Aging, Cognition & Financial Health: the case for *whealthcare*

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Many thanks to....

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Topics

• How do cognition and behavior change over time, with age?
  – disease and non-disease causes of change
• How do cognitive and behavioral changes impact on day-to-day life, especially financial health?
• What is the economic impact of cognition and behavior impairments?
• What are opportunities for the industry?

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Aging, Cognition & Financial Health

• “Aging, Cognition, and Financial Health: Building a Robust System for Older Americans”

• “The Philadelphia Financial Independence Project”
  – Learn more at www.whealthcare.org
The Aging Brain

• What do we mean when we talk about “cognition?”
  – memory, language, attention, executive function, orientation, visuospatial function, judgment

• What do we mean when we talk about “cognitive aging?”
  – cognitive function measured in the absence of disease
  – we typically adjust for years of education & years of life

• Over years of life, we observe changes in cognition – some domains remain stable, others decline
The Aging Brain

Cognitive function vs. Years

- Preclinical
- Mild Cognitive Impairment (MCI)
- Dementia

Cognitive Aging
A Closer Look At Cognitive Aging

crystallized intelligence or abilities, knowledge such as...
language skills
a particular topical area

fluid abilities
active processing of new information, (such as learning a new game)
in novel situations, thinking logically & solving problems
important to new learning and skill acquisition
The Aging Brain

Key points...

• Aging is associated with changes in cognition....
  – diseases that impair cognition: the most common is Alzheimer’s disease, others include vascular, Parkinsons, Lewy Body disease -- *neurons die*
  – Age-related cognitive changes: these are not uniform – there is a lot of variability -- *neurons don’t work as well*
  – Older adults often have *both* of these conditions

• Changes in cognition can lead to losses in the abilities to perform tasks and make decisions
Money Woes Can Be Early Clue to Alzheimer's

As Arthur Packel's dementia grew worse, he forgot how to handle money, and his wife, Renee, could not find where it all went.

By GINA KOLATA
Published: October 30, 2010

Renee Packel used to have a typical suburban life. Her husband, Arthur, was a lawyer and also sold insurance. They lived in a town house just outside Philadelphia, and Mrs. Packel took care of their home and family.

One day, it all came crashing down.
Mean Scores on Total ADL

<table>
<thead>
<tr>
<th>Months</th>
<th>Baseline</th>
<th>+6</th>
<th>+12</th>
<th>+18</th>
<th>+24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>38</td>
<td>34</td>
<td>30</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Family</td>
<td>38</td>
<td>34</td>
<td>30</td>
<td>27</td>
<td>24</td>
</tr>
</tbody>
</table>

Comparison Group
- Self
- Family

Group: NS
Time: F=6.54, p<.001
Time x Group: NS

Alzheimer’s Group
- Self
- Family

Group: F=18.1, p<.0001
Time: F=29.4, p<.0001
Time x Group: F=9.78, p<.0001
Linear Trend: F=19.35, P<.0001
Cubic Trend: F=7.39, p<.01

The AD Problem

• U.S. prevalence of about 5 million
  – no effective medication treatment
    • over last 30 years, risk of developing dementia has been declining
      – reflecting access to health care (especially CVD), education, social and economic stability

• Monetary costs $157 to 215 billion (in 2010 $’s)
  – Most (~60%) of this is the cost of long term care provided by family or professionals in the community

• Elder abuse & neglect costs lots of money but we really don’t know how much

Hurd et al. Monetary costs of dementia. NEJM. 2013.
The AD Problem

• “We all know client incapacity is as big an issue as exploitation, if not more.”
  – Mary Shae Tucker
  Elder Client Initiatives, Wells Fargo
Financial decision making

You have $2,000 to invest. You want a mutual fund that has a management fee of less than 1.5%, one that has been active for at least 5 years, and one that has a gross annual return of at least 6.0%. Based on the information in the table below, which fund should you choose?

(1) Fund A
(2) Fund B
(3) Fund C
(4) Fund D
(5) Fund E
(6) Fund F
(7) Fund G
(8) Fund H
(9) Fund I

25% correct

What is the account management fee for this fund?

(1) 8%
(2) 0.75%
(3) 0.10%
(4) 10%

85% correct

What is the gross annual return on the minimum investment?

(1) $8
(2) $80
(3) $800
(4) $1,000

50% correct
Literacy predicts dementia

Low literacy more likely to develop AD

Wilson et al., 2016; Yu et al, 2017

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Decision making about a mutual fund predicts dementia

- Low decision making about 5x more likely to develop AD
- Low decision making also more likely to develop MCI

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Declines over time

- Financial literacy and decision making decline with advancing age
- Decline in these skills also is related to impending dementia
- Change in financial behaviors likely driven by accumulating disease pathology in the brain
The Economic Ecosystem
Retirement shift to defined benefit plans
Debt of Older Americans
Paying for LTC


Impact of Long Term Care on Retirement Readiness, by Age Cohort, 2014

Percentage of Life Paths that Will NOT Run Short of Money in Retirement

- Early Baby-Boomers:
  - Assuming No Long Term Care: 74.8%
  - Long Term Care (Occurs Stochastically): 52.3%

- Generation X:
  - Assuming No Long Term Care: 83.8%
  - Long Term Care (Occurs Stochastically): 50.3%

Source: EBRI Retirement Security Projection Model®.

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The Opportunities:
From ignorance, to risk management, to whealthcare

• Communication to achieve KYC/TC
  – the post 2165 and 4512 world (at least for investment houses)
• Technology
  – to learn & to surveille
• Systems integration
  – Eldernet
• Privacy
  – whose data is it?

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