

The Psychiatric Bed Crisis in the US:

Understanding the Problem and Moving Toward Solutions

Section 7

Child and Adolescent Psychiatric Beds

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A. Overview

This section focuses on the unique needs of children and adolescents (together referred to as “youth”) and their families in child and adolescent psychiatry (CAP) inpatient care and other service settings providing intensive evaluation and treatment. This separate section is necessary because of the significant differences between adult and youth systems of care and the role that inpatient care plays within the respective systems.

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For youth, inpatient care provides acute crisis management, including but not restricted to a mental health exacerbation, as well as intensive evaluation and treatment. Whereas arrests were identified as an entry way to a hospital bed for adults, for children, referrals from schools are more likely to lead to inpatient stays.

The need for youth psychiatric beds has to be understood in the context of the overall continuum of care for youth. The organization of this section parallels that of the overall report, including the following parts: overview, introduction, historic and contemporary use of CAP beds, financing of CAP beds, population variables, community system contributors and variables (What does the ideal look like for each service?), and creation of the model.

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After emerging in the 20th century, CAP beds have been increasingly in demand over the last three decades. However, the supply has decreased in the context of managed care and utilization review. A complex and inconsistent system of financing has hampered the viability of CAP inpatient services and access to acute care for youth. This chapter outlines a proposed model of a continuum of care including inpatient care. Inpatient represents the most restrictive and, because it requires specialist-staffing, the most expensive component of the continuum. Potential standards for inpatient care and for determining transitions between levels of care are discussed. Finally, population definitions and factors involved in a CAP simulation model are described.



4. Introduction

In 2016 the American Psychiatric Association (APA) issued a position statement on Psychiatric Hospitalization of Children and Adolescents that begins by describing a crisis of access to inpatient care for youth (APA, 2016). It details the decline in psychiatric hospitals and public beds; long wait times and the problem of “boarding” in which youth wait in emergency rooms and pediatric inpatient units until inpatient psychiatric beds become available; the shortage of psychiatric care for youth in general; and how these system deficits leave many youths untreated and families without help. Currently, less than 50% of children with an identified behavioral health condition receive any treatment, resulting in increased costs and acuity of clinical presentation (Bostic and Hoover, 2020).

The APA Position Statement concludes:

“It is the position of The American Psychiatric Association to:

- 1) Advocate for the development of a full spectrum of appropriate, financially affordable, inpatient facilities and services for the diagnosis and treatment of children and adolescents in need of psychiatric care in the United States. These facilities are to include both psychiatric and general medical hospitals. Efforts should be focused on both increasing current inpatient services and also improving financial sustainability of existing inpatient programs.
- 2) Emphasize that the health of children and adolescents will be best served if primary treatment decisions such as admissions, medications, psychotherapy and appropriate disposition planning are the responsibility of a psychiatrist specialized in child and adolescent psychiatry whenever available.
- 3) Emphasize that, when possible, inpatient psychiatric hospitalization of children and adolescents should be provided close to their homes, so that their families may be included and participate during the treatment process.
- 4) Work to provide parity in mental health treatment for all age groups by increasing mental health resources for children and adolescents and subsequently providing opportunities for early treatment and intervention to benefit young patients suffering from mental illness.
- 5) Work to educate the public and health care community that inpatient psychiatric care is necessary and justified when psychiatric illness severely affects a young person’s safety or ability to function.
- 6) Address the shortage in child and adolescent psychiatrists by recruiting psychiatrists-in-training and early career psychiatrists into specialized training.”

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This chapter focuses on Position 1 of this statement, and specifically the need for “the development of a full spectrum of appropriate, financially affordable, inpatient facilities and services for the diagnosis and treatment of children and adolescents.”

In 2020, the most commonly diagnosed psychiatric health conditions in children aged 3 to 17 years were: attention deficit hyperactivity disorder (ADHD) (9.4%); disruptive behavioral disorders (7.4%), anxiety (7.1%), and depression (3.2%) (Bostic and Hoover, 2020). These conditions often co-occur and can be even more prevalent in groups affected by poverty and other environmental stressors. Suicide rates in youth have increased by 56% since 2010, and suicide is now the second most common cause of death in those ages 10-24 in the U.S. (Bostic and Hoover, 2020). Disparities are in evidence, particularly among racial and sexual minorities. For example, Black youth under 13 years are twice as likely to die by suicide as their white counterparts (U.S. Congressional Black Caucus, 2019).

There are four contexts in which children and adolescents are psychiatrically hospitalized: 1) clear mental illness with or without a comorbid medical illness; 2) developmental disability with comorbid mental illness or behavior problems; 3) referrals in which a psychiatric disorder may exist but the reason for hospitalization is psychosocial (e.g., unsafe home environment); and 4) family or juvenile court referrals. Particularly complex cases, diagnostic evaluations of major symptoms, and first presentations of chronic illness (e.g., first-episode psychosis) often warrant hospitalization regardless of whether intermediate-level services are available. For a list of common diagnoses requiring admission, see Table 6. These presenting problems are often compounded by cross-cutting symptoms such as aggression, severe temper outbursts, the effects of developmental trauma, self-injurious behavior, avoidant behaviors, and subtle neurodevelopmental deficits. Social issues such as stressful family environments, school refusal, state agency involvement, immigration status, and lack of English fluency can further compound the clinical presentation.

In child and adolescent psychiatry, hospitalization for mental health reasons is complicated by a number of issues: whether the hospital is a general hospital that has beds specifically identified for people with mental illness; whether beds are for children, adolescents, or both; whether the hospital is a children’s hospital that integrates beds for children with psychiatric disorders into general wards or has a specifically designated psychiatric unit; whether the child or adolescent psychiatric unit is in a free-standing psychiatric hospital; or whether the bed is in a state-funded hospital. Thus, the youth’s age and site of the hospital bed must be considered when interpreting data and have implications for cost and access. For example, patients with significant co-occurring medical conditions may be deemed inappropriate for certain types of units. Typically, triaging a youth in crisis is based more on what resources exist and where a bed is available than what would be a clinically optimal placement for that youth. For example, in rural states, where the children’s hospital may provide the only inpatient psychiatric unit, families may drive long distances to have their child admitted.

The core of a successful therapeutic inpatient unit is 24-hour supervision and safety monitoring by trained staff and a multi-disciplinary team. This team includes a child and adolescent psychiatrist to address the youth’s mental health, family, and psychoeducational requirements. Specialty services for certain sub-groups are needed, including young children (<10 years); those with developmental disorders or eating disorders; those with medical complexities; and those requiring certain safety protocols for treatments that require high security. Although alternatives in the community such as acute residential treatment beds are desirable, more data are needed to demonstrate their relative effectiveness (Lamb, 2009; Shepperd et al., 2009).

Table 6: Most common primary and comorbid pediatric mental health inpatient diagnoses nationally and in free-standing children's hospitals for 3- to 20-Year-Olds in 2009 (Bardach et al., 2014) (Reproduced with permission from Pediatrics, Vol. 133, Page 606, Copyright © 2014 by the AAP.)

Ranking	Primary Mental Health Diagnosis ^a		Any Mental Health Diagnosis ^b	
	National Inpatient Hospitals (N = 228 808) ^c	Children's Hospitals, Inpatient (N = 12 542)	National Inpatient Hospitals (N = 523 105) ^c	Children's Hospitals, Inpatient (N = 66 660)
1	Depression*: 100 988 (44.1)	Depression*: 5290 (42.2)	Depression: 187 902 (35.9)	Developmental disorder: 21 796 (32.7)
2	Bipolar disorder*: 41 345 (18.1)	Externalizing disorder: 1351 (10.8)	Substance abuse: 177 680 (34.0)	Depression: 15 936 (23.9)
3	Psychosis*: 27 589 (12.1)	Bipolar disorder*: 1325 (10.6)	ADHD: 101 658 (19.4)	ADHD: 15 247 (22.9)
4	Externalizing disorder: 14 087 (6.2)	Anxiety: 971 (7.7)	Anxiety: 90 140 (17.2)	Autism: 7120 (10.7)
5	Reaction disorder: 11 856 (5.2)	Psychosis*: 823 (6.6)	Bipolar disorder: 79 352 (15.2)	Externalizing disorder: 6509 (9.8)
6	Anxiety: 9288 (4.1)	Eating disorder: 684 (5.5)	Externalizing disorder: 63 368 (12.1)	Substance abuse: 5918 (8.9)
7	Substance abuse: 8501 (3.7)	Miscellaneous: 535 (4.3)	Developmental disorder: 61 662 (11.8)	Anxiety: 5326 (8.0)
8	ADHD: 6920 (3.0)	ADHD: 343 (2.7)	Psychosis: 51 158 (9.8)	Psychosis: 4545 (6.8)
9	Eating disorder: 2398 (1.1)	Substance abuse: 308 (2.5)	Reaction disorder: 28 030 (5.4)	Bipolar disorder: 4539 (6.8)
10	Autism: 2353 (1.0)	Autism: 271 (2.2)	Personality disorder: 26 666 (5.1)	Reaction disorder: 3012 (4.5)

Data are presented as n (%). Conditions shown with an asterisk (*) indicate the most common and costly primary diagnostic groups in the nationally representative KID. "Developmental disorder" includes learning and communication disorders and intellectual disabilities; "Externalizing disorder" includes oppositional defiant disorder, intermittent explosive disorder, impulse control disorder, and conduct disturbance; "Miscellaneous" includes psychogenic pain, postconcussive syndrome, sleep disorders, and tension headaches.

^a Mental health diagnoses are designated as primary based on physician discharge documentation. Comparison of national KID and free-standing children's hospitals (PHIS) data sets using Wilcoxon rank sum testing, $P = .002$.

^b "Any" mental health diagnosis refers to primary or nonprimary (ie, comorbid) mental health diagnoses. Comparison of national KID and PHIS free-standing children's hospitals datasets using Wilcoxon rank sum testing, $P = .001$.

5. Historic and Contemporary Use of Psychiatric Beds

In the nineteenth century, children and adolescents who could not be managed by their families were sent to poorhouses. Contemporary distinctions between developmental disabilities, juvenile delinquency, and early-onset psychiatric disorders did not yet exist. By midcentury, rising concerns over the safety of these youth, who were housed alongside adults in often deplorable conditions, motivated efforts to transfer the young people to orphanages, asylums, or foster homes. This trend was accelerated by the New York State Children's Act of 1875 which ordered all children aged 2-16 years to be removed from poorhouses (Katz, 1986).

Bradley Hospital at Brown University, founded in 1929, was the first neuropsychiatric hospital for children and adolescents. In 1937 the first public psychiatric hospital unit for adolescents in the U.S. opened at Bellevue Hospital. This was followed in 1955 by the opening of the first private unit for adolescents at Hillside Hospital, also in New York City.

Starting in the 1980s, research into effective treatment for youth increased, and the availability of evidence-based treatment options, including medications, drove an increased need for child psychiatrists. In 1983, the American Academy of Child and Adolescent Psychiatry (AACAP) called for an evidence-based approach in "Child Psychiatry: A Plan for the Coming Decades." Reimbursement patterns and legislative changes which first required and then incentivized the study of medication safety and efficacy in pediatric patients resulted in increased demand for child psychiatry services. The 1990 Americans with Disabilities Act, which increased mental health funding for schools; the 1994-98 Pediatric Rule from the U.S. Food and Drug Administration, requiring that all new drugs be studied in pediatric populations; and the 1996 Mental Health Parity Act followed by the 2008 Mental Health Parity and Addiction Equity Act all had the effect of increasing demand. Demand for youth psychiatric services (including inpatient) also increased as the rates of mental health diagnoses increased (specifically of autism, mood disorders, suicide, substance use disorders and anxiety). The supply of child psychiatrists did not grow concurrently. Today, virtually all states have significant CAP physician shortages, and the pediatric population is underserved (AACAP, 2022). A 2020 SAMSHA Behavioral Health Workforce Report states the current CAP workforce is approximately 8,000-9,000 and that another 48,000-49,000



CAPs are needed to meet the current needs of youth with serious mental illness, severe emotional disturbance, and substance use disorders (SAMSHA, 2020).

In the last decade, psychiatric hospitalizations of youth have increased, and a trend toward specialization of these beds (e.g., detoxification, autism and intellectual disability) has been noted (Teich et al., 2018; Huffman et al., 2012; Siegel et al., 2012; Righi et al., 2018; Pedersen et al., 2018). Both clinical factors (e.g., risk of self-harm) and non-clinical factors (e.g., age, insurance status, bed availability) reportedly influence the decision to hospitalize and the selection of an appropriate unit. Specialization trends for inpatient autism care have resulted in a proliferation of studies identifying risk factors and comparative effectiveness of these interventions (Siegel et al., 2012; Righi et al., 2018; Pedersen et al., 2018).

While demand for CAP services has increased due to the factors described above, the supply of inpatient CAP beds has decreased.

While demand for CAP services has increased due to the factors described above, the supply of inpatient CAP beds has decreased. After a boom in inpatient capacity during the 1970s and early 1980s spurred by private investment, there was a downturn in bed capacity in the context of aggressive utilization management by the insurance industry in the late 1980s and early 1990s. During this time, behavioral health spending was dramatically reduced by reducing the number of hospital admissions, shortening the length of inpatient stays, and discounting rates for psychiatric professional services. Inpatient psychiatric care for young people was particularly impacted. Between 1990 and 2000, the median stay of child and adolescent mental health inpatients in community hospitals declined from 12.2 to 4.4 days (Case et al., 2007). Providers and advocates proved unable to counter the market forces resulting from the rise of the behavioral managed care and health utilization review industry, which has narrowed the scope of inpatient psychiatric treatment. While length of stay is related to cost (Bardach et al., 2014), the relationship between length of stay and access to and quality of care has not been well studied.

At the time of this writing, the U.S. is emerging from the COVID-19 pandemic. Its resulting economic crisis and what some are calling a second pandemic in mental health is likely to increase demand for CAP services. In an unprecedented action, the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association declared a state of emergency in child and adolescent mental health (AAP, 2021). Evidence suggests that throughout the country there has been an increase in stress, substance use, domestic and interpersonal violence, and mental health problems. Children, many of whom were not able to be in school or access in-person mental health care, appear to be at increased risk; initial data suggests a significant increase in pediatric mental health service demand which is expected to continue for some time. The Centers for Disease Control and Prevention (CDC) reported in November 2020 that during the COVID pandemic, from April to October 2020, the proportion of mental health-related ED visits for children aged 5-11 years increased 24% and for those 12-17 years increased 31% compared with 2019 (Leeb et al., 2020). On Jan. 4, 2021, the Massachusetts Hospital Association reported that 300 children and adolescents were boarding in emergency rooms awaiting beds in metropolitan Boston and the southeast and northeast regions of Massachusetts (Personal communication to SMDJ 01-05-21). Rates of suicidal thinking and behavior are up by 25 percent or more from similar periods in 2019 and the deficits in the mental health system for



youth are being exposed (Hill et al., 2021; Carey, 2021).

D. Definition of a Child and Adolescent Psychiatric “Bed”:

CAP Inpatient in the Continuum of Care for Youth Mental Health

A child and adolescent psychiatry (CAP) inpatient “bed” is a place in a secure setting managed by child-trained mental health professionals. It is used when a child’s mental health condition or behaviors preclude them from safely living in the community with only outpatient support, or the capacity of the community environment is unable to meet the needs of the child and ensure safe functioning. A CAP “bed” represents the most restrictive setting in the continuum of care for those with mental health and safety needs that cannot be met in a less restrictive setting. Some beds are specifically defined as “short-stay beds” and are used for observation, assessment and treatment pending placement or discharge (Damiani et al., 2011). Some inpatient services in CAP specialize in treating certain sub-groups such as units for those with autism and other developmental disorders (approximately 12-15 such units exist in the U.S.); detoxification and substance use units; and eating disorder units.

Locked inpatient units for youth with psychiatric diagnoses who are in crisis are generally considered a last resort to be used only when other services fail to reduce the acuity. They should exist in a coordinated continuum of services that function to “wrap around” the youth and family and prevent exacerbation of symptoms, functioning and behavior. See Table 7 for the desired elements of this continuum and the characteristics of each. The continuum from community care to inpatient care increases in security and the capacity to address risk.

In addition to serving youth and families in crisis, psychiatric hospitalization should be used as a site of intensive evaluation and treatment when a child’s diagnosis, formulation and treatment plan are in question, or the child needs closer observation to clarify them. When the treatment team from the lower level of care (e.g., outpatient, group home, or residential facility) needs help in formulating a case and identifying an appropriate treatment plan, inpatient hospitalization with 24/7 clinical monitoring, daily assessments by trained staff, and an opportunity for closely assessing the effects of interventions can be extremely helpful. Medication discontinuation where intensive oversight is needed is another indication, especially where less than optimal outpatient follow-up or family collaboration precludes doing this in a less restrictive setting.



Table 7. Model Continuum of Care for Youth Mental Health¹

Type of Service or Bed ²	Location	Security and legal status	Typical Length of Stay	Purpose
Residential³				
Acute	Hospitals or community facilities	Voluntary, unlocked units	2-3 weeks	Alternative to or stepdown from acute inpatient
Intermediate	Hospitals (often state hospitals) or community facilities. includes psychiatric residential treatment facilities (PRTFs) which are an allowable Medicaid service.	Involuntary locked or voluntary and unlocked	8-12 weeks or longer (up to 6-12 months)	For patients with recurring hospitalizations. Includes on-site accredited school
Long term	State hospital or community-based settings. Combined funding (school, state agency, such as child welfare or mental health, local education authority)	Variable	12 months to indefinite	Long term care of chronically ill patients who have not been successfully stabilized in other settings and/or who are unable to function in the community.
Non-residential				
Acute inpatient beds	Pediatric psychiatric units in children’s hospitals, psychiatric hospitals, or community hospitals. Includes specialized beds for autism/developmental delay, eating disorders, substance use disorders, very young children, first-episode psychosis	Locked, voluntary and involuntary	5-8 days	For acute crisis with safety issues and complex assessments and treatments. Specialized beds include milieu programming and staffing expertise designed for that patient population.
Crisis Stabilization beds/ observation beds	Emergency departments or community facilities	Locked, voluntary and involuntary	Less than 24 hours up to 5 days	To mitigate the need for inpatient
Respite beds	Home, day treatment center, or healthcare facility.	Unlocked voluntary	1-2 weeks	To provide short-term relief for primary caretakers and patients
Forensic/juvenile justice beds	Special facilities	Locked involuntary and/or court-ordered	Variable	For evaluation of competency and criminal responsibility; may include court-mandated psychiatric and/or substance use treatment
Pediatric beds with psychiatric consultation	Pediatric units in children’s or general hospitals.	Unlocked medical floors.	Variable	For youth with a primary medical diagnosis and co-occurring psychiatric diagnosis that requires psychiatric consultation to the pediatric team, e.g., youth with complications of nonadherence to diabetes treatment.
Emergency psychiatric services	Hospital emergency rooms, community urgent care centers, or	Locked voluntary or involuntary	Variable, ideally less than 24 hours	Psychiatric evaluation and triage



	mobile crisis response and stabilization services.			
Partial hospitalization units	Hospitals	Unlocked voluntary	Full day (no less than 6 hours) for stays of 1-2 weeks.	Intermediate level outpatient care. Used to step up from outpatient or step down from inpatient.
Day treatment programs	Typically located at community clinics or DMH sites.	Unlocked voluntary	Serve patients during hours for up to several weeks	Intermediate level outpatient care. Used to step up from regular outpatient or step down from inpatient.
Intensive outpatient	Outpatient offices, clinics.	Unlocked voluntary	Multiple visits per week of outpatient services (see below).	Used when patient is starting to destabilize with less frequent outpatient visits.
Outpatient	Individual and family treatment; groups for youth and caretakers	Unlocked voluntary	1-2 visits per week	Initial and ongoing treatment; recovery support
Wraparound and team-based services	Multiple community sites typically coordinated by a central agency	Unlocked voluntary	Variable	Combination of services (e.g., outpatient clinicians, case manager, family support specialist, in-home therapy) designed to reduce the risk of youth needing re-hospitalization
Community supports for patients, caretakers, and families	Variable	Unlocked voluntary	Variable	Education, advocacy and support, e.g., peer and family support specialists; NAMI, Autism NOW, PALS; therapeutic mentors and sponsors
School-based services ⁴	Schools in partnership with community entities	Voluntary	Sept.-June; services in summer vary by community	Comprehensive school-based mental health system (CSMHS). Partners with behavioral health to provide a multi-tiered approach including health promotion, prevention and early intervention and crisis services
Primary pediatric care services	Primary care offices and clinics with co-located mental health clinicians and/or a collaborative/integrated care model and/or remote consultation	Voluntary	Year-round 24/7 access	Prevention and early intervention. Mental health and developmental screening and appropriate triage. Capacity for crisis management.
Other community-based services	Variable. Includes law enforcement trained in mental health assessment, triage and, where appropriate, diversion; after-school programs; faith groups; youth sport and recreational leagues and associations; Big Brother/Big Sister programs, etc.	Variable	Year-round and as needed	Community-based prevention and early intervention

Notes:

- 1 Pinals, 2020; Bostic and Hoover, 2020.
- 2 See SAMSHA, 2015 for recommended characteristics of these services.
- 3 Different states call these residential facilities by different names. Emphasis here is on how the service functions within the continuum of care.
- 4 New York State has school-based day treatment with mental health providers. The program, lasting 30 days several months, is for children needing more psychiatric support than what is available in “SED classrooms”; often stepdown from inpatient.



Standards for Inpatient Care for Youth

There are federal guidelines regarding inpatient psychiatric care and conditions of participation for being a Medicare and/or Medicaid provider. ([§ 482.60 Special provisions applying to psychiatric hospitals in the U.S. Code of Federal Regulations](#)). The National Committee for Quality Assurance (NCQA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and state health agency standards may further define the service components and requirements for CAP beds. However, these provide little specific guidance for the clinical processes and outcomes that should be the focus of an inpatient unit for youth. Section 482.60 of the US Code of Regulations specifies requirements for psychiatric evaluation, treatment planning and discharge summaries, including the requirement for goals and objectives of the inpatient stay; however, no details or guidance are provided about how to most effectively achieve those goals and objectives. Best practice guidelines have been developed for inpatient care for the hospitalization of youth with autism or intellectual disability (McGuire et al., 2015).

The authors' opinion is that clinical standards for inpatient hospitalization should build on those outlined in the AACAP Principles of Care for Treatment of Children and Adolescents with Mental Illness in Residential Treatment Facilities (AACAP, 2010).² See Table 8 for best practices of inpatient care.

Table 8. Best Practices in Psychiatric Inpatient Care for Youth

Best Practices in Psychiatric Inpatient Care for Youth

- Evidence-informed treatment, including medication evaluation and adjustments with sufficient time allowed to determine effectiveness.
- Measurement-based care, i.e., defined and measured outcome metrics.
- A family driven/centered and youth-guided approach, to include an understanding of the role of family and social systems in the presentation and in developing treatment recommendations about improving family functioning.
- An individualized, strengths-based, and evidence-informed approach to teaching skills to remedy the underlying reasons for the hospitalization.

² Although written more than 10 years ago, AACAP Principles of Care for Treatment of Children and Adolescents with Mental Illness in Residential Treatment Facilities the content is still applicable and directly relevant to acute inpatient care with appropriate attention to psychiatric staffing differences. These practice parameters delineate details of what a program should include staffing, admission, treatment and discharge planning; how to maintain safety; therapeutic services standards; educational services; and the therapeutic environment. The report also has an Appendix for "Special Populations and Programs," including children on the autism spectrum. A significant caveat to this approach is that residential treatment centers (RTCs) exist at five distinct levels, and it is important to recognize this gradation and its impact on expertise, staffing and cost. RTCs themselves must be distinguished from inpatient psychiatric units that care for the most complex cases at the highest level of acuity and require the highest proportion of child psychiatrists and other professionals in their staffing.



- Equipping children and families to manage situations at home or in less intensive environments, including practice with applying the skills the child and parent are learning during the hospital stay in the home and community.
- Consideration of the specific needs of youth with DDs, LGBTQ+ youth, youth with co-occurring SUDs, youth from impoverished backgrounds, youth and families impacted by structural racism and youth with co-occurring medical disorders.
- Cultural, racial, and linguistic responsiveness, competence and equity, including providing language interpreting to non-English speakers.
- Development of a cultural formulation with an eye towards how structural racism and inequities may be contributing to the child and family's presentation (Pumariega, 2013).
- For youth at higher risk, inpatient staff provide warm handoffs to aftercare services and to home as indicated (Family First, n.d.).
- For youth at higher risk, including a Transition Service as part of the hospital episode of care, continuing to provide support and transition during the weeks after hospitalization.
- Coordination and collaboration with outpatient clinicians and others at lower levels of care using case management as needed

6. Financing of Child and Adolescent Psychiatric Beds

The funding for child and adolescent psychiatric beds comes from multiple sources including Medicaid, private insurance, private “out-of-pocket” pay, as well as state and local behavioral health and department of education funding sources.

The funding for child and adolescent psychiatric beds comes from multiple sources including Medicaid, private insurance, private “out-of-pocket” pay, as well as state and local behavioral health and department of education funding sources. These funding sources can also be blended to support the inpatient stay, especially in residential settings, with schools paying for the educational needs of the child and health insurance or a state behavioral health agency paying for the clinical and “bed costs” associated with the stay. (In some situations, parents need to sign over custody to the state in order to get help for their child). Diagnosis-Related Groups (DRGs) are only relevant for the small fraction of children who are deemed ‘dual eligible’ for both Medicaid and Medicare, typically by meeting a qualifying condition for Medicare such as a developmental disorder. The Children’s Health Insurance Program (CHIP) is a state and federal combined health insurance program for children in families who earn too much to qualify for Medicaid but not enough to buy private health insurance. CHIP provides free or low-cost health coverage and goes by different names in every state. The majority of inpatient services are funded on a fee-for-service basis in the private sector (non-profit and for-profit organizations). Rates are negotiated with each payor and utilization management varies from payor to payor. Some rates are inclusive of professional fees, others separate. Some plans have pay for performance, differential rates based on historical lengths of stay (LOS) and readmission rates. A psychiatric system for youth typically needs sufficient scale to be able to ensure effective contract



brokering and voice in state and other systems, as well as adequate staffing and expertise to ensure sustainability.

The economic reality for inpatient child psychiatry services located in pediatric or general medical hospitals is that they have high fixed costs due to overhead, staff salaries, and the cost of compliance with extensive regulations, but reimbursement rates which are inadequate to cover overall operating costs. This is especially problematic for units in general hospitals and is aggravated by fluctuations in census in context of seasonal and non-seasonal fluctuations in demand. In areas of staff shortage or unionized staff, salaries may need to be higher than average to fill slots. Reimbursements may be low due to insurance (e.g., [Wit v. United Behavioral Health/Optum case.](#)) and insurance contracts; network inadequacy; discriminatory payment practices compared to other physicians for the same evaluation and management codes (Melek et al., 2019). In the authors' experience, child mental health is often not prioritized from a financial perspective despite community need.

In the current healthcare reimbursement system, other higher-reimbursing services such as obstetrics and surgery tend to be more competitive in acquiring space within general hospital systems. Until true parity is enforced, an inpatient CAP service needs to be a priority for hospital administrators for some reason other than revenue, and its costs need to be offset by revenues from more lucrative services. Another alternative is to offer inpatient service in community-based settings such as acute residential rather than medical hospitals in an effort to lower overhead rates. Free-standing psychiatric hospitals, which may be not for profit or for profit, operate under a different business model. Their cost may be higher due to staffing but, if large enough in scale, they can develop their own version of a continuum of care within their system and lobby directly with the state for contracts. Not-for-profit psychiatric hospitals typically re-invest profits into the development of systems that are consistent with their mission. While for-profit hospitals also invest in the continuing development of treatment systems, they must account for the capital they use by generating a financial return to their investors.



Other challenges include widely varying reimbursement rates across and within public and private payors, and seasonal fluctuations in census, particularly with younger children. Reimbursement can vary significantly from payor to payor; thus, admitting a range of patients with different payors may be necessary to achieve adequate average reimbursement. This practice can diminish access for publicly insured children. Census can vary significantly between winter (highest average census) and summer when children are out of school and typically under less stress (see Figure 6).

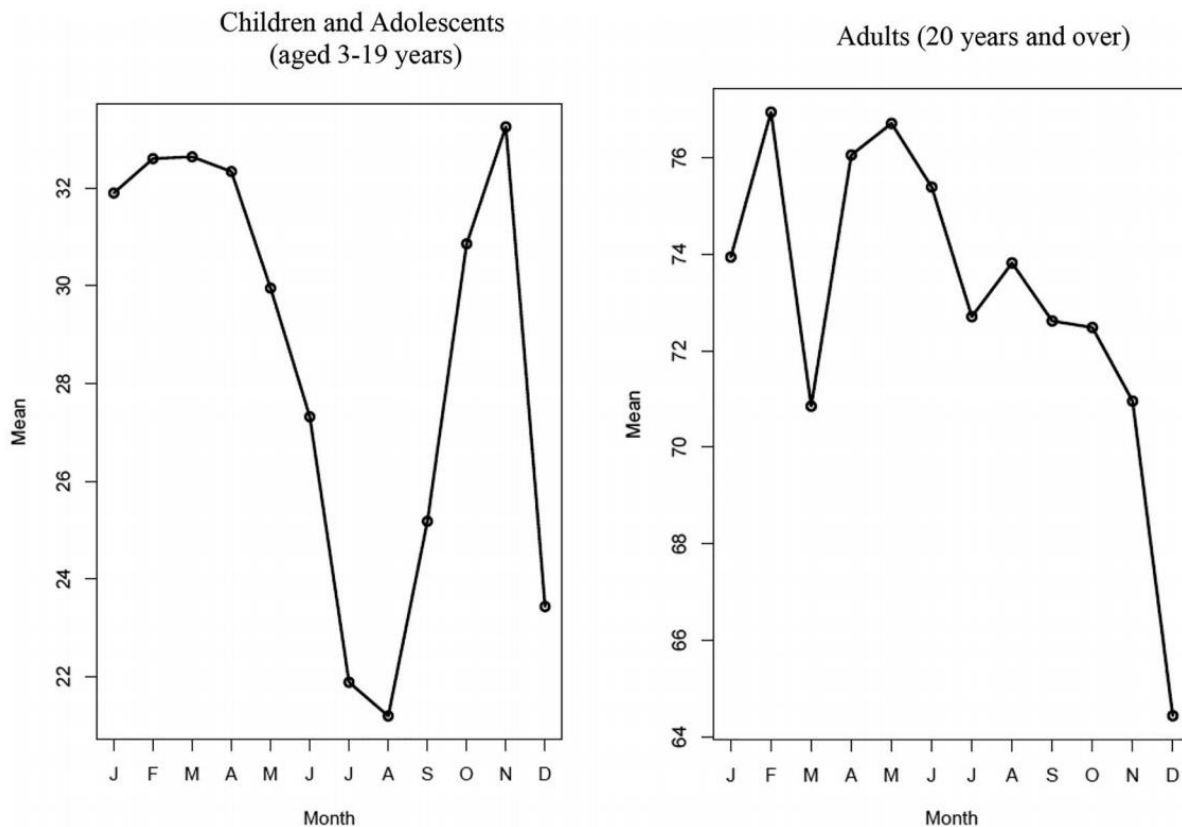


Figure 6. The monthly average of psychiatric admission for children and adolescents aged 3-19 years and adults per 100,000 (20 years and older), (2004-2014). Standardized by population and the average number of days per month. (Slaunwhite et al, 2019) (Reproduced with permission.)

Many states provide services to people under 21 through [psychiatric residential treatment facilities](#) (PRTFs). A PRTF provides Medicaid-funded comprehensive mental health treatment to youth who, due to mental illness, substance abuse, or severe emotional disturbance, need treatment that can most effectively be provided in a non-hospital-based residential treatment facility. All other ambulatory care resources available in the community must have been identified, and if not accessed, determined to not meet the immediate treatment needs of the youth.

The range of settings for inpatient treatment of youth also differs from adult settings, with an increasing number of free-standing community-based settings providing these services, particularly for younger children. These beds are variably called community-based acute treatment (CBAT) or acute residential treatment (ART). Their funding is similar to more traditional, hospital-based inpatient facilities although the *per diem* costs are significantly less and the involvement of psychiatric providers is much less intensive. Many of these programs are based in residential facilities that lack laboratory testing capacity



or other medical specialists but will have on-site or contracted psychiatric treatment providers who oversee the child's treatment program. The length of stay in these community-based programs tends to be longer than for hospital-based care. These may be private for-profit or not-for-profit and involve blended funding as described above.

Per the July 2018 *Faces of Medicaid Data Series* (Pires, et al., 2018) the percentage of children enrolled in Medicaid who were hospitalized psychiatrically increased from 3.2% in 2008 to 5.2% in 2011. At the same time, the mean expense per hospitalization decreased from \$11,803 to \$4,840 (a drop of 144%). The study authors suggest the following trends: lower average lengths of stay due to more children being enrolled in Medicaid managed care; children leaving inpatient treatment and moving to residential treatment; states using alternatives (such as wraparound, respite, or multisystemic therapy); the costs of youth who board may look lower, but these patients are in a clinically challenging limbo which can prove inhumane for youth and families.

7. What Does the Ideal Look Like for Each Service? Theory and Practice

While broad consensus exists that the number of youths presenting with severe and acute mental health needs is high and beyond current treatment capacities, the best way to approach this serious public health problem remains a vigorous debate

While broad consensus exists that the number of youths presenting with severe and acute mental health needs is high and beyond current treatment capacities, the best way to approach this serious public health problem remains a vigorous debate. Proposed solutions often vary according to the variety in viewpoints on the development and causes of emotional-behavioral problems in youth. For many, especially those who ascribe to more traditional conceptualizations of mental illness, the primary solution to the current problem is to increase inpatient bed capacity. Others, however, view mental health crises as more related to the environmental context, social determinants of health (socioeconomic factors such as poverty, lack of early quality childcare, discrimination, and poor access to basic needs) and/or adverse experiences (including abuse, neglect) and would much prefer funds to be directed to these areas. Still others hold that bolstering upstream mental health services such as outpatient treatment and comprehensive non-hospital-based crisis intervention and other services offer the best promise to reduce the number of youths needing psychiatric hospitalization. These different conceptualizations of the principal drivers of child mental health and how to address them translate to robust discussions on the best ways to use limited funds.

This section will attempt to describe reasonable standards that might be in place in community settings for services that could mitigate the need for acute inpatient care for youth. The feasibility of actual quality metrics or fidelity measures for these services will be deliberated.



Ideal Model in Theory: Reasonable standards

In 1999, the U.S. Surgeon General’s report on mental health concluded the following about child mental health:

“The multiple problems associated with serious emotional disturbance in children and adolescents are best addressed with a systems approach in which multiple service sectors work in an organized, collaborative way. Research on the effectiveness of systems of care shows positive results for system outcomes and functional outcomes for children; however, the relationship between changes at the system level and clinical outcomes is still unclear.” (USDHHS, 1999, p. 193).

The dearth of data documenting the relationships between systems changes and clinical outcomes data has continued, resulting in the lack of clear and explicit standards of pediatric mental health care, including inpatient. The “Unified Vision for Transforming Mental Health and Substance Use Care” published by Mental Health America with input from mental health organizations, including the APA, posits the following:

“To improve health outcomes and quality of life for people with mental health and substance use conditions, it is necessary to establish and hold systems accountable to implementing standards of quality care and to adopting payment models that support the cost of providing effective, integrated care.” (Mental Health America, 2020, p. 14).

Table 9: Recommended Steps from the “Unified Vision for Transforming Mental Health and Substance Use Care”

Recommended Steps from the “Unified Vision for Transforming Mental Health and Substance Use Care”

- Develop and frequently update evidence-based standards of care developed by clinical specialty organizations that do not service managed care organizations (MCOs) as primary clients for Mental Health and Substance Use Disorders.
- Extend measurement-based care requirements to primary care (see Utilization Review Accreditation Commission (URAC) requirements, extend current [Joint Commission](#) (JCAHO) requirements).
- Implement quality measures to reduce disparities, improve outcomes, and improve MH/SUD experience of care and transitions in care.
- Remove barriers to filling gaps in the continuum of care, such as sub-acute care and alternatives to hospitalization.
- Fund and scale the Certified Community Behavioral Health Clinic (CCBHC) model nationwide, which incorporates core federal standards reflective of the vision outlined here.

The “Unified Vision for Transforming Mental Health and Substance Use Care” was published online by Mental Health America, 2020

Table 9 above outlines the critical components of a system of care. A visual graphic of such an optimal system is below (Figure 7). A system for crisis intervention is outlined in Figure 8.

OVERVIEW OF A MODEL BEHAVIORAL HEALTH CARE SYSTEM

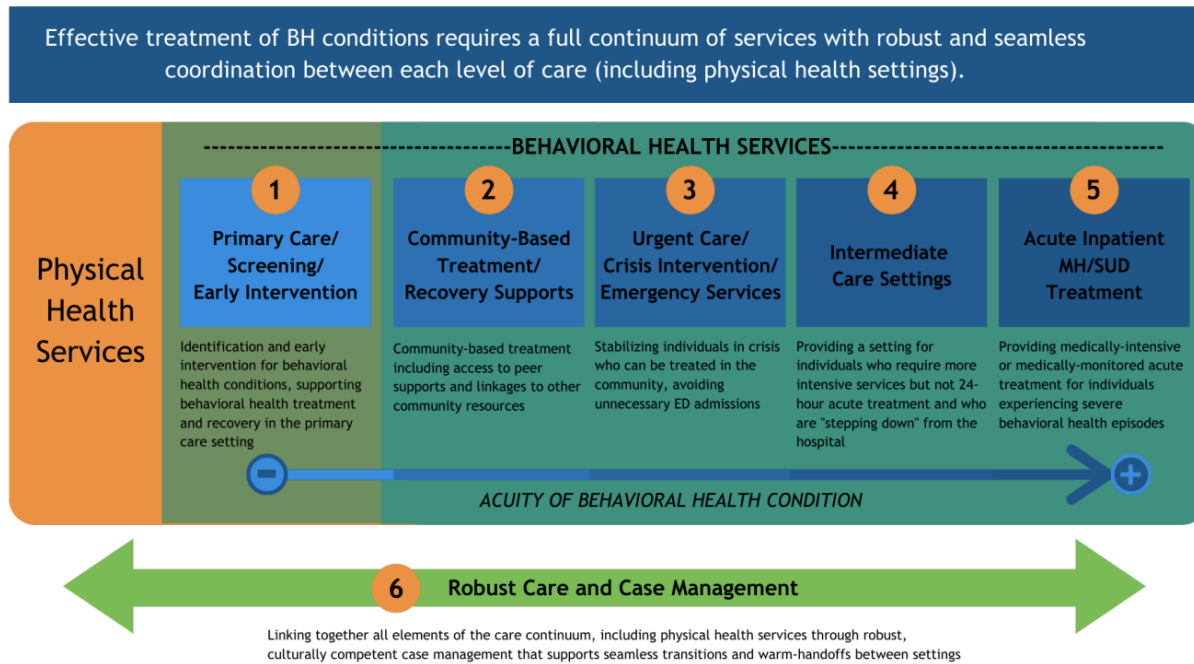


Figure 7: Proposed model for pediatric behavioral health care. Blue Cross Blue Shield of Massachusetts and Manatt Health. Presented in *Pediatric Behavioral Health Urgent Care Report, 2nd ed.* (p. 35) from the Massachusetts Association for Mental Health. (Reproduced with permission.)

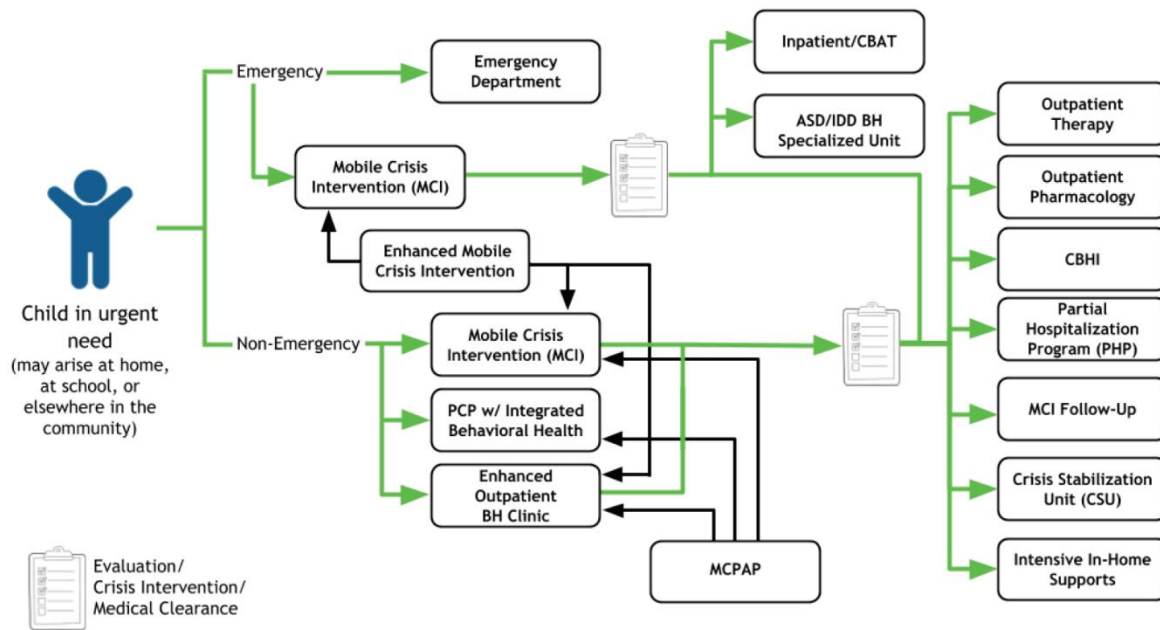


Figure 8: Proposed model for pediatric behavioral health urgent care. Massachusetts Association for Mental Health Children’s Mental Health Campaign. Presented in *Pediatric Behavioral Health Urgent Care Report, 2nd ed.* (p. 37). (CBHI= Child Behavioral Health Initiative, a statewide system of wraparound services for publicly insured children/adolescents. CBAT= Community-Based Acute Treatment program. ASD = autism spectrum disorders. IDD = intellectual/developmental disability. (Reproduced with permission.)

A key question remains: How should it be determined whether and when a youth should move up or down within the continuum of care?

A key question remains: How should it be determined whether and when a youth should move up or down within the continuum of care? The Child and Adolescent Services Intensity Instrument (CASII, now the CALOCUS-CASII) and the Early Childhood Services Intensity Instrument, ECSII) can help answer this question. These instruments were developed by the American Association of Community Psychiatrists and AACAP and are increasingly recognized as standards of care for determining level of care (Fallon et al, 2006; for more information see Appendix C). These instruments continue to be used by several states and apply to the population of 6-18-year-olds with mental illness/severe emotional disturbance, substance abuse, and/or developmental disabilities.

The CALOCUS-CASII outlines six principles and theoretical foundations for child mental health care:

- **Systems of Care:** community- and family-centered treatment in the least restrictive, most normative environment that is clinically appropriate.
- **Developmental Theory:** youth have a trajectory of normative physical, emotional, cognitive, and social changes that they undergo.
- **Family Empowerment:** the family leads the process.



- **Cultural Competence:** respect and accommodation of cultural factors and special needs, and service provision by culturally competent professionals.
- **Wraparound Concepts:** integration of formal and informal supports, blended/flexible funding, strengths-based, individualized service planning.
- **Clinical Expertise:** psychiatrists serving youth and young adults.

The CALOCUS-CASII also espouses the following Child and Adolescent Service System Program (CASSP) Principles for Determining Level of Care:

- Least restrictive level of care without sacrificing intensity; intensity and restrictiveness of care de-linked.
- Care delivered within the child's home and community.
- Care driven by the child and family's individual needs, strengths, and values.
- Care composed both of professionally delivered *and* natural services, skills, and supports from the family and community, combined and tailored through a wraparound process.

Appendix C illustrates how the CALOCUS-CASII and the CASSP principles can be used to determine the appropriate level of care moving both up and down the continuum and the degrees of restriction.

Meeting the need for pediatric inpatient care requires distinguishing between actual physical bed capacity and patients' access to care. While beds may be open within a system, children may be denied admission to those inpatient services on the basis of other factors. These factors may include type of insurance; presence of a developmental disorder; medical issues felt to be beyond the capacity of a specific inpatient unit; anticipation of the patient remaining "stuck" on the unit due to disposition difficulties; public insurance; lack of inpatient service at the point of emergent evaluation; acuity of the milieu; need to turn rooms into singles due to gender/sex variables; and potential danger to others.

In many communities, youth in crisis are brought to an emergency department. Once the decision has been made that admission to an inpatient unit has been made, that youth is "boarded" in the emergency department until a bed becomes available. Children can also "board" in inpatient pediatric beds or other community beds. Reported time spent boarding fluctuates from days to weeks; evidence suggests children with behavioral health conditions, co-occurring autism spectrum disorders or intellectual and developmental disabilities, and/or suicidal ideation experience the highest rates and longest durations of emergency department boarding (MAMH, 2020; McEnany, et al., 2020). While boarding may be one of a number of necessary approaches to managing the variation in census discussed above, it often provides less than optimal care and should be minimized.

Further validated and reliable instruments for assessing the quality of care at each level of service remain sparse; in particular, the lack of definition of standards for CAP inpatient care have meant a lack of consensus on quality metrics for that type of service (Zima et al., 2019). Across the U.S., data about child mental health service use, lengths of stay, admission chief complaint or diagnosis, and follow-up care appear to be sparse. What data exist are complicated by lack of breakdown by age, use of different terminology between states, and different approaches to systems of care. Improvement in the collection and reporting of pediatric mental health service data is a vital recommendation of this report.



Certain states that have been undertaking recent reforms of their child mental health services appear to have better data overall. One example is New Jersey, which in 2000 underwent a revamping of its system to replace it with one entitled “Child System of Care.” In its 15-year anniversary report, it provided data describing the utilization, characteristics, and performance of their system of care. (New Jersey, 2000):

- Out-of-home placements.
- Number of cases requiring case management.
- Use of mobile crisis response and stabilization services.
- Proportion of cases in the system who were under 15 years.
- Use of services by youth with developmental disorders, substance use disorders.
- Family satisfaction.
- Demand for and length of stay in residential treatment center beds.
- Demand for acute inpatient beds.

Ideal Model in Practice

The following is a case vignette from a public, coordinated system of care such as Massachusetts (Figure 1). The vignette is not based on an actual patient, but rather represents a synthesis of the authors’ experience and understanding of how care is currently happening and how it should ideally proceed. Key points are identified following the vignette.

Table 10: Case Vignette: Current Practice and Ideal Model

How care is currently happening	Expert commentary on ideal
<p><i>Juan lives with his parents and older sister in a state which has made investments in developing a public system of care for youth with mental health needs. At birth, the pediatrician noted Juan had low muscle tone. At 18 months, the pediatrician screened Juan for developmental delays using the Modified Checklist for Autism in Toddlers.</i></p>	<p><i>Such early screening is critical, especially for developmental disorders.</i></p>
<p><i>Juan’s results were borderline, and so he was not determined to be eligible for Early Intervention Services.</i></p>	<p><i>Ideally determination of eligibility for services would be based on need and not a specific diagnosis of developmental disability. In this case, an opportunity was missed for Juan to receive help with speech and language, gross motor and fine-motor skills.</i></p>
<p><i>His parents, who were native Spanish speakers, did not receive interpreter services and therefore were not able to adequately complete developmental ratings scale as part of the pediatrician’s evaluation, missing an opportunity to receive parenting support in Spanish.</i></p>	<p><i>Interpreter services should be available at all levels of care. Had Early Intervention services been started, at age 3 Juan would have been considered for an Individualized Education Plan (IEP) and for a Head Start preschool to prepare him for kindergarten.</i></p>



Instead, Juan's needs continued to go unaddressed, and by the time he started kindergarten his developmental delays had become compounded by aggression as he struggled to communicate with others. Upon entry to kindergarten his teacher noted social skills deficits and behavioral difficulties, but his school in a gateway city had limited resources, and staff were discouraged from making referrals of kindergarteners for evaluation.

Juan should have been referred for a formal evaluation to determine if he met criteria for an Individualized Educational Plan (IEP), which could have led to speech and language services, a social skills group, applied behavioral analysis services, occupational therapy services as well as other specialized educational interventions.

His parents were unaware of the services that Juan was entitled to and the school district lacked any family navigator supports.

Family navigators are parents with lived experience of parenting a child with special needs that can help families advocate for the needs of their child in a non-blaming or shaming manner.

In first grade, he struggled to learn to read, and his aggression worsened to the point that he was suspended from school.

Ideally the school would at this point noted Juan's developmental and educational delays and conducted an evaluation to determine Juan's eligibility for an IEP.

Juan's parents, who were both working multiple jobs to make ends meet, couldn't stay home with Juan and left him in the care of his 12-year-old sister who had to stay home from school to watch Juan. When Juan left the family's home while his sister was watching TV, a neighbor called the child welfare department reporting Juan was wandering in the street unattended. The child welfare agency opened a case and told the parents they were at risk of Juan being placed in foster care due to their apparent neglect.

Ideally the child welfare agency would have looked at the root cause of Juan's apparent neglect and engaged the family in strategies to help his parents get Juan the services and supports he needed in school and the community.

Fortunately, at his next pediatric visit the pediatrician, who was working at a Federally Qualified Health Center with funding for co-located behavioral health providers, identified Juan's developmental needs, and the family was assigned a social worker to help advocate for services and supports. After advocacy by his Spanish-speaking social worker, Juan was determined to be eligible for an IEP and started to receive services through his school. Juan showed some improvement in his school functioning but had learned maladaptive ways of coping with his frustration with academic demands and had fallen significantly behind his peers in his emotional and behavioral functioning. This problem escalated until an incident at school in which he punched a classmate. The incident resulted in the school calling the police who brought Juan to the emergency department of the local hospital.

Ideally the school would have accessed a mobile mental health response and stabilization service which would have diverted Juan from the emergency department and ensured he was connected to outpatient behavioral health services and supports.



After a conversation with the triage clinician, who did not speak Spanish and was not accustomed to working with such young children, Juan was referred to an inpatient psychiatric unit. When Juan's parents wanted to take him home, the emergency department filed a report with the child welfare agency who threatened to remove him from their care if they refused to allow him to be admitted.

Ideally the hospital would have an evaluator trained to assess children in a behavioral crisis. The evaluator would ideally be able to speak Spanish with the family or at least access interpreter services, making it more likely the family could understand the rationale for referral for further assessment via admission to the psychiatric facility.

During Juan's hospital stay that lasted just 4 days, Juan was very disruptive and aggressive resulting in numerous doses of an antipsychotic and he was discharged on an antipsychotic, an alpha-agonist and a stimulant.

Ideally the hospital stay would have been an opportunity to develop a biopsychosocial determination of Juan's strengths and needs; involve the family and their natural supports in identifying appropriate aftercare services; and initiate behavioral interventions that the family was trained in [which would require a longer length of stay]; and connect the patient and family to a wrap-around team in the community that could continue the evidence-based parent behavioral training that had been initiated during the hospital stay.

After no communication from the inpatient staff with the pediatrician or the school, Juan was discharged on three meds and his parents were given a list of providers to contact for aftercare.

Ideally, an instrument such as the CALOCUS-CASII would be completed to help determine if stepdown to outpatient services was appropriate, and a detailed aftercare plan and psychoeducation would have been developed with the family, the school, and the pediatrician. A HIPAA-compliant shared platform for communication would help ensure adequate communication.

Juan soon started to gain significant weight, alarming the parents who discontinued Juan's medications all at once. Juan returned to school and continued to present with behavioral disturbances despite the interventions the school had put in place. Within two weeks, Juan again became aggressive towards a teacher and the police were called and he was again hospitalized psychiatrically. After a six-day admission Juan was restarted on the prior three medications and an additional medication was added to address what was formulated to be Juan's PTSD from the neglect he suffered from his parents.

**Table 11: Key Points for Mental Health Services for Youth****Key points: Mental health inpatient services for youth must**

- Be accessible to families geographically, linguistically and culturally.
- Be used only when another set of resources is not appropriate and available to accomplish vital clinical objectives.
- Be part of a continuum that includes school, primary care, law enforcement, child welfare and community-based services, e.g., mobile crisis and stabilization services.
- Include a digital communication platform linking key services.
- Focus on prevention and early intervention.
- Include assessment of parental/caregiver mental health and functioning and integrate family into the treatment plan, including psychoeducation and skills acquisition.
- Have a centralized access point from a single phone number (e.g., mental health hotline) or website.
- Be user-friendly with minimal bureaucratic requirements for all involved.
- Allow for movement up and down between levels of care based on standard assessment.
- Share the same assessment/screening instruments system-wide.
- Include technological platforms for communication between all components of continuum.
- Have trained staff members who adhere to evidence-based models of care.

8. Population Variables

The term “severe emotional disturbance” (SED) is often considered to be the pediatric equivalent of “serious mental illness,” and both are used by SAMSHA and other federal government agencies. SED refers to “a diagnosable mental, behavioral, or emotional disorder in children and youth experienced in the past year that resulted in functional impairment that substantially interfered with or limited the child’s or youth’s role or functioning in family, school, or community activities” (SAMSHA, 2020). However, the term’s roots are in education not healthcare. Emotional disturbance is one of 13 disabilities included in the Individuals with Disabilities Education Act (IDEA Section 300.8 (c) (4), <https://sites.ed.gov/idea/regs/b/a/300.8/c/4/i>). The definition of autism is in section, 300.8 (c) (1) in IDEA. (See Appendix D.)

The authors believe that the SED definition risks setting a problematic threshold for child mental health services. As the CDC suggests:

“Mental health is not simply the absence of a mental disorder. Children who don’t have a mental disorder might differ in how well they are doing, and children who have the same diagnosed mental disorder might differ in their strengths and weaknesses, in how they are developing and coping, and in their quality of life. Mental health as a continuum and the identification of specific mental disorders are both ways to understand how well children are doing.” (CDC, n.d.)



The SED definition has other limitations: Some mental health problems do not include readily apparent functional impairment. For example, an adolescent who is using cannabis daily may look superficially like they are functioning well; however, the substance may be damaging the normal development of their brain and may evolve into a path of more serious substance use. The definition of SED also fails to take into account children with atypical development whose functioning is impaired at baseline. Fluctuations in functioning may be key and may be due to a psychiatric disorder that can be overshadowed by a developmental disorder (Riess et al., 1982). These fluctuations need to be recognized and may warrant access to intensive services. For example, a child with non-verbal learning disorder may have social and academic functioning difficulties at baseline that require long-term services; however, if that child becomes depressed due to bullying or some other stressor, they may need acute services. Finally, some children may have multiple co-occurring conditions.

Thus, when SED is used as the criterion for admission or for Medicaid reimbursement, the risk is that too many children in need will be left out. A more nuanced approach may try to assess in a biopsychosocial framework the baseline functioning of the child and the capacity of current care providers, and then evaluate the extent to which the child's current circumstances deviate from baseline and whether the care providers are able to manage the exacerbation.

Population subgroups that represent discrete needs are important to identify in order to provide a number of specialized beds. Community health needs assessments should identify the number of residents with autism and other developmental or intellectual disorders; mental health and complex medical conditions including eating disorders; and substance use and co-occurring disorders. As the number of adults with autism and developmental disorders increases, coordination of these services with adult resources will be important.

9. Factors Involved with Creation of the Model for Youth

As the team developed a diagram of model structure for adults in mental health crisis (See Section 6, Creating a Model), the changes that would need to be made to realistically depict system structure for youth were noted, and include the following. As psychiatric patients, youth differ from adults in that they are a vulnerable, dependent population whose treatment must (by law) include family and guardians. Developmental and psychosocial factors may have a heightened role in the need for psychiatric services, including the legal mandate to protect minors. Schools are a vital part of mental health treatment and a frequent source of referrals to acute care; for example, about a third of adolescents who receive mental health care receive it at school (Mojtabai & Olfson, 2020). Thus, mental health care overlaps with community entities such as schools and the child welfare system. In general, hospitalization is considered a last resort, and a host of community-based resources have been developed to provide alternatives. However, few areas of the country have a complete child mental health system. Gaps in the continuum, in part due to significant shortages of child psychiatrists, reduce access and sometimes necessitate relying on distant inpatient care. School is both a source of mental health services and a stressor for vulnerable children, and seasonal variation in need for admission is typical. Finally, youth present in the early stages of psychiatric illness, often before a clear diagnosis has presented itself. Inpatient care may be needed to provide in-depth evaluation and treatment interventions under the safety of 24/7 monitoring.



Because of real-world differences between children and adults and the mental health systems developed to help them, certain adjustments to the adult model were needed. The need for an inpatient bed is based on two potential situations: an acute crisis OR need for in-depth evaluation and treatment management by an expert clinical team. The model of child and adolescent intensive evaluation and treatment was developed from the adult counterpart (See Section 6, Creating a Model) with adaptations made to include the features unique to the mental health needs of and systems for youth. It integrates both current and “real world” features and elements of the ideal model. While the model structure diagram has not yet been translated into an interactive system dynamics model as was done for adults in a generic community (“Anytown,” See Section 6), the process would be parallel.

At the time of publication of this report, development of the full model estimating the number of child and adolescent psychiatric beds needed is actively underway. The series of diagrams in draft form can be seen in **Appendix F**. As is the case with the adult version the diagram is best viewed in order as elements are added from one to the next. These schematics will serve as the basis for full development of the child and adolescent model.

10. Value of Simulating the Youth Intensive Evaluation and Treatment System

As we wrestle with the child mental health crisis during the COVID pandemic, the challenges of determining what resources, including how many inpatient beds, are needed for youth has risen to the fore as emergency rooms and medical inpatient units house youth awaiting psychiatric hospitalization. Hospitals have made large capital expenditures in hopes of addressing this issue. As we have discussed, answering this question involves answering a whole host of others about the continuum of care, method of payment, and more factors.

With a simulation model in hand, healthcare systems, insurers, county and state administrators, and advocacy groups would have the capacity to explore a variety of potential scenarios and solutions. By adjusting different variables one by one, they could analyze the potential impact of any one change. Thus, a model has the potential to answer not just the question of how many inpatient beds are needed, but also such questions as, “What if we increase our school-based mental health counselors throughout our school district? What if we provide 24-hour crisis stabilization services based in the community? What if we add an unlocked acute residential treatment facility or day treatment program for inpatient diversion and stepdown?”

11. Summary Points

Children’s inpatient services should be part of a coordinated continuum of care that involves healthcare systems and community stakeholders: pediatric primary care, mental health experts and systems, schools, juvenile justice and law enforcement, state agencies, peer and family support services, and other community agencies.



- Children’s inpatient services should be part of a coordinated continuum of care that involves healthcare systems and community stakeholders: pediatric primary care, mental health experts and systems, schools, juvenile justice and law enforcement, state agencies, peer and family support services, and other community agencies.
- Standards for inpatient services should be based at a minimum on the AACAP Practice Parameters for Residential Treatment, recognizing that residential treatment includes five different levels and is distinct from the higher-level staffing of acute inpatient care.
- The CALOCUS-CASII and ECSII offer widely accepted standards for determining the appropriate intensity of care and are now used in several states.
- Whatever “ideal” model of care a catchment area or healthcare system adopts, fidelity to this model must be assessed at regular intervals and adjustments made accordingly.
- Validated quality measures for each service in the continuum of care for children and adolescents are sorely needed.
- Development of the full model estimating the number of child and adolescent psychiatric beds needed is actively underway.

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