



# Pediatric emergency department physicians' perceptions of virtual mental health assessments for urgent needs

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Received: 9 April 2022 / Accepted: 1 January 2023 / Published online: 7 February 2023

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## Abstract

**Purpose** Pressures related to the COVID-19 pandemic have created the need to develop innovative ways to deliver mental health care, especially for urgent needs. After the launch of a pediatric Emergency Department (ED) Virtual Care service, we aimed to evaluate pediatric ED physicians' experiences with the use of ED virtual care for mental health assessments.

**Methods** This mixed-methods study was conducted at a pediatric academic health center in Ontario, Canada. Pediatric ED physicians who conducted ED virtual mental health assessments from May to December 2020 were eligible. Participants completed a 22-question novel survey and were invited to participate in a focus group. Descriptive and thematic analyses were used to analyze the data.

**Results** Twenty-nine physicians provided mental health services through the ED virtual care platform. Twenty-five physicians (86% response rate) completed the survey and 3 (10%) participated in a focus group. While many agreed that virtual care benefits patients (67%), key barriers identified included time constraints, lack of mental health clinician support, and uncertainty around the pediatric ED physicians' role in these types of assessments. Despite these barriers, physicians recognized the potential benefit of the ED virtual care service for mental health assessments and were largely amenable to improving this process should mental health support be available.

**Conclusions** While many physicians agreed that there is a potential benefit of the ED virtual care platform for urgent mental health assessments, time constraints and lack of confidence in providing satisfactory virtual mental health care with minimal mental health support limited its acceptability. These findings can inform the future implementation of mental health services using an innovative virtual ED platform.

**Keywords** Pediatric · Virtual care · Emergency medicine · Mental health

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## Résumé

**Objectif** Les pressions liées à la pandémie de COVID-19 ont créé le besoin de développer des moyens innovants pour fournir des soins de santé mentale, en particulier pour les besoins urgents. Après le lancement d'un service de soins virtuels aux urgences pédiatriques, nous avons cherché à évaluer les expériences des médecins des urgences pédiatriques avec l'utilisation des soins virtuels aux urgences pour les évaluations de la santé mentale.

**Méthodologie** Cette étude à méthodes mixtes a été menée dans un centre universitaire de santé pédiatrique en Ontario, au Canada. Les médecins pédiatriques qui ont effectué des évaluations virtuelles de la santé mentale aux urgences de mai à décembre 2020 étaient admissibles. Les participants ont rempli une enquête inédite de 22 questions et ont été invités à participer à un groupe de discussion. Des analyses descriptives et thématiques ont été utilisées pour analyser les données.

**Résultats** Vingt-neuf médecins ont fourni des services de santé mentale par le biais de la plateforme de soins virtuels des urgences. Vingt-cinq médecins (taux de réponse de 86 %) ont répondu au sondage et trois (10 %) ont participé à un groupe de discussion. Si beaucoup s'accordent à dire que les soins virtuels sont bénéfiques pour les patients (67 %), les principaux obstacles identifiés sont les contraintes de temps, le manque de soutien des cliniciens en santé mentale et l'incertitude quant au rôle des urgentistes pédiatriques dans ces types d'évaluations. Malgré ces obstacles, les médecins ont reconnu l'avantage potentiel du service de soins virtuels de l'urgence pour les évaluations de la santé mentale et étaient largement disposés à améliorer ce processus si un soutien en santé mentale était disponible.

**Conclusions** Bien que de nombreux médecins s'accordent à dire que la plateforme de soins virtuels des urgences présente un avantage potentiel pour les évaluations urgentes de la santé mentale, les contraintes de temps et le manque de confiance dans la prestation de soins de santé mentale virtuels satisfaisants avec un soutien minimal en matière de santé mentale ont limité son acceptabilité. Ces résultats peuvent éclairer la mise en œuvre future des services de santé mentale à l'aide d'une plateforme virtuelle d'urgence innovante.

**Mots clés** Pédiatrie · Soins virtuels · Médecine d'urgence · Santé mentale

### Clinician's capsule

#### *What is known about the topic?*

Limited research is available on evaluating pediatric virtual Emergency Departments, especially for mental health presentations

#### *What did this study ask?*

What are pediatric ED physicians' experiences and satisfaction with conducting mental health assessments through a virtual platform during COVID-19?

#### *What did this study find?*

Pediatric ED physicians believe virtual care is beneficial and safe for mental health patients. However, limitations in personnel may impact its feasibility and acceptability

#### *Why does this study matter to clinicians?*

This study provides recommendations for implementing and sustaining a virtual emergency department for pediatric mental health patients

## Background

Due to the impact of the COVID-19 pandemic on the provision of in-person health care, there was a swift change to implement virtual care services to maximize access to care for families who were unable or reluctant to come into hospitals. The Children's Hospital of Eastern Ontario (CHEO) was the first of three institutions in Canada to implement an Emergency Department (ED) Virtual Care service in May 2020 where families could access a virtual assessment by a pediatric emergency department (ED) physician for acute health care needs, including mental health issues [1]. Among the few groups to evaluate ED virtual care platforms, Rosenfield et al. [2] reported that the right patient, right time, right provider, and right technology are determinants for success [2]. Limited research exists for the role of these platforms for emergency mental health assessments. A recent systematic review revealed that since the onset of the pandemic, children and youth have experienced more symptoms of depression and anxiety compared to pre-pandemic rates, highlighting the need to ensure services meet the mental health needs of this population [3]. CHEO's ED virtual care platform introduced a novel approach to emergency mental health care with pediatric ED physicians playing a vital role in conducting these assessments. We aimed to evaluate the experience and satisfaction of pediatric ED physicians providing ED virtual care services for patients presenting with urgent mental health needs.

## Methods

The study was approved by the CHEO Research Ethics Board (20/100X).

### Study design and population

This mixed-methods study was conducted at a pediatric academic health center in Ontario, Canada. Study participants were consenting pediatric ED physicians who were eligible to participate if they had conducted an ED virtual care mental health encounter between May 4 and December 31, 2020.

### Platform

The ED virtual care service adapted a secure encrypted video platform. Patients and caregivers self-referred by completing an online screening for in-person ED requirements before booking a virtual appointment. The only mental health-specific exclusion criterion was an intentional ingestion. Pediatric ED physicians could work remotely and saw an average of three patients per hour from 9 am to 9 pm, 7 days a week. For mental health complaints, the appointment time extended to 30 min, the last appointment was at 7 pm, with a minimum separation of 2 h between bookings. Ideally, two providers were assigned to each mental health appointment: an ED physician to assess for medical stability and a mental health clinician (Crisis Intervention Worker or mental health Nurse) who could stay on the line beyond the typical timeframe of the appointment. Mental health clinicians worked on site and covered ED virtual care assessments and the in-person ED. See Supplementary Appendix 1 for the workflow description.

### Survey

Eligible physicians were emailed a 22-question anonymous REDCap [4] survey, with questions about demographics, and physician experience and satisfaction with ED virtual care mental health encounters. Survey submission implied study consent. The novel survey was created based on existing recommendations and surveys found in the literature [5, 6], including an unpublished provider satisfaction survey currently being used by the Northwell Emergency Telepsychiatry Service [7] and the CHEO mental health virtual care working group. Upon completion, participants were asked to include their email address if they would be interested in participating in a focus group and/or enter a draw for a gift card.

### Focus group

Survey participants were invited to participate in a focus group, which was conducted in February 2021. All participants provided informed consent. Questions were developed based on the Theoretical Domains Framework [8] and explored potential barriers and facilitators to conducting ED virtual care mental health assessments.

### Analyses

Quantitative survey data were analyzed as descriptive statistics using SPSS 27. Qualitative data was analyzed using Nvivo software to determine key themes, and coded by two independent coders with conflicts resolved by a third coder.

## Results

### Survey

Twenty-five physicians completed the survey (86% response rate) and all were included for analysis (0.84% missing data). See Table 1 for survey results. Physicians were primarily female (63%) and most had been providing virtual care for 5 months to 1 year (80%). Many agreed that ED virtual care benefits mental health patients (67%) and is safe for most patients (64%). Only 36% agreed that they were able to build rapport and provide satisfactory mental health care virtually, 40% disagreed that they felt confident in the care they provided and only 20% agreed that ED virtual care for mental health assessments positively impacted their clinical practice.

### Key qualitative themes

Seventeen physicians (68%) responded to the open-ended survey question and 3 participated in a focus group. Three major barriers to the acceptability of ED virtual care for mental health presentations were identified in the survey comments and supported by focus group data: time constraints for the assessments, inadequate mental health clinician support, and concern regarding the appropriateness of pediatric ED physicians to conduct virtual mental health assessments [Supplementary Table 1].

Physicians voiced that the time allotted for each appointment (30 min) was insufficient to complete an adequate mental health assessment. They felt this patient population deserved more time to feel comfortable revealing their concerns and for physicians to be able to provide adequate and safe discharge planning.

Participants also questioned who should be completing these assessments and identified that ED virtual care mental

**Table 1** Participant survey results: participants asked to “share your experience providing Emergency Mental Health Care at CHEO Virtually”

	<i>n</i> (%)
Age ( <i>n</i> = 25)	
< 30	0 (0.0)
31–50	17 (68.0)
51–70	8 (32.0)
Gender ( <i>n</i> = 24)	
Male	9 (37.5)
Female	15 (62.5)
Prefer not to answer	0 (0.0)
Type of VC provided ( <i>n</i> = 25)	
Telephone	0 (0.0)
Video	20 (80.0)
Both	5 (20.0)
Length of time providing VC ( <i>n</i> = 25)	
4 months or less	4 (16.0)
5 months to 1 year	20 (80.0)
2+ years	1 (4.0)
Frequency ( <i>n</i> = 25)	
At least once a week	3 (12.0)
At least once a month	16 (64.0)
A few times a year	6 (24.0)
Type of encounter ( <i>n</i> = 25)	
Youth/child only	6 (24.0)
Parent only	1 (4.0)
Both	18 (72.0)
Likert-scale questions	
The virtual care workflows are easy to follow ( <i>n</i> = 24)	
Agree	14 (58.3)
Neutral	6 (25.0)
Disagree	4 (16.7)
I feel confident in the quality of care I provide virtually ( <i>n</i> = 25)	
Agree	9 (36.0)
Neutral	6 (24.0)
Disagree	10 (40.0)
I feel at ease when providing virtual care ( <i>n</i> = 25)	
Agree	10 (40.0)
Neutral	6 (24.0)
Disagree	9 (36.0)
I am able to build rapport and provide satisfactory patient care virtually ( <i>n</i> = 25)	
Agree	9 (36.0)
Neutral	9 (36.0)
Disagree	7 (28.0)
Virtual care positively impacts my clinical practice ( <i>n</i> = 25)	
Agree	5 (20.0)
Neutral	11 (44.0)
Disagree	9 (36.0)
Virtual care benefits patients ( <i>n</i> = 24)	
Agree	16 (66.7)
Neutral	7 (29.2)
Disagree	1 (4.2)

**Table 1** (continued)

	<i>n</i> (%)
There are circumstances in my home that negatively impact my ability to deliver services virtually ( <i>n</i> = 25)	
Agree	8 (32.0)
Neutral	3 (12.0)
Disagree	12 (56.0)
Providing virtual care has positively impacted my job satisfaction ( <i>n</i> = 25)	
Agree	6 (24.0)
Neutral	11 (44.0)
Disagree	8 (32.0)
Virtual care is safe for most of my patients ( <i>n</i> = 25)	
Agree	16 (64.0)
Neutral	8 (32.0)
Disagree	1 (4.0)
The image quality is satisfactory ( <i>n</i> = 24)	
Agree	18 (75.0)
Neutral	2 (8.3)
Disagree	4 (16.7)
The sound quality is satisfactory ( <i>n</i> = 25)	
Agree	23 (92.0)
Neutral	1 (4.0)
Disagree	1 (4.0)
The virtual care technology is easy to use ( <i>n</i> = 25)	
Agree	23 (92.0)
Neutral	1 (4.0)
Disagree	1 (4.0)
I think that a virtual ED visit takes less time than an in person ED visit ( <i>n</i> = 25)	
Agree	8 (32.0)
Neutral	8 (32.0)
Disagree	9 (36.0)

health assessments may be beyond their role as pediatric ED physicians. Despite the anticipated workflow, participants reported that mental health clinicians were often unavailable to assist in virtual assessments as they were covering in-person ED visits as well. Level of comfort, knowledge of mental health concerns, awareness of available mental health resources, and the lack of time available to complete mental health assessments were reported barriers to physicians conducting ED virtual care mental health assessments. Participants identified the lack of available support from mental health clinicians as a significant limitation to this platform. However, physicians recognized the benefit of the ED virtual care platform for mental health assessments and were largely amenable to improving this process should mental health support be available.

## Discussion

### Interpretation

The results of this study evaluating pediatric ED physicians' experiences conducting mental health assessments on a novel ED virtual care platform indicate a potential for this platform to be effective for pediatric mental health patients but it would require substantial adjustments to be sustainable. The survey had a high response rate with many physicians indicating that they perceived virtual mental health care to be beneficial and safe for patients as an alternative to in-person emergency care during the pandemic. However, the acceptability for pediatric ED physicians to do these assessments varied. Our survey and focus group responses identified three priority areas needing attention: time constraints, availability of mental

health clinicians to provide further support to patients, and the appropriateness of pediatric ED physicians in conducting mental health assessments.

### Previous studies

The facilitators and barriers of pediatric ED physicians' acceptability of virtual mental health assessments were consistent with the limited literature available. All key themes have been reported previously with pediatric ED physicians conducting mental health assessments in general [9, 10], and recently for ED virtual care services specifically [1]. To meet the recommendation for the right provider to be available at the right time, for the right patient, with the right technology, ED virtual care services will require clear communication and workflows for patients to have access to the most appropriate care provider in the most appropriate setting (e.g., redirect for in-person care, be seen by a mental health specialist) [2].

### Strengths and limitations

Our focus group's sample was small; however, the data collected further supported the themes established from the survey, which had a high response rate. Although surveys have a high margin of error, our data provides valuable, novel information to both pediatric ED and mental health systems in Canada. While the use of ED virtual care services is growing, our findings may not generalize to other institutions. However, we believe our study provides useful information regarding potential challenges in creating a viable alternative to in-person urgent mental health care provided by pediatric ED physicians and contributes to a limited area of literature. Although our study suggests a perceived benefit of pediatric ED physicians to provide virtual mental health assessments, there are rather large pitfalls in the system if inadequately resourced. Significant considerations for future programs include providing appropriate time allocations and mental health clinician support. Satisfaction for pediatric ED physicians in providing ED virtual mental health care was further impaired as physicians lacked confidence in the quality of care they were providing.

### Clinical and research implications

With some of our participants expressing uncertainty around whether they were the best clinician to be assessing mental health patients, stakeholders should review this process to determine who is the best fit based on available resources, skill set, and comfort. Given the ever-changing state of the pandemic and pre-existing challenges with both ED and mental health resource provision, human resources to support and sustain this model was only possible in the

early phases of the pandemic when ED volumes were low. Economic analyses of urgent ED virtual mental health care access need to be completed, and further research is needed to understand potential pros and cons to building, managing and sustaining virtual models to benefit mental health patients in the future.

### Conclusion

Many physicians agreed that there is a potential benefit of the ED virtual care platform to provide safe and timely mental health assessments. Acceptability from pediatric ED physicians was significantly limited by time constraints and lack of confidence in providing satisfactory virtual mental health care with limited resource allocation and support from mental health providers. Successful future programs will need to ensure adequate time for assessments, sufficient provider training and support from mental health-trained clinicians. With the continuous challenges in ED and mental health resource provision, these findings can inform the implementation or adaptation of similar services elsewhere to decrease overcrowding in a pediatric ED.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s43678-023-00446-w>.

**Acknowledgements** We acknowledge and thank the CHEO Research Institute Data Warehouse team, Dr. Gina Neto, Anik Levesque, Josée Blackburn and David Murphy for their invaluable assistance during the study.

**Funding** This study was funded by the Children's Hospital Academic Medical Organization COVID-19 Innovation Fund. The opinions, results and conclusions reported in this paper are those of the authors and are independent from the funding sources.

**Data availability** The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

### Declarations

**Conflict of interest** All the authors declare no conflicts of interest.

**Ethical approval** The study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the CHEO Research Ethics Board (20/100X).

**Consent to participate and consent to publish** Informed consent was obtained from all the individual participants included in the study. Submission of the survey implied consent to participate in the study.

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