Abuse and Diversion of Buprenorphine/Naloxone Oral Film Relative to Other Buprenorphine Formulations
Severtson SG1, Bucher Bartelson B1, McDaniel HA1, Green JL1, Besharat AC1, Cicero T2, Ellis M2, Kurtz SP1, Rosenblum A3, Dart RC1,5
1. Rocky Mountain Poison & Drug Center, Denver Health and Hospital Authority, Denver, CO, USA
2. Department of Psychiatry, Washington University School of Medicine, St. Louis, MO, USA
3. Center for Applied Research on Substance Use and Health Disparities, Nova Southeastern University, Coral Gables, FL, USA
4. Institute for Treatment and Services Research, National Development and Research Institutes, New York, NY, USA
5. Department of Emergency Medicine, University of Colorado School of Medicine, Aurora, CO, USA

Background

• This study examines whether abuse and diversion rates of buprenorphine/naloxone films differ from other buprenorphine formulations intended for treatment of opioid dependence [single entity (SE) tablets and combination buprenorphine/naloxone tablets].

Methods

• Data available from the Researched Abuse, Diversion, and Addiction-Related Surveillance (RADARS®) System Drug Diversion Program and the Opioid Treatment and Survey of Key Informants’ Patients (SKIP) Programs (Treatment Center Programs) combined were analyzed.
• Time periods where buprenorphine/naloxone tablets other than Suboxone® were available, but not included on surveys were excluded from the buprenorphine/naloxone tablet slopes. These quarters are shown in Figures 1 and 2.
• Rates per unique recipients of dispensed drug (URDD), a measure of drug availability, were calculated and scaled per 10,000.
• Poisson regression analysis with drug specific dispersion parameters was used to compare differences in rates per unique recipients of dispensed drug (URDD), a measure of drug availability, were calculated and scaled per 10,000.

Table 1. Drug Diversion Program Intercepts and Slopes per 10,000 URDD

<table>
<thead>
<tr>
<th>Drug Group</th>
<th>Expected Rate in 2015Q2 (95% CI)</th>
<th>Ratio of Intercepts (95% CI), p-value</th>
<th>Slope (95% CI), p-value</th>
<th>Difference in Slope p-value</th>
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<td>Buprenorphine/naloxone films</td>
<td>7.72 (7.08, 8.41)</td>
<td>Reference</td>
<td>0.98 (0.97, 0.99), &lt;0.001</td>
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<td>Single entity buprenorphine tablets</td>
<td>29.40 (25.77, 33.54)</td>
<td>3.81 (3.26, 4.46), &lt;0.001</td>
<td>0.97 (0.96, 0.98), &lt;0.001</td>
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<td>Buprenorphine/naloxone tablets</td>
<td>19.53 (16.04, 23.77)</td>
<td>2.53 (2.04, 3.14), &lt;0.001</td>
<td>0.99 (0.98, 1.01), 0.512</td>
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Table 2. Treatment Center Programs Intercepts and Slopes per 10,000 URDD

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Results

• The expected 2015Q2 rate was 5.99 reports/10,000 URDD (95% CI: 4.85-7.40) for buprenorphine/naloxone films (Table 1).
• This was significantly less than single entity buprenorphine tablets (10.86/10,000 URDD, 95% CI: 8.23-14.34, p<0.001) and buprenorphine/naloxone tablets (22.49/10,000 URDD, 95% CI: 17.04-29.69, p<0.001) (Table 1).
• However, diversion reports of buprenorphine/naloxone film increased 12% (95% CI: 9-16%) each quarter between October 2010 and June 2015, single-entity buprenorphine tablets increased non-significantly 1% (95% CI: -2%-4%) and buprenorphine/naloxone tablets increased 4% (95% CI: 2-7%) each quarter (Table 1).

• The increase for buprenorphine/naloxone film was significantly greater than trends for other buprenorphine formulations (Table 1).

Conclusions

• Buprenorphine/naloxone film was found less frequently in diversion reports and was endorsed less frequently by persons entering treatment for substance abuse than other forms of buprenorphine after adjusting for drug availability.

Table 2. Treatment Center Programs Intercepts and Slopes per 10,000 URDD