


Telephonic Outreach to Engage Patients with Substance Use Disorder Post-Hospitalization During the COVID-19 Pandemic



Carla King, MPH 
Drezzell Douglas, MPH
Lynsey Avalone, MPH, LMSW
Noa Appleton, MPH
Rebecca Linn-Walton, PhD, LCSW
Charles Barron, MD
Jennifer McNeely, MD, MS

Abstract

During the initial COVID-19 surge, one public hospital in NYC updated their post-discharge outreach approach for patients with substance use disorder, as part of the CATCH (Consult for Addiction Treatment and Care in Hospitals) program. Beginning April 1, 2020, three peers and two

Address correspondence to Carla King, Office of Behavioral Health, NYC Health + Hospitals, New York, NY, USA. kingc12@nychhc.org.

Lynsey Avalone, Office of Behavioral Health, NYC Health + Hospitals, New York, NY, USA. kingc12@nychhc.org.

Rebecca Linn-Walton, Office of Behavioral Health, NYC Health + Hospitals, New York, NY, USA. kingc12@nychhc.org.

Charles Barron, Office of Behavioral Health, NYC Health + Hospitals, New York, NY, USA. kingc12@nychhc.org.

Carla King, Department of Population Health, Section On Tobacco, Alcohol, and Drug Use, NYU Grossman School of Medicine, New York, NY, USA.

Noa Appleton, Department of Population Health, Section On Tobacco, Alcohol, and Drug Use, NYU Grossman School of Medicine, New York, NY, USA.

Jennifer McNeely, Department of Population Health, Section On Tobacco, Alcohol, and Drug Use, NYU Grossman School of Medicine, New York, NY, USA.

Drezzell Douglas, Graduate School of Public Health & Health Policy, City University of New York, New York, NY, USA.

The Journal of Behavioral Health Services & Research, 2023. 540–547. © 2023, National Council for Mental Wellbeing. DOI 10.1007/s11414-023-09837-4

addiction counselors attempted telephonic outreach to patients who received a CATCH consultation during hospitalization from program launch (October 7, 2019) through March 31, 2020 (n = 329). Outreach calls could include counseling, in-depth peer support, and referrals to substance use services (SUS)—a significant expansion of the services offered via outreach pre-pandemic. CATCH staff successfully reached 29.5% of patients and provided 77.6% of them with supportive counseling and referrals. Thirty percent of unsuccessful calls were due to inactive numbers, and only 8% of patients without housing were reached. Telephonic outreach established a low-barrier connection between patients and SUS that may be valuable during any period, including non-COVID times. Future interventions that address social determinants such as housing and cell phone access concomitantly with substance use should be considered by addiction consultation services to potentially reduce acute care utilization and improve health outcomes.

Keywords **Addiction consultation · Telephonic outreach · Peers · COVID-19**

Abbreviations

CATCH Consult for Addiction Treatment and Care in Hospitals
EHR Electronic health record
MAT Medication for addiction treatment
OASAS Office of Addiction Services and Supports
SUD Substance use disorder
SUS Substance use services

Introduction

Innovative programs to reduce overdose deaths, engage patients in substance use treatment and decrease associated healthcare costs are needed.^{1,2} In 2016, New York City (NYC) reported 1425 unintentional overdose drug deaths, a rate of 20.7 per 100,000 residents, 82% of which were attributed to opioids.³ In response, in 2017, the City of New York Office of the Mayor announced *HealingNYC*, a commitment of \$38 million annually to reduce opioid-related overdose deaths over five years.⁴ Among the initiatives supported by this funding was the launch of the “Consult for Addiction Treatment and Care in Hospitals (CATCH)” program, which now operates at six NYC public hospitals.

Under the CATCH model, medically trained addiction providers, social workers, addiction counselors, and peers with lived experience in addiction engage with hospitalized patients who have diagnosed or suspected substance use disorder (SUD), including but not limited to opioid use disorder (OUD), and are admitted to the hospital for medical reasons.⁵ Teams provide assessments, counseling, medications for addiction treatment (MAT), and referrals to substance use services (SUS), including SUD treatment, harm reduction, and recovery support. By engaging patients with compassion and respect, CATCH aims to improve patient initiation of MAT and linkage to SUS after hospitalization. This is supported in part by post-discharge outreach where a peer or addiction counselor calls a patient within a week of hospital discharge to confirm their referral or receipt of MAT.

COVID-19 presented significant challenges to the provision of SUS, particularly in NYC, which was an early epicenter for the pandemic in the USA.⁶ As government officials instituted mandatory stay-at-home orders and hospitals struggled to quickly implement distancing practices, NYC public

hospital patients with SUD faced disrupted access to SUS.⁷ CATCH consultations predictably decreased along with non-COVID-19 related hospital admissions during the spring surge in 2020.⁸

Following federal guidance, the Office of Addiction Services and Supports (OASAS) in New York State issued an emergency waiver allowing licensed providers at regulated facilities to provide reimbursable SUS using audiovisual or audio-only equipment, including MAT, counseling, and peer support.⁹ While CATCH medical providers and social workers were largely reassigned to overburdened medical departments in late March 2020, peers and addiction counselors remained available for patient outreach. The relaxation of restrictions that prohibited telephonic and virtual counseling/peer support meant that counselors and peers were able to innovate new methods for providing patient support. CATCH addiction counselors and peers at one NYC public hospital changed their approach by including comprehensive counseling, in-depth peer support, and tele-delivered MAT appointments with CATCH medical providers as part of their post-discharge outreach. The goal of this new approach was to address the potential worsening of SUD associated with COVID-19 and the disruption of in-person SUD programs.

Numerous studies support the effectiveness of tele-delivered care for patients with SUD.¹⁰⁻¹³ However, there is limited empirical evidence on the outcomes of telephonic outreach to patients with SUD after hospitalization, particularly during a period with mandatory and isolating stay-at-home orders. The purpose of this brief is to describe the outcomes of this new telephonic outreach approach utilized by CATCH peers and addiction counselors at one publicly funded NYC hospital during the initial COVID-19 surge and consider recommendations for future integration of this service into addiction consult models.

Methods

CATCH outreach

Prior to April 1, 2020, CATCH outreach calls primarily targeted patients who were discharged from the hospital with a referral to SUS. A peer made a brief outreach call within seven days of discharge to ensure patients made it to their referral location or were able pickup medications, as appropriate. Teams did not provide more intensive or ongoing counseling, or peer support. Beginning April 1, 2020, three peers and two addiction counselors from one NYC public hospital initiated a more intensive telephonic outreach approach to all patients who had received a CATCH consultation during hospitalization from the time of program launch (October 7, 2019) through March 31, 2020. These outreach calls differed in that peers and addiction counselors now offered more comprehensive services (i.e., more in-depth peer support, counseling, and referrals) and scheduled telehealth appointments with CATCH medical providers, if needed. CATCH staff “cold called” patients (or collaterals, including family members or friends, if listed as the primary contact) by phone, and after receiving verbal HIPAA consent, asked about a patient’s wellbeing, listened to their concerns, provided emotional support, assessed the need for SUS, and offered a follow-up call for a more structured counseling session or continued peer support. Counselors (and peers, with the support of counselors) also provided referrals to treatment/harm reduction programs and community-based MAT providers. Naloxone kits were only available for in-person pickup during this time, but were recommended when appropriate. When staff did not make contact initially, they attempted two additional outreach calls, unless contact numbers were out of service. Staff left a message, when voicemail was available and they had prior consent for doing so, by stating their name, a description of their role at the hospital, and providing a callback number. Staff recorded all outreach attempts in the electronic health record (EHR).

Analysis

The study team collected EHR data from CATCH outreach calls made between April 1 and May 31, 2020. Outreaches were coded as “successful” if one or more attempts resulted in a conversation between a peer/addiction counselor and a patient/collateral, or “unsuccessful” when there was no direct conversation. Leaving a message without reaching the patient was categorized as “unsuccessful.” The calls were further coded to specify outcomes, including “SUS referral provided,” “follow-up call/telehealth visit scheduled,” or “inactive contact number.” “Supportive counseling” was defined as a peer or counselor who provided support, listened, and helped address SUD concerns during the cold call. If a patient received “supportive counseling” and scheduled a follow-up call/telehealth visit, the encounter was coded as “Follow-up Call/Telehealth Visit Scheduled.” The authors used chi-squared tests in SAS Enterprise 7.1 to test associations between call outcomes and demographics, except for age (a continuous variable) where a *t*-test was used. The Institutional Review Board of NYU Grossman School of Medicine approved the study protocol.

Results

Overall, CATCH peers and addiction counselors outreached to 329 unique patients between April 1 and May 31, 2020, and successfully reached 97 patients (29.5%). Table 1 presents unique patient demographics by “successful” and “unsuccessful” groups. Patients were predominantly male (76.6%), white (48.9%), and had a historical diagnosis of alcohol use disorder (54.7%), reflecting a representative sample of the CATCH patient population at this hospital. Housing status was significantly associated with call outcome ($X^2(3) = 11.00, p = 0.01$); only 8% ($n = 2$) of patients without housing had a successful outreach compared to 29% ($n = 54$) of those in a private residence. Apart from housing status, there were no significant differences between groups on other demographic variables.

Table 2 provides a breakdown of outcomes by call. Most successful calls ($n = 83, 77.6%$) provided patients with supportive counseling for SUD and resources for SUS. Patients accepted a follow-up call/telehealth visit with the CATCH counselor or peer for continued supportive counseling in 19.6% ($n = 21$) of successful calls and attended 47.6% ($n = 10$) of these scheduled visits. Thirty percent ($n = 81$) of unsuccessful calls were attributed to an inactive contact number.

Discussion

In this analysis of telephonic outreach during the height of the COVID-19 pandemic, CATCH peers and counselors at one NYC public hospital successfully outreached to just over a quarter of former CATCH patients, and provided supportive counseling and re-connections to SUS in over three-quarters of those calls. Telephonic outreach established a low-barrier connection for patients with SUD to counseling and peer support that could be valuable during any period, including non-COVID times. The COVID-19 pandemic expedited the transition to telephonic delivery of SUS and the outcomes of this study support its integration into post-discharge outreach protocols delivered by addiction consultation services.

The findings suggest that outreach calls can be practical and helpful for patients with SUD, particularly when a patient needs additional support or a referral to treatment in the weeks and months after hospitalization. The successful connection to about 30% of patients is in line with other findings when considering the lapse in time from discharge to outreach. One randomized navigation intervention found 36% of patients completed 4 navigation calls in the 21 days after

Table 1

Unique patient demographics by outreach outcome

	Overall	%	Successful ^a		Unsuccessful ^b		<i>P</i> ^c
	<i>n</i>		<i>n</i>	%	<i>n</i>	%	
Unique patients	329	100.0	97	29.5	232	70.5	
Age (M ± SD)	48.5 ± 13.0		49.7 ± 13.0		48.1 ± 13.0		.31
Sex							.35
Female	77	23.4	26	26.8	51	22.0	
Male	252	76.6	71	73.2	181	78.0	
Race							.30
Asian	9	2.7	3	3.1	6	2.6	
Black	56	17.0	14	14.4	42	18.1	
White	161	48.9	43	44.3	118	50.9	
Other	96	29.2	33	34.0	63	27.2	
Missing	7	2.1	4	4.1	3	1.3	
Substance use disorder ^{d, e}							.58
OUD	45	13.7	12	12.4	33	14.2	
AUD	180	54.7	49	50.5	131	56.5	
Other SUD	33	10.0	11	11.3	22	9.5	
Missing	71	21.6	25	25.8	46	19.8	
Housing status							.01*
Private residence	186	56.5	54	55.7	132	56.9	
Homeless	25	7.6	2	2.1	23	9.9	
Other	26	7.9	5	5.2	21	9.1	
Missing	92	28.0	36	37.1	56	24.1	
Insurance ^f							.41
Medicaid	234	71.1	63	65.0	171	73.7	
Medicare	48	14.6	16	16.5	32	13.8	
Commercial	36	10.9	14	14.4	22	9.5	
Uninsured/self-pay	11	3.3	4	4.1	7	3.0	

*Statistically significant at alpha level 0.5

^aPatients were coded as successful if 1 or more outreaches was successful; ^bPatients were coded as unsuccessful if all outreaches were unsuccessful; ^c*p*-value of chi-squared test (or *t*-test, for age) comparing “successful” and “unsuccessful” groups; ^dOUD opioid use disorder, AUD alcohol use disorder, SUD substance use disorder; ^eAs indicated on the patient’s problem list. Patients with opioid use and any other substance use were classified as “OUD,” patients with alcohol use and any other substance use excluding opioids were classified as “AUD,” and patients with any substance use excluding opioids, alcohol and tobacco were classified as “Other SUD.” ^fInsurance as indicated in the patient’s electronic health record

Bolded values represent the total value for each column

seeing the addiction consult service during hospital admission.¹⁴ For patients who fall out of treatment after the initial post-discharge referral, outreach could be helpful for motivating re-initiation of treatment. A pilot study of community-based participants with a history of opioid

Table 2

Results of successful and unsuccessful telephone encounters

	<i>n</i>	%
Total calls	375	100
Successful ^a	107	28.5
Supportive counseling/SUS referral resources provided	83	77.6
Follow-up call/telehealth visit scheduled ^c	21	19.6
Other (appointment reminders, COVID information)	3	2.8
Unsuccessful ^b	268	71.5
Left message	102	38.1
No working contact number	81	30.2
No answer/patient unavailable	66	24.6
Patient/collateral declined/refused call	14	5.2
Other (deceased, admitted to hospital)	5	1.9

^aContact was made between patient/collateral and CATCH staff; ^bNo contact was made between patient/collateral and CATCH staff; ^cIf a patient received supportive counseling/resources and scheduled a follow-up call/telehealth visit, the call outcome was coded as “Follow-up call/telehealth visit scheduled”

Bolded values represent the total value for each column

overdose found that brief telephonic intervention with a peer may reduce future opioid overdoses and increase MAT uptake.¹⁵ While the current study could not assess these more distal outcomes, engaging patients and providing support or referrals was a critical step after a significant health event. Similarly, while peer post-discharge outreach after inpatient addiction consultation did not significantly reduce a patient’s substance use at 30 and 60-day follow-up, it may still be a helpful addition to existing services when patients are not enrolled in treatment.¹⁴

In this urban public hospital population, almost a third of unsuccessful outreaches were to patients with an inactive phone number and 10% lacked stable housing. These findings highlight a potential limitation of telephonic outreach when serving a safety net population. Acquiring and maintaining a mobile phone and phone number, accessing the internet, or securing a private location are well-documented barriers to tele-provided care in NYC and elsewhere.^{13,16} Existing structural and racial inequities also limit the ability of vulnerable groups to engage in telehealth services,¹⁷ and thus, increasing outreach efforts without an investment into the necessary inputs or other social determinants could exacerbate these disparities. In a randomized trial in Baltimore, social workers provided patients who were seen by the addiction consultation service with motivational interventions, treatment, and care coordination alongside resource coordination (food, housing, clothing, transportation) via telephone and in-person visits for up to 3 months post-hospital discharge.¹⁸ Patients receiving the intervention had fewer inpatient readmissions within 30 days and greater initiation into SUD treatment programs post-discharge.¹⁸ While this intervention included an in-person component and utilized social workers, the results underscore the potential importance of addressing other social determinants concomitantly with substance use. Future studies could evaluate the effectiveness of this service when delivered via telehealth, with other addiction consultation staff, including peers or addiction counselors, and with support for cell phones with long-term data or internet plans and additional components like text messaging.

These findings inform the adaptation of existing models to better serve patients post-hospitalization, during and after the pandemic. Regulations to support billable telephonic outreach

by peers and counselors may facilitate the sustainability of this service. Future studies should consider examining distal outcomes, including treatment retention or initiation on MAT associated with post-hospitalization telephonic outreach by an addiction consultation service, specifically when addressing resource coordination and substance use disorder treatment in parallel.

This study has several limitations. The sample was a subset of patients from one public hospital in a large metropolitan area. Because patients were frequently referred for services outside of the hospital system, and thus not captured in the EHR, the authors were unable to determine whether patients implemented the referral plans discussed during outreach calls. Second, the authors used historical diagnoses to describe the prevalence of SUDs among the patient population. While the CATCH program was implemented to address opioid mortality, AUD remains the most prevalent historical substance use diagnosis among this patient population. An ongoing study of the CATCH program at six hospitals will use NY State Medicaid data to assess medication initiation for patients with an active opioid use disorder,⁵ and thus will more accurately capture current substance use disorder prevalence. Sociodemographic data was extracted from the EHR and is missing for some individuals. The authors did not explore other reasons a patient might be harder to reach, including longer length of stay (which may suggest more intensive aftercare, so more commitments post-discharge). Finally, while the sample is not representative of all hospital populations, it highlights the challenges and potential benefits of this work with respect to the safety-net populations that have a high burden of unmet needs for SUS and may stand to gain the most from this service.

Implications for Behavioral Health

Further research on the effectiveness and optimal delivery of this approach is needed. However, given the potential for positive patient outcomes and the relative ease of integration, existing addiction consultation services should consider adapting models to include post-discharge outreach with more comprehensive services (i.e., counseling or in-depth peer support). Additionally, supporting patients in the acquisition of cell phones and data plans could improve access to this service. Regulatory bodies should also consider establishing policies that allow for reimbursable telephonic outreach and tele-delivered services post-hospital discharge by peers and addiction counselors outside of emergency COVID-19 waiver and ensure that reimbursements make this use of technology viable for systems of care. Augmenting peers and addiction counselors' reimbursement may be necessary to encourage the uptake and sustainability of this intervention.

Acknowledgements The authors would also like to acknowledge all CATCH staff at NYC Health + Hospitals for their ongoing commitment to addiction treatment and their tireless work throughout the COVID-19 pandemic. Your essential work saved lives.

Funding This work was generously supported by NIDA#1R01DA045669.

Declarations

Conflict of Interest The authors declare no competing interests.

References

1. Wilson N, Kariisa M, Seth P, et al. Drug and opioid-involved overdose deaths - United States, 2017-2018. *Morbidity and Mortality Weekly Report*. 2020;69(11):290-297. <https://doi.org/10.15585/mmwr.mm6911a4>. Accessed 10 March, 2022.

2. Reinhart M, Scarpati LM, Kirson NY, et al. The economic burden of abuse of prescription opioids: a systematic literature review from 2012 to 2017. *Applied Health Economics and Health Policy*. 2018;16(5):609-632. <https://doi.org/10.1007/s40258-018-0402-x>. Accessed 4 October, 2020
3. New York City Department of Health and Mental Hygiene. *Unintentional drug poisoning (overdose) deaths in New York City, 2000 to 2016*. Epi data brief 89, June, 2017. Available at <https://www1.nyc.gov/assets/doh/downloads/pdf/epi/databrief89.pdf>. Accessed 26 February, 2021.
4. The City of New York Office of the Mayor. *HealingNYC: Preventing overdoses, saving lives*. March 2018. Available online <https://www1.nyc.gov/assets/home/downloads/pdf/reports/2017/HealingNYC-Report.pdf>. Accessed 4 October, 2020.
5. McNeely J, Troxel AB, Kunins HV, et al. Study protocol for a pragmatic trial of the Consult for Addiction Treatment and Care in Hospitals (CATCH) model for engaging patients in opioid use disorder treatment. *Addiction Science and Clinical Practice*. 2019;14(1):1-12. <https://doi.org/10.1186/s13722-019-0135-7>. Accessed 4 October, 2020.
6. Centers for Disease Control and Prevention COVID-19 Response Team. Geographic Differences in COVID-19 Cases, Deaths, and Incidence -United States, February 12–April 7, 2020. *Morbidity and Mortality Weekly Report* 2020;69:465-471. Available online <https://doi.org/10.15585/mmwr.mm6915e4>. Accessed 10 March, 2022.
7. Hulse J, Mellis A, Kelly B. *COVID-19 Pandemic Impact on Patients, Families & Individuals in Recovery from substance use disorders*. North Bethesda, MD: Addiction Policy Forum website. Available at <https://www.addictionpolicy.org/post/covid-19-pandemic-impact-on-patients-families-individuals-in-recovery-fromsubstance-use-disorder>. Accessed 28 September, 2020.
8. Nourazari S, Davis SR, Granovsky R, et al. Decreased hospital admissions through emergency departments during the COVID-19 pandemic. *American Journal of Emergency Medicine*. 2021;42:203-210. <https://doi.org/10.1016/j.ajem.2020.11.029>. Accessed 10 March, 2022.
9. NYS Office of Addiction Services and Supports. *Regulatory waiver letter (14 NYCRR 830.5 - Telepractice)*. March 9, 2020. Available at <https://oasas.ny.gov/system/files/documents/2020/03/letter-of-counsel-covid-19-3.9.2020-002-signed.pdf>. Accessed 6 October, 2020.
10. Zheng W, Nickasch M, Lander L, et al. Treatment outcome comparison between telepsychiatry and face-to-face buprenorphine medication-assisted treatment for opioid use disorder: a 2-year retrospective data analysis. *Journal of Addiction Medicine*. 2017;11(2):138-144. <https://doi.org/10.1097/ADM.0000000000000287>. Accessed 10 March, 2022.
11. McKellar J, Wagner T, Harris A, et al. One-year outcomes of telephone case monitoring for patients with substance use disorder. *Addictive Behaviors*. 2012;37(10):1069-1074. <https://doi.org/10.1016/j.addbeh.2012.03.009>. Accessed 10 March, 2022.
12. Eibl JK, Gauthier G, Pellegrini D, et al. The effectiveness of telemedicine-delivered opioid agonist therapy in a supervised clinical setting. *Drug and Alcohol Dependence*. 2017;176:133-138. <https://doi.org/10.1016/j.drugalcdep.2017.01.048>. Accessed 10 March, 2022.
13. Tofighi BM, McNeely JM, Walzer DB, et al. 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. *Journal of Addiction Medicine*. 2022;16(1):e40-e43. <https://doi.org/10.1097/ADM.0000000000000809>. Accessed 10 March, 2022.
14. Wakeman SE, Rigotti NA, Herman GE, et al. The effectiveness of post-discharge navigation added to an inpatient addiction consultation for patients with substance use disorder; a randomized controlled trial. *Substance Abuse*. 2020;42(4):646-653. <https://doi.org/10.1080/08897077.2020.1809608>. Accessed 15 November, 2022.
15. Winhusen T, Wilder C, Kropp F, et al. A brief telephone-delivered peer intervention to encourage enrollment in medication for opioid use disorder in individuals surviving an opioid overdose: results from a randomized pilot trial. *Drug and Alcohol Dependence*. 2020;216:108270. <https://doi.org/10.1016/j.drugalcdep.2020.108270>. Accessed 10 March, 2022.
16. Krawczyk N, Fawole A, Yang J, et al. Early innovations in opioid use disorder treatment and harm reduction during the COVID-19 pandemic: a scoping review. *Addiction Science and Clinical Practice*. 2021;16(1):1-15. <https://doi.org/10.1186/s13722-021-00275-1>. Accessed 10 March, 2022.
17. Shakir M, Wakeman S. Substance use disorder and telemedicine: opportunity and concern for the future. *Journal of General Internal Medicine*. 2021;36(9):2923-2824. <https://doi.org/10.1007/s11606-020-06299-8>. Accessed 10 March, 2022.
18. Gryczynski J, Nordeck CD, Welsh C, et al. Preventing hospital readmission for patients with comorbid substance use disorder: a randomized trial. *Annals of Internal Medicine*. 2021;174(7):899-909. <https://doi.org/10.7326/M20-5475>. Accessed 10 March, 2022.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.