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## Mental Health and COVID-19 in Pediatric Emergency Departments: Perspectives From Directors

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### A B S T R A C T

**Purpose:** The aim of this study is to understand pediatric emergency department (PED) directors' perspectives on the COVID-19 pandemic's effect on PED visits for mental health concerns.

**Methods:** Semi-structured phone interviews were conducted with a national convenience sample of PED directors. Interviews were recorded, transcribed verbatim, and analyzed using rapid content analysis.

**Results:** Twenty-one PED directors from 18 states were interviewed. Directors perceived an increased volume of mental health visits and higher patient acuity. Some PEDs innovatively adapted services but were also met with new barriers in providing care due to increased use of personal protective equipment and required COVID-19 testing. Transfer to inpatient psychiatric units was more complicated due to reduced overall bed capacity and the need for a negative COVID test.

**Discussion:** The COVID-19 pandemic strained an already fragile pediatric emergency mental health system. Building infrastructure for adaptations and mental health service reserve capacity could help ensure proper care for pediatric patients with mental health crises during future public health emergencies.

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### IMPLICATIONS AND CONTRIBUTION

PED mental health service delivery and discharge dispositions were often more difficult during COVID-19, but also prompted innovative solutions to address barriers. Mental health service reserve capacity and investment in continued innovation is necessary to continue to serve pediatric patients in mental health crisis during future public health emergencies.

Pediatric emergency department (PED) visits for suicidal ideation or attempt have been rising for years [1], and the COVID-19 pandemic has added additional strain on children's mental health (MH) [2]. We sought to understand PED directors' perspectives on the COVID-19 pandemic's effect on MH visits for MH concerns.

**Conflicts of interest:** The authors have no conflicts of interest to disclose.

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### Methods

PED directors at 145 institutions were sent a survey in the fall of 2020 about emergency department (ED) MH practices and all institutions had the opportunity to participate in a follow-up interview. Our convenience sample for this qualitative study included survey respondents who indicated they would be interested in completing an interview.

The interviews focused on PED MH practices, with emphasis on implementation of practices and organizational culture and resources. The interview guide was iteratively refined based on

**Table 1**  
Demographic characteristics of pediatric emergency department directors interviewed

Characteristic	n (%)
Total	21 (100)
Practice setting	
Suburban	2 (10)
Urban	19 (90)
Practice type	
Academic	17 (80)
Community	4 (20)
ED type	
Pediatric ED in general hospital	10 (47)
ED in freestanding children's hospital	11 (54)
ED geographic region	
Northeast	6 (29)
West	5 (24)
Midwest	5 (24)
South	5 (24)
Role <sup>a</sup>	
Director/Division Chief/Chair	18 (86)
Other ED leader	3 (14)
Years in practice	
≤10 years	4 (19)
11–19 years	7 (33)
≥20 years	10 (48)
Years in current ED	
≤10 years	8 (38)
11–19 years	6 (29)
≥20 years	7 (33)

ED = emergency department; MH = mental health; PED = pediatric emergency department.

<sup>a</sup> Pediatric emergency department director deputized a PED physician colleague involved in MH services delivery or quality improvement to participate in the survey/interview.

preliminary interviews to include questions about changes in PED practices during the COVID-19 pandemic. Interviews were audio-recorded and transcribed verbatim. As outlined in detail in [Table A1](#), we used a rapid analysis approach [3,4], to analyze domains related to COVID-19 and MH. Rapid qualitative analysis is considered a particularly advantageous approach for studying time-sensitive phenomena and when actionable results are needed [5], both of which apply to the COVID-19 and accompanying MH pandemic. In our study, the three predetermined analytic domains focused on how the COVID-19 pandemic affected the following: (1) patients' MH emergency presentations; (2) provision of MH services; and (3) discharge dispositions. These domains were selected based on data from preliminary interviews and research team members' clinical experience. Analysis within and across domains was conducted by two Masters-level analysts experienced in qualitative research. The team met regularly to discuss results and resolve discrepancies in coding. The Institutional Review Board determined that this minimal risk study was exempt from review. Informed consent was obtained from all subjects.

## Results

Of the 35 PED directors who indicated they were interested in an interview, 11 were unable to be reached in the study time-frame, 3 declined to participate due to scheduling, and 21 enrolled and completed an interview between December 2020 and February 2021. PED director characteristics are provided in [Table 1](#). Below we present our three domains of analysis. [Table 2](#) includes exemplary quotes to support each domain.

**Table 2**  
Supportive quotes from pediatric emergency department directors

Effect of COVID-19 on mental health presentations	“The number of patients that did not have preexisting psychiatric illness increased, or the patients that did not have preexisting conditions, but were coming in with new suicidality increased, as well. So, it [the pandemic] had a profound effect. The numbers are higher, and the length of stays are longer” <b>PED Director 7</b>
	“I mean, the – it seems like the acuity's higher. All the resources are exhausted. All the resiliency is exhausted by the pandemic” <b>PED Director 11</b>
	“I think our psych volume has almost doubled. So, we're very, very busy with psych patients and obviously it's a stretched – it's not a resource-rich specialty anywhere, let alone where I'm practicing. And I think there's a big strain on the system right now” <b>PED Director 16</b>
Effect of COVID-19 on mental health service provision	“So I think one thing that's gotten in the way is if we had a lot psych patients waiting to be seen, there would just be a lot of people in this hallway waiting. But with COVID, it's not ideal to have that many people together. So that's been a challenge in that when there are more patients than spots, finding additional places where they can be safely, without being an infectious control risk is challenging” <b>PED Director 9</b>
	“We have plenty of PPE. It just takes us longer to see patients, every patient, because we are donning and offing PPE for every single patient” <b>PED Director 19</b>
Effect of COVID-19 on mental health discharge dispositions	“The number of psychiatric beds either has not increased, and in many occasions, has actually decreased. And due to the COVID constraints, many hospitals where they used to have double beds or shared rooms, they just became a private room, so that also decreased the number of patients who could be admitted” <b>PED Director 21</b>
	“I can say that the inpatient psych facilities have been kind of strict with the COVID testing. They want us to actually repeat a test if the patient's there more than 72 hours in our ED, and some of them actually want a PCR, they do not want just antigen testing” <b>PED Director 4</b>
	“So certainly the pandemic has impacted what we do as far as if they need to be admitted and there have been COVID outbreaks at the psychiatric hospital on the in-patient ward, so that did get closed down. COVID has impacted the resources that are available, we've certainly felt that” <b>PED Director 2</b>

ED = emergency department; PCR = polymerase chain reaction; PED = pediatric emergency department; PPE = personal protective equipment.

### Effect of COVID-19 on mental health presentations

Most PED directors noted that their EDs saw an initial decrease in the volume of MH presentations at the beginning of the pandemic, followed by a prolonged increase after the pandemic had continued for several months. Many said that although overall PED visit volumes had decreased, MH-related

PED presentations had increased. Respondents also noted that the severity and acuity of patients' MH symptoms seemed to have increased so that MH visits made up a greater proportion of overall PED volumes. Directors discussed that the severity and acuity of patients' MH symptoms seemed to have increased since the onset of the pandemic. Some directors reported that their staff felt that they lacked the education and experience to manage the increasing volumes and acuity of MH cases, and that the COVID-related precautions such as donning and doffing personal protective equipment (PPE) added to staff frustration.

#### *Effect of COVID-19 on mental health service provision*

When asked about telehealth use for MH concerns, participants ranged from reporting no telehealth use to saying telehealth increased dramatically. Telehealth consults for social work and psychiatric evaluations were most common. The availability of telehealth was seen by some as a facilitator to better care for a growing MH patient population, whereas other respondents said that telehealth was not ideal for mental healthcare or the PED setting. Further impeding ideal MH care in the PED was the use of PPE, which several directors reported hindered staff's ability to build rapport with MH patients.

Another change in service provision due to the pandemic was the need to perform a COVID-19 test prior to initiating MH services. In some cases, patients were left waiting without evaluations or services for many hours while awaiting COVID-19 test results.

#### *Effect of COVID-19 on mental health discharge dispositions*

Most respondents discussed the reduction in available inpatient psychiatric beds and difficulties transferring patients. Patients who tested positive for COVID-19 were "impossible" to transfer to a psychiatric unit. Other delays occurred when inpatient psychiatric units closed to new transfers due to COVID-19 outbreaks within their facilities. Due to need for COVID-19 testing and capacity limitations of inpatient psychiatric units during the pandemic, more patients boarded [6] in the PED while awaiting definitive psychiatric treatment. This sometimes resulted in PED policy changes related to boarding. Many interviewees said it had always been difficult to transfer patients to inpatient psychiatric units, and the pandemic further stressed an already-strained system.

Although it was clear that discharge to inpatient settings had been affected by the pandemic, there was no clear consensus among respondents about whether discharge to community resources had been affected. A few participants noted that discharge to the community was slightly easier than to inpatient facilities for a few reasons, including not needing to perform COVID-19 tests prior to discharge and telehealth adoption by community MH agencies.

## **Discussion**

PED directors reported that during the COVID-19 pandemic, PEDs experienced more volume and higher acuity of MH presentations, rapid changes in how PED services were provided, and a decrease in available disposition options. Our findings provide context to prior work showing increases in the proportion of PED visits for MH care and suggesting that PED MH presentations have been more severe during the COVID-19

pandemic [7–9]. Our interviews suggest that the COVID-19 pandemic exposed existing fragilities in the pediatric MH care system [10,11] and exacerbated the problem of pediatric patients boarding while awaiting definitive MH care.

Although COVID-19 infection prevention measures such as distancing and increased PPE presented challenges to engaging in mental healthcare in the PED, the pandemic also forced some health systems to develop innovative solutions to ensure patients receive quality and timely MH care. This included increasing the use of telehealth for MH care in the PED and providing patients with enhanced psychological services in the PED during boarding. The increased flexibility demonstrated by these innovations provide examples of potential long-term policy and practice amendments that may improve the care of children presenting with MH crises in the PED. Future disaster and pandemic preparedness can incorporate these findings with existing policy and practice recommendations [12–14] to build reserve capacity for pediatric MH care into systems.

Our study can be interpreted in the context of limitations. First, the study was designed to focus on MH services provision in PEDs (not specifically on the effects of COVID-19). Therefore, the conceptual models used to develop the interview guide did not focus on pandemic preparedness, and other COVID-19-related changes to PED care were outside the scope of our interviews. However, the structured nature of the interviews lent the data to rapid analysis based on predetermined domains related to COVID-19. Second, although our sample was largely urban, academic PEDs, it was geographically diverse and evenly split between freestanding PEDs and those nested within general adult hospitals. Still, results may not be generalizable beyond the PEDs included in our interviews.

Our study's main findings showed that PED staff experienced stress related to the increasing volume and acuity of patients seeking MH crisis care; that requirements to use PPE and have COVID testing results were barriers to high-quality patient care; and that MH services capacity was inadequate to meet patients' MH needs. Increased use of telehealth was an innovation spurred by the COVID-19 pandemic, and study participants were mixed on whether telehealth care was advantageous for patients seeking MH care in the PED.

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## **Supplementary Data**

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2022.03.019>.

## **References**

- [1] Plemmons G, Hall M, Doupnik S, et al. Hospitalization for Suicide ideation or attempt: 2008–2015. *Pediatrics* 2018;141:e20172426.
- [2] Stephenson J. Children and Teens Struggling with mental health during COVID-19 pandemic. *JAMA Health Forum* 2021;2:e211701.
- [3] Hamilton A. Qualitative methods in rapid turn-around health services research. VA HSR&D National Cyberseminar Series: Spotlight on Women's Health. 2013. Available at: [https://www.hsr.d.research.va.gov/for\\_researchers/cyber\\_seminars/archives/780-notes.pdf](https://www.hsr.d.research.va.gov/for_researchers/cyber_seminars/archives/780-notes.pdf). Accessed June 7, 2021.

- [4] Taylor B, Henshall C, Kenyon S, et al. Can rapid approaches to qualitative analysis deliver timely, valid findings to clinical leaders? A mixed methods study comparing rapid and thematic analysis. *BMJ open* 2018;8:e019993.
- [5] Gale RC, Wu J, Erhardt T, et al. Comparison of rapid vs in-depth qualitative analytic methods from a process evaluation of academic detailing in the Veterans Health Administration. *Implementation Sci* 2019;14.
- [6] American College of Emergency Physicians. Definition of a boarded patient. 2018. Available at: <https://www.acep.org/patient-care/policy-statements/definition-of-boarded-patient/>. Accessed July 26, 2021.
- [7] Krass P, Dalton E, Douppnik SK, Esposito J. US pediatric emergency department visits for mental health Conditions during the COVID-19 pandemic. *JAMA Netw Open* 2021;4:e218533.
- [8] Hill RM, Rufino K, Kurian S, et al. Suicide ideation and attempts in a pediatric emergency department before and during COVID-19. *Pediatrics* 2021;147.
- [9] Yard E, Radhakrishnan L, Ballesteros MF, et al. Emergency department visits for Suspected Suicide attempts among Persons aged 12–25 Years before and during the COVID-19 pandemic — United States, January 2019–May 2021. *MMWR Recomm Rep* 2021;70:888–94.
- [10] Fieldston E, Jonas J, Scharko AM. Boarding of pediatric psychiatric patients is a no-fly zone for value. *Hosp Pediatr* 2014;4:133–4.
- [11] Green CM, Foy JM, Earls MF. Committee on Psychosocial aspects of Child and Family health, mental health Leadership work Group. Achieving the pediatric mental health Competencies. *Pediatrics* 2019;144:e20192758.
- [12] Delaney KR, Burke P, DeSocio J, et al. Building mental health and caring for vulnerable children: Increasing prevention, access, and equity. *Nurs Outlook* 2018;66:590–3.
- [13] Richmond JS, Dragatsi D, Stiebel V, et al. American Association for emergency Psychiatry recommendations to address psychiatric staff Shortages in emergency settings. *Psychiatr Serv* 2021;72:437–43.
- [14] Kannarkat JT, Smith NN, McLeod-Bryant SA. Mobilization of Telepsychiatry in Response to COVID-19—Moving toward 21st Century access to care. *Adm Policy Ment Health* 2020;47:489–91.