Diagnosing Dementia: Doing So Effectively for Patients, Families, and Society

George Schoephoerster, MD
Past President, Minnesota Medical Director's Association
Monday, November 14

Objectives

- Name the major causes of dementia and describe how the diagnosis is made.
- Outline the infrastructure needed in a health care system to effectively diagnosis and manage those with dementia effectively.
- Describe how to best treat (manage) dementia and the role of a Dementia Resource Center in effective treatment (management).

Who is this guy?

- 1982-1996: Full spectrum family medicine in multiple settings, St. Cloud area
- 1996-2003: Faculty and program director Family Medicine Residency Program
- 2003-2009: Full spectrum family medicine as part of CentraCare Clinic
- 2009-present: Full time Geriatrician in 7 LTC facilities in central Minnesota

3

What is dementia?

- A chronic, persistent disorder of the mental processes caused by brain disease or injury and marked by memory disorders, personality changes, and impaired reasoning
- Another example of organ failure
  - Heart Failure
  - Kidney Failure
  - Brain Failure

Dementia: A Little history

- 2500 BC: Egyptians aware of loss of cognitive ability
- 1838: First described by a French psychiatrist
  - Soon labeled as senile dementia
- 1892: Senile plaques under microscope first described
- 1903: Dr. Alois Alzheimer (Germany) related the plaques, found on autopsy of a 55 y/o patient with early onset dementia, to her terminal illness

Alzheimer's: A Potential Public Health Crisis

- Scope of the problem
  - **5.2M** Americans with AD in 2013
  - Growing epidemic expected to impact **13.8M** Americans by 2050 and consume **1.1 trillion** in healthcare spending
  - Almost 2/3 are women (longer life expectancy)
- Some populations at higher risk
  - Older African Americans (2x as whites)
  - Older Hispanics (1.5x as whites)

Alzheimer's Association Facts and Figures 2014

Base Rates

- 1 in 9 people 65+ (11%)
- 1 in 3 people 85+ (32%)
- 1 in 2 people 90+ (50%)

Alzheimer's Association Facts and Figures 2014

7

Rational for Timely Diagnosis

1. Patient Care / Outcomes
2. Time
3. Money

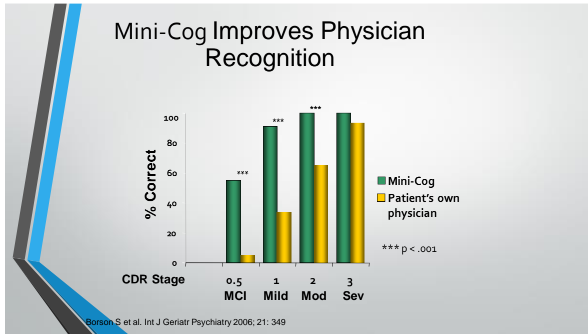
8

Money

- Dementia most expensive condition in the nation
  - $203 billion in 2013, $1.2 trillion in 2050
- Cost effectiveness of early diagnosis & treatment
  - Large scale studies ongoing
- Economic Models
  - No med known to alter costs of care
  - Disease education/support interventions increase caregiver capability, save money, and delay NH
  - Even if assume small # of people benefit (5%), $996 million in potential savings for MN over 15 years

Alzheimer's Association Facts and Figures 2014; Long et al., 2014

9



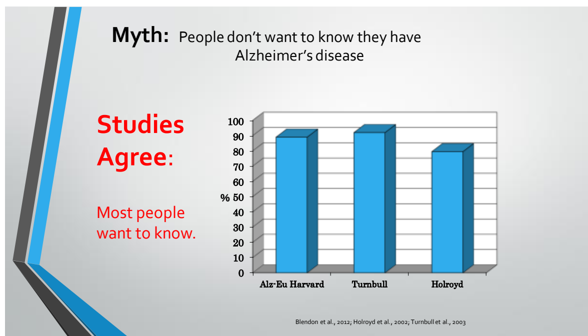
Patient Outcomes

1. Improve quality of life
   - Patients can participate in decisions regarding their future care
   - Decrease burden on family and caregivers
2. Intervene to promote a safe and happy environment that supports independence
   - RTC support/counseling intervention
   - Non-pharm intervention reduces NH placement by 30% and delays placement for others by 18+ months (

The message: You have a disease, but we can help you make life better for you and your family.

11

Mittelman et al., 2006



Patient Outcomes

3. Improved management of co-morbid conditions
   - Underlying dementia = risk factor for poor compliance with ALL treatment goals (e.g., diabetes, hypertension, CHF, anticoagulation)

4. Reduce ineffective, expensive, crisis-driven use of healthcare resources
   - Unnecessary hospitalization (dehydration/malnourishment, medication mismanagement, accidents and falls, wandering, etc.)

The message: We want to provide you with high quality care that is proactive and cost effective

13

Patient Outcomes

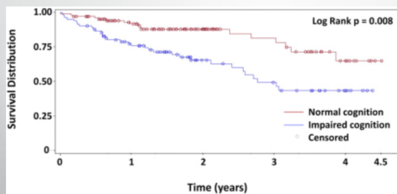
5. Treat reversible causes
   - NPH, TSH, B12, hypoglycemia, depression

The message: Maybe you don't really have dementia after all!

6. If you don't know about the AD co-morbidity, your inability to effectively manage their chronic diseases will impact your quality scores.

14

Outcomes of Elective Surgery:
Preoperative Cognitive Impairment and Mortality



Robinson et al, *J Am Coll Surg*, 2012.

Cognitive Impairment Predicts Readmissions

Mini-Cog Performance Novel Marker of Post Discharge Risk Among Patients Hospitalized for Heart Failure (Patel, 2015; Cleveland Clinic)

- Method: 720 patients screened with MiniCog during hospitalization for HF
- Results: 23% failed screen (M age 78, 49% men)
  - MiniCog best predictor of readmission over 6 mos. among 55 variables
    - Stronger than length of stay, cause of HF, and even comorbidity status
    - Readmission rate 2 times higher among screen fails
    - Fails discharged to facility (vs. home) had lower readmission rates within first 30 days

16

Clinical Practice

Cognitive Impairment Identification

- Screening
- Case Finding
  - Start with screen, for instance Mini-Cog
  - If fails, get further family history and more extensive cognitive screen, like MMSE, MOCA, or SLUMS
  - If abnormal, do W/U or refer to dementia champion, either within your practice or outside of it

Signs and Symptoms of Dementia

- Memory loss
- Confusion
- Disorientation to time or place
- Getting lost in familiar locations
- Impairment in speech/language
- Trouble with time/sequence relationships
- Diminished insight
- Poor judgment/problem solving
- Changes in sleep and appetite
- Mood/personality/behavior changes (BPSD)
- Wandering
- Deterioration of self care, hygiene
- Difficulty performing familiar tasks, functional decline

Alzheimer's Association, 2009

Issues we look for in practice

- Red flags
  - Repetition (not normal in 7-10 min conversation)
  - Tangential, circumstantial responses
  - Losing track of conversation
  - Frequently deferring answers to family member
  - Over reliance on old information/memories
  - Inattentive to appearance
  - Unexplained weight loss or "failure to thrive"

Practice Tips

- Intact older adult should be able to:
  - Describe at least 2 current events in adequate detail (who, what, when, why, how)
  - Describe events of national significance
    - 9/11, New Orleans hurricane disaster, 2016 election, etc.
  - Name or describe the current President and an immediate predecessor
  - Describe their own recent medical history and report the conditions for which they take medication

Things we look for in Practice

- Family observations:
  - ANY instances whatsoever of getting lost while driving, trouble following a recipe, asking same questions repeatedly, mistakes paying bills
  - These concerns should be taken seriously: by the time family report problems, symptoms have often been present for quite a while and are likely getting worse
- One question to consider:
  - If this patient was alone on a domestic flight across the country and the trip required a layover with a gate change, would he/she be able to manage that kind of mental task on his/her own?
    - If answer is "not likely" for a patient of any age: RED FLAG

Family Questionnaire

FAMILY QUESTIONNAIRE

We are trying to improve the care of older adults. Some older adults develop problems with memory or the ability to think clearly. When this occurs, it may not come to the attention of the physician. Family members or friends of an older person may be aware of problems that should prompt further evaluation by the physician. Please answer the following questions. This information will help us to provide better care for your family member.

In your opinion does________________ have problems with any of the following?
Please circle the answer.

1. Repeating or asking the same thing over and over?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
2. Remembering appointments, family occasions, holidays?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
3. Writing checks, paying bills, balancing the checkbook?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
4. Deciding what groceries or clothes to buy?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
5. Taking medications according to instructions?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*

Relationship to patient ________________
(spouse, son, daughter, brother, sister, grandchild, friend, etc.)

www.actonalz.org/pdf/Family-Questionnaire.pdf

Dementia Work-up and Diagnosis

Dementia Work-Up

PROVIDER CHECKLIST
Dementia Work-Up

Follow these diagnostic guidelines in response to patient failure on cognitive screening (e.g., Mini-Cog) or other signs of possible cognitive impairment.

History and Physical

- Review onset, course, and nature of memory and cognitive deficits (Alzheimer's Association Family Questionnaire may assist) and any associated behavioral, medical or psychosocial issues
- Assess ADLs and IADLs, including driving and possible medication and financial mismanagement
- Conduct structured mental status exam (e.g., MoCA, SLUMS, MMSE)
- Assess mental health (consider depression, anxiety, chemical dependency)
- Perform neurological exam focusing on focal/lateralizing signs, vision, including visual fields, and extraocular movements, hearing, speech, gait, coordination, and evidence of involuntary or impaired movements

Diagnostics

Lab Tests
- Routine: CBC, lytes, BUN, Cr, Ca, LFTs, glucose
- Dementia screening labs: TSH, B12
- Contingent labs (per patient history): RPR or MHA-TP, HIV, heavy metals

Neuroimaging
- CT or MRI when clinically indicated

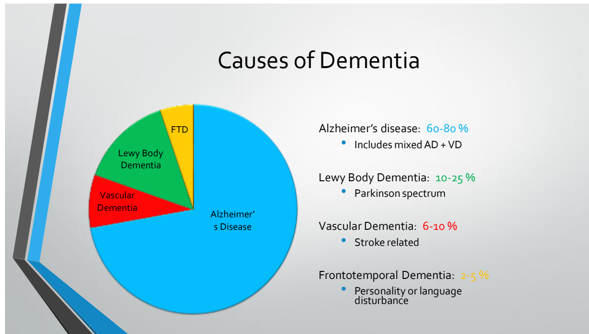
Neuropsychological Testing
- Indicated in cases of early or mild symptom presentation, for differential diagnosis, determination of nature and severity of cognitive functioning, and/or development of appropriate treatment plan
- Typically maximally beneficial in the following score ranges: MoCA 19-27; SLUMS 18-27; MMSE 18-28

Dementia Diagnosis (Neurocognitive Disorder) (DSM-5, released in 2013)

- Evidence from the history and clinical assessment that indicates significant cognitive impairment in at least one of the following cognitive domains:
  - Learning and memory (impaired ability to learn or acquire and remember new information—3 items in 5 minutes)
  - Executive function (impaired reasoning and handling of complex tasks, poor judgment)
  - Language
  - Perceptual-motor function
  - Complex attention
  - Social cognition (changes in personality, behavior or comportment)
    - Recognize thoughts, beliefs, and intentions in oneself and others (often referred to as theory of mind)
    - Identify basic emotions such as happiness, sadness, fear, anger, disgust, and surprise in others (emotion processing)
    - Make decisions by weighing choices associated with variable rewards and punishments

Dementia

- The impairment must be acquired and represent a significant decline from a previous level of functioning
- The cognitive deficits must interfere with independence in everyday activities
- In the case of neurodegenerative dementias such as Alzheimer disease, the disturbances are of insidious onset and are progressive, based on evidence from the history or serial mental-status examinations
- The disturbances are not occurring exclusively during the course of delirium
- The disturbances are not better accounted for by another mental disorder (e.g., major depressive disorder, schizophrenia)
- Cognitive impairment established by history-taking from the patient *and* a knowledgeable informant; and objective bedside mental status examination or neuropsychological testing



Diagnosis*

Mild Cognitive Impairment
- Mild deficit in one cognitive function: memory, executive, visuospatial, language, attention
- Intact ADLs and IADLs; does not meet criteria for dementia

Alzheimer's Disease
- Most common type of dementia (60–80% of cases)
- Memory loss, confusion, disorientation, dysnomia, impaired judgment/behavior, apathy/depression

Dementia With Lewy Bodies/Parkinson's Dementia
- Second most common type of dementia (up to 30% of cases)
- Hallmark symptoms include visual hallucinations, REM sleep disorder, parkinsonism, and significant fluctuations in cognition

Frontotemporal Dementia
- Third most common type of dementia primarily affecting individuals in their 50s and 60s
- EITHER marked changes in behavior/personality OR language variant (difficulty with speech production or loss of word meaning)

Vascular Dementia
- Relatively rare in pure form (6-10% of cases)
- Symptoms often overlap with those of AD; frequently there is relative sparing of recognition memory

* The latest DSM-5 manual uses the term "Major Neurocognitive Disorder" for dementia and "Mild Neurocognitive Disorder" for mild cognitive impairment. This ACT on Alzheimer's resource uses the more familiar terminology, as the new terms have yet to be universally adopted.

Follow Up Visit

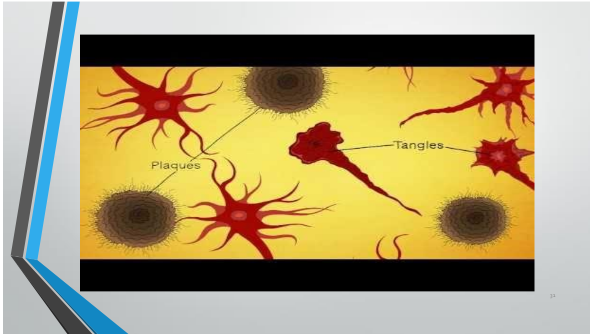
- Include family members, friends, or other care partners
- Review intervention checklist for Alzheimer's disease and related dementias
- Refer to Alzheimer's Association Minnesota-North Dakota 24/7 Helpline at 1-800-272-3900 and/or the Senior LinkAge Line® at 1-800-333-2433

© 2014 ACT on Alzheimer's® www.ACTonALZ.org Page 2

Alzheimer's is Insidious

- Accumulation of neuropathology in the brain 10-20 years before symptoms appear
- Relationship to MCI

30



Risk Factors for Alzheimer's

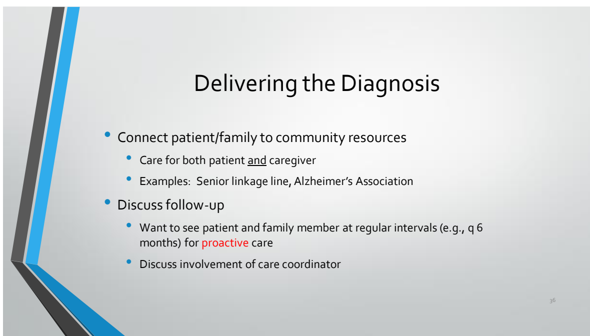
- Age
- Family History
- APOE-e4 (apolipoprotein)
- Cardiovascular Disease risk factors
- Head Trauma

Alzheimer's Dementia: It's history

- 1984: Plaques made up of B-amyloid protein
- Until 1985, Alzheimer's disease thought to be different than senile dementia
- Now neurodegeneration called neurofibrillary tangles under microscope
- Second protein called Tau
- These proteins accumulate and are neurotoxic

ACT
ON
ALZHEIMER'S
Dementia Care
and Treatment

Care and Treatment
INTERVENTION CHECKLIST
For Alzheimer's Disease and Related Dementias
Diagnostic Uncertainty & Behavior Management
Refer to Specialist as Needed
Neurologist (dementia focus, if possible)
Geriatric Psychiatrist
Geriatrician
Memory Disorders Clinic
Counseling, Education, Support & Planning
Link to Community Resources
Contact the Alzheimer's Association Minnesota-North Dakota 24/7 Helpline at 1-800-272-3900 or the Senior LinkAge Line® at 1-800-333-2433
Provide After a Diagnosis
Provide Taking Action Workbook
Stimulation / Activity / Maximizing Function
Daily Mental, Physical and Social Activity
Provide Living Well Workbook
Adult day services
Sensory aids (hearing aids, pocket talker, glasses, etc.)


Delivering the Diagnosis
Connect patient/family to community resources
Care for both patient and caregiver
Examples: Senior linkage line, Alzheimer's Association
Discuss follow-up
Want to see patient and family member at regular intervals (e.g., q 6 months) for proactive care
Discuss involvement of care coordinator

Delivering the Diagnosis

- Address immediate problems:
  - Management of medications, finances, meals
  - Driving
  - Home safety
  - Caregiver burnout
  - Social isolation
  - Inactivity/lack of exercise
- Encourage family involvement/assignments
  - Family need to accompany patient to doctor appts.

Delivering the Diagnosis

- Recommend future actions
  - Create a 'Plan B'
    - What if primary caregiver is suddenly unavailable?
  - Begin to investigate home care, AL, LTC, other living options
  - Develop transportation options
  - Complete Advance Directives
  - Consider future medical care (ACP)—how aggressive?
  - Consider exploring a medical/legal Power of Attorney

Zaleta & Carpenter 2010

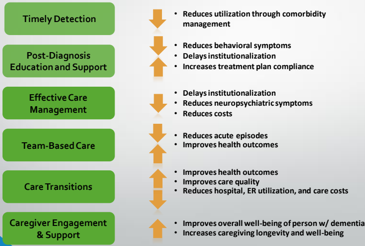
Treatment: Medications

- Cholinesterase inhibitors
  - Donepezil, Rivastigmine, Galantamine, Cognex
  - Possible side effects: nausea, vomiting, syncope, dizziness, anorexia
- NMDA receptor antagonist
  - Memantine
  - Possible side effects: tiredness, body aches, dizziness, constipation, headache
- Current medications
  - Help functioning at synapses, but don't impact cell death
  - Are too late in the process

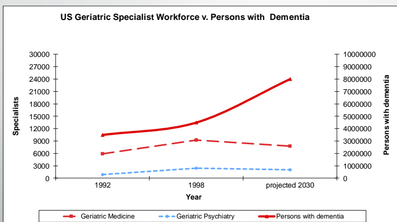
Care and Treatment

- The care for patients with Alzheimer's has very little to do with pharmacology and more to do with psychosocial interventions
- Involve care coordinator
- Connect patient and family to experts in the community
  - Example: Alzheimer's Association
  - Refer every time, at any stage of disease, and for every kind of dementia
  - Stress this is part of their treatment plan and you expect to hear about their progress at next visit

Impact of Optimal Practices



Why Primary Care?



Borson S, Chodosh J. Clin Geri Med 2014; 30: 395-420

Next steps for this Public Health Crisis

- SBMS Circle of Health Dementia Campaign (October 24)
  - Previous vaccination and pain management campaigns
  - In combination with the Central Minnesota Council on Aging, they are doing the background work for developing a Dementia Resource Center
    - To help secure regional capacity for dementia diagnosis and management

Needs Assessment

- SBMS Leadership
  - Help primary care clinics find a champion and structure their practices in a way to meet need for screening, case finding and ongoing management
  - Identify and secure local and regionals subspecialists (neurology/psychiatry)
  - Help neurologists structure practice in a way to minimize referral times
  - Obtain adequate neuropsych testing capacity
  - Educate all relevant providers in diagnosis and management of dementia, including care plan development
  - Develop a region wide standardized approach to screening, diagnosing and managing dementia

Needs Assessment

- Dementia Resource Center (Virtual?)
  - Provide family education on cognitive issues before and after diagnosis
  - Assist patient/care giver in navigating through the entire dementia journey through the remainder of their life
  - Connect patient/care givers to relevant community resources (including diagnostic and medical management capabilities), legal advice and financial matters, as needed
  - Help secure adequate community resources when the region lacks capacity
  - Improve communication of diagnosis, management and associated care plan across entities
  - Provide family care consultation, support and assistance in decision-making in all relevant matters, as needed

Needs assessment—other

- Developing a dementia-friendly region
  - Education and awareness
  - Culture change
- Secure adequate start up funding (Circle of Health)
- Research on the best means to achieve all of these goals in a financially viable manner
- Apply what we learn to other chronic diseases, like depression, and other geriatric issues

Any interest in learning more about or becoming part of the Central Minnesota Dementia Campaign?

- Contact:
  - George Schoephoerster, MD
  - drgeorge@charter.net

- Questions
- Thoughts
- Concerns
- Insights
- Reactions