

# PEDIATRIC PSYCHIATRIC BOARDING: USING DATA TO DEVELOP POLICY SOLUTIONS

children's mental health campaign

Supported by the C.F. Adams Charitable Trust





The Children's Mental Health Campaign (CMHC) is a large statewide network that advocates for policy, systems, and practice solutions to ensure all children in Massachusetts have access to resources to prevent, diagnose, and treat mental health issues in a timely, effective, and compassionate way. This will only happen through a shared responsibility among government and health care institutions working together to improve mental health care and access for children and youth.



Boston Children's Hospital is dedicated to improving and advancing the health and well-being of children around the world through its life-changing work in clinical care, biomedical research, medical education and community engagement.

Boston Children's is ranked the number one pediatric hospital in the nation by U.S. News and World Report. It is home to the world's largest pediatric research enterprise, and it is the leading recipient of pediatric research funding from the National Institutes of Health. It is the primary pediatric teaching hospital for Harvard Medical School. Boston Children's treats more children with rare diseases and complex conditions than any other hospital.

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# ACKNOWLEDGEMENTS

The Children’s Mental Health Campaign (CMHC) received generous support from the C.F. Adams Charitable Trust to launch a multi-year study to examine and understand the prevalence and trends of Emergency Department (ED) boarding among children and adolescents in the Commonwealth of Massachusetts. The data gathered by this project has informed policy solutions offered by the CMHC to address this longstanding problem.

This project could not have been completed without the commitment and participation of hospitals and mental health treatment programs across the Commonwealth, including:

Anna Jacques Hospital Child & Adolescent Psychiatry	Hampstead Hospital - Intensive Behavioral Unit
Arbour Hospital	Hasbro Children’s Hospital - Medical Psychiatric Program
Arbour-Fuller Hospital	Hill House - Lahey Behavioral Health Services
Baystate Medical Center Child Partial Hospitalization Program	Italian Home for Children CBAT
Boston Center Partial Hospitalization Program	JRI-Attleboro Center CBAT & Partial Program
Boston Children’s Hospital Inpatient Pediatric Psychiatry Service	Lowell Youth Treatment Center
BourneWood Hospital - Partial Hospitalization Program & Inpatient Unit	Metrowest Medical Center Child Development Unit
Bradley Hospital	Motivating Youth Recovery - Community Healthlink
Brandon School & Residential Treatment	North Shore Children’s Center - Adolescent Partial Hospital & Inpatient Unit
Burncoat Family Center - Community Healthlink	Pembroke Hospital Partial Hospitalization Program
Cambridge Eating Disorder Center	Sister of Providence Hospital
Carney Hospital	St. Ann’s Home
CASTLE High Point Treatment Center	St. Vincent’s Home
Cornerstones Ipswich (Hill House)	The Village - YOU Inc
Cottage Hill Academy - YOU Inc.	Walker’s CBAT
Franciscan Children’s Hospital - CBAT & Inpatient Program	Wayside Day Center
Germaine Lawrence Youth Villages	The Wetzel Center - YOU Inc
	Westwood Lodge

Most importantly, the CMHC extends its sincere gratitude to the families that inspire our work and are committed to changing the children’s mental health system in order to best serve children and families.

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# INTRODUCTION

The deinstitutionalization movement of the 1960s fueled the closing of many of the nation's psychiatric hospitals. Pediatric inpatient units were not exempt from these closures, so they too significantly decreased in capacity. The intent of this movement was to embed psychiatric care in the community in order to provide care in the least restrictive setting.<sup>1-4</sup> However, the robust community-based behavioral health care legislated in the Community Mental Health Act of 1963 was not adequately funded, and therefore, never fully realized in place of inpatient hospitals.<sup>5</sup> The decline in inpatient psychiatric beds over the past several decades is one of several factors contributing to psychiatric “boarding.”

*Psychiatric boarding is the practice of holding adult and pediatric psychiatric patients in the Emergency Department (ED) or on a medical floor while they await psychiatric treatment.<sup>5,6</sup>*

Before the age of 18, one in five children and adolescents will experience a serious behavioral health concern.<sup>7</sup> Despite the high prevalence, appropriate behavioral health treatment for children and adolescents is insufficient. Often, community-based care is not adequately comprehensive for complex behavioral health needs.<sup>5,8,9</sup> Left without alternatives, families increasingly seek behavioral health care for their children in the emergency department (ED) when symptoms become acute or when they are unable to find timely care.<sup>5,10-16</sup> However, the ED is not designed or equipped to manage psychiatric patients, particularly young people.<sup>5,6</sup> Although boarding may temporarily stabilize a patient's symptoms, the core psychiatric issues often are not addressed or treated.<sup>6</sup> Extensive waits in the ED are burdensome and frustrating for pediatric patients, their families, and ED staff. Unsurprisingly, patients boarding in the ED or on a medical unit while awaiting admission to an appropriate psychiatric setting can impact care for all hospital patients due to inevitable disruptions in the typical workflow.<sup>17</sup>

The effects of psychiatric boarding are not limited to delayed treatment or the burden placed on families; there are also considerable economic impacts on hospitals.<sup>17-19</sup> One study demonstrated that psychiatric boarding cost one pediatric hospital approximately \$2 million over an 18-month period, roughly \$4,269 per patient. Over this period, pediatric psychiatric patients were boarded in medical beds for a total of 1169 days.<sup>19</sup> In addition to the actual cost of boarding, psychiatric boarding can also cause a loss of potential revenue. Falvo and colleagues illustrated that psychiatric boarding resulted in an estimated \$3.9 million loss in possible revenue over a 12-month period because boarding patients occupied beds that otherwise would have been used for additional revenue-generating patient stays.<sup>17</sup>

Recently, psychiatric boarding has received increased attention in both academic literature and popular press; however, the specific characteristics and experiences of children and adolescents who board remain under-examined.<sup>3,18,20-24</sup> The adverse experiences of patients, families, and ED staff coupled with the economic implications of boarding should motivate hospitals and health care systems to develop solutions; however, doing so for pediatric populations has proven challenging due to the pronounced seasonal fluctuations in demand for inpatient behavioral health care.<sup>25</sup> Pediatric inpatient units are reluctant to add capacity because the demand for inpatient beds varies throughout the year, resulting in several weeks of empty beds during the summer, a model that is not financially viable. This study seeks to enumerate anecdotally long-understood patterns of use in order to inform the development of policy solutions. As a culmination of this study, a summit was held at the end of 2016.

This study provided an opportunity for researchers to prospectively collect data about a problem that has plagued the children, families, and providers of child and adolescent behavioral health care in the Commonwealth of Massachusetts for decades. First noted in the literature in 2003, policymakers in the Commonwealth convened experts repeatedly with the explicit goal of better defining and solving the

problem of ED boarding.<sup>26,27</sup> In 2014, Section 230 of Chapter 165 established a task force charged with addressing the existing structural and policy-based barriers to delivering comprehensive and cost-effective behavioral health treatment. The task force issued a report that recommended specific policy solutions to ED boarding, but also recognized the need for additional data collection and analyses to better understand the scope and nature of the persistent barriers to behavioral health care.<sup>28</sup> In 2017, the newly-appointed Executive Office of Health and Human Services (EOHHS) Secretary Marylou Sudders committed resources to addressing ED boarding. The ED boarding EOHHS task force began in the spring of 2017 by consolidating and streamlining work completed by previous convenings in order to find and implement practical solutions. This Children's Mental Health Campaign project informed the EOHHS task force with recommendations specific to children, adolescents, and their families.

# METHODOLOGY

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This sample included 1,028 patients ages four to 22, presenting to one of nine participating EDs in psychiatric crisis during 2016. Inclusion criteria were as follows:

1. Patients presented to the ED for a psychiatric primary presenting problem;
2. Patients were “medically cleared” and did not require medical admission for treatment of symptoms; and
3. Patients were assessed to require inpatient or Community-Based Acute Treatment (CBAT), an acute residential level of care.

Patients who were determined to require home-based care including day treatment, community supports, or outpatient therapy were excluded from the sample. In congruence with the Massachusetts’ EOHHS definition, patients were considered to board if they spent 12 or more hours from their time of arrival in the ED awaiting admission to the appropriate level of psychiatric treatment.<sup>29</sup>

Two instruments were developed for this study, both created in the online survey system REDCap (REDCap, Version 7.3.1).<sup>30</sup> The first instrument was the “Demographics/Background Form,” which captured patient demographic characteristics, including gender, race, age, and insurance. This form also collected data specific to the ED encounter, such as date and time of admission, primary and secondary psychiatric diagnoses, and co-occurring disorders.

The second instrument was the “Daily Bed Finding Form,” which was completed by designated ED staff for each day that a patient boarded during the week of data collection. For patients who boarded beyond the data collection week, a final “Daily Bed Finding Form” was completed on the day of discharge. This form tracked day-to-day patient location (e.g., whether the patient was in the ED or on a medical floor) and recommended disposition (e.g., an inpatient unit or a CBAT). The form also was used to track reasons that patients were not admitted when there were potential beds. Completing this form daily allowed researchers to examine initial clinical recommendations, reasons that prevented patients from transferring to more appropriate settings, and final disposition.

To ensure patient privacy and confidentiality, data collection included assigning each patient a unique identifier by the hospital. No Private Health Information was included in the data collection.

## PROCEDURE

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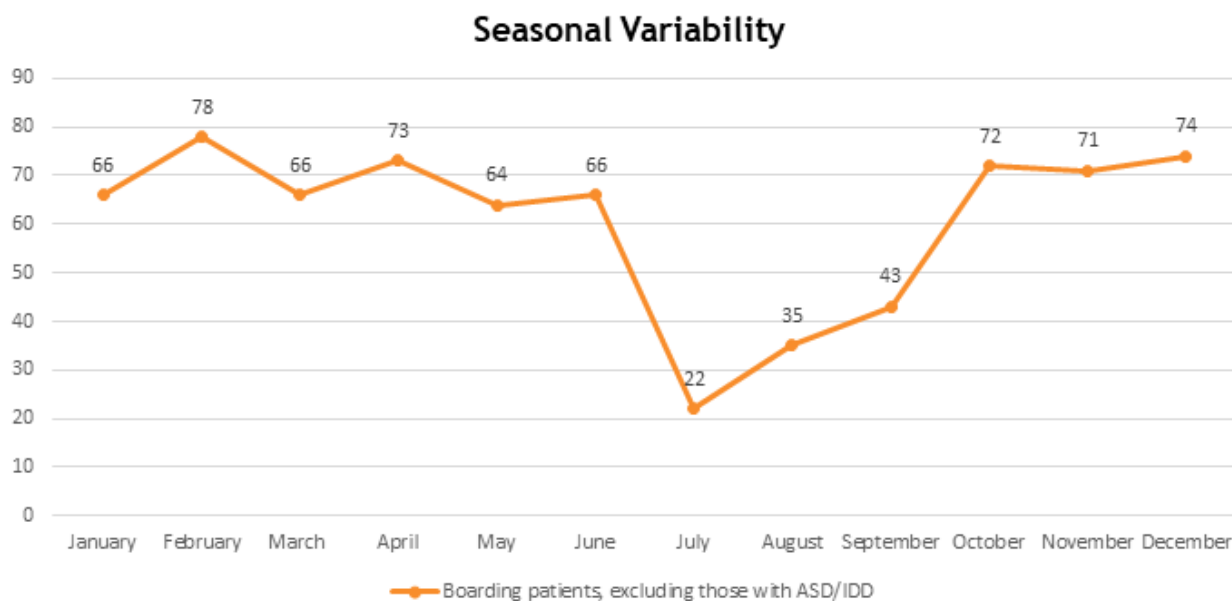
Ten hospitals from across the state including academic medical centers and community hospitals agreed to participate in this project, though only 9 contributed data due to staffing limitations. Each hospital identified an individual or team to collect data in REDCap using the web-based instruments described above. In order to minimize the impact on EDs while also capturing known seasonal variation in pediatric psychiatric ED utilization, EDs collected data for the first full week of each month of 2016. A research assistant provided support to some EDs during the week prior to data collection and throughout the week of data collection. However, most data were collected independently by hospital staff using the REDCap system.

Beginning on the first Monday of each month, patients meeting inclusion criteria were tracked using the REDCap instruments and followed until their eventual discharge. Patients who were evaluated prior to the first week of the month but who were still in the ED awaiting placement on Monday morning were also included in the study. Patients who were boarding in the ED or in another non-psychiatric setting at the end of the week were followed until their eventual placement in order to avoid right-censorship.



# RESULTS

During the twelve weeks of the study, 1,028 patients between the ages of 4 and 22 in psychiatric crisis presented to one of nine participating EDs. It should be noted that the study's host institution, the only participating pediatric hospital, represented 405 (39%) of the patients included in the study. Of the 1,028 patients who presented to the ED, 833 were considered “boarders” because they stayed 12+ hours in the ED. As seen in *Figure 1*, the seasonable variability established in the literature was clearly demonstrated in the data. Children and adolescents were much more likely to present and board in the ED in the non-summer months. However, note that the below figure excludes children and adolescents with autism spectrum disorder (ASD) or other intellectual/developmental disabilities (IDD).



*Figure 1.* Seasonal variability for all patients who boarded, excluding those with ASD/IDD

## DEMOGRAPHICS

Within the sample, 53.4 percent (n=549) of the patients identified as female, while 45.3 percent (n=466) identified as male, and 1.3 percent identified (n=13) as transgender. The majority of the patients (58%) identified as white/Caucasian, while 17 percent identified as Latinx and 12 percent identified as Black or African American. The remaining 12 percent identified as “other,” multiracial, or Asian. Sixty-nine percent (n=710) were adolescents ages 13-18, 27 percent (n=276) were children ages 6-12, and less than 1 percent (n=9) were children under age 6, illustrated in *Figure 2*. In this study, insurance is used as a proxy measure of income. Fifty-two percent (n=534) of patients had commercial insurance, while 46 percent (n=474) of patients had primary MassHealth (Massachusetts Medicaid) coverage, and 2 percent (n=20) were uninsured. Of those who were commercially insured, a significant number (20%) had secondary public coverage through MassHealth.

## Children Presenting to the ED, by Age

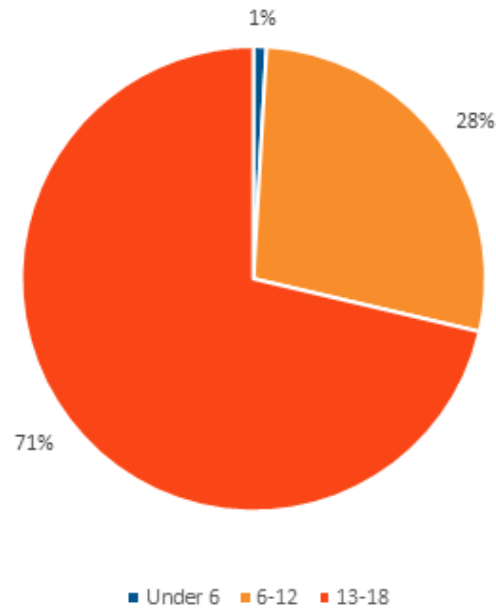


Figure 2. Children presenting to the ED, according to age

### CLINICAL PRESENTATION

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Clinicians assessed the primary reason for a child’s presentation to the ED, often a more accurate representation of the reason for the visit than a diagnosis, which may be historic or too general to reflect the reason that a patient is in crisis. Forty-nine percent of patients presented with a primary chief complaint of suicidal ideation, suicide intent, or self-injury, while 31 percent presented with aggressive, homicidal, or risk-taking behaviors. An additional 10 percent of patients presented with depression or anxiety; 3 percent with psychosis and 2 percent with eating disorders. The remaining 5 percent of patients presented with primary chief complaint that included somatic symptoms, substance use disorders, and others.

### LENGTH OF STAY

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The mean length of stay for all (n=1028) patients who presented to the ED, including those who came to the ED for treatment but did not board, was 60 hours, or 2.5 days, with a median length of stay of 26 hours. *Figure 3* illustrates the distribution of the length of stay, with 18 percent of all patients spending less than 12 hours in the ED, and therefore not considered “boarders.” An additional 59 percent of the patients boarded for three days or less. The remaining 23 percent stayed more than three days either in the ED or in a combination of the ED and other non-psychiatric settings, such as a pediatric medical floor. Notably, there was a wide distribution of length of stay among those patients who stayed for more than three days, with one patient waiting 46 days prior to placement in an appropriate setting. Although only 23 percent of patients remained boarding for longer than three days, the total number of patient-days for this group (1696 days) was exactly double that of the 77 percent of patients (including non-boarders) who remained for three days or less (848 days).

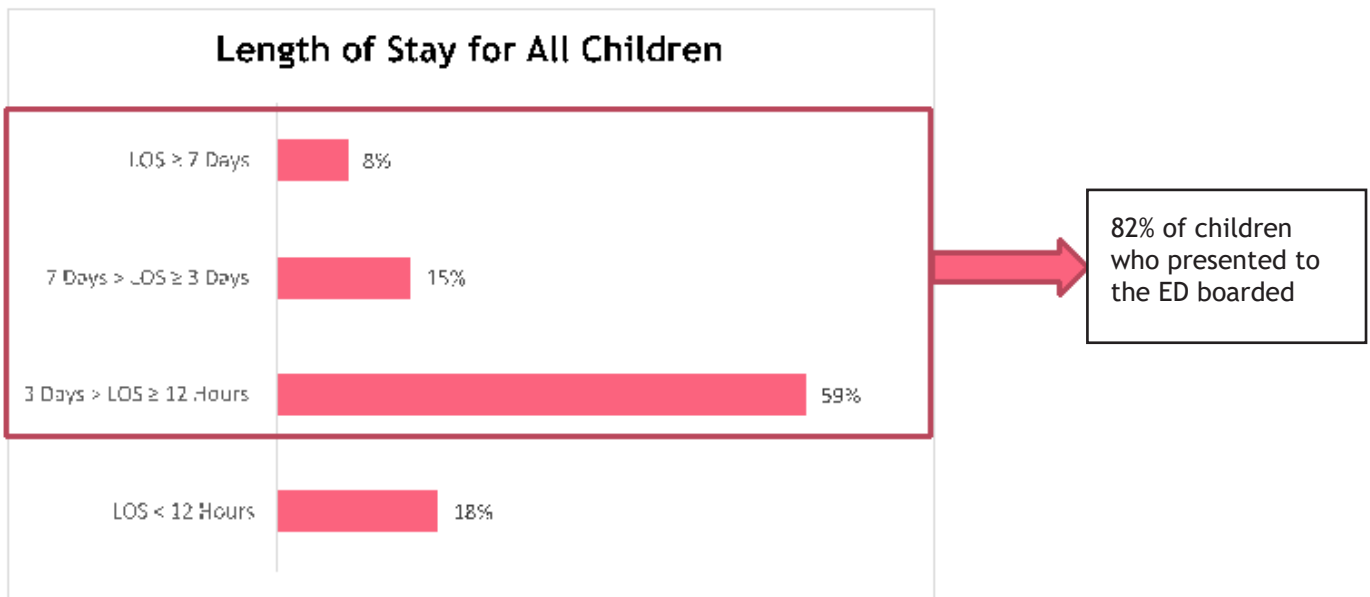


Figure 3. Length of stay, all patients presenting to the ED in crisis

The “Daily Bed Finding Form” captured both the initial recommendation for follow-up care as well as the final disposition after boarding. Sixty-eight percent of patients were initially assessed to require inpatient hospitalization, while another 27 percent were assessed to need CBAT. The clinical recommendation for the remaining 5 percent was a range of “other” dispositions, including home with outpatient or intensive outpatient care or returning to residential facilities or congregate care settings. Of those patients initially assessed to require inpatient hospitalization or CBAT, 14 percent were eventually discharged home with outpatient or other community-based treatment and did not require hospital or CBAT. The differences between initial and final disposition recommendations are illustrated in Figures 4 and 5.

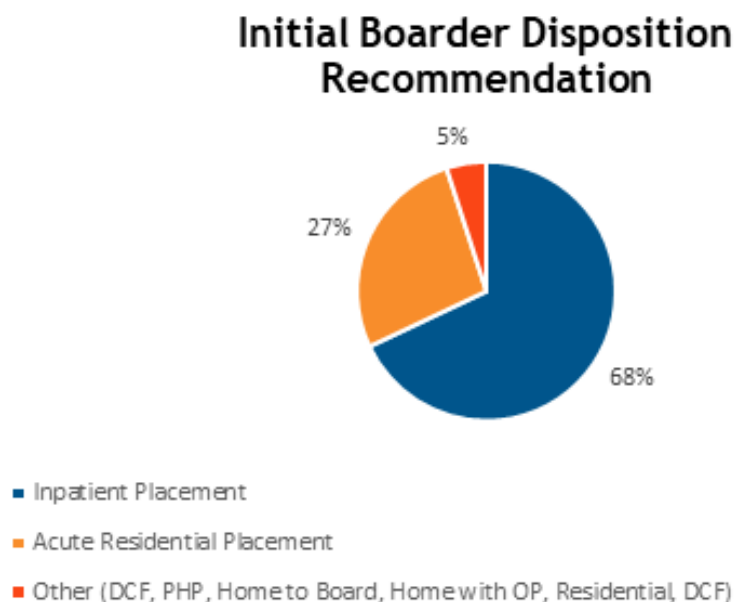


Figure 4. Initial disposition recommendations for children who boarded

## Final Disposition of Boarders

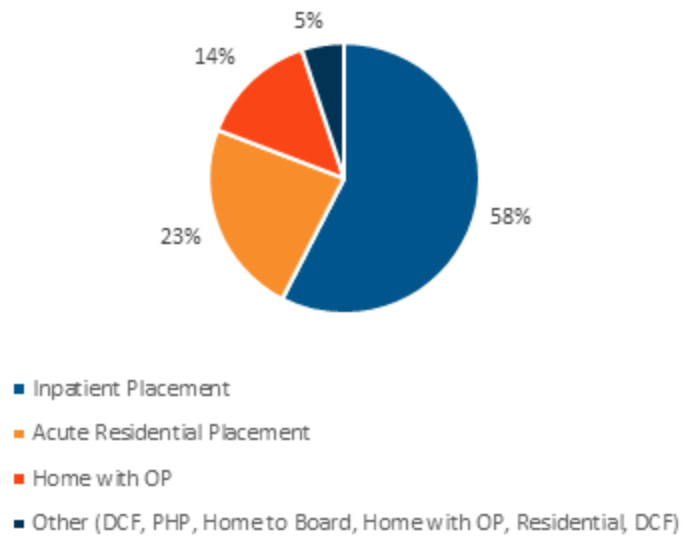


Figure 5. Final disposition recommendations for children who boarded

Because patients with ASD and IDD who are in crisis present a unique set of challenges within both the clinical and policy realms, these patients were tracked as a subset of the total population of patients. Of the total number of patients who presented to the ED in psychiatric crisis, 13 percent (n=133) were diagnosed with ASD/IDD, and 87 percent of those patients boarded (compared to 82 percent of children in the entire sample). These patients had a longer average length of stay, with 38 percent spending more than three days in the ED or in other non-psychiatric settings, as illustrated in Figure 6. Unlike the seasonal variability occurring in the overall pediatric psychiatric ED population, children and adolescents with ASD/IDD requiring hospitalization presented to the ED at a consistent rate throughout the year, demonstrated in Figure 7. Patients with ASD/IDD also were more likely to present with aggression (60%) than self-injury or suicidal behavior (30%).

## Length of Stay by Diagnosis

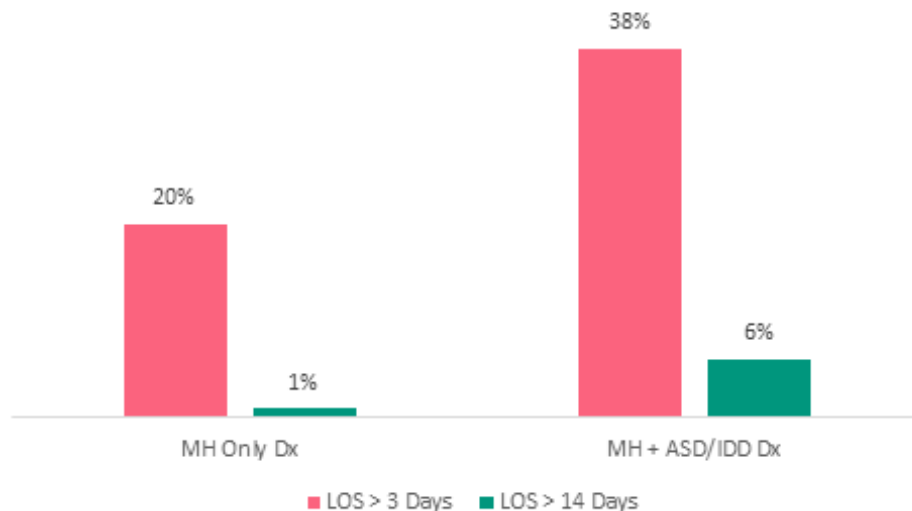


Figure 6. Length of stay, differentiated by co-occurring ASD/IDD

### Seasonality, Revisited

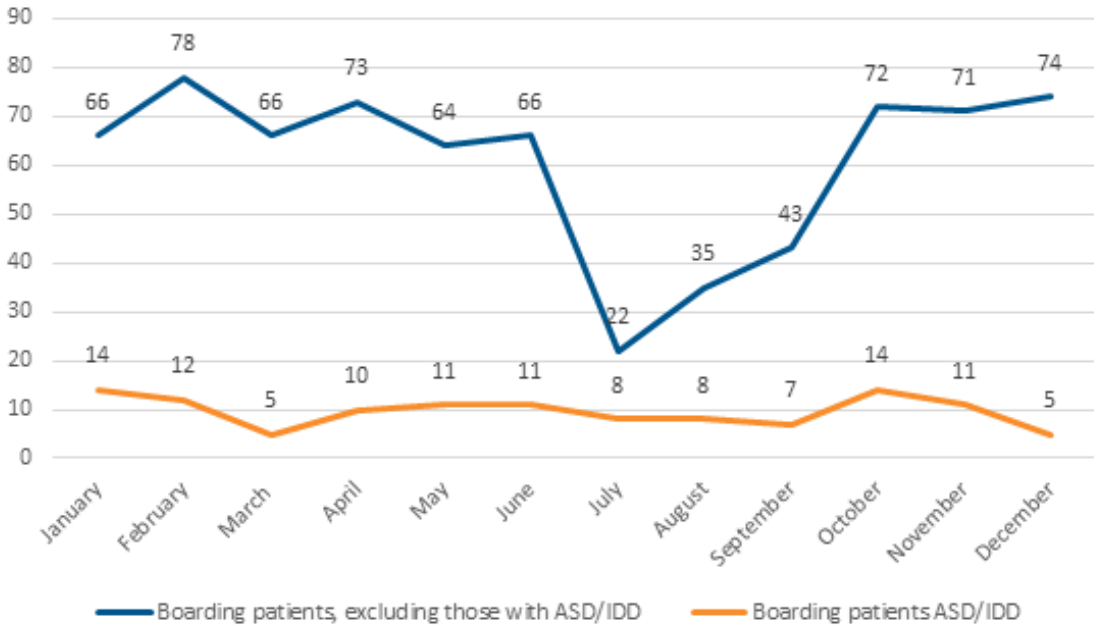


Figure 7. Seasonal variability for all patients who boarded, including those with ASD/IDD

# ANALYSIS AND RECOMMENDATIONS

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The data included herein illustrate a more comprehensive understanding of pediatric psychiatric ED boarding in the Commonwealth than was previously available. Some of the data aligned with anecdotally-established trends, including:

- Pediatric psychiatric boarding occurs in EDs across the Commonwealth; and
- Pediatric psychiatric boarding fluctuates seasonally, with the lowest rates occurring during summer months.

Additional findings unique to this study are discussed in detail below and have important implications for policy development in the Commonwealth.

The presence of patients initially assessed to require inpatient care but eventually discharged home indicates an opportunity and need for real-time crisis intervention. For physical health care, emergency medicine delivers an initial assessment and immediate intervention in order to provide immediate symptom relief and to avoid unnecessary inpatient stays. In contrast, typical emergency mental health care moves from initial assessment to disposition, without providing crisis intervention and stabilization. This pronounced lack of crisis care, both in the ED and in non-ED settings, is a missed opportunity for stabilizing patients and avoiding unnecessary hospitalizations. Urgent behavioral health care models should be further explored for adoption in the Commonwealth and must include payment mechanisms that incentivize:

- The development of non-ED locations for crisis care; and,
- The development and provision of evidence-based crisis intervention techniques.

## SEASONALITY

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The seasonal variability in demand for pediatric inpatient psychiatric care observed for decades and clearly demonstrated in this study presents a problem unique to children and adolescents, and requires pediatric-specific solutions. With regulatory support from the Department of Mental Health, some larger health systems in the Commonwealth convert adolescent inpatient capacity to adult inpatient capacity during the summer months in order to maintain their census and therefore their financial viability. Similarly flexible solutions should be explored, such as:

- Developing therapeutic summer programming for children and adolescents with mental health needs;
- Establishing a partnership between the mental health and the educational systems to provide clinical support to children and adolescents with year-round needs;
- Augmenting the fee-for-service payment model with state funding to maintain standing behavioral health crisis capacity to reduce the demand for inpatient beds; and
- Increasing inpatient reimbursement rates since enhanced rates would allow hospitals to maintain their child and adolescent bed capacity despite seasonal fluctuation, ensuring that both MassHealth and commercial insurers have adequate networks throughout the year.

This study demonstrated that the seasonal variability in demand for inpatient beds does not exist for children and adolescents with co-occurring ASD/IDD. The consistent demand throughout the year indicates that it should be possible to establish an appropriate number of beds in the Commonwealth for children

and adolescents with ASD/IDD, decreasing or even eliminating ED boarding for this population. This result is a critical development in our understanding of seasonal trends in demand, as children and adolescents with ASD/IDD are at risk for longer durations of boarding. While boarding is disruptive to any child/family, it can be especially distressing to children and adolescents with co-occurring ASD/IDD because of the chaotic nature of the ED environment.

## **INSURANCE**

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Over the years, most of the policy solutions implemented to address ED boarding have targeted individuals with MassHealth, since this is a risk factor for boarding among adults.<sup>38</sup> The data from this project demonstrate that children and adolescents in need of acute psychiatric care were more likely to have commercial insurance than MassHealth. Policy solutions for pediatric populations, therefore, must include children and adolescents with both MassHealth and commercial insurance. Such policy solutions will require working across regulatory agencies to ensure equity in access to care.

# CONCLUSION

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Originally defined as “the problem that needed solving,” ED boarding is itself a symptom of a broken mental health system where children, adolescents, and their families cannot access the care that they need when and where they need it. This study further illustrated and uncovered the nuances of psychiatric boarding among children and adolescents. This more comprehensive understanding will allow policymakers to implement data-driven solutions to ED boarding that must prioritize the development of payment structures and reimbursement models that incentivize timely access to the right care at the right time and in the right setting. It is imperative that Massachusetts no longer allows its children and adolescents to languish in EDs while awaiting appropriate mental health care and treatment.



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# APPENDIX

## BOARDING ADVISORY COMMITTEE

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Office of Senator Jennifer Flanagan

Office of Senator Cindy Friedman

Office of Representative Elizabeth Malia

Executive Office of Health & Human Services

Office of the Child Advocate

Department of Mental Health

Department of Public Health

Department of Youth Services

MassHealth

Children's Mental Health Campaign Partner Organizations:

*Massachusetts Society for the Prevention of Cruelty to Children*

*Boston Children's Hospital*

*Health Care For All*

*Health Law Advocates*

*Parent/Professional Advocacy League*

*Massachusetts Association for Mental Health*

Association for Behavioral Healthcare

Autism Insurance Resource Center

Bournewood Hospital

Eliot Community Human Services

Massachusetts Behavioral Health Partnership

Massachusetts Health & Hospital Association

The Children's Mental Health Campaign (CMHC) is a large statewide network that advocates for policy, systems and practice solutions to ensure all children in Massachusetts have access to resources to prevent, diagnose, and treat mental health issues in a timely, effective, and compassionate way. This will only happen through a shared responsibility among government and health care institutions working together to improve mental health care and access for children and youth.

The CMHC Executive Committee consists of six highly reputable partner organizations: The Massachusetts Society for the Prevention of Cruelty to Children (MSPCC), Boston Children's Hospital, the Parent/Professional Advocacy League, Health Care for All, Health Law Advocates, and the Massachusetts Association for Mental Health. The CMHC network includes more than 160 organizations across Massachusetts.

**We are unified in our commitment to safeguard the mental and emotional health and wellness of all children in Massachusetts.**

As a society, we cannot afford ignorance and inaction when it comes to the mental health of children. Compassion calls us to ease the suffering of any child who may be in emotional pain because of things happening to them or around them as well as those who suffer from biological or genetic conditions. Common sense requires us to assess and intervene long before a child's behavior becomes harmful to themselves or others. And determination drives us to help children and their families by fighting for access to supportive resources, proven interventions and treatments that will allow them to grow into healthy adults - ideally with an understanding of how they can manage their own mental health to avert crises and chronic distress.

