Brief Communications

Rapid design and deployment of intensive outpatient, group-based psychiatric care using telehealth during coronavirus disease 2019 (COVID-19)

Amber W. Childs,1,2 Adam Unger,2 and Luming Li1,2

1Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut, USA, and 2Yale New Haven Health, Yale New Haven Psychiatric Hospital, Connecticut, USA

Corresponding Author: Amber W. Childs, PhD, Department of Psychiatry, Yale University School of Medicine, 300 George Street, Suite 901, New Haven, CT 06511, USA (Amber.Childs@yale.edu)

Received 3 June 2020; Revised 9 June 2020; Editorial Decision 10 June 2020; Accepted 17 July 2020

ABSTRACT

COVID-19 has demanded unprecedented actions in the delivery of outpatient psychiatric services, including the rapid shift of services from in-person to telehealth in response to public health physical distancing guidelines. One such shift was to convert group-level intensive outpatient psychiatric (IOP) interventions to telehealth. Historically, telehealth in psychiatric care has been studied in provider-patient interactions, but has not been as well studied for group telehealth service delivery. During the COVID-19 outbreak, providing group-based interventions was important in order to care for high-risk individuals who needed structured psychotherapy group support. However, the delivery of services via telehealth led to special challenges that were unable to be fully accommodated by the preexisting telehealth infrastructure. Rapid feasibility testing and adoption of technology was needed to support IOP services to minimize infectious spread while delivering group services to high-risk psychiatric patients. This article describes the processes and workflows for service delivery and early results of telehealth for IOP services in 2 adolescent treatment programs. In addition, the article highlights early observations around safety and quality and the role of telehealth policy and payment.

Key words: COVID-19, hospital-based telehealth, rapid design, virtual group psychotherapy, intensive outpatient psychiatry

INTRODUCTION

Telehealth has emerged as an important mode of clinical service delivery. Studies have suggested that hospital-based systems with existing telehealth infrastructures have been able to rapidly deploy high-quality, virtual clinical services at the individual level.1,2 Prior to the coronavirus disease 2019 (COVID-19) pandemic, key barriers in the widespread adoption of telehealth included regulatory challenges/restrictions and reimbursement limitations.3 However, during the COVID-19 pandemic, pivots to telehealth and offsite treatment across systems of care have transformed the health-care service delivery model in a matter of weeks.1 Psychiatric and behavioral health service leaders across the country have needed to discontinue (or significantly limit) in-person services in response to the physical distancing precautions required to combat the spread of the disease.

Intensive outpatient psychiatric (IOP) services are a specialized treatment paradigm that aim to meet the needs of risky and psychiatrically complex individuals who are often either transitioning from inpatient care and require ongoing stabilization or are escalating in the community and would benefit from intervention to circumvent emergent or higher-level services. IOP services provide evidence-based interventions using group psychotherapy. Patients receive at least 3 hours of structured clinical services between 3-4
days per week for approximately 6 weeks. Individual psychotherapy, family involvement, recreation or art therapy, psychiatric medication management and consultation, and care management services are used collectively to support optimal adaptive functioning and to supplement groups toward supporting recovery from mental health disorders.

Yale New Haven Psychiatric Hospital made a strategic decision to discontinue in-person IOP services within 3 business days of the World Health Organization’s pandemic declaration, in order to follow global and national guidelines for reducing the pandemic’s spread. Though high-quality group-based, virtual IOP services existed in a limited scope prior to COVID-19, infrastructures to support group-based telehealth within hospital-based systems were less commonly described. In this article, we summarize the information workflows, clinical operations, and early results in rapidly deployed virtual IOP services necessitated by COVID-19 for high-risk and psychiatrically complex adolescents.

MATERIALS AND METHODS

Adolescent services were selected to evaluate the feasibility of video technology in group-based psychotherapy at Yale New Haven Psychiatric Hospital. Adolescent Ambulatory Services is comprised of 2 psychiatric IOPs (max census 24 patients each) and a small complement of outpatient (OP) group-based psychotherapy and medication management services. The program treats youth (13–17 years old) with a wide spectrum of psychiatric disorders with moderate to high levels of severity. Youth receive three 60-minute cognitively/behaviorally anchored psychotherapy groups a day 4 times weekly for approximately 6 weeks. Targeted individual and family intervention, recreation therapy, psychiatric medication management and consultation, and coordination of aftercare resources are also provided. OP groups provided youth with once-weekly 60- to 90-minute psychotherapy sessions utilizing cognitive and dialectical behavior therapy, respectively.

Due to allowances issued by the Office of Civil Rights, Zoom was the identified technology platform to facilitate the telehealth IOP services and clinical team communications (eg, patient rounds). The Zoom hospital-licensed account used an end-to-end 256-bit advanced encryption standard (the strongest current encryption standard) of video. The Zoom platform was selected due to ready access of a licensed account and the advanced encryption standard. Additionally, security measures (eg, waiting room, hold participant, remove participant, rename participants to protect privacy of last name, limitations on private chat among participants), the capacity for multiple synchronous users, and the capacity to allow for simultaneous, private, virtual meeting spaces within the same meeting were important elements in the selection. Leveraging aspects of Zoom’s functionality (eg, screen sharing) as well as existing asynchronous electronic communication through Epic MyChart Secure messaging (eg, psychotherapy worksheets and measurement-based care tools for remote monitoring of symptoms), telehealth groups were adapted to adhere as best as possible to evidence-based in-person psychotherapy standards. Psychiatrist medication management and evaluation visits were streamlined into the workflow by using Zoom’s breakout rooms feature to replicate the in-person practice of medication management occurring during program hours.

The Epic (Epic Systems Corporation, Verona, WI) MyChart patient portal and video visits were foundational to the immediate continuation of telehealth services and patient communication. Patients and caregivers were educated on establishing proxy access to MyChart to allow the youth to have routine and secure profile access to their scheduled individual video visits and, later, the links to Zoom group psychotherapy visits.

All patient communications, including the initial intake, informed consent with a caregiver (and teenager assent and/or consent), group registration and onboarding, measurement-based care assessments, and access to Zoom meeting links, occurred using Epic MyChart secure messaging. This was done to enhance privacy and security, as well as to capitalize on preexisting deep integration with the hospital’s electronic medical records (EMRs). Individual psychotherapy, family psychotherapy, and other contacts were conducted using Epic MyChart video visits and/or telephonic communication. In the case of a lack of patient access to or refusal to use technology, on-site intakes remained available using a multi-step screening process that included a previsit telephonic symptom screening, arrival symptom screening and vital checks, the use of personal protective equipment for patients and staff, physical distancing, capacity limits, and on-site environmental services providing sanitization.

Observational data were collected to assess clinical practice patterns from in-person to telehealth services. We queried the hospital system EMR for data from 8 March to 23 May 2020, and specifically documented the number of in-person visits and telehealth visits, as well as the type of telehealth visit. Telehealth visits were categorized into 4 groups: telephonic, MyChart Video, Virtual Tele-Video OP (group < 3 hours), and Virtual Tele-Video IOP (group ≥ 3 hours and/or simultaneous medication management) visits (Table 1).

RESULTS

In-person IOP group services were discontinued on 17 March, and telephonic services were provided to all patients. Epic MyChart intake, individual psychotherapy, and medication management video visits began the week of 23 March. Video group psychotherapy began at the OP level on 30 March and, subsequently, at the IOP level on 3 April. Figure 1 displays the timeline for implementation for each type of telehealth. The patient visit volume prior to the COVID-19 outbreak, as well as throughout deploying telehealth, is detailed in Figure 2, and the telehealth volume details by type of telehealth method are depicted graphically by date in Figure 3. As can be seen, there was a rapid transition from in-person to telehealth services and there were no lapses in treatment. In the week prior to the COVID-19 shutdowns, in-person services accounted for 100% of the visit volume (Figure 2). The following week, telehealth comprised 65.45% of the visit volume, where 100% of these visits were telephonic sessions (Figure 3). Telehealth continued to increase weekly and, in the second week of the pandemic response, accounted for 91.6% of the visit volume, where the bulk remained telephonic (83.49%), with a small margin of MyChart Video visits at 15.6% (Figure 3). By the third week of the pandemic response, virtually no visits (n = 1) occurred in person, with 99% of the visit volume being accounted for by telehealth. This trend steadily continued through the end of the query period, with nearly 100% of the visits occurring via telehealth. Moreover, in the third week, video group visits (both OP and IOP) accounted for 30% of the visit volume and steadily increased each week thereafter, peaking at 69.9% of the visit volume (Figure 3).

The visit volume fluctuated early in the hospital’s transition to telehealth and demonstrated a steady decline for the first 4 weeks. In Week 5 of the transition to virtual services, a slow but notable increase in the visit volume was apparent.
Within the context of the groups, utilizing the breakout room feature in Zoom facilitated simple and convenient transitions to medication management and consultation visits, and eliminated the need for patients to navigate 2 different technology platforms within the program hours (eg, log out of Zoom groups to attend an Epic MyChart Video visit for a medication management visit and return back to a Zoom group following the Epic MyChart Video visit).

**DISCUSSION**

This study demonstrated that technology can support the deployment of group-based IOP services in a hospital-based system for high-risk patients within a matter of weeks, as was necessitated by the COVID-19 pandemic. In addition, we provide early descriptive data around the service utilization trends in IOP services in 2 adolescent programs.

There are several notable findings from our study. We found that the utilization of telehealth to deliver group-based treatments in high-risk populations is both possible and necessary in the pandemic. Though feasible from a technological standpoint, streamlining deep integration of telehealth into existing EMRs and broadening patient care types (individual and group) across different levels of care will be a core consideration for sustainability. We also found that using the pre-existing telehealth infrastructure, including patient- and provider-initiated messaging within the EMR and MyChart Video Visits, was critical in ensuring no lapses in care (eg, MyChart Video Visits) while maintaining maximum levels of patient security and privacy. Moreover, these foundational elements allowed the time necessary to build the infrastructure required to restore IOP-level group-oriented services.

While visit volume fluctuations and decreases were apparent in the COVID-19 response period, they are likely due in part to

### Table 1. Types of telehealth defined and usage instances shown within the intensive outpatient psychiatric type

| Description | Pre–COVID-19 Infrastructure? | Usage Instances | Type of Communication |
|-------------|------------------------------|-----------------|-----------------------|
| Epic MyChart Messaging | Yes | Patient consenting, onboarding, routine secure communication (eg, psychotherapy materials, measurement-based care tools, Zoom links, etc.) | Asynchronous |
| Telephonic | Yes | Interim psychotherapy and medication management visits prior to MyChart Video and Zoom launch | Synchronous |
| Epic MyChart Video | Yes | Initial intakes, individual psychotherapy, medication management, and family therapy | Synchronous |
| Zoom (Virtual TeleVideo OP and Virtual Tele-Video IOP) | No | IOP and OP group psychotherapy; simultaneous medication management visits | Synchronous |

**Note:** Asynchronous communication is defined as 2-way treatment-related communications between a provider and patient that occur at different time points, while synchronous communication is defined as real-time 2-way treatment-related communication between a patient and provider.

**EMR:** electronic medical record; IOP: intensive outpatient psychiatric; OP: outpatient.

![Figure 1. Implementation timeline of telehealth by type for the first 30 days of the IOP response to COVID-19. COVID-19: coronavirus disease 2019; IOP: intensive outpatient psychiatric; OP: outpatient.](image-url)
planned discharges from IOP. As telehealth was deployed, Yale New Haven Psychiatric Hospital made the strategic decision to limit IOP referrals to those within the hospital’s own psychiatric inpatient units and emergency departments. Once this restriction was lifted, information highlighting the shift from in-person to video visits may not have reached all referring community physicians and hospitals.

Limitations in this study include a limited ability to assess efficacy, given the short time period of deployment of telehealth. Additionally, the safety and quality of telehealth for groups among high-risk populations should be evaluated further, and evaluations should include an assessment of whether patient outcomes and satisfaction are comparable to services received in person. Finally, telehealth service delivery was eased by the relaxation of policy and billing reimbursements during this time. The longevity of these changes will ultimately turn not only on information technology and EMR integration, safety, and quality, but whether policy changes will support the reimbursements and regulatory adjustments provisioned in the current crisis.

**Figure 2.** Number of patient visits by date and delivery method (in-person vs telehealth).

**Figure 3.** Number of patient visits by specific telehealth type. Virtual Tele-Video is for OP-level telehealth services, while Virtual Tele-Video IOP is for IOP-level telehealth services. IOP: intensive outpatient psychiatric; OP: outpatient.
CONCLUSION
COVID-19 has demanded unprecedented actions regarding the delivery of psychiatric and behavioral health services in the outpatient domain. The provision of group-based intensive outpatient programming presented special challenges that were unable to be fully accommodated by the preexisting telehealth infrastructure in a large health system. The rapid deployment of virtual IOP services for high-risk adolescents was imperative given their level of psychiatric need. Sweeping reductions in historic restrictions and decreased reimbursement barriers for telehealth made the rapid deployment of critical services possible. Examining the safety and quality of virtual, group-based interventions is vital, and policy changes will dictate whether these services are sustained beyond the current crisis.

FUNDING
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sector.

AUTHOR CONTRIBUTORS
All authors made substantial contributions to the conception and design of the study, as well as the acquisition of data or the analysis and interpretation of data; were involved in drafting the manuscript or revising it critically for important intellectual content; gave final approval of the version published; and agreed to be accountable for all aspects of the work.

ACKNOWLEDGEMENTS
The authors thank Amy Bradley for her significant support in developing telehealth protocols; Dr. Seth Axelrod, Dr. Katherine Klingensmith, and Carol Cestaro, LCSW, for their collaborations in the program design; and S. Tucker Childs, MS, for his support of manuscript preparation.

CONFLICT OF INTEREST
None declared.

REFERENCES
1. Mann DM, Chen J, Chunara R, Testa PA, Nov O. COVID-19 transforms health care through telemedicine: evidence from the field [published online ahead of print May 29, 2020]. J Am Med Inform Assoc 2020. doi:10.1093/jamia/ocaa072.
2. Reeves JJ, Hollandsworth HM, Torriani FJ, et al Rapid response to COVID-19: health informatics support for outbreak management in an academic health system [published online ahead of print March 24, 2020]. J Am Med Inform Assoc. doi:10.1093/jamia/ocaa037
3. Dorsey ER, Topol EJ. State of telehealth. N Engl J Med 2016; 375 (2): 154–61.
4. Cucinotta D, Vanelli M. WHO declares COVID-19 a pandemic. Acta Biomed 2020; 91 (1): 157–60.
5. Lionrock Recovery. Online substance abuse counseling. https://www.lionrockrecovery.com/ Accessed 15 May 2020.
6. Health and Human Services Office of the Secretary, Office for Civil Rights. OCR notification of enforcement discretion for telehealth. https://www.hhs.gov/hipaa/for-professionals/special-topics/emergency-preparedness/notification-enforcement-discretion-telehealth/index.html Accessed 30 May 2020.