The Impact of Prior Authorization on Buprenorphine Dose, Relapse and Cost of Opioid Addiction Treatment

Evidence from Massachusetts’ Medicaid Program

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Buprenorphine/naloxone

- Introduced in 2003 (Suboxone®)
- First opioid for addiction treatment that can be dispensed in an outpatient setting and taken without direct observation
  - Considered safer than methadone
  - Doses > 24 mg not recommended
Why we are interested in Buprenorphine & Medicaid?

- Medicaid is a key payer for buprenorphine treatment
- Increasing concern about cost and diversion of buprenorphine
- Most states restrict access through prior authorization requirements
Buprenorphine treatment in MassHealth has risen steadily

MassHealth* Members with a Opioid Use Disorder Who were Treated with Buprenorphine

*Massachusetts’ Medicaid program
Prior Authorization

• Prescribers must get authorization before a prescription is filled
• Seeks to reduce cost and/or improve safety
• Typically imposed by an insurer
• A favorite tool for Medicaid programs
Unanticipated Effects

• Does not always reduce costs
• May break treatment continuity
• May contribute to relapse

(Law et al, 2008; Abouzaid et al 2010; Lu et al. 2011; Morden 2008)
MassHealth* Prior Authorization for Suboxone®

- Implemented in January 2008
- High doses required more frequent authorization

<table>
<thead>
<tr>
<th>Daily Dose</th>
<th>Authorization Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 32 mg</td>
<td>Each prescription</td>
</tr>
<tr>
<td>&gt; 24 mg &amp; ≤ 32</td>
<td>Every 90 days</td>
</tr>
<tr>
<td>&gt; 16 mg &amp; ≤ 24</td>
<td>Every 180 days</td>
</tr>
<tr>
<td>≤ 16 mg</td>
<td>None required</td>
</tr>
</tbody>
</table>

* The Massachusetts Medicaid Program
Research Questions

1. Did high-dose treatment decrease?
2. Did prior authorization affect medication costs and total costs?
3. Did prior authorization affect relapse rates?
Methods

• Medicaid claims January 2007 through December of 2008
• Additional data on other publically funded detoxification treatment
• Limited to those who used Suboxone®
• Three treatment groups: Low dose < 16 mg/day, Medium 16-24 mg, High >24mg
Time series

• Population level analysis
  - analyzed claims for all patients using month as the unit of observation

• Individual level multivariable analysis
  - analyzed claims for continuously enrolled patients as the unit of observation (n = 2,049)

• Generalized estimating equations for both
Suboxone users in 2007

<table>
<thead>
<tr>
<th></th>
<th>Low n = 908</th>
<th>Medium n = 699</th>
<th>High n = 442</th>
<th>Total n= 2,049</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>32.9 (9.9)</td>
<td>33.1 (9.4)</td>
<td>34.2 (9.7)</td>
<td>33.2 (9.7)</td>
</tr>
<tr>
<td>% Women</td>
<td>43.1%</td>
<td>37.0%</td>
<td>33.3%</td>
<td>38.9%</td>
</tr>
<tr>
<td>MH conditions</td>
<td>1.4 (1.5)</td>
<td>1.3 (1.4)</td>
<td>1.2 (1.2)</td>
<td>1.3 (1.4)</td>
</tr>
<tr>
<td>Physical conditions</td>
<td>0.7 (1.0)</td>
<td>0.6 (0.9)</td>
<td>0.8 (1.0)</td>
<td>0.7 (1.0)</td>
</tr>
<tr>
<td>Suboxone® $/month</td>
<td>$164 ($96)</td>
<td>$284 ($128)</td>
<td>$362 ($179)</td>
<td>$248 (151)</td>
</tr>
<tr>
<td>Total $/month</td>
<td>$1,372 ($1,640)</td>
<td>$1,110 ($1,025)</td>
<td>$1,102 ($1,185)</td>
<td>$1,224 ($1,367)</td>
</tr>
</tbody>
</table>

(Standard deviation)
Suboxone® Doses Before and After Prior Authorization

The graph shows the percent of total users taking different doses of Suboxone over a period of time from January 2007 to December 2008. The x-axis represents the months, while the y-axis represents the percent of total users. The graph is color-coded to differentiate between low dose (≤ 16mg), medium dose (>16 and ≤ 24 mg), and high dose (> 24 mg).

The data indicates a decrease in the percent of users taking high doses over time, while the percent of users taking low doses remains relatively stable. The medium dose group shows an initial increase followed by a slight decrease towards the end of the period.
Cost impact

- Suboxone® expenditures decreased in the high dose group
- Increased in other groups
- Net 2008 Suboxone® savings from $131,347 to $492,641
- No savings in overall healthcare costs
Temporary Increase in Relapses

![Graph showing relapse rates by dose levels from January 2007 to December 2008. The graph indicates a temporary increase in relapses in July 2008. The x-axis represents months, and the y-axis represents the relapse rate (in %). Three different dose levels are compared: low dose (≤ 16 mg), medium dose (> 16 mg and ≤ 24 mg), and high dose (> 24 mg).]
Limitations

- Measures limited to administrative data
- Cannot rule out secular (time) effects
Summary

• The PA effectively lowered high doses
• Modest decrease in Suboxone® cost
• No impact on total cost
• Temporary increase in relapses for medium & high dose groups
• Long-term impact of dose limits needs further study
Why should we care?

- At least 6 states now place lifetime limits on buprenorphine treatment
- Limiting access to medication-assisted treatment can result in more relapses, deaths and higher costs
- Dose related PAs may be a relatively safe way to manage “over prescribing”