Diagnosing dementia and the caregiver role
Kristin Kahle Wrobleski, Ph.D., HSPP

National Alliance for Caregiving
March 21st, 2016
Washington, D.C.
When does caregiving begin?

CONCEPTUAL MODEL FOR PERFORMANCE MEASURE DEVELOPMENT FOR DEMENTIA:
Maximizing quality of life, minimizing distress

Population at risk
Symptom awareness/initial detection
Evaluation/initial management
Care, treatment, support for Mild/Moderate/Severe
End of life/bereavement

Onset of cognitive symptoms

Diagnosis Of Dementia

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Screening</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognition</td>
<td>Behavior</td>
<td>Function</td>
</tr>
<tr>
<td>Support</td>
<td>Environment</td>
<td>Safety</td>
</tr>
<tr>
<td>Experience of care</td>
<td>Engagement</td>
<td>Quality of Life</td>
</tr>
<tr>
<td>Education</td>
<td>Health</td>
<td>Support</td>
</tr>
</tbody>
</table>

NATIONAL QUALITY STRATEGY

Effective Prevention & Treatment
Health & Well-being
Safety
Affordability
Person & Family-Centeredness
Effective Communication & Coordination

Passive Approach to Diagnosis of AD

- There may be a delay of 2 years from first noticing symptoms to the initial doctor visit and 3 years before a firm dementia diagnosis\(^1\)
- Dementia specialists diagnosed AD in only 35%, and patients did not receive adequate work-up even after diagnosis\(^2\)
- Less than half of dementia cases are diagnosed by primary care physicians (sensitivity 48.2%, specificity 99.6%) and too few are referred to specialists\(^3\)

Differentiating AD From Other Causes of Cognitive Impairment Is Challenging

- Mild cognitive impairment (MCI) can be confused with normal aging\(^1\)
- Symptoms of AD dementia frequently overlap with those of other conditions\(^1\)
- Patients often present with multiple comorbidities, which can contribute to confusion about their diagnoses\(^1\)
- About 1 in 5 AD dementia diagnoses by experts do not have AD\(^3-5\)
- A definitive diagnosis of AD is only possible at postmortem examination\(^6,7\)
- Differentiating degenerative or vascular etiologies from reversible ones is important\(^2\)

Causes of cognitive impairment include\(^1,2\)
- Depression
- Delirium
- Thyroid dysfunction
- B\(_{12}\) deficiency
- Vascular dementia
- Parkinson’s disease dementia
- Lewy body dementia
- Frontotemporal dementia
- Alzheimer’s dementia
- Normal pressure hydrocephalus
- Substance or alcohol abuse
- Tumor
- Stroke
- Infection

Alzheimer’s Disease: Diagnostic Criteria Timeline

- **1984**
  - Based on correlation between pathology and clinical symptoms; did not incorporate nonamnestic presentations, biomarker information, or concept of MCI; clinical focus and diagnosis of exclusion

- **2000**
  - Criteria for AD dementia and provisional category mild neurocognitive disorder (mild level of cognitive impairment)

- **2007**
  - Included early/prodromal AD stages; incorporated biomarker information, and memory impairment; formalized the idea of a continuum; becomes a diagnosis of inclusion

- **2010**
  - Attempt to provide a common language about disease stages and types of evidence; distinguished MCI from prodromal and incorporated atypical presentations

- **2011**
  - Written to address both research and clinical practices; formalized different stages of continuum: preclinical AD, MCI due to AD, AD dementia; incorporated adjunctive biomarker information; includes atypical presentations

- **2013**
  - Terminology shift from dementia to neurocognitive disorders (NCDs); major or mild NCD subtypes can be due to AD

- **2014**
  - Diagnosis simplified to require clinical phenotype and AD pathology biomarker (amyloid PET; CSF amyloid-β1-42, p-tau, t-tau); MRI, FDG-PET recommended to monitor course of disease

---

Differential Diagnosis of Cognitive Impairment

1. First rule out and/or treat depression and delirium
2. Assessment of core clinical criteria for different major types of dementia
   Medical and neuropsychiatric history, physical examination, informant history, objective cognitive tests
3. Tests to help distinguish Alzheimer’s disease from other conditions and identify comorbidities
   Laboratory tests (CBC, folate, vitamin B₁₂; renal, liver, and thyroid function; syphilis, HIV),
   Structural neuroimaging (eg, CT or MRI scan)
4. Advanced diagnostics may be undertaken if uncertainty remains after the initial work-up
   Advanced MRI (volumetric, DTI), molecular neuroimaging (amyloid PET, dopamine transporter SPECT),
   functional neuroimaging (FDG-PET, SPECT), cerebrospinal fluid analysis (Aβ, tau), genomic (Huntington’s), neuropsychological testing

References:
Transverse Images From Different Neuroimaging Methods in AD and FTD Cases

- Alzheimer’s Disease Dementia
  - MRI shows diffuse cortical atrophy on FLAIR.
  - FDG-PET shows temporoparietal hypometabolism, and loss of the gray-white matter border indicating abnormal amyloid burden on florbetapir PET.

- Frontotemporal Dementia
  - MRI shows bilateral-frontal and temporal cortex atrophy on FLAIR.
  - FDG-PET shows bilateral-frontal and anterior-temporal cortex hypometabolism, and clear gray-white matter borders negative for amyloid plaque on florbetapir PET.

- In FDG-PET images, red areas represent the highest metabolism.

Scharre DW, Trzepacz PT. FOCUS 2013;11:482-500
The caregiver matters

Patient-centered Care

- Social support
- Medical support
- Daily living
- Finances

Diagnosis