

# Real World Outcomes in Uninsured Patients with Opioid Use Disorder Transitioning from Inpatient to Outpatient Treatment

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**To the Editor**—The opioid epidemic continues to devastate individuals and communities in North Carolina with more than 3500 overdose deaths in 2021 [1]. High rates of unemployment, low rates of insurance coverage, and difficulty accessing addiction treatment have been observed in populations with opioid use disorder (OUD) [2]. Opioid withdrawal management commonly occurs in inpatient or residential settings and can serve as a point of entry into treatment. Often, residential detoxification facilities do not offer FDA-approved medications for OUD (MOUD) [3]. Opioid “detox” alone, without subsequent outpatient treatment, results in poor outcomes following discharge [4, 5]. Real-world experience involving care transitions and MOUD among patients from vulnerable communities remains limited. Healthy North Carolina 2030 addresses initiatives vital to reducing drug overdose deaths including increasing the use of evidence-based medications across a variety of treatment settings [6].

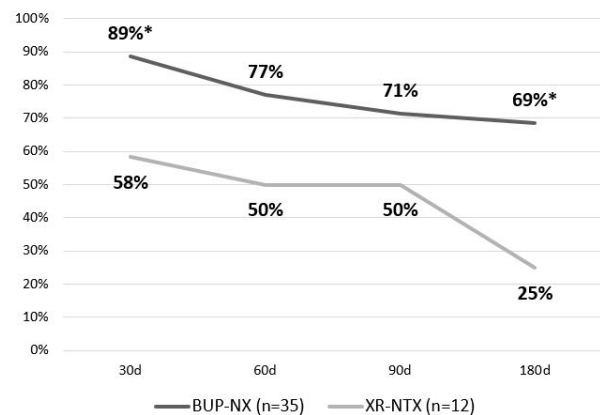
The authors conducted a retrospective chart review of 47 patients with OUD initiating MOUD, selecting either

buprenorphine-naloxone (BUP-NX) or extended-release naltrexone (XR-NTX), who received care through the “detox-to-outpatient” treatment pathway between July 2018 and November 2020. Patients initiated treatment with BUP-NX or XR-NTX while admitted to an inpatient detoxification facility and were transitioned to a co-located outpatient clinic 7–14 days after discharge and followed for a minimum of six months. Methadone was not offered as the detoxification unit is not a federally licensed opioid treatment program. Approval was obtained from the Office of Human Research Ethics at the University of North Carolina at Chapel Hill.

Among the 47 patients (66% male; mean age 34.7 years; 64% Caucasian; 96% uninsured), 35 initiated BUP-NX and 12 initiated XR-NTX. Patients treated with BUP-NX had higher rates of retention in outpatient treatment than patients treated with XR-NTX at 30 days (89% versus 58%,  $P = .02$ ), 60 days (77% versus 50%,  $P = .08$ ), 90 days (71% versus 50%,  $P = .18$ ), and 180 days (69% versus 25%,  $P = .01$ ) (Figure 1). By six months, 31% of patients on BUP-NX were lost to follow-up as compared to 75% of patients on XR-NTX. One overdose death occurred in the XR-NTX group during longitudinal follow-up; no overdose deaths occurred in the BUP-NX group (Appendix 1).

This study highlights several important aspects of the evolving opioid epidemic in North Carolina: 1) Medicaid expansion is a critical element in expanding access to evidence-based treatment; 2) although a small study, this study

**FIGURE 1.**  
Retention in Outpatient Treatment



|               | 30 days  | 60 days  | 90 days  | 180 days |
|---------------|----------|----------|----------|----------|
| BUP-NX (n=35) | 31 (89%) | 27 (77%) | 25 (71%) | 24 (69%) |
| XR-NTX (n=12) | 7 (58%)  | 6 (50%)  | 6 (50%)  | 3 (25%)  |
| p-value       | 0.02     | 0.08     | 0.18     | 0.01     |

## APPENDIX 1 Demographics, Clinical Characteristics, and Treatment Outcomes

This appendix is available in its entirety in the online edition of the NCMJ.

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and others identify potential issues with XR-NTX, including challenges with initiation in the era of fentanyl [7]; 3) OUD treatment programs across North Carolina should incorporate the standard of care—MOUD—into treatment to mitigate the risk of opioid overdose deaths. *NCMJ*

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**APPENDIX 1.**  
**Demographics, Clinical Characteristics, and Treatment Outcomes**

|                                                   | All (N=47)     | BUP-NX (n=35)  | XR-NTX (n=12)  | p-value <sup>a</sup> |
|---------------------------------------------------|----------------|----------------|----------------|----------------------|
| Age, years                                        | 34.7 ± 9.0     | 35.5 ± 8.2     | 32.6 ± 11.1    | NS                   |
| <b>Gender</b>                                     |                |                |                |                      |
| Female                                            | 16 (34%)       | 12 (34%)       | 4 (33%)        | NS                   |
| Male                                              | 31 (66%)       | 23 (66%)       | 8 (67%)        | NS                   |
| <b>Race</b>                                       |                |                |                |                      |
| Caucasian                                         | 30 (64%)       | 21 (60%)       | 9 (75%)        | NS                   |
| African American                                  | 10 (21%)       | 8 (23%)        | 2 (17%)        | NS                   |
| Other                                             | 7 (15%)        | 6 (17%)        | 1 (8%)         | NS                   |
| <b>Insurance Status</b>                           |                |                |                |                      |
| Uninsured                                         | 45 (96%)       | 34 (97%)       | 11 (92%)       | NS                   |
| Medicaid or Medicare                              | 2 (4%)         | 1 (3%)         | 1 (8%)         | NS                   |
| Commercial                                        | 0              | 0              | 0              | n/a                  |
| Concurrent SUD <sup>a</sup>                       | 33 (70%)       | 24 (69%)       | 9 (75%)        | NS                   |
| Alcohol Use Disorder                              | 5 (11%)        | 3 (9%)         | 2 (17%)        | NS                   |
| Cocaine Use Disorder                              | 16 (34%)       | 11 (31%)       | 5 (42%)        | NS                   |
| Methamphetamine Use Disorder                      | 10 (21%)       | 7 (20%)        | 3 (25%)        | NS                   |
| Benzodiazepine Use Disorder                       | 14 (30%)       | 11 (31%)       | 3 (25%)        | NS                   |
| Concurrent Tobacco Use                            | 44 (94%)       | 32 (91%)       | 12 (100%)      | NS                   |
| Concurrent Mental Health Diagnosis <sup>b</sup>   | 24 (51%)       | 18 (51%)       | 6 (50%)        | NS                   |
| Depression                                        | 16 (34%)       | 13 (37%)       | 3 (25%)        | NS                   |
| Anxiety                                           | 12 (26%)       | 9 (26%)        | 3 (25%)        | NS                   |
| ADHD                                              | 1 (2%)         | 1 (3%)         | 0              | n/a                  |
| PTSD                                              | 4 (9%)         | 4 (11%)        | 0              | n/a                  |
| Bipolar Disorder or rule-out Bipolar              | 3 (6%)         | 2 (6%)         | 1 (8%)         | NS                   |
| Psychotic Disorder                                | 0              | 0              | 0              | n/a                  |
| Concurrent Physical Health Diagnosis <sup>b</sup> | 13 (28%)       | 10 (29%)       | 3 (25%)        | NS                   |
| Hypertension                                      | 4 (9%)         | 3 (9%)         | 1 (8%)         | NS                   |
| Diabetes                                          | 2 (4%)         | 2 (6%)         | 0              | n/a                  |
| Respiratory Disease                               | 2 (4%)         | 2 (6%)         | 0              | n/a                  |
| Renal/Cardiovascular/Liver Disease                | 3 (6%)         | 2 (6%)         | 1 (8%)         | NS                   |
| Chronic Pain diagnosis                            | 5 (11%)        | 3 (9%)         | 2 (17%)        | NS                   |
| <b>Infectious Disease Status</b>                  |                |                |                |                      |
| HIV                                               | 1 (2%)         | 1 (3%)         | 0              | n/a                  |
| Chronic Hepatitis C                               | 12 (26%)       | 6 (17%)        | 6 (50%)        | 0.02                 |
| <b>Health System Utilization</b>                  |                |                |                |                      |
| Any homelessness in past 12 mo.                   | 20 (43%)       | 12 (34%)       | 8 (67%)        | 0.05                 |
| Any ED visits in past 12 mo.                      | 34 (72%)       | 23 (66%)       | 11 (92%)       | NS                   |
| Any hospitalization in past 12 mo.                | 12 (26%)       | 8 (23%)        | 4 (33%)        | NS                   |
| <b>Opioid Use Disorder Characteristics</b>        |                |                |                |                      |
| Prior pharmacotherapy                             | 18 (38%)       | 15 (43%)       | 3 (25%)        | NS                   |
| Prior residential treatment                       | 16 (34%)       | 15 (43%)       | 1 (8%)         | 0.03                 |
| Prior overdose                                    | 12 (26%)       | 6 (17%)        | 6 (50%)        | 0.02                 |
| Intravenous use                                   | 25 (53%)       | 20 (57%)       | 5 (42%)        | NS                   |
| Length of Stay, days <sup>c</sup> (range)         | 8.4±3.6 (2-17) | 8.0±3.8 (2-15) | 9.8±3.0 (7-17) | NS                   |
| < 7 days                                          | 17 (36%)       | 17 (49%)       | 0              |                      |
| 7-10 days                                         | 16 (34%)       | 7 (20%)        | 9 (75%)        |                      |
| > 10 days                                         | 14 (30%)       | 11 (31%)       | 3 (25%)        |                      |
| <b>Outpatient Treatment Outcomes</b>              |                |                |                |                      |
| Known return-to-use (opioids)                     | 24 (51%)       | 17 (49%)       | 7 (58%)        | NS                   |
| Known overdose death                              | 1 (2%)         | 0              | 1 (8%)         | n/a                  |

Data are presented as count (percent of total) or mean (standard deviation) unless otherwise specified.

<sup>a</sup>p-values calculated by Chi square analysis; NS = not statistically significant ( $P > .05$ ); n/a = not applicable (analysis not performed due to zero events in one or more categories)

<sup>b</sup>Conditions not mutually exclusive; some patients had more than one condition in the category

<sup>c</sup>Length of stay refers to the index admission to the inpatient detoxification unit preceding linkage to outpatient care