



**Senate Health, Human Services and Medicaid Committee
April 3, 2019**

Chairman Burke, Vice Chair Huffman, Ranking Member Antonio and members of the Health, Human Services and Medicaid Committee, thank you for the opportunity to provide proponent testimony for Ohio Senate Bill 24.

My name is Rhonna Shatz, and I serve as the Medical Director of the Cognitive Disorders Center and the Bob and Sandy Heimann Chair in Research and Education of Alzheimer's Disease since 2015. I am certified by the United Council for Neurologic Subspecialties as a behavioral neurologist, and before I came to Cincinnati I spent 25 years as the Chair of Behavioral Neurology at the Henry Ford Health Systems in Detroit and co-chaired subcommittees for the State of Michigan Dementia Plan.

UC Health is the leading expert in the care, education and research of brain, spine and nerve disorders in Greater Cincinnati. We are proud to be the:

- region's only neuroscience intensive care unit
- region's only Level 1 trauma center
- home of 10 neurosurgeons, the largest and most decorated in the region
- home of the most skilled neurological nurses and therapists in Cincinnati
- region's referral destination for complex care

As Medical Director of the Cognitive Disorders Center, housed within the UC Gardner Neuroscience Institute, we employ the latest technologies and therapies to diagnose and treat hundreds of adult patients each year.

Cognitive disorders affect the ability to reason, remember, make decisions and communicate. Our team has in-depth experience treating a wide variety of disorders of cognition, including Alzheimer's disease, Lewy body/Parkinson's disease dementia, Frontotemporal dementias, Normal Pressure Hydrocephalus, vascular cognitive impairment and other inherited dementias.

Cognitive disorders result from factors intrinsic to the brain, termed neurodegenerative disorders, or extrinsic to the brain, called non-neurodegenerative conditions. An individual may have and usually does have multiple factors impacting cognition. The major neurodegenerative pathologies include:

- Alzheimer's disease
- Lewy body/Parkinson's disease
- Frontotemporal dementias (behavioral variant, primary progressive aphasia, ALS/motor neuron disease, progressive supranuclear palsy, corticobasal degeneration)

The non-neurodegenerative factors that contribute to cognitive impairment or foster the development of neurodegenerative pathologies include:

- aging
- sleep disorders
- trauma
- substance abuse (including alcohol)
- heredity
- narrowing of the arteries that provide blood flow to the brain
- cardiovascular disease
- untreated infectious or metabolic disease

- brain tumors
- vitamin deficiencies
- medication side effects (especially “anticholinergic” side effects and sedatives)

A diagnosis of a cognitive disorder includes a term to denote **severity** as well as cause:

- Cognitively unimpaired: no subjective or objective indication of cognitive change
- Subjective cognitive impairment: when an individual first detects increased effort or less facility in performing usual tasks. Special cognitive batteries are needed to identify declines in cognition. Function in all activities is preserved.
- Mild cognitive impairment: cognitive impairment is present and detectable, but declines are within two standard deviations of normal on standard cognitive batteries (or only one domain is below two standard deviations from normal) and function may be impaired for more complex activities.
- Dementia: mild, moderate and severe
 - Mild: severe impairment in two or more domains of cognitive function (below two standard deviations from normal) and function is impaired for activities inside the home
 - Moderate: severe impairment across multiple cognitive domains and function is impaired for self-care
 - Severe: cognitive function is measured using severe impairment batteries or is unmeasurable and individuals cannot perform any functions

Using this schema, the term denoting severity is separate from pathologies that may be detected. Individuals may have Alzheimer’s pathology measurable by special tests but be cognitively unimpaired and individuals with dementia may not have Alzheimer’s pathology. Mild cognitive impairment may be due to sleep apnea and Alzheimer’s disease.

The most important issue, however, is that the non-neurodegenerative factors are permissive for dementia pathologies and yet they are identifiable, controllable, and easily addressed by leveraging capabilities that our health system and communities already have in place. Dementia is not inevitable, it is preventable.

As part of the Ohio medical community devoted to care of individuals with cognitive disorders of all kinds, I am heartened by your SB 24 supporting the creation of a Dementia Task Force with the goal of addressing a wide range of dementia related issues. I would like to emphasize an issue that I think is central to addressing the epidemic rise in dementias: prevention.

Despite almost three decades of research focused on a cure, treatment for dementias is only symptomatic. In part this is due to interventions that are too little and too late. Dementia pathologies can be detected 2-3 decades before the earliest symptoms but most clinical trials targeted later pathological stages. Although efforts for identifying strategic pathways to thwart neurodegeneration should continue, any intervention that prevents or delays disease onset could significantly reduce the risk and costs of dementia.

Early symptoms of neurodegenerative disorders, such as executive dysfunction or memory impairment, may not be apparent during a routine office visit unless they are directly assessed. Missed, incorrect, and delayed diagnoses in medicine, whether unintentional or not, cost in terms of money and human capital. As clinical trials aim to identify and treat pre-symptomatic stages of dementia, the ability to accurately identify individuals earlier in the course of disease, prior to irreversible neuronal dysfunction, becomes critical. Therefore, **novel clinical paradigms that encompass**

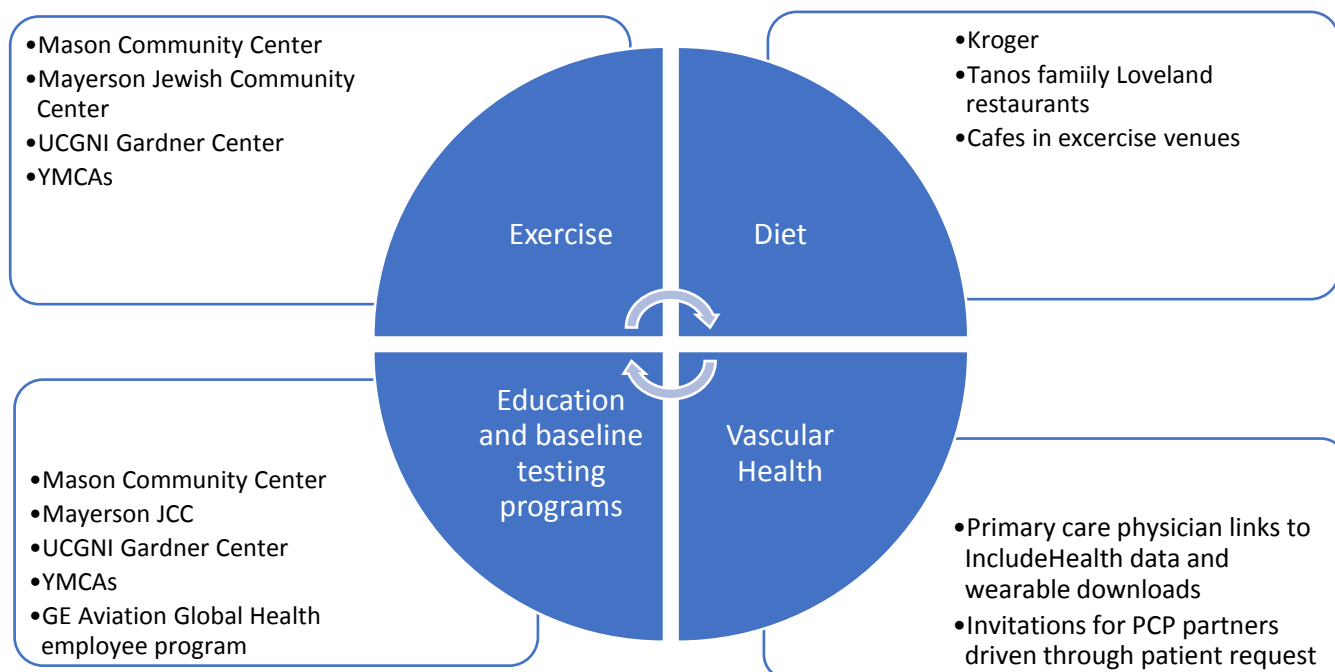
lifelong monitoring and treatment of cognition, mood, behavior, and movement need to be integrated into primary care healthcare systems beginning in early adulthood.

It is imperative to prioritize prevention and early detection of dementia pathologies **before cognitive changes manifest** in order to allow providers to intervene earlier and slow the disease progression across longer periods of time. These efforts will lead to a higher quality of life for both patients and their caregivers.

In addition to the higher quality of life, there is also a cost-benefit to this a proactive approach. As these conditions progress, the annual cost to treat also grows, incentivizing early diagnosis and management of the progression of the symptoms.

The University of Cincinnati is creating this next generation focus on Brain Health and Dementia Prevention. A central component of the program is the IncludeHealth exercise machine that has the capability for creation of individual exercise regimens, cloud- based data storage for personalized and group level monitoring of different aspects of exercise, cross-talk with wearables (such as Fitbits), integration with measures of vascular health (blood pressure, pulse), and capacity for downloading to electronic health records. These machines will be available in multiple community settings and serve as an incentive to engage young individuals in a brain health program that will include: Aerobic exercise, Diet (MIND diet), Sleep hygiene and identification of sleep disorders (Fitbit data, sleep questionnaire), Vascular health (blood pressure, pulse, body mass index, LDL cholesterol, blood sugar (hemoglobin A1C), Emotional health and wellbeing (PROMIS surveys for depression, anxiety, stress, OCD, life satisfaction), and Cognition (modified NIH Toolbox annual testing).

This pilot program targets a number of different venues to investigate the best combination of brain health program partnerships.





Both UC and the Alzheimer's Association have already developed programs and preliminary partnerships with a number of community organizations that we hope to build upon. Kroger already houses a Minute Clinic service in which they assist consumers in how to shop for healthy foods. For example, Kroger has worked with the Alzheimer's Association to inform its customers about brain health and has promoted healthy eating by disseminating information about diet and exercise through neighborhood markets.

I hope that this information will assist you in moving this current bill forward in the State of Ohio. Thank you for this opportunity to provide proponent testimony.

Rhonna Shatz, DO
Bob and Sandy Heimann Chair in Alzheimer's Disease Research and Education
Director of the Cognitive Disorders Clinic
University of Cincinnati Department of Neurology and Rehabilitation
260 Stetson St., Suite 2300
Cincinnati, Ohio 45219
shatzra@ucmail.uc.edu