Effects of the federal mental health insurance parity law on service use and spending among children with Autism Spectrum Disorders

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Outline for talk

• Background on Domenici-Wellstone Mental Health Parity and Addiction Equity Act of 2008 (MHPAE) and autism
• Research questions
• Data and methods
• Results
• Conclusions

Primary research question: How did the federal parity law affect mental health service use and spending by children with autism spectrum disorders?
Outline for talk

• Background on federal parity law and autism
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Background on Federal Parity

• Historically, more stringent limits under private insurance for mental health benefits compared with other medical benefits

• In 2008 the U.S. Congress enacted the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act

• Required insurers equalize private insurance coverage for mental health (and SUD) services with coverage for general medical services
  • Includes all financial requirements and treatment limits
  • Effective 2010
Autism

• Autism Spectrum Disorders (ASD) are a group of neurobehavioral syndromes defined by repetitive/stereotypic behaviors and disruption in social and language abilities

• Individuals with ASD require care throughout their lifetime
  • Treatment includes physical therapy, occupational therapy, speech language therapy, medication
  • Many individuals with ASD also have co-occurring mental health disorders

• Cost of care for individuals with ASD high; specific treatments (e.g., ABA) not always covered by private insurers due to concerns about evidence of effectiveness

• Private health plans have historically covered relatively few services for individuals with ASD

• Interest in whether recent policy initiatives such as federal parity law has increased use of services
Prior Literature

• Studies consistently find that parity policies do not significantly increase mental health service use or spending

• Parity policies have been found to confer important financial protections for families

• No published research used claims data to look at the impact of parity on autism services
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Effects of parity on children with autism

• Autism of particular interest when looking at federal parity law
  • ASD services often not covered under private insurers mental health benefit
  • The federal law allows insurers to decide what conditions are covered under mental health parity – not clear how insurers will handle autism services
Primary research question: How did the federal parity law affect service use and spending for children with autism spectrum disorders under private insurance?
Overall design

• Interrupted time series design
• Compare:
  • Trends in service use post-parity with what we would have expected those trends to have been, given the pre-parity trends
• Data: Marketscan claims data
Example of an ITS design

From http://www.cdc.gov/pcd/issues/2013/images/12_0268_01.gif
### Data

- Marketscan claims data
  - 2007-2012
  - Self-insured sample covering 17 million enrollees per year

- Population:
  - All children ages 0-21 with at least one primary autism diagnosis (299.xx) who were continuously enrolled for at least 1 calendar year. (Note: Did not require continuous enrollment across multiple years)
  - N=29,289
  - Approximately 0.3% of all children ages 0-21

- Claims:
  - All health insurance claims for each child
Outcomes of interest

- **Service use**
  - Any mental health service use, and # of outpatient mental health visits
  - Any speech/language therapy, and # of speech/language therapy visits
  - Any occupational or physical therapy (OT/PT), and # of OT/PT visits
  - Any psychotropic drug use

- **Spending**
  - Total health care spending (medical + behavioral + functional + pharmaceutical)
  - Total mental health spending
  - Total speech/language therapy spending
  - Total OT/PT spending

- **Out-of-pocket (OOP) spending (paid for through insurance)**
  - OOP mental health spending
  - OOP speech/language therapy spending
  - OOP OT/PT spending
 Statistical analysis

• Interrupted time series estimation
  • $Y \sim \text{Parity} + \text{Month} + \text{Parity*Month} + \text{[Calendar month indicators]}$

• 72 monthly observations
  • 36 months pre- and 36 months post-parity
  • i.e., models run on aggregated data at the month level

• Models account for correlation of observations over time
  • Yule-Walker estimation with first order autocorrelation

• Model comparison to select best model (AIC)
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What does the sample look like?

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence</td>
<td>0.30</td>
<td>0.34</td>
<td>0.38</td>
<td>0.42</td>
<td>0.45</td>
<td>0.49</td>
</tr>
<tr>
<td>Female (%)</td>
<td>17.4</td>
<td>17.8</td>
<td>17.9</td>
<td>18.2</td>
<td>18.7</td>
<td>18.7</td>
</tr>
<tr>
<td>Age 0-7 (%)</td>
<td>39.5</td>
<td>40.3</td>
<td>38.9</td>
<td>36.9</td>
<td>36.0</td>
<td>34.5</td>
</tr>
<tr>
<td>Age 8-11 (%)</td>
<td>27.6</td>
<td>27.2</td>
<td>27.9</td>
<td>29.4</td>
<td>29.7</td>
<td>30.7</td>
</tr>
<tr>
<td>Age 12-18 (%)</td>
<td>32.9</td>
<td>32.5</td>
<td>33.1</td>
<td>33.6</td>
<td>34.4</td>
<td>34.9</td>
</tr>
<tr>
<td>Any co-morbid diagnosis (%)</td>
<td>65.5</td>
<td>65.8</td>
<td>66.2</td>
<td>67.6</td>
<td>67.7</td>
<td>68.8</td>
</tr>
<tr>
<td>Any mental health service use (%)</td>
<td>65.5</td>
<td>65.8</td>
<td>66.2</td>
<td>68.0</td>
<td>67.8</td>
<td>68.8</td>
</tr>
<tr>
<td>Any speech/language therapy (%)</td>
<td>7.5</td>
<td>7.9</td>
<td>8.3</td>
<td>8.8</td>
<td>10.1</td>
<td>11.2</td>
</tr>
<tr>
<td>Any occupational/physical therapy (%)</td>
<td>5.0</td>
<td>4.8</td>
<td>4.9</td>
<td>4.9</td>
<td>5.6</td>
<td>6.3</td>
</tr>
<tr>
<td>Any psychotropic drug use (%)</td>
<td>41.4</td>
<td>41.1</td>
<td>41.8</td>
<td>41.9</td>
<td>41.7</td>
<td>41.8</td>
</tr>
<tr>
<td>Total spending per year (mean $)</td>
<td>7,958</td>
<td>8,282</td>
<td>8,953</td>
<td>9,530</td>
<td>10,329</td>
<td>11,156</td>
</tr>
<tr>
<td>Average # of OP visits per year</td>
<td>11.1</td>
<td>11.1</td>
<td>11.6</td>
<td>13.4</td>
<td>14.8</td>
<td>16.7</td>
</tr>
</tbody>
</table>
Results

- For most use outcomes, saw an increase in the rate of growth over time as a result of federal parity
  - No effects on the intercept

- Similar trends in effects for spending outcomes
  - Likely a result of the increased use

- But no effect on out of pocket spending
  - So kids getting more services without having to pay more
  - (Except for OT/PT)
## Detailed Results

<table>
<thead>
<tr>
<th></th>
<th>Parity</th>
<th>Parity*Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob. of any OP mental health</td>
<td>0.005 (p=0.08)</td>
<td>0.0004 (p&lt;0.01)</td>
</tr>
<tr>
<td># of OP mental health visits</td>
<td>0.06 (p=0.02)</td>
<td>0.01 (p&lt;0.01)</td>
</tr>
<tr>
<td>Prob. of any speech therapy</td>
<td>0.002 (p=0.87)</td>
<td>0.0005 (p&lt;0.01)</td>
</tr>
<tr>
<td># of speech therapy visits</td>
<td>0.062 (p=0.20)</td>
<td>0.012 (p&lt;0.01)</td>
</tr>
<tr>
<td>Total spending</td>
<td>-3.13 (p=0.82)</td>
<td>2.12 (p&lt;0.01)</td>
</tr>
<tr>
<td>Total speech therapy spending</td>
<td>-0.43 (p=0.56)</td>
<td>0.26 (p&lt;0.01)</td>
</tr>
<tr>
<td>Total OOP spending</td>
<td>3.93 (p=0.45)</td>
<td>-0.33 (p=0.19)</td>
</tr>
</tbody>
</table>
$174 increase in mental health spending in one year post-parity
Increase of 1.5 OP mental health visits in first year post-parity
No increase in OOP spending for mental health
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Strengths and Limitations

Strengths:
- Large sample of children with ASD
- Full medical and behavioral claims on each child

Limitations:
- Limited clinical data
- No comparison group
Conclusions

- Federal parity seems to have increased the services children with ASD receive
  - But effects relatively small in magnitude

- Concern that federal parity would greatly increase ASD-related spending unfounded

- OOP spending results indicate the parity law is conferring some additional financial protections for families of children with ASD

- Interesting to contrast parity effects for children with ASD to overall parity effects

- Ongoing litigation related to federal parity and ASD
Thank you!

comments:

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