It is illegal to post this copyrighted PDF on any website. Telehealth of Coordinated Specialty Care in Early Psychosis During COVID-19

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ABSTRACT

Background: The coronavirus 2019 (COVID-19) pandemic forced health care globally to provide remote services when feasible. In March 2020, psychiatric outpatient services across the United States transitioned to telehealth. Persons with early psychosis (EP) face challenges to maintain connection with care, an important element associated with better outcome. The ongoing pandemic offers the opportunity to review the feasibility of EP services using telehealth and to evaluate implications for continued implementation.

Methods: We examined delivery of coordinated specialty care (CSC) for 49 individuals aged 16–30 years enrolled in an EP (first-episode psychosis and clinical high risk) university-affiliated outpatient clinic located in Philadelphia, Pennsylvania, from March 2020 to July 2021, during which most appointments were delivered through telehealth. The services evaluated in this setting include psychotherapy, medication management, employment and educational services, peer support, and multifamily psychoeducation group. We compared completed and missed appointment rates across services and new enrollment rates with in-person versus hybrid telehealth and in-person care pre–COVID-19 and during the pandemic.

Results: In 6 months pre-COVID-19 (September 2019-February 2020), the Psychosis Evaluation and Recovery Center enrolled a mean of 4 people/mo compared to during the pandemic (March 2020–July 2021), when a mean of 2.2 people/mo were enrolled. The total number of completed psychology appointments pre-COVID-19 ranged from 51 to 88 and during the pandemic ranged from 72 to 137. The rate of missed psychology appointments ranged from 1.4% to 6.4% pre-COVID-19 and from 3.4% to 11.3% during the pandemic. The total number of completed medication management appointments pre-COVID-19 ranged from 35 to 59 and during the pandemic ranged from 22 to 66. The rate of missed medication management appointments ranged from 2.1% to 8.0% pre-COVID-19 and from 1.7% to 9.1% during the pandemic. The total number of completed supported education and employment services appointments pre-COVID-19 ranged from 5 to 11 and during the pandemic ranged from 3 to 16. Finally, the mean number of family members in attendance at the family psychoeducation group was 8.3 pre-COVID-19 and 17.1 during the pandemic.

Conclusions: New and continued engagement across services in EP CSC during the COVID-19 pandemic supports feasibility of telehealth and suggests that offering a hybrid model of in-person and telehealth should be considered once restrictions are lifted.

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D uring the coronavirus 2019 (COVID-19) pandemic, mental health transitioned to telehealth to comply with social distancing guidelines. While telehealth is not a novel means of health care delivery,^{1,2} COVID-19 has accelerated wide-scale use and facilitated implementation due to policy changes and recent technological advances.^{3–5} Over the past 10 years, telehealth has been promoted for mental health interventions, including psychotherapy and medication management. A recent review of the published literature on schizophrenia-spectrum disorders⁶ noted feasibility and acceptance of telehealth by clients and providers, despite methodological limitations.

It is particularly important to evaluate telehealth delivery in coordinated specialty care (CSC) clinics treating individuals with early psychosis (EP). For this group of people, accessing care can be challenging, and longer duration of untreated psychosis symptoms is associated with poorer clinical and functional outcomes.⁷ Additionally, research has shown that individuals with EP are a younger age group typically proficient with digital devices.⁸ Therefore, offering telehealth services in areas of strength for this age group could be beneficial.⁸ While telehealth in CSC for EP has not been explored in detail, investigations pre-COVID-19 have shown positive acceptance⁹ but also higher disengagement rates.¹⁰ An analysis of transition to telehealth post-COVID-19 in a Louisiana early episode clinic⁵ revealed increased engagement overall. The researchers also noted a trend toward increased hospitalization for their site, but listed COVID-19-related factors that may have contributed to this finding.⁵ These early findings and the ongoing pandemic offer a unique opportunity to explore telehealth options for services, as successful CSC is particularly important in promoting clinical recovery and psychosocial functioning.^{5,11} A survey of 1,482 individuals receiving telehealth in community mental health care in New York City during COVID-19¹² reported high levels of satisfaction and endorsed motivation for continued telehealth

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Clinical Points

- Research exploring additional strategies for increasing and maintaining engagement across services is needed in firstepisode psychosis (FEP), and the rapid transition to remote care during the COVID-19 pandemic offers an opportunity to evaluate the feasibility of providing services virtually.
- For most FEP participants, telehealth provided a feasible delivery of care option with little disruption in other daily activities and obligations, such as school or work.
- Remote engagement should be considered for a variety of services, including groups, peer support, and educational and vocational support in addition to therapy and medication management.

services. Additionally, a university-affiliated recoveryoriented outpatient clinic in New York City¹³ reported on utilization across services during COVID-19 for individuals with complex psychosis and found that 90% of participants maintained engagement with prior services remotely.

As the COVID-19 pandemic emerged in the United States in March 2020, access to in-person clinical care became restricted immediately. The Psychosis Evaluation and Recovery Center (PERC) at the University of Pennsylvania faced the challenge to efficiently transition CSC services to telehealth services. Given ongoing pandemic-associated restrictions, we explored whether transition of CSC to telehealth allowed us to provide a similar level of care as previously offered, as reflected by participant engagement across services. Additionally, these numbers can inform the extent and type of services that could continue via telehealth as restrictions lift.

METHODS

This project was reviewed and determined to qualify as Quality Improvement by the University of Pennsylvania's Institutional Review Board.

Providers

The PERC team includes efforts by 2 psychiatrists, 3 psychologists, 2 therapists, 2 psychology externs, and 2 certified peer specialists (CPSs) who provide CSC for individuals with EP, including clinical high risk (CHR) or first-episode psychosis (FEP). The team also has 2 clinical coordinators, one of whom provides supported employment and education services. PERC, as one of two FEP programs in Philadelphia, primarily serves persons who have commercial insurance. Services include medication management, recovery-oriented cognitive therapy (CT-R) and case management, supported education and employment services (SEES), certified peer-support (CPS), and monthly family educational groups.

Individuals Enrolled in PERC

PERC participants are young persons aged 16-30 years who are experiencing EP characterized by a DSM-5 diagnosis

It is illegal to post this copyrighted PDF on any website. associated with a threshold positive psychosis symptom (ie, delusion, hallucination, or thought disorder equivalent to a score of 4 or higher on the Positive and Negative Syndrome Scale¹⁴) that had an onset within the 24 months prior to admission (ie, FEP) or attenuated psychosis symptoms (ie, CHR). Participants are eligible for CSC for a period of 2 years and may transition to our 12-month "stepped care" program while establishing care with other providers. As of July 2021, there were 25 FEP individuals in year 1 of care, 14 individuals in year 2, 6 individuals in stepped care, and, additionally, 4 individuals receiving care for CHR. General demographics for our PERC cohort include 70.5% male, 25.6% female, and 3.9% unknown/other and 94.2% non-Hispanic/Latino, 5.1% Hispanic/Latino, and 0.9% unknown with a mean age of 21.4 years. All are fluent in English. Newly enrolled individuals typically engage in weekly therapy, medication management, and additional services based on individual needs.

> Our participant population was relatively stable in the characteristics examined pre-pandemic and during the pandemic, in part due to the length of the program (2+ years) and overall successful retention of participants. Specifically, there were no differences in sex or race ratios or in insurance types (χ^2 values all NS). Of note, a 1-way analysis of variance (ANOVA) of age at admission was significant overall (F = 3.49, P < .05), with post hoc pairwise comparisons (least-squares deconvolution [LSD]) revealing a significant difference between individuals who received services only during the pandemic (n = 26, mean [SD])age = 19.7 [2.2] years) compared to those who engaged in services only pre-pandemic (n = 15, mean [SD] age = 22.1 [4.5] years; post hoc pairwise LSD P < .05) and to those participating both pre-pandemic and during the pandemic (n = 38; mean [SD] age = 22.0 [3.9] years; post hoc pairwiseLSD P < .05). However, our pre-pandemic group was limited in size (n = 15), and a larger group would be needed to examine whether individuals presented at a younger than usual age during the pandemic period. Moreover, there were no differences between those participating only prepandemic and those receiving services during both the pre-pandemic and pandemic time periods (all P values NS).

Transition to Telehealth Platform

Beginning in March 2020, transition to telehealth occurred quickly as Philadelphia entered the "red" phase, in which only essential businesses remained open for in-person contact. Initially, contact was maintained via phone calls for medication management and psychotherapy. Rapidly, the University of Pennsylvania Health System implemented Health Insurance Portability and Accountability Act (HIPAA)-approved video telehealth services that can be accessed via computer, tablet, or smartphone. In June 2020, Philadelphia transitioned to the "yellow" phase, allowing for additional services and small gatherings of people, and PERC opened for in-person visits, as clinically indicated. In July 2020, Philadelphia transitioned to the "green" phase, allowing for more organizations/businesses to open, based on risk and infection rates¹⁵ and increased in-person

It is illegal to post this copy appointments following COVID-19 guidelines. In this article, we focus on utilization of CSC services comparing the pre-pandemic period between September 2019 and February 2020 with the pandemic periodic between March 2020 and July 2021. Figure 1A summarizes numbers of appointments in the pre-pandemic and pandemic periods, whereas Figure 1B presents the numbers of appointments across services held virtually. Figure 1C depicts the total number of missed appointments, including no-shows and cancellations.

Support Around Transition

The health system supported participants' and families' transitions to telehealth by providing detailed instructions on setting up the BlueJeans cloud-based cross-platform video conferencing service on their devices. The health system provided e-mail notifications with the link to BlueJeans appointments and offered help desk contact information to assist participants and family members in managing technical difficulties. PERC also supported participants with telehealth transition by providing support for using BlueJeans, aiding them in identifying a private space, and offering flexibility for the method of remote engagement such as using audio-only when clients requested it and moving toward audiovideo as participants' comfort level increased.

RESULTS

Total Appointments and No-Show, Transfer, and Dropout Rates

Completed and missed appointments per month before and during COVID-19 reflect that most people remained engaged across CSC services. The total number of appointments ranged from 87 to 147 pre-pandemic and ranged from 119 to 218 during the pandemic period. The rate of overall missed appointments ranged from 2.8% to 6.4% pre-pandemic and from 2.7% to 9% during the pandemic. Similarly, the number of people who transferred care or dropped out from CSC remained similar before and during COVID-19. The number of people who transferred care ranged from 1 to 3 during the pre-pandemic period and was consistently about 1 during the pandemic period. The number of people who dropped out ranged from 1 to 2 during the pre-pandemic period and ranged from 1 to 5 during the pandemic period.

Enrollment in the Clinic

In 6 months pre-pandemic (September 2019–February 2020), PERC enrolled 19 FEP individuals and 5 meeting CHR criteria (combined mean = 4/mo). In comparison, during the pandemic period, we enrolled 33 individuals who met criteria for FEP and 4 meeting CHR criteria (combined mean = 2.2/mo).

Psychotherapy

Therapists employed audio and visual conferencing for appointments. A small number of individuals preferred to

ahted PDF on any website, maintain audio-only conferencing. Telehealth appointments were of comparable length (30-60 minutes) during the pre-pandemic and pandemic periods. Therapists modified care delivery for individuals experiencing challenges due to clinical symptoms such as internal preoccupation or disorganization that interfered with engagement. In these situations, with consent from the individual, family members participated in sessions for support around engagement with the therapist until we offered more in-person visits. Psychotherapy engagement was maintained post-COVID-19 (See Figure 1A and 1B). Per month, the total number of completed psychology appointments pre-pandemic ranged from 51 to 88 and during the pandemic ranged from 72 to 137. The rate of missed psychology appointments ranged from 1.4% to 6.4% pre-pandemic and from 3.4% to 11.3% during the pandemic.

Medication Management

With minimal disruption in medication management appointments, engagement was maintained at rates similar to those pre-COVID-19 (See Figures 1A and 1B). There were fewer appointments in August 2020 due to our psychiatrist's change in availability. The total number of completed medication management appointments per month prepandemic ranged from 35 to 59 and during the pandemic ranged from 22 to 66. The rate of missed medication management appointments ranged from 2.1% to 8.0% prepandemic and from 1.7% to 9.1% during the pandemic.

Supported Employment and Educational Services

Initially, the SEES specialist provided typed instructions to assist individuals in maintaining activity at home and pursuing tasks in line with their academic and career goals. As remote services extended during COVID-19, follow-up appointments with established SEES participants and initial evaluations were conducted using the HIPAA-compliant phone app Doximity and BlueJeans video-audio. Initial appointments typically involve a 60-minute meeting to introduce the individual to the service, gather information, complete assessments, and plan goals. Following the initial meeting, follow-up appointments include 30- to 60-minute meetings and focus on assisting participants in pursuing personal goal development, online courses, future school plans, job searching and applications, resume and cover letter assistance, and accommodations requests. Clients continued to engage in SEES services at similar rates to those pre-COVID-19, but no-show rates were not tracked since this is not a billable service. The total number of completed SEES appointments per month pre-pandemic ranged from 5 to 11 and during the pandemic ranged from 3 to 16 (See Figures 1A and 1B).

Peer Support

CPS staff maintained contact with their peers and connected for 15–60 minutes each week using a digital platform or their work phone plus texting as indicated. With minimal interruptions, peer communications were

Telehealth of CSC in Early Psychosis During COVID-19

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B. Virtual Appointments (%)^b







^aNo. of appointments across service components. ^bPercentage of appointments (of each service type) that were conducted virtually via telehealth. ^cPercentage of missed appointments due to cancellations, reschedules, or noshows. For all 3 figures, superimposed colored bars correspond to phases of the pandemic in Philadelphia (red, yellow, and green; see text for definitions), beginning with pre-pandemic months (light gray). Abbreviations: PERC = Psychosis and Recovery Center, SEES = Supported Employment and Education Services.

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staff continued to collaborate with their peers to identify and pursue activities in line with personal interests and aspirations while adjusting to pandemic-related limitations.

Multifamily Group Psychoeducation

PERC routinely offers this support monthly to family members. We offered 90-minute remote groups in April, May, June, July, October, November, and December 2020 and January, February, March, April, and May 2021. Mean number of family members in attendance in the family psychoeducation group prior to the pandemic was 8.3, and mean number of family members in attendance during the pandemic was 17.1.

DISCUSSION

The abrupt onset of COVID-19 restrictions in March 2020 posed unforeseen challenges to ensure mental health care during the pandemic, from a public health perspective and, in particular, for health care personnel and people receiving clinical care.¹⁶ In the United States, the temporary lockdown evolved into a prolonged period of ongoing restrictions. Specific to our EP program, we intended to ensure continuity of CSC to our participants and their families, ie, pursue clinical stabilization and functional improvement as essential elements to promote long-term recovery. Our program quickly implemented telehealth services, and we were impressed by the positive acceptance of these services by the individuals enrolled in our clinic. For most participants, in particular those not experiencing challenges with engagement due to internal preoccupation or disorganization, telehealth provided a feasible delivery-ofcare option with less disruption in other daily activities and obligations, such as school or work. In particular, this option limited the potential burden of lengthy commuting, as our program serves a large metropolitan area. Initially, more people cancelled appointments assuming that in-person services would be made available soon. As pandemic-related stay-at-home orders were extended, individuals were more open to telehealth appointments. Also, engagement in new evaluations was lower, perhaps due to associated challenges (eg, reluctance to participate in video-based evaluations, decreased referrals from inpatient and outpatient providers, and, possibly, financial considerations), before rebounding. Medication management psychotherapy and SEES appointments remained stable throughout the COVID-19 period.

There were limitations to our conclusions regarding feasibility. The transition to telehealth occurred during COVID-19 and people were mostly homebound, which may contribute to higher engagement in care and motivation to maintain stability and social connectedness while people are physically distanced. As we evaluated service delivery over a limited period of time, it remains uncertain whether this level of engagement can be maintained over time, and longer follow-up will illustrate continued feasibility of telehealth CSC delivery in EP care. Nevertheless, the continued engagement in services delivered remotely offers strong support to continue a hybrid model of telehealth and in-person services within CSC for EP beyond COVID-19, as clinically and economically feasible.

Additionally, we describe the sudden transition and feasibility of delivering virtual CSC services; future research can address effectiveness and evaluate how telehealth services impact clinical course and psychosocial functioning. Additionally, the general demographics of our cohort limit the generalizability of the findings. These demographics are important to consider due to findings that reveal differences in attendance and level of engagement with telehealth related to age, insurance coverage, household income, English fluency, ethnicity, and race.¹⁷

CONCLUSION

Access to care for individuals in the early stages of psychosis is vital, and increasing opportunities to make connections with providers could contribute to engaging in and maintaining FEP services by more people.⁷ Research exploring additional strategies for increasing and maintaining engagement across services is needed in FEP, and the rapid transition to remote care during the COVID-19 pandemic offers an opportunity to evaluate the feasibility of providing services virtually.^{5,11}

Our record of engagement across services in a coordinated specialty care setting for individuals in the early stages of psychosis offers providers additional insight about feasibility of remote engagement and gives providers ideas of ways to connect, especially when transportation is a barrier to care. Methods for connection include using a HIPAA-compliant video-audio platform or starting with audio and progressing toward video-audio as comfort with this interface increases. Remote engagement should be considered for a variety of services, including groups, peer support, and educational and vocational support in addition to therapy and medication management.

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Additional information: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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