Evaluation of a Medicaid Psychotropic Drug Management Program in Utah

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Background

- State Medicaid programs are major purchasers of antipsychotic and antidepressant medications
  - About one-fifth of state Medicaid drug expenditures in 2003

- Budget pressures and rising drug costs have caused states to impose stringent limits on beneficiary drug use
  - Mandatory generic substitution, prior authorization requirements, preferred drug lists, monthly limits on the number of prescriptions

- More than 20 states have been using the Behavioral Pharmacy Management Program (BPMP)
  - Implemented by Comprehensive NeuroScience, Inc. (CNS)

- MPR evaluated the BPMP in Utah under contract to SAMHSA

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BPMP Characteristics

- Seeks to increase quality of care and reduce drug costs through prescriber-specific mailings
- Offered to states at no cost for two years using pharmaceutical company funding
- Searches Medicaid pharmacy data for use of 138 psychotropics in 15 therapeutic classes
  - Most common medications in Utah included antipsychotics, antidepressants, benzodiazepines, and mood stabilizers
- Can be tailored to specific needs of a state by choosing which prescribing behaviors to target
BPMP Clinical Edits and Mailings

- BPMP searches for as many as 60 clinical edits (or quality indicators) to identify inappropriate prescribing and use of psychotropics, in six broad categories:
  - Any use of certain psychotropics for children
  - Polypharmacy
  - Dosage (too high or too low)
  - Drug switching for adults
  - Prescribing by multiple prescribers
  - Therapy discontinuation

- Prescribers who trigger an edit may be sent two types of intervention mailings
  - *Clinical Considerations™* letter for edits in the first four categories
  - Alert for edits in the last two groups
BPMP Design and Mailing Components

PROGRAM DESIGN

- Clinical edits can be:
  - Targeted: Included in mailings to prescribers
  - Non-targeted: Not included in mailings to prescribers

- State clients can choose which edits they want to target and change those targeted at any time

MAILING COMPONENTS

- Prescribers whose behavior falls outside of established guidelines receive a mailing that includes:
  - A cover letter describing the intervention
  - A prescriber feedback form
  - Information on the quality indicator areas from which they deviated
  - All patients identified by one or more clinical edits
BPMP Implementation in Utah: Phase I

- Letters were mailed each month:
  - from March 2004 to November 2005 (21 months)
  - to the most extreme outlier prescribers, based on total targeted outlier costs

<table>
<thead>
<tr>
<th></th>
<th>Clinical Considerations™ Letters</th>
<th>Multiple Prescriber</th>
<th>Therapy Discontinuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Prescribers</td>
<td>297</td>
<td>721</td>
<td>615</td>
</tr>
<tr>
<td>Average Number of Letters per Prescriber</td>
<td>8.0</td>
<td>5.7</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Source: BPMP intervention data

Note: Prescribers mailed alerts are those who had at least one claim associated with a multiple prescriber or therapy discontinuation alert in the six months before their first alert.
BPMP Implementation in Utah: Phase II

- Letters were mailed each month from March 2006 to January 2007 (11 months)
- Alternated each month between prescribers to children and prescribers to adults

<table>
<thead>
<tr>
<th></th>
<th>Clinical Considerations™ Letters</th>
<th>Multiple Prescriber Alerts</th>
<th>Therapy Discont. Alerts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Prescribers to Adults</td>
<td>145</td>
<td>898</td>
<td>881</td>
</tr>
<tr>
<td>Average Number of Letters per Prescriber to Adults</td>
<td>3.3</td>
<td>6.2</td>
<td>6.1</td>
</tr>
<tr>
<td>Number of Prescribers to Children</td>
<td>89</td>
<td>444</td>
<td>310</td>
</tr>
<tr>
<td>Average Number of Letters per Prescriber to Children</td>
<td>3.2</td>
<td>6.2</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Source: BPMP intervention data
Note: Prescribers mailed alerts are those who had at least one claim associated with a multiple prescriber or therapy discontinuation alert in the six months before their first alert.
Design of MPR’s Evaluation

- Estimated effects for:
  - Clinical Considerations™ letters
  - Alerts for multiple prescribers and therapy discontinuation

- Primary outcome measures estimated for each calendar month for each prescriber included:
  - As a percentage of total psychotropic claims/costs:
    - Targeted clinical edits
    - Targeted outlier claims
    - Targeted outlier costs
Design of MPR’s Evaluation

- Different analytic approaches to assess the extent to which changes in behavior were real effects and not just regression to the mean

  - Pre-intervention versus intervention period prescribing behavior for prescribers who were mailed letters

  - Outcomes for treatment group (prescribers who were mailed letters) versus the comparison group (prescribers who were not mailed letters)
Illustration of Regression to the Mean

Prescriber A: Always prescribes at high level relative to peers

Prescriber B: Prescribing behavior fluctuates and returns to some “mean” level
Illustration of Pre-Post Analysis

Outcome Measure Value

Time

Mailings Begin

Prescriber A

Prescriber B
Behavior Before and After Each Prescribers' First Clinical Considerations™ Letter Utah

Outcome Measure: Targeted Claims as a Percentage of Total Drug Claims

Sources: Utah Medicaid pharmacy data and BPMP intervention data

Note: In Phase I, 297 prescribers were mailed letters. In Phase II, 145 prescribers to adults and 89 prescribers to children were mailed letters. Prescriber data shifted so that all months before the first intervention letters represent the pre-intervention period.
Phase I: Prescribing Behavior Improved in Short-term, but Not a Lasting Effect

Among Prescribers Mailed a Clinical Considerations™ Letter in Utah

Uptick near the end of Phase I suggests regression to the mean.

Number of Prescribers = 297

Sources: Utah Medicaid pharmacy data and BPMP intervention data
Note: Among prescribers who were mailed letters from March 2004 to November 2005 (297 total prescribers). Includes all data from April 2003 through December 2005. Prescriber data are shifted so that their first 4 quarters of data are the pre-intervention period on this graph.
Phase I: Treatment Group Prescribing Worse than Comparison Group Trend in Utah

Outcome Measure: Targeted Claims as a Percentage of Total Drug Claims

Sources: Utah Medicaid pharmacy data and BPMP intervention data

Note: Among prescribers who were mailed letters from March 2004 to November 2005 (297 total prescribers) and not mailed letters but who had targeted claims (221). Includes all data from April 2003 through December 2005.
Phase II: Very Short-term Improvement, but No Impacts over Longer Term

Among Prescribers to Adults Mailed a Clinical Considerations™ Letter in Utah

Number of Prescribers = 145

Sources: Utah Medicaid pharmacy data and BPMP intervention data

Note: Among 145 prescribers who were mailed letters from April to December 2006, using data from April 2003 to September 2007. Prescriber data shifted so that months before their first letters represent the pre-intervention period.
Phase II: Little Difference Between Treatment and Comparison Group Prescribers to Adults in Utah

Outcome Measure: Targeted Claims as a Percentage of Total Drug Claims

Outcome Measure: Targeted claims as a percentage of total drug claims

Sources: Utah Medicaid pharmacy data and BPMP intervention data
Note: Among 145 prescribers who were mailed letters from April to December 2006 and 354 comparison group prescribers who were not mailed letters but had targeted claims (data from April 2003 through September 2007).
Phase II: Promising Treatment Group Trend, Though Similar to Historic Levels

Among Prescribers to Children Mailed a Clinical Considerations™ Letter in Utah

Number of Prescribers = 89

Sources: Utah Medicaid pharmacy data and BPMP intervention data
Note: Among 89 prescribers who were mailed letters from March 2006 to January 2007, using all data from April 2003 to September 2007. Prescriber data shifted so that all months before their first intervention letters represent the pre-intervention period.
Phase II: Very Small Treatment – Comparison Differences Near End of Intervention Period

Among Treatment and Comparison Group Prescribers to Children in Utah

Outcome Measure: Targeted claims as a percentage of total drug claims

Beginning of BPMP Phase II

Treatment Group Prescribers to Children (N=89)

Comparison Group Prescribers to Children (N=82)

Sources: Utah Medicaid pharmacy data and BPMP intervention data
Note: Includes data from April 2003 to September 2007, which are shifted so that months before the first letters are the pre-intervention period. The comparison group is prescribers to children who had targeted claims but were not mailed letters. Comparison group prescribers had fewer monthly claims (12% as many) compared with the treatment group.
More Instances of Multiple Prescriber Alerts After Intervention Begins

Targeted Claims as a Percentage of Total Claims in Utah

<table>
<thead>
<tr>
<th>Phase</th>
<th>Pre-intervention Period</th>
<th>Intervention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>2.66</td>
<td>3.29</td>
</tr>
<tr>
<td>Phase II (Adults)</td>
<td>1.74</td>
<td>2.38</td>
</tr>
<tr>
<td>Phase II (Children)</td>
<td>3.01</td>
<td>4.87</td>
</tr>
</tbody>
</table>

Number of Prescribers
- Phase I: 721
- Phase II (Adults): 1,264
- Phase II (Children): 613

Sources: Utah Medicaid pharmacy data and BPMP intervention data
Note: Includes data from April 2003 to September 2007 for prescribers who were mailed an alert and had at least one claim associated with a multiple prescriber edit in the six months before their first alert. Because all prescribers who qualified for an alert received one, no comparison group was available.
Fewer Instances of Therapy Discontinuation After Intervention Begins

Targeted Claims as a Percentage of Total Claims in Utah

<table>
<thead>
<tr>
<th>Phase</th>
<th>Pre-intervention Period</th>
<th>Intervention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>1.00</td>
<td>0.30</td>
</tr>
<tr>
<td>Phase II: Adults</td>
<td>0.67</td>
<td>0.21</td>
</tr>
<tr>
<td>Phase II: Children</td>
<td>0.39</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Sources: Utah Medicaid pharmacy data and BPMP intervention data
Note: Includes data from April 2003 to September 2007 for prescribers who were mailed an alert and had at least one claim associated with a therapy discontinuation edit in the six months before their first alert. Because all prescribers who qualified for an alert received one, no comparison group was available.

Number of Prescribers
Phase I: 615
Phase II (Adults): 1,229
Phase II (Children): 595
### BPMP Design in Utah: Many Common Edits Not Targeted

**Most Common Clinical Edits and Average Cost per Claims Before Phase I**

<table>
<thead>
<tr>
<th>Clinical Edit</th>
<th>Targeted Status</th>
<th>Percent of All Clinical Edits</th>
<th>Average Cost per Claim</th>
<th>Total Cost of Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>3+ psychotropics for 60+ days</td>
<td>No</td>
<td>37.2</td>
<td>$97</td>
<td>$2,730,000</td>
</tr>
<tr>
<td>1+ benzodiazepines and 1+ antidepressants for 60+ days</td>
<td>No</td>
<td>9.6</td>
<td>$45</td>
<td>$327,000</td>
</tr>
<tr>
<td>5+ psychotropics for 60+ days</td>
<td>Yes</td>
<td>6.5</td>
<td>$107</td>
<td>$528,000</td>
</tr>
<tr>
<td>2+ antipsychotics for 60+ days</td>
<td>Yes</td>
<td>5.0</td>
<td>$188</td>
<td>$707,000</td>
</tr>
<tr>
<td>Higher than recommended dosage of atypical antipsychotic for 45+ days</td>
<td>Yes</td>
<td>1.5</td>
<td>$346</td>
<td>$398,000</td>
</tr>
<tr>
<td>2+ atypical antipsychotics for 60+ days</td>
<td>Yes</td>
<td>3.3</td>
<td>$220</td>
<td>$545,000</td>
</tr>
<tr>
<td>Other Targeted (20 total)</td>
<td>Yes</td>
<td>13.9</td>
<td>$100</td>
<td>$1,058,000</td>
</tr>
<tr>
<td>Other Non-targeted (24 total)</td>
<td>No</td>
<td>23.1</td>
<td>$132</td>
<td>$2,312,000</td>
</tr>
</tbody>
</table>

Total number of edits targeted was 24 and non-targeted was 26.
Earlier BPMP Findings from Missouri

- Intervention began in June 2003
- Analysis conducted by Mercer in August 2004
  - 6 months of pre-intervention and 12 months of intervention data
- Analysis was limited to aggregate prescription data and was not specific to prescribers or patients
- Projected trends in four drug classes based on 2 quarters of pre-intervention-period data
  - Antipsychotics, stimulants, antidepressants, and mood stabilizers
- Estimated an aggregate savings of ~$8 million based on BPMP intervention
  - Key assumption: pre-intervention baseline trend rates would have remained constant
Comparing Utah and Missouri Evaluations

- Much more pre-intervention data in Utah, particularly for the Phase II analysis
  - Can identify potential for regression to the mean
  - Can project trends based on longer pre-intervention periods

- Prescriber-level analysis in Utah among those who were mailed intervention letters and alerts
  - Permits analysis by type of prescriber and type of edit

- Comparison group approach in Utah
  - While comparison groups were not fully comparable, they highlight prescribing behavior by those not receiving letters
Evaluating the BPMP

- Analysis of intervention effects without these key components can lead to misleading conclusions
  - Pre-intervention data
  - Prescriber-level analysis
  - Comparison group approach
  - Statistical testing

- Short-term trend analysis can also be misleading
Assuming a Pre-Intervention Trend can be Misleading

Among Prescribers to Adults Who Were Mailed Intervention Letters

Projected trend line based on growth in six quarters before the intervention. For illustrative purposes only.

Outcome Measure: Drug claims associated with any clinical edits in Utah as a percentage of total claims.

Source: Utah Pharmacy Claims and Medicaid Enrollment Data, BPMP Intervention Data, and MPR simple projection of trend.

Note: The simple, unadjusted projection of the trends in outlier claims as a percentage of total claims is illustrative only and does not represent MPR’s primary impact analysis.
Assuming a Pre-Intervention Trend can be Misleading

Among Prescribers to Adults Who Were Not Mailed Intervention Letters

Outcome Measure: Drug claims associated with any clinical edits in Utah as a percentage of total claims.

Source: Utah Pharmacy Claims and Medicaid Enrollment Data, BPMP Intervention Data, and MPR simple projection of trend.
Note: The simple, unadjusted projection of the trends in outlier claims as a percentage of total claims is illustrative only and does not represent MPR’s primary impact analysis.
Assuming a Pre-Intervention Trend can be Misleading

Source: Utah Pharmacy Claims and Medicaid Enrollment Data, BPMP Intervention Data.
Outcome Measure: Drug claims associated with any clinical edits in Utah as a percentage of total claims.
Policy and Program Design Implications

- Limited impact of BPMP mailings
  - Impacts were small, not statistically significant, and similar to fluctuations observed in pre-intervention periods

- Keep expectations modest
  - Administrative costs would have to be small for BPMP to be worthwhile because impacts were small

- More aggressive intervention options
  - States have the option of using edits more aggressively, such as prior authorization for prescribers who trigger edits
Policy and Program Design Implications (Cont.)

- **Importance of program design**
  - Examine data for at least the past year to distinguish true outlier behavior from random changes
  - Carefully consider which edits to target and their rationale (most common, highest cost, greatest clinical importance)

- **Evaluating the impact and making adjustments**
  - Misleading short-term changes may be random or regression to the mean
  - Lasting impacts may not show up right away
Implications for Medicare Part D

- Medicare-Medicaid dual eligibles were included in the Utah BPMP before 2006
- Dual eligibles and other low-income Part D enrollees are similar to Medicaid beneficiaries in that they have no deductibles or coinsurance and very limited copayments
- Since Part D plans have limited ability to influence behavior of low-income enrollees through cost sharing, attempting to influence prescriber behavior may be an alternative