Brain Injury as a Chronic Health Condition

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• National Institute on Disability Independent Living and Rehabilitation Research (NIDILRR)
• Administration on Community Living (ACL)
• National Institutes of Health (NIH)
• Patient Centered Outcomes Research Institute (PCORI)

I am co-PI of a grant from NIDILRR to develop a chronic care management model for TBI
Outline

1. What is a chronic health condition and how did we come to think about TBI as one?
2. What services are needed to address TBI as a chronic condition and what do we need to know to do so?
3. What is the status of the NIDILRR-funded project to create a care model for chronic TBI?

CDC on Chronic “Disease”

Chronic diseases are conditions that last one year and require ongoing medical attention or limit activities of daily living or both.

Use Your Words Carefully: What Is a Chronic Disease?

*Stephanie Bernell and Steven W. Howard*
21 CMS-recognized Chronic Conditions

1. Alcohol Abuse
2. Alzheimer’s Disease and Related Dementia
3. Arthritis
4. Asthma
5. Atrial Fibrillation
6. Autism Spectrum Disorders
7. Cancer (Breast, Colorectal, Lung, Prostate)
8. Chronic Kidney Disease
9. COPD
10. Depression
11. Diabetes
12. Drug Abuse
13. Heart Failure
14. Hepatitis
15. HIV/AIDS
16. High cholesterol
17. High blood pressure
18. Ischemic Heart Disease
19. Osteoporosis
20. Schizophrenia & Other Psychotic Disorders
21. Stroke

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Traumatic Brain Injury: A Disease Process, Not an Event

Brent E. Masel and Douglas S. DeWitt

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SPECIAL COMMUNICATION

Traumatic Brain Injury as a Chronic Health Condition

John D. Corrigan, PhD, Flora M. Hammond, MD
Change in Function Over Time

<table>
<thead>
<tr>
<th>Year</th>
<th>% 2 categ. Declined</th>
<th>% 1 categ. Declined</th>
<th>% no change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 2 vs. Year 1 (N=4,968)</td>
<td>9%</td>
<td>13%</td>
<td>21%</td>
</tr>
<tr>
<td>Year 5 vs. Year 2 (N=2,867)</td>
<td>12%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Year 10 vs. Year 5 (N=796)</td>
<td>48%</td>
<td>45%</td>
<td>42%</td>
</tr>
<tr>
<td>Year 15 vs. Year 10 (N=194)</td>
<td>19%</td>
<td>17%</td>
<td>16%</td>
</tr>
</tbody>
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Corrigan JD & Hammond FM Arch Phys Med Rehabil 2013

Reversible Sources of Decline

- TBI triggers a progressive, degenerative process (i.e., Parkinson’s Disease, Alzheimer’s Disease, Chronic Traumatic Encephalopathy).
- TBI causes loss of functional independence which increases inactivity to increase poor health.
- Frontal lobe damage endemic to TBI causes changes in healthy behaviors which lead to death and disability from poor choices.
- Injury causes or exacerbates financial hardship, which in turn leads to poorer health.
- All of the above.
What do we need to know to address brain injury as a chronic condition?

Designing a “Disease Management” approach to Chronic Brain Injury

1. Which brain injuries increase risk for negative outcomes?
2. What pre-existing conditions require management?
3. What conditions develop post-injury that could be prevented or detected early?
### Designing a “Disease Management” approach to Chronic Brain Injury

1. Which brain injuries increase risk for negative outcomes?
2. What pre-existing conditions require management?
3. What conditions develop post-injury that could be prevented or detected early?
4. How can the individual participate in their self-management?
Self-Management Programs Typically Address

- How to make good health decisions
- How to evaluate new treatments
- Use of medications
- Communicating with family, friends, and health professionals
- Dealing with frustration, fatigue, pain, and isolation
- Managing depression
- Healthy living:
  - Breathing and relaxation techniques
  - Exercise
  - Healthy eating

A brain healthy lifestyle!

- Avoid any more TBIs
- Eat well
- Exercise regularly
- Get at least 7 hours sleep
- Don’t drink alcohol or use illicit drugs
- Stop smoking
- Be engaged with people & projects
- Seek to minimize the stress in your life
- Seek to increase restfulness with relaxation training, meditation or other practices
Ideally

Self-management of one’s health is integrated into one’s identity as an informed, responsible and proactive person who happens to be living with the effects of a brain injury.

Designing a “Disease Management” approach to Chronic Brain Injury

1. Which brain injuries increase risk for negative outcomes?
2. What pre-existing conditions require management?
3. What conditions develop post-injury that could be prevented or detected early?
4. How can the individual participate in their self-management?
5. How can access to medical and rehabilitation care be used to reduce negative outcomes?
6. How can community-based resources be accessed to improve function and reduce institutionalization?
BeHEALTHY: Building a Self-directed Chronic TBI Management Model

1. Start with the Chronic Care Model
2. Add Person-Centered approach
3. Use multi-disciplinary clinic structure

Vision: an optimally informed & activated participant served by an expert, proactive team
3. Multi-disciplinary expertise
   a. Brain injury medicine
   b. Affect, behavior & cognition — including adaptations for self-management
   c. Movement/exercise
   d. Social & vocational engagement
   e. Community resource navigation (potentially external)
   f. Care coordination — including Collaborative Care with other providers

Vision: an optimally informed & activated participant served by an expert, proactive team

4. Intensity based on:
   a. Medical complexity
   b. Independence in self-management
   c. Community resources including Social Determinants of Health

Vision: an optimally informed & activated participant served by an expert, proactive team
5. Funding
   a. Fee-for-service blended with...???
   b. Community partnership
   c. Accountable Care Organization subcontract
   d. Commercial insurance value-based funding
   e. Post-acute care managed risk
   f. HCBS waiver

Vision: an optimally informed & activated participant served by an expert, proactive team

Questions?

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