An Overview of Alzheimer's Dementia or other Cognitive Decline Impacting Aging Adults with Intellectual Disability



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Speaker Background

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Co-President, National Task Group on Intellectual Disabilities and Dementia Practices

Member, Federal Advisory Council on Alzheimer's Research, Care, and Services

Principal investigator, Longitudinal study of specialized dementia-related care group homes designed for adults with intellectual disability

Formerly, Director for Aging and Special Populations for the New York State Office for People with Developmental Disabilities

Content

- Risk factors, prevalence, and implications for services of different causes/types of dementia
- Issues faced by adults with intellectual disability as they grow older and their risk of older age neuropathologies, including Alzheimer's disease
- Prevalent service and support models helpful to maintaining community living of adults with dementia
- National Alzheimer's Project Act and the National Plan to Address Alzheimer's Disease



important to consider?

- Dementia is the result of a brain disease or injury, such as Alzheimer's disease, Lewy body disease, or a brain injury or trauma
- With progression, an adult with dementia is increasingly less able to take care of him or herself ... and requires supervision and someone to help him or her with basic necessities
- Dementia care **options** for most agencies are to support the person in place (whether at home or in their residential accommodation), refer to a longterm care facility, or admit to a specialty dementiacapable group home
- Dealing with dementia calls upon agencies to make some critical decisions about dementia care and developing support resources



Alzheimer's dise. name of a neuropati. or brain disease – that. Apat to general dysfunction



Dementia is the behaviora expression of the brain disease - usually via mem loss and behavioral dysfunction

... losses occur in memory, langur orientation, ADLs [activities of and changes in personality functioning

Things to know about dementia

- **Dementia an umbrella term** for a range of changes in behavior and function affecting aging adults and usually linked to brain disease (e.g., Alzheimer's) or injury (e.g., stroke)
 - Alzheimer's is a disease of the brain dementia describes the resulting behavior
 - Most adults with Down syndrome (DS) are at risk of **Alzheimer's disease** and consequently dementia; same risk as general population for adults with other ID
 - Average age of 'onset' in Down syndrome is about 52 and +60s/-70s for ID; Alzheimer's begins some 20 years before 'onset'
 - Changes in memory often signal dementia in ID; changes in personality often signal dementia in DS
 - After diagnosis progressive decline in DS can last for from 1 to 7+ years; up to 20 years in other ID
 - Care after the early stage can become more challenging as memory, self-care, communication, and walking become more difficult... eventually leads to advanced dementia

Alzheimer's on a relentless upward trajectory

Cases of progressive disease expected to rise

Current and projected numbers for Americans over 65 wit Alzheimer's.



By Mary Brophy Marcus USA TODAY

The number of people who have Alzheimer's disease is creeping insidiously higher year after year, adding increasing pressure on the health care system, experts say.

A report out tod the 2009 Alzheimer's Disease if its ond Figures, indicates that are mated 5.1 midicates with are mated 5.1 midicates with are mated 5.7 most have Alzheimer's.

report. "But we're seeing the government reducing dollars for Alzheimer's disease. Clearly, that's an equation togoing in the wrong direction."

- Every 70 seconds, someone in the USA develops Alzheimer's. The disease slowly erodes the bran and eventually the body and can dag out for years, placing financial burear one families and the medical system, the report says.

The disease also can lead to zerious remainders and the medical system, the report says.

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A report out to day. The disease also can lead to zerious emotional and physical stress on the care system, experts say.

A report out to day. The disease also can lead to zerious emotional and physical stress on the care system experts of those affilted with the disease, says William Klein, pofessor of neurobology and physiology at Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease, of neurobology and physiology at Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease, of neurobology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease, some experts believe treatments for Alzheimer's who are with the disease, some experts believe treatments for Alzheimer's martia for alzheimer's disease of neurobology and physiology at Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease may be even Northwestern University's Cognitive Neurology and Alzheimer's disease, so the true number linked to Alzheimer's disease, so the disease, says William Klein, pofessor of neurology and Alzheimer's disease in creased by 47.1%.

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But some studies show that



Between age 75 to 84, about 1 in 5 adults affected

About 30-50% of adults, age 85 and older, affected

Source: Marcus, M.B., "Alzheimer's on a relentless upward trajectory", USA Today, 24 March 2009, p. 6D

85

90

Terminology

70

60

50

40

30

20

10

0

45

55

65

Age

75

Percent

Mild cognitive impairment (MCI)

Early-stage dementia

Mid-stage dementia

Late-stage or advanced dementia

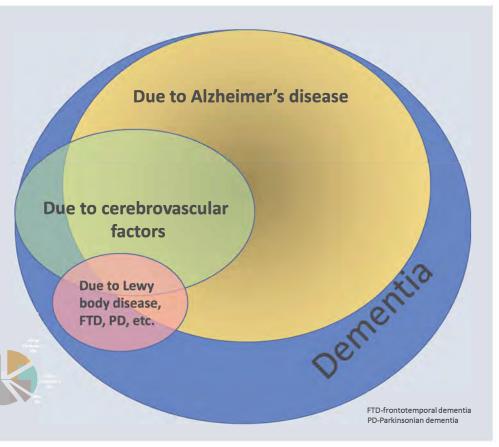
Alzheimer's disease pathology often co-occurs with other pathologies, particularly cerebrovascular pathology

The effects of these different pathologies are additive, and may at least interact

At later ages, mixed dementia is very common, and additional pathologies remain to be identified

Pie chart illustrations can be misleading...

Source: Blacker, D. (2020) [graphic from Weuve, J.]



CLINICAL ASPECTS OF DEMENTIA AND INTELLECTUAL DISABILITY: IMPACT ON SERVICES



Onset

When change is first noticed

For DS: $\overline{X} = 52$

For ID: \overline{X} = late 60s - early 70s

Prevalence (DS 7 66%+

 $ID \rightleftharpoons 5 - 6\%$



Progression

Patterns of change and decline

For DS: Some quick losses, other more normative (changes in personality before memory)

For ID: Varied trajectories; leading to progressive decline



Duration

Length of time persons are affected

For DS: Compressed duration

For ID: Similar to general pop

Why is 'onset' of importance?

- Knowing expected onset gives a head's-up for surveillance
 - Look for changes
 - Introduce periodic screening
 - Alert staff/caregivers to be watchful
 - Provides for an 'index of suspicion'
- Helps us to reformulate services and care practices
 - Creating safer environments
 - Signaling changes in demands for daily efforts
 - Planning ahead for eventualities
 - Setting goals for terms of service adapting personal program plans



	Intellectual disability and dementia
Rate of occurrence ^{1,3,5,8,14}	 ➢ Generally similar prevalence for adults with intellectual disability (~5-6% > age 60) ➢ Elevated prevalence in most adults with Down syndrome (60% >age 60)
Dementia type ^{2,9}	 Generally, 'dementia of the Alzheimer's type' is prevalent in DS Similar 'range of dementias' found in other ID as in other people
Risk ¹⁵	> DS and head trauma are significant risk factors in ID
Onset _{1,2,3,20}	 Average onset age in early 50s for DS – late 60s for others Most DAT diagnosed within 3 years of "onset" in adults with DS
Behavioral changes 2.3611,12,13,20	 In DS - early change in personality more evident In other ID - initial memory loss more evident Notable behavioral changes: apathy, sleep disturbance, agitation, incontinence, irritability, uncooperativeness, aggressiveness
Neurological signs124,7,16,17,18,19	 Late onset seizures in 24%-53% of adults with DS Late onset seizures in DS indicator of life expectancy of less than 2 years Seizures more common at end-stage (84%) versus at mid-stage (39%) Alzheimer's disease
Duration ^{2,17}	 Aggressive Alzheimer's disease can lead to death <2 years of onset in DS 2-7+ years mean duration in DS; probable death within 3-5 years of onset Same duration expected among ID in general as in other people with dementia

Janicki - 2022

Critical factors in dementia care planning

Degree of retention of function

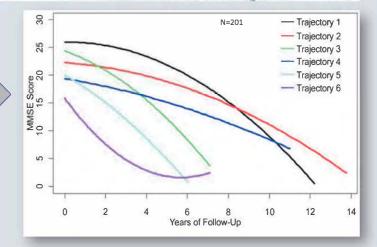
Expected trajectory of progressive dysfunction

Duration (remaining life years)

Type of dementia

Health status

Environmental accommodations



Varying trajectories have implications for continual assessment and adaptations to care management

Source: Figure 2 from Wilkosz et al., (2009). Trajectories of cognitive decline in Alzheimer's disease. International Psychogeriatrics, 28,1-10

Ruby

Ruby at age 62



Courtesy: A.J. Dalton (2000)

Sign or Symptom	Age
Early	
Impaired memory function	54.7
Impaired learning abilities	56.7
Hearing loss	57.0
Disorientation	58.0
Hypothyroidism	59.0
Middle	
Personality changes	60.5
Deterioration of ADL skills	63.0
Abnormal reflexes	64.5
Late	
Hallucinations	64.5
Seizures	65.0
Incontinence	65.4
Has to be fed	65.4
Apathy	65.4
Complete care required	65.4
Death	65.5

Ruby spent most of her life in a large congregate care institution ... back in the 80s.

Contemporary practices would have offered her a different life and opportunities... specially when dealing with her decline and eventual succumbing to dementia.

Ruby's decline illustrates a typical progression of stage associated losses of function, onset of comorbidities, and aging

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What to do when dementia is suspected - ID?

Start with an administrative screen

- · Capture visuals on functioning (preferably 'personal best')
- digital recording of behavior
- Screening instrument
- Observe if screen provides 'hits' on 'warning signs'





Refer for clinical assessment and diagnosis

- Clinicians reapply ID-specific measures to look for longitudinal patterns
- If evidence points to dementia-like symptoms, refers for full diagnostic evaluation (for differential dx)

Post-diagnosis support

- Post-dx decide on value of pharmacological tx
- Implement non-pharmacological strategies
- Support through stage changes



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Possible risks or threats to brain health

Improper use of some medicines

Smoking

Excessive use of alcohol

Heart disease, diabetes, and other health problems

Poor diet

Insufficient sleep

Lack of physical activity

Little social activity and being alone most of the time





EXPECTATION OF CHANGE AND FACTORS IN ID AND DEMENTIA UNDERLYING HOUSING AND CARE PRACTICES

Expectations of change

- · Cognitive skills will decline
- · Support needs will increase
- Increase risks of falls, injuries
- Swallowing dysfunction, clots, pneumonia, bladder infections, nutritional deficiencies, seizures

Care factors

- Watch for signs of abuse and neglect (including self-neglect)
- Watch for signs of caregiver burn-out and stress at home ... affected on adult's behavior
- Watch for advanced dementia and needs for endof-life care (palliative care and hospice)

ID associated issues that extenuate

these factors:

- Co-incident conditions that may affect gait, sensory faculties, and cognition
- Co-morbidities or diseases that may affect physiological functions
- Previously identified 'mental health' issue
- Late-onset seizures
- Precocious (early) aging effects
- Expressive language difficulties
- Nutritional deficiencies & diet inadequacies
- Presence of polypharmacy



Options for dementia care

Staying

Staying at home

- · Continued care by family members until eventual advanced dementia and end-of-life
- Considerations: home adaptation, close supervision for safety and avoiding self-harm or neglect 24/7, possible wheelchair use, palliative and/or hospice aid

Agency focus
Outreach and
community supports
(HCBS)
Helping support family
caregivers

Leaving

Leaving home

- · Admission to a nursing facility after non-ambulatory care is necessary
- . Consideration: SNF capability & understanding of DS?
- · Looking for an agency run specialty dementia care group home
- Other options perhaps memory care centers, assisted living programs?

Agency Focus
Securing housing with
dementia specialty
care
Clinical team supports
Training for staff

Prevalent models of group home-based dementia care

AGING-IN-PLACE

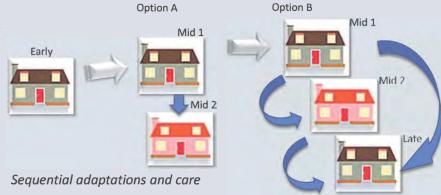
 single care home and stable stay



Linear adaptations and care

IN-PLACE-PROGRESSION

 multiple care homes & movement with progression



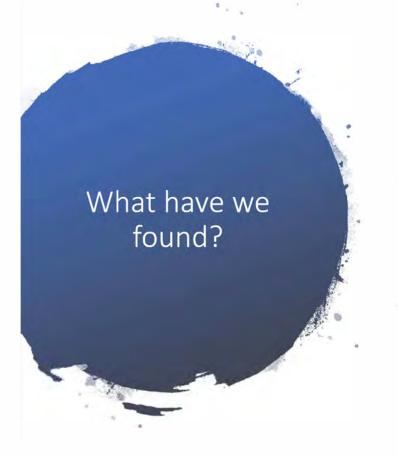
Mid = mid-level

Source: JANICKI (2010)



Study

- Since 2011, we have been following a cohort of 15 legacy adults with ID (w/15 replacements) who lived in 3 purposebuilt, 5-resident, dementia-capable GHs
 - along with 15 community-dwelling (nondementia) adults with ID as age-matched controls
- Data collected include resident function, demographics, health, and other related information as well as staff/home administrative factors



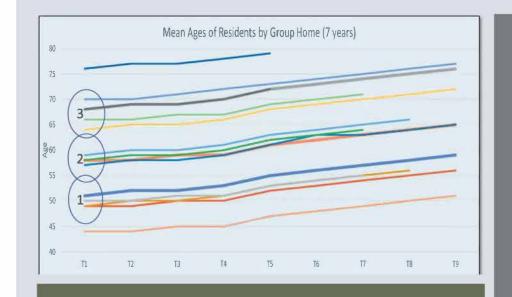
√ Admission trends

√ LOS

√ Mortality

√ Care patterns

√ Staffing



Admission age clusters

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Admissions based on dementia and age showed a tri-modal pattern

- Admit Age <u>Group #1</u> entry:
 ± age 50 [X=50.5] [range: 49-53]
 generally DS
- Admit Age <u>Group #2</u> entry:
 ± age 57 [X=57.1] [range: 56-59]
 some DS and ID
- Admit Age <u>Group #3</u> entry:
 ± age 67 [X=66.8] [range: 64-70]
 generally ID

Outliers were either

- much older [76, 79] or
- much younger [40, 44]



Average LOS over 10 years for 3 group homes was 4.9 years (58.5 months)

includes transfers, deaths, and new admissions

Average LOS for 15 'legacy' residents over 10 years was 8.3 years (99.6 months)

Implication

home compositions may change over time

Lighter shade of color = DS

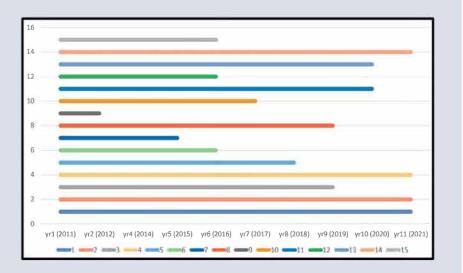
Mortality

Original residents n=15 Survivor residents n=4 (27%) 11/15 (73.3%) died over 10 years

- Mean age at entry: 59.1
 [ID: 66.2; DS: 53.5]
- Mean age at death = 67.5
 - [DS: 58.8; ID: 72.4]
 - Males = 66.3 yrs; Females = 69.5 yrs
- Mean years from entry to death: 5.4 yrs

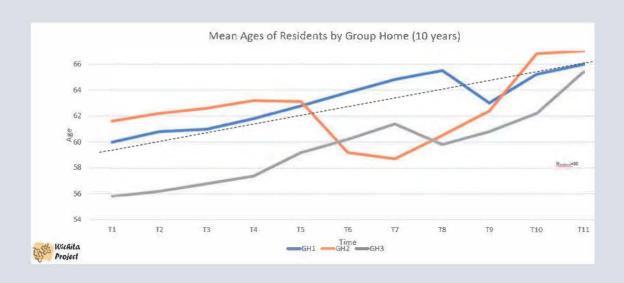
Mean age at entry of original residents who

- > died = 60.9
- > are survivors = 54.4
- Deaths began 2 years following admission
 - Average age of death for controls: 71.4 yrs
 5/15 (33%) deaths among controls



Legacy residents

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Aging in place

- Long-term residents age in place and mean age of residents progressively rises
- New entry residents, if younger, lead to lower mean age, but eventually also show aging-in-place
- Implications with aging, comorbidities increase need for health and medical services

Staff time care patterns by home



- Staff care time patterns varied by homes as well as the caregiving focus
- · Most time was spent on
 - toileting aid (GH1/GH3)
 - eating/drinking assistance (GH1/GH2)
 - behavior management (GH2)
- Chart shows 3hr block pattern variations by home (averaged over 3 times – T1, T5 & T8)

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Staff assignments by home

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- More staff were assigned to GH3 – the advanced dementia home
- Mean staffing: 4.3 full-time and 2.3 part-time
- Implication consider staffing patterns at home
 - Need more staff during times of peak activities and care
 - · Need specialized staff
 - · Plan for turn-overs



Findings

- Of the 15 legacy residents 11 died and were replaced by 15 others (greater mortality was noted among legacy residents with ID compared to DS)
- All 30 residents (legacy and replacements) exhibited features related to decline (increasing problems, more comorbidities with age, and lessened function with dementia progression)
- With multiple homes, over time there were interhome transfers and new admissions, and the GHs trended toward stage/level specialty care
- There was an ebb and flow of movement related to stage of dementia and changes in character among the 3 dementia GHs, as well as variations in staffing patterns and periods of focused staff care and intensity during the day
- Costs and staffing patterns varied among the homes

Implications for dementia care housing

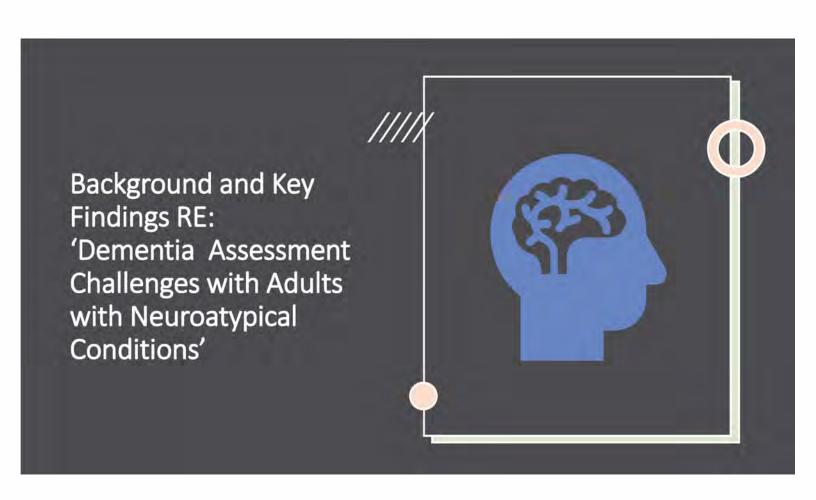
Location Design * Normative * Control egress * Single story * Planful transitions with decline appearance and and facilitate * Ambulation ease siting outdoor use * Functionality * Wheelchair use * Ease of access to * Evacuation factors (bathing, common * Privacy vs public off-housing areas, colors, * Wandering paths spaces resources and lighting, etc.) * Minimizing risk amenities



- Is the **building** set up for dementia care? (single level, lighting, barrier free, enclosed yard)
- Have **staff** received specialized training?
- At what point does the agency 'admit' to the home? Criteria? Matching to level of other residents?
- At what point does the agency 'terminate' care? What are the policies? End-of-life options?
- How is the daily support program individualized? Involvement in community? How adapted to change in functions? How long do people stay at the home? Adaptable for advanced dementia?
- What are the attitudes and capabilities of staff? Is there comfort with dementia-capable care? Comfort with skills?
- What are the training and clinical supports?



- Dementia care expectations
 - varied trajectories of decline
 - mortality linked to complexity of preexisting conditions and progression of dementia
 - changes in the focus of care needs over time (including advanced dementia and end-of-life care)
- Effective in-community dementia care is contingent on understanding
 - what dementia does to behavior and function
 - how well staff are trained
 - how agencies **provide supports** such as
 - · clinicians who can consult on care issues
 - help with planning when changes occur
 - staffing levels based on needs for care





The Neuroatypical Conditions Expert Consultative Panel

Assembled by the Lumind IDSC Foundation and the National Task Group on Intellectual Disabilities and Dementia Practices

 Composed of academic and clinical experts familiar with each of the neuroatypical conditions included

Charged with **examining** what **barriers** existed to effective screening, detection, and assessment of adults with neuroatypical conditions and with **identifying** the special **adaptations** that may be employed when examining adults with these conditions



 People with certain disabilities and conditions lack equity with respect to access for early detection of MCI and dementia...

 Why are there barriers and what are they?

What can be done to achieve equity?

Which groups of adults may face special challenges when being assessed?

- Neuroatypical conditions include:
 - Acquired and traumatic brain injury
 - Autism spectrum disorder
 - Cerebral palsy
 - Intellectual disability
 - Down syndrome
 - Intellectual disability with severe behavioral/mental health issues
 - Serious mental illness
 - Significant vision/hearing impairment

"Each of these conditions has a range of prevalence in the adult population in the US, but in aggregate they represent a considerable number of Americans – probably between 10 and 25% of all older adults who may initially present with MCI or dementia at their annual wellness visit or other older-age screening."

Factor associated with dementia

Table 2: Summary of Factors Related to Dementia in Select Neuroatypical Conditions

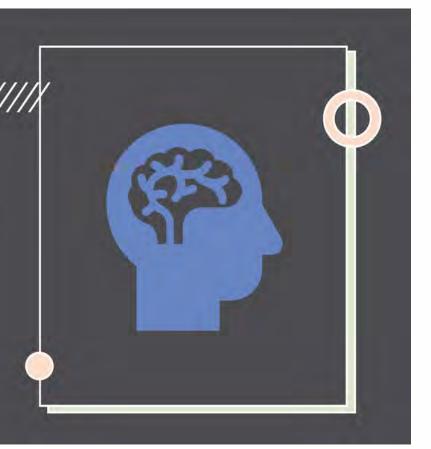
Factor	ABI/TBI	ASD	CP	DS	ID	ID/MH	SMI	Sensory
Risk for dementia	Potentially higher	Potentially slightly higher	Not confirmed	Definitive and high	Potentially higher	Potentially higher	Potentially higher	Not confirmed
Dementia type	Vascular, CTE	Frontotemporal in some	Urknown	Usually AD	Mixed	Mixed	Frontotemporal in some, AD in others	Mixed
Risk feature	CTE high Stroke higher	ASD & DS – higher risk	Younger onset higher	Younger onset prevalent	Coincident conditions	Coincident conditions	Unknown	Unknown
Causal feature	Stroke, extensive head injury	Unknown	Coincidence with seizures and ID	Genetic predisposition and co-incident with seizures	Unknown	Coincidence of ID and SMI	Unknown	Unknown
Associative feature	Behavioral functions Senses Language Loss of prior function without other explanation	Variability in communication abilities Loss of prior function without other explanation	Post-impairment syndrome Loss of prior function without other explanation	Seizures increase risk Precious aging Loss of prior function without other explanation	Loss of prior function without other explanation	Loss of prior function without other explanation	Declines in memory and executive function Declines in memory and executive function	Reported coincidence Declines in memory and executive function
Temporal*	Point measures	Longitudinal measurements	Point measures	Longitudinal measurements	Longitudinal measurements	Longitudinal measurements	Longitudinal measurements	Point measures
Measures	General CIA instruments	General CIA instruments Specialized ID instruments if appropriate	General CIA instruments Specialized ID instruments if appropriate	Specialized ID instruments	Specialized ID instruments	Specialized ID instruments	General CIA instruments	General CIA but adapted for items affected by hearing/vision
Adaptations	Verbal measures when vision affected; Due to ABI effects use of non-normed measures	Visual testing Concrete instructions Serial assessments Individualize exam	Accessible exam room Use measures not requiring task reproduction if fine motor skill impaired	General CIA instruments with mild ID Special instruments with other ID Serial assessments	General CIA instruments with mild ID Special instruments with other ID Serial assessments	General CIA instruments with mild ID Special instruments with other ID Serial assessments	Tracking short- term decline	Visuals for hearing impaired Aural for vision impaired

Risk for dementia among adults with neuroatypical conditions

Diagnostic condition	Risk factors	Dementia
Acquired and traumatic brain injury	Potentially higher in some circumstances – depending upon extent and location of injuries. Penetrative injuries (e.g., bullets, shrapnel), repetitive contact brain injuries (concussions)	Vascular, CTE*
Autism spectrum disorder	Potentially higher, but not certain	Frontotemporal
Cerebral palsy	Not confirmed; potential higher if ID and seizures present	Unknown
Intellectual disability	At norm, general factors, head injuries	Alzheimer's disease, mixed dementias
Down syndrome	Predisposition to Alzheimer's due to abnormal accumulation of amyloid	Alzheimer's disease
Serious mental illness	Potentially higher, depending upon dx	Frontotemporal, Alzheimer's disease
Significant vision/hearing impairment	Not confirmed, may be higher if coincident condition present	Mixed types when present

^{*}Chronic traumatic encephalopathy

NAPA and the National Plan to Address Alzheimer's Disease



The 'NAPA

- National Alzheimer's Project Act (became law in early 2011)
 - Requires DHHS to submit an annual Alzheimer's plan to Congress – from 2012 to 2025
- Administered by federal Department on Health Human Services (DHHS)
- Advisory Council on Alzheimer's Research, Care, and Services
 - Council composed of Presidential appointees and federal agency staff
 - Creates the National Plan to Address Alzheimer's Disease with annual updates

The National Alzheimer's Project Act required the creation of a national strategic plan to address the rapidly escalating Alzheimer's disease crisis and calls for coordination of Alzheimer's disease research and caregiver support efforts by the federal government

National Plan called for -- among other things....

- ☑ Issuance of practice guidelines for care and supports and expanded public education
- ☑ Promotion of assessment tool for detection of cognitive impairment as part of the annual wellness visit
- ☑ Enhanced supports for caregivers
- ☑ Expanded research
- ☑ Special population focus I/DD

First released on May 15, 2012 Continues to be updated annually until 2025!







The **National Task Group** is a non-profit organization charged with creating quality lives for adults with intellectual disability at-risk of or living with dementia and ensuring that their interests and those of their families are taken into account as part of the *National Plan to Address Alzheimer's Disease*.

The NTG's mission is to advocate for services and supports for people with intellectual disability and their families who are affected by Alzheimer's disease and dementias.

'My Thinker's Not Working'



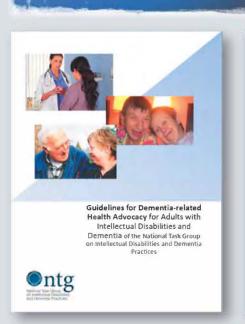
- ✓ To define best practices that can be used by agencies in delivering supports and services to adults with intellectual disabilities affected the various dementias
- ✓ To identify a workable national a 'first-instance' early detection / screening instrument
- ✓ To produce educational materials of use to families, people with ID, and providers of services
- ✓ To further public policy with respect to dementia as it affects adults with intellectual disabilities

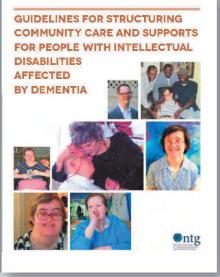
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NTG-EDSD **NTG Activities** Early detection-screening instrument (NTG-EDSD) • Various language versions available Access at www.the-ntg.org **Practice guidelines** • Community supports guidelines • Health advocacy guidelines • Assessment guidelines **Training and education activities** • National education curriculum on dementia & ID ontg • Training workshops & webinars • Meetings with professional groups • Family information promotion & support group Linkages • Administration on Community Living, NIH Summits, HRSA • NASDDDS, N4A, NACDD & state activities • CARF & national program standards

NTG Guidelines

NDSS, Dementia Connect, Biomarkers Research Consortium
 The Arc, Alzheimer's Association, LEAD, Down Syndrome Coalition









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