

*“The change was almost immediate”*

## Background

- Dextromethorphan (DXM) is an over-the-counter antitussive and a N-methyl-d-aspartate (NMDA) receptor antagonist
- Exceedingly high DXM doses can lead to hallucinations, euphoria, and dissociation
- A growing literature indicates DXM misuse amongst adolescents and adults
- There are no FDA-approved medications for DXM-use disorder
- A recent case study describes successful treatment of DXM-use disorder with naltrexone and gabapentin, which may not be practical for patients with chronic pain

## Discussion & Conclusion

- Studies have investigated NMDA-receptor antagonists for opioid withdrawal symptom alleviation and opioid use disorder, suggesting a link between DXM and mu-opioid receptors, though an exact mechanism is unknown
- Buprenorphine may influence NMDA receptor signaling; through this mechanism and partial mu-opioid receptor agonism, it is possible that activity at these receptors attenuate cravings and DXM withdrawal symptoms
- This is a single case report of successful DXM-use disorder treatment with buprenorphine
- Limitations including lack of generalizability and no urine toxicology to confirm DXM-abstinence
- Further research is warranted to evaluate the efficacy of buprenorphine in DXM-use disorder

## Affiliations

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Authors do not have financial relationships to disclose  
\*FQHC: Federally qualified health center

## Case Report

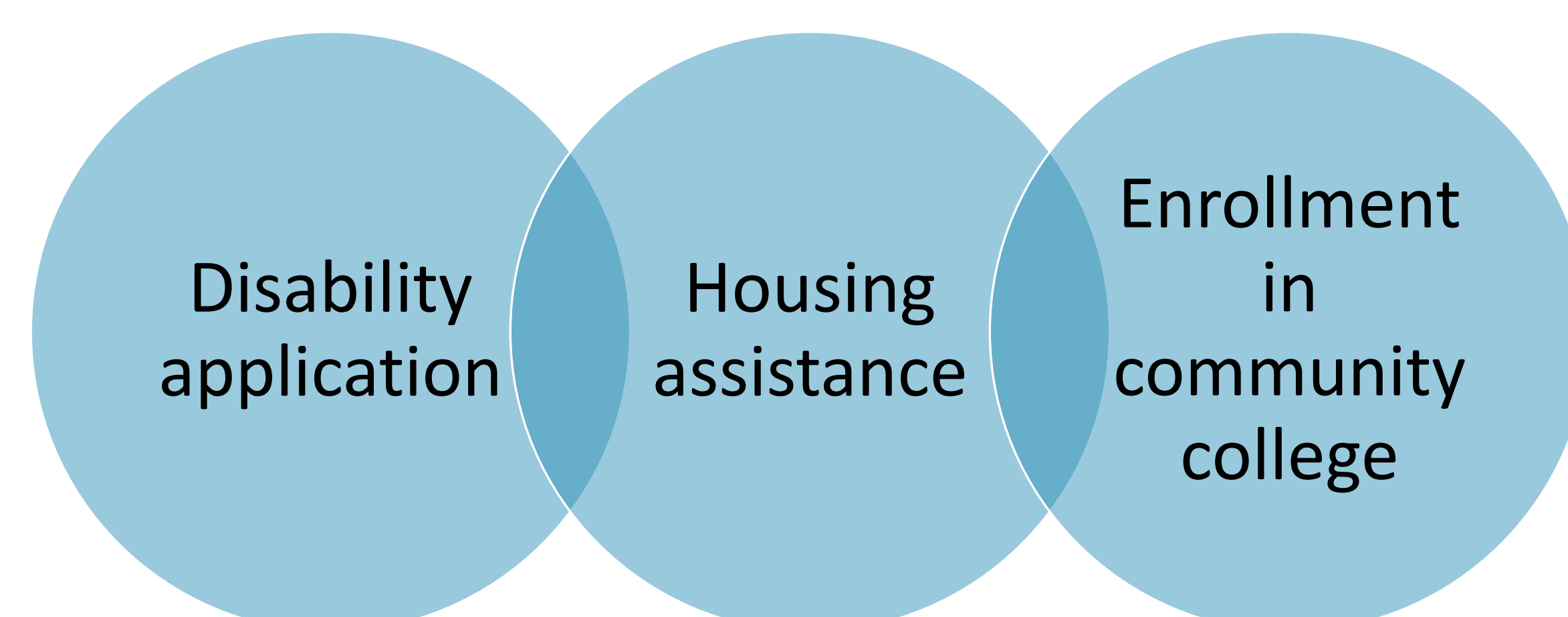
- 44 year old male experiencing homelessness
- Past medical history: Chronic lower back pain, anxiety, depression, and DXM-use disorder, using 80-200 DXM/guaifenesin 20/600 mg tablets daily (max daily recommended DXM dose: 120 mg)
- No previous history of opioid misuse or opioid use disorder

## Hospitalizations

- Treated  $\geq 15$  times for DXM intoxication, including intensive care unit (ICU) admission, supportive care for serotonin syndrome, and brief intubation for obtundation
- During the latest ICU admission, he underwent psychiatric evaluation and reported symptoms consistent with anxiety, post-traumatic stress disorder, and depression, confounded by severe DXM-use disorder
- In a shared decision-making model with the patient, buprenorphine/naloxone (BUP/NX) sublingual films were initiated for DXM-use disorder and severe, chronic musculoskeletal pain

## Follow-Up

The patient continued to have improved functional outcomes, including engagement in:



13 months after stabilizing on BUP/NX 20 mg TDD, the patient continues to follow in an outpatient clinic and has not required emergency or inpatient care

## Treatment Timeline

