



## Research Letters

**Cite this article:** Chaudhry S, Roy R, Mansourian K, Weiss A, Breier A. Psychosis, telehealth, and COVID-19: Engagement and hospitalization pre- and peri-pandemic. *Disaster Med Public Health Prep.* 17(e493), 1–2. doi: <https://doi.org/10.1017/dmp.2023.144>.

**Keywords:** coordinated specialty care; psychosis; patient engagement; hospitalizations; telehealth

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# Psychosis, Telehealth, and COVID-19: Engagement and Hospitalization Pre- and Peri-Pandemic

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Telehealth has become the linchpin of virtual care since the coronavirus disease 2019 (COVID-19) pandemic. Research has shown the use of telehealth has improved patient engagement, medication adherence, and satisfaction.<sup>1–3</sup> Psychiatry is poised to benefit from telehealth because individual psychotherapy and parts of medication management can be done virtually. However, some practitioners believe telehealth interferes with rapport building, detection of nonverbal cues, continuity of care, and collection of physiological data.<sup>4</sup> This is a particular issue for coordinated specialty care (CSC), an evidence-based practice that relies on multiple specialties and high levels of patient engagement to improve outcomes in patients with first-episode psychosis (FEP).<sup>5</sup>

The Early Psychosis Intervention Clinic New Orleans (EPIC-NOLA) provides CSC to patients experiencing their first episode of psychosis. During the COVID-19 pandemic, EPIC-NOLA transitioned from in-person to telehealth care. The clinic team published a study comparing patient engagement and hospitalization rates between telehealth and in-person care,<sup>3</sup> and found a higher patient engagement rate with telehealth, and no difference in hospitalization rates. This research letter serves as a follow-up analysis to the original publication.<sup>3</sup> The primary aim is examining engagement and hospitalization rates with the different treatment modalities for FEP care during an extended time period beyond the acute phase of the pandemic.

## Methods

Deidentified electronic medical records from EPIC were collected from March 16 to May 15 of 2019, 2020, 2021, and 2022. A demographic breakdown of patients is detailed in [Table 1](#).

A series of Pearson chi-squared analyses was conducted to assess for potential associations between: year and engagement rates, year and hospitalizations rates, appointment method and hospitalization rate (only for 2021 and 2022), and year and appointment method.

Finally, a series of 1-way analyses of variance (ANOVAs) were conducted to assess the effects of appointment method on show and no-show rates in 2021 and 2022. Partial eta-squared effect sizes were measured and interpreted as: small = 0.01, medium = 0.06, and large = 0.14. Tukey posthoc analyses were run for significant effects. All analyses were conducted using IBM SPSS Statistics v. 27.

## Results

Between March 16 and May 15 of each year, 173 patients were seen at EPIC-NOLA in 2019 with a total of 837 patient encounters, 152 patients were seen in 2020 with a total of 702 patient encounters, 226 patients were seen in 2021 with a total of 944 patient encounters, and 177 patients were seen in 2022 with a total of 765 patient encounters.

A chi-squared test showed a significant association between the year and engagement ( $\chi^2 = 34.37$ ;  $P < 0.001$ ) with the highest engagement rate in 2020 (91%) and the lowest in 2019 (80%). Middling levels were found for 2021 (84%) and 2022 (86%). A significant association was found between the year and hospitalization rates ( $\chi^2 = 8.64$ ;  $P = 0.03$ ) with the hospitalization rates of 2019 (7%) and 2022 (7%) lower than in 2020 (12%) and higher than in 2021 (4%).

A chi-squared analysis revealed no significant association between the appointment method and hospitalization rates in 2021 ( $\chi^2 = 0.37$ ;  $P = 0.83$ ) and 2022 ( $\chi^2 = 2.53$ ;  $P = 0.28$ ). Further analysis revealed a significant association between the year and the appointment method ( $\chi^2 = 47.36$ ;  $P < 0.001$ ), showing telehealth was the most common method in 2021 and in-person was most common in 2022 ([Table 2](#)).

One-way ANOVAs showed a significant effect of appointment method on show rate in 2021 ( $F(2, 146) = 7.23$ ;  $P = 0.01$ ;  $\eta_p^2 = .09$ ) and 2022 ( $F(2, 132) = 13.29$ ;  $P < 0.01$ ;  $\eta_p^2 = .17$ ). Tukey post

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**Table 1.** Appointment demographic breakdown

	2019	2020	2021	2022
Client race				
American Indian or Alaska Native	0	0	0	1
Asian	21	11	5	5
Black	403	296	443	283
Hispanic	4	0	0	0
Unreported	128	184	220	306
White	281	211	276	170
Total	837	702	944	765
Client sex				
Male	548	398	627	444
Female	289	304	317	321

Note: 2019 was all in-person, 2020 was all telehealth, 2021 and 2022 were telehealth, in-person, and hybrid care. These data reflect appointments, not individual patients.

**Table 2.** Hospitalizations by visit type

	2021			2022		
	Visit count type	No hospitalizations	Hospitalizations	Visit count type	No hospitalizations	Hospitalizations
Hybrid	34 (23%)	33 (23%)	1 (17%)	45 (33%)	44 (35%)	1 (13%)
In-person	15 (10%)	14 (10%)	1 (17%)	51 (38%)	46 (36%)	5 (63%)
Telehealth	100 (67%)	96 (67%)	4 (66%)	39 (29%)	37 (29%)	2 (25%)
Total	149	143	6	135	127	8

hoc tests revealed that rates were higher for hybrid (2021:  $M = 6.28$ ;  $SD = 2.81$ ; 2022:  $M = 6.14$ ;  $SD = 2.43$ ) compared with both in-person (2021:  $M = 2.73$ ;  $SD = 3.52$ ;  $P = 0.002$ ; 2022:  $M = 3.5$ ;  $SD = 3.33$ ;  $P < 0.001$ ) and telehealth (2021:  $M = 4.18$ ;  $SD = 3.43$ ;  $P = 0.006$ ; 2022:  $M = 3.41$ ;  $SD = 2.49$ ;  $P < 0.001$ ).

## Discussion

Engagement at EPIC-NOLA spiked in 2020 and stabilized in 2021 and 2022. Underlying these trends is the inclusion of telehealth and hybrid care (receiving care both in-person and by means of telehealth) as a treatment model. While this study cannot assign cause to the spike in patient engagement during 2020, it is irrefutable that telehealth facilitated engagement as it was the only way to engage at the time. The years 2021 and 2022 saw the introduction of a hybrid method of care which may explain heightened engagement levels compared with 2019. The reduction in engagement from 2020 levels in these years may reflect the end of isolation, and more opportunities for alternative interaction.

The hospitalization rate at the beginning of the study period in 2019 was 7%. The rate increased in 2020 (12%), decreased in 2021 (4%), and increased again in 2022 (7%). The 7% hospitalization rates of 2019 and 2022 are particularly notable when considering each year had 12 hospitalizations of 173 and 177 total patients, respectively. This similarity suggests that a mixed model of care (in-person, telehealth, and hybrid) has similar effectiveness in reducing hospitalizations postpandemic as the standard in-person care model prepandemic.

Hybrid care had the highest average of 2021 and 2022 by a notable margin. This suggests that hybrid care represents a “best of

both worlds” position in terms of telehealth and in-person care whereby the flexibility of the model allows for optimal solutions to barriers to engagement. However, receiving hybrid did not yield the lowest hospitalization rates. Chi-squared results revealed no significant association between the appointment method and hospitalization rates for patients. It was surprising that high rates of patient engagement in hybrid care did not result in significantly lower hospitalizations; understanding why presents an interesting avenue for future research.

## References

1. Crisanti AS, Altschul D, Smart L, *et al.* Implementation of coordinated specialty services for first episode psychosis in rural and frontier communities. 2015. Accessed August 24, 2023. <https://bhsd.sccgov.org/site/g/files/exjcpb711/files/nasmhpd-implementation-css-for-fep-rural-fact-sheet-2015.pdf>
2. Patel SR, Bello I, Cabassa LJ, *et al.* Adapting coordinated specialty care in the post-covid-19 era: study protocol for an integrative mixed-methods study. *Implement Sci Commun.* 2021;2(1):72. doi: 10.1186/s43058-021-00178-x
3. Chaudhry S, Weiss A, Dillon G, *et al.* Psychosis, telehealth, and covid-19: Successes and lessons learned from the first wave of the pandemic. *Disaster Med Public Health Prep.* 2021;16(5):1785-1788. doi: 10.1017/dmp.2021.42
4. Imlach F, McKinlay E, Middleton L, *et al.* Telehealth consultations in general practice during a pandemic lockdown: survey and interviews on patient experiences and preferences. *BMC Fam Pract.* 2020;21(1):269. doi: 10.1186/s12875-020-01336-1
5. Dixon LB, Goldman HH, Bennett ME, *et al.* Implementing coordinated specialty care for early psychosis: the raise connection program. *Psychiatr Serv.* 2015;66(7):691-698. doi: 10.1176/appi.ps.201400281