OUD and Treatment Research in VHCURES, Vermont’s All-Payer Claims Database

Mary Kate Mohlman, PhD, MS
Health Services Researcher, Blueprint for Health
Department of Vermont Health Access

November 14, 2018
The Blueprint for Health 101

- Health care reform initiative expanded statewide in 2010 by Statute; mandatory Medicaid and commercial payer participation, Medicare voluntarily participates.
- Supports primary care transformation to NCQA-recognized patient-centered medical homes
- Supported by regional Program Managers, Quality Improvement Facilitators, and multi-disciplinary Community Health Teams
Hub and Spoke System of Care 101

- Medicaid State Plan Amendment to implement Health Home Model with greater coordination between Opioid Treatment Programs (Hubs) and Office-Based Opioid Treatment sites (Spokes).
- Enhanced care coordination within and across Hub and Spoke settings
- Spoke Staff: 1 nurse and 1 licensed mental health/addictions counselor for every 100 Medicaid patients
- Buprenorphine administered in Hubs in addition to methadone
Evaluation of Medicaid and Medication-Assisted Therapy: Baseline Study

- Study population: members with full Medicaid, ages 18-64 with claims in VHCURES indicating treatment for opioid addiction
- Intervention Group: claims data for either of the two primary drugs used in MAT – methadone and buprenorphine
- Control Group: no claims for MAT, but had at least two opioid addiction diagnoses on different dates of service; treatment included individual and group outpatient settings, intensive outpatient settings, partial hospitalization, detoxification, and residential treatment services.
<table>
<thead>
<tr>
<th>Expenditures</th>
<th>MAT group</th>
<th>Non-MAT</th>
<th>Difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total expenditures</td>
<td>$14,468</td>
<td>$14,880</td>
<td>-$412</td>
<td>0.07</td>
</tr>
<tr>
<td>Total expenditures without treatment</td>
<td>$8,794</td>
<td>$11,203</td>
<td>-$2,409</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Buprenorphine expenditures</td>
<td>$2,708</td>
<td>-$47</td>
<td>$2,755</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Total prescription expenditures</td>
<td>$4,461</td>
<td>$2,166</td>
<td>$2,295</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Inpatient expenditures</td>
<td>$2,132</td>
<td>$3,757</td>
<td>-$1,625</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Outpatient expenditures</td>
<td>$345</td>
<td>$604</td>
<td>-$259</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Professional expenditures</td>
<td>$674</td>
<td>$981</td>
<td>-$307</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>SMS expenditures*</td>
<td>$2,872</td>
<td>$4,160</td>
<td>-$1,288</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Utilization (rate/1,000)</th>
<th>MAT group</th>
<th>Non-MAT</th>
<th>Difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient days</td>
<td>1.54</td>
<td>3.00</td>
<td>-1.46</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Inpatient discharges</td>
<td>0.30</td>
<td>0.52</td>
<td>-0.22</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>ED visits</td>
<td>1.44</td>
<td>2.48</td>
<td>-1.04</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Primary care physician visits</td>
<td>15.27</td>
<td>9.81</td>
<td>5.46</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Advanced imaging</td>
<td>0.29</td>
<td>0.54</td>
<td>-0.25</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Standard imaging</td>
<td>0.76</td>
<td>1.43</td>
<td>-0.67</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>0.01</td>
<td>0.02</td>
<td>-0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Echography</td>
<td>0.46</td>
<td>0.53</td>
<td>-0.07</td>
<td>0.002</td>
</tr>
<tr>
<td>Medical specialist visits</td>
<td>0.49</td>
<td>0.82</td>
<td>-0.33</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Surgical specialist visits</td>
<td>3.04</td>
<td>1.89</td>
<td>1.15</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Table 2. Adjusted average annual expenditures and utilization rates among Medicaid enrollees identified with opioid misuse or abuse †

*SMS refers to special Medicaid services and include transportation, home and community-based services, case management, dental, residential treatment, day treatment, mental health facilities, and school-based services.

†Multivariable regression analysis, adjusted for gender, age, calendar year, clinical risk groups, Medicaid in the prior year, hepatitis C virus (HCV) status, and maternity.
Evaluation of Hub and Spoke System of Care: Current Study

• Study Question: With statewide expansion of a system for OUD treatment with MAT as the standard of care, what were the trends in health care service expenditures and utilization for Medicaid enrollees with an OUD diagnosis receiving treatment in this system relative to those receiving non-MAT forms of treatment?
  • **Goal** to understand the impacts of a state’s policy decision.

• Populations:
  • Medicaid enrollees with an OUD diagnosis
    • Those receiving MAT
    • Those receiving non-MAT treatment
  • Benchmark population: Medicaid enrollees without an OUD diagnosis

• Method: Serial cross sectional descriptive analysis
Using APCD Claims

- Inclusion and Exclusion Criteria
  - Ages 18-64 (eligibility records)
  - Medicaid enrollees, including Medicare dual-eligible (eligibility records)
  - Exclude members institutionalized in long term care facilities (category of service, type of bill, and provider specialty codes)
  - Diagnosis for Opioid Use Disorder (ICD9 and ICD10 diagnosis codes)
- Assignment to Hub, Spoke, or other treatments
  - Hub procedure codes (CPT/HCPCS)
  - Spoke prescription fills in pharmacy claims (NDC)
  - Other treatment procedure codes (CPT/HCPCS)
Outcomes

• Membership Trends
• Demographics
  • Age, gender, comorbidities
• Expenditures with and without treatment costs
• Emergency Department and Inpatient Discharges
• Linked claims and Incarceration Data
• Urinalysis Expenditures
Expenditures for Populations with OUD, Including and Excluding Treatment Costs, Unadjusted

- OUD Dx & MAT w/ Treatment Costs
- OUD Dx & MAT, No Treatment Costs
- OUD Dx & Other SUD Tx w/ Treatment Costs
- OUD Dx & Other SUD Tx, No Treatment Costs
Examples of Utilization Trends

Inpatient Days PMPY

Year

Potentially Avoidable ED Visits PMPY

Year

MAT Analysis Group
Medicaid non-OUD OUD Dx & MAT OUD Dx & Other SUD Tx

Medicaid non-OUD OUD Dx & MAT OUD Dx & Other SUD Tx
Other Factors...
Questions?

Contact:
Mary Kate Mohlman, PhD, MS, Blueprint for Health, Department of Vermont Health Access
marykate.mohlman@vermont.gov

David Jorgensen, MS, Onpoint Health Data
djorgenson@onpointhealthdata.org