



Proven Clinical and Cost Effectiveness of Medications to Treat Opioid Use Disorder

Key Points

- Physicians have classified opioid use disorder as a chronic disease.
- The FDA has approved three medications for opioid use disorders: methadone, buprenorphine, and naltrexone.
- All three medications have undergone rigorous FDA trials and are proven to be effective in treating opioid use disorder.
- At adequate doses, these medications block the “high” of taking opioids.
- Studies have clearly shown that methadone and buprenorphine are cost-effective.
- While no cost-effectiveness studies have been performed on injectable naltrexone, preliminary cost analysis studies justify further research.

While all three medications are both clinically and cost effective for the treatment of opioid use disorders, research has found they are underutilized in American healthcare.

The opioid epidemic is one of the most important problems facing our country’s citizens and our nation’s budget. Overdose deaths are now comparable to the number of deaths caused by motor vehicle crashes, and the societal costs of opioid misuse is estimated to be above \$55 billion per year.

Over the past few decades, physicians and researchers have classified addiction as a chronic disease identified by a cluster of cognitive, behavioral and physiological symptoms. As with other chronic diseases, medication can be an important component of a treatment regimen.

The FDA has approved three medications for the treatment of opioid use disorder: methadone, buprenorphine, and naltrexone. Despite the growing opioid epidemic, these medications remain underutilized, which raises two important questions:

1. Are these medications clinically effective for people with opioid use disorder?
2. Is the use of medication as a component of treatment financially pragmatic for treating opioid use disorder?

A recent comprehensive review of the literature found that the answer to both these questions is unequivocally – YES.

The review by the Treatment Research Institute showed that the use of these medications for the treatment of opioid use disorder is both clinically and cost effective.

CLINICAL EFFECTIVENESS

Methadone: Methadone, the most thoroughly researched medication, blocks the “high” of taking opioids, suppresses withdrawal symptoms and curbs cravings.

Methadone has been clinically proven to reduce opioid use more than (1) no treatment, (2) outpatient treatment without medication, (3) outpatient treatment with placebo medication, and (4) detoxification only. Additionally, methadone has proven to reduce several opioid use related health problems, including HIV/AIDS and is associated with decreased use of more intensive medical services, such as utilization of Emergency Department and inpatient hospital services.



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Buprenorphine: Buprenorphine and methadone have similar track records of success for treating opioid use disorder. Like methadone, buprenorphine also blocks the “high” of taking opioids, suppresses withdrawal symptoms and curbs cravings.

Buprenorphine treatment provides two key benefits over methadone: there is less risk of overdose from buprenorphine, and it can be prescribed in a physician’s office rather than through a specialized treatment center.

Naltrexone: The newest of the three medications, naltrexone, can be taken orally (daily) or extended release injection (monthly). Like methadone and buprenorphine, naltrexone binds to opioid receptors in the brain, blocking a patient’s ability to get “high” from opioids. Unlike methadone or buprenorphine, however, naltrexone does not produce euphoria even when not given at adequate dose; it has no withdrawal symptoms or abuse potential. Naltrexone is also approved by the FDA as a treatment for alcohol use disorder. While naltrexone’s effectiveness is clear, its oral version has low retention rates, and its depot injection is the most expensive of the opioid use disorder medications.

Further, no studies of injectable naltrexone’s cost effectiveness have yet been performed.

COST EFFECTIVENESS

Research has shown that methadone and buprenorphine are both cost-effective interventions for the treatment of opioid use disorder; compared to other opioid treatment interventions, these medications result in greater improvements at a lower overall cost as well as reduced medical costs related to reductions in hospital inpatient and emergency department visits.

Methadone: The most thoroughly researched drug for opioid use disorder. Various studies have shown clinically and statistically significant reductions in opioid misuse and opioid use-related incidence of infectious diseases and crimes with averted costs ranging from two to four times the costs of methadone per year. A 2008 study showed that reductions in robbery alone justified the costs associated with outpatient methadone treatment (Basu et al., 2008). However, it must be stressed that cost-offsets for methadone pertain to its use for longer term maintenance therapy, as it does not have long-term benefit when used for detoxification only.

Buprenorphine: Fewer cost-effectiveness studies have been completed on buprenorphine to date. Buprenorphine-naloxone direct medication costs can be hundreds of dollars a month versus anywhere from \$0.50 to \$2.50 per dose for methadone. However, the clinical effects of the two medications on reductions of opioid misuse and opioid use-related health and social problems are quite comparable. An Australian Treatment Outcome Study (ATOS; Ross et al., 2003; Shanahan et al., 2003) showed that two-years of maintenance costs approximately \$5,000 as compared to \$11,000 for residential rehabilitation and \$52,000 for prison.

Naltrexone: Due to its relatively recent FDA approval (2010), extended release, injectable naltrexone is the least studied of the three medications. Oral naltrexone is inexpensive, but high patient attrition rates are common. Injectable naltrexone, on the other hand, shows promise in cost-analysis studies, but no cost-effectiveness studies have been conducted yet. Injectable naltrexone is also the most expensive of these medications, at approximately \$700 per monthly dose.

POLICY IMPLICATIONS

Opioid use disorder has reached epidemic levels in the United States. Since 1990, there has been exponential growth in opioid-related hospitalizations, overdoses, and deaths. Medications for the treatment of opioid use disorder have proven to be both clinically and cost-effective, but are seriously underutilized despite epidemic growth in the number and severity of opioid-related deaths. Better physician training and more facilitative policies for medication for the treatment of opioid use disorder could reduce mortality with substantial cost savings.