Economic Evaluation of Residential Length of Stay and Long-Term Outcomes

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Current Criticism of RC

• The relatively high cost of residential care (RC) is an ongoing concern
• Cost is the principal basis for arguments for eliminating or reducing RC for troubled youth
• RC costs are disproportionately higher, but high risk youth are the most likely to impact public funding via limited education, underemployment, and criminality issues
RC Youth at admission

- 37-52% have special education needs
- 64-68% have substance use issues
- 39-92% have histories of suicidality
- 52-79% qualify for one+ DSM diagnoses
- 31-76% are on psychotropic medication
Service Utilization

- Over a 12-month period, youth with severe issues
  - Per-youth average of 36.2 service provider contacts
  - 40% of contacts resulted in out-of-home placement
- For foster care youth with less severe treatment needs, 20% experience a RC placement at some point during care
Some current policies aimed at limiting time in residential care specify that residential stays should be 6 months or less
- Building Bridges Initiative
- California Child Welfare Continuum of Care Reform
- Florida’s State In-patient Psychiatric Program (SIPP)

Research support for the effectiveness of shorter lengths of stay is tenuous
Study Questions

• We compared long-term outcomes for youth in a RC program 6 months or less (≤6m) with youth in the program more than 6 months (>6m)

• Hypotheses
  – >6m youth will have better outcomes than the ≤ 6m youth
  – Improved outcomes will be associated with better long-term cost benefits (i.e., return on investment - ROI)
Method

- Outcomes from 24-month follow-up (7/2008 – 1/2017)
  - Former RC youth over 19 years old (to capture adult status)
  - From both home campus (n = 1105) and sites (n = 371)
  - 79% completion rate for survey

- Demographics
  - Average 20.1 (range 19 to 22)
  - 61% male, 54.4% minority
  - Average LOS 19.4 months
    - ≤ 6m group: $M = 3.6$ months; $SD = 1.6$ (1 day to 6 months)
    - > 6m group: $M = 21.5$ months; $SD = 13.0$ (6.1 to 103.9 months)
• The ROI tool consists of six questions pertaining to size and cost of the programs that are being compared.
• Inputted values are used in conjunction with outcome values to calculate the impact on long-term ROI.
  – In this study, youth staying in the FHP > 6m versus ≤ 6m.
• ROI tool calculated outcomes in 2013 dollars.
Yes, I know 60% of Americans can't find Nebraska on a map, but this is a map of Nebraska.
• Tests of equality between groups (i.e., groups the same?)
  – 13 variables (SDQ score, prior ROLES, sex, age at admit, Tx site, number of problems at admit, race, referral source, prior school problems, aggression, substance use, criminality, legal problems)
  – Only differences between groups
    • > 6m more like to have come from more restrictive setting
    • ≤ 6m more likely to have been older at admission and to have received care at a site other than home campus
Results

• Youth in the > 6m had significantly better functional outcomes for all three major outcome measures

• ROI for youth in the > 6m group were significantly better than the ≤ 6m
### Functional Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>&gt; 6m (n = 1031)</th>
<th>≤ 6m (n = 141)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed (if not in school)</td>
<td>64.3%</td>
<td>45.9%</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>High School degree or higher</td>
<td>90.4%</td>
<td>67.0%</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Recidivism</td>
<td>22.3%</td>
<td>30.2%</td>
<td>&lt; .05</td>
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</tbody>
</table>
Governmental Benefit
- Reflects program outcomes associated with government fiscal expenditures or tax revenues
- E.g., Improved school, employment and recidivism outcomes

Societal Benefit
- Includes the governmental perspective and also considers non-governmental costs and benefits
- E.g., predicted value of life-time labor market earnings from improved school outcomes and reduced unemployment
<table>
<thead>
<tr>
<th>Outcome</th>
<th>Value</th>
<th>Net Cost Savings (Government Fiscal Impact)</th>
<th>Net Cost Savings (Societal)</th>
<th>% Return (Government)</th>
<th>% Return (Societal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;6m (N=1031)</td>
<td>$154M</td>
<td>-$80M</td>
<td>$325M</td>
<td>36%</td>
<td>361%</td>
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<tr>
<td>Total Cost for group (Per Person; $200K)</td>
<td></td>
<td></td>
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<tr>
<td>≤6m (N=141)</td>
<td>$29M</td>
<td></td>
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<td></td>
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<tr>
<td>Total Cost for group (Per Person; $33K)</td>
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<tr>
<td>Net Benefit (Government Fiscal Impact)</td>
<td>$45M</td>
<td></td>
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</tr>
<tr>
<td>Net Benefit (Societal)</td>
<td>$450M</td>
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</tbody>
</table>

If Both Groups were equal size, the >6m group would realize:
- Increase in Employed Persons: 190
- Decrease in School Dropouts: 241
- Increase in Persons with Military Service: 51
• The >6m group had better educational, employment, and criminality outcomes

• Outcomes were associated with better estimated long-term financial societal benefit ($3.61 benefit for every dollar spent on program)

• A long-term perspective is especially important where troubled youth have a life-time of productivity and lowered criminality to recoup the costs of intervention
Future Research

• Real value of RC needs an ROI based on a randomized clinical trial

• We need to determine which youth benefit the most from RC in terms of both positive outcomes and cost-benefit

• More nuanced analyses of optimal length of stay in relation to specific youth treatment needs is needed
Summary

- Sufficient time is needed to really have an impact on youth behavior

“Once fully established, child and adolescent mental health conditions are often unusually stubborn beasts: rarely completely cured, challenging to manage; frequently escalating in complexity, increasing in severity and intensifying in functional impact”

Sonuga-Barke (2014)

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