

The CSB Paradigm Shift: Dementia and Brain Injury Programs for Eastern Virginia

Paul F. Aravich, Ph.D.

Professor of Pathology/Anatomy, Geriatrics & PM&R

Eastern Virginia Medical School, Norfolk, VA

aravicpf@evms.edu

Session

Brain Injury, Dementia & Cognition: Expanding the CSB Perspective

Development and Training Conference

Virginia Association of Community Services Boards

Norfolk, VA, May 3, 2023.

Paul Aravich, PhD: Bio

- Professor/Neuroscientist: Eastern Virginia Med School, Norfolk, VA. aravicpf@efms.edu
- PhD: City University New York. Postdoctoral fellow: Department of Neurology, University of Rochester Medical School. And, Research Associate, Department of Neurobiology and Anatomy, University Rochester Medical School.
- Major recognitions: One of the highest awards for medical education in the US and Canada. Highest Virginia faculty award for excellence in teaching, research and service. Institutional awards for diversity and gender equity.
- Gubernatorial recognitions: Two task forces related to COVID-19 and Military/Veteran suicide. Gubernatorial appointee and eventual head of the Virginia Public Guardian/Conservator Advisory Board. Five Gubernatorial Citations.
- Policy maker presentations: Eight Congressional Caucus program presentations on the epidemic of fatal behavioral and neurological disorders. Multiple Virginia policy-maker talks. Several international neuroscience efforts. First ever TEDx NASA talk.
- Other service: Former Head of the Virginia Brain Injury Council. Advisory Committee and dementia study section member, Virginia Center on Aging at VCU. State Dementia Services Workgroup. Several behavioral and neurological advocacy groups.
- Current research: From a jellyfish model of Parkinson's disease to a CDC "Strike Team" grant for nursing-home challenging behaviors.

Session PowerPoint and Resources

- DBHDS Region 5 YouTube site
- “Region 5 Coalition on Cognition and Brain Injury”
- To be updated regularly

<https://region-five.org/community-special-services/traumatic-brain-injury-program/region-5-coalition-on-cognition-and-brain-injury/>

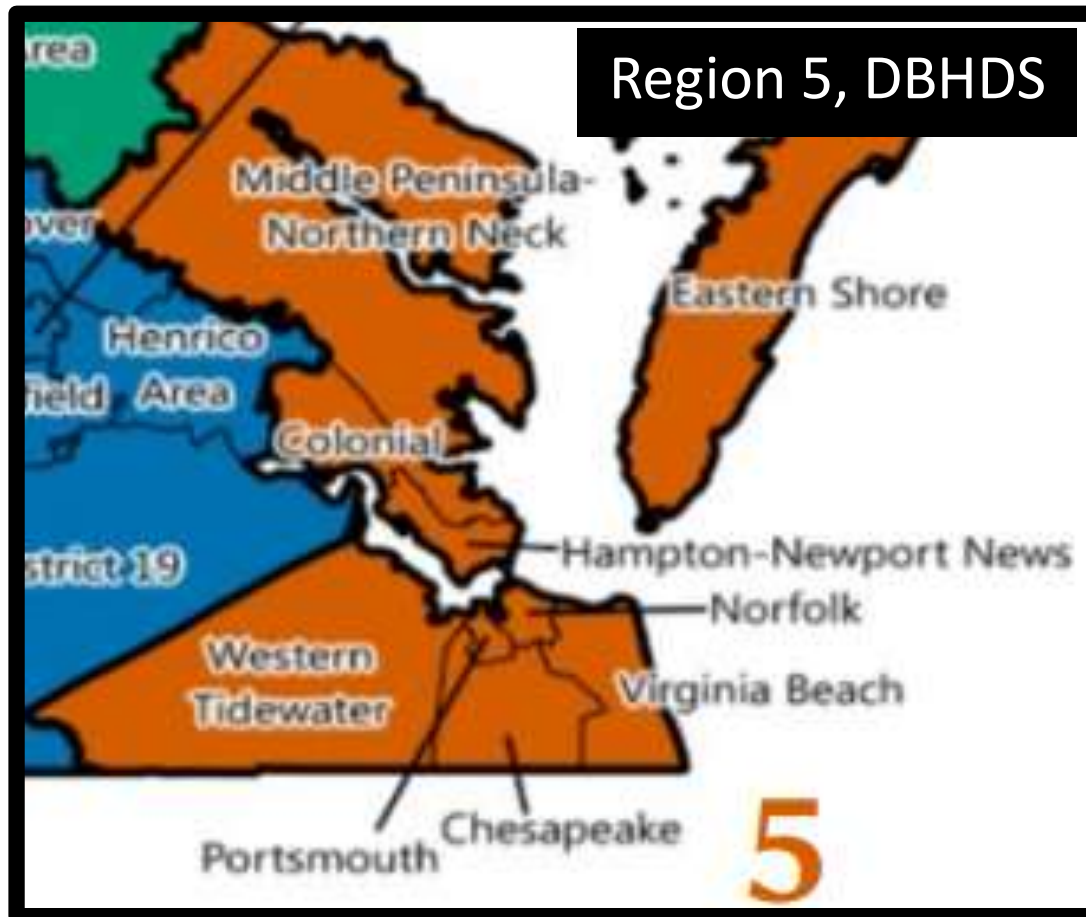
Acknowledgements

- **Demetrios Peratsakis:** Director, WTCSB
 - His inspirational and collegial skills made this Workshop possible
- **Suzanne Mayo, PhD:**
Senior Director, Office of Patient Continuum Services, DBHDS
 - Headed the Statewide Dementia Services Workgroup, which provided a major impetus for the WTCSB CSB dementia pilot.
- **Anne McDonald and, e.g., Jason Young:**
 - Long-time advocates for CSB brain injury services
- **Brandon Rogers:** Administrator of Program and Service Development, WTCSM
 - YouTube site

New CSB Dementia & Brain Injury Programs for Eastern Va:

“new and creative ways to interact”

From 2023 Conference Welcome, Patrick Sowers, Board Chair, Va Assoc of CSBs



<https://dbhds.virginia.gov/wp-content/uploads/2022/03/QI-Regional-Specialists-Map-rev-3.11.22.pdf>

Take home points

1. WTCSB brain injury and dementia programs are a paradigm shift for under-resourced persons.
2. Specialized treatment programs are necessary for brain injuries and for the dementias.
3. Brain injuries and the dementias overlap with SUDs, SMIs & IDD and require broad treatment coalitions.
4. Cardinal Care (formerly Virginia Medicaid) funds a patient-centered medical home for persons with complex needs (“Cardinal Care Managed Care,” formerly CCC+) that is unknown to many clinicians.

Intro: “The Universe Between Our

Brain: The Last Great Frontier of Science*

Behavioral Neuroscience:
The Last Frontier of the Last Frontier of Science

*Andromeda Galaxy (M31): 2.6 M light years
~15 Billion- Billion miles away.
Visible by unaided eye*

Alzheimer's



Aravich



Fatal TBI

Hubble Telescope
<http://pics-about-space.com/hubble-andromeda-galaxy-pictures?p=1>

*See Aravich, TEDx on the You Tube Channel
<https://www.youtube.com/watch?v=-SfJsqnMRVc> on

Behavioral Disorders: Public Health Crisis

Single most costly health care problem (annual direct & indirect costs)

• Substance use disorders:	\$820.5 ¹⁺²⁺³
• Serious mental disorders:	\$467B ⁴
• Irreversible dementias:	\$355B ⁵
• Autism	\$268B ⁶
	~Total
	<u>\$1.911T</u>

Equivalent to:

- \$1.9T 2021 American Rescue Plan Act for COVID-19 relief
- ~50% of 2019 total health costs of \$3.8T

<https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet> accessed 3/21

1 Surgeon Gen Addict Report 2016 <https://addiction.surgeongeneral.gov/surgeon-generals-report.pdf>

2 Surgeon Gen Smoking Report 2014 <https://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf>

3. Florence et al. Med Care. 2016 Oct;54(10):901-6

4 NIMH 2015 <https://www.nimh.nih.gov/about/directors/thomas-insel/blog/2015/mental-health-awareness-month-by-the-numbers.shtml#14>

5 Alzheimer's Assoc 2021 <https://www.alz.org/media/documents/alzheimers-facts-and-figures.pdf>

6 Autism Speaks. 2015 data. <https://www.autismspeaks.org/autism-facts-statistics-asd#:~:text=The%20majority%20of%20autism's%20costs,than%20for%20those%20without%20autism>.

New WTCSB Brain Injury Rehabilitation Support Team (BIRST): Region 5

- For adults with:
 - Brain injury
 - Neurocognitive disorders: Delirium; Mild neurocognitive disorder; Major neurocognitive disorder (AKA dementia)
 - PTSD
- Wrap-around services, e.g.
 - Specialized outpatient care
 - Specialized case management
 - Specialized day treatment programs.
- Follows many years of advocacy for a Medicaid program

<https://www.wtcsb.org/brain-injury-rehabilitation-support-team-birst/>

Types of brain “injuries”

- Congenital, e.g.: autism, cerebral palsy
- Acquired, e.g.: stroke, traumatic brain injury (TBI)
- Degenerative, e.g.:
 - Dementia, AKA Major Neurocognitive Disorder (MND):
 - Parkinson’s disease
 - Huntington’s disease
 - Amyotrophic lateral sclerosis (ALS)
 - Multiple sclerosis (MS)
- Substance use disorders
- Serious mental illness

New WTCSB: GERO Community Stabilization Program (GCST)

- 65+ Adults in crisis due to **dementia** or **SMI**
- At risk for hospitalization, incarceration, homelessness
- Caregiver/provider training
- Follows many years of advocacy for a Medicaid program

<https://www.wtcsb.org/gero-community-stabilization-program/>

All Cause Dementia: Dx Criteria

Dementia = Major Neurocognitive Disorder

- Everyday activities impaired
 - e.g., social activities, work, managing money, cook/shop
- Cognitive/Behav Impairment: ≥ 2 of following 5 domains
 - Recent memory *note memory does Not have to be affected*
 - Language *speaking; reading; writing*
 - Judgment/reasoning *place an iron in refrigerator*
 - Visuospatial function *driving problems; clock draw*
 - Personality/behavior changes *apathy, withdrawal, agitation*
- Impairments have declined from previous levels
- Not due to delirium *temporary & sudden (hrs/days) confusion/fluctuation of awareness b/c of infections, drugs, etc.*
- Not due to mental illnesses like depression
- Not due to other causes like thyroid etc.

Many irreversible dementias, e.g.

Note: most dementias are mixed

Type	Distinguishing Features
Alzheimer's Most: Late Onset Less: Early Onset	Recent memory, visuospatial, judgement & at least one other domain Recent memory, visuospatial, judgement & at least one other domain
Vascular Most: Small vessel Less: Large vessel	Judgement (memory may be spared). Insight often preserved Judgement (memory may be spared). Insight often preserved
With Lewy Bodies (LB) Most: Dementia w/ LB Less: Parkinson's Dem	Fluctuating cognition w/in a yr of Parkinson's symptoms. Hallucinations Dementia occurs several years after onset of Parkinson's disease
Frontotemporal Most: Behav Variant 1 ^o Progress. Aphasia	Changes in personality/behavior Memory ~intact Initial/significant language impairment. Behav & Memory ~intact
Chronic Traumatic?	Memory. Impulse control. Depression. Parkinson's features

Importance of preventative strategies for each

Irreversible dementia features, e.g.

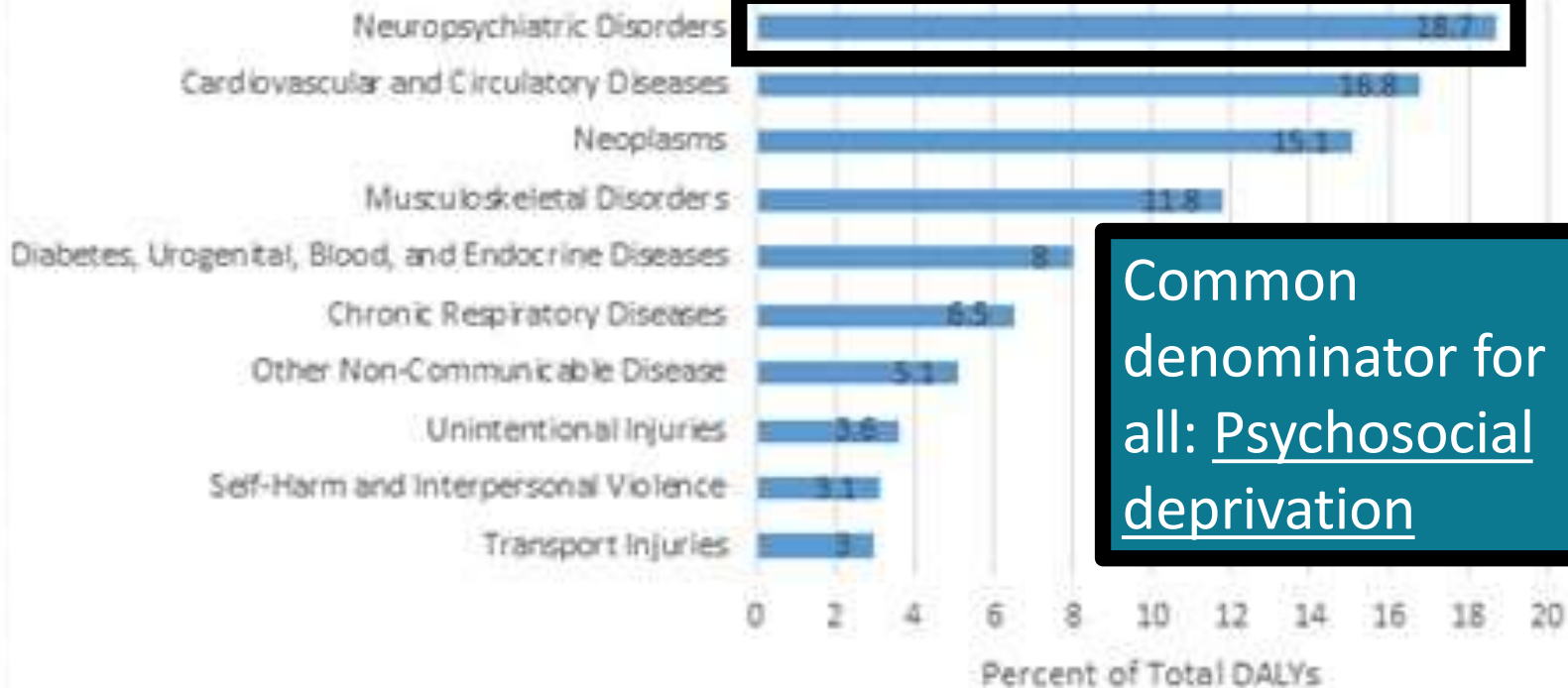
Type	Typical Age	Main Gender	Misfolded Protein	Onset
Alzheimer's				
Most: Late Onset	65+	Women	A-beta, Tau	Gradual
Less: Early Onset	<65	Equal	A-beta, Tau	Gradual
Vascular				
Most: Small vessel	65+	Men	X	Gradual
Less: Large vessel	65+	Men	X	Rapid
With Lewy Bodies (LB)				
Most: Dementia w/ LB	65+	Men	α -Synuclein	~Rapid
Less: Parkinson's Dem	65+	Men	α -Synuclein	Gradual
Frontotemporal				
Most: Behav Variant	<65	Equal	Tau, TDP-43	~Rapid
1 ^o Progress. Aphasia	<65	Equal	Tau, TDP-43	~Rapid
Chronic Traumatic?	?	?	Tau, TDP-43	Gradual

Protein Misfolding Hypothesis:
Characterizes Several dementias

UN. World's largest minority population: Persons with disabilities

- Most prevalent: Neuro & Psychiatric disorders

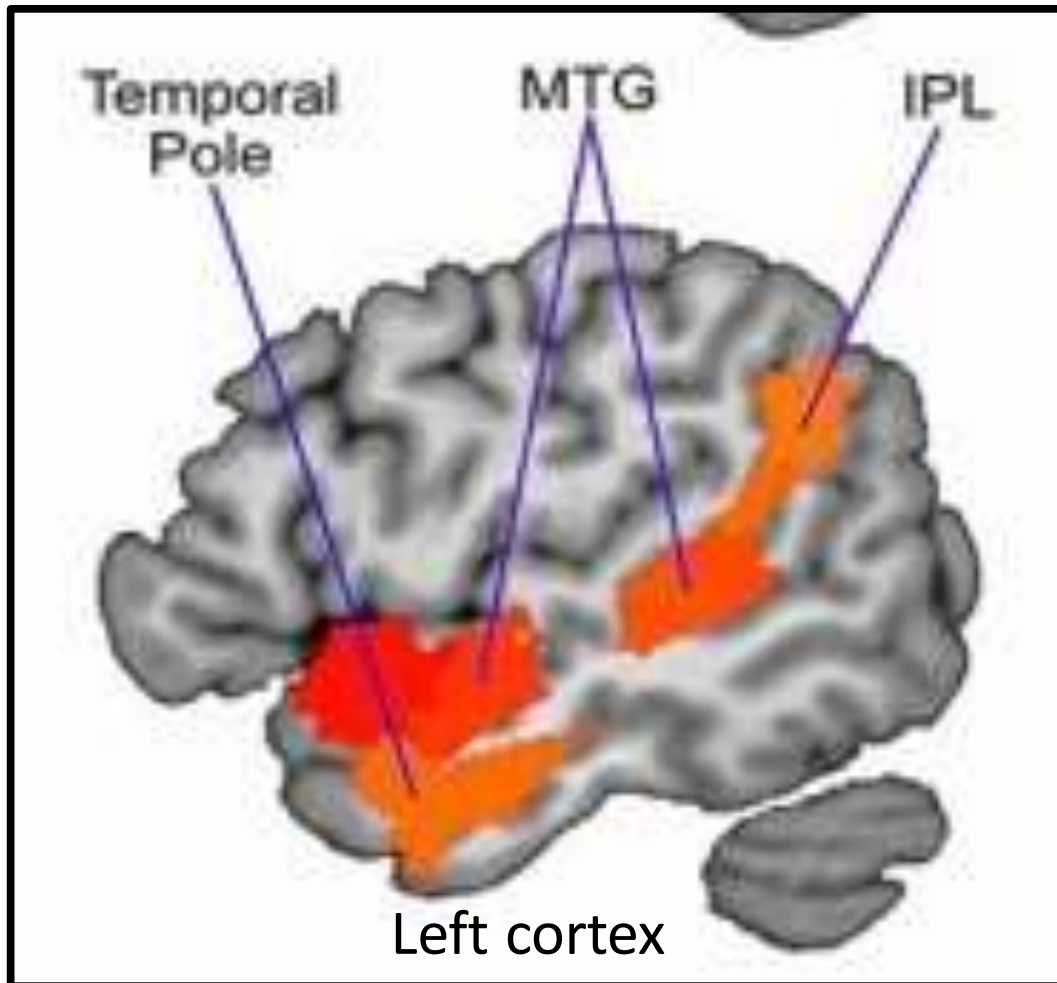
Top 10 Leading Disease Categories Contributing to United States Disability Adjusted Life Years (DALYs) - 2010



Common denominator for all: Psychosocial deprivation

<https://www.americanbraincoalition.org/page/PPPHelpPatients>

Social isolation causes a brain disorder



MRI structural data from a brain bank (UK Biobank) that has matched environmental and lifestyle data. Image: Pooled left-sided MRI structural variations between the hippocampal formation and the cortical “default network.” Marked areas are associated with the lack of social support (relative to “social support”). Not shown: Hippocampal formation structural variations due to the lack of social support.

Social isolation ↑ risk of:

Heart disease

High blood pressure

Depression

Anxiety

Dementia

Diabetes

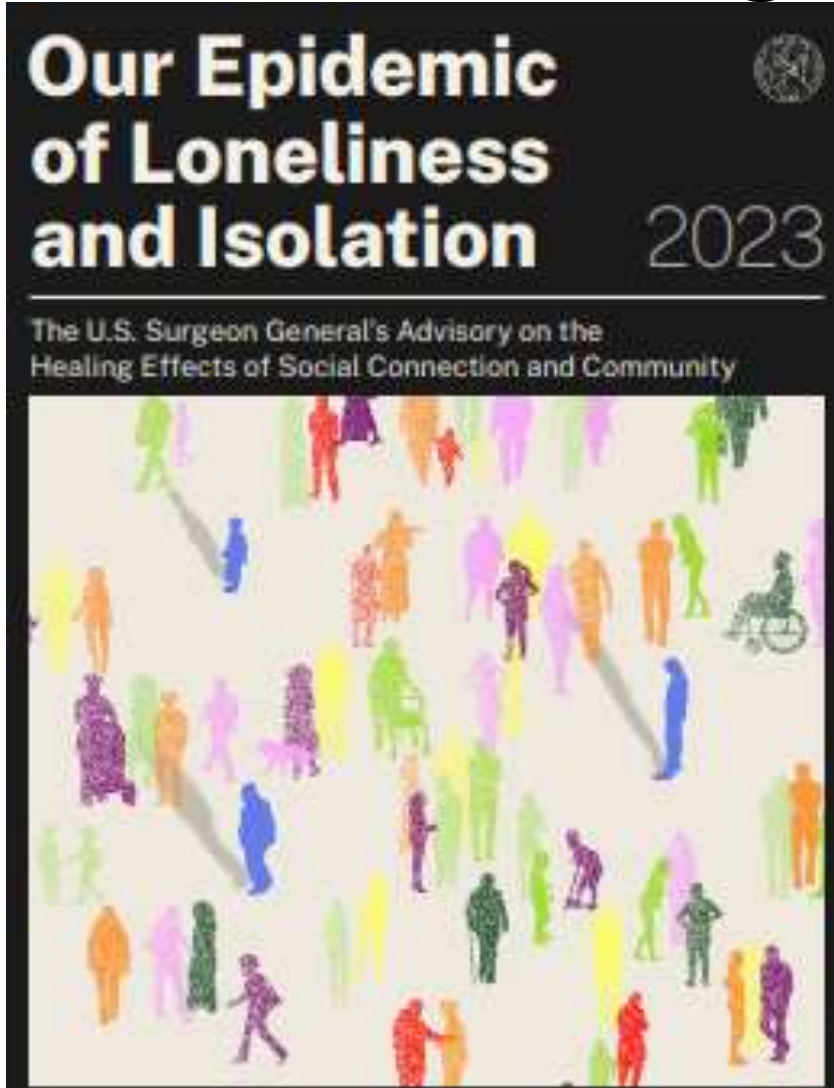
Premature Death

The Need for Social Connection

<https://www.hhs.gov/surgeongeneral/priorities/connection/index.html>

Neuroscientists say:
“The Human Brain is a Social Brain”

National Strategy to Advance Social Connection. Surgeon General 5/23



<https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf>

Assess Social Isolation/Loneliness

- Social Status part, Uniformed Assessment Instrument (UAI)

https://www.dss.virginia.gov/files/division/licensing/alf/intro_page/current_providers/manuals/uai_users_manual.pdf

- Other assessments:

- Revised UCLA Loneliness Scale. De Jong Gierveld Loneliness scale. Lubben Social Network Scale. Berkman Social Network Index.

[https://hqlo.biomedcentral.com/articles/10.1186/s12955-022-01946-](https://hqlo.biomedcentral.com/articles/10.1186/s12955-022-01946-6#:~:text=Commonly%20used%20measures%20of%20loneliness,Social%20Network%20Index%20%5B15%5D.)

[6#:~:text=Commonly%20used%20measures%20of%20loneliness,Social%20Network%20Index%20%5B15%5D.](https://hqlo.biomedcentral.com/articles/10.1186/s12955-022-01946-6#:~:text=Commonly%20used%20measures%20of%20loneliness,Social%20Network%20Index%20%5B15%5D.)



Take home points

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Challenging Behaviors

Virginia Dementia Services (VDS)

Work Group. DBHDS, 12/7/21

Convened by Virginia Sec. HHS

Reported directly to Chairs, State Finance Com. and House Appropriations Committee

<https://rga.lis.virginia.gov/Published/2021/RD801/PDF>

Work Group Chair: Dr. Suzanne Mayo, Dir. Community Integration, DBHDS

- State psychiatric facilities: Not suited to Tx challenging behaviors due to the dementias
 - Less effective than specialized Tx facilities
 - More costly

TBI: Needs Targeted Case Management

“Medicaid targeted case management services for individuals with severe traumatic brain injury.”

<https://budget.lis.virginia.gov/amendment/2022/1/HB30/Introduced/CA/304/7h/>

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Silos & the American Brain Coalition

Advocating for 100M persons w/ brain disorders

<https://www.theopentable.org/models/>



NAMI

Depression/Bipolar Support Alliance

Parkinson's Fdn

Society for Neuroscience etc.

TBI Action Alliance

<https://www.americanbraincoalition.org/page/NonProfitMembers>

Build Coalitions.

“If you want to go fast, go alone. If you want to go far, go together” *African proverb*

The American Brain Coalition. For 100M

alzheimer's association



NAMI

Depression/Bipolar Support Alliance

Parkinson's Fdn

Society for Neuroscience etc.

TBI Action Alliance

<https://www.americanbraincoalition.org/page/new-to-join-members>

Dialectic of Behavioral Pathologies

- *Hesse. The river: always the same...always different.*
- **Challenging behaviors** due to SMI, SUD, Dementias, TBI, IDD:
 - Different pathophysiologies requiring specialized treatments
 - Similar effects: Suffering. Caregivers. Systems of care. Law. Challenging behaviors. Positive behavioral controls.



See things from
different perspectives

[https://www.kobo.com/us/en/
ebook/dialectical-thinking](https://www.kobo.com/us/en/ebook/dialectical-thinking)

Change definitions from, e.g.:

- Behavioral/Psychological Sx of dementia.
- Neurobehavioral complications of TBI...

...To an empirical description:
“Challenging Behaviors”

Figure 1

Social Determinants of Health

Dialectical thinking:
Overlapping issues

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education		Stress	
Support	Walkability				
	Zip code / geography				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

<https://www.kff.org/racial-equity-and-health-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>

Dialectical thinking: Overlapping issues

- Suffering
- Caregiver stress
- Community-based services
- Integrated case management
- Stigma
- Public awareness
- Workforce
- Abuse/Neglect
- Criminal justice
- Housing/Homelessness
- Transportation
- Guardianship

Dialectical thinking: Overlap cont.

- TBI & Dementia
 - TBI: Main environmental risk factor for all dementias
 - Dementia: Prone to falls, which are the main cause of TBI
- SMI/SUD/IDD: risk factors for TBI and dementia
- SMI/SUS/IDD/ABI/& Dementia pathophysiology
 - Brain inflammation, free radicals, excitotoxicity (cells stimulate others to death)
- Support groups
- Aging in place
- State resources from DBHDS, DARS, DMAS
- Challenging behaviors: Behavioral management to ↓ Rx restraints
- Outcome data
- Therapeutic and recreational arts
- Implementation issues
- Crisis care

Dialectal thinking:

Best practice extrapolation

- Club House SMI & ABI respite care models for dementia:
 - To enrich dementia respite care
 - To expand upon the nursing home “cultural change model”
- Dementia Friendly America training: <https://www.dfamerica.org/>
 - Sensitivity and language approach: relevant to SMI/SUD/IDD/TBI
- Caregiver training:
 - Mental Health First Aid <https://www.mentalhealthfirstaid.org/take-a-course/find-a-course/>
 - Crisis Intervention Team Training <https://virginiacit.org/>
- Compare/Contrast Crisis Care programs, e.g.:
 - IDD REACH program
<https://dbhds.virginia.gov/developmental-services/crisis-services/>
Regional Education Assessment Crisis Services Habilitation
 - Older person SMI/Dementia RAFT program
<https://www.raftnorthernvirginia.org/About-RAFT>
Regional Older Adults Facility Mental Health Support Team
 - Other WTCSB/CSB crisis programs

“Compassionate Crisis Care” for Nursing-Home Challenging Behaviors during Pandemics & Disasters.

Extrapolate
behavioral
management



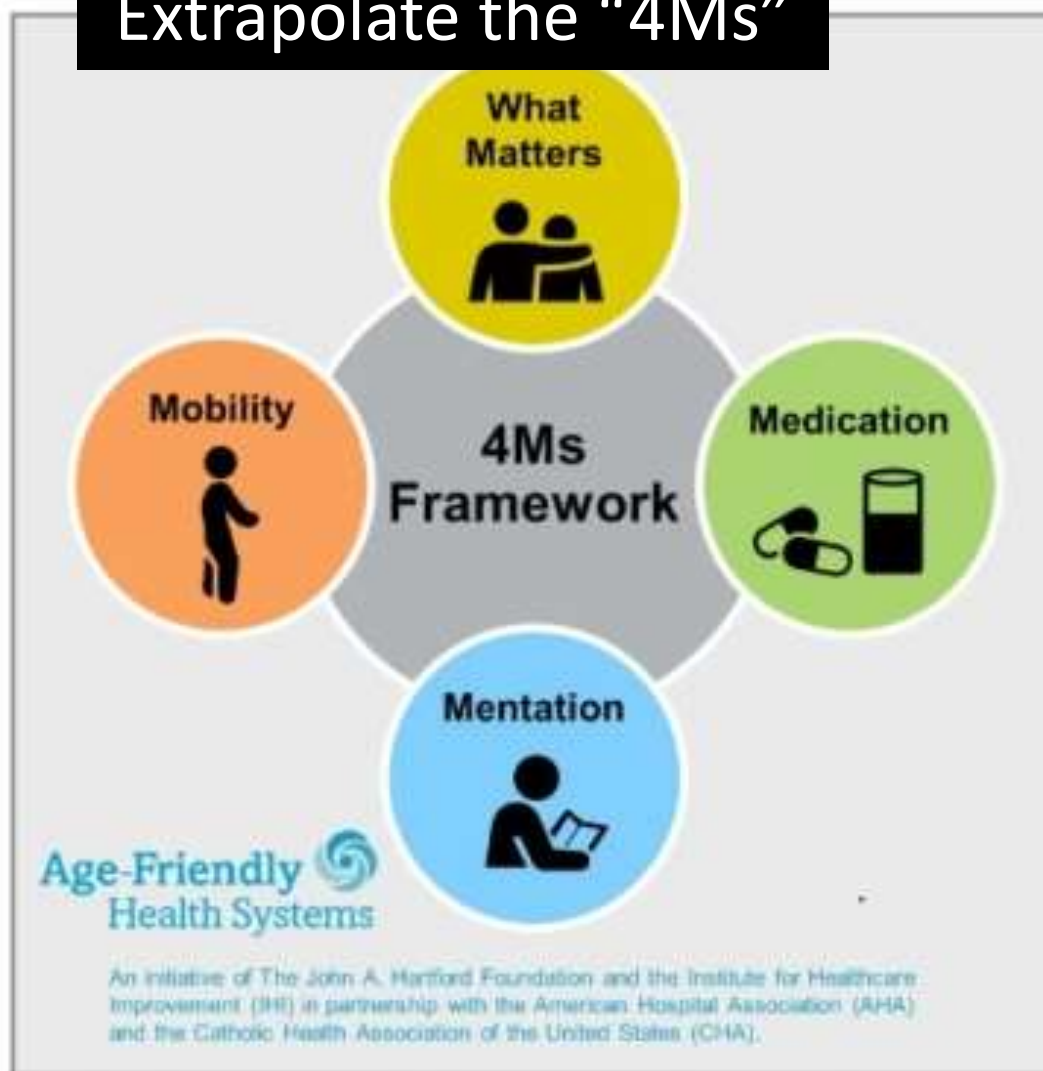
- CDC-funded video series for certified-nursing assistants (CNAs) and outside “Strike Teams” to be posted in the near future on the Eastern Virginia Medical School YouTube site.*
- Stresses behavioral management/crisis intervention techniques for challenging behaviors in general over pharmacological restraints. The first video is focused on CNAs. The second will be focused on the Virginia Medical Reserve Corps. A total of five videos will be posted by July 31, 2024.

*When activated:

Log on to www.evms.edu/crisiscare for videos and more information

What Does It Mean to Be Age-Friendly?

Extrapolate the “4Ms”



What Matters

Know and align care with each older adult's specific health outcome goals and care preferences including, but not limited to, end-of-life care, and across settings of care.

Medication

If medication is necessary, use Age-Friendly medication that does not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care.

Mentation

Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care.

Mobility

Ensure that older adults move safely every day in order to maintain function and do What Matters.

<https://www.ih.org/communities/blogs/using-the-age-friendly-4ms-to-better-advocate-for-older-adults-and-geriatric-care>

DBHDS Region 5 Coalition Resources

- Posted on Region 5 YouTube site

<https://region-five.org/community-special-services/traumatic-brain-injury-program/region-5-coalition-on-cognition-and-brain-injury/>

- Selected examples follow.
- See site for specific contact information

EVMS. Vision: “Community service”

- Glennan Center for Geriatrics and Gerontology
 - Geriatric primary care
 - Dementia clinical trials recruiting, e.g., minorities/women
 - Palliative care and hospice care training
 - Virtual “Geriatric Sit Down Rounds” for complicated pt presentation
- Geriatric psychiatry
- Art therapy
- Physical Medicine and Rehabilitation
- O.N.E School of Public Health: Old Dominion, Norfolk State, EVMS
- Foscue Brock Institute for Community and Global Health
- Community Engaged service-learning student programs
- Minority programs with Norfolk State & Hampton Univ.
- Existing partnerships with SE Virginia Alzheimer’s Chapter
- Existing partnerships with Senior Services of SE Va.
- Existing partnerships with Sentara Neurology/Neurosurgery

Selected Other resources posted on site

- Sentara Neurology
- Chesapeake Regional Neurosciences
- Riverside Martha W. Goodson Center for memory disorders, brain changes and clinical trials
- Four Area Agencies on Aging serving Region 5, including Bay Aging partnership with Riverside Goodson Center above
- Regional brain injury Club Houses
- Naval Medical Center Portsmouth
- Hampton Veterans Affairs Medical Center
- Virginia Department of Veterans Services
- Virginia Department of Health Stroke Resources
- Brain Injury Association of Virginia
- Brain Injury and Dementia Resources, Dept. Aging & Rehab.
- Virginia Home Health Providers
- PACE
- Virginia No Wrong Door
- Virginia Supportive Housing
- Other Departments of Aging/Rehab and Behav Health resources

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Virginia Cardinal Care



- New name for all Virginia Medicaid programs

<https://www.dmas.virginia.gov/media/5613/updated-provider-and-stakeholder-cardinal-care-fact-sheet-3-3-2023.pdf>

<https://www.dmas.virginia.gov/for-providers/managed-care/ccp-plus/>

Virginia “Cardinal Care Managed Care”

Formerly CCC+ “Commonwealth Coordinated Care Plus Medicaid Waiver”

- Evidence-based **Person-Centered Medical Home**
 - For those with complicated behavioral and physical needs
 - Care Coordinator and Care Coordinator Team
 - Kids/Adults in community and in nursing homes
- **General lack of clinician awareness**

<https://www.dmas.virginia.gov/for-members/managed-care-programs/ccp-plus/>



Name switch from CCC+ to
“Cardinal Care Managed
Care” Effective ~7/31

<https://www.dmas.virginia.gov/media/5613/updated-provider-and-stakeholder-cardinal-care-fact-sheet-3-3-2023.pdf>

“Cardinal Care Managed Care”

Six regional Managed Care Orgs (MCO)

MCO Provider Services Contact Information

MCO	Phone/Website
Aetna Better Health of Virginia	1-800-279-1878 https://www.aetnabetterhealth.com/virginia/providers/index.html
Anthem HealthKeepers Plus	Medallion - 1-800-901-0020 CCC Plus – 1-855-323-4687 https://www.anthem.com/
Molina Healthcare	1-800-424-4518 https://www.molinahealthcare.com/providers/va/medicaid/home.aspx
Optima Health	Medical - 1-800-229-8822 Behavioral Health – 1-800-648-8420 https://www.optimahealth.com/providers/
UnitedHealthcare	Medallion: 1-844-284-0146 CCC Plus: 1-877-843-4366 www.uhcprovider.com/
Virginia Premier Health Plan	1-800-727-7536 https://www.virginiapremier.com/providers/medicaid/providerresources/

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