Adverse Financial Events Before and After Dementia Diagnoses

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The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff of the Board of Governors of the Federal Reserve.
Background

• Dementia, a degenerative disease characterized by deteriorating memory and cognitive ability affects growing number of Americans
• 15% of those over 70, + 20% mild cognitive impairment
• Estimated 12 million older adults by 2050
• Currently, no effective treatments or cures
• Patients frequently continue to manage finances after impairment onset (Boyle et al, 2013; Hsu and Willis, 2013)
Background

• One of the earliest signs of cognitive decline and dementia is impaired financial capacity
  • difficulties managing money and paying bills
  • making erratic and uncharacteristically risky financial decisions

• Cognitively impaired patients frequently overestimate their financial abilities, placing them at risk of
  • financial fraud
  • inappropriate asset allocation
  • credit delinquency from unpaid bills
Anecdotal Evidence

• 84% of financial advisors report at least 1 cognitively impaired patients in a Fidelity survey
• Popular press articles describe families learning about relative’s cognitive impairment
  • When home is foreclosed
  • After significant fraud has occurred
  • At wedding to much younger spouse
• But we don’t know how prevalent these events are or magnitude of losses
Concerns for Retirement Financing

• Retirement products are increasingly complex
  • Cognitive impairment can -> financial decisions that eliminate or markedly reduce retirement savings
• Losing entire portfolio can trigger Medicaid spend-down or leave unimpaired spouse without financial support
• Financial fraud is prevalent, increasingly sophisticated
Research Goals

- Describe the prevalence and magnitude of financial losses before and after dementia diagnosis
- Assess the extent that financial data can be used to detect early warning signs of cognitive decline

<table>
<thead>
<tr>
<th></th>
<th>Normal Cognition</th>
<th>Newly Cognitively Impaired</th>
<th>Cognitively Impaired 2+ Waves</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Difficulty Managing Money</td>
<td>1.9</td>
<td>6.4</td>
<td>11.4</td>
</tr>
<tr>
<td>New Difficulty Managing Money at t-1</td>
<td>2.0</td>
<td>4.0</td>
<td>11.3</td>
</tr>
<tr>
<td>New Difficulty Managing Money at t-2</td>
<td>1.8</td>
<td>3.3</td>
<td>8.6</td>
</tr>
<tr>
<td>New Debt</td>
<td>11.2</td>
<td>10.3</td>
<td>8.8</td>
</tr>
<tr>
<td>New Debt at t-1</td>
<td>11.9</td>
<td>10.9</td>
<td>9.6</td>
</tr>
<tr>
<td>New Debt at t-2</td>
<td>12.1</td>
<td>11.3</td>
<td>10.0</td>
</tr>
<tr>
<td>Observations</td>
<td>57,550</td>
<td>7,608</td>
<td>11,432</td>
</tr>
</tbody>
</table>

Notes: Cells indicate the percentage of Health and Retirement Study respondents with difficulties managing money/new debts in the current and previous interviews. New and continuously cognitively impaired categories pool mild cognitive impairment and dementia versus normal cognitive functioning. Sample includes respondents with at least 3 interviews between 1996 and 2012.
Project Overview

• Create new dataset combining health information with consumer credit files

• Use probabilistic matching (on census block, age, hh size) to link FRBNY Equifax Consumer Credit Panel to Medicare claims

• Equifax CCP: quarterly observations at the individual level for a 5% sample of US households, 2000 – 2016

• Medicare claims: beneficiary summary file (chronic conditions)- indicator variable for whether the respondent has had 1 more claim indicating Alzheimer’s disease or related dementia, 2005 - 2014
Methods: Medicare Claims Data

• Collected for billing, not research
• Provide health information triggered by utilization
• No claims received for patients who elect to receive benefits through a managed care plan (32% in 2014)
• Chronic Conditions Warehouse Alzheimer's and Related Dementia flag likely represents the most serious cases
  • Experts estimate up to 50% undercount
• Exact addresses for approximately 20% of beneficiaries will allow creation of household-level file and facilitate match to CCP
Alzheimer’s and Related Dementia

The graph illustrates the share of Medicare beneficiaries with Alzheimer’s and Related Dementia as a function of age at the end of the reference year. The data shows a significant increase in the share of beneficiaries with dementia as age increases, particularly after the age of 70. The graph uses two lines to represent different categories of dementia: CCW Alzheimer's/Dementia (solid blue line) and Any Alzheimer's/Dementia (dashed red line).

- **CCW Alzheimer's/Dementia**: This category shows a steady increase in the share of beneficiaries with dementia, starting from a lower baseline and rising gradually as age increases.
- **Any Alzheimer's/Dementia**: This category includes both CCW and non-CCW cases, showing a more pronounced rise, especially after age 70, indicating a higher prevalence of Alzheimer's and related dementia across the age spectrum.

The y-axis represents the share of Medicare beneficiaries, while the x-axis indicates age at the end of the reference year, ranging from 60 to 100 years.
Methods: Consumer Credit Data

• Represents large-scale, real-time source of information about many consumer events potentially tied to dementia
  • Late bill payments (30, 60, 90 day delinquencies)
  • Tax liens
  • Home foreclosure
  • Changes in borrowing (# credit inquiries, amount of outstanding credit, share of credit being used)

• Already being used (for other purposes) by financial institutions that may have legal responsibilities around financial decisions and dementia
## Summary Statistics

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Any Credit Accounts</td>
<td>74%</td>
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<tr>
<td>Any 30 day past due accounts</td>
<td>1.3%</td>
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<tr>
<td>Any 60 day past due accounts</td>
<td>0.6%</td>
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<tr>
<td>Any 90 day past due accounts</td>
<td>0.4%</td>
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<tr>
<td>Any 120 day past due accounts</td>
<td>1.0%</td>
</tr>
<tr>
<td>Any 120+ day past due accounts</td>
<td>3.6%</td>
</tr>
<tr>
<td>Bankruptcy</td>
<td>1.0%</td>
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<tr>
<td>Met CCW Alzheimer’s/Dementia Algorithm</td>
<td>7.5%</td>
</tr>
<tr>
<td>Any Indication of CCW Alzheimer’s/Dementia</td>
<td>9.5%</td>
</tr>
</tbody>
</table>
Adverse Financial Events Among Older Americans

• Based on aggregate data averaged at the state*year of age level, 2000 – 2016
• Adjusted for state and year fixed effects
• Show changing use of credit with age
Any 30 Day Past Due Accounts

Average % vs. Age, in Years
Any 120 Day Past Due Accounts

Age, in Years

Average %
Summary of Results

• Older adults are using credit products, but account balances and # cards declines with age
• Adverse events also decline with age, possibly due to family intervention
• When rare events occur they may be a strong signal of problems
Implications for Retirement Security

• Credit data represent a potential source of information about beneficiaries’ need for assistance managing money

• Large numbers of beneficiaries are using credit products through their 60s – 80s, years when pre-clinical signs of dementia may be apparent in financial transactions

• Public policies that facilitate earlier detection of cognitive decline may facilitate asset protection and promote family retirement security