings provide a highly structured environment with daily therapy options. When it is safe to do so, the youth will be discharged to a lower level of care such as from inpatient to CBAT and then to home or residential placement such as foster care, group home, or a residential school.

**KEY PARTNERSHIPS AND STAKEHOLDERS**

There are several state agency, clinical, and insurance partners that support the mental health continuum and aim to help youth flow smoothly through the system.

**State Agency Partners**

CBHI leads broad initiatives to integrate state-funded behavioral health services across multiple agencies into a “comprehensive, community-based system of care.” Key state agency partners are summarized in Table 1, and details are in Appendix D.
Table 1: Key State Agency Partners

<table>
<thead>
<tr>
<th>State Agency</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Mental Health (DMH)</td>
<td>Mental health authority that licenses inpatient units and provides continuing care services.</td>
</tr>
<tr>
<td>Department of Children and Families (DCF)</td>
<td>Child welfare agency charged with protecting children from abuse and neglect. Provides many residential and transitional care services.</td>
</tr>
<tr>
<td>Department of Youth Services (DYS)</td>
<td>Agency that oversees juvenile justice system and maintains detention centers and group homes.</td>
</tr>
<tr>
<td>Department of Developmental Services (DDS)</td>
<td>Agency that coordinates services for children and adults with intellectual disabilities.</td>
</tr>
<tr>
<td>Department of Education (DE)</td>
<td>Local school systems provide or fund education for special needs children in their communities.</td>
</tr>
</tbody>
</table>

Insurance Partners

Insurance partners provide insurance coverage for behavioral health services. In addition, many are involved in care management and data sharing. While some MassHealth managed care entities (MCEs) cover behavioral health services directly, others subcontract for this care. These behavioral health carve-outs are Massachusetts Behavioral Health Partnership (MBHP) or Beacon Health Strategies. Additional details are available in Appendix E.

Clinical Partners

A broad range of providers along the Continuum of Care serve youth with behavioral health needs. Table 2 provides an overview of the common community-based, crisis, and acute sites of care along the mental health continuum.

Table 2: Key Clinical Partners

<table>
<thead>
<tr>
<th>Community Based</th>
<th>Crisis</th>
<th>Acute Psychiatric Care</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Outpatient Services</em></td>
<td><em>Mobile Crisis Intervention Teams</em></td>
<td><em>Community Based Acute Treatment</em></td>
</tr>
<tr>
<td>▪ Outpatient clinics</td>
<td>▪ Emergency Departments</td>
<td>▪ Inpatient units</td>
</tr>
<tr>
<td>▪ In-home services</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Residential Services</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Foster homes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Group homes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Residential schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Transitional Care</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Transitional Care Units</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ STARR Programs</td>
<td></td>
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</tr>
</tbody>
</table>

Notes: CBHI is one of the providers of outpatient, in-home, and mobile crisis services. Acute psychiatric care units can be located in hospitals as well as free-standing mental health facilities.
FOUNDATIONS FOR A SYSTEM OF CARE

The provision of mental health services for children and adolescents should be grounded in best practices for coordinated care delivery and an understanding of the developing brain for behavioral skill development. *In this report, we will use a developmentally-informed and evidence-based approach, with reference to these foundations as the benchmarks for provision of youth behavioral health services.*

**System of Care**

The concept of a System of Care was originally developed in 1986 by the Substance Abuse and Mental Health Services Administration as part of the national Child and Adolescent Service System Program (CASSP). These ideas have become the framework for the provision of behavioral health services across the country and continue to evolve with the changing needs of mental health systems.

A System of Care is defined as:

“A spectrum of effective, community-based services and support for children and youth with or at risk for mental health or other challenges and their families, that is organized into a coordinated network, builds meaningful partnerships with families and youth, and addresses their cultural and linguistic needs, in order to help them to function better at home, in school, in the community, and throughout life.”

The values of the CBHI reflect such a system of care. CBHI states its core values to be:

- Child-centered and family driven
- Strengths-based
- Culturally responsive
- Collaborative and integrated
- Continuously improving

CBHI seeks to integrate services across the state’s youth-serving agencies around these core values by continuously improving service through the use of data, evidence, recognized best practices, and family feedback.

In this report, we will use this definition of a System of Care and seek to uphold and further the core values of CBHI in our recommendations for the children’s mental health system in Massachusetts.

**Child and Adolescent Development**

The environment of early childhood shapes the developing brain to profoundly affect learning, behavior, and lifetime health. A child’s genetic predisposition, physical environment, and social and familial relationships all impact the ability to learn language, behavioral skills, and social-emotional regulation. Adverse childhood experiences such as abuse or neglect, parental mental illness or substance use, and exposure to family and community violence can change the way the brain develops. Repeated and prolonged exposure to these adverse experiences is
called toxic stress. Tox stress exposes the developing brain to chemicals that impair the child’s ability to learn emotional skills and adaptive coping mechanisms. Prolonged exposure to toxic stress can even alter the genome, leading to effects in future generations.

Research has shown a direct relationship between the intensity and duration of toxic stress and the likelihood of negative outcomes. Lifetime effects include poor mental and behavioral health, educational attainment, low socioeconomic status, and chronic physical diseases such as obesity, cardiovascular disease, and diabetes.

Nurturing caregivers buffer the effects of toxic stress

The negative effects of toxic stress can be mitigated by the protection of a safe, stable, responsive relationship with an adult caregiver. These relationships promote foundational cognitive and behavioral skills that lead to adaptive coping mechanisms and the ability to tolerate stresses. Supportive caregivers and communities buffer the negative effects of toxic stress and offer an opportunity to promote positive development. Programs that bolster the abilities of caregivers, such as visiting nurse programs, are shown to be highly effective.

Stability and permanence matter

Children in the child welfare system also need such buffering relationships. However, those with mental and behavioral health problems are more likely to experience multiple placements and less likely to achieve permanency through reunification, adoption or guardianship. Research has shown placement instability to be associated with previous poor behavior, but also with future externalizing behaviors like acting out and aggression. A system of care should prioritize placement stability, particularly for children with serious behavioral health needs.

Adolescence is a time of vulnerability and great opportunity

Adolescence is a second period of brain plasticity akin to early childhood. The malleability of the brain is U shaped, downward-sloping after the toddler years but increasing again with puberty. Like infancy, this period of heightened change makes adolescents particularly vulnerable to the toxic effects of stress and adverse exposures. In this stage of brain development, they are more susceptible to addiction than adults, have few perceptions of consequences, and are substantially impacted by peers. The average age of onset of mental health problems is 14, and more than half of all serious mental health conditions begin between the ages of 10 and 25. Adolescence is a vulnerable time in development and that requires careful attention in a system of care.

Youth success is determined by self-regulation and resiliency

The central developmental task of adolescence is increasing self-regulation, the ability to recognize and control one’s emotions and impulses. It is the primary predictor of later mental health, educational achievement, and social success. All adolescents, even those with histories of aggression and criminal involvement, can improve self-regulation.
The factors that describe the ability of youth to overcome adverse situations are termed resiliency. Development of resiliency has been described by the “7Cs”:

- Competence
- Confidence
- Connectedness
- Character
- Contribution
- Coping
- Control

These attributes must be the central focus of a youth serving system. Youth need a strong relationship with a caring adult, high expectations for their success, and opportunities for meaningful participation to develop into caring and productive adults.

In this report, we will integrate evidence-informed approaches from the science of child and adolescent development as foundations for our evaluation and recommendations for the children’s mental health system.

PROBLEM

Despite the comprehensive services offered throughout the mental health continuum in Massachusetts, not all youth move through the continuum in a timely manner. Our client, CBHI, engaged us to understand why some youth do not flow through the system smoothly. Specifically, CBHI asked us to analyze the two key points on the continuum where youth remain longer than medically necessary while awaiting their next placement and/or services – Emergency Departments (EDs) and acute psychiatric units (including inpatient and CBAT units). Colloquially, this has become known as the “stuck kids” problem.

Case Illustrations

To illustrate the stuck kids problem, we outline three archetypes of cases shared by EDs and acute psychiatric units during our interviews. These stories highlight how some children get stuck in the mental health continuum despite the supports offered by their community-based care teams. It is important to note these three cases are not unique. Many similar cases were shared with us throughout our interviews. All names and identifying information has been changed.

Case: “Dan” – Adolescent with Trauma History

Dan is a 13 year old young man who was diagnosed with anxiety and post-traumatic stress disorder (PTSD) and was classified as having serious emotional disturbance after repeated episodes of out acting out. He has a significant history of early childhood trauma and has been in DCF custody for the last several years. Figure 1 provides an overview of Dan’s community-based care team.
Dan has had several different placements in foster care and group homes, but his aggressive behavior towards staff and peers has prevented him from remaining in any placement for a long period. During his last group home placement, Dan was taken to the ED after threatening and aggressive behavior toward peers in the residence. When the MCI team arrived to evaluate Dan in the ED, they determined that he required CBAT level of care and started a bed search. Although there were beds available at several hospitals, Dan was not felt to be appropriate for these facilities. Some providers suspected that the units passed on Dan due to his large size and history of aggressive behavior.

While Dan waited for a bed, he became increasingly hopeless and distressed about not knowing where he would be placed next. He began to take his frustration out on ED staff. He threw objects and spit at staff, and required several incidents of restraints. After several weeks, Dan was admitted to a CBAT. However, he remains at high risk of becoming stuck in the CBAT because his group home does not intend to take him back and finding an alternative placement may be difficult due to his history.

Case: “Kerry” – Young Girl with Autism Spectrum Disorder

Kerry is an 8 year-old girl with autism spectrum disorder (ASD) and severe speech delays. Figure 2 below provides an overview of her community-based care team.
Kerry recently presented to the ED after out of control behavior at home. After she arrived in the ED, the MCI team was contacted and arrived to evaluate Kerry. The MCI team determined that Kerry required acute psychiatric treatment, and started an inpatient bed search. Inpatient units were hesitant to admit her because she is nonverbal and they did not feel equipped to care for her. The only inpatient unit that was open to admitting Kerry had a long waitlist and was located in a neighboring state.

In the meantime, Kerry boarded in the ED. The bright lights, constant beeping, and frequent change of staff were disorienting and over-stimulating, and the clinicians did not have the specialized expertise or resources to communicate with or care for her. As a result, Kerry began acting out by biting staff. After three weeks boarding in the ED waiting for an inpatient bed, Kerry left the ED without receiving treatment.

**Case: “Sam” – Adolescent with Aggressive Behavior**

Sam is a 14 year-old young man with a history of trauma and aggressive behavior. Figure 3 below provides an overview of his community-based care team.

**Figure 3: Sam’s Care Team**

Sam has been stuck in a CBAT unit for 2 months. The intake staff at the CBAT had been reluctant to admit Sam because he has a history of assaultive behavior, which requires one-to-one staffing. Sam had been through nearly 20 programs in the last few years including multiple inpatient psychiatric units. These programs have been spread across the state, so he has had a new treatment team each time. His time in each unit has been short due to a combination of pressure from insurance to decrease the length of each admission and his aggressive behavior.

His family is exhausted from his ongoing out-of-control behavior as well as frequent traveling to different programs and re-telling their story to each new provider. Therefore, they are seeking voluntary DCF involvement because they do not feel like they can care for Sam safely in their home. They made this decision at the encouragement of their CBHI family partner, who also feels unsafe around Sam. While his family waits for voluntary DCF involvement, they are refusing to pick Sam up from the CBAT even though he is doing well and his physicians have determined that he is ready for discharge. His family fears that he will act out again after leaving the CBAT.
Residential programs are not an option for Sam at this time. Multiple state agencies are involved in Sam’s care, but they are each hesitant to fund residential care given its high cost. The other agencies have decided to wait to see whether DCF will become involved with the family since DCF involvement would change the interagency dynamics of any funding negotiations.

**Connection to Mental Health Continuum of Care**

These cases are important to consider because some argue that the stuck kids problem has been solved. Fewer youth are reported as stuck relative to a decade ago. However, the stuck kids problem is deeper than the number of reported stuck cases; it is a symptom of larger, persistent problems in the mental health system. To fully represent the core values of CBHI and clinical providers, it is important to understand how and why the system fails this group of youth with severe behavioral health needs.

**METHODOLOGY**

We collected and analyzed both qualitative and quantitative data to evaluate the stuck kids problem in Massachusetts.

**Qualitative Analysis**

We interviewed professionals from state agencies and health care facilities across Massachusetts as well as health policy experts and leaders of successful programs in other states. Overall, we completed 33 interviews. Table 3 below provides an overview of our interviewees.

**Table 3: Interviews**

<table>
<thead>
<tr>
<th>State Agencies</th>
<th>CBHI</th>
<th>DYS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DMH</td>
<td>DCF</td>
</tr>
<tr>
<td></td>
<td>Office of the Child Advocate</td>
<td></td>
</tr>
<tr>
<td>Community Based Providers</td>
<td>Outpatient clinics</td>
<td>DCF STARR programs</td>
</tr>
<tr>
<td></td>
<td>Residential facilities</td>
<td>CSAs</td>
</tr>
<tr>
<td>Crisis Providers</td>
<td>MCI</td>
<td>EDs</td>
</tr>
<tr>
<td>Acute Psychiatric Units</td>
<td>Hospitals</td>
<td>CBATs</td>
</tr>
<tr>
<td>Advocate</td>
<td>Society for the Prevention of Cruelty to Children</td>
<td></td>
</tr>
<tr>
<td>Experts</td>
<td>Mental health policy</td>
<td>Juvenile justice</td>
</tr>
<tr>
<td></td>
<td>Child welfare</td>
<td></td>
</tr>
<tr>
<td>Case Examples</td>
<td>Wraparound Milwaukee</td>
<td></td>
</tr>
</tbody>
</table>

In semi-structured interviews, we asked these professionals to describe 1) who they think of as “stuck kids”, 2) why youth get stuck in acute psychiatric units and EDs, and 3) their recommendations for change.
We used detailed notes from these interviews to evaluate trends in the experience and perspectives regarding the stuck kids problem. We also tracked whether information was volunteered spontaneously or obtained through direct questions. All responses are identified only within a category of interviewee to preserve confidentiality.

Data Limitations

A limitation of any qualitative research is that it is a reflection of the opinions and personal perspectives of interviewees. To address this limitation, every effort was made to speak with a representative cross-section of stakeholders and assess their responses objectively using the constant comparative method of qualitative analysis.31

It is important to note that several interviewees indicated that they felt as though they did not have another avenue to discuss the stuck kids problem outside of their organization, and perceived our interview as an opportunity to report concerns confidentially. Therefore there may be a reporting bias to focus on shortcomings of programs rather than strengths. In addition, responses reflect interviewees’ understanding of the behavioral health system and may not reflect awareness of existing programs to address their concerns. However, such findings also indicate important gaps in communication between segments of the system.

Quantitative Analysis

Data Overview

We compiled existing data from MBHP on acute psychiatric units, crisis providers, and community-based providers to characterize the stuck kids problem and identify trends. See Table 4 below and Appendix G for additional details.

Table 4: MBHP Data Sources and Descriptions

<table>
<thead>
<tr>
<th>Provider</th>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Psychiatric Units</td>
<td>CARD Reports*</td>
<td>Overview of children in CBAT or inpatient units that MBHP determines no longer require the level of care at their current placement, but they have not been yet discharged.</td>
</tr>
<tr>
<td>Crisis</td>
<td>MCI Trends Report</td>
<td>Overview of MCI calls, including call volume as well as calls resulting in ED visits or acute psychiatric unit referrals.</td>
</tr>
<tr>
<td>Community Based</td>
<td>Children’s Mental Health Reports</td>
<td>Overview of utilization of community-based programs, including TCU’s and residential placements. Residential placements include intensive foster care, group homes, and residential schools.</td>
</tr>
</tbody>
</table>

*CARD = Children awaiting resolution and discharge

Notes: Additional detail on data sources and limitations is available in Appendix G.
Data Limitations

While this data is valuable, it is also important to note its limitations. The following children and youth are not included in our data:

- Children and youth boarding in the ED awaiting acute psychiatric unit beds.
- Children and youth stuck in STARR programs and TCUs.
- Children and youth with commercial insurance or an MCE other than MBHP.

Our data limitations present a challenge for drawing conclusions on the stuck kids problem because we only have information on a subset of stuck kids. Therefore, we estimated the total number of stuck kids for all insurance plans and sites of care based on MBHP data, interviews with providers, and bed capacity.

FINDINGS

We define “stuck kids” as any child or adolescent that remains longer than medically necessary at a site of care awaiting their next placement and/or services. Sites of care where youth become stuck include acute psychiatric units, EDs, STARR programs, and TCUs. Although inpatient Administratively Necessary Days and ED boarding are often considered to be separate issues, they stem from the same underlying causes and will therefore be discussed as components of the same “stuck kids” problem.

In this section, we summarize our quantitative and qualitative findings, including:

- Characterization of the stuck kids problem
- Causes of the stuck kids problem

Characterization of the Stuck Kids Problem

To characterize the stuck kids problem, we quantified the number of stuck kids across the care continuum and identified key trends in who becomes stuck.

Number of Stuck Kids

State agencies use the CARD Report as a measure of the stuck kids problem.\(^4\) CARD Reports indicate that there are an average of 147 children and youth per month stuck in acute psychiatric units, including children and youth not affiliated with state agencies.

Based on these CARD Reports, a handful of interviewees believed that the stuck kids problem has been solved. Since more children were stuck for longer periods a decade ago, they do not believe that stuck kids should be a current policy focus.
Despite the achievement of reducing the number of stuck children, it is important to note that the CARD Report does not capture the full spectrum of the stuck kids problem. Note the following data gaps by site of care.

**Acute Psychiatric Units:** Only children with MBHP are included in the CARD Report. Therefore, the report does not capture children with other behavioral health carve-outs or commercial insurance.

**Crisis Providers:** Boarding in the ED or at home while awaiting a bed in an acute psychiatric unit is not systematically tracked across all insurance plans, although most state agency representatives did mention ED boarding was an issue.

**Community Providers:** STARR and TCU programs were developed to help address the stuck kids problem in acute psychiatric units. However, the STARR programs we interviewed reported stuck kids to be a significant problem in their units as well. One STARR program reported having a child stuck for over six months when their length of stay was anticipated to be forty-five days. In addition, TCUs were designed as a transitional program after an acute psychiatric unit discharge to ease the stuck kids problem. Therefore, TCU programs likely face similar challenges with stuck kids.

Accounting for these gaps, we conservatively estimate that the stuck kids problem across all sites of care is over twice as large as CARD Reports indicate. See Table 5 and Appendix K for detailed estimates.

State agencies may argue that these sites or populations are outside the scope of their responsibility. However, providers’ capacity and resources depends on total demand for services. Therefore, it is important to understand the full system.
### Table 5: Estimated Number of Stuck Kids per Month Across Mental Health System

<table>
<thead>
<tr>
<th>Site of Care</th>
<th>Assumptions*</th>
<th>Estimated Number of Stuck Kids per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute Psychiatric Units</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MassHealth</td>
<td>Assume that only MassHealth children with MBHP become stuck and use CARD Report data (including NASA youth).</td>
<td>147</td>
</tr>
<tr>
<td>Commercial</td>
<td>Assume that children with commercial insurance become stuck at 20% the rate of Medicaid children.</td>
<td>61</td>
</tr>
<tr>
<td><strong>Emergency Departments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MassHealth</td>
<td>Assume that 15% of admissions to acute psychiatric units from MCI teams board either in the ED or at home.</td>
<td>84</td>
</tr>
<tr>
<td>Commercial</td>
<td>Assume that children with commercial insurance are admitted to acute psychiatric units from EDs at the same rate as children with Medicaid, and assume that 15% of these admissions board in the ED or at home.</td>
<td>17</td>
</tr>
<tr>
<td><strong>Community-Based Programs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STARR**</td>
<td>Assume that each STARR provider has one stuck kid per month.</td>
<td>18</td>
</tr>
<tr>
<td>TCU**</td>
<td>Assume that 1/3 of children in TCUs have no clear next placement and could be considered stuck.</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Estimates of Stuck Kids per Month**

<table>
<thead>
<tr>
<th>Site of Care</th>
<th>Assumptions*</th>
<th>Estimated Number of Stuck Kids per Month</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Acute Psychiatric Units</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MassHealth</td>
<td>MassHealth (CARD Report)</td>
<td>147</td>
</tr>
<tr>
<td>Commercial</td>
<td></td>
<td>61</td>
</tr>
<tr>
<td>ED Boarding</td>
<td>MassHealth</td>
<td>84</td>
</tr>
<tr>
<td>Commercial</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Community-Based Programs</td>
<td>MassHealth</td>
<td>22</td>
</tr>
<tr>
<td><strong>Estimate of Total Number of Stuck Kids</strong></td>
<td></td>
<td><strong>331</strong></td>
</tr>
</tbody>
</table>

* These assumptions are intended to be conservative. Details on assumptions and sources in Appendix K.
** Only children with MassHealth typically have access to TCU and STARR programs.
Characteristics of Stuck Kids

The majority of providers interviewed spontaneously said that they could tell which youth would become stuck when they presented to care (3/4 of inpatient and 2/3 of MCI interviewees). Provider’s recognition of which youth are at risk indicates strong trends in who is likely to become stuck.

This section provides insight into the demographics of stuck kids based on our qualitative and quantitative analyses. Note that our quantitative analysis relies heavily on CARD Report data because it is the best available data on stuck kids, despite its limitations.

State Agency Affiliation

The increasingly large majority of youth on the CARD Report are affiliated with DCF, which is widely recognized by state agencies and providers (Figure 4).

Figure 4: Youth on CARD List by State Agency by Year

Note: Detailed trends on stuck kids by state agency are available in Appendix I.

The proportion of stuck youth affiliated with DDS, however, contracted from 9% in 2011 to 2% in 2014. DDS affiliation indicates that the youth has a primary diagnosis of an intellectual disability or developmental delay. Despite the small and declining proportion of stuck youth affiliated with DDS, all of the inpatient unit and ED interviewees and half of MCI interviewees perceived that a larger proportion of stuck youth had autism spectrum disorder (ASD) or pervasive developmental delay (PDD).

There are three potential reasons why the CARD Report data is not aligned with providers’ perspectives around ASD and PDD:

Data limitations: There may be a large number of youth with ASD and PDD that are not captured in CARD Report data because they have either commercial insurance or a MassHealth plan that does not use the MBHP behavioral health carve-out.

Access to Resources: Many youth with ASD or PDD may not receive DDS services. Until recently children with ASD were not eligible for DDS unless they had a documented intellectual disability. As a result, providers indicated that these youth were
often not affiliated with a state agency (NASA) or instead received services through DMH. Therefore DDS affiliation may be a poor proxy for ASD or PDD, and the CARD Report data may underrepresent the number of these youth.

**Recall Bias:** People tend to believe that events with emotional significance occur more frequently than they really do.\(^{32}\) Therefore, it is possible that because these cases were more salient to providers due to their both their severity and the reported lack of available resources, they remembered them more readily. Providers reported both a paucity of services and expertise for these youth.

**Age**

According to CARD reports, almost 70% of stuck kids are adolescents (Figure 5). However, few interviewees (3/17 providers, 1/9 state agency representatives) described adolescents as likely to be stuck. In fact, a greater number of interviewees explicitly stated that this is a problem of young children.

It is likely that this disconnect between the quantitative data and provider recollection is another example of recall bias. The behavioral economics literature documents that people use many mental shortcuts, called heuristics, to make decisions. In general, people are more likely to remember the minority of particularly emotional or sympathetic scenarios, rather than the larger proportion of mundane ones.\(^{32}\) This may lead to adolescents featuring less prominently in how providers and state agencies understand the stuck kids problem.

**Figure 5: Average Age on CARD Report, 2011-2014**

![Average Age on CARD Report](image)

**Disposition**

Providers also reported that youth with uncertain dispositions were likely to become stuck. These youth typically lacked either a clear diagnosis or clear goals and next steps. Providers and state agencies noted that youth with uncertain dispositions often began to feel frustrated and hopeless as they cycled through the system with no apparent purpose. As a result, these youth occasionally take out their frustration on staff or peers.

**Common Behavioral Issues**

Common behavioral issues detailed by providers and state agencies included:

- Aggressive behavior
- Sexualized behavior
- Fire setting behavior
As a result of these issues, some youth become stuck because their parents cannot or will not take them home due to safety concerns. Providers report that in some cases parents come to this decision at the encouragement of CBHI family partners.

**Repeated Admissions**

Repeated admissions and being “kicked out” of residential facilities were also named frequently as markers of youth who are likely to become stuck. When youth have a history of repeat admissions or multiple residential placements, it is an indicator that they are difficult to maintain and may require additional staffing or other resources. Therefore, providers become less likely to take that youth and the youth becomes more likely to get stuck.

**Causes of the Stuck Kids Problem**

The most common causes of the stuck kids problem discussed by interviewees included:

- **Systems problems**, including capacity constraints, high acuity patients, frequent readmissions, and the lack of outpatient resources.
- **Quality issues**, including the perceived lack of efficacy of services delivered by CBHI, inpatient units, and MCI teams, and the lack of accountability for quality of outcomes across the system.
- **Payment issues**, in terms of both payment rates and the structure of reimbursement.
- **Leadership and collaboration problems**, including the lack of strong leadership, interagency cooperation, and meaningful participation from all stakeholders.

**Systems Problems**

“Stuck kids are like the canary in the coal mine- they are a manifestation of larger problems in the mental health system” - State agency interviewee

“ED problems flow from hospital problems because of a systemic failure to find appropriate placement . . . it is almost always a systems problem and lack of therapeutic efficacy” - Inpatient provider

Almost all interviewees regarded stuck kids as a surface-level problem that serves as an indicator of more fundamental problems in the mental and behavioral health system. Many spontaneously noted that the issues of stuck kids in the ED and on inpatient units are part of the same system wide problems. The most common problems mentioned include **capacity**, **high acuity**, **frequent readmissions** and, **lack of outpatient resources**.
Capacity

It is widely held that the seasonal variation in demand for child and adolescent acute services complicates the evaluation of capacity needs. The highest volume is when school is in session, while units can be nearly empty during the summer. The majority of interviewees spontaneously raised this issue, and both CARD and MCI data indicate that volumes vary significantly by season. For example, the average number of stuck kids on the CARD Report ranges from 142 during summer months to 155 during fall months (See Appendix I).

Despite trends in seasonal variation, respondents had differing views about whether the cause of youth getting stuck is merely a capacity issue within the mental health system.

In general, state agency interviewees were less likely to think that capacity is a problem; only 4/9 mentioned any kind of capacity constraint. Furthermore, two high level interviewees explicitly stated that capacity was a false start and a distraction from the underlying systems problems.

In contrast, over 75% of providers (13/17) thought that there was a capacity issue in the mental health system that contributed to kids being stuck. This makes sense as the providers are doing the day-to-day admitting and discharging and would perceive a lack of availability in placements. However, there was no broad agreement over where capacity should be expanded.

Among providers, CBATs and STARRs were most likely to think that additional capacity was needed and 75% of these providers cited foster care and residential capacity as a constraint. These are generally the places to which such providers discharge children and adolescents.

Overall, the most common issue mentioned was capacity for autism spectrum and developmentally delayed youth (7/17 providers). This was concentrated in the providers who see these cases most often and experience the youth who are stuck for long periods of time without services. Two-thirds of ED providers and half of MCI and inpatient unit interviewees felt there is not enough capacity for ASD or PDD youth.

Almost no providers thought that more inpatient capacity was needed. A small number expressed the idea that more state hospital Intensive Residential Treatment Program (IRTP) beds would help reduce waiting times.

While CARD Reports indicate that the most common reason that children are stuck is lack of placement after discharge, it is not clear whether capacity constraints drive these placement issues. See Figure 6.
Figure 6: Reported Reason Youth Stuck on CARD Report, 2013-2014

Note: Data from 2011 and 2012 is excluded due to significant changes in reason code definitions beginning in 2012. Similar reason categories have been combined for the purpose of this analysis.

Acuity

The anecdotal sentiment that the “acuity” of the youth in the mental health system has increased in recent years was common throughout our interviews with providers. Notably, all (4/4) inpatient providers and two-thirds of CBAT providers spontaneously raised this issue. Most providers described these higher acuity youth as being more assaultive, combative, and difficult to contain. These behavioral issues were particularly difficult among larger adolescents who had the potential to harm staff or other patients on the unit. As a result, all inpatient interviewees were concerned about the mix on their units due to the high volume of aggressive youth.

“If they want to take kids out of EDs, they are sitting there for a reason . . . They are too disruptive to the milieu. If we already have 3-4 assaultive kids on the unit, we can’t take more.”

--Inpatient provider

The majority (3/4) of inpatient interviewees ascribed the increase in acuity to the success of CBHI. Because CBHI has successfully kept many youth in the community, an unintended consequence has been to leave only the most complex and challenging youth in acute settings.

“CBHI has been successful in keeping a lot of kids in the community who we used to see admitted inpatient . . . But now what is left is extremely acute, assaultive . . . the system hasn’t changed with this demographic change”

--Inpatient provider

The perceived increase in acuity may also have substantial financial implications that affect flow through the system. Most interviewees felt that aggressive youth were less desirable patients for acute units. Half of all providers explicitly stated that there was a financial disincentive for taking aggressive or complex youth, including 3/4 of inpatient providers, 2/3 of EDs, and half of MCI interviewees.
While providers report increasing acuity, they also cite increasing pressure from insurance companies to send higher acuity patients to a lower-cost site of care. CBATs are typically reimbursed at a significantly lower rate than inpatient units. As a result, they reported that CBAT acuity has increased significantly over the last several years. However, the CARD Report data indicates that the proportion of stuck kids in CBATs has remained relatively constant (See Figure 7). However, it is important to note that we do not have data total CBAT volumes or acuity.

**Figure 7: Children on CARD Report by Site of Care, 2011-2014**

<table>
<thead>
<tr>
<th>Year</th>
<th>Substance Abuse</th>
<th>Inpatient</th>
<th>CBAT/ICBAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3%</td>
<td>41%</td>
<td>55%</td>
</tr>
<tr>
<td>2012</td>
<td>8%</td>
<td>36%</td>
<td>57%</td>
</tr>
<tr>
<td>2013</td>
<td>10%</td>
<td>35%</td>
<td>55%</td>
</tr>
<tr>
<td>2014</td>
<td>12%</td>
<td>33%</td>
<td>55%</td>
</tr>
</tbody>
</table>

Some (25%) of providers suggested using a high acuity payment rate because this would incentivize acute units to take aggressive youth from the ED, rather than passing them over for other patients. However, almost an equal number of providers, including half of inpatient interviewees, did not believe this would help. They felt that ultimately a higher rate would not guarantee that these youth get the specialized services and environment that they need.

Many providers, including 3/4 inpatient interviewees and half of MCIs, thought the idea of an intensive adolescent unit had promise. Many cited a comparable adult unit at The Quincy Center, an Arbor facility, which has all single rooms, trained staff, and specialized services for aggressive adult patients.

There may be a notable disconnect between how providers and state agencies perceive trends in acuity. Only a minority (2/9) of state agencies raised the concern of increased acuity.

**Readmissions**

Frequent readmissions were viewed as a fundamental contributor to stuck kids problem by all CBAT, STARR, and outpatient providers and by 3/4 of inpatient interviewees. Overall, half of all interviewees spontaneously raised the issue of readmissions as a problem, making it the
second largest systemic issue mentioned. It is commonly believed that readmissions are fueled by length of stay pressure and the need to “fail up” in order to access more acute services.

**Length of Stay:** Length of stay pressure was a frequently raised topic by interviewees across all sectors (11 total, including 7 providers and 4 state agency interviewees). Many felt as though pressure from insurance providers to decrease length of stay had severely impacted their ability to provide the quality of care that patients needed. In addition, providers stated that they felt like the degree and character of utilization management had changed such that it was more intense and adversarial than in the past.

> “There needs to be more robust programs when they are inpatient or at a higher level of care . . . Maybe keeping them longer is better than having tons of 3-day hospitalizations.” - MCI provider

**Failing Up:** Several provider interviewees specifically mentioned a “fail-up” system in which youth had to experience multiple acute psychiatric hospitalizations before insurance plans, state agencies, or schools would consider funding more intensive treatment or residential care.

> “How many short-term placements should one kid or family need to experience to be paid attention to in a different way?” - CBAT provider

While we do not have data on youth’s admission and residential placement histories, we can use CARD Reports to see how many months a youth appears on the CARD Report over a three-year period (2011-2014). On average, a youth that has been stuck is on the CARD Report for **2.9 months** over this period, with a **wide range from one month to nineteen months**.

The months that a youth is on the CARD Report may be either consecutive or non-consecutive. Non-consecutive months on the CARD Report occur when a youth experiences several distinct stuck episodes. Regardless, being stuck for multiple months is a chronic issue for a subset of youth.

- Over 43% of youth are on the CARD list for greater than three months.
- Over 10% of youth are on the CARD list for greater than four months.
- Over 5% of youth are on the CARD list for greater than five months.

We analyzed how often youth became stuck using three years of CARD Report data. We found that if a child or adolescent is on the CARD Report in any given month, there is a high probability that they will be on the CARD Report for the next two to three months. In addition, there is a subset of youth that will remain stuck for long periods or become stuck again during subsequent months. See Table 6 and Appendix I for details.
Table 6: Fraction of Youth on CARD Report in Months Subsequent to First Appearance

<table>
<thead>
<tr>
<th>Number of Months After First Appearance on CARD Report</th>
<th>Percentage of Youth on CARD Report by Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Appearance on CARD Report</td>
<td>100.0%</td>
</tr>
<tr>
<td>Month 2</td>
<td>87.6%</td>
</tr>
<tr>
<td>Month 3</td>
<td>29.0%</td>
</tr>
<tr>
<td>Month 4</td>
<td>14.8%</td>
</tr>
<tr>
<td>Month 5</td>
<td>10.0%</td>
</tr>
<tr>
<td>Month 6</td>
<td>7.4%</td>
</tr>
<tr>
<td>Month 7</td>
<td>5.6%</td>
</tr>
<tr>
<td>Month 8</td>
<td>4.9%</td>
</tr>
<tr>
<td>Month 9</td>
<td>4.2%</td>
</tr>
<tr>
<td>Month 10</td>
<td>3.6%</td>
</tr>
<tr>
<td>Month 11</td>
<td>4.0%</td>
</tr>
<tr>
<td>Month 12</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Note: This analysis includes data from September, 2011 through August, 2014 for the 989 youth for which CARD Report data was available for at least one year. Each child or adolescent’s initial month on the CARD Report was standardized as “First Appearance.” Each subsequent month references this standardized “First Appearance” month for each youth. Months on the CARD Report may be consecutive or non-consecutive. See Appendix I for details.

These youth who are chronically stuck represent a subset of behavioral health users who use the most system resources and spend the most money, sometimes called super-utilizers.

“Over past 20 years, there has been huge shift in kids trying to be maintained in community, so there are less kids that are in intense residential care, but those kids are really struggling and constantly moving between facilities. Maybe if that kid spent even a few months in a residential placement and got what they needed instead of a Band-Aid approach, maybe they wouldn’t cycle in and out of CBAT.”

- CSA provider

In our interviews, nine providers who represented every clinical area independently raised the idea that there is a small population of youth who are high-utilizers. They are readmitted multiple times in a calendar year and shuttled between CBATs, inpatient, and short stays at home. These same providers also said youth are often getting the wrong level of care, or just need time in residential care but are not eligible for these services. Instead, they often become stuck in many different acute psychiatric units across the state.
Philosophical Divide on Residential Care: Multiple interviewees from across state agencies and provider settings expressed the viewpoint that some families cannot safely maintain more complex youth at home even with maximal supports. However, this was not a view shared by all.

“There is a model of treatment where [therapists] would go into the home and be available to the family as often as possible. The job was to have success with the family. They go in with the belief that they can keep kids who are hard in the home, they really believe that.”
- State agency interviewee A

“We are raising a generation in institutions. And it is not doing much good.”
- State agency interviewee B

“You have to acknowledge that families are at various stages of understanding and willingness to work on behavior.”
- State agency interviewee C

“There has been a change of philosophy that kids need to be in home and community. And we should have that. But it overlooks that some kids that need residential level of care and you can’t apply that philosophy to every kid.”
- CSA provider

“Sometimes there are circumstances that you can’t reasonably, safely, humanely treat a child in a place without walls and secure staffing. No matter what we do, it will always be a necessarily level of care for some kids.”
- MCI provider

These comments underscore a basic philosophical difference that we encountered during interviews. Some favor a rigorous wrap-around approach where even the most challenging youth can remain at home with their families if sufficient intervention is delivered. Others feel that some families are so overwhelmed by current challenges, including a caretaker’s own mental health or personal limitations, that a very high acuity and complex youth cannot be safely maintained at home. These philosophical disagreements are likely complicated by variation in treatment options across the state.

Outpatient

Outpatient mental and behavioral health treatment is often viewed as the backbone of a functioning health system. However, inadequate outpatient care was the single most frequently cited systemic issue leading to stuck kids.

“What is causing this issue? The inadequacy of community mental health. The watering down and lack of integrity of outpatient. Identifying and getting help earlier is very needed.”
- State agency interviewee

When early detection and treatment does not happen, the situation for youth and families deteriorates. Half of state agency interviewees and one third of providers said that inadequate
outpatient care was a root cause of kids becoming stuck and that a recommendation to fix the problem would be to bolster the outpatient system.

> “More and more agencies have shrunk their outpatient component because they are not compensated adequately. Who in the world can afford to do fee-for-service if you are graduating with immense student loans?”
> - CSA provider

All outpatient providers interviewed said that both the payment rates and the current fee-for-service system make it impossible to provide high quality care. In a fee-for-service environment, providers must take on high case-loads to earn an adequate salary through billing for each appointment. They perceive that they are not paid for care coordination services like calling other providers, school, or family members – only for in-person visits.

Multiple interviewees from all sectors cited a lack of highly trained outpatient staff, including child psychiatrists and experienced therapists, leading to long wait lists and poor quality of care for children with MassHealth. They reported that poor quality of care stemmed from lack of care coordination, short appointments, and lack of experience and training.

**Quality Issues**

Many interviewees felt that the lack of **measurement of and accountability for quality outcomes** and the need for **more efficacious services** contributed to the stuck kids problem.

**Quality Measurement**

The quality of mental and behavioral health services is typically measured through process metrics. For example, providers are evaluated on length of stay, whether or not a follow-up appointment is scheduled within a week of discharge, and or restraint rates.

However, outcome measurements of quality that assess clinical improvement or life functioning are rarely used.

> “We should be focusing on the triple aim of healthcare – looking at outcomes and experience, not just utilization”
> - State agency interviewee

> “Systems do not support real quality because we do not look at outcomes”
> - State agency interviewee

The lack of outcomes measurement was brought up most often by advocacy groups and outside policy experts. Both DCF and DMH interviewees raised this as an issue as well, but it was only mentioned by 30% of state agency interviewees overall. Very few providers suggested lack of outcome measurement as a problem.
Rather, more interviewees cited the problem that very little data was collected or shared between agencies or providers. Four state agency interviewees said it was a problem that either data was not collected or not shared. Some cited parental preference for not sharing data or privacy constraints. Four providers recommended collecting better data, though few state agency interviewees expressed this view. Two high level DCF and DMH interviewees said better data sharing and collection would be helpful, but expressed little optimism about this reality.

**Quality of Services**

Many interviewees expressed the idea that youth became stuck because the efficacy of mental and behavioral health services was lacking. They felt that youth are not getting the care they need at the time they need it.

In all, 88% (8/9) of state agency interviewees and 75% (13/17) of providers spontaneously cited the quality of one or more components of the mental and behavioral health system as an underlying problem contributing to stuck kids. The most frequently mentioned areas were CBHI, Inpatient units, and MCI.

**CBHI**

Many interviewees expressed that CBHI was serving the majority of youth well. They mentioned a substantial shift in the number of youth who can safely be cared for in the community and a positive change in the range of options now available for behavioral services.

> "The CBHI continuum of services with CSAs and in-home therapy was huge for allowing us to have legitimate sub-acute alternatives that can hold families and children in the community in a safe and therapeutic way that mitigates risk. It enables providers to aim for hospitalization much less than they did in past.”
> --MCI provider

However, they felt that for a subset of high-acuity or very complex youth, CBHI services were not having the desired effect. The view that CBHI does not serve complex children well was raised spontaneously by at least one interviewee in every group. Eleven interviewees expressed concern about the quality of services in CBHI, including 7 providers and all 3 interviewees from DCF. Ten interviewees cited the experience and level of training of ICCs and in-home behavioral providers, including all regional DCF interviewees and 3/4 inpatient providers. Six interviewees were concerned that supervision was inadequate.
Interviewees often described CBHI clinicians as “inexperienced” and “overwhelmed.” They also cited frequent turnover and inadequate levels of training for challenging cases. Four separate interviewees used identical phrasing that the least experienced providers were treating the most challenging youth in the system.

“They are young and not deeply experienced. They are well intended, but often taken back by the level of violence that they see in these homes.” - Inpatient provider

“The people who are seeing these kids are new grads – so the least experienced in the system are seeing the most disturbed kids. The senior people are not doing the work and the junior people are not getting the supervision.”

- Outpatient provider

“The most difficult setting to work in is the home, so we are putting the hardest work on the least paid and experienced in the system.”

- MCI provider

“The demands and expectations on staff are very, very high. They are dealing with the most complicated kids in the state, with the most needs, and staff don’t have the experience and training and supervision and support.”

- CSA Provider

Many interviewees, including every inpatient provider, expressed a concern about the ability of CBHI providers to work with the most complex children. Several providers expressed concern about the number of in-home team members assigned to each family while seeing little improvement in outcomes.

Another common concern, particularly among inpatient, STARR providers, and DCF was that the family partner often aligns with the caretakers in fear of the youth or pushes the family to keep the youth out of the home. As a result, family partners were often viewed as working in the interests of the caretaker rather than in the best interest of the youth.

Inpatient

About a third of all interviewees raised the issue that the quality of inpatient care has eroded, including most DCF and DMH interviewees. Notably, 3/4 inpatient provider interviewees said that inpatient quality is in general variable or that their units were not providing the kind of care they would like to be.

The most commonly cited reasons for quality erosion were budget constraints and pressure to decrease length of stay.

“The hospital used to be a place where all the difficulties could be worked out, but the hospitals are not given that time anymore. They are not getting paid for the work that they had to do in the past.” - Inpatient provider

Interviewees mentioned hospitals previously offering more therapy and neurocognitive evaluation with psychologists, as well as more occupational therapy, sensory evaluation, and physical therapy that they were unable to do now due to budget constraints.
Length of stay was a frequently raised topic by interviewees across all sectors (11 total, 7 providers and 4 state agency interviewees). All DMH and some DCF interviewees spontaneously raised length of stay pressure. It was also mentioned by 3/4 inpatient, 2/3 CBAT, and an MCI team. In addition, providers stated that they felt like the degree and character of utilization management had changed such that it was more intense and adversarial than in the past.

**MCI**

Some (7/26) interviewees, most of whom were from state agencies including DCF and DYS, stated that MCI services or training needed to be improved. However, very few providers said that MCI services were of variable or poor quality. In fact, 6/17 providers volunteered that their relationship overall was positive with MCI. This included 2/3 of CBAT and ED providers.

The most common state agency recommendation for system change was expansion of the role of MCI to include prevention and crisis planning. However, no providers suggested this. Instead, providers favored improving CBHI services or creating an acute unit for aggressive teens.

**Payment**

Payment was the most commonly discussed problem that interviewees believed influenced stuck kids. Overall, 77% of interviewees (7/9 state agencies, 14/17 providers) spontaneously mentioned payment rates or payment structures, including all outpatient, CBAT, STARR, Inpatient, DMH, and DCF interviewees. However, the issue was quite polarized. While some interviewee groups universally discussed payment, others, such as MCI teams, did not mention it as an issue.

**Rates**

Most interviewees who identified payment as an issue said that the payment rates were inadequate to support high quality care.

> “It takes time to get the kid to go home. The social workers are not doing disposition planning on the unit – the financing doesn’t support this”
> - State agency interviewee

> “The insurance just wants to get the kid out. Some facilities are still doing the right thing, being family centered . . . but they’re not getting paid for it.”
> - State agency interviewee

**Structure**

Most state agency interviewees (75%, including all of DCF and DMH) and 11/17 providers including all CBAT, all outpatient, and some inpatient, MCI, and ED providers, said that the structure of payments incentivized the wrong things. This included hospitals not getting paid for disposition planning (this was said as often by state agencies as by providers). In addition, 100% of outpatient interviewees spontaneously mentioned the negative consequences of a fee-for-service model. Outpatient providers said that they feel rushed to see high caseloads and that the
uncertainty of their income causes people to leave the field. They also perceived that they did not get paid to call community team members, coordinate care, or do other administrative work.

“It’s the fee-for-service model that doesn’t work. How do you do training when you’re doing fee for service?”
- CSA Provider

Although billing codes for patient calls and care coordination exist, it is notable that they were not mentioned by any interviewees. There may be inadequate communication about the use of these codes, or providers may feel that the reimbursement is too low to justify the administrative burden of billing for these individual services.

In addition, different entities fund different aspects of patients’ care. Therefore, funding incentives do not always align even between state agencies. Residential care, for example, is funded by different combinations of state agencies and schools depending on each beneficiaries’ situation. Interviewees report that accessing residential services can therefore require long difficult negotiations between both different state agencies and schools.

**Leadership and Cooperation**

Multiple interviewees said that strong leadership was necessary to improve the mental health care system.

“Someone needs to take the helm, say we are going to do this! This is the model! . . . There needs to be a strategic response.”
- State agency interviewee A

“It all boils down to same problem, which is who is running the show?”
- State agency interviewee B

“There is no hammer, no decider . . . Who can pick up the phone and say you have to take this kid? People are always telling us to do more. Tell me, what is that more?”
- MCI provider

In total, 11/26 interviewees mentioned the need for stronger leadership on a range of issues along the mental health continuum, including a creating a culture of excellence and stronger oversight of hospital rejections. These views were most often expressed by interviewees from DCF and from inpatient hospital units.

Many interviewees were excited by the appointment of Secretary Marylou Sudders, and they believed that she was the only one who could successfully address issues related to interagency cooperation, communication with providers, and bringing key stakeholders to the table.
Interagency Cooperation

Interagency cooperation and siloing was raised as an issue by half (13/26) of all interviewees. It was more frequently raised by state agencies themselves than by providers. Among providers, lack of state agency coordination was most felt by inpatient, CBAT, and STARR programs (7/8 providers). Half of inpatient providers and all STARR programs also mentioned that state agencies and MBHP often do not agree in their clinical recommendations.

“\textquote{It starts at the highest level, being responsible to kids and families. The focus should be on getting the services that they need rather than what door a kid walks through}”
- CBAT provider

“\textquote{Everyone is focused on where the kid should go, not what the kid needs}.”
- State agency A

“\textquote{We should be focused on what is best for the child, not who is paying for what unit of care}.”
- State agency B

State agency interviewees frequently discussed how the state needs to be more responsible to youth and focus on ensuring quality, rather than focus on cost sharing negotiations or dividing payment for care episodes. This sentiment was expressed independently by 7 interviewees, including both DCF and DMH.

Clinical Providers

There is frequently a communications gap between what is intended on a state level and what is understood by clinical practitioners. For example, only a handful of providers we interviewed were familiar with the new Caring Together program (See Appendix F for details on Caring Together). Most were confused about the purpose of the program. Clear communication would be well received by providers.

In addition, providers cited a lack of avenues for expressing their concerns about stuck youth with state agencies and EOHHS. A handful of providers even mentioned fear of future backlash from state agencies if they expressed disagreement with the opinions of state agencies on the cases of individual youth or on the issue of stuck youth more broadly.

Key Stakeholders

While some key stakeholders send high-level representatives to CARD committee meetings focusing on stuck kids, others either fail to send a representative or send a low level representative that lacks formal authority to make decisions.
• DDS: There is no DDS representation at the CARD committee meetings, even though youth with ASD and PDD are a significant concern among other state agencies.

• DCF: DCF’s mental health specialists actively participate in the CARD meetings and they are extremely knowledgeable. However, DCF does not send high-level leadership to these meetings.

• MassHealth MCEs and Behavioral Health Carve-Outs: Only MBHP regularly attends CARD committee meetings. However, efforts are underway to rotate involvement from other MCEs and behavioral health carve-outs in addition to MBHP.

• School Systems: School systems are not directly involved in CARD committee meetings even though cost sharing between state agencies and school districts is a well-known cause of budgetary issues for stuck kids. Half of all interviewees said that involving schools in reform was important or mentioned relationships and communication with schools as a key part of the stuck problem.

• DOI: DOI engages commercial insurance plans and the agency recently held hearings on children’s mental health services. However, they are not actively involved in conversations on stuck kids with other state agencies.

KEY FINDINGS AND RECOMMENDATIONS

The following recommendations are based on our key findings from both our quantitative analysis and qualitative interviews about the nature and causes of the stuck kids problem.

These recommendations incorporate current evidence-based practices from the behavioral health, healthcare economics, and management literatures, as well as lessons learned from successful programs in other states (See Appendix L for case example details). These recommendations also seek to align with the foundational values for a System of Care stated by the Children’s Behavioral Health Initiative.

Our short, mid, and long-term recommendations include:

**Short-Term**

- Measure the full scope of the stuck kids problem.
- Engage key stakeholders to lead initiatives

**Mid-Term**

- Use predictive analytics to enable early intervention.
- Focus on repeat admissions and high-utilizers
- Develop more comprehensive quality measures.

**Long-Term**

- Pool funding to align incentives
- Prepare for future payment models today
Short-Term Recommendation: Measure the full scope of the stuck kids problem

Key Finding
The stuck kids problem is currently defined and measured primarily through the CARD Report. While the CARD Report captures youth stuck in acute psychiatric units who are the direct responsibility of MBHP and the state agencies, it does not describe the full scope and magnitude of the stuck kids problem. We conservatively estimate that the stuck kids problem is two to three times larger than the CARD Report suggests.

Recommendation
Any intervention to address the issue of stuck kids in Massachusetts must be informed by a true understanding of the scope and nature of the problem. Therefore, we recommend developing a system to track and report the stuck kids problem across the care continuum and for all payers.

- **Sites of Care:** Acute psychiatric units, EDs, STARR Programs, and TCUs
- **State Agency Affiliation:** Youth affiliated and youth not affiliated with state agencies
- **Insurance Plans:** All MassHealth and commercial plans

Sharing actionable data is a key to the success of other wraparound programs and would advance CBHI’s core intention to integrate and improve services using data (See cases in Appendix L).

Political Considerations
State agencies may argue that these sites or populations are outside the scope of their responsibility. However, provider capacity and resource availability depends on total demand for services. Therefore, it is important to understand the full system. In addition, insurance plans that have not traditionally been involved in the stuck kids problem may be hesitant to share data. For this reason, it is important to engage both MassHealth and the Department of Insurance to help communicate the importance of collaborating. Finally, clinical partners are likely to welcome the broader focus on stuck kids. However, they will be hesitant of data collection if it requires additional time without a clear benefit.

Operational and Financial Feasibility
Most of these additional data on stuck kids are already tracked by state agencies or insurance plans. Therefore, incorporating this data into a stuck kids report would primarily require building partnerships and establishing data-sharing agreements. ED boarding may be an exception since some insurance plans may not currently track it. Therefore, establishing a comprehensive measure of ED boarding may require additional capacity.

Action Steps
- Form a subcommittee of both state agency and clinical stakeholders to lead this initiative.
- Broaden the definition of stuck kids to include youth with behavioral health needs that do not flow smoothly through any site along the care continuum.
- Partner with insurance plans and the DOI to collect data on non-MBHP stuck kids.
- Work with DCF to collect and report data on stuck kids in TCUs and STARR programs.
- Partner with clinical providers, MCI s, insurance plans, and advocacy groups to develop a strategy for collecting ED boarding data.
- Identify a data-sharing platform to report stuck kid data in an easy-to-use format.
- Ensure that data is actionable and captures important trends in who is stuck and why.
Short-Term Recommendation: Engage key stakeholders to lead initiatives

Key Finding
Many interviewees felt that the leadership necessary to address the stuck kids problem was lacking. They expressed a desire to see someone “leading the charge.”

Recommendation
Many interviewees believed that Secretary Marylou Sudders was the only one who could successfully lead the charge to break down silos and address the stuck kids problem. We certainly agree that it is important to engage Secretary Sudders.

In addition, we recommend engaging the following stakeholders at a high-level with the authority to make decisions and concessions.

- **DDS:** There is no DDS representation at committees focusing on stuck kids. We recommend coordinating with Secretary Sudders to ensure DDS involvement.

- **DOI:** DOI recently held hearings on children’s mental health services. We recommend actively collaborating with DOI leadership on these issues.

- **DCF:** DCF’s mental health specialists actively participate in committees on stuck kids, and they are extremely knowledgeable. We recommend coordinating with Secretary Sudders to engage active support at the Commissioner level as well because stuck kids can only become a visible priority for DCF with high-level support.

- **School Systems:** School systems are not actively involved in committees focusing on stuck kids. We recommend consulting with Secretary Sudders and school superintendents on how to more actively engage school leadership.

- **MassHealth Behavioral MCEs:** Efforts are underway to rotate involvement from other MCEs in addition MBHP. To ensure optimal data collection and care management it is crucial to have all insurance plans actively involved.

- **Clinical providers:** Clinical providers representing different sites of care are not actively engaged in committees or conversations on the stuck kids problem. We recommend creating an avenue for clinical leaders to provide insight on both potential initiatives and provider communication strategies.

Political and Operational Feasibility
Engaging this broad range of stakeholders will be essential to the success of any initiative. Many of these stakeholders are likely eager to participate. For example, many clinical providers want to improve quality and build better relationships with the state. They are just not sure where to start. However, some of the leaders that we recommend engaging, including DDS, are invited to committee meetings on the stuck kid problem and choose not to participate. Engaging these leaders will likely require Secretary Sudders’ leadership.
Action Steps

 Engage Secretary Sudders on the stuck kids problem.
 Identify key stakeholders and work with Secretary Sudders on an engagement strategy.
 Encourage and support genuine communication from stakeholders.
 Subdivide the larger committee into smaller working groups as necessary to promote deeper conversations and accountability.

Mid-Term Recommendation: Use predictive analytics to enable early intervention

Key Finding

Many providers noted that they could tell immediately who was likely to become stuck. CARD Report data corroborated several of the features they identified.

Recommendation

We recommend developing predictive analytics to identify youth at risk of getting stuck. Predictive analysis would enable early intervention, which could prevent children from becoming stuck and promote the development goal of stability and permanence.²⁴

Predictive analytics can be an effective strategy to improve patient care while avoiding lowering costs. For example, Parkland Health and Hospital System in Dallas, Texas has successfully used patient’s clinical and social characteristics to predict who may be in need of additional intervention to prevent heart failure readmissions. As a result, they have reduced 30-day Medicare readmissions for heart failure by 31% without increasing staffing.²⁵

Political Feasibility

Predictive analytics is likely to be supported by most key stakeholders as long as the early intervention teams have the resources and training necessary to be effective. A small number of stakeholders may also be hesitant to support the program if they felt that it would make accessing residential care more difficult for youth in need of those services.

Operational and Financial Feasibility

Developing the algorithm to identify youth at risk of becoming stuck will require a computer scientist or skilled quantitative analyst with broad access to MassHealth data. The potential cost savings from predictive analytics may offset the cost of developing the algorithm and implementing an early intervention program. However, the financial analyses of this recommendation should be ongoing as the analytics are developed and the number of at-risk youth is estimated.
Action Steps:\textsuperscript{36}

- Form a subcommittee of state agencies, clinical providers, and insurance plan stakeholders to lead this initiative.
- Identify a computer scientist or quantitative analyst to evaluate the potential for development of a predictive analytics program using claims data.
- Use historical claims data to evaluate if it is possible to predict who will become stuck.
- Estimate the number of children at risk of becoming stuck.
- Partner with state agencies and clinical providers across the continuum to develop evidence-based early intervention services.
- Develop a pilot program and evaluate the potential for a state-wide program.

Mid-Term Recommendation: Focus on repeat admissions and high-utilizers

Key Finding

The quantitative and qualitative data point to a small number of youth who are admitted multiple times to multiple different programs. These youth cycle between short placements in inpatient units, CBATs, home, and residential facilities, and eventually become stuck. There are also specific populations of high-utilizing youth, such as aggressive adolescents, that are challenging to treat and become stuck.

Recommendation

We recommend developing complex-care management programs and interventions designed for specific high-utilizing populations such as youth with aggression or placement instability. Care management programs specifically for high-utilizers present an opportunity to target the visible gaps in the current system and engage stakeholders, including acute care providers, wraparound programs, and schools.\textsuperscript{37–39} Medicaid behavioral health programs such as those in Colorado and Texas have already started using these approaches (Appendix L).\textsuperscript{40–42}

This small population of youth may also benefit from a wraparound team with specific training and experience in aggression. Massachusetts should continue its role as a leader in restraint reduction by implementing on a statewide basis programs such as the Collaborative Problem Solving (CPS) approach or the Treatment of Maladaptive Aggression in Youth (T-MAY) guidelines and sharing best practices between adolescent providers.\textsuperscript{43–45} Targeted interventions provide an opportunity to address the adolescent population that is often overlooked in stuck kid discussions, but who is at a critical junction for developing behavioral skills for future success.

Operational and Political Feasibility

MCEs and hospitals already measure 30-day readmission rates; however they only pertain to readmission to the same hospital. By virtue of admission to the first open acute bed, youths are often readmitted instead to another inpatient unit or CBAT, which should also be measured. Health plans could use claims data to develop a more complete metric as well as a “trigger criteria” by examining outliers in top spending or number of admissions. Providers expressed challenges with these youth and would welcome more information and resources. They also voiced support for an intensive adolescent unit with single rooms and specialized staff which may present an opportunity to decrease boarding while improving care for this population.
Financial Feasibility

Developing complex-care management teams and specific programming for aggressive youth will require upfront investment. It will require special staff training and retaining experienced staff. However, previous cross-disciplinary case management initiatives like the Massachusetts Mental Health Services Partnership for Youth (MHSPY) demonstrated cost-effectiveness for a similar small, high-need group (Appendix L).\textsuperscript{46,47} In addition, success will require easing length of stay penalties for acute units. Strict utilization review is correlated with increased readmissions in youth specifically, and it may save money overall with fewer, more intensive treatment options. \textsuperscript{48}

Action Steps

- Collect and share data on 30-day readmission to all inpatient units or CBATs.
- Share and implement best practices for adolescents and aggressive youth, and investigate the development of intensive units.
- Develop a “trigger criteria” for high utilization such as historic admissions or spending.
- Develop high-utilizer care management program including both acute care and wraparound providers.
- Monitor readmissions and overall utilization in addition to the number of youth who become stuck. Share information among providers to facilitate shared responsibility.

Mid-Term Recommendation: Develop more comprehensive quality measures

Key Finding

Stuck kids are an indication of underlying problems in the behavioral health system. Youth who become stuck are not getting the care that they need. Providers and agencies across the system are not held accountable for care processes, outcomes, coordination, and client satisfaction.

Recommendation

We recommend expanding quality measurement to include all providers, emphasizing care coordination and functional outcomes. Currently, CBHI rigorously evaluates its wraparound processes including those in outpatient, MCI, and ICC/IHT. These evaluations also include measures of family engagement and satisfaction.\textsuperscript{49} Similar quality measures should be developed throughout the system to encourage use of recommended practices and coordination between silos of care delivery. Agency integration and continuous improvement are core tenets of CBHI, and meaningful improvement in youth functioning should be a joint responsibility of youth-serving entities.

Measuring outcomes in behavioral health can be particularly challenging due to the range of presentations and the difficulty of attributing improvement to interventions.\textsuperscript{50-52} It is also important to ensure adequate risk-adjustment in reporting outcomes to not select against challenging patients.\textsuperscript{53-55} However, outcome measurement and payment is now increasingly used to guide progress in a diverse care team. Philadelphia Community Behavioral Health, a Medicaid MCE, uses pay-for-performance for nearly all providers and has observed promising
improvements.\textsuperscript{56,57} (Appendix L). Even without financial incentives, public reporting of measures is shown to stimulate provider quality improvement processes.\textsuperscript{58,59}

Massachusetts already uses the CANS as an instrument for process and outcomes measures;\textsuperscript{60} however, we believe it can better utilized to achieve its full potential. We recommend converting the CANS into a fully electronic system that providers can update in a timely manner and use to view the progress of individual patients over time. Evaluations should also be shared between providers in different settings to facilitate collaboration and mutual accountability.

**Operational and Political Feasibility**

Operationally, improvement of the CANS is very feasible but requires technical assistance. Full data sharing will be more difficult, but other systems such as Wraparound Milwaukee have successfully used a voluntary waiver to enable access to relevant data on the part of a broad group of individuals working with a child and family (Appendix L).\textsuperscript{61–64}

Politically, it is important to develop a culture among providers of continuous improvement and data use. Studies of other Medicaid systems have shown most success when stakeholders help design the measures and feel like the data is straightforward to contribute and meaningful for their individual practice.\textsuperscript{65,66}

**Action Steps**

- Identify programming assistance to develop an electronic and viewable CANS system.
- Develop waivers to enable sharing of CANS data for patients entering a system of care.
- Use experience with CBHI wraparound quality measurement to develop measures for other care settings (acute, outpatient, residential) including recommended practices, functional outcomes, care coordination, and satisfaction.
- Share data on individual performance with providers, including their performance relative to the aggregate group of their peers.
- Consider future options to integrate quality with financial accountability using pay-for-performance, particularly under a global payment or shared budget system that encourages flexible resource use.

**Long-Term Recommendation: Align payment incentives through pooled funding**

**Key Finding**

Funding incentives are not aligned between state agencies. When youth need services that require joint funding decisions between state agencies, funding negotiations can be slow and difficult. Interviewees report feeling like everyone is always pointing the finger at everyone else. As a result, youth can be at high risk of being stuck for longer amounts of time.

**Recommendation**

We recommend pooling state agency funding for children’s behavioral health services for use with that group of individuals whose care frequently requires funding negotiations. Pooled funding would allow state agencies to make decisions about service provision on the basis of need rather than on individual agency budgets. By removing constraints on time and type of care,
pooled funding has the potential to reduce both the number of stuck kids and the length of stay of stuck kids. In addition, it could improve overall collaboration between state agencies. See Appendix L for case examples of how pooled state agency funding can align incentives.

**Political Feasibility**

Pooled funding would require the leadership and support of Secretary Sudders. Some state agencies are likely to resist pooled funding because it reduces the autonomy of individual agencies. However, recent success with DMH and DCF collaborating on the Caring Together initiative may provide a solid foundation for pooling interagency funding. Insurance plans and clinical providers are likely to support pooled funding if it decreases the amount of time that children are stuck in acute psychiatric units and they can share in the resulting savings.

**Operational and Financial Feasibility**

Establishing pooled funding will require an intensive financial analysis of historical state agency spending as well as the characteristics of youth that become stuck. This analysis will help to identify which services should be included and to determine the scope and potential magnitude of state agency contributions. Secretary Sudders should chair an interagency committee that oversees this process. The committee should also determine operating procedures for requesting services covered by the pooled funding. By aligning incentives, pooled funding has the potential to decrease length of stay, which would both improve quality and reduce costs.

**Action Steps**

- Engage Secretary Sudders on aligning incentives through pooled funding.
- Establish an interagency committee to lead the transition pooled funding.
- Analyze historical interagency conflict and joint funding to determine which services are appropriate to include in the initiative.
- Analyze historical spending for these services to determine how each state agency should contribute to the pooled fund.
- Establish a system for ongoing evaluation. Consider the following metrics:
  - Length of stay
  - Number of kids stuck while awaiting placement
  - Utilization of services funded through pool and directly through state agencies
  - Number of interagency conflicts
- Implement pooled funding in stages by starting with one specific set of services to ensure that the processes work well.

**Long-Term Recommendation: Prepare for future payment models today**

**Key Finding**

The incentive and accountability structures in the children’s mental health system are fundamentally misaligned. Different providers and state agencies are responsible for discrete points along the continuum. However, no single person or entity is responsible for ensuring that children flow through the system of care smoothly and appropriately. Many providers reported that this structure actually prevents them from doing their jobs well. As one interviewee put it, “You don’t necessarily have to pay people more. You just have to pay them differently.”
Recommendation

The structure of MassHealth payment is set to change as it evaluates the potential for accountable care organizations (ACOs).\(^{67,68}\) We recommend actively engaging in these payment conversations to ensure that the new payment structures support CBHI’s goals. ACOs are groups of physicians and hospitals that are responsible for caring for a defined group of patients. ACOs are often funded through global payments, which are set amounts per patient for specific time periods.\(^ {69}\) This structure allows providers to focus on the most appropriate services for children and their families without considering reimbursement details. Providers are also rewarded for managing their patients well. If providers meet both financial and quality targets, they receive financial rewards funded by the savings that accrue from better patient management.\(^ {69}\) This reward structure is commonly referred to as “shared savings.”

Centers for Medicare and Medicaid Services has suggested global payment models with shared savings as a strategy for addressing fragmented behavioral health systems, particularly in states with behavioral health carve-outs like Massachusetts.\(^ {70}\) Philadelphia County in Pennsylvania started a Medicaid shared savings program in 2009 and early results are promising. Not only do early results indicate that behavioral health care is improving, but their payment structure is supporting the integration of physical and behavioral care.\(^ {67,70}\) See Appendix L for case details.

Political Feasibility

Global payment would require the leadership and support of Secretary Sudders as well as Governor Baker. While some state agencies and clinical providers are likely to be hesitant of large changes to payment structure, others are likely to support the goals of payment reform.

Operational and Financial Feasibility

Global payment may require MassHealth MCOs and providers to invest in technology to support the new payment structure. Providers and state agencies would also require training on the new payment structure. While some ACOs cite large upfront costs, it is highly variable, and global payment also offers cost savings and quality improvement opportunities.

Action Steps

- Engage Secretary Sudders on the role of children’s behavioral health in Medicaid ACOs.
- Join the MassHealth conversations on payment reform.
- Establish a committee with state agencies and providers to prepare for payment reform.
- Develop a strategy with provider leaders to communicate payment changes to providers.
- Identify and measure quality metrics before financial incentives are in place.
- Develop metrics to evaluate success.
CONCLUSION

Stuck kids are the “canary in the coal mine” indicating fundamental problems in the mental health system in Massachusetts. Although many children, adolescents, and their families benefit from the current behavioral health services, there is a group of youth who are not being well served. Addressing the underlying causes of the stuck kids problem will require significant structural and payment changes to the mental and behavioral health system. These changes would enable greater collaboration and alignment between state agencies, payers, and providers to support the provision of high-quality care delivered at the right place and the right time.

Leading change on these underlying causes of stuck kids offers an opportunity for the Children’s Behavioral Health Initiative to strengthen its role in providing comprehensive services to all youth with significant behavioral health needs. The recommendations that we have outlined in this report provide a path forward toward a system of care that reflects the core values of CBHI. Now is a pivotal moment in the development of reformed health systems in Massachusetts and CBHI is well poised to be a leader and advocate for this important population of young people.
APPENDIX

- A – Glossary of Terms
- B – CBHI
- C – Rosie D. Lawsuit
- D – State Agency Partners
- E – Insurance Partners
- F – Prior Interventions on Stuck Kids
- G – Data Sources
- H – Qualitative Interviews
- I – CARD Report Analysis
- J – MCI Data Analysis
- K – Estimated Number of Stuck Kids
- L – Case Studies
**A – Glossary of Terms**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACO</td>
<td>Accountable Care Organization</td>
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<td>ASD</td>
<td>Autism Spectrum Disorder</td>
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<td>CARD</td>
<td>Child Awaiting Resolution and Disposition</td>
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<tr>
<td>CBAT</td>
<td>Community Based Acute Treatment</td>
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<tr>
<td>CBHI</td>
<td>Children’s Behavioral Health Initiative</td>
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<td>DCF</td>
<td>Department of Children and Family Services</td>
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<td>DDS</td>
<td>Department of Developmental Services</td>
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<td>DE</td>
<td>Department of Education</td>
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<td>DMS</td>
<td>Department of Mental Health</td>
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<td>DYS</td>
<td>Department of Youth Services</td>
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<tr>
<td>ED</td>
<td>Emergency Department</td>
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<td>EOHHS</td>
<td>Executive Office of Health and Human Services</td>
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<td>EPSDT</td>
<td>Early and Periodic Screening, Diagnosis, and Treatment</td>
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<tr>
<td>ICBAT</td>
<td>Intensive Community Based Acute Treatment</td>
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<td>ICC</td>
<td>Intensive Care Coordination</td>
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<td>IHBH</td>
<td>In-Home Behavioral Health</td>
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<td>IHT</td>
<td>In-Home Therapy</td>
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<tr>
<td>IP</td>
<td>Inpatient</td>
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<tr>
<td>IRTP</td>
<td>Intensive Residential Treatment Program</td>
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<td>MBHP</td>
<td>Massachusetts Behavioral Health Partnership</td>
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<td>MCE</td>
<td>Managed Care Entity</td>
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<td>MCI</td>
<td>Mobile Crisis Intervention</td>
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<td>MCO</td>
<td>Managed Care Organization</td>
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<tr>
<td>PDD</td>
<td>Pervasive Developmental Delay</td>
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<tr>
<td>SED</td>
<td>Serious Emotional Disturbance</td>
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<tr>
<td>STARR</td>
<td>Short-Term Assessment and Rapid Reunification</td>
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<tr>
<td>TCU</td>
<td>Transitional Care Unit</td>
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CBHI expanded the home and community-based treatment options for children with mental health needs. The table below provides an overview of these services.

### Table B.1: CBHI Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
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<tbody>
<tr>
<td>Behavioral Health Screening</td>
<td>Pediatricians conduct voluntary behavioral health screenings during well-child visits.</td>
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<tr>
<td>Comprehensive Diagnostic Assessments</td>
<td>Care teams conduct assessments that include a review of the child’s medical record and a home visit as well as interviews with family members and teachers.</td>
</tr>
<tr>
<td>Mobile Crisis Intervention (MCI)</td>
<td>MCI is a 24-hour mobile service that responds to children in crisis in their homes or in the community. MCI teams assess, de-escalate, and stabilize the situation and make referrals to support services. When the child needs more acute services, the MCI team takes the child to the ED.</td>
</tr>
<tr>
<td>In-Home Therapy</td>
<td>Mental health therapists provide counseling and therapy to the child and their family. Aides may also provide support in the home, school or community settings.</td>
</tr>
<tr>
<td>Intensive Care Coordination (ICC)</td>
<td>Care manager coordinates and oversees all aspects of children’s health care and treatment. Note that only children diagnosed with SED who are receiving services from more than one state agency and/or provider are eligible for ICC.</td>
</tr>
<tr>
<td>Family Support and Training</td>
<td>Family Partners help children and their families participate in the care planning process, access services, and navigate agencies.</td>
</tr>
<tr>
<td>In-Home Behavioral Services</td>
<td>Behavioral therapists develop and monitor behavioral management plans with families. Behavioral aides then work with families to implement the plan.</td>
</tr>
<tr>
<td>Therapeutic Monitoring</td>
<td>Paraprofessionals work with children on their independent living, social, and communication skills</td>
</tr>
</tbody>
</table>
Eligibility\(^5,71\)
Children are eligible for CBHI services if they meet each of the following requirements:\(^1\)
- Resident of Massachusetts
- Eligible for MassHealth
- Under the age of 21
- Diagnosed with a serious emotional, behavioral of psychiatric conditions
- Determined to need home-based services through a mental health evaluation

Access\(^5,72\)
To receive a particular CBHI service, the child must meet the medically necessary criteria for that specific service. Appropriate services for eligible children are identified through several different channels, including:

**Behavioral health screenings:** Primary care physicians and nurses must offer voluntary behavioral health screenings at well-child visits.

**Mental health evaluations:** Children with known conditions have mental health evaluations to determine their service needs. This evaluation will include a CANS survey to identify the child and family’s strengths and needs.

**Home-based assessment:** Children diagnosed with SED who are receiving services from more than one state agency and/or provider are entitled to intensive-care coordination. Their care manager will coordinate a comprehensive home-based assessment to determine the child and family’s strengths and needs.
C – Rosie D. Lawsuit

In a 2006 class action lawsuit, *Rosie D. v. Romney*, eight plaintiffs (aged 5 to 16) sued the state of Massachusetts for violating the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) provisions of the Medicaid Act. As a result, Massachusetts was directed to comply with a remedial plan to address these inadequacies, and a court monitor was appointed to ensure compliance.\(^\text{73}\)

The final remedial plan includes the following key terms, which may restrict the changes that CBHI can make to address the stuck kids problem.\(^\text{73}\)

- **Screening**: Standardized screening instruments must be used to determine eligibility for home-based services.
- **Child and Adolescent Needs (CANS) Tool**: The CANS tool must be used for preliminary assessments.
- **Qualifications, Training, and Supervision Requirements**: Minimum qualifications and training requirements are outlined for care managers and the Child and Family Team, which includes home-based service providers. Supervision requirements for these Child and Family Teams are also specified.
- **Child and Family Team**: Guidelines on who should be included on the team are included, and minimum requirements for the clinical and administrative functions of the Child and Family team are outlined.
- **Eligibility**: Eligibility cannot be further restricted. While reimbursement rates and utilization procedures can be changed or developed, they cannot effectively restrict eligibility further.
- **Data and Evaluation**: Utilization data must be collected on screening, assessment, and case management. However, there is no requirement to evaluate child and family outcomes.

Note that these terms would be difficult to change during the duration of the court monitoring. The anticipated end date of the court monitoring is not publically available.
D – State Agency Partners

Department of Mental Health (DMH)74

The Department of Mental Health is the State Mental Health Authority. It operates two state hospitals and three public inpatient hospital units. It also offers an Intensive Residential Treatment Program (IRTP) for adolescents and Clinically Intensive Residential Treatment (CIRT) for children. DMH contracts and pays for long-term residential and group home placements in the community. Most DMH services are delivered in the community through partnering providers. The agency also performs targeted case management through Medicaid funding. DMH licenses all psychiatric inpatient hospital units in the Commonwealth.

Children and adolescents up to 18 years are eligible for DMH services through diagnosis with an Axis I psychiatric condition that does not include developmental delay. Youth must also meet certain criteria for lack of functioning in their environment. Child focused services are centered on serious emotional disturbance while adult services are focused on those with chronic, serious mental health needs.

The current commissioner of DMH is Marcia Fowler who has been in her role since 2012. The agency is divided into 5 geographic regions, each managed by a Regional Director. At the state level, the Central Office coordinates all regional activities and has a Division of Child and Adolescent Services, led by a deputy commissioner.

Department of Children and Families (DCF)75

The Department of Children and Families is the child welfare agency charged with protecting children from abuse and neglect. DCF services are not granted through eligibility, but rather report of abuse/neglect through 51A filing or voluntarily seeking assistance by a CRA (Child Requiring Assistance) petition. All children who receive DCF services are eligible for MassHealth and are all assigned to the PCC plan with MBHP mental health services.

DCF operates the foster care system in the Commonwealth, including therapeutic or intensive foster care placements. In the mental health system, it operates Transitional Care Units (TCUs) and Stabilization, Assessment, and Rapid Reunification (STARR) programs for children who no longer meet acute hospital level of care but cannot be readily discharged to home or foster care. Historically, the agency has been the primary contractor for residential services.

The agency is organized into 4 regional offices with several area offices within each region. There is one mental health clinician per regional office. These individuals report to a state mental health coordinator. These clinicians are separate from the hierarchy of case workers to regional directors and state officers. The interim-commissioner of DCF is Erin Deveney, appointed after Olga Roche resigned in April 2014. Recently, Linda Spears, currently head of the Child Welfare League of America, was appointed as the next DCF Commissioner under Governor Baker.
Department of Youth Services (DYS)\textsuperscript{76}

The Department of Youth Services oversees the juvenile justice system in the Commonwealth. Youth become committed to DYS by a criminal court judge. DYS operates overnight arrest units, detention centers, and residential programs throughout the state. The agency is divided into 5 regional units across the state, each with its own supervision. Mental health issues are overseen at the state office level by an assistant commissioner. The current Commissioner is Peter Forbes who has been in office since 2013.

Department of Developmental Services (DDS)\textsuperscript{77}

The Department of Developmental Services is the state agency charged with overseeing coordinated services for children and adults with intellectual disabilities. This includes those youth diagnosed with Pervasive Developmental Delay (PDD) and as of this year, the agency will serve youth with Autism Spectrum Disorder (ASD). Eligibility requirements for services include formal intelligence and developmental testing with an established medical diagnosis. The agency is comprised of 4 regional offices and smaller area offices overseen by the state Central Office. The current DDS commissioner is Elin Howe.

Department of Education (DOE)

The State Department of Education is a key stakeholder through its involvement with special education, therapeutic schools, and residential schools that frequently serve children and adolescents with severe behavioral needs. Under Chapter 766 the each local school system is required to fund education for any special needs child in that community.\textsuperscript{78} This includes school portions of long-term residential treatment settings.
E – Insurance Partners

Families with children enrolled in MassHealth choose a managed care plan to provide their insurance coverage. Managed care plans must ensure that their network includes access to a set of mandated services, including mental and behavioral health services. While some managed care plans provide these services directly, others plans subcontract for behavioral health services. These subcontracted plans for behavioral health services are called “behavioral health carveouts.”

There are two general types of managed care plans, and behavioral health insurance coverage can vary based on the type of plan.79

**Primary Care Clinician (PCC) Plans:** Members in PCC plans receive behavioral health insurance through a behavioral health carve-out. Massachusetts Behavioral Health Partnership (MBHP) currently has the contract for these services.

**Manage Care Organization (MCO) Plans:** There are five MCO plans in Massachusetts. Each MCO plan either insures behavioral health services directly or uses a behavioral health carve-out. All MCO plans using a behavioral health carve-out contract with either MBHP or Beacon Health Strategies.4

MBHP is the primary payer for mental health services in the Commonwealth. MBHP operates 5 regional offices around Massachusetts. Currently, Carol Kress, LICSW is interim CEO and Jim Thatcher, MD is the Chief Medical Officer.80 Beacon Health Strategies recently acquired ValueOptions, the parent company of MBHP, and formed Beacon Health Options.81 However, MBHP currently operates as a distinct MCE from the perspective of state agencies and providers.4
F – Prior Interventions on Stuck Kids

Research Studies

Previous research on youth who are unable to move to their next location of care have focused on Emergency Department (ED) boarding. To our knowledge, no studies have specifically focused on youth stuck on acute psychiatric units.

Nationally, literature on ED boarding has focused on adults. The Office of the Assistant Secretary for Planning and Evaluation (ASPE) in the U. S. Department of Health and Human Services published a national literature review and interview study on psychiatric boarding in 2008.82,83 However, studies of adults and of states with high rates of uninsurance may not be generalizable to youth in Massachusetts due to differences in resource availability. Pediatric studies have largely focused on the length of stay for psychiatric patients and implications for emergency department management.84,85

Research teams in the Emergency Departments at Boston Children’s Hospital and Boston Medical Center published several observational studies detailing youth boarding in EDs and pediatric medical floors.86–88 These studies are summarized in Table F.1.

These studies are the most relevant literature on the issue of stuck youth in Massachusetts. However, it is important to note that all were conducted before CBHI was implemented, which we believe has changed the dynamics governing which youth are likely to be stuck versus which may be treated in the community. Additional research is needed to understand the full extent of these problems in the current behavioral health system.
### Table F.1: Prior studies of Pediatric ED Boarding in Massachusetts

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Method</th>
<th>Key Findings</th>
</tr>
</thead>
</table>
| Wharff, et. al., “Predictors of psychiatric boarding in the emergency department.” *Pediatric Emergency Care*, 2011 | Psychiatric ED in freestanding children’s hospital (Boston Children’s Hospital) | Retrospective Cohort Study (2007-2008) | • 34% of youth presenting for inpatient hospitalization boarded on the medical service  
• Increased odds of boarding for: 1) diagnoses of autism, mental retardation, developmental delay 2) Presentation during weekend or months without a school vacation 3) Severe suicidal ideation (reverse triage)  
• No correlation with age, race, insurance status |
| Mansbach, et. al., “Which psychiatric patients board on the medical services?” *Pediatrics*, 2003 | Psychiatric ED in freestanding children’s hospital (Boston Children’s Hospital) | Retrospective Cohort Study (1999-2000) | • 33% of youth presenting for inpatient hospitalization boarded on the medical service.  
• Increased odds of boarding for: 1) 10-13 year olds 2) black race 3) Presenting during weekend or Oct-June 4) Increasing severity of suicidal or homicidal ideation  
• Less likely to board with insurance requiring second evaluation at designated sites |
| Sharfstein, J. *et al.* Presented at the Ambulatory Pediatric Association Meeting, Boston, MA, May, 2000. | General Hospital ED serving adults and children (Boston Medical Center) | Retrospective Cohort Study (1999-2000) | • 33% of youth presenting for inpatient hospitalization boarded on the pediatric medical service. |
Interventions to Reduce Stuck Kids

Interagency CARD Meeting and CARD List

Representatives from youth-serving state agencies meet monthly to discuss the status of the Child Awaiting Resolution of Disposition (CARD) list and discuss initiatives to address the stuck kids problem in Massachusetts. Recent initiatives from this working group include:

- Protocols for effectively using MCI and for discharging from inpatient units
- Improving collaboration between MCI and Residential facilities
- Improve collaboration between schools and behavioral health providers
- Coordinating with Division of Insurance (DOI) on commercially insured stuck youth

The Director of CBHI moderates the meeting and invites agencies including DCF, DMH, DYS, DDS, Department of Education, MBHP, and other MassHealth MCEs. The individual agency chooses whether to attend and which representative to send. Not all agencies choose to participate and the level of seniority or authority of their delegates varies. The meeting serves as a forum for communication between agencies and a check-in on actionable projects addressing stuck kids.

The Executive Office of Health and Human Services tracks the number of MassHealth clients who remained in hospital units beyond when it was considered medically necessary. Many believe that accounting for these youth was a catalyst for efforts to decrease the number stuck. A detailed description of the CARD Report is available in Appendix G.

Massachusetts Behavioral Health Partnership (MBHP) Bed and Boarding List

MBHP hosts an electronic portal that shows the number of available beds at each inpatient and CBAT in the state and lists MBHP clients who are seeking a bed. The acute bed availability is required to be updated by providers at least twice daily and may be used by Mobile Crisis Intervention (MCI) teams or Emergency Departments (EDs) to find placements. No similar system exists for commercially insured patients.

Caring Together

Caring Together is a joint initiative of DCF and DMH to increase collaboration among the agencies and streamline resource allocation for shared clientele. It launched approximately 9 months ago.

Key components of the initiative include joint procurement of residential services, continuum of outpatient care, and emphasis on family involvement. Historically, DCF and DMH separately contracted with residential providers for beds, but new uniform requirements enable joint contracting for residential services.

There are also several in-home services offered similar to what would be experienced in a residential setting in order to better prepare families to transition a child to home. This initiative includes trips home with the residential staff to make a smoother transition.
Massachusetts Child Psychiatry Action Project (MCPAP)\textsuperscript{92,93}

MCPAP is an intervention to increase access to child psychiatry services by providing telephone consultations to primary care pediatricians. It is administered through MBHP and funded by DMH. A regional mental health team consisting of child psychiatrists, clinical social workers, psychologists, and care coordinators are available for telephone consult during business hours on weekdays. The goal is to increase the comfort of pediatricians in treating children and adolescents with basic mental health conditions and to better integrate behavioral health into primary care. It is hoped that it will alleviate shortages in outpatient psychiatry services by increasing the capacity in primary care and leading to more efficient referrals to mental health for only the more severe patients.

Care plans and protocols\textsuperscript{33,94}

Over the last 10 years, both the DYS and DMH have developed step-by-step protocols and flow charts to help hospital providers negotiate a situation in which a youth may become stuck. These protocols include care plans for DYS youth with a variety of conditions, for example how to approach care of a suicidal youth within the juvenile justice system. The DMH protocols are specifically targeted toward discharge planning and helping providers work through multiple contingency plans for disposition.

Higher initial rate for “intensive adolescents”\textsuperscript{33}

Both MBHP and DMH have investigated the use of higher up-front payments for aggressive or acute adolescents who are at high risk of becoming stuck in emergency departments. The goal of these payments is offset additional costs that may be incurred from patients requiring single rooms or increased staffing. There have also been bonuses for accepting patients within the first few hours after they have approval for acute care.
G – Data Sources

We compiled data from three primary sources for our analysis.

- Acute Psychiatric Units – CARD Reports
- Crisis – MCI Key Indicators Report
- Community – Children’s Mental Health Reports

Acute Psychiatric Units – CARD Reports

The CARD Reports provide insight into the stuck kids problem in both inpatient units and CBATs for youth with MassHealth and MBHP. In the CARD Report, a child or adolescent is considered stuck when they no longer meet level of care in their current placement and they have not yet been discharged. The days that a child or adolescent is stuck are considered administratively necessary days for reimbursement.

The CARD Report is distributed weekly to key state agency stakeholders. Stakeholders have the opportunity to submit any corrections to the weekly report, and then a final report is published at the end of the month. For our analysis, MBHP provided monthly CARD Reports from September, 2011 through August, 2014. It is important to note that the CARD Report does not typically include youth not affiliated with state agencies (NASA youth). However, MBHP was able to include NASA youth in the data they provided to us.

In addition, the data that MBHP provided included unique identifiers for each child or adolescent on the CARD Report. It is important to note that these unique identifiers are de-identified. In other words, they cannot be traced back to individual children or adolescents in any way. These unique identifiers allowed us to analyze trends in which youth become stuck repeatedly over the three year period.

While this data is valuable, it is also important to note its limitations. The following children and adolescents are not included in CARD Report Data.

- Children and youth with commercial insurance
- Children and youth with a MassHealth MCO that does not contract for MBHP for a behavioral health carve-out.

Crisis – MCI Key Indicators Report

MBHP developed a report in early 2015 on key MCI indicators, which includes MCI data from July 2009 through December 2014. The MCI data in the report includes trends in key indicators, including:

- MCI call volumes
- Percent of encounters in community locations
- Percent of calls resulting in acute psychiatric unit referrals
We analyzed trends in this data to inform our evaluation of both MCIs and EDs. We only present data from 2011 through 2014 so that the timeline is comparable to the CARD Report data.

While this data is valuable, it is also important to note its limitations. First, we do not have unique identifiers for children in this data. Second, we do not have data on the number of children boarding in EDs or at home.

**Community – Children’s Mental Health Reports**

Mental Health Reports are available on the CBHI web site by month. These reports include an overview of the utilization of community-based programs, including TCU's and residential placements. Residential placements include intensive foster care, group homes, and residential schools. We analyzed trends in 2014 Mental Health Report data to inform our evaluation of community based programs.

While this data is valuable, it is also important to note its limitations. First, we do not have unique identifiers for children in this data. Second, we do not have data on the number of children that could be considered stuck in any of these programs.
H – Qualitative Interviews

We conducted semi-structured interviews with professionals from state agencies and health care facilities across Massachusetts as well as policy experts and successful leaders of children’s behavioral health programs in other states.

All interviews were from professionals speaking in the context of their professional experience. Participation was voluntary and confidentiality was assured so that no result would be attributed to a specific individual. Oral consent was obtained for all interviews. Due to the sensitive political nature of this topic, names of participants will not be listed in this public report. Numbers of interviewees by areas of expertise are listed in Table H.1.

Interviewees were asked 1) who they think of as “stuck kids”, 2) why youth get stuck in acute psychiatric units and EDs, and 3) recommendations for change.

Interviewees answered these open-ended questions in long form and then follow-up questions were asked as needed. We used detailed notes from interviews to evaluate trends in experiences and perspectives, and tracked whether information was volunteered spontaneously by interviewees or obtained by direct questioning. The constant comparative method of qualitative analysis was used where two readers assessed each interview for themes and responses to questions and agreed on the results expressed.\textsuperscript{31}

<table>
<thead>
<tr>
<th>State Agencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Children and Families (DCF)</td>
<td>3</td>
</tr>
<tr>
<td>Department of Mental Health (DMH)</td>
<td>3</td>
</tr>
<tr>
<td>Department of Youth Services (DYS)</td>
<td>2</td>
</tr>
<tr>
<td>Office of the Child Advocate (OCA)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Providers*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CBAT</td>
<td>3</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>3</td>
</tr>
<tr>
<td>Inpatient</td>
<td>4</td>
</tr>
<tr>
<td>MCI</td>
<td>4</td>
</tr>
<tr>
<td>Outpatient</td>
<td>3</td>
</tr>
<tr>
<td>STARR</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy Groups</td>
<td>1</td>
</tr>
<tr>
<td>Policy Experts</td>
<td>5</td>
</tr>
<tr>
<td>Case Examples</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

| **Total Unique Interviewees**                       | **33**|

*Providers may have indicated more than one area of expertise (for example, does work in both outpatient and MCI) and were counted in both areas. The total count refers to the number of unique individuals.
I – CARD Report Analysis

The table below provides summary statistics on the number of youth on the CARD Report from September, 2011 through August, 2014.\(^9\) Note that these metrics include NASA children.


<table>
<thead>
<tr>
<th>Metric</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>142</td>
<td>155</td>
<td>150</td>
<td>142</td>
<td>147</td>
</tr>
<tr>
<td>Median</td>
<td>155</td>
<td>159</td>
<td>150</td>
<td>153</td>
<td>152</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>24</td>
<td>17</td>
<td>7</td>
<td>35</td>
<td>23</td>
</tr>
</tbody>
</table>

In addition, the CARD Report includes several key variables that allow us to characterize the stuck kids population and identify important trends.\(^9\) In this appendix, we present analyses and figures not presented in the main report.

- **Seasonality**: variation in number of stuck kids
- **Demographics**: age and living situation
- **Site of care**: geographic region and provider
- **Reason**: detailed analysis on reason for becoming stuck
- **Care management**: proportion of youth on CARD Report with care management
- **Readmissions**: detailed analysis of number of months youth are on CARD Report
- **State agency affiliation**: detailed analysis of youth on CARD Report by state agency

**Seasonality**

Seasonality is important to understand because even though demand for acute psychiatric unit beds varies, there are only a set number of beds throughout the year. Therefore, seasonality has important implications for providers:

- **Low occupancy**: Facilities risk running at a revenue loss because they are typically paid fee-for-service for each patient.
- **High occupancy**: Facilities may face capacity constraints.

There is significant variation in the number of children on the CARD list by season. The average number of children on the CARD list is highest in the fall and winter with an average of 155 and 150 children on the CARD list respectively. While the average is lowest in the summer and spring, there is significant variation during these months with standard deviations of 24 and 35 children respectively. See Table J.2.


<table>
<thead>
<tr>
<th>Metric</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>142</td>
<td>155</td>
<td>150</td>
<td>142</td>
<td>147</td>
</tr>
<tr>
<td>Median</td>
<td>155</td>
<td>159</td>
<td>150</td>
<td>153</td>
<td>152</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>24</td>
<td>17</td>
<td>7</td>
<td>35</td>
<td>23</td>
</tr>
</tbody>
</table>

Note the following: Summer refers to June, July, and August; Fall refers to September, October, and November; Winter refers to December, January, and February; and Spring refers to March, April, and May.
Trends in seasonality are also evident in Figure I.1 below, which illustrates children on the CARD list by month.

**Figure I.1: Average Number of Children on CARD Report, 2011-2014**

Demographics

**Age**

Trends in age are important to understand because adolescents and young children often have different treatment and support needs. Among youth on the CARD Report, the majority are adolescents. The proportion of adolescents remained relatively steady from 2011 through 2014 (Figure I.2).

**Figure I.2: Youth on CARD Report by Age, 2011-2014**

However, it is important to note that there is more seasonable variations among adolescents. See Figure I.3.
Living Situation

There are many paths through which children can flow through the mental health system. Therefore, it is important to understand where children were before they became stuck. The CARD Report data on living situations was described by several state agency interviewees inaccurate. However, we present the data here for your reference given that it is still circulated in the weekly CARD Reports.

From 2011 through 2014, most stuck youth came from a home environment. However, a large minority of stuck youth came from another program.

Figure I.4: CARD Report Youth Living Situation Prior to Becoming Stuck, 2011-2014
Site of Care

Geography
The geographic location of stuck youth is important because there is an uneven distribution of acute psychiatric units across the state, with the majority of beds in the greater Boston area. Given that only 15% of stuck kids are from the greater Boston area, geographic bed capacity may contribute to the stuck kids problem.

Figure I.5: Number of Youth on CARD Report by Provider, 2011-2014

Provider
The annual number of stuck youth per provider varies significantly. While it is helpful to understand where the problem is most pervasive, it is important to note that the frequency of stuck youth by provider is likely not a reflection of provider quality. In fact, it may reflect which providers admit youth who are most likely to become stuck.

Figure I.6: CARD by Provider
**Reason**

When a youth is stuck, MBHP reviews each case and reports the reason. Figure I.7 provides an overview of these reasons for January 2013 through August 2014. Note that 2011 and 2012 are excluded due to significant changes in reason code definitions between 2012 and 2013. The most common reason that youth are stuck is lack of placement after discharge (Figure I.7). Among these youth, 65% are affiliated with DCF (Figure I.8).

**Figure I.7: Reason for Becoming Stuck on CARD Report, 2013-2014**

![Pie chart showing reasons for becoming stuck on CARD report, 2013-2014. The largest reason is lack of placement after discharge, accounting for 44%. Other reasons include DMH Eligibility or Placement, Educational Setting, Other, and No Placement, at 39%, 5%, 1%, and 11%, respectively.]

Note: Data from 2011 and 2012 is excluded due to significant changes in reason code definitions beginning in 2012. Similar reason categories have been combined for the purpose of this analysis.

**Figure I.8: State Agency Affiliation for Youth on CARD Report Awaiting Placement, 2013-2014**

![Pie chart showing state agency affiliations for youth awaiting placement, 2013-2014. The largest affiliation is DCF, accounting for 65%. Other affiliations include DMH, DYS, DDS, NASA, at 15%, 9%, 2%, and 10%, respectively.]

Note: Data from 2011-2012 is excluded due to data quality issues.
Care Management

Children with more severe diagnoses are typically eligible for intensive care management services through CBHI or their managed care provider. Nearly 60% of CARD receive these care management services.

Figure I.9: Youth on CARD Report with Care Management Services, 2013-2014

Note: Data from 2011-2012 is excluded due to data quality issues.

Readmissions

We analyzed how often children became stuck using three years of CARD Report data. The unique identifiers for each child or adolescent enabled us to perform this analysis. Note that these unique identifiers are non-identifiable and, therefore, cannot be traced back to individual children.

Table I.3 below provides a high-level overview of how many months each child appears on the CARD Report. These months can either be consecutive or non-consecutive.

Table I.3: Number of Months on CARD Report

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>2.9 months</td>
</tr>
<tr>
<td>Median</td>
<td>2.0 months</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.5 months</td>
</tr>
<tr>
<td>Maximum</td>
<td>19 months</td>
</tr>
</tbody>
</table>

Note: Months may be consecutive or non-consecutive.

To gain a better understanding of how often youth were on the CARD Report, did an additional analysis using Stata. Below are the key steps of our analysis.

- We coded each youth as stuck (1) or not stuck (0) for each month from September 2011 through August 2014,
- We standardized each child or adolescent’s initial month on the CARD Report as “First Appearance.” Each subsequent month references this standardized “First Appearance” month for each youth.
- We limited the dataset to the 989 youth that had at least twelve months of data after their first appearance on the CARD Report.
- We computed the percentage of youth on the CARD Report for each month after their first appearance. Months on the CARD Report may be consecutive or non-consecutive.

We found that if a child is on the CARD Report in any given month, there is a high probability that they will be on the CARD Report in months two and three. In addition, there is a subset of children that will remain stuck for long periods or become stuck again during subsequent months. See Table I.4.

**Table I.4: Fraction of Youth on CARD Report in Months Subsequent to First Appearance**

<table>
<thead>
<tr>
<th>Number of Months After First Appearance on CARD Report</th>
<th>Percentage of Youth on CARD Report by Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Appearance on CARD Report</td>
<td>100.0%</td>
</tr>
<tr>
<td>Month 2</td>
<td>87.6%</td>
</tr>
<tr>
<td>Month 3</td>
<td>29.0%</td>
</tr>
<tr>
<td>Month 4</td>
<td>14.8%</td>
</tr>
<tr>
<td>Month 5</td>
<td>10.0%</td>
</tr>
<tr>
<td>Month 6</td>
<td>7.4%</td>
</tr>
<tr>
<td>Month 7</td>
<td>5.6%</td>
</tr>
<tr>
<td>Month 8</td>
<td>4.9%</td>
</tr>
<tr>
<td>Month 9</td>
<td>4.2%</td>
</tr>
<tr>
<td>Month 10</td>
<td>3.6%</td>
</tr>
<tr>
<td>Month 11</td>
<td>4.0%</td>
</tr>
<tr>
<td>Month 12</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

**State Agency Affiliation**

We also looked at each of the key CARD metrics by state agency affiliation. See Table I.5 on the following page.
Table I.5: Key CARD Metrics by State Agency Affiliation

<table>
<thead>
<tr>
<th>Metric</th>
<th>DCF</th>
<th>DMH</th>
<th>DYS</th>
<th>DDS</th>
<th>NASA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seasonality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Number per Month</td>
<td>99.4</td>
<td>19.5</td>
<td>2.0</td>
<td>7.8</td>
<td>19.2</td>
</tr>
<tr>
<td>Summer</td>
<td>100.4</td>
<td>18.6</td>
<td>2.2</td>
<td>5.9</td>
<td>16.9</td>
</tr>
<tr>
<td>Fall</td>
<td>104.7</td>
<td>19.4</td>
<td>2.5</td>
<td>9.4</td>
<td>19.6</td>
</tr>
<tr>
<td>Winter</td>
<td>96.6</td>
<td>19.4</td>
<td>1.8</td>
<td>9.1</td>
<td>23.2</td>
</tr>
<tr>
<td>Spring</td>
<td>96.1</td>
<td>20.4</td>
<td>1.8</td>
<td>6.4</td>
<td>17.1</td>
</tr>
<tr>
<td>Median Number per Month</td>
<td>101.5</td>
<td>20.0</td>
<td>2.0</td>
<td>7.5</td>
<td>20.0</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>15.9</td>
<td>4.4</td>
<td>1.3</td>
<td>3.5</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young Child (0-12)</td>
<td>33%</td>
<td>37%</td>
<td>0%</td>
<td>30%</td>
<td>26%</td>
</tr>
<tr>
<td>Adolescent (13-22)</td>
<td>67%</td>
<td>63%</td>
<td>100%</td>
<td>70%</td>
<td>74%</td>
</tr>
<tr>
<td><strong>Living Situation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>45%</td>
<td>67%</td>
<td>35%</td>
<td>89%</td>
<td>83%</td>
</tr>
<tr>
<td>Residential</td>
<td>18%</td>
<td>19%</td>
<td>20%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>STARR</td>
<td>12%</td>
<td>&lt;1%</td>
<td>0%</td>
<td>2%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Foster Care</td>
<td>9%</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Inpatient/CBAT/TCU</td>
<td>4%</td>
<td>3%</td>
<td>0%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Homeless</td>
<td>2%</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>DYS / Jail / Institution</td>
<td>&lt;1%</td>
<td>1%</td>
<td>16%</td>
<td>0%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>DMH or DPH Program</td>
<td>&lt;1%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>5%</td>
<td>29%</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Site of Care (Unit Type)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBAT/ICBAT</td>
<td>62%</td>
<td>48%</td>
<td>16%</td>
<td>18%</td>
<td>46%</td>
</tr>
<tr>
<td>Inpatient</td>
<td>30%</td>
<td>52%</td>
<td>44%</td>
<td>82%</td>
<td>30%</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>8%</td>
<td>0%</td>
<td>38%</td>
<td>0%</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Reason</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DCF Placement/Services</td>
<td>54%</td>
<td>3%</td>
<td>0%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>DMH Eligibility/Placement</td>
<td>2%</td>
<td>61%</td>
<td>15%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Educational Setting</td>
<td>&lt;1%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>No Placement</td>
<td>41%</td>
<td>33%</td>
<td>54%</td>
<td>94%</td>
<td>55%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>2%</td>
<td>32%</td>
<td>3%</td>
<td>24%</td>
</tr>
<tr>
<td>*<em>Care Management</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensive Care Management</td>
<td>24%</td>
<td>31%</td>
<td>7%</td>
<td>46%</td>
<td>29%</td>
</tr>
<tr>
<td>Intensive Care Coordination</td>
<td>34%</td>
<td>20%</td>
<td>44%</td>
<td>34%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Months on CARD</td>
<td>1.9</td>
<td>2.0</td>
<td>1.6</td>
<td>3.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Median Months on CARD</td>
<td>2.0</td>
<td>2.0</td>
<td>1.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.2</td>
<td>1.1</td>
<td>0.7</td>
<td>2.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Maximum</td>
<td>9</td>
<td>7</td>
<td>3</td>
<td>14</td>
<td>19</td>
</tr>
</tbody>
</table>

*Data on 2013-2014 only*
J – MCI Data Analysis

Mobile crisis intervention (MCI) is one of the key entry points into EDs and the acute system of care for children experiencing mental health crises. There are an average of 1,786 unique MCI encounters with youth per month across Massachusetts. It is important to note, however, that the MCI team often meets with the child or adolescent more than once during an encounter, particularly if the child is boarding in the ED for several days. These additional interactions are not captured in this data.

**Seasonality**

Variation in demand for MCI services is important to understand since it can impact capacity and revenue for MCI teams as well as EDs and acute pediatric units. Similar to the CARD data, there is significant variation in MCI encounters by season. MCI encounters are lowest during the summer when school is not in session. See Table J.1.

Table J.1: Monthly MCI Encounters for Ages 0-20, 2011-2014

<table>
<thead>
<tr>
<th></th>
<th>Average Number of Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer</strong></td>
<td>1,378</td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td>1,794</td>
</tr>
<tr>
<td><strong>Winter</strong></td>
<td>1,792</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td>2,182</td>
</tr>
<tr>
<td><strong>Median Number per Month</strong></td>
<td>1,812</td>
</tr>
<tr>
<td><strong>Standard Deviation</strong></td>
<td>406</td>
</tr>
</tbody>
</table>

Despite this seasonal fluctuation, the number of MCI encounters has remained relatively steady over time. See Figure J.1.

**Figure J.1: Average Number of MCI Encounters per Month for Ages 0-20, 2011-2014**
MCI Encounters Resulting in Acute Admission

The percentage of MCI encounters results in an admission to an acute psychiatric unit remained relatively steady from 2011 to 2014 (Figure J.2). Table J.2 provides the average number of encounters resulting in acute admissions over this time period.

Table J.2: Average Number of MCI Encounters Resulting in Acute Admissions per Month for Ages 0-20, 2011-2014

<table>
<thead>
<tr>
<th></th>
<th>Average Number of Encounters Resulting in Acute Admission per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inpatient</strong></td>
<td>365 youth</td>
</tr>
<tr>
<td><strong>CBAT</strong></td>
<td>557 youth</td>
</tr>
<tr>
<td><strong>Total Acute Psychiatric Unit</strong></td>
<td>557 youth</td>
</tr>
</tbody>
</table>

Figure J.2: Percent of MCI Encounters Resulting in CBAT and Inpatient Admission per Month for Ages 0-20, 2011-2014
K – Estimated Number of Stuck Kids

Providers’ capacity and resources depend on total demand for services. Therefore, it is important to understand the full scope of the stuck youth problem across sites of care and payers.

**Sites of Care**
- Acute psychiatric units (IP and CBAT)
- EDs
- Community-based programs (STARR and TCU)

**Payers**
- MassHealth (including non-MBHP youth)
- Commercial

We estimated the total number of stuck youth across sites of care and payers. Our estimates rely on a series of assumptions based on utilization data, program details, and key insights from our interviews with experts, providers, and state agencies. **Our aim was to develop conservative “back of the envelope” estimates.**

**Acute Psychiatric Units**
We estimated the number of stuck youth with both MassHealth and commercial insurance.

**MassHealth**
As a conservative estimate, we assumed that only MassHealth children with MBHP become stuck and use CARD Report data (including NASA). We make this assumption since MBHP is the largest provider of behavioral health services for children with MassHealth.80

We based our estimate on the average number of youth on the CARD report each month from August 2011 through September 2014.

Therefore, we estimate **147 youth** with MassHealth are stuck on acute psychiatric units per month.

**Commercial**
Youth with commercial insurance also become stuck in acute psychiatric units. While providers report that youth with commercial insurance become stuck at a lower rate, there is no publicly available data on the rate at which they become stuck. Therefore, we estimated the number of youth with commercial insurance that become stuck as follows:

- We started with the total number of youth (aged <18) with commercial insurance in 2013 (most recent year of data available):97 993,400 youth.
- Then we calculated the rate at which children with MassHealth become stuck.
  - Rate at which children with MassHealth become stuck:89,97
    \[
    \frac{\text{Number Stuck}}{\text{Total MassHealth}} = \frac{147}{481,100} = 0.00030561
    \]
We conservatively assumed that children with commercial insurance become stuck at 20% the rate of children with MassHealth based on conversations with providers and CBHI. We find:

\[
\text{Commercial Stuck Rate} = \text{[MassHealth Stuck Rate]} \times 0.20 = 0.000061122
\]

\[
\text{[Commercial Stuck Rate]} \times \text{[Total Commercial]} = 0.000061122 \times 993,400 = 61
\]

Therefore, we estimate **61 youth** with commercial insurance are stuck on acute psychiatric units per month.

**Emergency Departments**

We estimated the number of youth boarding in the ED with both MassHealth and commercial insurance.

**MassHealth**

From Table J.2 in Appendix J, we know that an average of 557 youth per month are referred to acute psychiatric units by an MCI team (365 IP and 192 CBAT). Since only those with MassHealth typically have access to MCI services, we assume that all of these children and adolescents have MassHealth.

Several studies on ED boarding in Massachusetts found that approximately 33-34% of youth presenting for inpatient psychiatric hospitalization boarded on the medical service (See table F.1 in Appendix F for an overview of these studies). These studies define a youth as an ED boarder when they have been awaiting bed placement for 12 or more hours. Note that this definition of ED boarding is stricter than MBHP’s definition of 72 hours. However, we believe that the 12 hour definition of ED boarding more accurately reflects the values of a youth and family centered care system.

We assume a lower rate of ED boarding than these studies though since they were conducted prior to establishment of CBHI. Since CBHI likely helped alleviate the ED boarding problem, we conservatively estimate that 15% of youth presenting for acute psychiatric care board in the ED. Note that this is less than half of the rate found in studies on ED boarding in Massachusetts. Using these assumptions, we do the following calculations:

\[
\text{[MCI referrals to acute care]} \times \text{[ED boarding rate]} = 557 \times 0.15 = 84
\]

Therefore, we estimate **84 youth** with MassHealth board in EDs per month.

**Commercial**

Youth with commercial insurance also board in EDs. Some believe that youth with commercial insurance board at a lower rate than children with MassHealth. However, we consulted with a provider on these estimates who shared that in some cases youth with more commercial insurance may be more likely to board than youth with MassHealth. Commercial payers often cover a narrower range of community-based services. Therefore, an ED physician may have a youth with commercial insurance board while waiting for a CBAT bed if they know that the child will not have access to in-home services. Additionally, commercial insurers typically contract with fewer CBATs than MassHealth behavioral health carve-outs.
With this insight, we made the following assumptions and calculations:

- We started with the total number of youth (aged <18) with commercial insurance in 2013 (most recent year of data available):97 993,400 youth.
- Then we calculated the rate at which children with MassHealth are admitted to acute psychiatric units from EDs, and assumed that children with commercial insurance are admitted to acute psychiatric units from EDs at 10% the rate of children with MassHealth based on provider interviews.95,97

\[
\frac{\text{Number of MassHealth Admissions}}{\text{Total MassHealth}} = \frac{557}{481,000} = 0.00115730
\]

\[
\text{Commercial Acute Admission Rate} = 0.00115730 \times 0.10 = 0.00011573
\]

\[
\text{Number of Commercial Acute Admissions} = 0.00011573 \times 993,400 = 115
\]

- We assume that approximately 15% of these admissions to acute psychiatric units board in either the ED or at home prior to admission. Note that we used the same boarding rate assumption for youth with both MassHealth and commercial insurance. We make this assumption based on provider insight that youth with commercial insurance often board in the ED, but for different reasons than youth with MassHealth. We then calculate the number of commercial insurance boarders per month as follows:

\[
\lfloor \text{Number of Commercial Acute Admissions} \rfloor \times \lfloor \text{Commercial Boarding Rate} \rfloor = 115 \times 0.15 = 17
\]

Therefore, we estimate 17 youth with commercial insurance board in EDs per month.

**Community-Based Programs**

We estimated the number of stuck kids at two additional sites of care where the stuck youth problem is not typically discussed by state agencies: STARR programs and TCUs. Only children with MassHealth typically utilize these programs.

**STARR Programs**

The DCF STARR programs that we interviewed described how the stuck kid problem also exists in their programs. However, there is no available data on the number of youth stuck in STARR programs. Based on these conversations, we conservatively estimate that there is one stuck youth per month at each of the 18 STARR programs.91

Therefore, we estimate 18 youth are stuck in STARR Programs per month.

**TCU**

Several of our interviewees discussed how TCUs were created by DCF to address the stuck kids problem by providing a transitional placement for youth discharged from acute psychiatric units while awaiting their next placement. However, there is no available data on number of youth that could be considered stuck in TCUs. Therefore, we conservatively estimate that 1/3 of the youth in TCUs have no clear next placement and could be considered stuck. Based on the 2014 Mental Health Reports, we found an average of 13 youth in TCUs at the end of the month count.96

Therefore, we estimate 4 youth are stuck in TCUs per month.
L – Case Studies

Since other states face similar problems, we compiled several case studies that highlight innovative approaches to addressing the “stuck kids” problem. Lessons learned from these case studies were used in the development of our recommendations.

- **Wraparound Milwaukee** – Milwaukee, Wisconsin
- **Philadelphia Community Behavioral Health** – Philadelphia, PA
- **Massachusetts Mental Health Services Program for Youth (MHSPY)** – Cambridge, MA
- **Texas Medicaid MCO Super-Utilizers Program** – Bexar County, Texas

**Wraparound Milwaukee**

**Overview**

Wraparound Milwaukee is a managed care program that provides comprehensive, community-based, and individualized care to children with serious emotional or mental health needs at risk of institutional placement.

**Program**

Milwaukee County developed Wraparound in 1995 to address the overutilization of institutional care (e.g., inpatient psychiatric care, residential treatment, and group homes) by children in the child welfare and juvenile justice systems.

The child welfare and juvenile justice systems refer children with serious emotional or mental health needs at risk of institutional placement to Wraparound. Wraparound then assigns each child and their families a Care Coordinator. Care Coordinators work with families to develop an individualized care plan and they facilitate treatment by coordinating services from the Wraparound network of providers. A broad array of services is offered from medication management, and in-home therapy, to respite care, and housekeeping. To ensure that the child’s care plan is working well, Care Coordinators conduct weekly home visits and monthly treatment team meetings, appear in court as needed, and monitor the child’s plan of care.

**Impact**

Wraparound has successfully reduced utilization of institutional placements, lowered costs, and improved clinical outcomes.

**Utilization:** The average daily census in residential treatment dropped from 375 to 110 children from 1995 to 2014. During this same time period, the average length of stay for residential treatment dropped from 14 months to 4 months.
Cost: The average monthly cost of enrollment in Wraparound is significantly less than the average monthly cost of institutional settings. See Table M.1.

Table M.1: Average Monthly Program Cost in Milwaukee County, Wisconsin (2014)

<table>
<thead>
<tr>
<th>Program</th>
<th>Average Monthly Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wraparound Milwaukee</td>
<td>$3,545</td>
</tr>
<tr>
<td>Group Home</td>
<td>$5,998</td>
</tr>
<tr>
<td>Residential Treatment</td>
<td>$9,116</td>
</tr>
<tr>
<td>Psychiatric Inpatient</td>
<td>$38,130</td>
</tr>
</tbody>
</table>

Clinical Outcomes: Data from both Child Behavioral Checklist and Youth Self Report assessments indicates statistically significant improvements in functioning among enrollees. Wraparound also improved child permanency, with 80% of youth in a permanent setting with parent, relative, adoptive resource, or subsidized guardianship upon leaving the program.

Keys to Success

Child/Family Centered Focus: Wraparound developed their program around providing individualized support and treatment services for children and their families. One Care Coordinator provides a consistent point of contact with a deep understanding of children and families’ strengths and needs. Care plans are developed based on their strengths, which enables providers to successfully work with children in the community rather than institutional settings.

Care Coordinators: Care Coordinators are bachelors level clinicians who undergo rigorous training in wraparound philosophy and understanding of the behavioral health system in Milwaukee. They typically have a caseload of 1:9. Wraparound Milwaukee contracts with nine community agencies to hire Care Coordinators. They are matched with a specific family’s needs through a screening process, and families have the option to change Care Coordinators if they are unhappy. Some of these agencies have specialized services such as non-English speakers or working with aggressive boys.

Quality Assurance/Quality Improvement: Wraparound Milwaukee places a great emphasis on measuring and evaluating outcomes including programmatic, financial, clinical, legal, educational, and child permanency measures. The organization has a full-time QA/QI team to collect and monitor quality indicators, audit provider services, review utilization, and monitor requirements of the Medicaid contract. Measures used include wraparound fidelity, the Child Behavior Checklist, Youth Behavior Report, school enrollment, youth permanency, and family satisfaction.

Interagency Collaboration: Children enrolled in Wraparound have complex issues that span the responsibilities of multiple state agencies, including child welfare, juvenile justice, and Medicaid. Therefore, Wraparound could only be successful if these state agencies collaborated.
Collaboration efforts were successful for three key reasons.

- Each state agency was frustrated with the current system.
- Leaders at each state agency were committed to fixing the system.
- Pilot program with twenty-five children demonstrated the potential of Wraparound.

**Data Sharing:** Information on each child’s case can be shared between state agencies, care coordinators, and providers. Data sharing enables state agencies and providers to collaborate and discuss cases without the child and their family repeating the same information multiple times. While Wraparound did face obstacles in integrating different data systems used by state agencies, data is now integrated into the Synthesis IT system that serves as one Electronic Health Record for all Case Coordinators and providers that contract with Wraparound.

Wraparound Milwaukee created a one-page waiver authorizing release of patient information for the duration of a family’s involvement with the program. The waiver system was supported by the Milwaukee Municipal court and certified by HIPAA. Information in the Synthesis system is shared only on a need-to-know basis such that most users cannot access the record in its entirety. A privacy office routinely monitors data use and levels of access.

**Pooled Funding:** Wraparound’s development was funded with a $15 million federal grant from the Center for Mental Health Services. The program is sustained through a pooled funding system. State and county agencies contribute to the funding, including Milwaukee Child Welfare, the State Division of Health Care Financing (operators of Medicaid), County’s Delinquency and Court Services, and the Behavioral Health.

Funds were combined from Child Welfare’s budget for institutional care of Children Requiring Assistance and/or Services (CHIPS), Juvenile Justice’s budget for treatment and juvenile corrections placements, along with a per member per month payment from Medicaid and block grants, crisis billing, and commercial insurance payments from the Mental Health system.

**Payment Structure:** Wraparound is a Care Management Organization (CMO), which enables the program to operate like a behavioral health HMO. It has a 1915(a) Medicaid waiver to act as a voluntary managed care organization. Payment is capitated per enrollee per month and Wraparound is at risk for any costs above the capitated rate, including both inpatient and outpatient care. Therefore, Wraparound is financially accountable for all care provided and has a strong incentive to provide high-quality community-based services to prevent children from needing institutional care.

Wraparound contracts with providers in a fee-for-service structure to allow maximum flexibility in choosing individualized services for each family and youth. Each service provider is contracted for a specific service in a care plan, which is reviewed every 90 days. If the youth and family are not improving, the contract is not renewed and a new care plan is created.

**Potential Application to Massachusetts**

CBHI ensures that MassHealth beneficiaries have access to community-based treatment options for mental health. However, CBHI does not have the kind of accountability structure that ensures children flow through the system of care smoothly and appropriately. A combination of pooled
funding, global payment, and rigorous quality assurance similar to Wraparound Milwaukee, has the potential to provide the necessary accountability.

State agencies and MBHP are likely to resist pooled funding and global payment because each tends to feel as though they are fulfilling their responsibilities. However, their insular focus is also contributes to the need for a global payment structure that supports child/family focused care. Establishing a global payment structure would likely require the support and leadership of Governor Baker and Secretary Sudders.

A global payment structure would also support improvements in data sharing and care coordination. Regardless of payment structure, however, CBHI may have the authority to lead interagency initiatives on data sharing and care coordination.

Philadelphia Community Behavioral Health (CBH)\textsuperscript{56,57}

Overview
Philadelphia Community Behavioral Health (CBH) is non-profit organization contracted by the city of Philadelphia to provide mental and behavioral health services to Medicaid recipients in Philadelphia County.

Program
CBH functions as a behavioral health carve-out for Medicaid in Philadelphia County. In 2007, it began a pay-for-performance system in which providers were given end of year bonuses based on whether or not they met specified levels on outcome-based quality measures. The amount of the bonus is scaled to the level of performance. CBH now uses pay-for-performance incentives with over 90\% of its provider network.

Philadelphia CBH uses a homegrown set of quality metrics developed in collaboration with providers and the city. Although there are over 60 metrics for different sites of care, usually only a few apply to a given provider. Typically, measurements include speed of access to care, follow-up after treatment, and recidivism. Performance is calculated from Medicaid claims data so that providers do not have to submit additional information. Providers receive evaluations with their performance on these metrics in comparison to local and national benchmarks for providers who do similar work and serve similar populations. CBH also monitors all providers in the city to see if the program is effectively improving outcomes.

Impact
Early reports show that Medicaid recipients are more often using outpatient services and have shorter waiting times for appointments. Adult 30-day readmission rates for inpatient facilities have dropped from 16\% to 11\%. Effective practices have been shared between providers at learning conferences. However, it is still unclear if the program will generate cost savings that may come from reducing inpatient hospitalizations.
**Keys to Success**

**Provider involvement:** Providers helped to design the metrics used in Philadelphia and are regularly solicited for feedback about the fairness of the measurements and utility of the evaluations. There is complete transparency where providers are aware of the metrics and benchmarks, as well as how to give feedback to CBH leadership. Providers were initially in favor of the program because it offered them an opportunity to make a profit if they were able to successfully adapt and meet performance benchmarks.

**Outcome orientation:** CBH focused exclusively on outcome-based measures rather than on the processes that lead to these outcomes. This approach gives providers wide latitude in meeting the benchmarks and encourages creativity in improving care processes. It has been deemed a “whatever it takes” approach that encourages providers to focus on the overall health and productivity of their clients.

**Shared learning:** Providers have credited the approach with increasing collaboration across the city by encouraging agencies to find best practices and work together as a network so that they can all benefit. The pay-for-performance evaluations are designed so that providers are measured against an external benchmark, rather than competing with each other. Everyone can potentially earn the bonus. CBH holds learning conferences where the most effective providers in the city can share their practices.

**Leadership:** The Philadelphia City Behavioral Health Commissioner was the one to initially push for an outcome oriented approach. The Commissioner wanted to be an early adopter when Pennsylvania Medicaid made funding available for managed care organizations to institute pay-for-performance. City leadership has fostered a close relationship between CBH and the Department of Behavioral Health and Intellectual Disability Services (DBHIDS) which oversees all of public sector behavioral health. The city has also made close ties between CBH and the Office of Housing, Health, and Opportunity to be able to offer a full spectrum of social services.

**Potential Application to Massachusetts**

Instituting an outcomes-based pay-for-performance approach such as Philadelphia CBH may benefit Massachusetts by encouraging provider creativity and collaboration in sharing the most effective practices across the state. Providers who are already high performers can help to raise the level of others. It may also help foster collaboration between different sectors of the behavioral health system (e.g. inpatient units and the clinics to which they discharge patients) in order to achieve mutual goals.

The metrics used by CBH are primarily HEDIS measures already captured by Medicaid reporting. Initiating the program would require funding for the performance bonuses and evaluation of the measurements by a managed care organization such as MBHP. It is possible that savings could be captured from decreased use of acute services. Such a program may also represent an opportunity for the state to create stronger partnerships with providers and collaborate to form a culture of accountability for outcomes.
Massachusetts Mental Health Services Partnership for Youth (MHSPY)\textsuperscript{46,47}

Overview
The Massachusetts Mental Health Services Partnership for Youth (MHSPY) was a community-based integrated clinical intervention that managed wraparound services for youth with severe functional impairment.

Program
MHSPY offered coordinated services in mental health, primary care, substance use, and social services in a home-based, family centered model. It operated from 1999-2009 and served youth from the towns of Cambridge, Somerville, Malden, Medford, and Everett.

It was initially funded by the Robert Wood Johnson Foundation (RWJF) and Washington Business Group on Health (WGBH) as a demonstration project to create a System of Care within state Medicaid. The program was a collaboration of MassHealth, DCF, DYS, DMH, and the Department of Education where the state’s youth-serving state agencies pooled funding to address the needs of a specific youth population. Neighborhood Health Plan, a Medicaid MCO, managed the funding and paid MHSPY a capitated rate.

Any state agency that funded the program could refer youth for care management. Eligibility included being at-risk for out of home placement, score greater than 40 on the Child and Adolescent Functional Assessment Scale (CAFAS), and a parent or guardian who would consent to the program. It was therefore specifically created for a small segment of youth for whom the existing behavioral health system was not working.

MHSPY used a wraparound model where a Care Manager identified needs and resources then worked with families to develop an individual care plan. Data was collected on clinical functioning at baseline and every 6 months, as well as on service utilization, costs of care, and satisfaction from families, youth, and state agencies.

Impact
Analysis of 4 years of data showed that participants improved clinical functioning, reduced service utilization and costs of care, and had high rates of family satisfaction.

During the pilot period from 1998-2002, 83 children were enrolled in the program. Youth who were enrolled for 12 months in the program showed improvement on every subscale of the CAFAS, an indicator of global functioning. The greatest areas of improvement were in home, self-harm, substance abuse, and school/work.

There was also a reduction in hospitalizations and out-of-home placements. Both costs included in the capitation, as well as state agency expenses such as foster care, residential, group home, or jail were decreased by 50% during the pilot period. Enrollees in the program were 50-60% less expensive than similar youth who were placed in more restrictive settings.
Keys to Success
Outcomes orientation: MHSPY rigorously tracked outcomes of the program in four key domains: 1) clinical improvement and global functioning 2) utilization 3) cost 4) satisfaction. Multiple clinical outcomes tools were used including the Child and Adolescent Functional Assessment Scale (CAFAS), Child Behavior Checklist (CBCL), Youth Self-Report (YSR), Teacher Report Form, and Family Support Scale (FSS) that were administered by a MHSPY Enrollment Manager initially and then by a Clinical Outcomes Coordinator at regular intervals. Clinicians administered the Child Global Assessment Scale (CGAS) and Patient Assessment Tool (PAT). Administrative reports on living situation and level of restrictiveness were collected weekly.

Care Managers: MHSPY utilized both a Family Coordinator and a Care Manager for each family. The Family Coordinator was a paraprofessional who had personal experience caring for a child with behavioral health needs. The Care Manager was a master’s level clinician who assessed the strengths and needs of each family, designed an individualized care plan, and contracted for the services provided. Each Care Manager carried 8 families. This individual was responsible for the care provided to each family and was the point-person in the behavioral health continuum.

Pooled funding: The demonstration project was able to successfully pool funding from the major youth-serving state agencies in Massachusetts to jointly serve a specific population. This enabled flexibility in using individual services to create a wraparound plan and promoted shared care planning and accountability.

Interagency Cooperation: Importantly, the program sought to have a shared decision-making structure built on state agency cooperation. This helped to remedy what was otherwise a fragmented and overlapping approach to providing services.

Potential Application to Massachusetts
The MHSPY demonstration project was a highly effective intervention to improve behavioral health services for a small segment of youth. Youth were able to be kept in their homes and the program successfully reduced costs of care. Unfortunately it did not appear to be readily scalable or financially sustainable.

Many of the wraparound services previously provided by MHSPY are now provided by CBHI. However, there are some potential lessons from the success of the demonstration project. It was initially envisioned for a particularly challenging, high-cost population of youth, much like modern super-utilizer programs. It used highly trained master’s level Care Managers with low case-loads, and routinely evaluated treatment progress with validated measures. These approaches may be helpful for the challenging and high-utilizing population that becomes stuck.

Importantly, the MHSPY demonstration was able to coordinate state agency efforts to address youth behavioral health and achieved pooled funding with a capitated rate for provision of services. The process by which this was originally achieved may serve as a model for another attempt at pooled state agency funding. Although the more detailed services of the program may not have been ready for scale, it may offer an example for how to move forward with more accountable payment schemes. The funding landscape may now be ready to accommodate a shared savings approach to capture the cost effectiveness of a similar high-utilizer program.
Texas Medicaid MCO Super-Utilizers Program\textsuperscript{41,42}

Overview
The Texas Health and Human Services Commission (HHSC) now requires all Managed Care Organizations (MCOs) in the state to have a specialized program for the outreach, education, and intervention on the highest utilizing members for whom typical disease management approaches have not proven effective.

Program
Each MCO plan is allowed to set its own trigger criteria for super-utilizers, for example ED utilization, inpatient hospital use, readmissions, or total costs of care. HHSC is developing a common benchmark to define super-utilizers to measure progress consistently across MCOs.

Most super-utilizer programs include a similar structure of intensive case management, home visits, interdisciplinary teams, and referral to social resources. The goal is to better coordinate both physical and behavioral care across all Medicaid providers in the region. HHSC requires all programs to have face-to-face visits with super-utilizers. Most MCOs are also utilizing predictive modeling to direct their efforts towards those who are at risk of being high-utilizers.

MCOs are required to measure progress by overall costs of care, ED visits, and readmissions. They report clinical outcomes by nationally recommended measures such as from the Agency for Healthcare Research and Quality (AHRQ) or the Healthcare Effectiveness Data and Information Set (HEDIS). An important outcome measured is gaps in care and continuity with the program.

One program, the Texas Center for HealthCare Services, in Bexnar County, has specifically targeted behavioral health super-utilizers. The goal of the program is to create an integrated, strengths-based, and multidisciplinary team. It has involved multiple hospitals and outpatient clinics in Bexnar County that are coordinating efforts. The program utilizes health navigators located across the county with additional mental health support from NPs or LMHCs as needed.

The state of Texas recently received a grant to design multi-payer delivery and payment models that will base payment on quality outcomes. In addition, the Texas Legislature requires public reporting of the quality of all state-funded mental health and substance abuse services that is available online. These measures include a wide range of outcomes from readmission and follow-up appointments to jail diversion, effective crisis response, and family engagement.

Impact
Implementation in Texas is still fairly recent and the overall impact of these initiatives has yet to be evaluated.

Potential Application to Massachusetts
High-utilizer care management programs are becoming increasingly common in Medicaid managed care. Although relatively new, programs like the Texas Medicaid MCOs offer a promising approach for a state level Medicaid agency to coordinate care for a specific, high cost population who is not well served by existing services.
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