Emergency Department Use by Children and Youth with Mental Health Conditions: A Health Equity Agenda

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Abstract

There are growing concerns regarding the referral of children and youth with mental health conditions to emergency departments (EDs). These focus on upward trends in utilization, uncertainty about benefits and negative effects of ED visits, and inequities surrounding this form of care. A review was conducted to identify and describe available types of data on ED use. The authors' interpretation of the literature is that it offers compelling evidence that children and youth in the U.S. are being sent to EDs for mental health conditions at increasing rates for reasons frequently judged as clinically inappropriate. As a major health inequity, it is *infrequent* that such children and youth are seen in EDs by a behavioral health professional or receive evidence-based assessment or treatment, even though they are kept in EDs far longer than those seen for reasons *unrelated* to mental health. The rate of increase in these referrals to EDs appears much greater for African American and Latinx children and youth than White children and is increasing for the publicly insured and uninsured while decreasing for the privately insured. A comprehensive set of strategies are recommended for improving healthcare quality and health equity. A fact sheet is provided for use by advocates in pressing this agenda.

Keywords Emergency department · Utilization · Health equity · Children and youth · Mental health

Introduction

Mental health conditions are common among children and youth in the United States. It is estimated that 13–25% experience mental illness in a given year (Centers for Disease Control & Prevention, 2013; Merikangas et al., 2009),

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10–13% have severe impairment, and rates of illness are increasing over time (Olfson et al., 2015). Despite the negative impact of the conditions, no more than half of these children and youth receive treatment (Centers for Disease Control & Prevention, 2013; Merikangas et al., 2009; Whitney & Peterson, 2019). Research suggests that exposure to racism, both individual and systemic, contributes to mental health symptoms and healthcare inequities (Gonzalez et al., 2020; Pachter & Coll, 2009). Access to needed treatment is especially limited among underrepresented minority populations and the uninsured (Gonzalez et al., 2020).

Historically, venerable media organizations, such as *CBS News* through its program 60 Minutes (2014), have highlighted concerns about access and quality of care issues for children and youth seen in emergency departments (EDs) for mental health conditions. The last several years, both pre- and post-pandemic, have seen a substantial rise in media reporting on the increased numbers of these children and youth visiting and languishing in EDs without appropriate care (ABC News, 2020; Connecticut Mirror, 2021; Forbes, 2021; National Public Radio, 2021; U.S. News & World Report, 2021). There is clearly a public perception of a crisis. Speculation as to causes

has included an increased prevalence of mental illness and substance use, improved identification and referral, inadequate ED services for children and youth, an overwhelmed community-based system of care, scarcity of pediatric inpatient beds, and lack of non-hospital crisis services.

Analogous to stories in the public media, there have been numerous reports in the professional literature that children and youth with mental health conditions are visiting EDs with much greater frequency. To preview the conclusions, the studies detailed in this review found annual increases in utilization of 6 to 10% *per year*, which over time have had a very large cumulative effect. These rates of increase have far exceeded the increase in utilization of pediatric EDs for non-mental health reasons. Recently, the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association jointly declared a national state of emergency in child and adolescent mental health, citing dramatic increases in mental health conditions and ED utilization (2021).

The increased utilization related to mental health has generated considerable concern among professionals (Gonzalez et al., 2020; Grover & Lee, 2013). They generally view EDs as a suboptimal setting for children and youth, particularly if they are not at imminent risk of harm to self or others (Frosch et al., 2011). These settings are often characterized by a lack of privacy, overstimulating environments, exposure of patients to other psychiatrically and medically ill individuals, and a frequent absence of appropriate assessment and treatment for mental health conditions.

There is also concern that trends over the past decade reflect an increase in health inequities. The information reported below has sharpened the definition and varied dimensions of these inequities. It involves those who have mental health conditions being treated differently than those with non-mental health conditions; racial and ethnic minorities being treated differently than Whites; the publicly insured and uninsured being treated differently than those with private insurance; and a notable absence of appropriate urgent care for special populations among children and youth.

The project reported in this article orginated in an effort by the authors to inform public policy and professional practice in the State of Connecticut with respect to child and adolescent mental health care in general, and ED use more specifically. Since the literature on ED use had expanded substantially over the past decade, it was timely to appraise the literature with a focus on four objectives: (1) identifying the categories of data related to ED utilization that had been assessed in the literature; (2) highlighting what was known about each category of data; (3) searching for evidence of health inequities among the information that had been reported; and (4) identifying a comprehensive set of

strategies for achieving effective healthcare and health equity for children and youth with urgent mental health needs.

What follows is a broad description of the existing ED literature and an interpretation of its meaning for policy, practice, and research. This article is unique in its efforts to identify strategies for *each* element of this ED problem; to assemble them into a comprehensive action plan; to link recommended actions to specific stakeholders; to call for a major advocacy initiative while translating information in the literature into a summary that is useful to advocates; and to much more explicitly bring attention to the health inequity dimensions of ED use by children and youth with mental health conditions.

The Approach

A search of the literature was conducted by two co-authors (MH & MP) using PubMed, MEDLINE, Allied and Complementary Medicine, PsycINFO, Global Health, Google Scholar, and Google with filters set to identify publications in English. The data in studies examined during this project were gathered prior to the COVID-19 pandemic. The initial search was designed to cover a decade of publications, from 2009 to 2018. It was subsequently updated to include publications from 2019 to 2020 as the project approached completion to ensure that the search was current. Two studies that analyzed data gathered between 2003 to 2015, but were not formally published for a matter of months after the 2020 close of the search period, were uncovered by the authors and reported here due to their relevance to the questions of focus in this project.

The search combined terms related to: service setting or type of service (emergency department, emergency services, emergency psychiatric); age (child, children, adolescent, youth, pediatric); and conditions (mental disorders, mental health, behavioral health, suicide, psychiatric, substance-related disorders, substance abuse, substance use). The search yielded 611 publications, which were screened by the two co-authors (MH & MP) for relevance. Inclusion criteria included a primary focus on (a) ED utilization, (b) in the United States, (c) by children and/or youth, (d) with a mental health condition or presenting problem. The citations in publications judged to be relevant were, in turn, screened to identify other valuable resources, resulting in a total of 203 pertinent publications.

The lead author then conducted an informal qualitative review of these articles to identify the recurring categories of data being assessed in these reports. As outlined below, nine categories recurred frequently. The category of *care provided in EDs* was defined by an additional eight subcategories. Another co-author (JV) reviewed and vetted the final categories and subcategories. A structured coding

system was not used in this analysis, which is a limitation of this report.

Information from articles that best addressed the currently available data for each category were summarized, with priority given to data drawn from recent nationwide surveys and systematic reviews. In the absence of such data or of a robust body of research on a specific category, individual studies were identified to highlight recent findings. The criteria used to select and highlight these articles focused on their recency, clear focus on a variable of interest, and quality of the methods employed to examine the variable. This phase of work was led by two co-authors (MH & MP) and then reviewed and refined by the other co-authors.

Strategies for achieving improved care and health equity for children and youth with urgent mental health needs were scattered throughout this literature. Augmented by the authors' knowledge of systems of care and best practices in child and youth mental health, they integrated these strategies into Table 1. To complement the strategies, key data from the review were distilled into a *fact sheet for advocates* (Table 2) to use in bringing greater attention to the problems in care delivery, the inequities, and the potential solutions.

All authors certify responsibility for this contribution and attest to the fact that there are no known conflicts of interest.

Variation within the Literature

There was considerable variation in the methods used among the research reports reviewed and, in some reports, key elements of the method were not described. Publications differed with respect to the age ranges under study, with most including children and adolescents up to 18 years of age, but some extending their samples to age 21 or 25. Studies varied with respect to whether their samples included children and youth who were seen in any type of ED, a pediatric ED, or a psychiatric ED. Some studies included children and youth who had any mental health or substance use diagnosis, while others restricted their samples to those with a primary diagnosis of one of these conditions. Most studies focused on *mental health* conditions, with substance use mentioned in a minority of reports. Differences in the findings across studies may be attributable to these many variations in methodological approach.

Categories of Information

The informal qualitative analysis of the literature yielded nine commonly found categories of information about ED use by children and youth with mental health conditions. These included: ED utilization; demographics; payor mix; reason for ED visit; referral source; acuity level and appropriateness; care provided in EDs; outcomes; and interventions to reduce ED utilization. The category on the care provided in EDs had eight subcategories of information, which included: specialized teams; trained professionals; telepsychiatry; assessment; clinical pathways; pharmacological interventions; care of special populations; and extended lengths of stay/boarding. These categories and subcategories can be viewed as defining the important dimensions of ED use by children and youth with mental health conditions. The amount of information available on health inequities was limited in most categories.

ED Utilization

Two recent studies have summarized U.S. trends in utilization for children and youth. Using 2007 to 2016 data from the Nationwide Emergency Department Sample, Lo et al. (2020) reported that visits for *mental health disorders* had risen by 60% during the decade, while the volume of *overall* pediatric *ED* visits had remained unchanged. In a similar examination of 2011–2015 U.S. data from the National Hospital Ambulatory Medical Care Survey (NHAMCS), Kalb et al. (2019) reported a 53% increase in psychiatric ED visits among children (6–11 years old) and a 54% increase among youth (12–17 years old).

There have been numerous studies of ED utilization in urban centers. A New York area hospital found a doubling of ED visits for this population over the 10-year period ending in 2014 (Nadler et al., 2021). A separate retrospective review of almost 200,000 visits between 2010 to 2016 in a pediatric ED in Boston found a 45% increase in the number of mental health visits compared to an increase of only 13% in ED visits unrelated to mental health (Hoffmann et al., 2019b). At the Oregon Health and Science University the volume of pediatric ED visits involving a mental health discharge diagnosis increased by 10% *annually* between 2009 and 2013 (Sheridan et al., 2015).

Demographics

Analyses of the national NHAMCS data for 2011 to 2015 showed that males[1] used psychiatric EDs significantly more than females as children, slightly more as adolescents, and with approximately equal frequency as young adults (Kalb et al., 2019). With respect to race and ethnicity, 62.1% of utilizers were non-Hispanic White, 19.8% African American, and 15.8% Hispanic. With respect to health inequities, trend data showed substantial differences by group, with a 91% increase in use over 5 years among Hispanic youth, a

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[1] All references to sex/gender identity are assumed to be the assigned sex/gender.

Table 1 Strategies for achieving improved care & health equity

Strategies	Responsible Stakeholders
1. Standards development	
Create and promote adoption of a standardized minimum data set to guide tracking of ED volume, referral source and appropriateness, patient demographics and characteristics, payor mix, presenting problems, ED interventions and outcomes, length of stay and boarding, dispositions, pre- and post-visit connections to outpatient care, and patient/family satisfaction	Substance Abuse and Mental Health Services Administration (SAMHSA), Centers for Medicare and Medicaid Services (CMS), Agency for Healthcare Research and Quality (AHRQ), Health Resources and Services Administration (HRSA), National Pediatrics Readiness Project, Expert panels of Clinicians, Evaluation Specialists and Researchers
Develop, test, standardize, and measure adherence to clinical pathways for ED care and boarding of children and youth with mental health conditions, including adaptations for race, culture, gender identity, and other individual differences	SAMHSA, AHRQ, HRSA, National Pediatrics Readiness Project, Professional Mental Health Associations, Expert panels of Clinicians, Evaluation Specialists and Researchers, Accrediting Organizations
Develop, disseminate, and measure adherence to practice standards for the ED care of special populations of children and youth (e.g., DD, ASD, transgender and gender expansive) that include adaptations for race, culture, gender identity, and other individual differences	SAMHSA, AHRQ, HRSA, Professional Mental Health Associations Expert panels of Clinicians, Evaluation Specialists and Researchers, Accrediting Organizations
2. Systems development	
Increase access to evidence-based ambulatory services for children and youth	State Mental Health Authorities, State Medicaid and CHIP Agencies, Systems of Care, Managed Behavioral Health Care Organizations
Increase the number of and funding for prevention and early intervention programs (e.g., mobile crisis, START)	State Mental Health Authorities, State Medicaid and CHIP Agencies, Systems of Care, Managed Behavioral Health Care Organizations
Establish 23-h mental health assessment centers as alternatives to EDs	State Legislatures, State Mental Health Authorities, State Medicaid and CHIP Agencies, Systems of Care
Expand care coordination and follow-up for children and youth with mental health conditions who are discharged from EDs	State Mental Health Authorities, State Medicaid and CHIP Agencies, Systems of Care, Managed Behavioral Health Organizations, Hospitals with EDs, Community Mental Health Organizations, Primary Care Practices
Implement telehealth consultation to EDs lacking appropriate services for children and youth with mental health conditions, especially in rural locations	State Mental Health Authorities, State Medicaid and CHIP Agencies, Systems of Care, Managed Behavioral Health Care Organizations
Implement effective screening prior to ED referral and address liability issues that incentivize inappropriate referrals	State Mental Health Authorities, Schools, Community Mental Health Agencies, Primary Care Practices, Managed Behavioral Health Organizations
3. Workforce development	
Strengthen the behavioral health, primary care, and school workforce through increased training in prevention and intervention with mental health crises among children and youth	Professional Education Programs, Continuing Education Providers, Behavioral Health Employers
Assess the adequacy and training of the ED workforce to assess and treat children and youth with mental health conditions	State Departments of Health, Accrediting Organizations
Increase education of parents and guardians about ED mental health services and alternatives to EDs	Family Advocacy Organizations, Systems of Care, Community Mental Health Agencies
4. Quality improvement	
Implement learning collaboratives in each state on improving mental health care in EDs	State Mental Health Authorities, Systems of Care, Institute for Healthcare Improvement, SAMHSA, AHRQ
Implement comprehensive quality improvement initiatives in each ED serving children and youth: • Provide adequate space and privacy • Staff the ED with trained mental health professionals that represent the diversity of the communities being served • Establish multidisciplinary ED mental health teams • Adopt critical pathways and practice standards • Educate staff in best practices for treating diverse and special populations • Implement data systems to track referrals, interventions, dispositions, and outcomes • Target ED lengths of stay for *mental health* visits on par with *non-mental health* visits	Hospital and ED Leadership

Table 1 (continued)

Strategies	Responsible Stakeholders
Assess the adequacy of EDs to evaluate and treat children and youth with mental health conditions	State Departments of Health, Accrediting Organizations, Hospital Quality Improvement Teams
5. Research & evaluation	
Establish and fund a national research and evaluation agenda on the urgent care of children and youth with mental health conditions and on the workforce that provides the care	SAMHSA, National Institute of Mental Health, AHRQ, HRSA

Clinical pathways and practice standards should require that every child and youth presenting with mental health conditions is seen during an ED visit by a trained mental health professional

Special populations include but are not limited to children and youth with developmental disabilities or autism spectrum disorder, and those who are transgender and gender expansive

53% increase among African Americans, and a 9% increase among non-Hispanic Whites (Kalb et al., 2019).

Research has demonstrated that children of ethnic/racial minority status have been at increased risk for factors that lead to use of emergency psychiatric services, such as poverty, racism, acculturative stress, and care by distressed family members (Snowden et al., 2008). The U.S. Surgeon General has argued that ethnic minority individuals are often engaged in crisis-oriented patterns of mental health care, and that these patterns and crisis settings, including EDs, undermine the delivery of high-quality care (Snowden et al., 2009; U.S. Department of Health & Human Services, 2001). Analysis of data from California's public mental health system revealed that African American, Asian American/Pacific Islander, and American Indian/Alaska Native children and youth had a greater probability than Whites of using hospital-based crisis stabilization services, and that African Americans were the most likely, among all racial and ethnic groups, to use psychiatric emergency services (Snowden et al., 2008).

Payor Mix

Analysis of NHAMCS psychiatric ED visit data over two periods, one ending in 2010 and the other ending in 2015, revealed a decline over time in the percentage of children and youth with private insurance from 39 to 34.3%. In contrast, the percentage of children and youth with public insurance using EDs rose from 41 to 43.6%, and the percentage of self-pay and uncompensated care rose from 20 to 22.3% (Kalb et al., 2019; Pittsenbarger & Mannix, 2014). While there was a 26% overall increase in the number of psychiatric ED visits for individuals under 18 years of age during the decade ending in 2010, the rate of psychiatric ED visits declined for the privately insured (from 4.81 to 3.06 visits per 1000) and increased for the publicly insured (from 8.71 to 12.60 visits per 1000; Pittsenbarger & Mannix, 2014). This information raises concerns about growing inequities in care related to type of insurance.

Reasons for ED Visits

The studies of ED utilization have adopted differing schemes for categorizing the reasons for ED visits, involving a mixture of diagnoses, behaviors, and presenting problems. Across studies, the reasons identified for visits also have varied considerably. A review of U.S. data found that 76% of ED psychiatric visits for children and youth involved a primary psychiatric ICD-9 diagnosis, which means that approximately a quarter did not have such a diagnosis (Pittsenbarger & Mannix, 2014). The most frequently assigned diagnoses were anxiety states/panic disorder (14%), depression (13%), drug abuse (11%), and conduct disorders (8%). Reasons for ED visits as reported in other studies have included: personality disorders and schizophrenia/psychotic disorders (Sheridan et al., 2015); aggressive behavior, thoughts or actions of self-harm, and medication refills (Holder et al., 2017); and Autism Spectrum Disorders (ASD; Hoffmann et al., 2019a). Two recent studies report alarming increases related to self-injury: a 250% increase between 2011 and 2015 in suicide-related ED visits among children and youth (Kalb et al., 2019) and a 329% increase in self-harm related visits between 2007 and 2016 (Lo et al., 2020). The latter study also reported a 75% increase in ED presentations related to substance use disorders.

Referral Source

Holder et al. (2017) examined 5 years of ED data (2010 to 2014) from a mental health team within a tertiary medical center and found that family members were the primary referral source (49%). Other sources included schools (21%), primary care providers (PCP; 10%), other medical providers or local mental health centers (17%), and a social welfare agency (3%). These are the commonly reported referral sources across a number of studies (Grudnikoff et al., 2015; Soto et al., 2009).

The role of schools in prompting ED visits due to mental health concerns may be underreported since they frequently

Table 2 Fact sheet for advocates:[a]ED use healthcare inequities among children and youth with mental health conditions

ED utilization rates

1. ED utilization by children and youth for mental health conditions has increased as much as 50% in the U.S. during a recent 5-year period (Kalb et al., 2019)

2. This is more than *triple* the rate of increase by children and youth for ED visits that are *unrelated* to mental health (Hoffmann et al., 2019b)

ED inequities

3. The increased ED utilization for mental health conditions is substantially higher among racial/ethnic minorities: 91% increase among Hispanic children and youth, 53% among African Americans, and 9% among non-Hispanic Whites (Kalb et al., 2019)

4. ED utilization in the U.S. is *increasing* among children and youth who have public insurance or are uninsured and *declining* among those with private insurance (Kalb et al., 2019)

ED referral

5. Increased ED utilization is driven largely by the referral of *non-acute* children and youth, with as many as 39% of referrals to EDs deemed inappropriate (Grudnikoff et al., 2015; Soto et al., 2009)

6. Of the nearly 50% of ED referrals of children and youth with mental health conditions that come from schools, most are not evaluated by a school nurse or professional prior to referral, and almost half of the referrals are likely to be deemed inappropriate (Grudnikoff et al., 2015)

7. The majority of children and youth with mental health conditions who visit an ED have an outpatient provider, but only 1 in 5 seek an outpatient evaluation prior to the ED visit and less than half of these actually receive the outpatient evaluation (Soto et al., 2009)

8. Inappropriate referrals of children and youth to an ED are a major concern because of the overstimulating nature of the ED environment, their exposure to other psychiatrically and medically ill individuals, and the frequent lack of adequate care in these settings, which can lead to *increased* agitation (Frosch et al., 2011; Sheridan et al., 2015)

ED quality of care

9. Parent and child expectations for an ED visit are frequently unmet, including a desire to feel better, receive guidance about what to do or how to cope, a diagnosis, treatment or a connection to treatment, or admission to a hospital (Cloutier et al., 2010)

10. Evidence-based treatments and best practices for serving children and youth with mental health conditions in EDs have been identified but are *not available in the vast majority of EDs* (American College of Emergency Physicians, 2019; Chun et al., 2013; Grover & Lee, 2013; Kalb et al., 2017)

11. Among children and youth with mental health conditions who visit an ED, it is estimated that only 16% are seen by a mental health professional and only 37% of those presenting with a suicidal attempt or self-injury are seen by a mental health professional (Kalb et al., 2019)

12. There is an absence of proven measures for assessing the quality of ED mental health care for children and youth (Hoffmann & Foster, 2020)

13. The clinical outcomes of an ED visit are seldom assessed or studied, and follow-up is infrequent; so, little is known about the effects of these visits (Cappelli et al., 2019; Patton & Borschmann, 2017)

ED length of stay

14. Children and youth with mental health *related* visits stay twice as long in EDs than those with visits *unrelated* to mental health, visit lengths are expanding *ten times faster* than for non-mental health visits, and 1 in 5 mental health related visits last longer than 24 h (Hoffmann et al., 2019a)

15. Up to 50% of children and youth admitted to psychiatric inpatient units experience boarding (waiting for an extended time) in EDs or medical inpatient units, sometimes for days (McEnany et al., 2020)

Reducing ED utilization

16. There are promising initiatives to reduce ED utilization through mobile and community crisis services, START programs, and learning communities focused on EDs and their community partners (Fendrich et al., 2019; Kalb et al., 2016)

[a]Some data has been simplified for presentation in the *Fact Sheet* format. Additional data is available in the body of the article and the cited sources

mandate that parents obtain an evaluation of a child as a condition of return to school. In such cases, the ED visits may be coded as a parent referral rather than school referral. Parents often report taking their child to the ED because of difficulty obtaining a timely evaluation from an outpatient mental health provider (Holder et al., 2017).

Acuity Level and Appropriateness

A perspective offered in the literature is that the volume of ED visits for mental health reasons has been rising mainly due to *non*-urgent conditions, and that EDs have become a primary locus for screening of children and youth in both emergency *and* non-emergency situations (Cloutier et al., 2010). In their analysis of nationwide ED data, Lo et al. (2020) reported that the percentage of children and youth seen for mental health visits *and* then released from EDs had increased by 70% between 2007 and 2016.

Research has shown that level of acuity among children or youth has been positively correlated with judgements that they were appropriate for an ED visit (Soto et al., 2009). Grudnikoff et al. (2015) studied the referral source and

appropriateness of 551 children and youth referred for mental health reasons to a hospital ED in the Queens Borough of New York City during 2009 to 2010. Two hundred (44.1%) of these students were referred by schools. Among those, 7.9% were admitted to a psychiatric hospital, 44.4% were given a follow-up appointment for ambulatory services at ED discharge, and 47.7% received *no* follow-up appointment. The authors argued that those in the latter category potentially constituted *inappropriate* school referrals to the ED. A school nurse, social worker or other school professional had evaluated only 18.5% of these students prior to their referral to the ED. Those students without a school-based evaluation were nearly twice as likely to be discharged without follow-up, leading to a conclusion that in-school screening might have reduced unnecessary ED evaluations by 52%.

A scale to measure the appropriateness of visits to a pediatric ED psychiatric service by children and youth with mental health conditions was developed and applied by Soto et al. (2009). In examining just over a 1000 such visits at the Long Island Jewish Medical Center, only 39% were judged as fully appropriate for the visit based on the ED assessment of functioning, harm potential, severity of the presenting complaint, and absence of suicidality and homicidality. Notably, 68.7% of all children and youth in this study were enrolled in outpatient mental health treatment, but only 21.9% sought an outpatient mental health evaluation prior to the ED visit and just 11.5% completed such an evaluation before the visit. These data on acuity and appropriateness raise major concerns about the equity of the nation's healthcare system in which such a large proportion of children with behavioral health conditions referred to EDs seem to be sent without basic screening or just cause.

Care Provided

The American Academy of Pediatrics and the American College of Emergency Physicians (2006) issued a position statement identifying optimal ED services for children and youth. This was subsequently updated by the American College of Emergency Physicians (2019). Below is information on the nature and effectiveness of care being provided.

Specialized Teams

An early systematic review of interventions with children and youth in EDs found that the presence of a dedicated team of pediatric mental health professionals, when compared to usual ED care, was associated with shorter lengths of stay, reduced hospital admissions, and a decrease in return visits to EDs (Hamm et al., 2010). However, Grover and Lee (2013) estimated that only about 6% of the nation's EDs are equipped with the specialized services necessary to manage child and youth psychiatric emergencies. The National Pediatric Readiness Project recently found that less than half of EDs surveyed nationally had policies in place for serving children and youth with mental health conditions (Hoffmann & Foster, 2020).

Recent efforts to implement multidisciplinary teams in EDs have shown positive results. Grover and Lee (2013) evaluated a dedicated pediatric behavioral health unit at the Children's Hospital of Akron. After the first year of implementation, they found reductions in all the following: average length of ED stay from 235 to 190 min; use of security personnel from 54 to 17 h per 100 patients; and physical and chemical restraint use from 1.5 to 0.6 incidents per 100 patients. Placing a mental health team in the pediatric ED of the Oregon Health Sciences University led to a 27% reduction in ED length of stay and an 18% decline in inpatient admissions, with no change in the frequency of return visits over a 1-year period (Sheridan et al., 2016).

Trained Professionals

Numerous reports have indicated that most professionals in EDs lack appropriate education or training to provide mental health care to children and youth. For example, pediatric emergency physicians have acknowledged their lack of training and confidence in assessing and managing mental health concerns (Chun et al., 2013). A poignant example of the lack of access by this population to trained professionals in EDs is drawn from the nationwide NHAMCS data for 2011 to 2015 (Kalb et al., 2019). The analyses revealed that only 16% of all youth presenting to an ED with a mental health condition and just 37% of those presenting with a suicidal attempt or self-injury were seen by a mental health professional. These data call into question how ED care for children and youth with behavioral health conditions can be equitable if 84% never see an ED professional trained to evaluate and treat their conditions.

Acknowledging the discomfort of medical residents in managing mental health concerns among children and youth, and in an effort to shape their training, the Association of Pediatric Program Directors and the American Board of Pediatrics issued a joint report identifying expected physician competencies for this work (McMillan et al., 2018). The overall shortage of child and adolescent psychiatrists poses a major obstacle to employing appropriately trained physicians in pediatric EDs, even among those hospitals that have the funding and the interest to do so. By recent estimates, there are only 8300 child and adolescent psychiatrists in practice in the United States, despite the estimated need for 30,000 (Carubia et al., 2016).

Telepsychiatry

To increase access to professionals with expertise in the emergency mental health care of children and youth, there are examples of the use of telehealth in EDs, especially in rural areas (Fairchild et al., 2020). The Children's Hospital of Colorado used telepsychiatry to link adolescent behavioral health specialists in its central academic medical center to five pediatric EDs and urgent care centers in the Denver area (Thomas et al., 2018). Children and youth who received the telehealth consultations, when compared with those receiving usual care, had ED lengths of stay that were 2.8 h shorter, charges for care that were over 40% lower, and higher levels of satisfaction among their caregivers *and* ED providers. An implementation study of telepsychiatry in the New York metropolitan area using child psychiatry fellows reduced ED lengths of stay by 32% and decreased physician burden by 75%, measured as travel time to the ED (Reliford & Adebanjo, 2019).
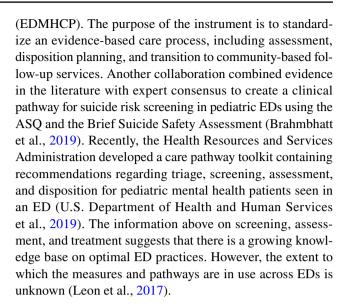
Assessment

There is a widely held opinion among experts that many children and youth seen in EDs for mental health and substance use conditions do not receive formal screening, a psychosocial assessment, or a diagnostic interview (Diggins et al., 2017; Wilson & Seupaul, 2018). To address this area of need, Gill et al. (2018) developed and demonstrated the reliability of HEARTSMAP, which is a standardized psychosocial assessment for use in EDs with this population.

To determine if there were useful decision-making tools to screen children and youth with mental health conditions in EDs, a systematic review was conducted by Newton et al. (2017). The authors concluded that there was evidence of acceptable quality to support the use of three tools. The HEADS-ED (Cappelli et al., 2012) had demonstrated modest power to identify patients in need of hospitalization; the Ask Suicide Screening Questions (ASQ; Horowitz et al., 2012) had shown high sensitivity to suicidality; and the DSM-IV 2-Item instrument (Newton et al., 2017) appeared highly accurate in screening for alcohol use disorders. With respect to EDs, Wilson and Seupaul (2018, p. 234) concluded that "Although most of these tools do not provide sufficient sensitivity and specificity to be used in isolation, they may offer advantages over physician gestalt, particularly for those working at centers with a lower volume of pediatric patients."

Clinical Pathways

In an effort to improve the care of youth in EDs, Jabbour et al. (2016) developed an evidence-based instrument called the Emergency Department Mental Health Clinical Pathway (EDMHCP). The purpose of the instrument is to standardize an evidence-based care process, including assessment, disposition planning, and transition to community-based follow-up services. Another collaboration combined evidence in the literature with expert consensus to create a clinical pathway for suicide risk screening in pediatric EDs using the ASQ and the Brief Suicide Safety Assessment (Brahmbhatt et al., 2019). Recently, the Health Resources and Services Administration developed a care pathway toolkit containing recommendations regarding triage, screening, assessment, and disposition for pediatric mental health patients seen in an ED (U.S. Department of Health and Human Services et al., 2019). The information above on screening, assessment, and treatment suggests that there is a growing knowledge base on optimal ED practices. However, the extent to which the measures and pathways are in use across EDs is unknown (Leon et al., 2017).

Pharmacological Interventions

The literature on the use of psychiatric medications with children and youth in ED settings is quite sparse. Rudolf et al. (2019) identified 224 youth who received antipsychotic medications in the pediatric ED of a tertiary care hospital between 2009 and 2016. Chief complaints were suicidal ideation (47.6%), aggression (28.0%), homicidal ideation (10.5%), hallucinations (7.4%), and agitation (6.1%). Approximately half of patients received only one type of antipsychotic, but almost 10% received four or more types.

A study that examined pediatric ED visits involving a mental health discharge diagnosis in an academic medical center between 2009 and 2013 found that 23% of patients received chemical restraints (a pharmacological intervention), 18% received physical restraints, and 8% received both (Sheridan et al., 2015). Notably, the initiation of these treatments occurred fairly long after ED admission (5.5 h for chemical restraints; 4.5 h for physical restraints). The authors speculated that this pattern may be evidence of the iatrogenic effects of the ED experience on children and youth, leading to their increased agitation and dangerousness *after* admission.

Special Populations

Experts have raised repeated concerns regarding the quality of ED psychiatric care for special populations. Psychiatric comorbidity is common, for example, among children with obesity, allergies, and asthma (Dolan & Fein, 2011). An estimated 20 to 40 percent of individuals with developmental disabilities (DD) have co-occurring psychiatric disorders, which are considered the principal cause of approximately half of all hospitalizations among that population (Kalb et al., 2016).

Medicaid data collected in Florida from 2011 to 2012 highlighted the prevalence of ADHD as a presenting problem for children and youth seen in EDs (Lynch et al., 2016). Of the 28,001 mental health or substance use ED visits during the study year, 24% were for ADHD-related evaluation and treatment. Ninety-seven percent of this latter group were discharged home from the ED and the authors estimated that at least 30% of the visits for that subgroup were unnecessary. EDs were used more frequently by the individuals with ADHD who lived in counties that had a mental health professional shortage (Lynch et al., 2016).

A recent survey of members of the American Academy of Child and Adolescent Psychiatry reported an absence of trained ED personnel or specialized consultation to aid them in providing developmentally and behaviorally appropriate care to youth with ASD (Kalb et al., 2017). Initial efforts have occurred to develop training curricula on ASD for emergency medical services and ED personnel (McGonigle et al., 2014).

Chun et al. (2013) highlighted the unique ED challenges and communication barriers in evaluating and treating children with DD and ASD who present in EDs. They emphasized the importance of turning to parents and other caregivers as sources of information, attempting to convey in advance to these children and youth what will happen in the ED, limiting wait times, minimizing sensory stimuli, and using adjunctive tools for communication.

A recent analysis of presentations to the psychiatric emergency department of a large midwestern hospital, found that LGBT youth were over-represented in the ED sample compared to non-LGBT youth and were more likely to have had prior ED visits and hospitalizations, more frequent past-week suicidal ideation, and more prior self-injury (Berona et al., 2020). LGBT youth had higher rates of suicidal behavior and attempts during the 12-month, post-ED follow-up period. There is evidence in the literature of transgender and gender expansive (TGE) youth overhearing negative comments in EDs about their gender and experiencing the pressure to educate ED staff about their needs as TGE individuals (Bauer et al., 2014).

Extended Lengths of Stay & Boarding

The length of stay in EDs has been a major quality of care and health equity concern. Nadler et al. (2021) reported that the length of psychiatric visits to a pediatric emergency department in New York quadrupled over the 10-year period ending in 2014. Based on a review of the literature, Mapelli et al. (2015) concluded that lengths of stay for mental health visits in EDs by children and youth in the U.S. are significantly longer than visits for other reasons, raising concerns of inequitable treatment, and that the rate of extended visits in EDs has been increasing. The authors found that increased

lengths of stay correlated with patient dissatisfaction, ED discharge without being seen by a physician, and increased costs of patient monitoring by ED medical and security staff.

Nash et al. (2021) recently focused on the issue of prolonged ED stays, analyzing 2005 to 2015 data in 36,125 records from the National Hospital Ambulatory Medical Care Survey. During that 11-year period, the rates of pediatric ED mental health visits greater than six hours in length increased from 16.3% of all visits to 24.6%, while lengths of stay for non-mental health visits remained essentially unchanged. Beyond the obvious concerns about health equity raised by this finding, the data also revealed that children and youth of Hispanic ethnicity had approximately threefold odds of experiencing ED lengths of stay greater than 12 h as compared to their non-Hispanic peers.

One type of prolonged stay is called *boarding*, which involves extended periods of time in EDs or in inpatient *medical* beds for the purpose of awaiting inpatient psychiatric admission or other transfer. A recent scoping review of the literature reported that, among youth in need of an inpatient psychiatric admission, 23% to 58% experienced boarding, ranging in length from 5 to 41 h in EDs and 2 to 3 days in inpatient medical units (McEnany et al., 2020).

A recent analysis of 1746 mental health visits to Boston Children's Hospital pediatric ED between 2010 to 2016 found a median length of stay of 6.9 h, which was twice as long as the 3.4 h average for visits unrelated to mental health (Hoffmann et al., 2019a). Once again, this provides evidence of stark inequities. Twenty-two percent of visits were classified as boarding, defined in this analysis as stays of 24 h or greater, while 7.6% of visits exceeded 48 h. The visits related to mental health increased in length by 186% during this period compared with just an 18% increase in length for all other visit types. Boarding was associated with presenting problems of agitation, aggression, suicidal or homicidal ideation, and self-injury; and diagnoses related to ASD, DD, depression, bipolar disorder, mania, and psychosis.

Longer lengths of stay also have been positively correlated with dual diagnosis. Fahimi et al. (2015) reported that, when compared to ED visits that did *not* involve mental health or substance use conditions, the average lengths of stay were 88 min longer for mental health focused visits, 71 min longer for substance use focused visits, and 149 min longer for visits involving both mental health and substance use.

ED Outcomes

Disposition

It is striking how little information is available in the literature about the specific care provided or clinical outcomes of ED use by children and youth for mental health

reasons (Cappelli et al., 2019). In a study of those seen by a mental health team within the ED of a tertiary care medical center, dispositions included: hospitalization in a psychiatric facility (21.7%), discharge to a different type of facility (12.8%), discharge home (63.7%), and leaving the ED against medical advice (1.8%; Holder et al., 2017). These are common dispositions found in other studies (Hoffmann et al., 2019a; Sheridan et al., 2015; Soto et al., 2009). However, this line of research has highlighted the enormous variability among hospital EDs in terms of practice patterns and outcomes. For example, a review of ED visits by children and youth seen in a regional Detroit hospital for mental health conditions between 2012 and 2014 found that 86% were referred to inpatient treatment; far greater than reported in most studies (Williams et al., 2018).

Connection to Outpatient Care

Patton and Borschmann (2017) concluded that there is clear evidence that adolescents who present in EDs with substance use, self-harm, or violence-related injuries have higher mortality rates over the ensuing decade. They noted, however, that follow-up with these adolescents is infrequent and that, even when outpatient services are offered, engagement after ED discharge is poor. An analysis of claims data in the U.S. from 2014 found that approximately 46% of individuals aged 2 to 18 seen in an ED with a psychiatric diagnosis had a follow-up visit with a primary care provider or a specialty mental health provider within 7 days of ED discharge (Lynch et al., 2021).

Frosch et al. (2011) examined repeat pediatric psychiatric ED visits in an urban general hospital to determine why youth were seeking care and if their ED visits led to increased outpatient connections. Among the 338 youths in this sample, 65% reported having a connection to an outpatient mental health provider at the time of both their initial *and* subsequent visit, while 9% had no connection at either visit. From the first to second visit, the percentage with an outpatient mental health connection rose from 71 to 85%. The authors speculated that youth with an outpatient connection and urgent or non-urgent concerns may have sought help in the ED because their outpatient providers directed or referred them there, or the ED was more accessible or responsive to immediate needs than the outpatient provider. In a study that bears on this issue, Witt et al. (2017) found that for Medicaid-insured children and youth the existence of a "usual source" of ambulatory care was associated with *lower* behavioral health inpatient utilization and expenditures but trended toward *higher* behavioral health-related ED utilization and expenditures.

Repeat Visits

In a systematic review of the literature, Leon et al. (2017) identified three predictors of repeat ED visits for mental health reasons by children and youth: lower socioeconomic status, involvement with child protective services, and previous or current use of mental health care. Currently receiving mental health services significantly predicted how frequently and how recently ED services were used. In the eleven studies that the authors reviewed, the level of clinical severity among youth either had *no association* with the number of repeat visits, or *lower* severity was *positively* correlated with the number of repeat visits.

Interventions to Reduce ED Utilization

There have been a range of strategies employed to address ED utilization rates. These have included diversion services, such as mobile crisis, and efforts to enhance patient connections to primary care, community mental health treatment, and child protective services. Until recently, the general opinion among experts was that these efforts had not resulted in a net decrease in ED utilization (Frosch et al., 2011). A systematic review of randomized controlled trials examined the impact on ED utilization of mental health care provided in outpatient, community, school, and primary care settings and concluded that there is limited evidence to suggest an effect (Kirkland et al., 2018). A related study found that increasing access among African Americans to community health center services produced a statistically significant, but practically insignificant reduction in racial and ethnic disparities in psychiatric ED visits (Das et al., 2020).

There are, however, at least three areas of work that have shown recent promise. An analysis of Connecticut Medicaid data found a significant reduction in the odds of a repeat ED visit and total number of ED visits among children and youth who received mobile crisis services in comparison to those who were not mobile crisis recipients (Fendrich et al., 2019). At a large urban hospital in Brooklyn, New York, the establishment of an outpatient Urgent Evaluation Service appeared effective in reducing unnecessary pediatric ED mental health visits among predominantly Medicaid insured Latinx, Chinese, and South Asian immigrant populations (Alvarado et al., 2020). Research also has shown the positive impact of START programs (Systemic, Therapeutic, Assessment, Resources, Treatment) in reducing emergency service use among DD populations (Kalb et al., 2016). Operated in nine states, these programs build capacity within health and human service systems to provide support, promote early detection and intervention, and stabilize acute crises.

As another promising development, the Institute for Healthcare Improvement (IHI) recently designed and conducted the first 18-month learning community called

Improving Behavioral Health Care in the Emergency Department and Upstream (Schall et al., 2020). This involved experts educating teams from the eight U.S. participating hospitals on strategies that focused on improved processes, provider culture, patient and family engagement, and community partnerships. Hospitals then tested strategies and IHI subsequently reported on early lessons from these efforts and approaches to scaling the promising practices.

Increased innovation in efforts to reduce ED utilization at this moment in history are particularly feasible in the United States. Through the American Rescue Plan Act of 2021 (ARPA), the Substance Abuse and Mental Health Services Administration (SAMHSA) has substantially increased Block Grant funding to the states. The directive sent to Single State Authority Directors and State Mental Health Commissioners (U.S. Department of Health & Human Services, 2021) encourages a substantial use of this support to improve the behavioral health crisis continuum statewide and outlines 14 potential areas of action.

Implications for Policy, Practice, and Research

EDs have a critical role to play for children and youth with the most acute conditions. However, the information highlighted in this report sheds light on a stunning set of inadequacies and better defines the multiple inequities in the healthcare system. There is compelling evidence that the nation's children and youth have been sent to EDs for mental health conditions at alarming and increasing rates that are far greater than the rates of increase in ED referral for non-mental health conditions. They typically have been sent to the ED without being pre-screened by a qualified mental health or school professional and, once they arrived, large percentages were deemed clinically inappropriate for the ED. Further, the referral to EDs of children and youth who are *not* in acute crisis has seen an apparent recent and rapid rise.

As another dimension of the health inequities, it appears infrequent that these children and youth were seen in EDs by a behavioral health professional or received evidence-based assessment, treatment, care coordination, or an outpatient connection, even though they were kept or boarded in EDs far longer than those seen for reasons *unrelated* to mental health. Additional health inequities center on the fact that the rate of increase in referrals to EDs appears to have been far greater for Black and Latinx than for White children and youth and is increasing for the publicly insured and uninsured while decreasing for the privately insured. Appropriate services also seldom seemed available for special populations that were frequently sent to EDs, including those with ADHD, ASD, and DD.

The information reviewed suggests a clear set of strategies that must focus simultaneously on improving the appropriateness and quality of care, both in EDs and the community, and the equity with which that care is made available and delivered. Health equity must be the lens through which every issue surrounding ED use by children and youth with mental health conditions is assessed and every effort at improvement is undertaken.

The strategies, which are detailed in Table 1, along with the responsible stakeholders, fall within five critical areas of activity: (1) standards development, (2) systems development, (3) workforce development, (4) ED quality improvement, and (5) research and evaluation. Standards are needed in the form of a minimum data set for use across EDs in clarifying the characteristics of referred children and youth with mental health conditions, the referral sources, care providers, assessment and treatment offered, outcomes, and the equity or lack thereof that occurs across all those variables. Standards are also needed with respect to practice patterns and clinical pathways.

The referral of low to moderate acuity children and youth to EDs is often viewed as a failure of the system of care. Systems development is needed to increase access to evidence-based ambulatory services, prevention and early intervention programs, effective screening, mobile crisis and crisis stabilization units, behavioral health urgent care centers, care coordination, and telehealth consultation. These enhancements must be equally available to children and youth from all types of diverse backgrounds and unique needs. Improving healthcare quality and equity is inescapably intertwined with workforce development, involving efforts to strengthen prevention and intervention skills with children and youth among behavioral health professionals, primary care providers, and school personnel, while increasing the education of parents and guardians.

While the reduction in ED utilization is a primary objective, quality improvement initiatives specific to EDs are essential so long as these remain a locus of care. The improvement goals include ensuring adequate space, data and tracking systems, qualified staffing and teams, and adoption of clinical pathways, practice standards, best practices, and outcomes measurement. An equity lens throughout these improvement efforts should ensure that children with mental health conditions are treated in EDs in a manner at least on par with those seen for non-mental health conditions and that inequities are identified, addressed, and ultimately eliminated for those from diverse groups or special populations.

A robust research and evaluation agenda should inform efforts at improvement and equity across all the strategies that have been identified, yielding publicly available quality and outcome data that can be used to gauge the resulting impact. Future studies should use more rigorous methodologies to capture and analyze data and should report the details

of those methods. As the body of reliable and valid evidence grows, it increasingly will be possible to conduct systematic reviews that address the limitations inherent in the less systematic review of the current literature as reported here.

Researchers should be stakeholders in the recommended effort, described above, to develop a minimum data set and then adopt the set in their data collection efforts. Data should be collected at repeated intervals to detect trends over *extended* periods of time, as these will reveal the success or failure of interventions to reverse the troubling trends reported above. Studies can move this field forward by developing and incorporating *meaningful* measures of clinical, behavioral, and social outcomes of ED utilization, which are so starkly absent in most research on this topic. Research initiatives are needed that broadly examine mental health crises among children and youth, and the crisis response in a geographic area, rather than focusing narrowly on psychiatric EDs. Too little is known, for example, about what happens when children and adolescents present in an ED where no appropriate services are available. Researchers should also expand their focus to the undetected mental health problems among children presenting in pediatric EDs for non-mental health reasons.

While some of the concerning trends reported above are relatively recent, the absence in many EDs of qualified mental health professionals and appropriate assessment and treatment for children and youth with mental health conditions has been in plain sight for quite some time. It will take substantial advocacy efforts by family members, youth and young adults, state and federal policymakers, legislators, and professionals in mental health, primary care, and education to catalyze concerted action on the quality concerns and healthcare inequities (Gonzalez et al., 2020). Table 2 succinctly summarizes some of the key information presented in this article in the form of a *Fact Sheet for Advocates*, which can be used to bring greater attention to these problems and potential solutions. The facts suggest an urgent need for action.

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