Dementia, Cognitive Aging Services and Support

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- Biogen, Inc.: Consultant
- Eli Lilly and Company: Consultant

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  - U01 AG024904
Outline

• Alzheimer’s Disease and Dementia

• Cognitive Aging

• National Plan to Address Alzheimer’s Disease
  Long Term Services and Support
  • Healthy brain aging
  • Dementia-capable services and support
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Dementia

Impairment in cognition, memory/thinking, of sufficient severity to compromise one’s daily activities
Dementia

- Alzheimer’s disease (AD): 53%
- AD vascular dementia: 10%
- Vascular dementia: 8%
- Fronto-temporal dementia: 8%
- Other: 6%
- DLB: 5%
- AD + dementia with Lewy bodies (DLB): 10%
Criteria for AD

National Institute on Aging
Alzheimer’s Association

Alzheimers and Dementia, May, 2011
Introduction to the Recommendations from the National Institute on Aging-Alzheimer’s Association Workgroups on Diagnostic Guidelines for Alzheimer’s Disease

Clifford R. Jack, Jr, Marilyn S. Albert, David S. Knopman, Guy M. McKhann, Reisa A. Sperling, Maria C. Carrillo, Bill Thies, Creighton H. Phelps
Hypothetical Model of Dynamic Biomarkers of the Alzheimer’s Pathological Cascade

- Normal
- Abnormal
- Aβ
- Tau-meditated neuronal injury and dysfunction
- Brain structure
- Memory
- Clinical function

Clinical disease stage:
- Cognitively normal
- MCI
- Dementia

Jack et al: Lancet Neurol 2010
Prevalence of PiB PET in Normals

Rowe et al: 2010
Biomarkers for AD

• Early biomarkers
  Amyloid deposition
    PET imaging
    CSF amyloid

• Later biomarkers
  Neurodegeneration
    Structural MRI
    Tau PET
    FDG PET
    CSF tau
Neuroimaging in AD
Neuroimaging in AD

- Structural MRI
- Functional imaging
  - FDG PET
- Molecular imaging
  - Amyloid PET imaging
Structural Imaging in AD
Structural MRI: Atrophy and AD Stage

Control, 70, F  
MCI, 72, F  
AD, 74, F
Functional Imaging in AD
Molecular Neuroimaging
PIB Idealized

- CN
- aMCI
- AD
Tau PET Imaging
Alzheimer’s Disease Spectrum

Preclinical AD

MCI Due to AD

Dementia Due to AD
AD Statistics

• 5+M people in US have AD
• 10-15M caregivers
• Numbers will triple by 2050

• But, not everyone will develop dementia
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Major question

What is normal aging?
Successful aging

Typical aging

MCI

Dementia

Function

Time
Cognitive Aging: Progress in Understanding and Opportunities for Action

IOM Committee on the Public Health Dimensions of Cognitive Aging
The IOM committee was convened to examine cognitive health and aging, as distinct from Alzheimer's disease. The committee was asked to make recommendations focused on the public health aspects of cognitive aging with an emphasis on:

• Definitions and terminology,
• Epidemiology and surveillance,
• Prevention and intervention opportunities,
• Education of health professionals,
• Public awareness and education.
What is Cognitive Aging?

• **Cognition** refers to the mental functions involved in attention, thinking, understanding, learning, remembering, solving problems, and making decisions.

• **Cognitive aging** is a process of gradual, ongoing, yet highly variable changes in cognitive functions that occur as people get older.

• Cognitive aging is a lifelong process. It is not a disease or a quantifiable level of function.

• In the context of aging, **cognitive health** is exemplified by an individual who maintains his or her optimal cognitive function with age.
Demographics

**Key Features of Cognitive Aging**

- **Inherent in humans** and animals as they age
- Occurs **across the spectrum of individuals** as they age regardless of initial cognitive function
- Highly dynamic process with **variability within and between individuals**
- Includes cognitive domains that may not change, may decline, or may actually improve with aging, and there is the potential for older adults to strengthen some cognitive abilities
- **Only now beginning to be understood biologically** yet clearly involves structural and functional brain changes
- **Not a clinically-defined neurological or psychiatric disease such as Alzheimer’s disease** and does not inevitably lead to neuronal death and neurodegenerative dementia.
Mayo Clinic
Study of Aging

Population-based study of 3000-5000 (3000 active) nondemented persons ages 50-89 years in Olmsted County, MN
Frequency of Subjective Memory Complaints

- No complaint
- Subjective Memory Complaint (0-9)

Bar chart showing the percentage of complaints ranging from 0 to 8.
## Multivariate Cox Proportional Hazard Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>HR (95% CI)</th>
<th>P</th>
</tr>
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<tbody>
<tr>
<td>Degree of subjective memory complaints (0-9)</td>
<td>1.12 (1.06, 1.19)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Male</td>
<td>0.77 (0.63, 0.95)</td>
<td>0.013</td>
</tr>
<tr>
<td>Education</td>
<td>1.04 (1.00-1.07)</td>
<td>0.03</td>
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<tr>
<td>Depression/dysphoria</td>
<td>1.28 (0.85, 1.72)</td>
<td>0.011</td>
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<tr>
<td>Anxiety</td>
<td>1.27 (0.85, 1.92)</td>
<td>0.25</td>
</tr>
<tr>
<td>APOE carrier</td>
<td>1.44 (1.17, 1.77)</td>
<td>0.0005</td>
</tr>
<tr>
<td>zAttention</td>
<td>0.72 (0.60, 0.87)</td>
<td>0.0004</td>
</tr>
<tr>
<td>zMemory</td>
<td>0.57 (0.47, 0.68)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>zGlobal</td>
<td>0.32 (0.49, 0.82)</td>
<td>0.0005</td>
</tr>
<tr>
<td>Charlson index</td>
<td>1.03 (1.00, 1.06)</td>
<td>0.073</td>
</tr>
</tbody>
</table>
Cognitive Trajectories for Global Cognition in Older Adults, Mayo Clinic Study of Aging, N=1,390

Key Messages

• Cognitive aging is more than decline in memory or speed of processing; can have positive effects on cognition.

• Scientific understanding of the non-disease changes in cognition with age is rapidly advancing; much remains to be learned.

• Wide variability in the impact of cognitive aging among individuals and throughout the life span.

• Age affects all organs, including the brain.

• Cognitive changes can affect daily activities.

• Actions can be taken by individuals to help maintain cognitive health.

• Opportunities for action at many levels.
Recommendation 1

Increase Research and Tools for Assessing Cognitive Aging and Cognitive Trajectories
Recommendation 2

Collect and Disseminate Population-Based Data
Recommendation 3

Take Actions to Reduce Risks of Cognitive Decline with Aging
Recommendation 4

Increase Research on Risk and Protective Factors and Interventions
Recommendation 5

Ensure Appropriate Review, Policies, and Guidelines for Products that Affect Cognitive Function or Assert Claims Regarding Cognitive Health
Recommendation 6

Develop and Implement Core Competencies and Curricula in Cognitive Aging for Health Professionals
Medicare AWV as Springboard

• Established by the Patient Protection and Affordable Care Act of 2010.

• All Medicare beneficiaries are entitled to annual wellness visits where “detection of any cognitive impairment” is a mandated component.

• Opportunity to increase the use of evidence-based cognitive assessment tools to fulfill this mandate on a universal basis.

• No specific evidence-based assessment tools were mandated; as part of its charge, the GSA Workgroup reviewed other efforts to identify such tools.
Recommendation 7

Promote Cognitive Health in Wellness and Medical Visits
Recommendation 8

Develop Consumer Product Evaluation Criteria and an Independent Information Gateway
Recommendation 9

Expand Services Relevant to Cognitive Health
Recommendation 10

Expand Public Communications Efforts and Promote Key Messages and Actions
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Cognitive Disability among Adults

• Most adults living in the community do not have serious cognitive disabilities.

• According to the BRFSS, in 2013, among adults living in the community:
  – 10.1% of those 18-44 reported a serious cognitive disability
  – 12.0% of those 45-64 reported a serious cognitive disability
  – 9.9% of those 65+ reported a serious cognitive disability

• According to NHATS in 2011, only 20% of adults aged 65+ had probable dementia
Cognitive Disability in LTSS

HOWEVER:

• About 40% of people using HCBS have cognitive disability

• About 50% of those living in ALFs and nursing facilities have cognitive disability
Two Key Goals related to Cognition for Medicaid Beneficiaries

1. Promote brain health and maintenance of cognitive abilities across the life span.

2. Ensure that health and long-term services & supports are “dementia-capable”
National Alzheimer’s Plan Goals

1. Prevent and effectively treat Alzheimer’s disease by 2025

2. Optimize care quality and efficiency

3. Expand supports for people with Alzheimer’s disease and their families

4. Enhance public awareness and engagement

5. Track progress and drive improvement
Plan Goal 4: Increase Awareness and Engagement

*Brain Health As You Age*

- Four-part set of materials developed by:
  - Administration for Community Living/Administration on Aging
  - National Institutes of Health/National Institute on Aging
  - Centers for Disease Control and Prevention
- Explains what people can do to protect and maintain cognition – the ability to think, learn, and remember
- Provides free resources to help people promote their brain health as they age
Brain Health As You Age

• Available at: www.acl.gov/Get_Help/BrainHealth/Index.aspx

• New sections available on brain injury and dementia
Brain Health As You Age
“Educator Guide”

- Contains the slides for a presentation designed to help older adults and their caregivers learn how to reduce risks that may be related to brain health

- Provides no more than one page of “talking points” per slide

- Includes additional background information for about half of the slides
Brain Health As You Age
“Slide Presentation”

• Designed to help older adults and their caregivers learn how to reduce risks that may be related to brain health

• About 30 minutes in length

• Offers information at a basic level to adults across the lifespan older adults about:
  o Aging and health
  o Good health and the normal aging brain
  o Threats to brain health
  o Healthy aging for your body and brain

For More Information

- Community Programs:
  - Contact a local Area Agency on Aging (AAA)
  - Contact a local Aging & Disability Resource Center (ADRC)
  - Go to http://eldercare.gov/

- National Institutes of Health: http://nih.gov
- National Institute on Aging at NIH: http://nia.nih.gov
- ClinicalTrials.gov, a service of NIH: http://clinicaltrials.gov
- Centers for Disease Control and Prevention:
  - http://www.cdc.gov/aging
  - http://www.cdc.gov/physicalactivity

Age-Related Changes in Memory and Learning

You may find:
- Increased difficulty finding words
- More problems in multi-tasking
- Mild decreases in ability to pay attention

You can still:
- Learn new things
- Create new memories
- Improve vocabulary and language skills
Brain Health As You Age
“Materials for Older Adults”

Provides information about risk factors & free resources
Brain Health As You Age

- Available at: www.acl.gov/Get_Help/BrainHealth/Index.aspx

- New sections available on brain injury and dementia

- More to come....
Plan Goals 2 and 3: Improve Care and Expand Supports

Dementia-capable systems:

1. Educate the public about brain health and participating in research
2. Identify people with possible dementia and referring for diagnosis
3. Ensure that program eligibility and resource allocation account for cognitive disabilities
4. Ensure services are person and family-centered and culturally appropriate
5. Educate workers to identify possible dementia, understand its symptoms, and provide appropriate services
6. Implement quality assurance systems that measure dementia service impact
7. Encourage development of dementia-friendly communities
1. Educate the public

• Risk factors associated with developing dementia -
  http://www.acl.gov/Get_Help/BrainHealth/Index.aspx

• First signs of cognitive problems-
  http://www.nia.nih.gov/alzheimers and National Alzheimer’s Call Center at 1-800-272-3900

• Evidence-based management of symptoms -

• Opportunities to participate in research -
  http://www.nia.nih.gov/alzheimers/clinical-trials or
  www.alz.org/trialmatch.
2. Identify people with possible dementia

• Use assessment and staff training to identify possible impairment

• Explore the ACL-sponsored assessment of cognitive screening tools that non-medical staff can use at http://www.adrc-tae.acl.gov/tiki-download_file.php?fileId=33535

• Recommend that those with impairment get a diagnosis and rule out reversible causes of dementia or conditions that resemble it
3. Ensure appropriate eligibility and resource allocation

• Recognize prompting and supervision in eligibility criteria for LTSS programs

• Recognize that people with dementia use more and different services

• Service preference may vary and involve respite for caregivers
4. Provide person/family-centered services

- Identify person’s abilities, preferences, needs and desired outcomes
- Staff and family caregivers help the person with dementia manage services
- Offer self-direction opportunities
- Recognize role of family caregivers – education and training, respite
- Secretary of HHS’ guidance on person-centered planning and self-direction: [http://www.acl.gov/Programs/CDAP/OIP/docs/2402-a-Guidance.pdf](http://www.acl.gov/Programs/CDAP/OIP/docs/2402-a-Guidance.pdf)
5. Educate workers

• Identify possible dementia

• Understand symptoms of dementia

• Deliver appropriate services

• Toolkit with links to trainings, knowledge tests, staff competencies, and information on state dementia training policies at:
  http://aoa.gov/AoARoot/AoA_Programs/HPW/Alz_Grants/docs/Staff-Training-Toolkit_September_2013.pdf
6. Assure quality

- Assess dementia-capability of the system
- Measure the experience of people with dementia
- CQI with feedback
- ACL grantees can track their progress in improving dementia-capability - http://aoa.gov/AoARoot/AoA_Programs/HPW/Alz_Grants/docs/Learning_Collaborative_Quality_Assurance_Tool-FINAL.pdf
7. Dementia-friendly communities

• These communities learn about dementia and interact effectively with people with dementia and their caregivers as they go about their daily lives:
  – Understand dementia
  – Improve customer service
  – Encourage participation in spiritual life and faith communities
  – Accommodate their needs in transportation and emergency services

• The leading organization promoting dementia-friendly communities is Minnesota’s ACT on Alzheimer’s. www.ACTonALZ.org has tools that help explore building dementia-friendly communities
Take away messages:

• Under the National Alzheimer’s Plan, there are resources that can help states, localities, and service providers:
  – Educate people about brain health
  – Develop dementia-capable health and LTSS systems

• Many free tools are available on brain health and all aspects of dementia-capable services, including an ACL issue brief at:

  • [http://www.acl.gov/Get_Help/BrainHealth/Index.aspx](http://www.acl.gov/Get_Help/BrainHealth/Index.aspx)
Thank You