Tennessee State Health Plan

Cognitive and Brain Health across the Lifespan

2019 Edition

TN Department of Health

A Message from the Commissioner

Dear Fellow Tennesseans,

Figure 1: Dr. Lisa Piercey, Commissioner

As a lifelong citizen of our great state, I am committed to improving health and well-being across Tennessee. The State Health Plan provides an opportunity for the Tennessee Department of Health to deepen its understanding of the needs of the people of Tennessee and to develop new and innovative ways to address these needs. Through these efforts, the State Health Plan advances the mission of the Department of Health to "protect, promote, and improve the health and prosperity of people in Tennessee."

Tennessee is experiencing promising growth and economic opportunity, but, unfortunately, it continues to struggle with practicing healthy behaviors, achieving positive health outcomes, and sustaining and improving access to health care and healthy environments. The State Health Plan annually evaluates these issues and offers a series of recommendations designed to improve health across the state.

This edition of the State Health Plan uses "Cognitive and Brain Health across the Lifespan" as a mechanism for improving health outcomes by encouraging healthy behaviors, increasing health education, and building partnerships to advance our reach and enhance our efficiency as a department. By encouraging healthy lifestyle behaviors in early and middle life, we can decrease the risk of developing Alzheimer's and other dementias later in life. In doing so, we will not only lead healthier and fuller lives, but we will also decrease health care costs associated with Alzheimer's and other dementias.

The Department is committed to the work of making the lives of all Tennesseans better through the prevention of chronic disease and the promotion of healthy behaviors and healthy environments. Through this work, we can ensure that Tennessee continues to be a great place to live, work, and grow.

Lisa Piercey, MD, MBA, FAAP

Commissioner, Tennessee Department of Health

TN Department of Health

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Executive Summary

The 2019 Edition of the State Health Plan serves to support the mission of the Tennessee Department of Health (TDH), "to protect, promote, and improve the health and prosperity of the people in Tennessee."

The Five Principles for Achieving Better Health

The State Health Plan utilizes the Five Principles for Achieving Better Health that are informed by Tennessee law to serve as the framework of the State Health Plan. The Five Principles are as follows:

1. **Healthy Lives:** The purpose of the State Health Plan is to improve the health of the people in Tennessee.
2. **Access:** Every citizen should have reasonable access to health care.
3. **Economic Efficiencies:** The State's health and health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies, and the continued development of the State's health care system.
4. **Quality of Care:** Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by providers.
5. **Workforce:** The state should support the development, recruitment, and retention of a sufficient and quality health and health care workforce.

Tracking Health in Tennessee

The State Health Plan annually monitors the health of the people of Tennessee. To effectively monitor health in in the state, the Plan takes into consideration not only health outcomes, but also metrics for mental health and social determinants of health.[1] These additional metrics inform the Department in its efforts to develop and implement programs and policies that holistically improve health and well-being in the state.

[1] Social determinants of health are the conditions that impact health. These include, but are not limited to, socioeconomic status, education, physical environment, social support, and access to health care.

Vital Signs

The Tennessee Vital Signs were put into use in 2018 as a way to track health in Tennessee. Taken together, they provide an at-a-glance view of leading indicators of health and prosperity. Tennessee's Vital Signs seek to provide an objective answer to the question, "How healthy is Tennessee?" The Vital Signs include both health outcomes and some social determinants of health in order to help the Department and its partners to think about factors that influence the health of the state.

Table 1: Tennessee Vital Signs

Measure	Percentage/Rate	Definition
Youth Obesity	41.1%	Percent of public schools students with a BMI greater than or equal to the 85th percentile
Physical Activity	69.4%	Percent of adults who reported doing physical activity during the last 30 days other than their regular job
Youth Nicotine Use	11.5%	Percent of high school students who used electronic vapor products on at least one day during the last 30 days
Drug Overdose	23,657	Number of drug overdose outpatient visits and inpatient stays caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent
Infant Mortality	6.9	Number of infant deaths per 1,000 live births
Teen Births	25.3	Number of births per 1,000 women aged 15-19 years
Community Water Fluoridation	88.8%	Percent of population served by community water systems that are receiving fluoridated water
Frequent Mental Distress	13.7%	Percent of adults who reported their mental health was 'not good' 14 or more days during the past 30
3rd Grade Reading Level	36.9%	Percent of public school 3rd graders that are reading at grade level
Preventable Hospitalizations	1,531	Hospitalization rate for ambulatory care-sensitive conditions per 100,000 adults
Per Capita Personal Income	$47,179	Annual, not seasonally adjusted, per capita personal income in dollars
Access to Parks and Greenways	71%	Percent of population with adequate access to locations for physical activity

State Health Plan Deep-Dive: Cognitive and Brain Health across the Lifespan

The 2019 Edition of the State Health Plan features a "deep-dive" into cognitive and brain health across the lifespan in the State. This deep-dive was an opportunity for the Department to develop a strategic approach to address health across the lifespan by increasing awareness of how lifestyle behaviors in early and mid-life impact brain health throughout the aging process. These lifestyle behaviors include tobacco use, physical activity, substance misuse and abuse, diet, and traumatic brain injury. The Department hosted focus groups across the state with subject matter experts to develop a series of recommendations that will be implemented by TDH, in partnership with numerous public and private stakeholders, in the coming years.

Cognitive and Brain Health Recommendations

The following recommendations were developed through a series of focus group meetings. Each focus group meeting included participants representing non-profit and advocacy organizations, caregivers, providers, payers, government agencies, and faith-based communities. They are informed by the expertise of these stakeholders and are designed to support the Five Principles for Achieving Better Health.[2] Each recommendation will be implemented by the Office of Patient Care Advocacy in partnership with private and public stakeholders.

Dementia Friendly Communities

In partnership with the Office of Patient Care Advocacy, individuals with dementia, caregivers and families of those with dementia, and other engaged stakeholders will develop and implement Dementia Friendly Communities in order to:

- Improve the accuracy of the general public's knowledge about dementia;
- Reduce the stigma associated with dementia;
- Promote respect and acceptance among providers, first responders, and the community in order to meet the needs of individuals with dementia and their caregivers;

[2] The State Health Plan utilizes the Five Principles for Achieving Better Health that are informed by Tennessee law to serve as the framework of the State Health Plan.

- Promote early detection, diagnosis, treatment, care, and support through the development and implementation of statewide evidence-based dementia friendly communities.

Dementia Risk Reduction Education: Public Health Workforce and Health Care Providers

The Department of Health Offices of Patient Care Advocacy and Chronic Disease Management will include dementia education and awareness in existing chronic disease programs and campaigns related to chronic disease risk reduction and management and will further design, deliver, and promote risk reduction messaging to the public health workforce, health care providers, and community at large.

Public Health Response to Dementia: A Statewide Summit

The Tennessee Department of Health Office of Patient Care Advocacy will convene state public health and aging officials as well as diverse non-traditional sectors to address the challenges associated with healthy aging and encourage healthy lifestyles throughout the life spectrum to ultimately improve the health and well-being of older adults. Due to the variety of healthy aging efforts at the state level, the summit will provide an opportunity to promote coordination and increased partnerships across all sectors and to apply public health fundamentals to strategically address all components impacting healthy aging. This summit builds upon the success of the 2018 Healthy Aging Workshop sponsored by the U.S. Department of Health and Human Services and the planned 2020 Healthy Aging Regional meeting where state health and aging officials identified priority healthy aging topics and developed actionable plans that promote healthy aging in their communities.

Certificate of Need

Tennessee's Certificate of Need (CON) program seeks to deliver improvements in access, quality, and cost effectiveness through orderly growth management of the state's health care system. In accordance with Tennessee law, the annual updates to the State Health Plan contain revisions to CON Standards and Criteria that are used by the Health Services Development Agency (HSDA) as guidelines when issuing CONs. Certificate of Need Standards and Criteria for Comprehensive Inpatient Rehabilitation Services and Megavoltage Radiation Therapy were revised in 2019.

Introduction

Recognizing the need for the state to coordinate its efforts to improve the health and welfare of the people of Tennessee, the General Assembly passed Public Chapter 0942 in 2004. This act created the Division of Health Planning that was charged with developing a State Health Plan. The Public Chapter required the State Health Plan to be annually revised and approved and adopted by the Governor. The law states that the State Health Plan:

- "Shall include clear statements of goals, objectives, criteria and standards to guide the development of health care programs administered or funded by the state of Tennessee through its departments, agencies or programs;"
- Is to be considered "as guidance by the Health Services and Development Agency when issuing certificates of need;"
- "Shall guide the state in the development of health care programs and policies in the allocation of health care resources in the state".

State Health Plan Purpose and Use

The State Health Plan serves as a tool for improving the health of people in Tennessee. Since 2009, the Division of Health Planning has developed annual editions of the Plan that are designed to serve the needs of the people of the state and to uphold the mission of the Department of Health (TDH or the Department):

> *"To protect, promote, and improve the health and prosperity of people in Tennessee."*

Health impacts every aspect of our lives. From our ability to learn to our ability to work, the quality of our lives and our ability to meaningfully contribute to our communities depends heavily on how healthy we are. The State Health Plan exists to contemplate the factors that determine health, consider the resources that can be utilized to improve health, and coordinate the people who lead the way in making Tennessee healthier. By functioning in this way, the State Health Plan also supports the vision of the Department of Health set forth in the Department's strategic plan:

> *"Healthy People, Healthy Communities, Healthy Tennessee."*

Five Principles for Achieving Better Health

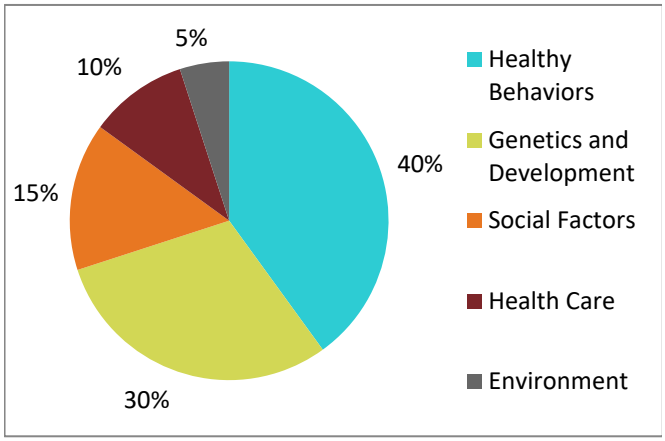
The State Health Plan utilizes the Five Principles for Achieving Better Health that are informed by Tennessee law to serve as the framework of the State Health Plan. The Five Principles are as follows.

1. **Healthy Lives:** The purpose of the State Health Plan is to improve the health of the people in Tennessee.
2. **Access:** Every citizen should have reasonable access to health care.
3. **Economic Efficiencies:** The State's health and health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies, and the continued development of the State's health care system.
4. **Quality of Care:** Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by providers.
5. **Workforce:** The state should support the development, recruitment, and retention of a sufficient and quality health and health care workforce.

Healthy Lives

The State Health Plan emphasizes improving population health through policies and programs that use primary prevention and address social determinants of health. Social determinants of health are the numerous factors that influence health and well-being, including personal behaviors, culture, the environment, and social and socio-economic factors. By moving upstream and addressing population health, primary prevention, and social determinants of health, the State Health Plan aims to equip Tennesseans with the knowledge, tools, and resources necessary to prevent health issues from ever developing.

Table 2: What Impacts Health



Sources: McGinnis JM & Foege WH. Actual causes of death in the United States. JAMA 4993: 270(18):2207-12 (Nov. 10) McGinnis JM, Williams-Russo P, & Kinckman JR. The case for more active policy attention to health promotion. Health Affairs 2002: 21(2):78-93 (Mar).

The Department's strategic plan also prioritizes prevention as a mechanism for population health improvement. The Department's approach to prevention includes the following efforts to improve health in the state: 1) support local leadership, 2) decrease youth obesity, 3) decrease tobacco use, 4) decrease substance misuse, and 5) prevent and mitigate adverse childhood experiences. The State Health Plan uses these priorities to inform the recommendations that are developed annually.

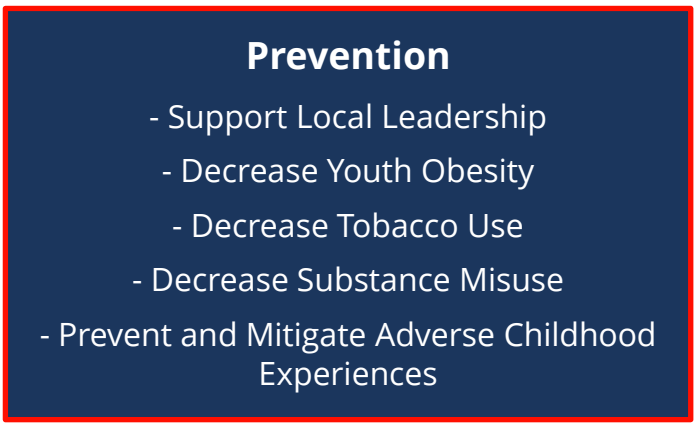


Figure 2: TDH Strategic Priorities - Prevention

Access

Access to high quality, comprehensive health care is important to promoting and maintaining health, preventing and managing chronic disease, and improving health equity across the state. Barriers to accessing care vary depending on the region of the state, but they include cost, transportation, high-speed internet availability, and geographic location.

Tennessee is facing particularly acute challenges in terms of access. Since 2010, 11 rural hospitals in Tennessee either closed or ceased to provide inpatient services. Additionally, from 2015 to 2019, Tennessee lost six obstetric delivery facilities; four were in rural counties, including three in economically distressed or at-risk counties.

Many rural communities face transportation barriers to care and lack basic internet access, inhibiting advances in telehealth and impacting the work of emergency responders. The rate of insurance coverage also impacts access to care in the state. Five of Tennessee's rural counties have uninsured rates above 15 percent among adult populations.

The State Health Plan considers recommendations that may alleviate these challenges to access. In doing so, it works to advance the Department's strategic plan that emphasizes improving access by 1) optimizing internal clinical efficiency, 2) improving external primary care access, 3) leveraging innovation, and 4) expanding partnerships.

Figure 3: TDH Strategic Priorities - Access

Economic Efficiencies

Health care spending in the United States increased 3.9 percent to 3.5 trillion dollars (10,739 dollars per person) in 2017.[i] There is evidence rising health care costs impact the following: 1) individual or family share of health insurance premiums, 2) out-of-pocket spending, 3) employer share of the health insurance premium, and 4) the portion of federal and state taxes devoted to government health programs.[ii] Improving economic efficiencies may have a positive impact on the ability of Tennesseans to access health care services, supporting the second principle of achieving better health. Additionally, addressing prevention by decreasing smoking, obesity, and chronic disease in the state may serve as a cost-saving mechanism. Lower-cost preventive measures used by the Department can potentially prevent the need for higher cost health care interventions.

Quality of Care

Quality of care is defined by the World Health Organization as "the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered."[iii] The Department plays a key role in monitoring and improving the quality of care provided in the state through licensure, health care facility inspections, health professional boards, provider recruitment, and data collection and monitoring.

Workforce

A sufficient, high-quality workforce is a factor of both prevention and access to care. Primary care plays an important role in preventing, mitigating, and managing disease throughout the lifespan, and dental and mental health services are also key components of health and well-being.

The Department collects and reports data on the number of primary care physicians, including family medicine, internal medicine, obstetrics and gynecology, and pediatrics, and dentists in the state. These data are used to identify federally designated Health Professional Shortage areas (HPSAs). In Tennessee, 93 of the 95 counties contain Health Professional Shortage Areas for primary care, dental services, and/or mental health.

The State Health Plan plays a role in identifying solutions to workforce recruitment and retention challenges faced by both the Department's local health departments and communities at large.

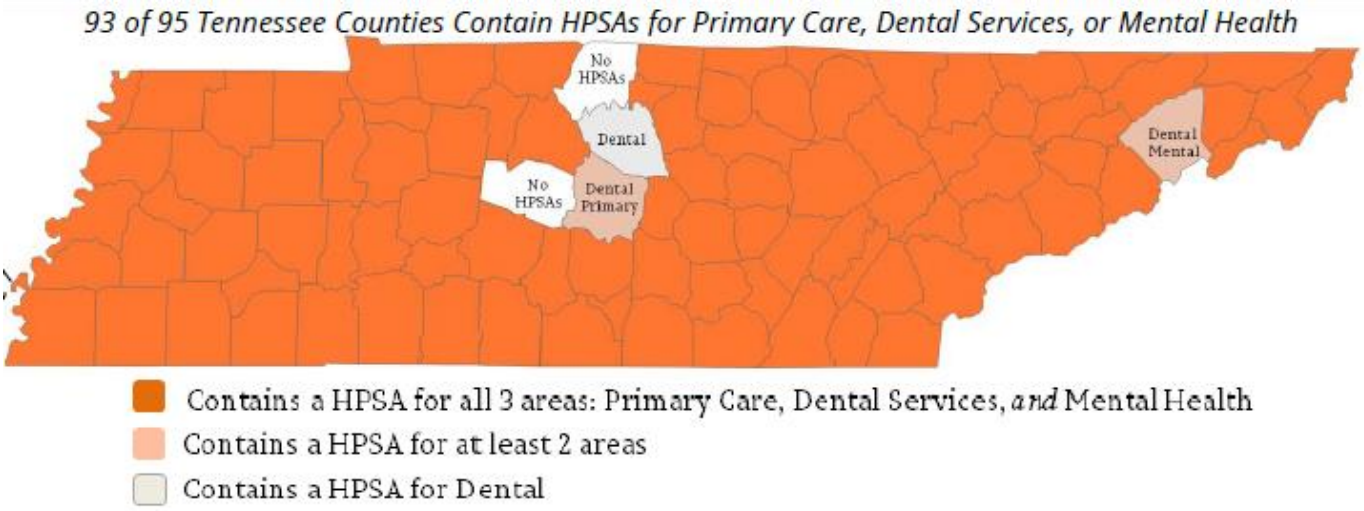


Figure 4: Health Professional Shortage Areas

Tracking Health in Tennessee

Tennessee law directs the State Health Plan to annually review the health status of Tennesseans. In 2018 the Department began using Tennessee Vital Signs to monitor and track health in the State. They were developed through an extensive public process in conjunction with a thorough internal review.

Vital Signs

Tennessee Vital Signs provide an at-a-glance view of leading indicators of health and prosperity. Tennessee's Vital Signs seek to provide an objective answer to the question, "How healthy is Tennessee?" The Vital Signs include both health outcomes and social determinants of health in order to help the Department and its partners to think about factors that influence the health of the state. Because the Vital Signs include metrics like 3rd grade reading level and frequent mental distress, they offer an opportunity for the Department to partner with other state agencies to improve health and well-being in the state.

Table 3: Tennessee Vital Signs

Measure	Percentage/Rate	Definition	Source
Access to Parks and Greenways	**71%**	Percent of population with adequate access to locations for physical activity	County Health Rankings (2018)
Community Water Fluoridation	**88.8%**	Percent of population served by community water systems that are receiving fluoridated water	Centers for Disease Control (CDC) and Prevention Water Fluoridation Reporting System (2017)
Drug Overdose	**23,657**	Number of drug overdose outpatient visits and inpatient stays caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent	Tennessee Department of Health (TDH) Office of Informatics and Analytics (2017)
Frequent Mental Distress	**13.7%**	Percent of adults who reported their mental health was 'not good' 14 or more days during the past 30 days	Behavioral Risk Factors Surveillance System (BRFSS) (2017)
Infant Mortality	**6.9**	Number of infant deaths per 1,000 live births	TDH Death Statistics (2018)
Per Capita Personal Income	**$47,179**	Annual, not seasonally adjusted, per capita personal income in dollars	US Bureau of Economic Analysis (2018)
Physical Activity	**69.4%**	Percent of adults who reported doing physical activity or exercise during the past 30 days other than their regular job	BRFSS (2017)
Preventable Hospitalizations	**1531**	Hospitalization rate for ambulatory care-sensitive conditions per 100,000 adults	Hospital Discharge Data System (2017)
Teen Births	**25.3**	Number of births per 1,000 women aged 15-19 years	TDH Birth Statistics (2018)
Third Grade Reading Level	**36.7%**	Percent of public school students in grade 3 that test "on track" and "mastered" for ELA on TNReady	Tennessee Department of Education (TDE) (2019)
Youth Nicotine Use	**11.5**	Electronic Vapor Products: Percent of high school students who currently used electronic vapor products on at least one day during the 30 days before the survey	Youth Risk Behavior Surveillance System (2017)
Youth Obesity	**39.3%**	Percent of public school students with a body mass index (BMI) greater than or equal to the 85th percentile for children of the same age and sex	TDE Coordinated School Health (CSH) (2018)

Cognitive and Brain Health across the Lifespan

In partnership with the Department of Health Office of Patient Care Advocacy

Introduction to Cognitive and Brain Health across the Lifespan

The 2017-2021 Tennessee State Plan on Aging projects that by 2030 the number of Tennesseans 60 years and older will grow by 37 percent to 2.16 million individuals, 28 percent of our state's population.

Recognizing Tennessee's population is aging, the 2019 Edition of the State Health Plan is a deep-dive into healthy aging with an emphasis on cognitive and brain health across the lifespan. The deep-dive was conducted by the Office of Health Planning in partnership with the Office of Patient Care Advocacy. State health departments, federal agencies, national organizations, and local stakeholders are exploring opportunities and action steps to support programs, policies, and innovative interventions to promote health and well-being for people as they age. To advance these types of initiatives, several state public health departments across the country are using frameworks such as Trust for America's Health and The John A. Hartford Foundation's "Framework for Creating Age-Friendly Public Health Systems" to improve the health and well-being of adults as they age. They are focusing on areas where public health can support, complement, or collaborate with state units on aging, known in Tennessee as the Tennessee Commission on Aging and Disability (TCAD). Tennessee has many different agencies, organizations and professionals working to support healthy aging, and public health can play a significant role by connecting and convening the multiple sectors that provide the supports, technical services, policies and infrastructure to promote healthy aging.

The World Health Organization (2015) defines healthy aging as the process of developing and maintaining the functional ability that enables well-being in older age. This definition portrays healthy aging as both an adaptive process in response to the challenges that can occur as we age and a proactive process to reduce the likelihood, intensity, or impact of future challenges through the promotion of healthy lifestyle choices. Healthy aging requires the active contribution of a variety of stakeholders. Public health establishes community partnerships and community action to improve the health, safety and well-being of the whole community at any stage of life, at any age through the promotion and protection of health and the prevention of illness.

Public health practice focuses on the entire life course, working collaboratively with community partners on a wide range of health issues to provide programs and policies such as maternal and child health, diabetes prevention, brain health, emergency preparedness, and tobacco-free initiatives, that eventually support healthy aging later in life. While public health has experience and skill in addressing these components of health for some populations, it has not traditionally focused such attention on its role in healthy aging and more specifically Alzheimer's disease and other dementias for adults and older adults. Alzheimer's disease has been viewed primarily as an aging issue. However, research shows that the brain changes associated with brain health begin to take root many years, even decades, before symptoms appear. The Alzheimer's disease continuum spans decades, providing many opportunities to change outcomes across the lifespan. Just as with other chronic and degenerative conditions, public health along with national, state and community partners can reduce risk in populations, further early detection and diagnosis, improve safety and quality of care for people living with cognitive impairment, and attend to caregivers' health and wellbeing.

Cognitive and Brain Health Overview

Dementia is characterized by changes in the brain that result in a loss of cognitive function that interferes with daily life. Dementia is an umbrella term encompassing several diseases that cause dementia including Alzheimer's disease, vascular dementia, dementia with Lewy bodies, and frontotemporal dementia. Alzheimer's disease accounts for 60-80 percent of all dementia cases, making it the most common cause of dementia.[iv]

Dementia, including Alzheimer's disease, should be considered throughout the lifespan. While aging is an inevitable process, there is growing evidence that healthy behaviors across the lifespan may reduce the risk of cognitive decline and dementia.[v]

Source: Alzheimer's Association and Centers for Disease Control and Prevention. Healthy Brain Initiative, State and Local Public Health Partnerships to Address Dementia: The 2018-2023 Road Map

Figure 5: Alzheimer's and Other Dementias across the Lifespan

Currently, Alzheimer's disease is the fifth leading cause of death in Tennessee, and Tennessee has the fourth highest Alzheimer's death rate in the nation.[vi] The Tennessee Department of Health has an integral role to play in raising awareness and inspiring action around Alzheimer's and dementia risk reduction across the lifespan.

The long-term vision of the Department for Alzheimer's and other dementias risk reduction for the state is:

1. To encourage healthy lifestyle choices and create healthy environments to reduce or delay the development and onset of Alzheimer's and other dementias, and
2. To improve the quality of life and patient-centered care of individuals living with Alzheimer's and other dementias, caregivers, and family and friends.

This long-term vision supports the mission of the Department to "protect, promote, and improve the health and prosperity of people in Tennessee" while also providing an opportunity to use the Five Principles of Achieving Better Health to inform the recommendations and future action plans for TDH that are set forth in this State Health Plan.

Prevalence

Prevalence is the number of current cases (new and preexisting) of a certain health condition at a specific point in time. For Alzheimer's and other dementias, it is an estimate of the number of people that are currently living with Alzheimer's and/or other dementias.

National Prevalence

In 2019, an estimated 5.8 million Americans are living with Alzheimer's dementia. Among those living with Alzheimer's, 5.6 million are aged 65 and older, while approximately 200,000 of these individuals have earlier-onset Alzheimer's and are under the age of 65. The number of Americans living with Alzheimer's dementia is projected to rise to approximately 14 million by 2050.[vii]

> *1 in 3 seniors dies with Alzheimer's or another dementia. It kills more than breast cancer and prostate cancer combined.*

As of 2019, Alzheimer's is the sixth-leading cause of death in the United States. It is the fifth-leading cause of death among individuals aged 65 and older, resulting in one in three seniors dying with Alzheimer's or another dementia.[viii] Between 2000 and 2017 deaths from heart disease decreased nine percent, while deaths from Alzheimer's disease increased 145 percent.

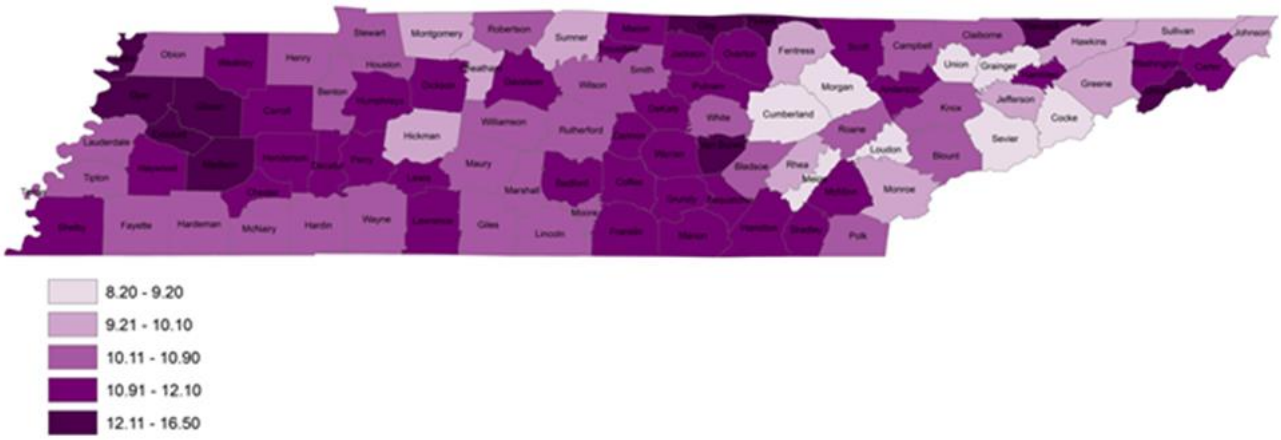
Tennessee Prevalence

An estimated 120,000 Tennesseans are living with Alzheimer's in 2019. It is the fifth-leading cause of death in the state, and Tennessee has the fourth-highest Alzheimer's death rate in the nation. There has been a 244 percent increase in Alzheimer's deaths in Tennessee since 2000.

Table 4: Leading Causes of Death in Tennessee

10 Leading Causes of Death in Tennessee: CDC 2017	
1	Diseases of the heart
2	Malignant neoplasms
3	Chronic lower respiratory diseases
4	Accidents (unintentional injuries)
5	**Alzheimer's disease**
6	Cerebrovascular diseases
7	Diabetes mellitus
8	Influenza and pneumonia
9	Intentional self-harm (suicide)
10	Nephritis, nephrotic syndrome and nephrosis

Among the counties in Tennessee, Loudon County has the lowest Alzheimer's prevalence rate at 8.2 percent and Lake County has the highest Alzheimer's prevalence at 16.5 percent.



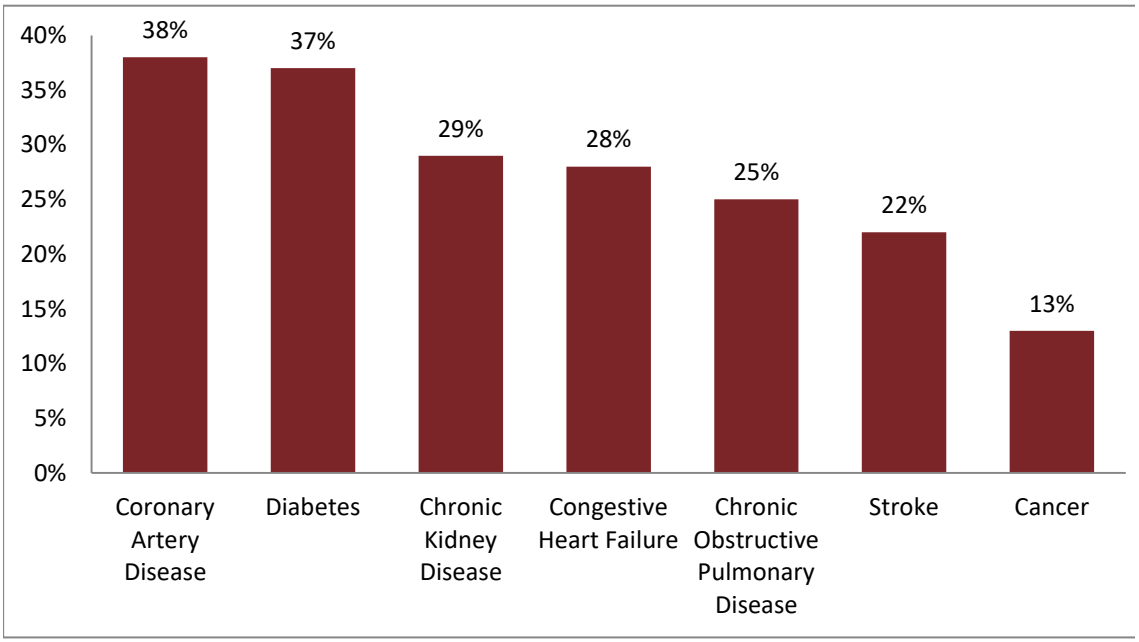
Source: 2017 Medicare Fee for Service data from Chronic Conditions Overview

Figure 6: Alzheimer's disease and other Dementias Prevalence in Tennessee

Coexisting Conditions

Ninety-five percent of Medicare beneficiaries living with Alzheimer's disease nationwide have one or more other coexisting chronic conditions (e.g. coronary heart disease, congestive heart failure, and/or diabetes). Living with Alzheimer's disease often exacerbates issues with the self-management of other chronic conditions, resulting in the compounding of the burden of disease and associated medical costs. Medicare beneficiaries diagnosed with Alzheimer's disease and other chronic conditions have more hospital stays and emergency department visits and higher nursing home payments per year than other older people.

Table 5: Percent of Medicare beneficiaries diagnosed with Alzheimer's/dementia living with coexisting chronic conditions



Source: 2018 Alzheimer's Facts and Figures report

Figure 7: Female Prevalence

Health Disparities: Alzheimer's disease and other Dementias

Across the state of Tennessee, there are certain populations that have higher prevalence rates of Alzheimer's and other dementias than others. These differences in prevalence rates, also known as health disparities, are most apparent when looking at race and sex.

While genetic risk factors are attributed to racial and ethnic disparities in Alzheimer's and other dementias, recent research shows that differences in socioeconomic and lifestyle related risk factors account for most of the differences in Alzheimer's and other dementias prevalence by race. Studies have shown that lower levels of education, higher rates of poverty, and greater exposure to early life adversity and discrimination increase the risk of Alzheimer's in these minority communities.

National Disparities in Prevalence

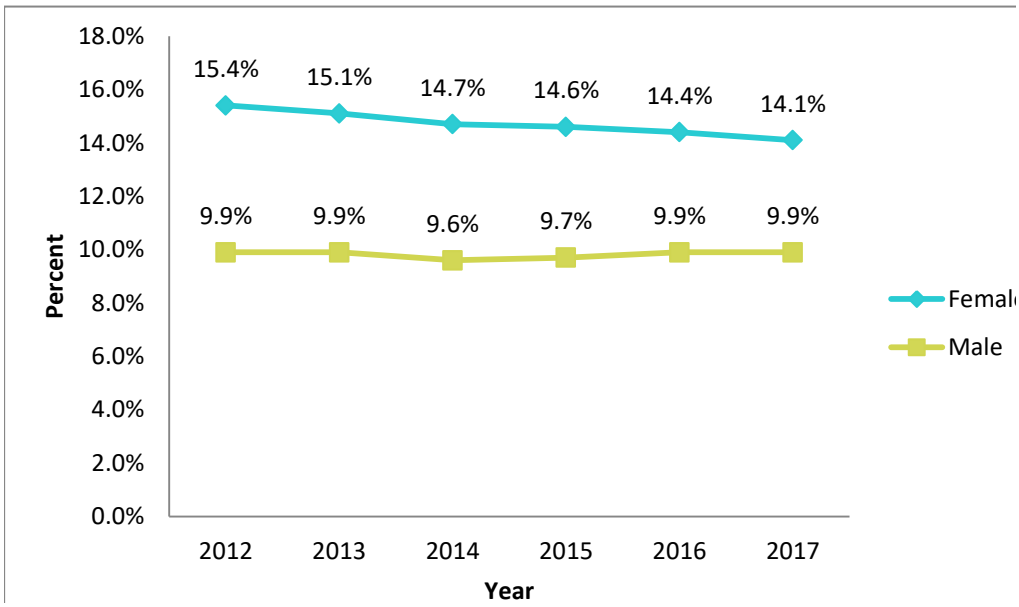
Almost two-thirds of individuals diagnosed with Alzheimer's disease are women. At age 65, women without Alzheimer's dementia have a one in five chance of developing the disease during the remainder of their lives, compared to a one in nine chance for men.

Studies show older African American adults are twice as likely to have Alzheimer's and other dementias when compared to older white adults, and Hispanic adults are 1.5 times more likely to have Alzheimer's and other dementias when compared to older white adults. Missed diagnoses and misdiagnoses are also more common for African American and Hispanic adults, and this issue exists across all racial and ethnic minority groups.

Tennessee Disparities in Prevalence

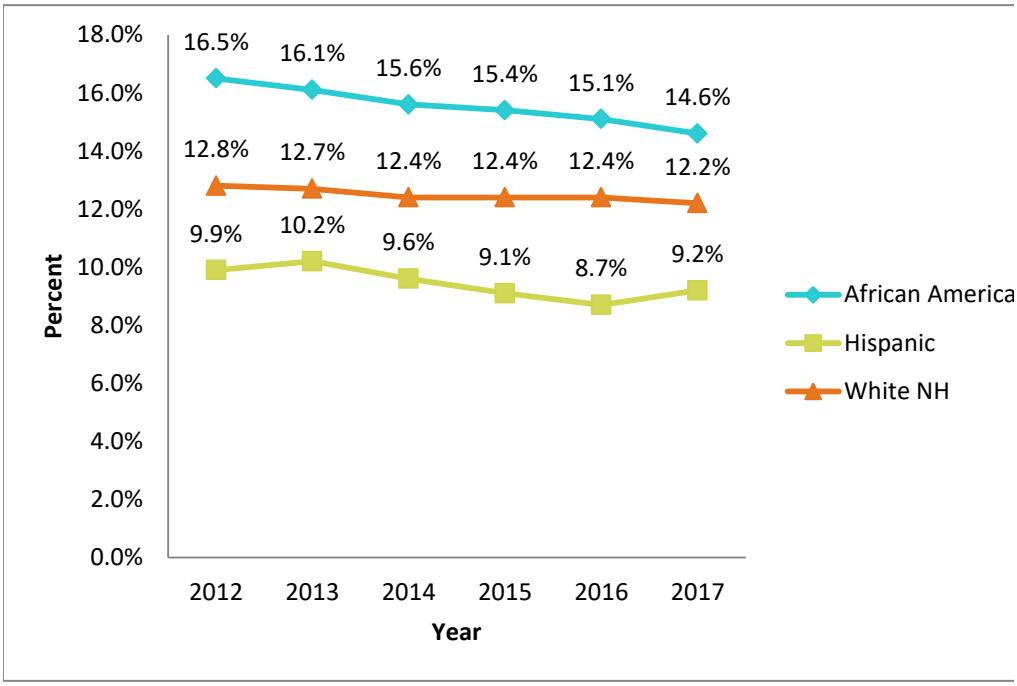
In Tennessee, the Alzheimer's disease and other dementias prevalence rate is consistently higher among women than men in the 65 and older population. In 2017, the rate was 14.4 percent among females aged 65 and older and 9.9 percent among males aged 65 and older.

Table 6: Alzheimer's disease and Other Dementias Prevalence by Sex - Tennessee



Racial disparities in prevalence of Alzheimer's disease and other dementias in Tennessee diverge slightly from national trends. African Americans have the highest rate, mirroring national trends. However, Hispanics in Tennessee have the lowest rate of Alzheimer's and other dementias in the state. In 2017, the prevalence among those aged 65 and older was 12.2 percent for Non-Hispanic Whites, 14.6 percent for African Americans, and 9.2 percent for Hispanics.

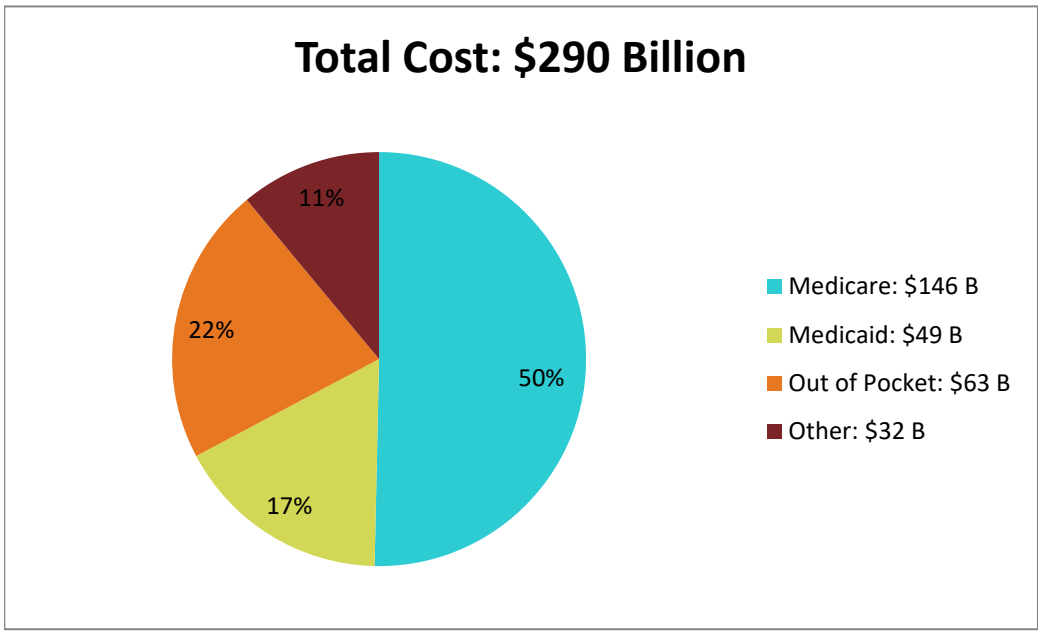
Table 7: Alzheimer's disease and Other Dementias Prevalence by Race – Tennessee



Associated Costs

Costs associated with both health care and long-term care for individuals with Alzheimer's and other dementias are significant. Total payments in 2019, including health care, long-term care, and hospice, for all individuals living with Alzheimer's and other dementias, are estimated at 290 billion dollars. These costs are estimated to rise to 1.1 trillion dollars by 2050. Of these total payments, 195 billion dollars, or 67 percent, are expected to be covered by Medicare and Medicaid, while 63 billion dollars, or 22 percent, of total payments are expected to be out-of-pocket spending.[ix]

Table 8: Total Alzheimer's and Other Dementias Payments



In 2018, total per-person health care and long-term care payments from all sources for Medicare beneficiaries were 48,977 dollars per-person among individuals living with Alzheimer's and/or other dementias compared to 13,976 dollars per-person for those without dementia; making the payments for beneficiaries with dementia three times higher than payments for beneficiaries without dementia.[x]

Additionally, 27 percent of older individuals with Alzheimer's and/or other dementias that have Medicare also have Medicaid. Medicaid provides coverage for nursing homes and other long-term care for some low-income individuals. Average Medicaid payments per-person for Medicare beneficiaries with Alzheimer's and other dementias were 23 times greater than average Medicaid payments for Medicare beneficiaries without Alzheimer's and other dementias.[xi]

Table 9: Average Annual Per-Person Payments by Payment Source for Health Care and Long-Term Care Services, Medicare Beneficiaries Age 65 and Older, with and without Alzheimer's and other Dementias, in 2018 Dollars

Payment Source	Beneficiaries with Alzheimer's and other Dementias	Beneficiaries without Alzheimer's and other Dementias
Medicare	$24,598	$7,561
Medicaid	8,565	365
Uncompensated	381	382
Health maintenance organization	1,261	1,544
Private insurance	2,253	1,422
Other payer	937	242
Out of Pocket	10,798	2,336
Total*	**48,977**	**13,976**

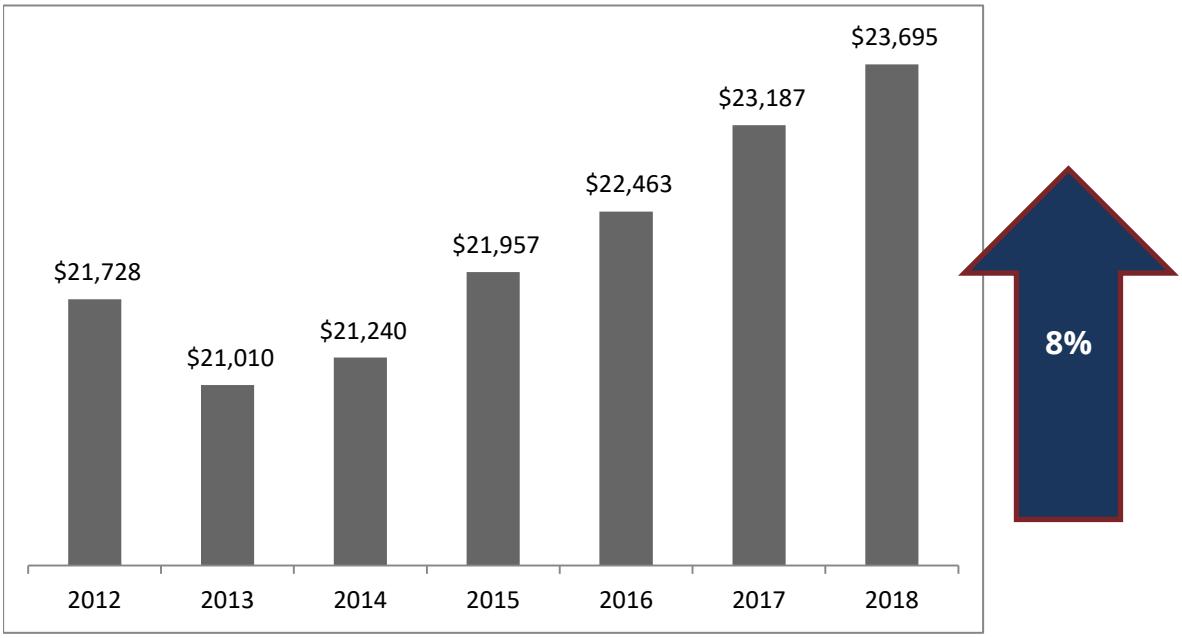
*Payments from sources do not equal total payments exactly due to the effects of population weighting. Payments for all beneficiaries with Alzheimer's or other dementias include payments for community-dwelling and facility-dwelling beneficiaries.
Adapted from: Alzheimer's Association. 2019 Alzheimer's Disease Facts and Figures. Alzheimers Dement 2019;15(3):321-87

Tennessee Associated Costs

In Tennessee, the per capita Medicare spending on people with Alzheimer's disease and other dementias was 23,695 dollars per capita in 2018. These associated costs increased eight percent from 21, 728 dollars in 2012 to 23,695 dollars in 2018.

In 2019, the total Medicaid cost of caring for people with Alzheimer's was 1.05 billion dollars, and the cost is expected to increase 29.6 percent from 2019 to 2025.[xii]

Table 10: Alzheimer's disease and Other Dementias Actual Spending 2012-2018



Source: Created from data from the Centers for Medicare and Medicaid Services

Contributing to these costs were 1,565 ED visits per 1,000 beneficiaries with dementia and a hospital readmission rate of 21.2 percent.[xiii] Compared to other states, Tennessee had the 12th highest number of emergency department visits of people diagnosed with Alzheimer's disease and other dementias and the 14th highest number of hospitalizations of people diagnosed with Alzheimer's disease and other dementias. Additionally, in 2016, Tennessee had 5,852 people in hospice with a primary diagnosis of Alzheimer's disease and other dementias; accounting for 19 percent of people in hospice.[xiv]

Table 11: Table 12: Emergency (ED) Visits, Hospital Readmissions and Per Capita Medicare Payments in 2018 Dollars by Medicare Beneficiaries with Alzheimer's and other Dementias in Tennessee, 2015

State	Number of ED Visits per 1,000 Beneficiaries	Percentage of Hospital Stays Followed by Readmission within 30 Days	Per Capita Medicare Payments
Tennessee	1,565	21.2	$23,695
US Average	1,471	21.3	$25,937

Created from data from the U.S. Centers for Medicare & Medicaid Services

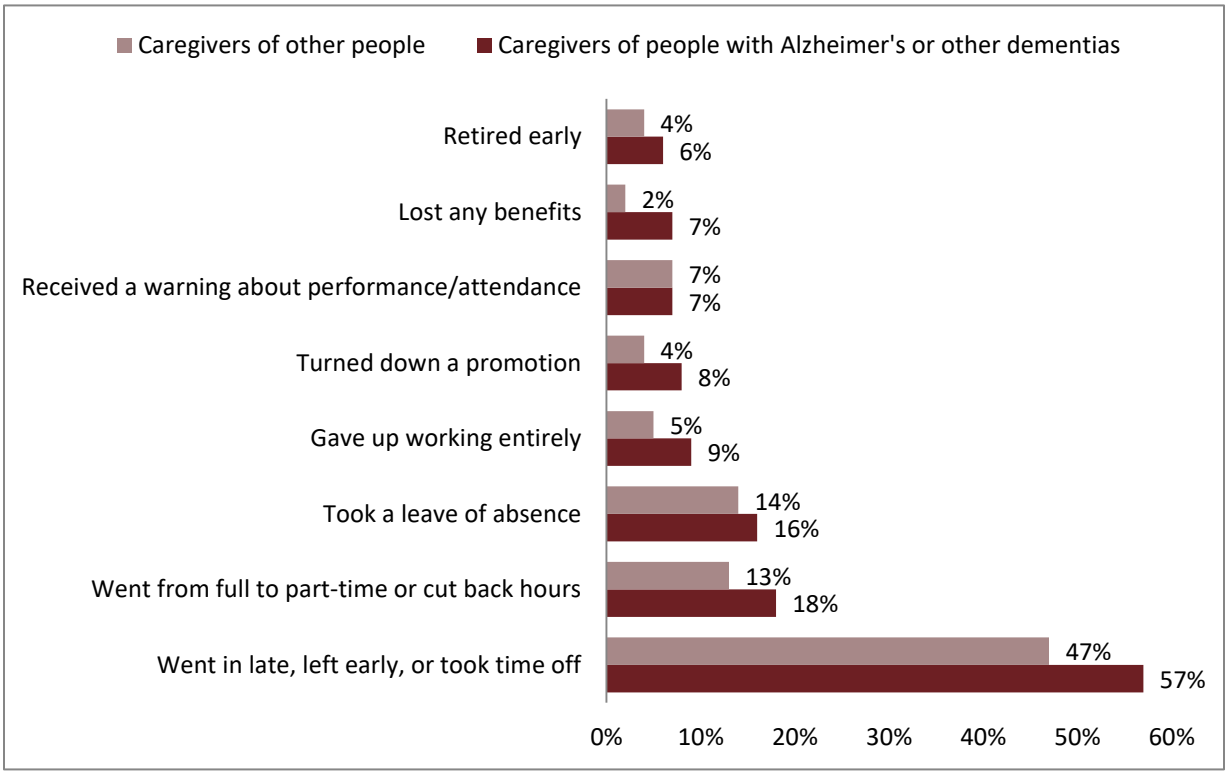
Caregiving

Caregiving is an important component of the quality of life and the care provided to an individual living with Alzheimer's or other dementia. Eighty-three percent of the help provided to older adults in the United States comes from unpaid caregivers, usually family or friends.[xv]

Financial Implications

Businesses in the United States lose between 17.1 billion dollars and 33.6 billion dollars per year in productivity due to the impact of caregiving responsibilities on full-time employees.[xvi] In addition, Alzheimer's and other dementias caregivers reported nearly twice the average out-of-pocket costs than non-dementia caregivers.[xvii]

Table 13: Work-Related Changes Among Caregivers of People with Alzheimer's or other Dementias Who Had Been Employed at Any Time Since They Began Caregiving



Source: 2018 Alzheimer's Fact and Figures Report

Health Implications

While caring for an individual with Alzheimer's and/or other dementias can be rewarding, many caregivers report significantly higher levels of emotional stress, depression, and anxiety disorders than non-caregivers or caregivers of those living with other chronic conditions report.[xviii]

Caregiving in Tennessee

There are approximately 439,000 caregivers in Tennessee (nearly one in four adults), providing care for someone with Alzheimer's and/or other dementias.[xix] Nearly one-third of caregivers report providing 20 or more hours of care per week, and 52.1 percent of caregivers provide care for at least two years. This results in an estimated 500 million hours of unpaid care, which has a value of approximately 6.3 billion dollars.[xx]

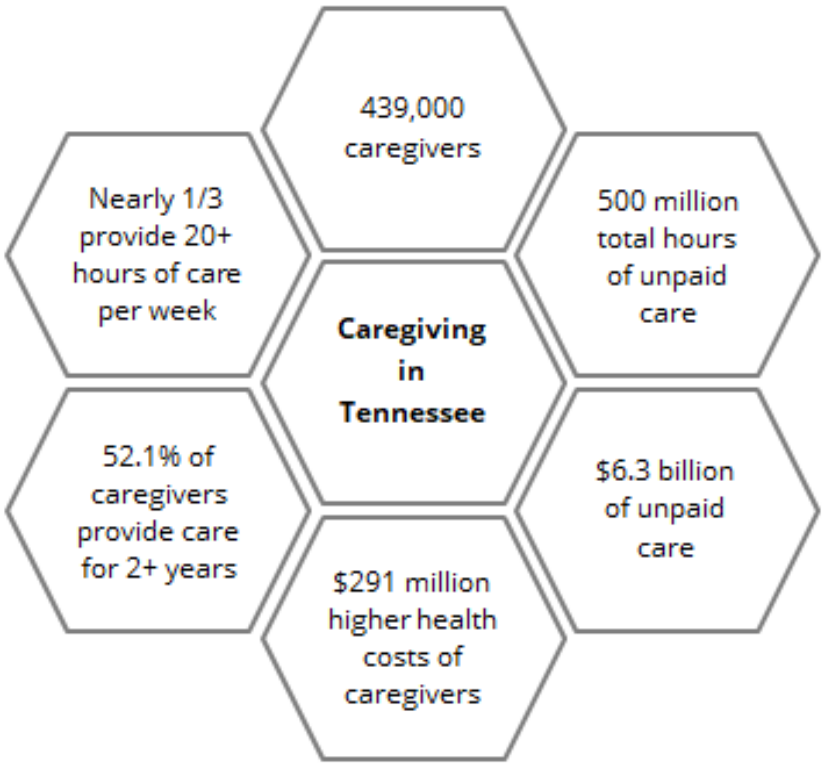
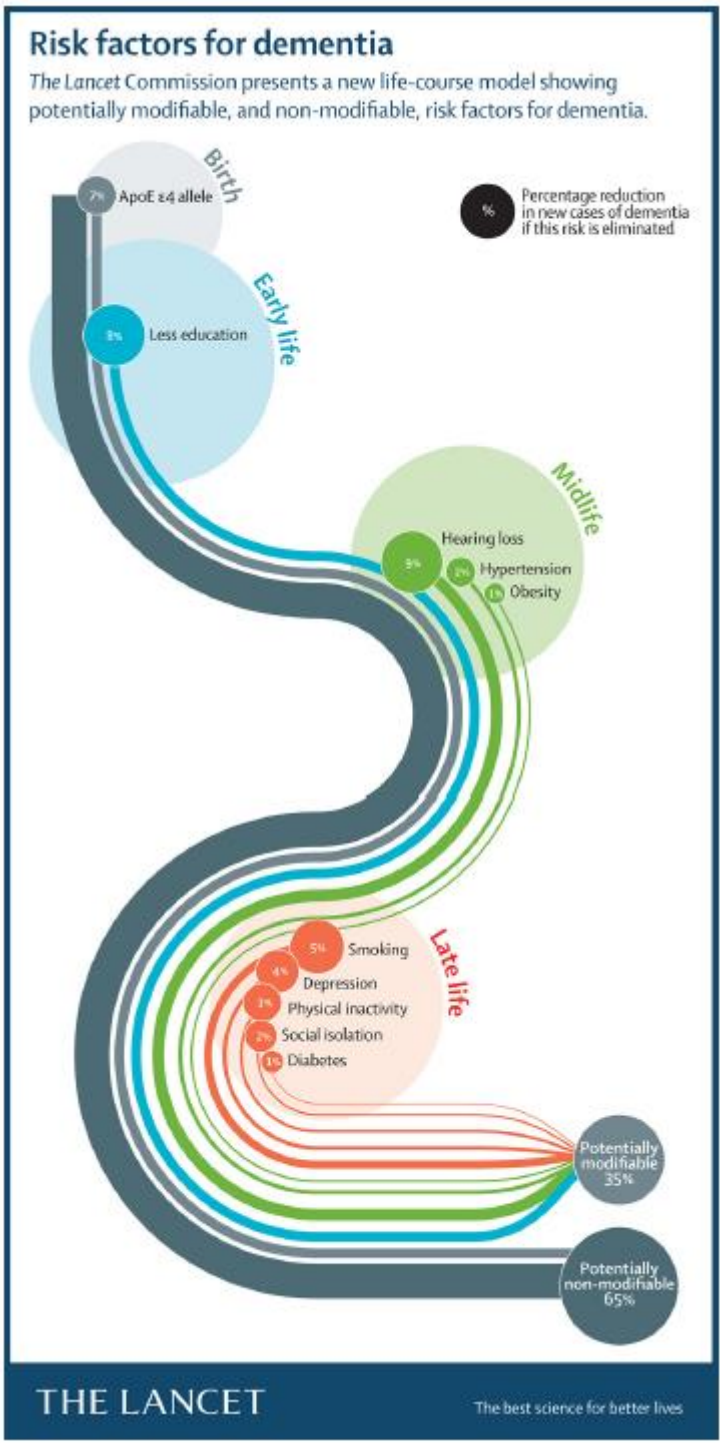


Figure 8: Caregiving for Individuals with Alzheimer's disease or other dementia in Tennessee

Modifiable Risk Factors and Prevention

The three greatest risk factors for late-onset Alzheimer's and other dementias are age, genetic mutation, and family history. While these three factors cannot be changed, other risk factors can be altered in order to decrease the likelihood of cognitive decline. An increasing number of scientific studies show a connection between Alzheimer's and other dementias and lifestyle-related risk factors that also contribute to chronic conditions, such as heart disease and diabetes. These lifestyle-related risk factors are known as modifiable risk factors. Research indicates that physical activity, cardiovascular health[3], and healthy diet play a role in reducing the risk of cognitive decline. Other modifiable risk factors include educational attainment, social and cognitive engagement, and traumatic brain injury.[xxi]



Source: Livingston, G. et. Al (2017) Dementia prevention, intervention, and care. The Lancet, 390 (10113).

Figure 9: Risk Factors for Dementia

[3] This includes preventing and treating diabetes, obesity, smoking, and hypertension.

Reducing an individual's or a population's exposure to these modifiable risk factors, beginning in childhood and extending throughout the lifespan, can strengthen individual and population-level ability to make healthier choices and follow lifestyle patterns for good health. One study that modeled the elimination of the seven most important modifiable risk factors[4] found a 30 percent reduction in Alzheimer's and other dementias incidence.[xxii]

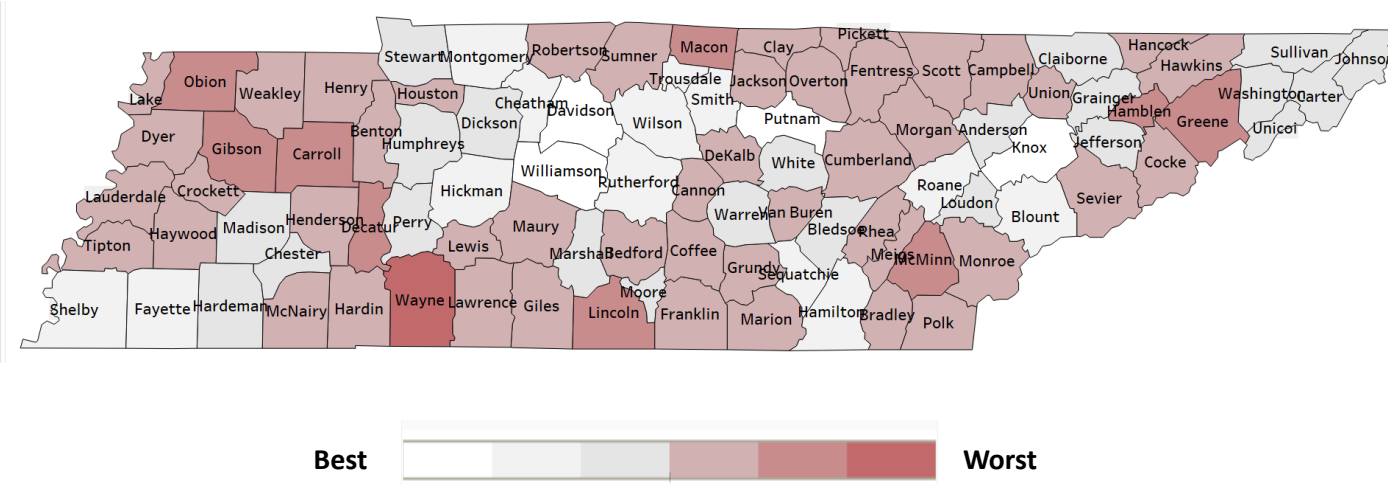
Figure 10: Modifiable Risk Factors

Modifiable risk factors are receiving increased attention to determine what preventive measures can be taken to reduce the risk of Alzheimer's and other dementias. One study reported that more than one-third of global dementia cases may be preventable through addressing lifestyle factors that impact an individual's risk. These potentially modifiable risk factors have been identified at multiple phases across the lifespan, not just in old age.[xxiii]

[4] Low education, smoking, physical inactivity, depression, mid-life hypertension, diabetes, and mid-life obesity

Physical Activity

Numerous population-level studies have found that physical activity, along with management of other cardiovascular risk factors, can lower the risk of cognitive decline. Physical activity increases blood flow to the brain and body, reducing potential dementia risk factors such as high blood pressure, diabetes, and high cholesterol. Physical activity also preserves cognitive and physical functioning, reducing the impact of dementia on the body and improving quality of life. An active lifestyle may also delay the need for costly long-term care.[xxiv] An estimated two million Tennessee residents reported receiving no physical activity in 2017, and approximately 45 percent of adults are not sufficiently active to achieve substantial health benefits.[xxv] Promoting physical activity and highlighting its connection to brain health is an essential role that health department staff can play. In Tennessee, 30.9 percent of adults were physically inactive in 2019.[xxvi]

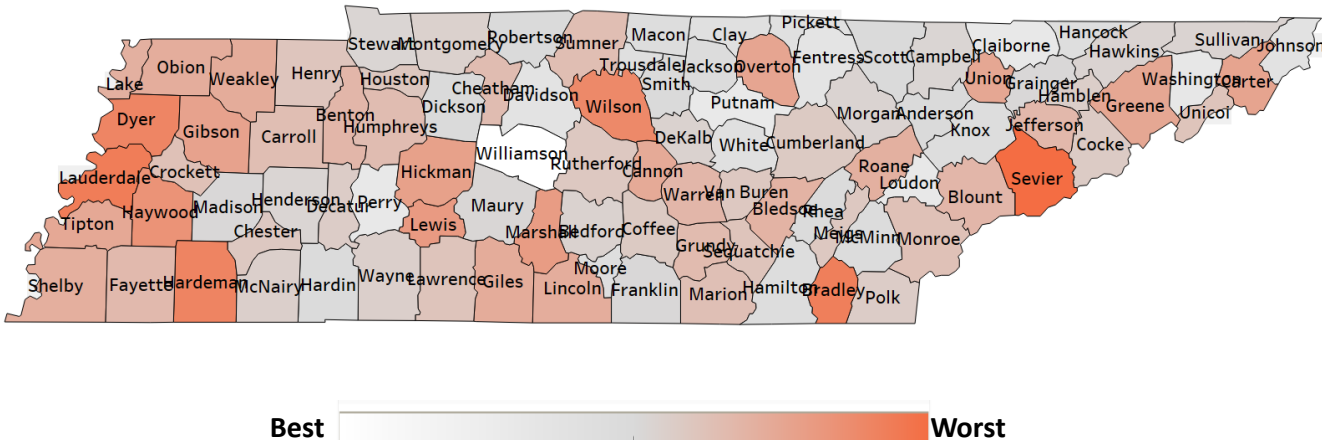


*Adults over 20 years of age reporting no leisure time physical activity in the last month

Figure 11: Physical Inactivity in Tennessee

Obesity and Diet

Studies show that obesity during midlife, or adult obesity, is linked to increased risk of Alzheimer's disease and other dementias in addition to being linked to earlier age of onset of Alzheimer's disease.[xxvii] Obesity is also associated with many cardiovascular diseases, including high blood pressure and diabetes, both of which are linked to increased risk of Alzheimer's and other dementias.[xxviii] In Tennessee, 34.4 percent of adults were obese in 2019.[xxix]

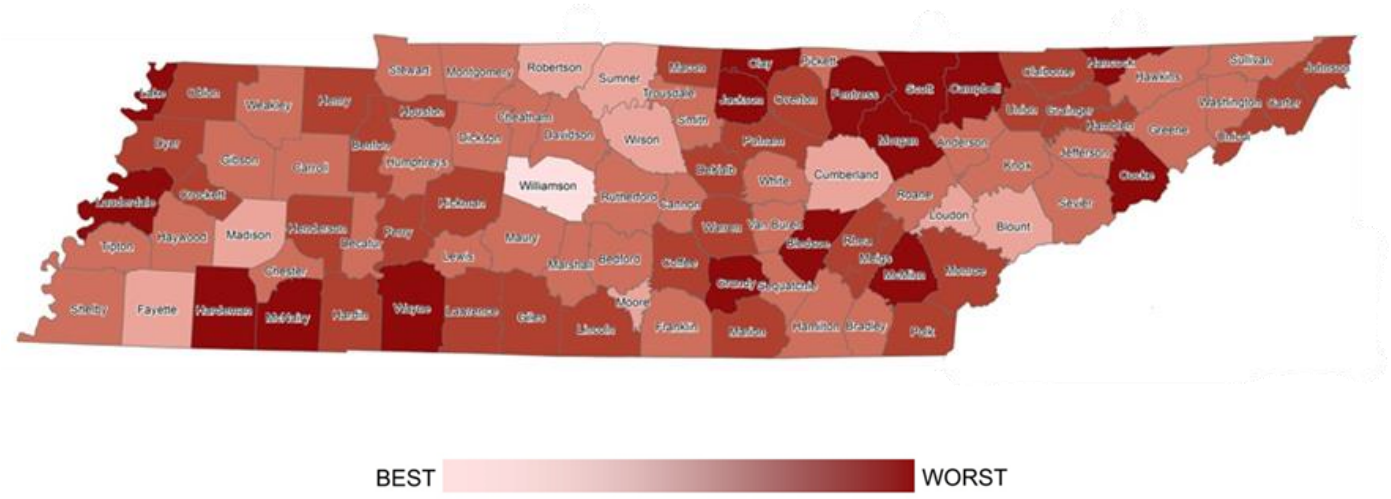


*Percent of adults who reported a body mass index (BMI) that is considered obese

Figure 12: Adult Obesity in Tennessee

Tobacco Use

Smoking tobacco, smokeless tobacco use, and other forms of tobacco consumption contribute to oxidative stress and inflammation in the brain that can contribute to the development of Alzheimer's disease. Tobacco use is also associated with obesity and heart disease, both of which are correlated with a higher risk of Alzheimer's and other dementias.[xxx] Quitting smoking may reduce the associated risk levels comparable to those who have not smoked. Approximately one in seven US adults still smoke, and approximately 3.9 million middle and high school students reported using at least one tobacco product. In 2019, 20.7 percent of adults were smokers in Tennessee.[xxxi]



* Percentage of adults who are smokers (reported smoking at least 100 cigarettes in their lifetime and currently smoke daily or some days)

Figure 13: Adult Smoking in Tennessee

Substance Abuse

Chronic substance abuse can intensify existing dementia, bring out genetic predispositions to dementia, or, in some cases, cause this condition outright. In many cases, dementia caused by addiction is treatable or even reversible. It is estimated that up to 20 percent of dementia cases are brought about by alcohol abuse.[xxxii] Additionally, Tennessee is facing an epidemic of prescription drug overdose and addiction. In 2019, Tennessee had a drug death rate of 24.3 deaths due to drug injury per 10,000 population.[xxxiii] The following map provides information on the opioid prescription rate for pain by county in Tennessee.

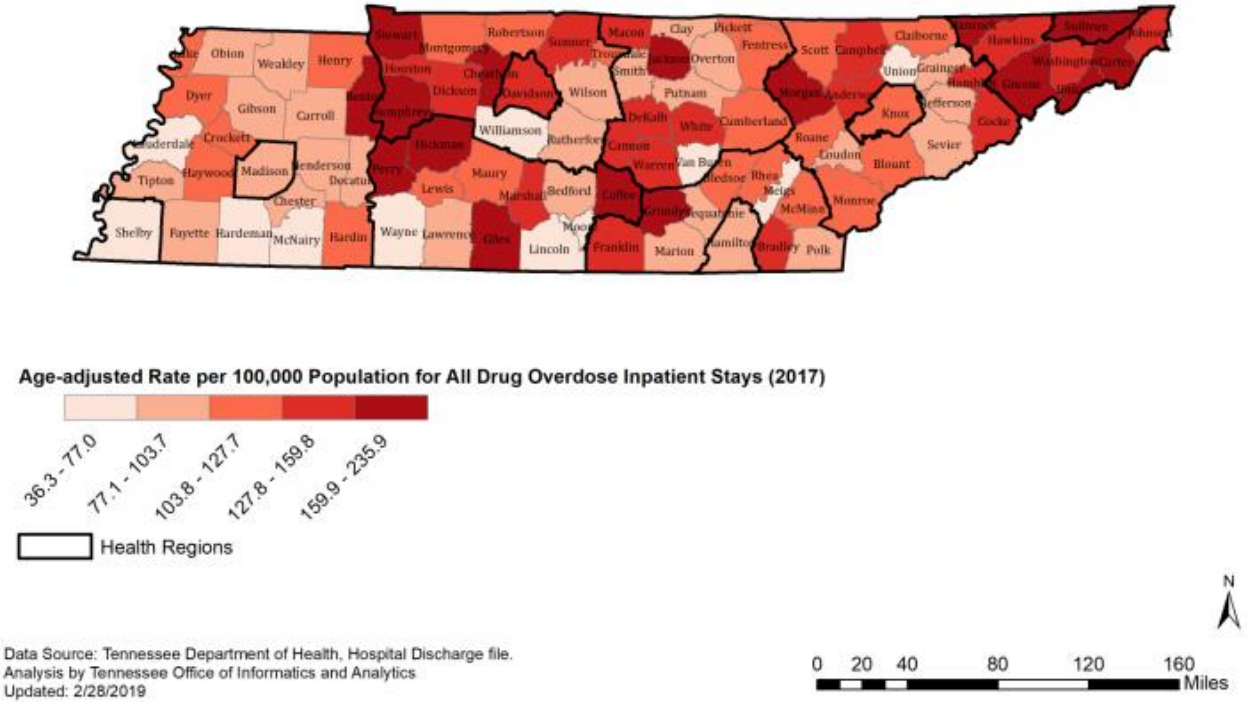


Figure 14: Age-Adjusted Rates for All Drug Overdose Inpatient Stays in 2017 by Tennessee County of Residence

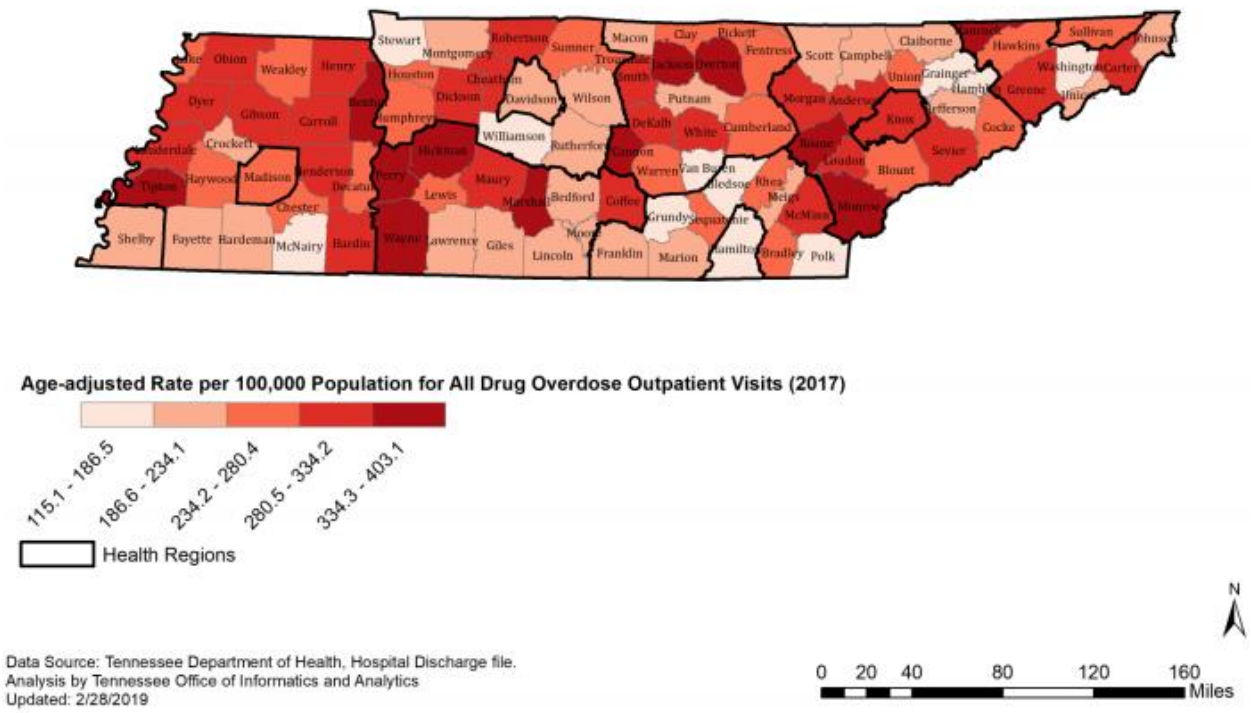


Figure 15: Age-Adjusted Rates for All Drug Overdose Outpatient Visits in 2017 by Tennessee County of Residence

Traumatic Brain Injury

Research has linked moderate and severe traumatic brain injury to an increased risk of developing Alzheimer's and other dementias later in life. One study found that older adults with a history of moderate traumatic brain injury had a 2.3 times greater risk of developing Alzheimer's than other older adults with no history of head injury. Those with a history of severe traumatic brain injury had a 4.5 times greater risk. Falls, being struck by an object, and motor vehicle crashes are the most common causes of traumatic brain injury that results in emergency department visits.[xxxiv]

State Health Plan Deep-Dive

The Department of Health Offices of Health Planning, Patient Care Advocacy, and Minority Health and Disparities Elimination conducted a series of 10 focus groups across the state. Industry stakeholders, community members, faith-based leaders, and caregivers, among others, attended these meetings.

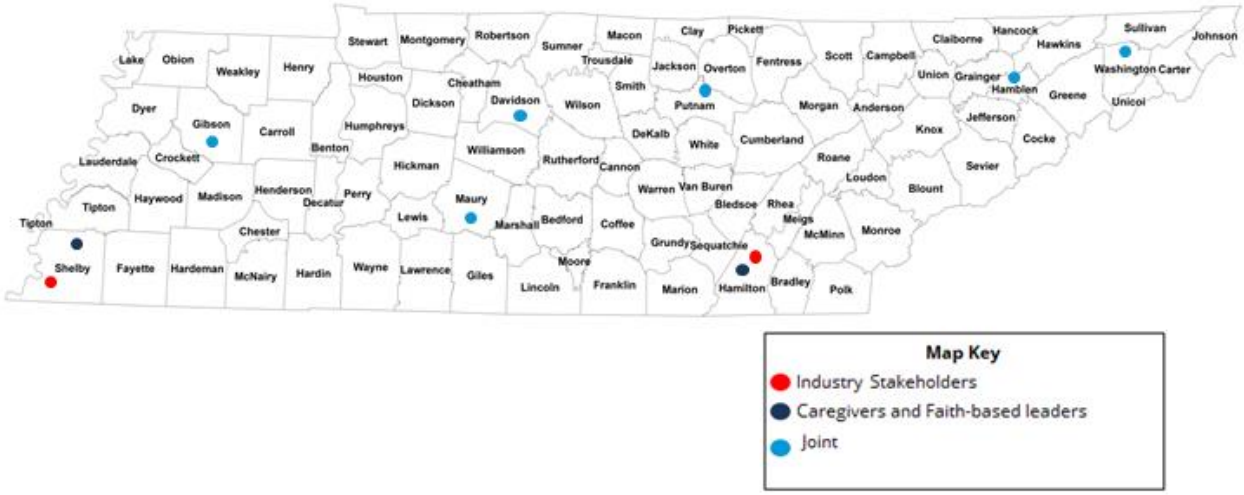


Figure 16: Focus Group Meetings

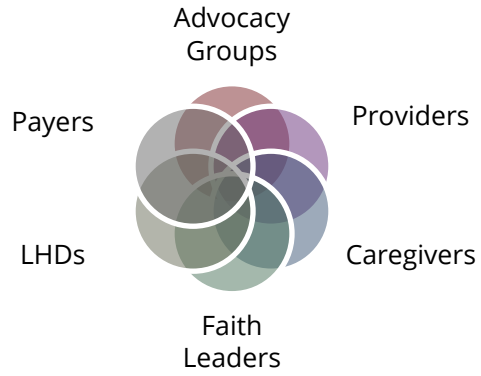


Figure 17: TDH Partners

Each meeting was formatted to include a presentation by TDH on the State Health Plan and aging across the lifespan, followed by breakout sessions discussing specific questions designed for the targeted audiences. Three separate sets of questions were developed: 1) questions for advocacy groups, non-profit organizations, providers, payers, and government agencies, 2) questions for caregivers, and 3) questions for faith-based community members and leaders. [5] In more populous counties, two meetings were held, one for industry stakeholders and one for community members, caregivers, and faith-based leaders. In smaller communities, these were held as joint meetings.[6]

Focus Group Results

The Department of Health engaged numerous stakeholders throughout the focus group meeting process. Attendees included legislative representatives, payers, advocacy groups, providers, individuals living with Alzheimer's disease or other dementias and their caregivers, faith leaders, local health departments, other state agencies, and numerous non-profit organizations. Focus group questions gathered information on what work is already underway in the state, what gaps in knowledge and services exist, needed resources to support future efforts, the experience of being a caregiver, and actions that should be taken to improve cognitive and brain health in Tennessee (both in terms of prevention and care after diagnosis).[7]

[5] Focus group questions are included in Appendix B.
[6] For detailed notes gathered from these sessions see appendix C.

Below is the information received in each county in response to the focus group prompt: *List five actions to promote brain health across the lifespan, expand early detection and diagnosis, improve safety and quality of care for people living with dementia, and attend to caregivers' health and well-being.*

Table 14: Focus Group Results

County	5 Recommended Actions
Davidson	1. Dementia friendly communities 2. Cognitive screenings 3. Coordinated messaging and education for lifelong brain health 4. Statewide summit to break down silos 5. Cognitive screenings
Gibson	1. Dementia friendly communities 2. Dissemination of information to faith-based communities and leaders 3. Coordinated messaging 4. Engaging and educating the workforce – caregivers, law enforcement, health care providers, and first responders 5. Caregiver support
Hamblen	1. Education of providers and accommodation of older adults 2. Dealing with the "here and now" for patients and caregivers 3. Expanding home and community based services 4. Support plans for caregivers 5. Engagement with those with cognitive decline
Hamilton	1. PACE Model 2. Increase education and resources to communities 3. Physician awareness of the importance of screenings 4. Roadmap for preventative services 5. Referral from emergency department and first responders – provide education and navigation
Maury	1. Increase provider screenings 2. Education related to prevention and symptoms 3. Decreasing stigma 4. Improved access to information and navigation resources 5. Support groups for caregivers

Putnam	1. Coordinated statewide effort 2. Education and training for families, communities, and faith-based communities 3. Increase preventative services and screenings 4. Health care provider education 5. Utilize faith-based communities for outreach and education
Shelby	1. Electronic Medical Records a. Cognitive assessment b. Care planning and navigation resources c. Interoperability 2. Dementia Friendly Communities 3. Strategic messaging for existing programs 4. Healthy lifestyle education 5. Statewide symposium on brain health and healthy aging
Washington	1. Annual statewide conference including health care providers, caregivers, active surveillance, and Alzheimer's associations 2. Workforce training and development for health care, law enforcement, and support services 3. Coordinated statewide effort to implement action strategies 4. Education related to safety and awareness 5. Lifestyle and symptom education

During the focus group discussions with caregivers and faith-based community members, two key themes emerged. The first was the importance of early detection and diagnosis. This included education related to signs and symptoms of Alzheimer's disease and other dementias, access to providers for screenings and diagnosis, and education for providers to improve communication with patients and caregivers.

Second, caregivers and faith-based community members highlighted difficulties related to accessing information on available resources including financial, respite, legal, and health care services. Participants acknowledged that many resources do exist, however, it is often difficult to navigate the system and access the available assistance.

Through these responses and additional discussions held during the meetings, three key themes emerged that were then developed into recommendations. The key themes fell into the following three categories: 1) dementia friendly communities, 2) dementia risk reduction, and 3) the improvement of alignment and coordination through a statewide summit.

Table 15: Focus Group Key Themes

Dementia Friendly Communities	Dementia Risk Reduction	Summit
• Gibson County • Washington County • Hamilton County • Shelby County • Davidson County • Hamblen County • Maury County • Putnam County	• Gibson County • Washington County • Shelby County • Davidson County • Maury County	• Washington County • Shelby County • Davidson County • Putnam County

Recommendations

The information provided during the focus group meetings directly informed a set of three recommendations that TDH, with the assistance of public and private partners, will implement in order to support cognitive and brain health and healthy aging across the state.

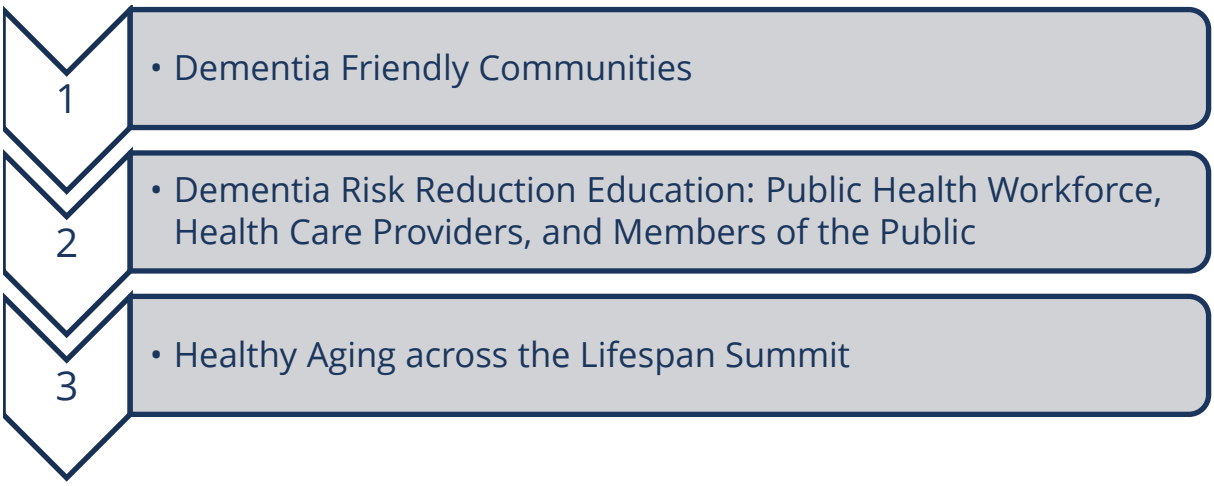


Figure 18: Recommendations

Recommendations and the Five Principles for Achieving Better Health

The Five Principles for Achieving Better Health, informed by Tennessee law, serve as the framework of the State Health Plan. The recommendations were developed to support the Five Principles for Achieving Better Health and to improve health in the state. The recommendations aim to accomplish this through individual and population-level public health prevention efforts and through improved education and efficiencies in health care.

Figure 19: Five Principles for Achieving Better Health

Principle 1: Healthy Lives: The purpose of the State Health Plan is to improve the health of the people in Tennessee.

1. **Dementia Friendly Communities** will increase awareness, acceptance, and understanding of Alzheimer's disease and other dementias in the community among health care providers, first responders, those living with dementia, and their caregivers. This not only improves the lives and the health of those with the disease, it also plays a role in providing education to the community at large.
2. **Dementia Risk Reduction Education** will increase public awareness, engagement, and education about the connections between health and wellness, brain health, and dementia to reduce the risk of cognitive decline. This will play a key role in increasing upstream preventive efforts to improve risk reduction for the population of the state.
3. **A Statewide Summit** will increase collaboration between multiple state agencies and non-traditional partners to support enhanced work in healthy aging across the lifespan.

Principle 2: Access: Every citizen should have reasonable access to health care.

1. **Dementia Friendly Communities** will use data to identify underserved high-risk populations and counties with high Alzheimer's disease prevalence. These communities will then be targeted with pilot sites in order to improve access for early detection and diagnosis and to improve access to ongoing care post diagnosis. Additionally, memory care centers will be identified across the state to improve access to early and accurate diagnosis in rural areas.[8]
2. **Dementia Risk Reduction Education** will provide education to public health professionals and the general public related to detection, caregiving, and local and regional resources to improve access to care and resources (community services, care planning, behavioral health, and legal and financial planning services) among those diagnosed with Alzheimer's and other dementias.

[8] Memory care centers provide comprehensive evaluation, diagnosis and treatment of patients with memory problems and/or dementia, and they provide education and assistance for families and caregivers.

Principle 3: Economic Efficiencies: The State's health and health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies, and the continued development of the State's health care system.

1. **Dementia Friendly Communities** will provide community-wide education to improve economic efficiencies by encouraging behavior change throughout the lifespan to decrease the risk of cognitive decline. Training will also be given to providers, ED personnel, and first responders to reduce preventable hospitalizations, increase early diagnosis, and promote the use of care planning, telehealth, advanced directives, and palliative care services, all of which will play a role in increasing economic efficiencies in the state.

Principle 4: Quality of Care: Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by providers.

1. **Dementia Friendly Communities** will offer competency-based dementia training to medical personnel in order to improve the quality of care provided to those with Alzheimer's and other dementias. This recommendation will also promote the use of advanced directives, palliative care, and telehealth as means to improve the quality of care provided to these individuals.
2. **Dementia Risk Reduction Education** will include information related to solutions to support brain health across the lifespan, personalized disease management, early detection and diagnosis, and available resources. This will be offered to health care providers, the public health workforce, and the general public to improve personalized, quality care.

Principle 5: Workforce: The state should support the development, recruitment, and retention of a sufficient and quality health and health care workforce.

1. **Dementia Friendly Communities** will provide additional training to support and empower medical providers, ED personnel, public health workers, and first responders to ensure the retention and development of high quality health and health care workforce.
2. **Dementia Risk Reduction Education** will provide education and resources to medical providers and public health professionals to ensure a competent workforce.

Recommendation 1: Dementia Friendly Communities

In partnership with the Office of Patient Care Advocacy, individuals with dementia, caregivers/families of those with dementia, and other engaged stakeholders develop and implement Dementia Friendly Communities to address the following:

- Improve the accuracy of the general public's knowledge about Alzheimer's disease and other dementias;
- Reduce the stigma associated with Alzheimer's disease and other dementias;
- Promote respect and understanding to meet the needs of individuals with dementia and their caregivers;
- Promote early detection, diagnosis, treatment, care and support through the development and implementation of statewide evidence-based dementia friendly communities.

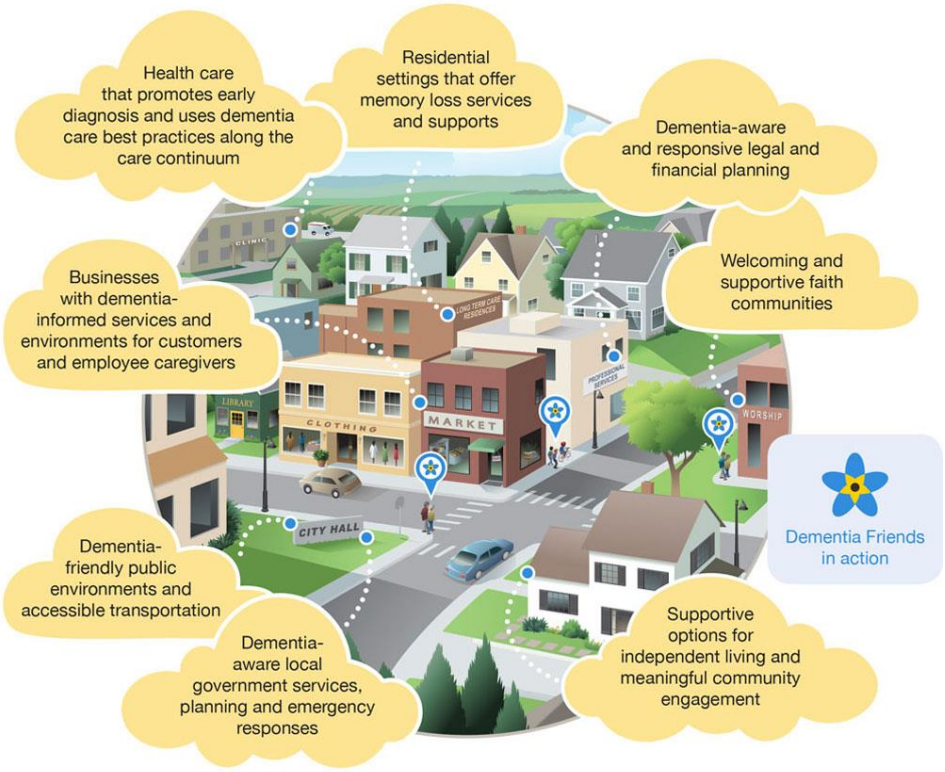


Figure 20: Dementia Friendly Communities

Profound advances in public health and medicine have added years to our lives. Dementia friendly communities emphasize breaking down stigma and promote the need for communities to actively accept and value people with dementia and their caregivers. Awareness-raising programs, along with training for health care services, businesses, and faith-based communities, are a core feature of this recommendation.

Implementation Plan: Dementia Friendly Communities

Guide: Dementia-Friendly Communities

Principles of Health Supported: Healthy Lives, Access, Economic Efficiencies, and Quality of Care

Action Plan

Strategy: Implement dementia-friendly communities to increase awareness, acceptance, and understanding of Alzheimer's disease and other dementias in the community among health care providers, first responders, those living with dementia and their caregivers.

1. **Action:** Develop a culturally appropriate dementia-friendly toolkit to enhance training for health care providers on the benefits and best practices for detection, diagnosis, and services referrals of those living with Alzheimer's disease and other dementias and their caregivers.
2. **Action:** Use data to identify underserved high-risk populations and implement dementia-friendly communities.

Expected Impact

1. Decrease stigma and enhance the lives of people living with dementia by supporting and enabling them to live within their communities for as long as possible.
2. Potential economic benefit to the acute care and long-term care supports and services systems if dementia-friendly communities help to ultimately reduce health care costs.[xxxv]
3. Shifting the culture and elevating brain health within the health care system and public health may encourage consumers to discuss brain health with their health care providers and improve the quality of life of those living with Alzheimer's and their caregivers.

Guide: Sector-Specific Best Practices

Principles of Health Supported: Access, Economic Efficiencies, Quality of Care, and Workforce

Action Plan

Strategy: Increase health care provider knowledge and promote early detection, diagnosis, and documentation of diagnosis for people living with Alzheimer's and other dementias and encourage primary care providers to refer patients to comprehensive memory centers.

1. **Action:** Educate first responders and hospital ED personnel in providing dementia-competent services.
2. **Action:** Identify memory care centers around the state that can accurately diagnose Alzheimer's and other dementias, provide comprehensive best practice care planning, and community support services.[9]

Expected Impact

1. Competency-based dementia training and access to established resources for providers, ED personnel, and first responders offer the potential for reduced preventable ED visits and hospitalizations and support the well-being of individuals living with Alzheimer's and other dementias.
2. Improved health care access in rural areas.

Guide: Leverage

Principles of Health Supported: Economic Efficiencies and Quality of Care

Action Plan

Strategy: Build on existing frameworks to support dementia friendly communities, all working toward a better life for people with dementia and lower health care costs.

1. **Action:** Promote the delivery of telehealth, palliative care services, and advanced care planning within hospitals, nursing homes, and communities.

[9] Memory care centers provide comprehensive evaluation, diagnosis and treatment of patients with memory problems and/or dementia, and they provide education and assistance for families and caregivers.

2. **Action:** Promote utilization of Medicare Annual Wellness Visit and educate clinicians on the assessment of cognitive function and the billing codes for care planning services.

Expected Impact

1. Palliative care has been shown to control costs by decreasing utilization of unnecessary or unwanted services, reducing admissions, readmissions, and use of ED services through better management of symptoms and avoidance of medical crises.
2. Research shows the diagnosis disclosure and dementia-specific care planning result in fewer hospitalizations, fewer ED visits, and better medication management.[xxxvi]

Recommendation 2: Dementia Risk Reduction Education: Public Health Workforce, Health Care Providers, and Members of the Public

The Department of Health Offices of Patient Care Advocacy and Chronic Disease Management will include dementia education and awareness in existing chronic disease programs and campaigns related to chronic disease risk reduction and management. Additionally the offices will further design, deliver and promote risk reduction messaging to the public health workforce, health care providers, and community at large.

Figure 21: Healthy Brain Campaign

Research shows that lifestyle changes, such as diet and exercise, may positively impact cognition and reduce risk of cognitive decline. However, this knowledge in the general population is low, especially about the link between cardiovascular risk factors and brain health.

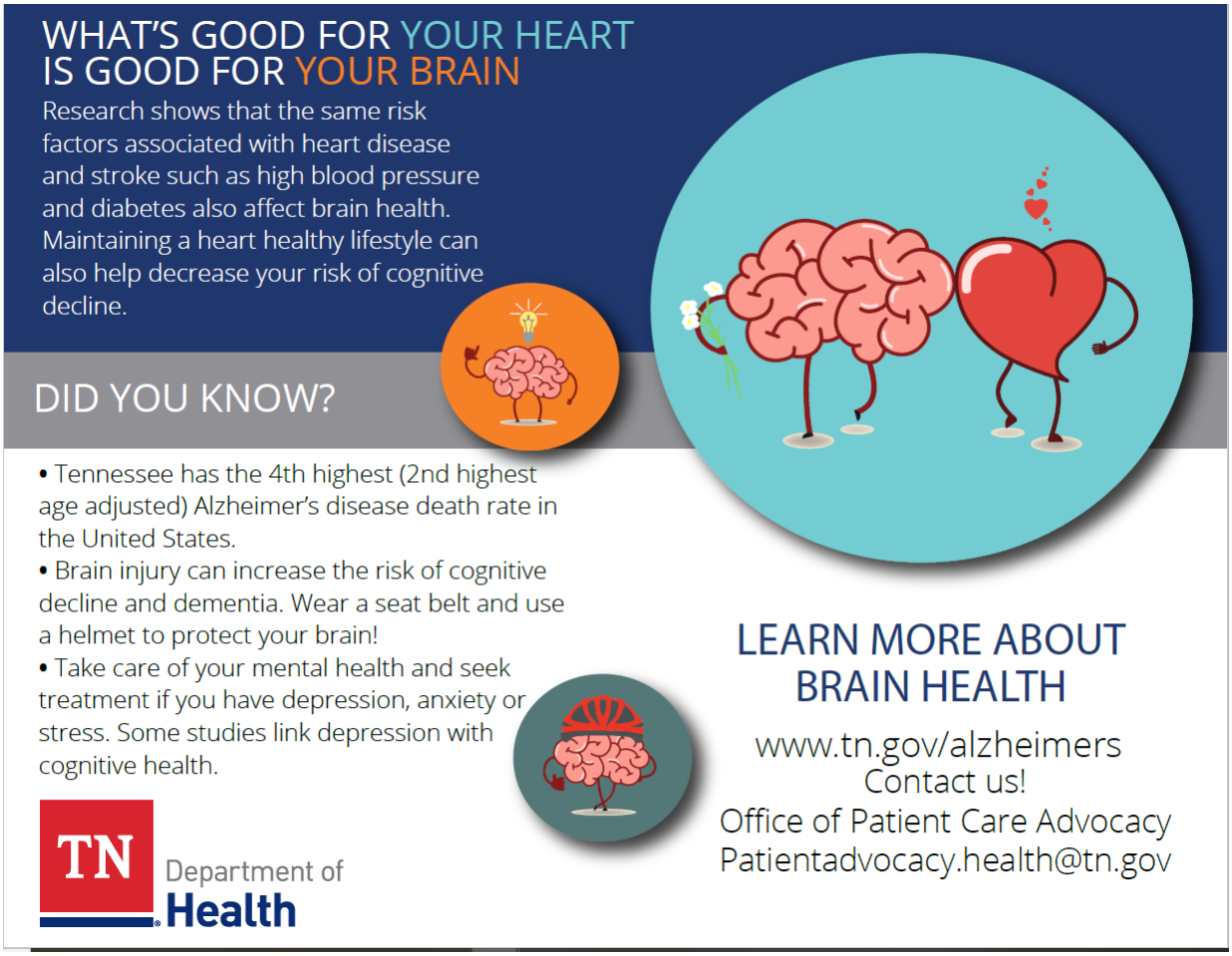


Figure 22: Healthy Brain Campaign

Implementation Plan: Dementia Risk Reduction Education

Guide: Implement Initiatives to Promote Brain Health

Principles of Health Supported: Healthy Lives

Action Plan

Strategy: Recognize Alzheimer's as a chronic disease and increase public awareness, engagement, and education via educational and promotional campaigns about the connections between health and wellness, brain health, and dementia to reduce the risk of cognitive decline.

1. **Action:** Develop health education and promotion materials to integrate cognitive decline risk factors into existing health communications.
2. **Action:** Help providers promote healthy brains for patients of all ages.

Expected Impact

1. Research shows that Alzheimer's may begin 20 years or more before the onset of symptoms. Cognitive risk reduction education may inspire people in midlife to consider healthier lifestyles. [xxxvii]
2. Refreshing existing health education campaigns by giving target populations a "new" reason to adopt healthy lifestyle behaviors could have an impact on dementia prevalence over time.

Guide: Assure a Competent Workforce

Principles of Health Supported: Access, Quality of Care, and Workforce

Action Plan

Strategy: Equip health care providers and the public health workforce with solutions to support brain health across the lifespan including the importance of early, accurate diagnosis, encouraging lifestyle changes, and personalized disease management.

1. **Action:** Educate public health professionals about the best available evidence on dementia, including detection, accurate diagnosis, and dementia caregiving, and the importance of promoting healthy brains for patients of all ages.

2. **Action:** Educate providers on the importance of early detection and the value of discussing the diagnosis with the patient and caregiver, interventions to reduce the risk or delay symptom onset, and connect providers with regional and local resources.

Expected Impact

1. Discussions about brain health between providers and patients become a standard practice enabling measurement of cognition throughout the lifespan, including healthy individuals and individuals with symptoms.
2. Improved access to available information, care planning, and community services, including physical and behavioral health and social, legal, and financial resources, for diagnosed patients and their caregivers.
3. Improved health care access and professional care, and long-term health system savings.

Guide: Monitor and Evaluate

Action Plan

Strategy: Implement surveillance strategies to inform public health programming, public awareness of cognitive health, and policy response to cognitive health, impairment, and caregiving.

1. **Action:** Provide surveillance data from the Behavioral Risk Factor Surveillance System (BRFSS) Cognitive Decline and Caregiving modules and other sources to state agencies, advocacy organizations, and regional planning commissions.

Expected Impact

1. Assist communities in identifying health disparities and assist with planning efforts and direct resources to maximize impact.
2. Support national data collection on dementia and caregiving to set priorities and to inform public health policy strategies.

Recommendation 3: Healthy Aging across the Lifespan Summit

The Tennessee Department of Health Office of Patient Care Advocacy will convene state public health and aging officials as well as diverse non-traditional sectors to address the challenges associated with healthy aging and encourage healthy lifestyles throughout the life spectrum to ultimately improve the health and well-being of older adults. Due to the variety of healthy aging efforts at the state level, the summit will provide an opportunity to promote coordination and increased partnerships across all sectors and to apply public health fundamentals to strategically address all components impacting healthy aging. This summit builds upon the success of the 2018 Healthy Aging Workshop, sponsored by the U.S. Department of Health and Human Services, where state health and aging officials identified priority healthy aging topics and developed actionable plans that promote healthy aging in their communities. It will also build upon the planned 2020 Healthy Aging Regional meeting. The summit will convene non-traditional stakeholders and partner with communities to promote healthy aging from a life course perspective, build support to advance identified state priorities to advance programs and policies that work to improve health and well-being for all Tennesseans.

Implementation Plan: Healthy Aging across the Lifespan Summit

Guide: Alzheimer's Disease and Healthy Aging Summit and Workshop

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Principles of Health Supported: Healthy Lives and Economic Efficiencies

Action Plan

Strategy: Collaborate with aging experts to co-host a statewide summit to explore how a healthy lifestyle can sustain and promote healthy aging and brain health, not only in late adulthood, but beginning in pregnancy and early childhood and extending throughout the lifespan.

1. **Action:** Convene state health officials, government agencies, aging experts, health care providers and community leaders to learn about the latest research, the role of prevention, and topics of importance to optimize healthy aging including: cognitive health, healthy lifestyle behaviors, and chronic disease management.
2. **Action:** Share priority healthy aging topics, actionable plans, and resources developed during the 2020 Healthy Aging Workshop.
3. **Action:** To encourage partner engagement and to support enhanced work in healthy aging, identify opportunities to support ongoing collaboration between attendees, state public health, state aging unit, state Medicaid and attendees.

Expected Impact

1. Identification of evidence-based programs, strategies, and approaches that can be used to promote healthy aging at the state and local levels.
2. A coordinated response through newly created partnerships across multiple sectors to promote healthy aging efforts, develop joint initiatives, and influence innovation.

Certificate of Need Standards and Criteria

Comprehensive Inpatient Rehabilitation Services

Megavoltage Radiation Therapy Services

Certificate of Need

A certificate of need (CON) is a permit for the establishment or modification of a health care institution, facility, or service at a designated location. Tennessee's CON program seeks to deliver improvements in access, quality, and cost savings through orderly growth management of the state's health care system.

In the 1970's, the federal government urged states to control rising health care costs by managing the growth of health care services and facilities through the use of health planning. In response, the Tennessee General Assembly created the state's CON program in 1973. The Health Services Development Agency (HSDA) was established as part of the Health Services Planning Act of 2002. The HSDA serves as an independent agency that reviews CON applications and votes to either approve or deny each request. The Division of Health Planning was established under Tennessee law in 2004 and is statutorily charged with developing and revising the Standards and Criteria that guide the HSDA review and decision making process.[10] The following facilities, equipment, and services are regulated by the CON program:

Table 16: Certificate of Need Provisions

Institutions that Require a Certificate of Need
• **Hospital** • **Nursing Home** • **Recuperation Center** • **Ambulatory Surgical Treatment Center** • **Mental Health Hospital** • **Intellectual Disability Institutional Habilitation Facility** • **Home Care Organization** • **Outpatient Diagnostic Center** • **Rehabilitation Facility** • **Residential Hospice** • **Non-Residential Opioid Treatment Programs**

[10] For more information visit: http://tn.gov/health/article/certificate-of-need or https://www.tn.gov/hsda/certificate-of-need-information/certificate-of-need-basics.html

Services that Require a Certificate of Need
• **Burn Unit** • **Neonatal Intensive Care Unit** • **Open Heart Surgery** • **Positron Emission Tomography** • **Organ Transplantation** • **Home Health** • **Psychiatric (Inpatient)** • **Pediatric Magnetic Resonance Imaging** • **Magnetic Resonance Imaging in counties with populations less than 250,000** • **Cardiac Catheterization** • **Linear Accelerator**
Actions that Require a Certificate of Need
• **Any change in the bed complement of a health care institution which:** a. **Increases by one or more the total number of licensed beds;** b. **Redistributes beds from acute to long term care;** c. **Redistributes from any category to acute, rehabilitation, child and adolescent psychiatric, or adult psychiatric; and/or** d. **Relocates beds to another facility or site.** • **Change in location or replacement of existing or certified facilities providing health care services or health care institutions.** • **Change of parent office of a home health or hospice agency from one county to another county.** • **One time every three years, a hospital, rehabilitation facility, or mental health hospital may increase its total number of licensed beds in any bed category by 10% or less of its licensed capacity at any one campus over any period of one year for any services or purposes it is licensed to perform without obtaining a certificate of need. The hospital, rehabilitation facility, or mental health hospital shall provide written notice of the increase in beds to the agency on forms provided by the agency prior to the request for licensing by the board for licensing health care facilities or the Department of Mental Health and Substance Abuse Services, whichever is appropriate.** a. **A hospital, rehabilitation facility, or mental health hospital shall not** i. **Increase its number of licensed beds for any service or purpose for which it is not licensed to provide; or**

ii. **Redistribute beds within its bed complement to a different category.**

- **"Campus" means structures and physical areas that have the same address and are immediately adjacent or strictly contiguous to the facility's or hospital's main buildings.**
  a. **For new hospitals, rehabilitation facilities, or mental health hospitals, the 10% increase cannot be requested until 1 year after the date all of the new beds were initially licensed.**
  b. **When determining projected county hospital bed need for certificate of need applications, all notices filed with the agency pursuant to subdivision (g)(1), with written confirmation from the board for licensing health care facilities or the Department of Mental Health and Substance Abuse Services, whichever is appropriate, that a request and application for license has been received and a review has been scheduled, shall be considered with the total of licensed hospital beds, plus the number of beds from approved certificate of need, but yet unlicensed.**

Each edition of the State Health Plan has included revisions to CON Standards and Criteria.[11] The revision or development of Standards and Criteria includes a comprehensive process that engages the public, industry stakeholders, and HSDA staff and board members.

The 2019 Edition of the State Health Plan includes revisions to the CON Standards and Criteria for Comprehensive Inpatient Rehabilitation Services and Megavoltage Radiation Therapy Services. As required by statute, these revisions and the entire 2019 Edition of the State Health Plan have been reviewed by the agency members and staff.

[11] All current CON standards, including those previously revised, can be found at the following link: https://www.tn.gov/hsda/.

STATE OF TENNESSEE

STATE HEALTH PLAN

CERTIFICATE OF NEED STANDARDS AND CRITERIA

FOR

Comprehensive Inpatient Rehabilitation Services

The Health Services Development Agency (HSDA) may consider the following standards and criteria for applicants seeking to establish Inpatient Rehabilitation Services. Rationale statements are provided for standards to explain the Division of Health Planning's underlying reasoning. Additionally, these rationale statements may assist stakeholders in responding to these Standards and may assist the HSDA in its assessment of certificate of need (CON) applications. Existing Inpatient Rehabilitation programs are not affected by these Standards and Criteria unless they take action that requires a new CON for such services.

These Standards and Criteria are effective immediately upon approval and adoption by the Governor. However, applications to provide Inpatient Rehabilitation Services that are deemed complete by the HSDA prior to the approval and adoption of these Standards and Criteria shall be considered under the Guidelines for Growth, 2000 Edition.

The Certificate of Need Standards and Criteria serve to uphold the Five Principles for Achieving Better Health set forth by the State Health Plan. Utilizing the Five Principles for Achieving Better Health during the development of the CON Standards and Criteria ensures the protection and promotion of the health of the people of Tennessee. The State Health Plan's Five Principles for Achieving Better Health are as follows:

1. **Healthy Lives:** The purpose of the State Health Plan is to improve the health of Tennesseans.
2. **Access:** Every citizen should have reasonable access to health care.
3. **Economic Efficiencies:** The state's health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies and the continued development of the state's health care system.
4. **Quality of Care:** Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by health care providers.
5. **Workforce:** The state should support the development, recruitment and retention of a sufficient and quality health care workforce.

Standards and Criteria

1. **Determination of Need:** The need for comprehensive inpatient rehabilitation beds shall be determined by applying the guideline of one bed per 1,000 applied to the age 65+ population in the service area of the proposal.

   The need shall be based upon the current year's population and projected four years forward. Population statistics from the Department of Health should be used for the calculation.

   In accordance with Tennessee Code Annotated 68-11-14607 (g), "no more frequently than one time every three years, a hospital, rehabilitation facility, or mental health hospital may increase its total number of licensed beds in any category by ten percent or less of its licensed capacity at any one campus over any period of one year for any services it purposes it is licensed to perform without obtaining a certificate of need. These licensed beds that were added without a certificate of need should be considered as part of the determination of need formula by the agency.

2. **Establishment of Service Area:** The geographic service area shall be reasonable and based on an optimal balance between population density and service proximity of the applicant.

3. **Minimum Bed Requirements:** Inpatient rehabilitation units should have a minimum size of 20 beds.

   Freestanding rehabilitation hospitals should have a minimum size of 50 beds.

4. **Relationship to Existing Similar Services in the Area:** The proposal shall discuss what similar services are available in the service area and the latest reported three-year trends in occupancy and utilization of those services. This discussion shall include the likely impact of the proposed increase in rehabilitation beds on existing providers in the proposed service area and shall include how the applicant's services may differ from these existing services. The agency should consider if the approval of additional beds in the service area will result in unnecessary, costly duplication of services.

   Additional inpatient rehabilitation beds, units, or freestanding hospitals should not be approved by the HSDA unless all existing units or facilities in the proposed service area are utilized at the following levels:

   10-30 bed unit ~ 75%
   31-50 bed unit/facility ~ 80%
   51 bed plus unit/facility ~ 85%

5. **Quality Considerations:** Applicants should use the Centers for Medicare & Medicaid Services (CMS) required measures for inpatient rehabilitation facilities. As of fall 2019, these measures are as follows:

   a. Pressure ulcers,
   b. Catheter associated urinary tract infection (CAUTI),
   c. Healthcare worker influenza vaccinations,
   d. 30-day post-discharge readmissions,
   e. Clostridium difficile (C. diff),
   f. Falls with injury, and
   g. Functional outcome measures – mobility, self-care.

Applicants should use the following table to demonstrate the quality of care provided at the existing unit or units.

Measure	National Average	Unit
Pressure ulcers		
Catheter associated urinary tract infection (CAUTI),		
Healthcare worker influenza vaccinations		
30-day post-discharge readmissions		
Clostridium difficile (C. diff)		
Falls with injury		
Functional outcome measures – mobility, self-care		

Data Source: Inpatient Rehabilitation Facility Compare
https://www.medicare.gov/inpatientrehabilitationfacilitycompare/

Because these measures change over time, applicants should use the measures that are in place at the time of the application. Applicants should provide data from the most recent four quarters from existing facilities operated by the applicant.

For applicants with no existing facility or service line, quality data from the most recent four quarters would be unavailable and not required for the application.

6. **Licensure and Quality Considerations**: Any existing applicant for this CON service category shall be in compliance with the appropriate rules of TDH. Additionally, the applicant shall demonstrate certification by CMS for existing facilities.

7. **Adequate Staffing:** The applicant must document the availability of adequate professional staff, as per licensing and Centers for Medicare & Medicaid Services (CMS) requirements, to deliver all designated services in the proposal.

8. **Services to High-Need and Underserved Populations:** Special consideration shall be given to applicants providing services fulfilling the unique needs and requirements of certain high-need populations, including uninsured, low-income, and underserved geographic regions, as well as other underserved population groups.

9. **Access to Services in the Proposed Service Area:** The applicant must demonstrate an ability and willingness to serve equally all of the service area in which it seeks certification. In addition to the factors set forth in HSDA Rule 0720-11-.01(1) (listing factors concerning need on which an application may be evaluated), the HSDA may choose to give special consideration to an applicant that is able to show that there is a limited access in the proposed service area. Factors influencing access to services in the proposed service area may include drive time to obtain care.

10. **Data Requirements:** Applicants shall agree to provide the Department of Health and/or the Health Services and Development Agency with all reasonably requested information and statistical data related to the operation and provision of services and to report that data in the time and format requested. As a standard practice, existing data reporting streams will be relied upon and adapted over time to collect all needed information.

STATE OF TENNESSEE

STATE HEALTH PLAN

CERTIFICATE OF NEED STANDARDS AND CRITERIA

FOR

Megavoltage Radiation Therapy Services

The Health Services and Development Agency (HSDA) may consider the following standards and criteria for applications seeking to provide Megavoltage Radiation Therapy (MRT) Services. Rationale statements are provided for standards to explain the Division of Health Planning's (Division) underlying reasoning and are meant to assist stakeholders in responding to these Standards and to assist the HSDA in its assessment of certificate of need (CON) applications. Existing providers of MRT services are not affected by these Standards and Criteria unless they take an action that requires a new CON for such services.

These Standards and Criteria are effective immediately upon approval and adoption by the Governor. However, applications to provide MRT services that are deemed complete by the HSDA prior to the approval and adoption of these Standards and Criteria shall be considered under the 2011 Standards and Criteria for Megavoltage Radiation Therapy Services.

The Certificate of Need Standards and Criteria serve to uphold the Five Principles for Achieving Better Health set forth by the State Health Plan. Utilizing the Five Principles for Achieving Better Health during the development of the CON Standards and Criteria ensures the protection and promotion of the health of the people of Tennessee. The State Health Plan's Five Principles for Achieving Better Health are as follows:

1. **Healthy Lives:** The purpose of the State Health Plan is to improve the health of Tennesseans.
2. **Access:** Every citizen should have reasonable access to health care.
3. **Economic Efficiencies:** The state's health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies and the continued development of the state's health care system.
4. **Quality of Care:** Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by health care providers.
5. **Workforce:** The state should support the development, recruitment and retention of a sufficient and quality health care workforce.

Definitions

External Beam Radiation Therapy (EBRT): Radiation therapy delivered by an MRT Unit from outside the body.

Image-Guided Radiation Therapy (IGRT): A procedure that uses a computer to create a picture of a tumor to help guide the radiation beam during radiation therapy. The pictures are made using CT, ultrasound, X-ray, or other imaging techniques. IGRT makes radiation therapy more accurate and causes less damage to healthy tissue. [12]

Intensity-Modulated Radiation Therapy (IMRT): A type of 3-dimensional radiation therapy that uses computer-generated images to show the size and shape of the tumor. Thin beams of radiation of different intensities are aimed at the tumor from many angles. This type of radiation therapy reduces the damage to healthy tissue near the tumor, and can also called intensity-modulated radiation therapy.[13]

[12] National Cancer Institute Definition
[13] National Cancer Institute Definition

Linear Accelerator: A type of EBRT Unit that delivers a beam of high energy x-rays (photon or electron particles) from an external source to the location of the patient's tumor and/or other tissue being irradiated. Linear accelerators may deliver conventional EBRT, intensity modulated radiation therapy, image-guided radiation therapy, SBRT, and SRS services. Linear accelerators are the only MRT Unit type specifically listed in Tennessee Code Annotated Section 68-11-1607 (a)(4) as requiring a CON in order for services to be initiated. Select linear accelerators (hybrids) are capable of performing IGRT, IMRT, SRS, and SBRT services.

Select linear accelerators, hybrids, are capable of performing IGRT, IMRT, SRS, and SBRT services.

Megavoltage Radiation Therapy Procedure (MRT): Each discrete MRT treatment related to services performed on a single patient during a single visit, designated by CPT code. The Health Services and Development Agency (HSDA) shall be responsible for setting reporting requirements consistent with this definition, including the development of a selected set of CPT codes.

Megavoltage Radiation Therapy Unit (MRT): Medical equipment that performs radiation therapy using a linear accelerator.

On-Board Imaging (OBI): On-Board Imaging uses images obtained from the linear accelerator separate from patient delivery to confirm that a patient's therapy setup is accurate. Using these images, adjustments can be made to the patient's positioning on the treatment table or to the programed settings on the linear accelerator.

Radiation Therapy: A medical procedure that allows non-invasive treatment of tumors and cancer cells using X-rays, gamma rays, and charged particles. The radiation may be delivered by a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body near cancer cells (internal radiation therapy, also called brachytherapy). Radiation therapy delivered via high doses in five treatments or less is also known as Stereotactic Radiosurgery (SRS) when used to target lesions in the brain and as Stereotactic Body Radiotherapy (SBRT) or Stereotactic Ablative Radiotherapy (SABR) when used to target lesions in the body.

Standards and Criteria

1. **Determination of Need:** The following table outlines the utilization standards that should be used to determine need in the proposed service area.

    a. These utilization standards were developed based on the following assumptions related to operating time:

        i. 8 hours per day,
        ii. 5 treatment days per week,
        iii. 52 weeks per year, and
        iv. 95% average up-time.

		Capacity		
Type of Linear Accelerator	**Estimated Patients Per Day**	**Minimum (40%)**	**Optimal (80%)**	**Maximum (100%)**
Non-IMRT, Non-IGRT	32	3162	6323	7904
IMRT only without OBI	32	3162	6323	7904
IMRT with OBI	38	3754	7509	9386
SRS only	14	1383	2766	3458
SBRT only	16	1581	3162	3952
Hybrid MRTs	32	3162	6323	7904

    b. Applicants should use the treatment codes provided on the HSDA website to calculate utilization.

    c. An applicant proposing a new Linear Accelerator should project a minimum of at least 3,162 MRT procedures in the first year of service in its proposed Service Area, building to a minimum of 6,323 procedures per year by the third year of service and for every year thereafter.

d. Applicants should utilize the publicly available Tennessee's Cancer Registry (https://www.tn.gov/health/health-program-areas/tcr.html) data to estimate the need within the proposed service area. These data should then be compared to the data included in the HSDA's Medical Equipment Registry for the defined market to determine the need.

   To estimate the number of radiation treatment patients in its proposed service area, the applicant should multiply the number of cancer patients by 60%. A minimum of 600 cancer patients and 360 radiation patients should reside in the proposed service area. Data included in the HSDA's Medical Equipment Registry may also be used to determine the need for radiation services in the proposed service area.

e. An exception to the standard number of procedures may occur as new or improved technology and equipment or new treatment applications for Linear Accelerators develop. Any applications seeking an exception to the standards and criteria must include information on the projected impact on existing services in the proposed service area. Data reported in the HSDA's Medical Equipment Registry should also be used to estimate the impact of the proposed project on existing services for the proposed service area.

2. **Relationship to Existing Similar Services in the Proposed Service Area:** Applicants should provide an inventory of and assess all available technologies and utilization in the service area. Additionally, the applicant should provide evidence that volumes in the proposed service area will support the introduction of new MRT services without causing existing providers to fall below the minimum thresholds outlined in the following table.

Type of Linear Accelerator	Minimum (40)%
Non-IMRT, Non-IGRT	3162
IMRT only	3162
IMRT with OBI	3754
SRS only	1383
SBRT only	1581
Hybrid MRTs	3162

a. Applicants should use the treatment codes provided on the HSDA website to calculate utilization.

b. Applicants should utilize the data included in the HSDA's Medical Equipment Registry along with the publicly available Tennessee's Cancer Registry (http://tn.gov/health/health-program-areas/tcr.html) to estimate the capacity for all existing units located within the applicant's proposed service area.

c. An exception to the need standards may occur as new or improved technology and equipment or new treatment applications for MRT Units develop. An applicant must demonstrate that the proposed MRT Unit offers a unique and necessary technology for the provision of health care services in the proposed service area.

3. **Establishment of Service Area:** For linear accelerators that do not perform SRT or SBRT procedures, the contiguous counties representing a reasonable area in which an applicant intends to provide MRT services.

   Applicants should utilize the publicly available Tennessee's Cancer Registry (https://www.tn.gov/health/health-program-areas/tcr.html) data to estimate the need within the proposed service area. These data should then be compared to the data included in the HSDA's Medical Equipment Registry for the defined market to determine the need.

   To estimate the number of radiation treatment patients in its proposed service area, the applicant should multiply the number of cancer patients by 60%. A minimum of 600 cancer patients and 360 radiation patients should reside in the proposed service area. Data included in the HSDA's Medical Equipment Registry may also be used to determine the need for radiation services in the proposed service area.

   Otherwise, a service area shall be the contiguous counties representing a reasonable area in which an applicant intends to provide MRT services.

   Additionally, the applicant must demonstrate that the patient origin of the proposed site aligns with other existing cancer-related healthcare services provided within the defined service.

4. **Access to MRT Units**
    a. An MRT unit should be located at a site that allows reasonable access for residents of the proposed service area.

    b. An applicant for any proposed new Linear Accelerator should document that the proposed location of the Linear Accelerator is within a 45 minute drive time of the majority of the proposed service area's population.

    c. Applications that include non-Tennessee counties in their proposed service areas should provide evidence of the number of existing MRT units that service the non-Tennessee counties and the impact on MRT unit utilization in the non-Tennessee counties, including the specific location of those units located in the non-Tennessee counties, their utilization rates, and their capacity (if those data are available).

5. **Economic Efficiencies:** All applicants for any proposed new MRT Unit should document that lower cost technology applications have been investigated and found less advantageous in terms of accessibility, availability, continuity, cost, and quality of care.

6. **Separate Inventories for Linear Accelerators and for other MRT Units:** A separate inventory shall be maintained by the HSDA for Linear Accelerators, and, if data are available, for Linear Accelerators dedicated to SRT and/or SBRT procedures and other types of MRT Units.

7. **Patient Safety and Quality of Care:** The applicant shall provide evidence that any proposed MRT Unit is safe and effective for its proposed use.

    a. The United States Food and Drug Administration (FDA) must certify the proposed MRT Unit for clinical use.

    b. The applicant should demonstrate that the proposed MRT Units shall be housed in a physical environment that conforms to applicable federal standards, manufacturer's specifications, and licensing agencies' requirements.

    c. The applicant should demonstrate how emergencies within the MRT Unit facility will be managed in conformity with accepted medical practice.

d. The applicant should establish protocols that assure that all MRT Procedures performed are medically necessary and will not unnecessarily duplicate other services.

e. An applicant proposing to acquire any MRT Unit shall demonstrate that it meets the staffing and quality assurance requirements of the American Society of Therapeutic Radiation and Oncology (ASTRO), the American College of Radiology (ACR), the American College of Radiation Oncology (ACRO) or a similar accrediting authority such as the National Cancer Institute (NCI). Applicants should provide evidence of accreditation by ASTRO, ACR, or other similar accrediting authority either as a stand-alone facility or through that of a parent organization with oversight capabilities.

f. All applicants should seek and document emergency transfer agreements with local area hospitals, as appropriate. An applicant's arrangements with its physician medical director must specify that said physician be an active member of the subject's transfer agreement hospital medical staff.

g. All applicants should demonstrate the ability to provide simulations and treatment planning services to support the volumes they project and any impact such services may have on volumes and treatment times.

h. Applicants should provide evidence of plans for the radiation oncology physician treating patients to participate in consultative services and a multi-disciplinary cancer committee to ensure high quality treatment for the patients. Additionally, each center should have a dedicated radiation oncologist to serve as medical director with defined responsibilities overseeing quality assurance for the site.

i. Treatment planning at off-site centers should be coordinated with a multi-disciplinary cancer center.

8. **Data Requirements:** Applicants shall agree to provide the Department of Health and/or the Health Services and Development Agency with all reasonably requested information and statistical data related to the operation and provision of services and to report that data in the time and format requested. As a standard practice, existing data reporting streams will be relied upon and adapted over time to collect all needed information.

9. **Services to High-Need and Underserved Populations:** Special consideration should be given to applicants providing services fulfilling the unique needs and requirements of certain high-need populations, including uninsured, low-income, and underserved geographic regions, as well as to other underserved population groups. This includes any applicant:

    a. Who is offering the service in a medically underserved area as designated by the United States Health Resources and Services Administration,
    b. Who is a "safety net hospital" or a "children's hospital" as defined by the Bureau of TennCare Essential Access Hospital payment program, and/or
    c. Who provides a written commitment of intention to contract with at least one TennCare MCO and, if providing adult services, to participate in the Medicare program.

10. **Access:** An applicant should demonstrate an ability and willingness to serve equally all of the service area in which it seeks certification.

11. **Adequate Staffing:** An applicant shall document a plan demonstrating the intent and ability to recruit, hire, train, assess competencies of, supervise, and retain the appropriate numbers of qualified personnel to provide the services described in the application and that such personnel are available in the proposed service area.

12. **Assurance of Resources:** The applicant shall document that it will provide the resources necessary to properly support the applicable level of services. Included in such documentation shall be a letter of support from the applicant's governing board of directors, Chief Executive Officer, or Chief Financial Officer documenting the full commitment of the applicant to develop and maintain the facility resources, equipment, and staffing to provide the appropriate services. The applicant shall also document the financial costs of maintaining these resources and its ability to sustain them.

13. **Quality Control and Monitoring:** The applicant shall identify and document its existing or proposed plan for data reporting, quality improvement, and outcome and process monitoring system.

14. **Licensure and Quality Considerations:** Any existing applicant for this CON service category shall be in compliance with the appropriate rules of TDH. The applicant shall also demonstrate its accreditation status with the Joint Commission or other applicable accrediting agency.

Appendix A

Statutory Authority for the State Health Plan

The Division of Health Planning was created by action of the Tennessee General Assembly and signed in to law by Governor Phil Bredesen (Tennessee Code Annotated § 68-11-1625). The Division is charged with creating and updating a State Health Plan. The text of the law follows.

a. There is created the state health planning division of the department of finance and administration[14]. It is the purpose of the planning division to create a state health plan that is evaluated and updated at least annually. The plan shall guide the state in the development of health care programs and policies and in the allocation of health care resources in the state.

b. It is the policy of the state of Tennessee that:

    1. Every citizen should have reasonable access to emergency and primary care;
    2. The state's health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies and the continued development of the state's health care industry;
    3. Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by health care providers; and
    4. The state should support the recruitment and retention of a sufficient and quality health care workforce.

c. The planning division shall be staffed administratively by the department of finance and administration in a manner that the department deems necessary for the performance of the planning division's duties and responsibilities, which may include contracting for the services provided by the division through a private person or entity

d. The duties and responsibilities of the planning division include:

[14] The state health planning division is now located in the Tennessee Department of Health.

1. To develop and adopt a State Health Plan, which must include, at a minimum, guidance regarding allocation of the state's health care resources;
2. To submit the State Health Plan to the Health Services and Development Agency for comment;
3. To submit the State Health Plan to the Governor for approval and adoption;
4. To hold public hearings as needed;
5. To review and evaluate the State Health Plan at least annually;
6. To respond to requests for comment and recommendations for health care policies and programs;
7. To conduct an ongoing evaluation of Tennessee's resources for accessibility, including, but not limited to, financial, geographic, cultural, and quality of care;
8. To review the health status of Tennesseans as presented annually to the Division by the Department of Health, the Department of Mental Health and Substance Abuse Services, and the Department of Intellectual and Developmental Disabilities;;
9. To review and comment on federal laws and regulations that influence the health care industry and the health care needs of Tennesseans;
10. To involve and coordinate functions with such State entities as necessary to ensure the coordination of State health policies and programs;
11. To prepare an annual report for the General Assembly and recommend legislation for its consideration and study; and
12. To establish a process for timely modification of the State Health Plan in response to changes in technology, reimbursement and other developments that affect the delivery of health care.

Appendix B

Focus Group Questions

Questions for Associations, Organizations, and other Health Professionals
1. What current health promotion activities are occurring within your organization? 2. What current activities are occurring within your organization or community to increase awareness of Alzheimer's disease, dementia, and brain health? 3. What current knowledge gaps exist in your organization or community around Alzheimer's disease, dementia and brain health? 4. List five actions to promote brain health across the lifespan, expand early detection and diagnosis, improve safety and quality of care for people living with dementia, and attend to caregivers' health and well-being.
Questions for Caregivers
1. What have been your experiences as a caregiver? 2. What are some of the specific challenges in providing care to your loved one? 3. Are there particular resources you feel like you've lacked? 4. Do you feel well-informed by your loved one's primary health care provider? 5. Do you think there are adequate opportunities for people providing direct care to individuals with memory loss and dementia to participate in meaningful activities or to continue working? 6. Being a caretaker can be stressful. What, if anything, do you do for yourself to cope with these challenges? 7. What do you want your community to understand about caring for a loved one with memory loss or dementia? 8. What is the most important thing your community could do over the next year to better meet your needs? 9. Is there anything you'd like to discuss that we haven't covered?
Questions for Faith-Based Community Members and Leaders
1. As a faith-based organization, what current health promotion activities are occurring with your organization or community? Are any current health promotion activities specifically focused on brain health, memory loss, or dementia? 2. Do you feel your congregation has adequate knowledge and awareness of memory loss and dementia? 3. What are the three most important things that you want your congregation/community to know about brain health, memory loss or dementia disease, and brain health?

4. How can congregations mitigate the impact of memory loss for those living with memory loss, and what are the challenges?
5. What are your plans (if any) as a faith-based organization to respond to memory loss and dementia within the community?
6. If you have plans, what does your organization need to think about or do before your organization feels ready to take action?
7. What resources does your organization need in order to provide education, support, and potential programming to individuals living with dementia and their caregivers?

Appendix C

Focus Group Information

Questions for Associations, Organizations, and other Health Professionals	
County	Question
	What current health promotion activities are occurring within your organization?

Gibson	• Singfit program
	• Opioid education/safety
	• Smoking cessation
	• AAAD SAIL program
	• Healthy eating on a budget with seniors
	• Chronic disease self-management
	• Walk club with seniors
	• Senior gardens and kids gardens
	• Youth health council working on tobacco policy
	• Smoke free park
	• Haywood/Hardin gardens with senior citizens
	• West TN Health Care:
	  ○ Diabetes clinic Wednesday
	  ○ Smoking cessation
	  ○ Sit and fit program ideas for physical activity
	  ○ Nutrition programs
	• 95210 program and public health education program
	• Public housing smoking program
	• Pink lung smoking program for kids
	• Lake and Lauderdale FQHC diabetes program
	• UT Martin smoke free campus
	• Humboldt/Gibson Co. walking
	• "Walk in the Park"
	• "Go Girl Go"
	• Substance abuse – "Take Back" events – all ages
	• AAAD senior nutrition programs
	• AAAD Senior Expo
	  ○ Tai Chi
	  ○ Walk with elders
	  ○ Eat healthy
	  ○ Arthritis

	• Madison Co. converted school into community recreation site
Hamblen	• HD Promotion – smoking, drug use, and obesity • Physical activities – Healthy Hamblen • CHA – county health assessment • WSCC – new walking trail, smoke free campus, workplace wellness • Bold gold, social isolation, including for employees – health points • Food pantry - health foods • Suicide prevention • Silver sneakers • Senior center – brain games • Aide assistance – vet. Adult day services • Knoxville Aging in Place Inc. – home safety • Pharmacy – patient and caregiver with adherence • Most programs are for children – missing middle aged

Hamilton	• Senior Activity Centers
	  ○ Mental and physical activities
	  ○ Social component
	  ○ Perform at senior assisted living facilities
	  ○ Some provide meals
	  ○ Physical activity
	• Senior trips – travel to different cities
	• Senior drive program
	• Physical activity – UTC/Memorial
	  ○ Walking groups, fitness center
	• Free education classes, 50+ screening
	  ○ Connection between hearing loss and memory loss – social isolation – suicide/depression
	• QSource – Opioid epidemic – integrating behavioral health into PC sites
	• Memorial – screening mobile – CA screening
	• Data surveillance – smoking
	• Hospice Chattanooga – workforce focus on health eating policies
	• Memorial – insurance provider – wellness incentives
	• Heart Health – exercise equipment, physical activity
	• United Health – Population health program and behavioral health integration (opioid/mental health)

	• PACE Chattanooga – lifestyle/health promotion • Encourage physical activity with clients in their homes • Mobility training – impaired vision – keeping individuals engaged with their environment • Erlanger: wellness expo – full prevention • Learning lectures on health promotion/wellness
Maury	• Eating habits • Join tobacco free coalition • Brain games • Promotion – Baby and Me Tobacco Free • Vape education • Educating parents • Healthy eating (breast cancer awareness) • Luncheons • Classes about healthy eating • Lunch and learn (nutrition as we age) • Presentation (PowerPoint) • IPad in nursing homes (education) • Promoting physical activity • Focus groups • Healthy TN communities • Education substance abuse • Access to Naloxone • Monthly meetings • Mental health – substance abuse • $25 gift card • 6 week health program “walking to Memphis” at senior living center. They do education sessions on brain health, nutrition, heart health • Had get fit activities in Tullahoma. Now, they have a story pathway on the greenway. Also, healthy eating in schools.

Memphis	• Diabetes/chronic disease
	  ○ Self-management classes
	  ○ VA Whole Health Model
	  ○ UT Weight loss coaching
	• Opioid/substance

	• BCBS revitalizes Whitehaven
	• Cooking classes for male caregivers
	• Fall prevention 65+
	• Healthy Eating 65+
	• Physical activity
	• Get set Program – physical activity 18+
	• Physical disability for 18+
	• The Green Line: trail goes from West Memphis across Memphis
	• Bike share
	• Diabetes/chronic disease management
	• Tobacco cessation
	• American Cancer Society – chronic disease
	• Meetings for caregivers addressing physical activity and Big 4
	  ○ Faith-based meetings
	• ADS - physical activity fine motor meetings
	• Breastfeeding services
	• Outdoor classrooms/gardens
	• United Health – referral to health coach
	• Orange Mound - addressing food deserts
	• UT – opioid research and work with dentists to decrease prescriptions
	• Senior center activities: chronic disease, Silver Sneaker
	• Community health fairs
	• Population health fairs – wrap around – financial, health
	• Peer consultations
	• Community Health – Focus on Big 4
	• S.A.I.L.S.
	• Diabetes education/chronic disease management
	• United communities/partnership
	  ○ Hospital/hospice outreach 65+ population
	• Physical activity
	• 3k Walk Methodist

Nashville	• Title 3D Health Promotion ○ Chronic disease health management • Nutrition Education Programs • ACL Released Information

	○ Brain and heart health ○ TBI ○ Medication management • Educational Programs • 10 ways to love your brain promotions • Kids and Kites and family walk (March 30th at Bicentennial Mall) • Boys and girls scouts • Beaman Park – use park to promote activities • Williamson County walk • Continually engage parks • Early onset Alzheimer's walking groups • PPIs about brain health • Chronic disease workshops/self-management • Creative Aging TN (using art to affect healthy outcomes; focus on older adults) • Music and memory program grant ($1 million – 147 nursing homes in TN, upcoming) • Walking with Ease at senior center partnership – walking as well as other education classes (i.e. healthy brain, Breathe Easy, heart health, etc.) • Educational materials and resources on state website – provide to caregivers and long term care
Putnam	• TNSTRONG (tobacco cessation programs) in schools • Run clubs • Diabetes self-management and chronic disease self-management classes • Drug take backs • Morning movement (schools) • Walking clubs • DPP • Baby and Me • Run Clubs • Living well Chronic Conditions (x2 counties) • Weight control (pop health) • Smoking cessation • Honoring 1st steps (moms) • Community forums
Washington	• ALZ TN – monthly memory and brain group

	• Primary Prevention, Big 4 – TDH (preschool -> seniors) • ETSU – nursing program – Hear TN promotion
	What current activities are occurring within your organization or community to increase awareness of Alzheimer's disease, dementia, and brain health?

Gibson	• West TN Health Care:
	  ○ Alz. Caregiver Conference (400 attendees last year)
	  ○ Mini conference in fall for attorneys and physicians
	  ○ Dementia experience
	  ○ Support groups
	  ○ Alz. community of West TN (info. and support)
	• Daycare for families and respite care
	• Respite care AAAD
	• Caregiver support program
	• First responder training
	• Jackson – Caregiver conference
	• Alz. conference
	• Legal – Advanced directives
	• Talk to Me Baby
	• Rise to read
	• Run clubs (k-4) incorporating reading
	• Community collaboration
	• Alz. community of West TN

Hamblen	• Adult day services – dementia tours/education – VDT free to community one day per month in center in Morristown • Alz.. TN – dementia tours • Family service community education • ETHRA – SS benefits
Hamilton	• Brain games for awareness • UTC → VDT, fusing geriatrics into every class, resource directory for providers • Speech and hearing – connection with hearing and dementia – education • Alz. disease program initiative (ACL grant) – 50% expanding services and scope • Specialized case management • Unmet needs assessment • PACE program recreational therapy ○ Increase mobility

	○ Advanced care planning • Signal Center ○ Visual impairment ○ Adult daycare • Private Adult Daycare • AARP ○ Home Fit Program ○ Livable communities • AARP healthy meals program • Caregiver support groups • Faith-based – let's sing from memory • Alz. Association promotes activities ○ Care finder ○ Walk to Alz. • AAAD – referral line • United Way - 211 • Memory loss program • Dementia support groups • Center for healthy aging • Dementia based lectures • Speech and hearing center – health hearing = healthy brain • Rehab program/cognitive connection/training • QSource – working with providers on setting up care plans • AARP – refresh drivers courses • Encourage brain health (puzzles, etc.) • Music therapy
Maury	• IPad in nursing homes • Brain games • Education • Training programs for caregivers • Memory café • Care consultation • Training in facilities • Clergy training • Helping hands kit

	• 24/7 help line • Specific focus groups • Support groups • Conferences • Focus on family caregivers • Staff/family training • Law enforcement training • Chronic conditions programs • Walking • Staying sharp benefit • Handout information • Respite • Activities to raise awareness: "picking on the porch" activity • Trainings for care partners and health profession • Clergy conference • Alz. one-on-one trainings • Music and memory grant – implemented in NHs across the state • Alz. Foundation had conference in downtown Nashville • NCH Pulaski – Dementia Education sessions/came into facility to educate on dementia

Memphis	• Churches – Alz. Association
	• Dementia sensitivity events
	• Brain games for senior centers – competition state/national
	• Emotional support – Hispanic
	• Provide education to patient/family/community
	• Caregiver 101
	• UT/Reach – training to become caregiver
	• ADS does caregiver 101 – 6 week class at Methodist Hospital
	  ○ Support groups
	  ○ Training for staff
	  ○ Dementia experience
	  ○ Caregiver conference with free care
	  ○ What is Alz..
	  ○ Communication
	  ○ ADLS

	○ Safety ○ Behaviors ○ Taking care of caregivers • Starting CROP – caregiver outreach program • Working toward dementia friendly park for caregiver • 24/7 Alz. Association hotline • CHOICEs – safety determination screening for dementia • Caregivers (LTC settings) – education related to cognitive decline, dementia and Alz. • Caregivers respite • Addressing stigma of Alz. • Efforts to educate community • Providing education at "family reunions"
Nashville	• Area aging disability • Family caregiver program • TN state brain games ○ Statewide trivia contest • Presentations ○ Ex: church • Virtual Simulation ○ Simulates challenges with brain • Annual research symposium • Conferences • TBI received ACI grant ○ Training workforce • Pushing out materials on prevention, encouraging people to seek knowledge • Generation AL TN ○ Study, website, social media, tv, radio • Prep publications • Brochures for schools • Mayoral proclamation • AKA's Longest Day Event • June (ABAM) • Paint the town purple • Healthy brain initiatives

	• Certified dementia specialist training (train the trainer) • Social media use for awareness • Education/awareness through local senior centers • TennCare: member advocates working directly with patients (MCO's)
Putnam	• Praise in Purple (2019) – 5 churches x 5 = 25 • Partnerships with TDH • CMO – seminars • Community education/worksite wellness • WIC – nutrition • Community needs assessment • FQHCs • Whole person care team (Medicaid) • LTSS – referrals to Alz. Organizations • SB20 • Reach out to faith-based communities • Law-enforcement training • Support groups • Baby-boomers studies • Chronic disease self-management classes • Virtual dementia tours
Washington	• Kingsport – Senior Center – brain health promotion • Heart – brain connection added to TN Alz. presentation • Chronic disease self-management classes – TDH/AAAD's/partners • AAAD's/Alz. TN Section 8/HUD housing – offering chronic disease management/"powerful tools for caregivers" • School system – virtual dementia tours (college high school)/College – medical schools 1st year medical students • Collectively health care community – annual conference in the past • AARP – webpage for caregivers (members and nonmembers) – print materials • ETSU/Alz. TN – "SPARK" – cultural experience "celebrate" • Age friendly community – Kingsport 1st in state – Johnson City is in process
	What current knowledge gaps exist in your organization or community around Alzheimer's disease, dementia and Brain health?
Gibson	• Provider initial screening/baseline questions with screening • Lack of organizational support

	• Provider wrap-around services once diagnosed • Community support groups • What is dementia and Alz? • Funding • Resources for families/education/knowledge of resources • PCP/Health care providers not sharing information/resources related to disease, progression, planning • Lack of educational materials • Education related to financial exploitation • TDH materials to educate – risk factors, resources
Hamblen	• Having service – accessible service • Managed care knowledge/insurance knowledge • Denial/acceptance of caregiver
Hamilton	• Information and efficacy of Alz. medications • Untreatable aspect of disease • Housing (green house) • Screening access/stigma/"middle" access gap • Facility quality – equal treatment • Provider education gap (screening/diagnosis/payment) • Education for faith groups about dementia • Choices/options do no pay enough for services/technology • Pop. At risk for early diagnosis • Money for economically challenged families to keep individuals in their homes • Elder abuse education • Fear of nursing home • Qualification for CHOICES • inclusiveness • Caregiver realistic expectations • Transportation • Medical criteria for PACE Program – needs to be expanded • CHOICES program • Affordable care • Income – middle class gap • Lack of bed space in nursing facility • Skilled care vs. long-term care

	• Nutrition – food is medicine • Food insecurity • Waiting list for Meals on Wheels • Technology – resources are online • Resources need to come in various forms • Vision barriers • Fraud • Need funding from federal level • Paying on back end – using 911 services • Understanding aging/cognitive services • Fractured health care • Understanding mental health and brain health • Resource availability (central repository) – how do we connect to access points • Expense/cost of hearing aids/vision screenings • Comprehensive approach – navigation/care continuum – high turnover rate of health providers • Limited resources within community – transportation, caregivers, housing, etc. • Connection between homeless • Professional caregivers – requirement for caregiver training but not requirement for trainings specific to Alz. dementia • Rehab – limited funding • Current/updated resources/education materials - research
Maury	• Training to children • If every insurance offered respite • Avoid taking advantage • MD doesn't know/doesn't want to offer the information • Don't understand the benefits • Explaining with detailed information • Authorization – for insurance • Fear of stepping on provider's toes • Eligibility • Overall knowledge about caregivers • Marketing info for caregivers

	• Rural resources • Not fitting resources • Qualifications for help • Elder abuse • Data is important/would like to see more data – hard facts to help change behavior • None of work (QSource) has anything to do with aging ○ Doesn't address things like individual going to ER just to talk to someone • Age is barrier/don't need to wait until they are Medicare eligible • Poor job of promoting and marketing resources – hire marketing person • Need a phrase or logo like click it or ticket

Memphis	• Education: standard outreach
	• Access to care for Hispanic community
	• Resources – clearinghouse
	• Patient/provider relationship
	• Proactive education to caregivers
	• Direct connections to chronic disease/other risk factors
	• Support for dementia friendly communities
	• Increase knowledge about topic as part of Orange Mound senior initiative
	• First responder knowledge
	• Increase general community awareness
	• Increase practitioner awareness – wrap around services
	• TDH – translation services/materials/physical interpreters
	• Physician – diagnosis and detection – limits eligibility – CHOICES/safety determination
	• TDH connection health promotion and prevention
	• Healthy Shelby – Alz. not listed/addressed
	• Peer counseling
	• Evaluation of advance directives/legal/financial
	  ○ Stigma – diagnosis – self-identity
	  ○ Community engagement
	• Caregivers
	• Legal
	  ○ Expenses

	○ Conservatorships ○ POA • Legal Status
Nashville	• Awareness • Part of aging assumption • Relationship between behaviors (i.e. health eating…) and brain health • Lack of awareness of advocacy groups and providers • Med management • Support groups at churches, schools, workplaces, virtual • Use of fear to motivate people to act rather than to avoid • Education and messaging on social media • Putting books for children in libraries • Importance of lifelong learning • Social media – older generation gaps in knowing how to use • Not understanding disease and then developing but not knowing next steps – including caregivers with parents who are aging • Younger generations not thinking disease is relevant to them and not realizing they will be caregivers • Not caring to know or learn until it actually happens to them and then having to learn • Family dynamics are different which takes learning and getting resources and where to access resources • Brining faith based community to the table (incorporating education into faith community activities) normalizing conversation to educate members on brain health and caregiving (know what works for your faith community) • Healthy aging not just about dementia, educating community on all aspects of brain health
Putnam	• Transportation • Provider education resources • Willingness to change • Financial barriers • Limited access to healthy foods • Communication/education • Availability of direct support professionals • Training for HCBS workers

	• Behavior supports • Aging population – sandwich generation • Availability of respite services • Alz's materials • HCBS – no certification – high school only • 3% 65+ in FQHCS – lack of resources • Isolation – rural counties
Washington	• If not in an association – difficult for individual to navigate/awareness within general community of resources • Lack of overall focus on mid-life –> elder health – lack of exposure to topic (within medical community) • Because of stigma of disease reluctance to seek assistance • Healthy families implementing strategies without utilizing available community resources • Caregiver support groups
	List five actions to promote brain health across the lifespan, expand early detection and diagnosis, improve safety and quality of care for people living with dementia, and attend to caregiver's health and well-being.
Gibson	1. Increasing access to affordable healthy food 2. Dementia friendly communities 3. Alz. daycare and overnight care 4. Getting churches involved 5. Website/social media for caregivers/families/diagnosis 6. Engage workforce – caregiver, law enforcement, health care providers, correctional, etc. 7. Community Coalition (AAAD, TDH, hospital systems, public health, legal) what does our coordinated messaging look like 8. Disseminating information – specifically to faith-based community 9. Caregiver support 10. Academic Community involvement **Top Three:** **1. Dementia friendly communities** **2. Dissemination of information to faith-based communities and leaders** **3. Coordinated messaging**
Hamblen	1. Education of provider and accommodation of seniors 2. Dealing with "here and now"

	3. Expanding home, community based services 4. Volunteer/engagement for those with cognitive decline 5. Support plan for caregivers "mommy's day out" but for seniors (churches, orgs.) called "kids day out"
Hamilton	1. Provider education (screening and diagnosis) 2. Team payment 3. Better advanced care planning 4. Early detection diagnosis 5. Greater and earlier information about resources 6. Private pay expansion 7. PACE model 8. Community champion (CHW) 9. Volunteer respite 10. Talking about reality of HCFS 11. System for ER referral 12. Education for first responders 13. Increase education and resources to communities 14. Affordable/accessible case management services 15. Education public to ask for cognitive testing 16. Physician awareness of importance of screening (for early diagnosis) – health care providers in general 17. Paid FMLA – including AWS education 18. Food is medicine 19. Mobile cognitive screenings – similar to mammogram bus 20. Create task force around Alz. and dementia – TDH spearhead 21. Road map for preventive services for 50+ population (comprehensive screening) 22. Self-assessment cognitive screening – self administered 23. Caregivers - preventing self-crisis – through a statewide caregiver organization – leverage technology for those who are homebound 24. Supportive living housing environment for middle class 25. Access to long term care policies 26. Importance of early detection and diagnosis – education health care providers 27. Livable/walkable communities

	28. Therapy referrals for cognitive intervention – to improve independent functions 29. Funding – blind rehab/sensory improvement, wrap around services, identified gaps, expand CHOICES, accessibility 30. Environmental clutter 31. Technology (Ex. Television programming) specifically for those with cognitive loss **Top Five:** **1. PACE Model** **2. Increase education and resources to communities** **3. Physician awareness of importance of screening – all health care providers** **4. Roadmap for preventative services for 50+ population – including comprehensive screenings** **5. Referral from ER and first responder education and navigation**
Maury	1. De-stigmatizing by talking about it 2. Access to information 3. Talking about experience 4. Not to fear it 5. Education 6. Encouragement 7. Adding brain health screenings 8. Adding memory screenings 9. Standard screenings 10. Put 60 minutes of physical activity back in school from K-12 11. More emphasis on health 12. Physical activity! In several aspects of life 13. A holistic approach 14. Plan for future financially 15. A clearer picture of what this disease looks like – this is what your brain looks like on drugs – ex. Virtual dementia tour
Memphis	1. Healthy lifestyle – education all – all ages 2. Caregiver and dementia park 3. Information sessions for caregivers – continuum of care – care provided while caregiver receives information

	4. Licensed adult daycares 5. Home health resources – professional education/training/transportation 6. Opportunities to decrease caregiver isolation 7. Dementia friendly communities 8. Practitioner knowledge – asking about being a caregiver 9. Direct care staff support – decrease turnover 10. More awareness and training for caregivers – what to do, relief/stress reduction, media/poster support 11. Strategic messaging for existing programs 12. Caregivers – flex spending program for elders 13. Hotline for Alz. (similar to TN Quit Line) 14. Prevention Week – add Alz. has a health topic – prioritizing 15. Statewide brain symposium/healthy aging symposium 16. Insurance companies – incentives/discounts related to modifiable risk factors 17. Electronic Medical Records a. Assessment (cognitive) b. Care plan/navigation resources c. Interoperability **Top Three:** **1. Electronic Medical Records** **a. Cognitive assessment** **b. Care plan/navigation resources** **c. Interoperability** **2. Dementia Friendly Communities** 3. **Strategic Messaging for Existing Programs**
Nashville	1. K-12 programs covering risky behaviors, bullying, physical activity, tobacco prevention, anxiety, etc. – prevention 2. Incorporate brain health in what you're already teaching 3. Breaking down silos, work with other individuals/organizations to increase reach 4. Action items out to the public (e.g. exercise, reduce hypertension) 5. Smoking cessation 6. Traumatic brain injury 7. Messages at YMCA, libraries 8. Targeted advertising

	9. Healthy living role models 10. Support for teachers and caregivers (ACEs) lifelong brain health 11. Messaging and education 12. Educate, screen, and treat PC visits 13. Support young babies and mothers 14. Bigger public health events 15. Offering incentives 16. Publicity 17. Cognitive screenings 18. Dementia friendly environment a. Clergy conference b. Restaurant rooms for people with dementia c. Targeted messaging senior centers around healthy behaviors 19. Messaging and education 20. Annual regional conferences 21. More primary care 22. Working with existing entities like YMCA, library a. Education for all generations 23. Link before untreated depression and cognitive decline 24. Work with families to change behaviors 25. Safety in homes
Putnam	1. Physician funding 2. Health care provider education 3. Limited income 4. Family toolkit – resources/repository 5. Coordinated effort 6. Outside help/support (form org's and community) 7. Increase communication and education 8. Increase preventative services/screenings 9. Reach out to faith-based organizations 10. Education and training for families
Washington	1. Annual statewide conference – all health care providers, caregivers, Alz.'s and active surveillance 2. Workforce development – health care, law enforcement, support services – policy/legislation

	3. Coordinated statewide effort to implement action strategies 4. Safety/awareness 5. GIS Mapping

Questions for Caregivers	
County	Question
	What have been your experiences as a caregiver?
Gibson	
Hamblen	
Hamilton	• Professional caregivers with experience (identifying) • Stress related to caregiver responsibilities – multiples roles – sandwich generation • Stress/strain between caregivers and paid. caregiver – individual with diagnosis feels isolated/dumped • Unpaid caregiver lacks resources, education, training related to diagnosis
Maury	
Memphis	• Limited info on Alz./cognitive decline provided by PCP – basic information only • Lack of diagnosis • Limited to no information related to Alz. meds (new) • Receiving info from other health care providers vs. PCP • If diagnosis by PCP → no empathy, no care planning, no resources – progression of disease • Knowledge of 'wrap around services" • PCP lack information on disease/ importance of diagnosis
Nashville	
Putnam	

Washington	• "Hardest thing I've ever done"
	• Confusing: didn't know what agencies were involved (TennCare Choices)
	  ○ Agencies don't communicate
	  ○ Operating in a column
	• Lack of public recognition for health care services "good"

	What are some of the specific challenges in providing care to your loved one?
Gibson	

Hamblen	
Hamilton	• Support (risk factors, safety, driving) for medical health care providers • Lack of stimulation (sensory) social isolation • Financial support – lack of eligibility for gov't programs
Maury	

Memphis	• Finding appropriate/competent health care provider, community at large understanding diverse
	• Evaluating professionals or subject matter experts
	• You don't know what you don't know
	• Church and family
	  ○ Family/friends lack of understanding
	  ○ Stigma/cultural awareness

Nashville	
Putnam	

Washington	• Navigating health care system
	  ○ Accurate information
	• Health care provider knowledge
	  ○ Recognition of disease especially with younger age
	  ○ Screening coverage/imaging studies
	• Provider partnerships between fields

	Are there particular resources you feel like you've lacked?
Gibson	
Hamblen	
Hamilton	• Communication between caregivers and providers ○ Provider awareness of dementia/Alz. • Specifics of types of dementia – ability to offer appropriate interventions • Lack of services/repository (centralized)
Maury	
Memphis	• Transportation • Navigator • Clinical trial knowledge • Financial resources • Respite for individual but focus on health (emotional/physical) for the caregiver • Technology

	• In-home supports (laundry, housekeeping, shopping) • MedAlert
Nashville	
Putnam	
Washington	• Information hotline – knowledge of what resources do exist • Resources for caregivers (insurance example) • Zip code – website search on TDH website
	Do you feel well-informed by your loved one's primary health care provider?
Gibson	
Hamblen	
Hamilton	• Family and individual didn't receive diagnosis – health care provider unwilling to identify and discuss • Uncertain – maybe caregiver received diagnosis but is in denial
Maury	
Memphis	• Needed more information from primary care physician • Referred to specialist – Alz. Association, AG TN, AADs
Nashville	
Putnam	
Washington	• Big NO
	Do you think there are adequate opportunities for people providing direct care to individuals with memory loss and dementia to participate in meaningful activities or to continue working?
Gibson	
Hamblen	
Hamilton	• Depends on stage of dementia – early stage may be the possibility
Maury	
Memphis	• Yes/No – to attend Alz's support groups • Within faith-based – "programing to supervise individual with cognitive decline so the caregiver can attend the service (like kids nursery) • Assisting individual w/ Alz. early to cope with disease (memory strategies to remain as functional as possible
Nashville	
Putnam	
Washington	
	Being a caretaker can be stressful. What, if anything, do you do for yourself to

	cope with these challenges?
Gibson	
Hamblen	
Hamilton	• Respite services • Encouragement – respite moments when caregiver services are available and take time to enjoy and take care of themselves • Physical activity - encourage
Maury	
Memphis	• Finding time for yourself – recognizing limitations and not feeling guilty • Continuing your life • Music (individual and caregiver) • In their moment
Nashville	
Putnam	
Washington	
	What do you want your community to understand about caring for a loved one with memory loss or dementia?
Gibson	
Hamblen	
Hamilton	• More accepted now than 20 years ago • Within community more resources available now than before • No skilled NHs available – facilities lacking secured dementia care units • Payor source not keeping up with needs of the community – middle class gap – qualifications/eligibility for gov't sponsored programs
Maury	
Memphis	• Family/friends – understand/ease stigma/stop judging • Faith-based – provide support and services – face it – please do not forget about the individual and caregiver • Family awareness/understanding this is not a reason to be ashamed/stigma
Nashville	
Putnam	
Washington	• Social isolation with those diagnosed – opportunities for those with disease to integrate in society
	What is the most important thing your community could do over the next year to better meet your needs?

Gibson	
Hamblen	
Hamilton	• Increase availability of served NH units/facilities • Increased HCBS – increase opportunities to remain in the home – gov't sponsored programs – consumer detection
Maury	
Memphis	• Educate – re: disease (coping/awareness/disease) • Educate providers (nurses, PCP, receptionists, etc.) – re: disease – early detection, Dx, navigating, care planning
Nashville	
Putnam	
Washington	• Education – start young with kids
	Is there anything you'd like to discuss that we haven't covered?
Gibson	
Hamblen	
Hamilton	• Increased transportation for senior population
Maury	
Memphis	• Better positive media related to support groups, resources, church activities • Promoting intergenerational activities/education youth
Nashville	
Putnam	
Washington	

Questions for Faith-Based Community Members and Leaders	
County	Question
	As a faith-based organization, what current health promotion activities are occurring with your organization or community? Are any current health promotion activities specifically focused on brain health, memory loss, or dementia?
Gibson	
Hamblen	
Hamilton	
Maury	
Memphis	• Drinking water

	• Provide info about what's in community • Exercise program • Healthy eating • Nursing: monthly support group for community • Seminar for caregivers w/ Alz. Association
Nashville	
Putnam	
Washington	
	Do you feel your congregation has adequate knowledge and awareness of memory loss and dementia?
Gibson	
Hamblen	
Hamilton	
Maury	
Memphis	• Lack of cause knowledge • Nutrition focus • Fear base to understand what is normal vs. what could be Alz.
Nashville	
Putnam	
Washington	
	What are the three most important things that you want your congregation/community to know about brain health, memory loss or dementia disease, and brain health?
Gibson	
Hamblen	
Hamilton	
Maury	
Memphis	• Ask for help: stigma/fear • "if you don't use it you'll lose it" • Kids understanding of chemicals and nutrition • Understanding of side effects/end of life
Nashville	
Putnam	
Washington	
	How can congregations mitigate the impact of memory loss for those living with

	memory loss, and what are the challenges?
Gibson	
Hamblen	
Hamilton	
Maury	

Memphis	• Keep them active and involved
	• Support groups
	• Respite care in church or resources
	• Being considerate of type of events and time of day
	• Child care – adult care
	• Offering personalized music/materials
	• Clergy training/leader training related to dementia/Alz.
	• Make it "home" friendly
	• Challenges:
	  ○ Funding
	  ○ Having enough trained people
	  ○ Transportation
	  ○ Stigma
	  ○ Cultural sensitivity
	  ○ Denominational understanding
	  ○ Getting resources out
	  ○ Insurance payment

Nashville	
Putnam	
Washington	
	What are your plans (if any) as a faith-based organization to respond to memory loss and dementia within the community?
Gibson	
Hamblen	
Hamilton	
Maury	• One on one sit downs • Sharing today's information ○ Sharing Alz. website/printed materials • Contact aging commission in Memphis to get booklet • Quarterly training

	• Including message in sermon/luncheon
Memphis	
Nashville	
Putnam	
Washington	
	If you have plans, what does your organization need to think about or do before your organization feels ready to take action?
Gibson	
Hamblen	
Hamilton	
Maury	
Memphis	• Contact commission • Denominational hierarchy • Asking questions to congregation • Rollout plan • Passionate people/leader • Collaborative board around topic • Test materials
Nashville	
Putnam	
Washington	
	What resources does your organization need in order to provide education, support, and potential programming to individuals living with dementia and their caregivers?
Gibson	
Hamblen	
Hamilton	
Maury	
Memphis	• Funding • Subject matter expertise/social worker • Neutral 3rd party • Handouts/health literate • Knowing how to safe-proof house
Nashville	
Putnam	

Washington	

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