A Telemedicine Buprenorphine Clinic to Serve New York City: Initial Evaluation of the NYC Public Hospital System's Initiative to Expand Treatment Access During the COVID-19 Pandemic

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Objectives: The purpose of this study was to assess the feasibility and clinical impact of telemedicine-based opioid treatment with buprenorphine-naloxone following the Coronavirus disease 2019 pandemic.

Methods: Participants included in this retrospective analysis consisted of adult New York City residents with opioid use disorder eligible for enrollment in the NYC Health+Hospitals Virtual Buprenorphine Clinic between March and May 2020 (n = 78). Follow-up data were comprised of rates of retention in treatment at 2 months, referrals to community treatment, and induction-related events.

Results: During the initial 9 weeks of clinic operations, the clinic inducted 78 patients on to buprenorphine-naloxone and completed 252 visits. Patient referrals included non-NYC Health + Hospitals (n = 22, 28.2%) and NYC Health + Hospitals healthcare providers (n = 17, 21.8%), homeless shelter staff (n = 13, 16.7%), and the NYC Health + Hospitals jail reentry program in Rikers Island (n = 11, 14.1%). At 8 weeks, 42 patients remained in care (53.8%), 21 were referred to a community treatment program (26.9%), and 15 were lost to follow-up (19.2%). No patients were terminated from care due to disruptive behavior or suspicions of diversion or misuse of Buprenorphine. Adverse clinical outcomes were uncommon and included persistent withdrawal symptoms (n = 8, 4.3%) and one nonfatal opioid overdose (0.5%).

Conclusions: Telemedicine-based opioid treatment and unobserved home induction on buprenorphine-naloxone offers a safe and feasible approach to expand the reach of opioid use disorder treatment, primary care, and behavioral health for a highly vulnerable urban population during an unprecedented natural disaster.

Key Words: buprenorphine, disasters, opioid related disorders, telemedicine

(*J Addict Med* 2022;16: e40–e43)

The Coronavirus disease 2019 (COVID-19) pandemic has led to significant loss of life and potential increases in opioid overdose fatalities due to social distancing measures, reduced hospital capacity, and exacerbating barriers to accessing medications for opioid use disorder (OUD).[1,2]

Telemedicine-based opioid treatment (TBOT) with buprenorphine-naloxone (BUP-NX) using video conferencing and telephonic visits offers an efficacious approach to increase access to OUD treatment.[3–6] Further, most substance use disorder telehealth studies have been studied in rural settings and less is known about its role in urban areas or during natural disasters.[6]

New York City (NYC) experienced the largest early surge of COVID-19 infections in the US. To mitigate disruptions in OUD treatment, NYC Health + Hospitals (NYC H + H) and Bellevue Hospital launched the NYC H + H Virtual Buprenorphine Clinic to facilitate same-day telemedicine visits to initiate BUP-NX. We conducted a retrospective chart review to evaluate the feasibility and clinical impact of TBOT at 2 months among patients initiating BUP-NX treatment.

METHODS

Population and Recruitment

The study included patients enrolled in treatment between March 26, 2020 through May 28, 2020. The NYU SOM IRB approved the study protocol. Clinical protocols for the TBOT program are mostly identical to procedures

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Received for publication August 6, 2020; accepted December 5, 2020.

BT, JM, NK, TR, AD and DS made substantial contributions to conception and design; DW, KF, CSC, and IS collected the data, all co-authors were involved with the interpretation of data and drafting the manuscript.

BT was supported by the National Institute on Drug Abuse (K23DA042140-01A1). The project was sponsored by NYC Health+Hospitals.

The authors report no conflicts of interest.

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ISSN: 1932-0620/21/1601-0e40

DOI: 10.1097/ADM.0000000000000809

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described previously in the Bellevue Hospital office-based opioid treatment (OBOT) program. The clinic was available to insured and uninsured adult NYC residents at no cost.

Clinic Workflow

The clinic workflow is elaborated in Figure 1 and was structured around the Medical Management model. The initial visit consisted of a standard 30 to 45-minute evaluation using video conferencing or via audio technology only if patients lacked smartphone ownership. Patients' self-reported medical history and receipt of prescription opioids were confirmed by reviewing the EMR and the NY state prescription drug monitoring database. At the first visit, providers reviewed the instructions on home-induction of buprenorphine,[8] sent a pdf copy of the home-induction pamphlet via email, offered referrals to NYC H+H telemedicine primary care providers, psychiatrists, and intensive outpatient program staff, and prescribed BUP-NX and Naloxone to a community pharmacy. Before concluding the visit, patients verbalized their home-induction plan and agreement to abide by clinic guidelines.

Between-visit patient calls were made the day after each visit by trained medical students and the clinic coordinator to address unanticipated clinical and administrative issues, including receipt of prescribed BUP-NX. This additional task was added to the workflow due to the observed high burden of medical and psychiatric comorbidities, unstable housing, and uninsured status among patients initiating care. Follow-up visits consisted of 20 to 30-minute encounters that were scheduled every 1 to 2 weeks. Given the risk of COVID-19 infection, patients did not present in-person and prohibited the collection of urine toxicology testing. Patients who did not attend scheduled appointments were called (×3 attempts daily) over the subsequent 2 to 3 days to reengage with care.

Data Collection and Analysis

All patients completing an initial visit between March 26, 2020 through May 28, 2020 were included in this retrospective chart review. Patient characteristics, clinic attendance, and prescription records were extracted from the electronic medical record and a clinic registry, and were entered into Research Electronic Data Capture (REDCap). Baseline data consisted of patient demographic characteristics, telephone access (eg, smartphone, basic mobile phone), and clinical characteristics (eg, medical, psychiatric, substance use, HIV and Hepatitis C status, and addiction treatment histories). Data were not captured after individuals left the clinic or were lost to clinical follow-up. Analysis was conducted using descriptive statistics (eg, counts, proportions) to characterize demographic and clinical characteristics.

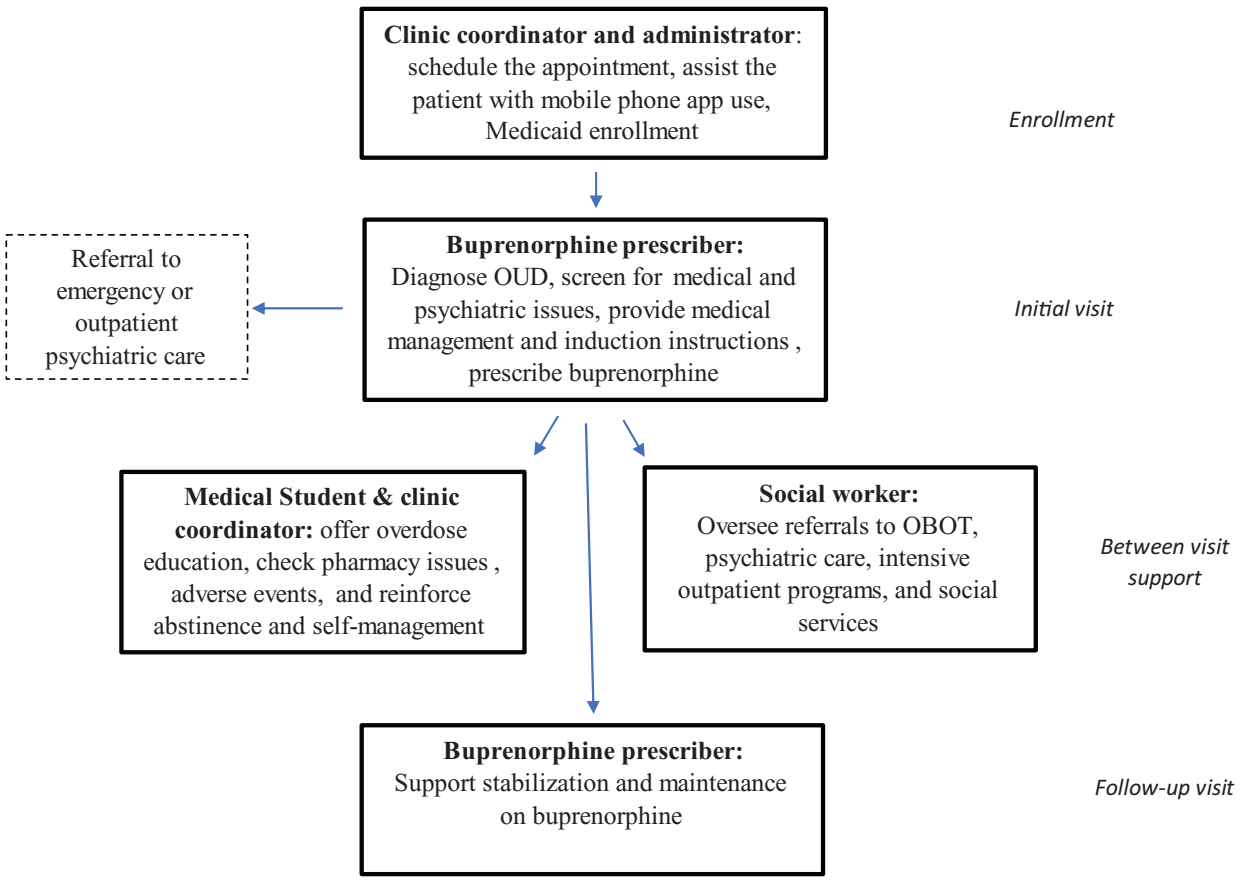


FIGURE 1. The virtual buprenorphine clinic workflow.

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RESULTS

Patient Demographic and Clinical Characteristics

The clinic successfully initiated 78 patients on to BUP-NX and completed 252 visits during the initial 9 weeks of clinic operations. The clinic population was mostly male (n = 65, 83.3%) and enrolled in Medicaid (n = 55, 70.5%) (see Table 1).

Patients were referred to the program from non-NYC H+H (n = 22, 28.2%) and NYC H + H providers (n = 17, 21.8%), homeless shelter case management or nursing staff (n = 13, 16.7%), the NYC H + H jail reentry program (n = 11, 14.1%), word of mouth (n = 5, 6.4%), social media (n = 4, 5.1%), clinical trials involving patients with OUD (n = 3, 3.8%), and the NYC Department of Health and Mental Hygiene mental health hotline and website (NYC WELL) (n = 2, 2.6%).

At the time of clinic entry, nearly one third of patients were new to the NYC H + H system (n = 24, 30.8%). Patients self-reported heroin (n = 67, 88.2%), prescription opioid misuse (n = 23, 30.3%), alcohol (n = 25, 32.9%), crack/cocaine (n = 14, 18.4%), cocaine (n = 33, 43.4%), benzodiazepine misuse (n = 17, 22.4%), cannabis (n = 34, 44.7%). Nearly half of patients reported intravenous drug use (n = 37, 49.3%).

Nearly all patients reported past year receipt of prescribed buprenorphine (n = 73, 93.1%). Most sources of buprenorphine were from a physician in primary care or specialty addiction treatment (n = 33, 56.9%) or in a correctional health setting (n = 13, 22.4%). Fewer patients reported any past year receipt of methadone from an opioid treatment program (n = 14, 17.9%). Approximately half of patients possessed Naloxone at the time of their initial visit (n = 34, 45.9%). Commonly reported psychiatric comorbidities consisted of depression (n = 24, 31.2%), anxiety d/o (n = 24, 31.2%), and bipolar disorder (n = 13, 16.9%).

TABLE 1. Study Sample Demographic Characteristics

	Study Sample n = 78, n (%)
Male	65 (83.3%)
Insurance	
Medicaid	55 (70.5%)
Privately insured	8 (10.3%)
Uninsured	8 (10.3%)
Medicare	5 (6.4%)
Housing status	
Own residence	22 (28.2%)
Homeless shelter or hotel	29 (37.2%)
Temporarily residing with friends/family	14 (17.9%)
Street homeless	9 (11.5%)
Other*	4 (5.1%)
Race/Ethnicity	
White non-Hispanic	25 (34.2%)
Black non-Hispanic	14 (19.2%)
Hispanic/Latinx	27 (34.6%)
Other	12 (15.4%)
Mobile phone ownership	
Smartphone	33 (47.1%)
Basic cell phone	20 (28.6%)
Shelter/hotel phone	10 (14.3%)
Other†	7 (10%)
Borough of residence	
Manhattan	31 (41.9%)
Brooklyn	18 (24.3%)
Bronx	13 (17.6%)
Queens	8 (10.8%)
Staten Island	4 (5.4%)
Prior criminal justice involvement	37 (48.7%)
Past year detention or incarceration	25 (32.9%)

*Includes nursing homes, residential treatment programs, and transitional housing.
†Includes friends, family, free NYC WiFi kiosks.

Outcomes at 2 Months

Among the initial cohort of patients followed at 8 weeks, 42 patients remained in the TBOT program (53.8%), 21 were successfully transitioned to a community treatment program (26.9%), 15 were lost to follow-up (19.2%), and none were terminated from care due to suspicions of diversion or misuse. Referrals to community treatment consisted of NYC H+H affiliated and nonaffiliated OBOT programs (n = 8/21, 38.1%), opioid treatment programs (n = 5, 23.8%), and other addiction treatment services providing medications for OUD (eg, residential treatment, intensive outpatient programs; n = 8/21, 31.8%).

Twenty-nine patients were prescribed naloxone during their initial visit (37.2%). Adverse clinical outcomes among this cohort (n = 78) were uncommon and included persistent withdrawal symptoms (n = 8, 10.3%) and one non-fatal opioid overdose (1.3%). Some patients experienced difficulties receiving buprenorphine from the pharmacy following their initial visit (n = 17, 21.8%) and attributed to insurance coverage issues, inadequate pharmacy supplies of medication, and difficulties with electronic prescribing.

DISCUSSION

This naturalistic registry study demonstrated the safety and feasibility of TBOT with buprenorphine among a mostly underserved urban population. Loss-to-follow-up among patients enrolled in TBOT at 8 weeks and not transitioned to community treatment was relatively low (19.2%) and comparable to prior studies of in-person OBOT.[7,8] These encouraging findings may be partially attributed to the role of telemedicine in circumventing factors impeding retention in NYC, such as transportation issues, termination of care due to rigid clinic protocols, family/childcare obligations, or stigma associated with traditional treatment programs.[9] However, TBOT also presents challenges to ensuring optimal retention in care, including the treatment of a more vulnerable and underserved population with high rates of turnover of mobile phones and phone numbers, lack of internet access among low-income and rural populations, and correlating self-reported treatment adherence with laboratory testing.

The generalizability of our findings may be limited due to the availability of same-day treatment entry, low-threshold initiation on BUP-NX among mostly underserved patients typically unable to enroll in private sector settings, and the availability of medical students to enhance between-visit patient support. The study team was also unable to assess treatment retention among patients transitioned to community treatment.

CONCLUSIONS

TBOT offers an innovative approach to enhancing low-threshold and same-day access to BUP-NX for underserved

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populations with OUD with limited past year engagement with addiction treatment.

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