

Economic Evaluation of Extended-release Injectable Naltrexone Compared to Buprenorphine-naloxone Initiated in Inpatient Settings for Treatment of Opioid Use Disorder

Results Derived from the X:BOT Clinical Trial

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What is the X:BOT Trial?

The U.S. National Institute on Drug Abuse (NIDA) supported a national clinical trial, X:BOT, to assess the comparative effectiveness of extended-release injectable naltrexone (XR-NTX) and buprenorphine-naloxone (BUP-NX) for preventing a return to opioid use. Trial participants started treatment in inpatient and residential treatment programs and was offered to continue managing medication in an outpatient setting. The trial results published in the *Lancet*¹ in January 2018 showed it was more difficult to initiate patients on XR-NTX than BUP-NX, and this negatively affected overall relapse outcomes. However, both medications were equally safe and effective for those who initiated treatment.

What We Evaluated

Supported by NIDA, researchers affiliated with the Center for Health Economics of Treatment Interventions for Substance Use Disorder, HCV, and HIV (CHERISH) estimated the costs, health-related quality-of-life (HRQoL), and cost-effectiveness of opioid use disorder (OUD) treatment with XR-NTX compared to BUP-NX using data collected alongside the X:BOT trial. Researchers also used trial data to estimate the potential economic impact of improving the likelihood of initiating individuals on XR-NTX compared to BUP-NX.

What We Found

For treatment providers, offering XR-NTX and/or BUP-NX as part of existing detoxification treatment modalities generates modest costs in addition to the costs of detoxification².

- The mean 24-week cost per participant in 2015 USD was \$5,416 for XR-NTX (57% detoxification, 37% medication, 3% provider, 3% patient) and \$4,148 for BUP-NX (64% detoxification, 12% medication, 10% provider, 14% patient).
- For treatment providers, start-up costs to implement XR-NTX and BUP-NX into detoxification programs were modest: mean \$1,071 per program for XR-NTX and \$828 per program for BUP-NX.

Recommendations

- 1 Policymakers** interested in maximizing economic value should consider supporting policies that promote BUP-NX as the preferred treatment over XR-NTX in contexts where both medications are shown to be equally effective and clinically appropriate for patients.
- 2 Providers** should direct patients to services that address their socioeconomic and psychosocial needs in addition to efforts to improve medication adherence. Customizing care to a patient's needs can improve HRQoL benefits of treatment for OUD.
- 3 Healthcare systems** should invest in models of care that increase the likelihood of successful initiation of medication treatment for OUD, especially for XR-NTX, and minimize the duration of detoxification and residential days.

What We Found (continued)

- The cost of detoxification varied substantially among the eight sites.
- The costs associated with attending outpatient medication management visits may be a barrier for some patients².

Medications for OUD can improve health-related quality-of-life (HRQoL) for most individuals³.

- Jalali et al. studied characteristics, determinants, and patterns of HRQoL over time among trial participants using a novel statistical framework. The model identified patient subgroups and evaluated the relationship between OUD medication and HRQoL:
 - The **pharmacotherapy responsive** subpopulation (82%) was characterized by short-term HRQoL improvement followed by stable HRQoL patterns over time and by a positive and statistically significant association between HRQoL and receiving medications for OUD.
 - The **characteristic sensitive** subpopulation (18%) was characterized by initial HRQoL improvement followed by a gradual decline over time but showed no statistically significant association between HRQoL and receiving medications for OUD. HRQoL in this subpopulation was associated with patient demographic, socioeconomic, and psychosocial characteristics.
- A subpopulation representing about one-fifth of trial participants may require additional services that address their socioeconomic and psychosocial needs to obtain similar HRQoL benefits.

When XR-NTX and BUP-NX are clinically appropriate and patients face potential detoxification hurdles with starting XR-NTX, consider BUP-NX as the preferred first-line treatment for OUD^{4,5}.

- Using two outcome measures, quality-adjusted life-years and a clinical measure of time abstinent from opioids (i.e. abstinent years), results showed that BUP-NX and XR-NTX were similarly effective.
- From a healthcare sector perspective, BUP-NX was on average less costly than XR-NTX for both the 24- and 36-week study periods, due to lower detoxification period and treatment costs in the intent-to-treat analyses.
- Treatment site was the only factor that was significantly associated with likelihood of XR-NTX initiation.
- Efficient detoxification models of care, such as those employed at one treatment site, were projected to result in a higher probability of successful XR-NTX initiation, a shorter induction process, and reduced costs.
- For healthcare sectors, adopting an efficient model of XR-NTX initiation could lead to XR-NTX and BUP-NX being of comparable economic value over 24–36 weeks for patients seeking treatment at an inpatient facility.

References

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Appendix

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CHERISH investigators **Sean M. Murphy** and **Kathryn E. McCollister** and CHERISH Research Affiliate **Ali Jalali** led primary and secondary economic evaluations of the X:BOT trial to inform stakeholders on the cost-effectiveness of extended-release injectable naltrexone compared to buprenorphine-naloxone. Other contributors include CHERISH Director **Bruce R. Schackman** and Senior Research Manager **Jared A. Leff**.