Telehealth Use in Rural Medicaid:
A Baseline Inventory

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National Rural Health Association Annual Conference
San Diego, CA
May 10, 2017
Acknowledgments

Support for this project was provided by the Federal Office of Rural Health Policy (FORHP) within the Health Resources and Services Administration.

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Rural Telehealth Use: Prospects and Current Status

• Telehealth (TH) holds promise for increasing availability and quality of rural health services

• Limited evidence suggests low TH use in rural US

• Prospects for expansion improving as Medicaid reimbursement becomes more widespread
Establishing a Baseline

• Medicaid Analytic Extract (MAX)
  – Claims data with TH modifiers
  – Nationwide
  – Annual: available before and after recent policy shifts
Research Questions

1. How prevalent was TH use among rural and urban Medicaid members?
2. What were the characteristics of TH users?
3. What types of TH services were provided?
4. What diagnoses were associated with TH use?
5. Did TH use rates differ depending on state TH parity policy?
Method

• **Data Source:** 2011 Medicaid Analytic Extract (MAX): 5% random sample, stratified by state

• **Population:** non-dual Medicaid members

• **Rurality Measure:** Rural-Urban Continuum Codes (RUCCs)

• **Identifying TH Claims:** selected claims with TH modifiers required by state Medicaid programs in 2011

• **Analyses:** one-way ANOVA, chi-square
Medicaid Reimbursement for Telehealth

■ = State Medicaid program reimbursed for TH in 2011

Map source: https://commons.wikimedia.org/wiki/File:US_states_by_HDI.svg
Data source: Hall L, LaMothe C, Reiser C. 50 State Medicaid Statute Survey. Washington, DC: Center for Telehealth & e-Health Law; February 2011. Additional analysis of legislation was conducted by the authors for 12 states not included in the Center for Telehealth & e-Health Law document.
## Telehealth Use by Residence

<table>
<thead>
<tr>
<th>Residence</th>
<th>Urban</th>
<th>Rural Adjacent</th>
<th>Rural Non-Adjacent</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH users per 100,000 beneficiaries****</td>
<td>60</td>
<td>240</td>
<td>340</td>
</tr>
<tr>
<td>TH claims per 100,000 beneficiaries++++</td>
<td>154</td>
<td>611</td>
<td>906</td>
</tr>
</tbody>
</table>

Chi-square test of difference by beneficiary residence significant at *p < 0.05, **p < 0.01, ***p < 0.001, **** p < 0.0001

ANOVA by beneficiary residence significant at +p <0.05, ++p <0.01, +++p <0.001, ++++p < 0.0001
Characteristics of Telehealth Users

• **Total number of TH users:**
  - 2,512 in 5% sample
  - Estimated 50,240 in non-dual population

• **Rural TH users more likely to be:**
  - White
  - Under age 19
  - In child or disabled Medicaid eligibility categories
Telehealth Use Rates by Type of Service and Residence

% of TH users receiving specified services

- Urban (n = 1,350)
- Rural Adjacent (n = 652)
- Rural Non-Adjacent (n = 510)

Data: Medicaid Analytic Extract (MAX), 2011.
Chi-square test of difference by beneficiary residence significant at *p <0.05, **p <0.01, ***p < 0.001, ****p < 0.0001.
Telehealth Diagnoses by Residence

% of TH users with diagnosis

- Urban (n = 1,350)
- Rural Adjacent (n = 652)
- Rural Non-Adjacent (n = 510)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Urban</th>
<th>Rural Adjacent</th>
<th>Rural Non-Adjacent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD and other disorders usually diagnosed in childhood*</td>
<td>21.6</td>
<td>25.9</td>
<td>27.5</td>
</tr>
<tr>
<td>Mood disorders***</td>
<td>44.7</td>
<td>43.1</td>
<td>34.3</td>
</tr>
<tr>
<td>Other behavioral health diagnoses</td>
<td>24.6</td>
<td>23.3</td>
<td>20.4</td>
</tr>
<tr>
<td>Non-behavioral health diagnoses****</td>
<td>12.7</td>
<td>11.7</td>
<td>22.9</td>
</tr>
</tbody>
</table>

Data: Medicaid Analytic Extract (MAX), 2011.
Chi-square test of difference by beneficiary residence significant at *p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001.
Impact of Telehealth Parity Laws on Rate of Rural Telehealth Use

• No statistically significant difference in TH use rates between rural Medicaid beneficiaries in states with TH parity laws and those in states without TH parity laws
Conclusions

• Rates of TH use were higher in rural than in urban subpopulations
• Absolute rates of rural TH use were low
• Behavioral health problems the most common target for TH services in rural and urban populations
• Rural TH users more likely than urban peers to access non-behavioral health services via TH
Limitations

- Dual eligibles excluded from analyses
- Likely undercounting of TH claims
Questions for Future Research

• Has rural TH use in Medicaid increased since 2011?
• What TH policies were associated with higher rural TH use rates in 2011?
• What TH policies were associated with faster expansion of TH use after 2011?
• Do distinctive patterns of rural TH use persist over time?
• Does TH expansion improve rural health access, quality, outcomes, and cost-effectiveness?
Contact Information

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