The Cost-Effectiveness of a Collaborative Care Approach to Treating Depression and PTSD in the Military

Tara Lavelle, PhD

Assistant Professor, Tufts Medical Center Institute for Clinical Research and Health Policy Studies
Adjunct Researcher, The RAND Corporation
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Acknowledgements

Collaborators:

• Mallika Kommareddi, MS, Lisa H. Jaycox, PhD, Charles C. Engel, MD, MPH (RAND Corporation)
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1/10 military personnel have mental health diagnosis

1/5 returning from combat receive diagnosis of PTSD
Treatment

- Medication
- Clinical follow-up
- Therapy

But...

- Less than half receive mental health services
- Often not timely or adequate
New Approach:
Centrally Assisted Collaborative Telecare (CC)
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Centrally Assisted Collaborative Telecare (CC)

• 12-month RCT: CC vs. Optimized Usual Care (UC)

• Clinically effective

• What is cost and is it cost-effective?
Cost-effectiveness analysis

Incremental cost-effectiveness ratio

\[
\frac{\text{Cost new treatment} - \text{Cost current treatment}}{\text{Effect new treatment} - \text{Effect current treatment}}
\]

Effect: Quality Adjusted Life Year (QALY)

— Range: 0-1
CEA Perspective

Societal

Health sector

Caregiver time

Work Productivity

Family quality of life
Cost-effectiveness: health sector
Cost-effectiveness: societal perspective
METHODS
12-month health outcomes

Quality of Life
• SF-12

Survey measurements:
• Baseline, 3-months, 6-months, and 12-months

Patient QALYs
• SF-6D
12-month costs

Intervention:

• Centralized management team
• Weekly case management team calls
• Contacts between nurse coordinator and patient

Other costs:

• Health Care: Outpatient, inpatient, medications
• Productivity: Lost work days
RESULTS
Baseline Characteristics (n=666)

- Male: 80%
- Married: 67%
- Education > High School: 70%
- Race White: 48%
Cost-effectiveness: health sector

Health care

Work
12-month outcomes

Health Outcomes

• Patient QALYs

Costs

• Intervention

• Inpatient, outpatient, medications
12-month Patient QALYs

CC > UC
0.02

QALYs

UC

CC
12-month outcomes

Health Outcomes
• Patient QALYs

Costs
• Intervention
• Inpatient, outpatient, medications
12 month health care costs

<table>
<thead>
<tr>
<th>Service</th>
<th>UC</th>
<th>CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>$0</td>
<td>~$1800</td>
</tr>
<tr>
<td>Outpatient</td>
<td>~$2000</td>
<td>~$1800</td>
</tr>
<tr>
<td>Inpatient</td>
<td>~$1800</td>
<td>~$2000</td>
</tr>
<tr>
<td>Medication</td>
<td>~$1800</td>
<td>~$2000</td>
</tr>
</tbody>
</table>

Total 12-month costs:
CC > UC
$2200
Cost-effectiveness: health care perspective

$110,000 per QALY

$2200

0.02
What is considered cost-effective?

Country specific

• USA:
  – No explicit threshold
  – $50,000- $100,000/QALY most commonly cited in literature
Cost-effectiveness: societal perspective

Health care

Work
12-month outcomes

Health Outcomes

• Patient QALYs

Costs

• Intervention

• Inpatient, outpatient, medications

• Lost work days
12 month costs

Comparing the costs:
- **Usual Care (UC)**
- **STEPS-UP (CC)**

### Productivity Costs
- Usual Care: $0
- STEPS-UP: $1200

### 12 month costs
- **Total 12-month costs**
  - STEPS-UP > Usual care: $2200
  - Usual care: $1000

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**Graph Details:**
- Y-axis: Cost in $000s ($0 to $12,000)
- Categories: Intervention, Outpatient, Inpatient, Medication
- Colors: UC (light brown), CC (purple)

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*Source: Tufts Medical Center, CEVR (Center for the Evaluation of Value and Risk in Health)*
Cost-effectiveness: societal perspective

$50,000 per QALY

Δ Cost
$1000

Δ QALYs
0.02
Results were sensitive to our decision to include productivity costs...

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Δ Cost</th>
<th>Δ QALY</th>
<th>ICER</th>
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<tbody>
<tr>
<td>Health System</td>
<td>$2200</td>
<td>0.02</td>
<td>$110,000 per QALY</td>
</tr>
</tbody>
</table>
Limitations

• Claims data: Military health system and TRICARE
  – No other third party payers
  – No out of pocket costs

• 12-month time horizon

• SF-6D not sensitive to mental health outcomes

• Did not include impact on other family members
Conclusions

• CC cost-effective approach to treating PTSD and depression in the MHS
• Consistent with CEA of other collaborative care models
• Increased health care integration promotes efficiency and value, major goals of the Affordable Care Act
Thank You

Questions/Comments