Research That Matters

Reduced Emergency Department Use Among Insured Individuals Receiving Extended-Release Buprenorphine In A Health System Setting

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Research Summary

This study provides preliminary real-world evidence that initiation of monthly extended-release buprenorphine (XR-Bup) was associated with lower emergency department (ED) use and lower mental health or substance use-related inpatient utilization in an integrated health system. Among 99 patients who maintained insurance coverage for the full six months before and six months after XR-Bup initiation, the proportion with any all-cause ED use fell from 41% to 28%, and the mean number of ED visits fell from 0.63 to 0.30. The proportion receiving inpatient treatment for mental health or substance use-related reasons fell from 46% to 16%; both the number of stays and the number of inpatient days also declined.

The findings are encouraging, but they require a disciplined reading. This was a non-randomized, retrospective pre-post study with no comparison group. It demonstrates an association between XR-Bup initiation and lower subsequent utilization; it does not establish that XR-Bup caused the reductions, and it did not evaluate total health care expenditures or cost-effectiveness.

STUDY DESIGN

- **Design**: Retrospective, non-randomized observational study using a within-person comparison of utilization during the six months before and six months after XR-Bup initiation.
- **Setting**: Kaiser Permanente Northwest, an integrated health system serving approximately 615,000 members in the Pacific Northwest, with primary care, outpatient specialty mental health and addiction treatment services, and two hospitals.
- **Study Population**: The electronic health record identified 152 individuals with an XR-Bup order. Chart review confirmed that 126 received at least one injection. The utilization analysis was restricted to the 99 patients who were insured throughout the entire 12-month observation window; 27 patients without continuous coverage were excluded from that analysis.
- **Intervention**: The once-monthly, 100 mg or 300 mg subcutaneous formulation of extended-release buprenorphine used by the health system.
- **Primary Outcome**: All-cause ED use. Secondary outcomes included mental health or substance use-related ED use, ED use for other causes, inpatient treatment for mental health or substance use-related reasons, discontinuation reasons, and evidence of non-prescribed substance use during treatment.
- **Analysis**: McNemar's test was used for categorical pre-post comparisons and Wilcoxon matched-pair tests for continuous outcomes.

STUDY FINDINGS

Emergency Department Utilization

Among the 99 continuously insured patients, all-cause ED use declined from 41% in the six months before initiation to 28% in the six months after initiation ($p<.05$). The mean number of all-cause ED visits declined from 0.63 (SD=1.32) to 0.30 (SD=0.93; $p<.001$).
The proportion with an ED visit for a mental health or substance use-related reason declined from 29% to 18% ($p<.05$). ED use for all other causes declined from 27% to 15% ($p<.05$).

Inpatient Utilization

The proportion receiving inpatient treatment for mental health or substance use-related reasons declined from 46% before XR-Bup initiation to 16% afterward ($p<.001$). The mean number of inpatient stays declined from 0.81 (SD=1.21) to 0.24 (SD=0.70; $p<.01$), and mean inpatient days declined from 4.42 (SD=7.28) to 1.61 (SD=5.03; $p<.01$).

Treatment Exposure & Continuity

Patients received a mean of 3.95 XR-Bup injections during the six months after initiation; 33% received all six monthly doses. Among the 126 patients who received at least one injection, 21% lost insurance coverage or access to XR-Bup coverage during treatment. Eleven percent discontinued because of cost, including high copayments or full out-of-pocket expense, and another 11% discontinued because of side effects.

Ongoing Substance Use & Harm Reduction

Thirty-one of the 126 patients (25%) had at least one opioid-positive urine drug test during treatment. Twenty tested positive for THC and 13 for amphetamines; fewer than five tested positive for cocaine, non-prescribed benzodiazepines, or barbiturates. Most patients with an opioid-positive test continued receiving XR-Bup. The health system did not treat ongoing opioid use as an automatic reason for discontinuation and viewed continued medication treatment as a harm reduction strategy intended to reduce overdose risk.

CLINICAL & ADMINISTRATIVE IMPLICATIONS

For Payers

The observed reductions in ED and inpatient utilization justify further evaluation of XR-Bup's effect on total cost of care. They do not, by themselves, demonstrate cost savings. The findings on lost coverage and cost-related discontinuation are more immediate: coverage continuity and patient cost-sharing are material parts of whether treatment can be sustained.

For Provider Organizations & Health Systems

A health-system program should measure more than medication initiation. The more meaningful operational picture includes injection continuity, coverage disruptions, cost-related discontinuation, ED use, inpatient use, and reasons for missed or stopped doses. Benefits verification and financial navigation should be treated as clinical implementation functions, not peripheral administrative tasks.

For Clinical Professionals
The study illustrates a clinically important harm reduction approach: an opioid-positive urine test did not automatically end medication treatment. Continued engagement may still reduce risk while the clinical team addresses ongoing use, withdrawal, craving, side effects, and the adequacy of the treatment plan. The study does not establish which patients are the best candidates for XR-Bup or that it should replace other medications for opioid use disorder.

STUDY LIMITATIONS

- **Association, Not Causation:** Without randomization or a comparison group, the study cannot determine whether XR-Bup caused the reductions in utilization. Concurrent treatment, changing clinical circumstances, regression to the mean, and unmeasured confounding could contribute.
- **Selected Utilization Sample:** The pre-post utilization analysis excluded 27 of the 126 treated patients because they lacked continuous insurance coverage. The results may therefore be less applicable to patients with unstable coverage, even though this group may face the greatest barriers to continuity.
- **Variable Treatment Exposure:** Only one-third of the continuously insured group received six doses in six months. The study therefore does not represent six months of uninterrupted monthly treatment for most patients.
- **Limited Generalizability:** The treated cohort was predominantly White (84.9%) and came from one integrated health system. The researchers could not determine whether the racial distribution reflected patient preference, care disparities, or other selection factors, and they did not compare the cohort with the broader population of patients with OUD.

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CITATION

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