2020 Annual Report
South Carolina
Alzheimer’s Disease Registry

ARNOLD SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF SOUTH CAROLINA

Data included in this report covers
January 1, 2016 through December 31, 2016,
the most current years with available and comprehensive data.
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ALZHEIMER’S DISEASE REGISTRY ANNUAL REPORT

We are pleased to present the 2020 Annual Report on the South Carolina Alzheimer's Disease Registry. This report is issued by the Office for the Study of Aging at the University of South Carolina’s Arnold School of Public Health.

The following pages describe the significant and multifaceted impact of Alzheimer’s disease and related dementias (ADRD) on our state. ADRD affect 11% of the population of South Carolina aged 65 years and older and 51% of those over age 85. Caring for someone with ADRD can cause a major burden for caregivers and other family members.

The South Carolina Alzheimer’s Disease Registry is one of only three statewide population-based registries of ADRD in the United States and is the oldest and most comprehensive. Data have been collected on South Carolinians with ADRD since 1988. The Registry was established and is maintained by the Office for the Study of Aging with the invaluable support of the South Carolina Department of Health and Human Services and the Revenue and Fiscal Affairs Office. In this Annual Report you will also find a wide range of research, evaluations, programs, and trainings that address the needs of older South Carolinians and their families.

The Office for the Study of Aging is proud to provide services that strive to improve the quality of life of our older adult population, their families and their caregivers. We hope you will visit our website at http://sph.sc.edu/osa.

If you have any questions about the Alzheimer's Registry or our Office's activities, please contact Dr. Maggi Miller, Registry Manager (803-777-0214 or chandlmj@mailbox.sc.edu).

Best Regards,

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An Equal Opportunity Institution
Executive Summary

The Office for the Study of Aging (OSA) at the University of South Carolina (UofSC) Arnold School of Public Health, in cooperation with the South Carolina Department of Health and Human Services (SCDHHS), the South Carolina Department of Mental Health, the UofSC School of Medicine, and the South Carolina Revenue and Fiscal Affairs Office, maintains a statewide Registry of South Carolina residents diagnosed with Alzheimer’s disease and related dementias (ADRD).

This report is published in fulfillment of the requirement of South Carolina Code of Law Section 44 36 10 and Section 44 36 50 which established the registry for the people of South Carolina and tasked the Arnold School of Public Health and OSA with its upkeep, management, and the dissemination of an annual report.

This report uses the abbreviation ADRD to indicate “Alzheimer’s disease and related dementias.” The term “related dementias” refers to dementias associated with vascular disease, mixed dementia and with other medical conditions such as Parkinson’s disease. Where the report refers specifically to “Alzheimer’s disease” (AD), analysis is limited to individuals with AD only.

Since January 1, 1988, the Registry has identified 285,984 cases of ADRD in South Carolina.

Registry Goals:

• Maintain the most comprehensive and accurate state registry of ADRD in the nation
• Provide disease prevalence estimates to enable better planning for social and medical services
• Identify differences in disease prevalence among demographic groups
• Help those who care for individuals with ADRD
• Foster research into risk factors for ADRD

Other Activities of OSA:

In addition to maintaining the Registry and conducting research using this valuable state resource, OSA works to promote broader research, training and other collaborative activities that enhance quality of life for our state’s older adult population. Specifically, OSA’s activities include the following:

• Provide education on ADRD management
• Develop training on long-term care issues
• Contribute technical assistance for programs for older South Carolinians
• Develop programs including Dementia Dialogues®
• Evaluate programs for South Carolina’s aging population
• Conduct research on aging and public health issues
Acknowledgments

The South Carolina Alzheimer’s Disease Registry has developed into one of the nation’s most important and premier resources for understanding ADRD. The growth and development of the Registry and the related research and training programs at OSA have been due to the support of many organizations and agencies. The leadership and staff of OSA want to acknowledge the particular contributions of:

- The Arnold School of Public Health at UofSC, for core support;
- The SC Revenue and Fiscal Affairs Office Health and Demographics Section, for its extensive cooperation in maintaining the Registry;
- The UofSC School of Medicine (Department of Medicine, Division of Geriatrics), for providing collaboration;
- The SC Department of Mental Health, for access to data;
- The SC Department of Health and Human Services, for core support and access to data;
- The SC Public Employee Benefit Authority, for access to data;
- The SC Department of Health and Environmental Control, Vital Records and Public Health Statistics; for access to data; and
- The SC Department on Aging, for its continued collaboration.
Introduction

Someone in America develops Alzheimer’s every 65 seconds; by mid-century someone will develop Alzheimer’s every 33 seconds.¹

In 1988, the U.S. Census Bureau estimated that there were 474,073 people 65 years of age and older living in South Carolina, and the state was ranked 25th among other states with regard to the percentage of persons aged 65 years and older. In 2010, there were 631,784 people 65 years of age and older living in South Carolina, and the state was ranked 23rd. Since that time, the older adult population in South Carolina has grown at a rapid rate. In fact, by 2050, the U.S. Census Bureau projects that South Carolina will be home to 1.1 million people ages 65 years and older, potentially propelling South Carolina to a ranking of 15th in the nation for the percentage of residents over 65 years of age.¹

ADRD represent an ever-increasing area of concern for families and the healthcare community. An estimated 5.7 million people in the United States are currently living with AD. By 2025, this estimate is expected to reach 7.1 million; by 2050, the number of people age 65 and older with AD may more than double from 5.7 million to a projected 13.8 million.² With increasing age as a leading risk factor for AD, South Carolina’s rapidly growing population of persons aged 65 years and older presents a challenge to families, communities and those who plan and deliver services for the state.

This report covers data from calendar year 2016. Registry cases in this report are defined as AD, vascular dementia, mixed dementias (mixed) and ADRD in other medical conditions (other). Registry cases are also identified by location of residence; either in a facility (nursing facilities or residential care facilities), in the community (home or adult day care) or in an unknown location. Exclusions of some demographic information are due to the voluntary method of data collection. It should be noted that many cases may be identified at a late stage of the disease rather than at onset. This affects the time from entry into the Registry until death.

In this report, ADRD is an umbrella term that encompasses many types of neurocognitive disorders. The Diagnostic and Statistical Manual of Mental Disorders - 5th Edition (DSM-5) states that AD can be diagnosed with a level of certainty if there is 1) clear evidence of decline in memory and learning and at least one other cognitive domain (based on detailed history or serial neuropsychological testing), 2) steadily progressive, gradual decline in cognition, without extended plateaus, and 3) no evidence of mixed etiology (i.e., absence of other neurodegenerative or cerebrovascular disease, or another neurological, mental, or systemic disease or condition likely contributing to cognitive decline). AD is a type of ADRD with an insidious onset and gradual progression of cognitive and behavioral symptoms.³ Other types of ADRD include those related to stroke, mixed dementia (with both Alzheimer’s and vascular dementia), and dementias associated with medical conditions such as Parkinson’s disease, Huntington’s disease, dementia with Lewy Bodies (DLB), frontotemporal, AIDS, and alcohol or drug abuse.

¹ US Census Bureau, Population Division, April 2020.
² Alzheimer’s Association, 2019 Alzheimer’s Disease Facts and Figures.
ADRD in South Carolina

The prevalence of AD in the United States is currently estimated to be 10% among persons aged 65 and older.¹ In 2016, there were 830,232 South Carolina residents 65 years and older, representing 16.7% of the total population, an almost 71% increase since the Registry began in 1988.²

The total number of persons with ADRD in South Carolina is not known with certainty. National estimates of ADRD prevalence vary widely from one study to another. Individuals who have mild forms of the disease, but lack a diagnosis, do not appear in the Registry data. Previous research suggests that the number of individuals with ADRD may be nearly 50% greater than the number with diagnosed ADRD.³ With that being said, the South Carolina Alzheimer’s Disease Registry is the oldest and most comprehensive population-based Registry of ADRD in the country. There are only two other such registries in existence. One, is located in West Virginia and began collecting data in 2008 and the second is in Georgia and began collecting data in 2014.⁴,⁵

Individuals with ADRD are usually identified when they or their family members seek provider services. Since no single system identifies all newly diagnosed patients with ADRD, cases in the Registry are collected from several sources (see Figure 1). This ensures that the Registry captures as many diagnoses as possible.

**Figure 1**
REGISTRY DATA SOURCES
*South Carolina Alzheimer’s Disease Registry, 2016*

**NOTE:** CMHC = Community Mental Health Center; MHRC = Mental Health and Rehabilitation Clinics; PACE = Program of All-inclusive Care for the Elderly

*Duplicates occur because individuals often use more than one name, social security number, or other identifying information when using health or social services.

¹ Alzheimer’s Association, 2019 Alzheimer’s Disease Facts and Figures.
History of the Registry

1988  The Alzheimer’s Disease Registry was established in 1988 to record specific information about South Carolinians who develop ADRD.

1990  On May 31, 1990, Governor Carroll A. Campbell, Jr. signed a state law authorizing the Registry. This law (R653, H4924) amended Title 44, Code of Laws of South Carolina 1976, relating to health, by adding Chapter 36 establishing a voluntary Statewide Alzheimer’s Disease and Related Dementias Registry located within the School of Public Health at UofSC. The law has strict confidentiality requirements but does allow Registry staff to contact the families and physicians of persons diagnosed as having ADRD to collect relevant data and provide information about public and private health care resources available to them.

1993  From July 1993 to May 1996, the Registry was moved to the James F. Byrnes Center for Geriatric Medicine, Education, and Research, a geriatric research hospital jointly sponsored by the UofSC School of Medicine and the South Carolina Department of Mental Health.

1997  The Registry was moved back to the Arnold School of Public Health at UofSC, where it continues to be maintained by the Office for the Study of Aging. It provides prevalence data to public and private entities for planning and fosters research on risk factors for ADRD, including the risk of institutionalization.


2015  The 25th Registry report was published, with a celebration of the 25th anniversary of the legislation authorizing the Registry being signed into law.

2018  The 30th Anniversary celebrating the establishment of the Registry, which continues to receive widespread support and interest from the academic community, support groups, state agencies, and other public and private organizations as part of a statewide effort to study the growing impact of ADRD on the health and welfare of South Carolinians.
Registry Procedures

A definitive diagnosis of ADRD is difficult, especially in the early stages. The Registry staff is not directly involved in diagnosis; the physician’s diagnosis is collected from the individual’s medical records through codes using the International Classification of Diseases, 10th revision, Clinical Modification (ICD-10-CM, 2010). An individual is then classified into four general categories for reporting purposes as shown in Table 1.

Individuals with ADRD are usually identified when they or their family members seek provider services. Since no single system identifies all newly diagnosed patients with ADRD, cases are collected from several sources (see Figure 1, page 6).

Table 1
CLASSIFICATION OF ADRD BY ICD-10-CM CODES
South Carolina Alzheimer’s Disease Registry, 2016

<table>
<thead>
<tr>
<th>ALZHEIMER’S DISEASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>F03.90 – F03.91 Senile or presenile dementia</td>
</tr>
<tr>
<td>G30.0 – G30.9 Alzheimer’s Disease</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VASCULAR DEMENTIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01.50 – F01.51 Arteriosclerotic dementia</td>
</tr>
<tr>
<td>G45.0 – G45.9 Cerebrovascular disease (with a dementia code*)</td>
</tr>
<tr>
<td>I67.0-I67.9 I69.00-I69.998</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIXED DEMENTIA (see note below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both Alzheimer’s disease and Vascular dementia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEMENTIA IN OTHER MEDICAL CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>F10.27 – F10.97 Alcohol dementia</td>
</tr>
<tr>
<td>F19.97 Drug-induced dementia</td>
</tr>
<tr>
<td>F02.80-F02.81 Dementia with other conditions</td>
</tr>
<tr>
<td>G31.83 Dementia with Lewy bodies</td>
</tr>
<tr>
<td>G31.1 G31.9</td>
</tr>
<tr>
<td>G91.0-G91.9</td>
</tr>
<tr>
<td>G93.7-G94</td>
</tr>
<tr>
<td>G20 Parkinson’s disease</td>
</tr>
<tr>
<td>G21.11-G21.8</td>
</tr>
<tr>
<td>G10 Huntington’s disease</td>
</tr>
<tr>
<td>B20 HIV</td>
</tr>
</tbody>
</table>

The following conditions are included with a dementia code*:

A81.00-A81.09 Creutzfeldt-Jakob disease
F04-F09 Organic brain syndrome
F48.2
F07.81 Chronic traumatic encephalopathy
G31.1 – G31.9 Other cerebral degeneration
G91.0-G91.9
G93.7-G94
G20 Parkinson’s disease
G21.11-G21.8
G10 Huntington’s disease
B20 HIV

NOTE: In the case where a person’s record contains multiple indicators of the above categories, Alzheimer’s disease and vascular dementia take precedence, except in the case where there are indications of both Alzheimer’s disease and vascular dementia. In this case, the person is classified as having mixed dementia. Those classified with dementia in other medical conditions have no indications of Alzheimer’s disease or vascular dementia.

*One of the following dementia codes must also be present: F03.90 – F03.91, G30.0 – G30.9, F01.50 – F01.51, F10.27 – F10.97, F19.97, F02.80-F02.81, G31.83
Registry Core Data Items

The registry core data set consists of case-identifying data (for matching purposes only), diagnostic data (ICD 9 + 10 CM codes), the place from which the records were obtained, location of case (facility or community), gender, race, and age. Other information collected, if available, includes other medical diagnoses, educational status, marital status, and name and location of caregiver/contact person for follow up.
South Carolina Alzheimer’s Disease Registry Report

South Carolina Population Prevalence of ADRD

- In 2016 the Registry maintained information on 106,223 individuals living with ADRD.
- Based on the Registry and 2016 population estimates from the United States Census:
  - 11% of South Carolinians age 65 or over have ADRD;
  - 51% of South Carolinians age 85 or over have ADRD;
  - ADRD prevalence rates vary notably among SC counties; and
  - African Americans are at notably higher risk of an ADRD diagnosis than are non-Hispanic whites. At ages 65 and older, for example, African American South Carolinians are 57% more likely to have ADRD as are non-Hispanic whites.

Registry Overview:

Of South Carolinians with diagnosed ADRD in 2016:

- 70% have AD;
- 9% have a dementia due to stroke;
- 18% have a dementia related to other chronic conditions;
- 25% live in an institution at the time of diagnosis;
- 63% are women;
- 27% are African American; and
- 44% of those with AD are 85 years or older.

ADRD Prevalence across South Carolina Counties

Figure 2 shows the percentage of individuals age 50 or over with ADRD in 2016. The county prevalence rates vary from a low of about 3.0% to a high of about 7.8%. This county variation provides an important starting point for epidemiological studies of ADRD. It should be noted that counties with a larger older adult population are likely to have greater percentages of individuals with ADRD. This is because the risks of ADRD rise dramatically at older ages. The map is useful because it illustrates where the greatest service needs are for the oldest old, who are more likely than others to require institutional care.

Figure 2

ADRD Prevalence in South Carolina, 2016

Data from SC Alzheimer’s Disease Registry (2016) and Census Annual County Population Estimates (2010-2016)
Characteristics of ADRD in South Carolina

Since 1988, 285,984 cases of ADRD have been identified in South Carolina. This report describes demographic characteristics and medical information for the 106,223 cases who were alive on January 1, 2016 displayed by type of ADRD.

Type of ADRD

Among the 106,223 Registry cases in 2016, 70% had a diagnosis of AD and 9% had a diagnosis of vascular dementia, which is often associated with stroke. In the event of records showing both AD and vascular dementia, the case was reported in a mixed dementia category (3% of all Registry cases). The additional 18% for the total number of “Other Conditions” had a dementia related to other medical conditions, such as Parkinson’s disease (see Table 3 for complete listing). The diagnosis shown represents the most current diagnosis in the data received.

Location

As shown in Figure 3, more Registry cases resided in the community (69%) than in a nursing facility (25%) or unknown locations (6%). The distribution of the types of ADRD was similar in the community and in nursing facilities (Table 2, Figure 4).

Table 2
REGISTRY CASES BY DEMENTIA TYPE AND PLACE OF RESIDENCE

<table>
<thead>
<tr>
<th>Dementia Type</th>
<th>Community N</th>
<th>Community %</th>
<th>Nursing Facility N</th>
<th>Nursing Facility %</th>
<th>Unknown N</th>
<th>Unknown %</th>
<th>Total N</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer’s disease</td>
<td>50,601</td>
<td>69</td>
<td>19,431</td>
<td>74</td>
<td>4,652</td>
<td>70</td>
<td>74,684</td>
<td>70</td>
</tr>
<tr>
<td>Vascular dementia</td>
<td>6,449</td>
<td>9</td>
<td>2,508</td>
<td>9</td>
<td>468</td>
<td>7</td>
<td>9,425</td>
<td>9</td>
</tr>
<tr>
<td>Mixed dementia</td>
<td>1,864</td>
<td>2</td>
<td>1,035</td>
<td>4</td>
<td>197</td>
<td>3</td>
<td>3,096</td>
<td>3</td>
</tr>
<tr>
<td>Other conditions</td>
<td>14,326</td>
<td>20</td>
<td>3,359</td>
<td>13</td>
<td>1,333</td>
<td>20</td>
<td>19,018</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>73,240</strong></td>
<td><strong>69</strong></td>
<td><strong>26,333</strong></td>
<td><strong>25</strong></td>
<td><strong>6,650</strong></td>
<td><strong>6</strong></td>
<td><strong>106,223</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*NOTE: Mixed dementia = both Alzheimer’s and Vascular dementia; Other conditions = dementia in other medical conditions.*
Dementia in Other Medical Conditions

In addition to AD, the Registry tracks dementias that are associated with other medical conditions, such as Parkinson’s disease, alcohol and drug abuse, and HIV/AIDS. In the 2016 Registry, there were 22,107 persons with a dementia associated with one of these conditions who did not also have a diagnosis of AD or vascular dementia. Eight percent had dementia associated with Parkinson’s disease and 26% had an indication of dementia associated with some other medical condition (Table 3 footnote). The percentages in the table are not mutually exclusive due to the fact that some records indicate more than one medical condition.

Dementia with Lewy Bodies

Dementia with Lewy Bodies (DLB) is a progressive brain disease characterized by abnormal round structures in the areas of the brain that control thinking and movement. Hence, DLB causes symptoms similar to those commonly associated with both AD and Parkinson’s disease. Like AD, it can cause confusion, memory loss, and depression, while other possible symptoms are slowed movement, rigid muscles, and tremors, symptoms normally found in those with Parkinson’s disease. Persons with DLB may also have hallucinations and experience day-to-day changes in their symptoms. Currently, there is no cure for DLB. Medications used to treat AD, Parkinson’s disease, and depression are typically used to manage DLB symptoms. National estimates suggest that DLB accounts for approximately 10-25% of all dementia cases.¹ In the South Carolina Registry, DLB accounted for 8% of the dementia in other medical conditions category and only 2% of all dementia cases.

### Table 3
DEMENTIA WITH OTHER MEDICAL CONDITIONS BY AGE GROUP

*South Carolina Alzheimer's Disease Registry, 2016*

<table>
<thead>
<tr>
<th>Condition</th>
<th>Under 65</th>
<th>65–74</th>
<th>75–84</th>
<th>85+</th>
<th>Total (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol dementia</td>
<td>25%</td>
<td>12%</td>
<td>4%</td>
<td>2%</td>
<td>1,613 7%</td>
</tr>
<tr>
<td>Drug-induced dementia</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>54 0%</td>
</tr>
<tr>
<td>Organic brain syndrome</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>221 1%</td>
</tr>
<tr>
<td>Other cerebral degenerations</td>
<td>46%</td>
<td>67%</td>
<td>68%</td>
<td>47%</td>
<td>10,278 46%</td>
</tr>
<tr>
<td>Parkinson's disease</td>
<td>3%</td>
<td>9%</td>
<td>14%</td>
<td>10%</td>
<td>1,732 8%</td>
</tr>
<tr>
<td>Huntington's disease</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>26 0%</td>
</tr>
<tr>
<td>HIV/AIDS dementia</td>
<td>5%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>226 1%</td>
</tr>
<tr>
<td>Dementia with Lewy Bodies</td>
<td>3%</td>
<td>9%</td>
<td>15%</td>
<td>10%</td>
<td>1,740 8%</td>
</tr>
<tr>
<td>Frontotemporal dementia</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>220 1%</td>
</tr>
<tr>
<td>Pick's disease</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>68 0%</td>
</tr>
<tr>
<td>Creutzfeldt-Jakob disease</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>5 0%</td>
</tr>
<tr>
<td>Traumatic Brain Injury Dementia</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td>91 0%</td>
</tr>
<tr>
<td>Chronic Traumatic Encephalopathy</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>24 0%</td>
</tr>
<tr>
<td>Dementia with other conditions*</td>
<td>30%</td>
<td>26%</td>
<td>37%</td>
<td>36%</td>
<td>5,809 26%</td>
</tr>
</tbody>
</table>

**Total** 3,824 5,843 6,745 5,695 22,107

**Note:** The percentages in the table are not mutually exclusive due to the fact that some records indicate more than one medical condition.

*Dementia with other conditions includes those with an ICD-10-CM code F02.80 - F02.81 (dementia in conditions classified elsewhere) on their medical record. This code is listed along with the ICD-10-CM code of the dementia-causing condition. However, the dementia-causing condition may not be identifiable from the record, and therefore, may not be in the above table.*
Age and ADRD in South Carolina

Table 4 shows that in 2016, 44% of persons with AD were 85 years of age or older. Figure 5 shows this information graphically for all dementias included in ADRD, with 41% of persons over 85 years of age.

Figure 6 indicates that for people with ADRD, 70% of those 75 - 84 years of age were being cared for in the community at the time of diagnosis. Living in the community is most often the location of choice for the individual with ADRD and the family. However, as Figure 7 indicates, with age comes an increase in the numbers of those who reside in nursing facilities.

### Table 4

<table>
<thead>
<tr>
<th>Age Group</th>
<th>AD N</th>
<th>AD %</th>
<th>Vascular N</th>
<th>Vascular %</th>
<th>Mixed N</th>
<th>Mixed %</th>
<th>Other N</th>
<th>Other %</th>
<th>Total N</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 65</td>
<td>4,065</td>
<td>6</td>
<td>1,281</td>
<td>14</td>
<td>129</td>
<td>4</td>
<td>3,223</td>
<td>18</td>
<td>8,698</td>
<td>8</td>
</tr>
<tr>
<td>65 – 74</td>
<td>13,049</td>
<td>18</td>
<td>2,052</td>
<td>23</td>
<td>636</td>
<td>21</td>
<td>4,625</td>
<td>26</td>
<td>20,362</td>
<td>20</td>
</tr>
<tr>
<td>75 – 84</td>
<td>23,403</td>
<td>32</td>
<td>2,658</td>
<td>29</td>
<td>966</td>
<td>32</td>
<td>4,737</td>
<td>26</td>
<td>31,764</td>
<td>31</td>
</tr>
<tr>
<td>85 +</td>
<td>31,831</td>
<td>44</td>
<td>3,120</td>
<td>34</td>
<td>1,312</td>
<td>43</td>
<td>5,297</td>
<td>30</td>
<td>41,560</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>72,348</td>
<td>71</td>
<td>9,111</td>
<td>9</td>
<td>3,043</td>
<td>3</td>
<td>17,882</td>
<td>17</td>
<td>102,384</td>
<td>100</td>
</tr>
</tbody>
</table>

*3,839 records for individuals have missing values for the variables required for inclusion in this table or have ages either less than 50 or greater than 110.

**NOTE:** AD=Alzheimer’s disease; Vascular=vascular dementia; Mixed=both Alzheimer’s disease and vascular dementia; Other=dementia with other medical conditions.
Gender and ADRD in South Carolina

Table 5 shows Registry cases by gender, ADRD type, and age group. For each dementia type, the number of women was notably larger than the number of men in all but the youngest age category. In particular, among those age 85 or over, the number of women with ADRD was almost three times the number of men with ADRD. More women than men in this population were diagnosed with ADRD (Figure 7). This is likely due to the larger number of women alive after age 75. The differences in the ADRD diagnoses by gender are shown graphically in Figure 8.

<table>
<thead>
<tr>
<th></th>
<th>AD</th>
<th>Vascular</th>
<th>Mixed</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65</td>
<td>1,904</td>
<td>8</td>
<td>703</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>65 – 74</td>
<td>5,478</td>
<td>22</td>
<td>1029</td>
<td>27</td>
<td>297</td>
</tr>
<tr>
<td>75 – 84</td>
<td>8,646</td>
<td>35</td>
<td>1,148</td>
<td>30</td>
<td>405</td>
</tr>
<tr>
<td>85 +</td>
<td>8,581</td>
<td>35</td>
<td>980</td>
<td>25</td>
<td>420</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65</td>
<td>2,160</td>
<td>4</td>
<td>575</td>
<td>11</td>
<td>64</td>
</tr>
<tr>
<td>65 – 74</td>
<td>7,560</td>
<td>16</td>
<td>1,004</td>
<td>19</td>
<td>338</td>
</tr>
<tr>
<td>75 – 84</td>
<td>14,746</td>
<td>31</td>
<td>1,495</td>
<td>29</td>
<td>561</td>
</tr>
<tr>
<td>85 +</td>
<td>23,197</td>
<td>49</td>
<td>2,118</td>
<td>41</td>
<td>884</td>
</tr>
</tbody>
</table>

*4,050 records for individuals have missing values for gender or have ages either less than 50 or greater than 110.

NOTE: AD=Alzheimer’s disease or senile dementia; Vascular=Vascular dementia; Mixed=both Alzheimer’s disease and Vascular dementia; Other=dementia in other medical conditions.
Race and ADRD in South Carolina

Compared with whites, African Americans, who comprise approximately 20% of the population 65 years and older, were over-represented in vascular dementia of the South Carolina and in the overall Registry (27%; Table 6). At ages 65 and older, for example, African American South Carolinians were 57% more likely to have ADRD than non-Hispanic whites*. Seventy five percent of African Americans with ADRD resided in the community compared to 68% of whites (Figure 10).

### Table 6

<table>
<thead>
<tr>
<th>Race</th>
<th>AD</th>
<th>Vascular</th>
<th>Mixed</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>49,394</td>
<td>66</td>
<td>5,025</td>
<td>53</td>
<td>1,849</td>
</tr>
<tr>
<td>African-American</td>
<td>18,854</td>
<td>25</td>
<td>3,518</td>
<td>37</td>
<td>904</td>
</tr>
<tr>
<td>Hispanic</td>
<td>346</td>
<td>1</td>
<td>57</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>All Others</td>
<td>6,090</td>
<td>8</td>
<td>825</td>
<td>9</td>
<td>333</td>
</tr>
<tr>
<td>Total</td>
<td>74,684</td>
<td>63</td>
<td>9,425</td>
<td>11</td>
<td>3,096</td>
</tr>
</tbody>
</table>

*AD=Alzheimer's disease or senile dementia; Vascular=Vascular dementia; Mixed=both Alzheimer's disease and Vascular dementia; Other=dementia in other medical conditions.

Deaths Among Individuals in the Registry

The individual’s first date of diagnosis may not be known to the Registry in every instance. For example, if an individual is first diagnosed during a physician office visit, then that diagnosis is not available to the Registry. The Registry uses the first date that a person entered one of the systems reporting to us as their entry date. The Alzheimer’s Disease Registry data are linked with death certificates to summarize the deaths occurring among persons in the Registry. Of those people identified with ADRD since 1988, 179,761 have died. Table 7 illustrates the number of years from date of diagnosis to death.

*Odds ratio was calculated comparing prevalence of ADRD in 65+ African Americans and Whites.
Table 7
LENGTH OF TIME IN REGISTRY BY ADRD TYPE
South Carolina Alzheimer’s Disease Registry, 2016*

<table>
<thead>
<tr>
<th>Years in Registry</th>
<th>AD N</th>
<th>%</th>
<th>Vascular N</th>
<th>%</th>
<th>Mixed N</th>
<th>%</th>
<th>Other N</th>
<th>%</th>
<th>Total N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 years</td>
<td>38,984</td>
<td>43</td>
<td>7,508</td>
<td>46</td>
<td>3,142</td>
<td>41</td>
<td>1,273</td>
<td>48</td>
<td>62,370</td>
<td>44</td>
</tr>
<tr>
<td>2–5 years</td>
<td>36,337</td>
<td>40</td>
<td>5,934</td>
<td>36</td>
<td>3,322</td>
<td>43</td>
<td>9,479</td>
<td>36</td>
<td>55,072</td>
<td>39</td>
</tr>
<tr>
<td>5 + years</td>
<td>15,922</td>
<td>17</td>
<td>2,884</td>
<td>18</td>
<td>1,234</td>
<td>16</td>
<td>4,277</td>
<td>16</td>
<td>24,317</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>91,243</td>
<td>64</td>
<td>16,326</td>
<td>12</td>
<td>7,698</td>
<td>5</td>
<td>26,492</td>
<td>19</td>
<td>141,759</td>
<td>100</td>
</tr>
</tbody>
</table>

*38,001 records for individuals have missing values
AD=Alzheimer’s disease or senile dementia; Vascular=Vascular dementia; Mixed=both Alzheimer’s disease and Vascular dementia; Other=dementia in other medical conditions.

Table 8 lists the top 10 underlying causes of death for persons 65 years of age or older in the Registry who died during 2016. The #1 underlying cause of death for these persons was attributed to senility and organic mental disorders. This category includes AD and many other dementing illnesses. Nationally, the leading causes of death for persons ages 65 years and older were heart disease, cancer, chronic lower respiratory diseases, cerebrovascular disease, AD, diabetes, accidents, influenza and pneumonia, nephritis, and septicemia. As can be seen in Table 8, the underlying causes of death for those with ADRD in the Registry closely mirror the national trend.

Table 8
TOP 10 UNDERLYING CAUSES OF DEATH AMONG REGISTRY CASES 65 YEARS OR OLDER
South Carolina Alzheimer’s Disease Registry, 2016*

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Senility and organic mental disorders</td>
</tr>
<tr>
<td>2</td>
<td>Coronary atherosclerosis and other heart disease</td>
</tr>
<tr>
<td>3</td>
<td>Acute cerebrovascular disease</td>
</tr>
<tr>
<td>4</td>
<td>Chronic obstructive pulmonary disease and bronchiectasis</td>
</tr>
<tr>
<td>5</td>
<td>Congestive heart failure; nonhypertensive</td>
</tr>
<tr>
<td>6</td>
<td>All external causes of injury and poisoning</td>
</tr>
<tr>
<td>7</td>
<td>Acute myocardial infarction</td>
</tr>
<tr>
<td>8</td>
<td>Parkinson’s disease</td>
</tr>
<tr>
<td>9</td>
<td>Cancer of bronchus; lung</td>
</tr>
<tr>
<td>10</td>
<td>Septicemia</td>
</tr>
</tbody>
</table>

*Only includes persons who died during the 2016 calendar year.
**Excludes pneumonia caused by tuberculosis or sexually transmitted disease.

1 CDC NCHS https://www.cdc.gov/nchs/nvss/mortality_tables.htm Accessed April 28 2020
Additional Programs and Trainings at the OSA

A. Dementia Dialogues®

- **FUNDING SOURCE:** South Carolina Department of Health and Human Services,
- **PRINCIPAL INVESTIGATOR:** Daniela B. Friedman, MSc, PhD
- **CO-PRINCIPAL INVESTIGATOR:** Lee Pearson, MS, DrPH
- **PROGRAM COORDINATOR:** Megan Byers, MSW, LMSW

Dementia Dialogues® is a 5-module, evidence-informed, nationally registered training course designed to educate community members and caregivers for persons who exhibit signs and symptoms of Alzheimer's disease and related dementias.

Individuals who attend and complete all five modules of the training course will be awarded a Dementia Dialogues® Specialist Certificate. The five modules include the following:

1. **The Basic Facts:** An Overview of Alzheimer's Disease and other Dementias
2. **Keep the Dialogue Going:** Strategies for Effective Communication
3. **It's a Different World:** Understanding the Impact of the Environment & Ways to Promote Independence
4. **It's Nothing Personal:** Addressing Challenging Behaviors
5. **Now What Do We Do?** Creative Problem Solving

Since 2001, over 21,000 individuals have been trained in at least one module and over 10,000 individuals have completed the entire course. Dementia Dialogues® is provided at no cost to participants through the Office for the Study of Aging at the Arnold School of Public Health, University of South Carolina. For further information including training materials and contact information for trainers please visit: https://sph.sc.edu/dementia_dialogues
B. Evaluation Sub-Award for the Prisma Health Greenville – REACH Expansion Grant

- **FUNDING SOURCE:** Administration for Community Living – Administration On Aging.
- **GHS – REACH Expansion, 2019-2020**
- **PRINCIPAL INVESTIGATOR:** Maggi Miller, PhD
- **CO-INVESTIGATOR:** Mindi Spencer, PhD

OSA serves as the evaluator an 18-month REACH Expansion (PI: James Davis, MD). Prisma Health–REACH seeks to enhance the educational and supportive services to persons with ADRD and their caregivers through the provision of caregiver coaching and education. The focus is on high-risk patients and caregivers, including individuals who live in rural areas, those who identify as a racial/ethnic minority, or are living alone. The OSA evaluation team is responsible for designing the evaluation methodology and instruments, conducting analysis and program reporting. The evaluation aims are to assess whether program objectives were reached and develop tools for program monitoring and quality assurance. This evaluation uses a mixed-methods approach, consisting of multiple assessments pre-, during, and post-intervention.
C. Home Care Specialist Training

The Home Care Specialist course provides training on chronic disease management and is intended for Personal Care Aide (PCA) workers caring for people in their own homes. This course provides PCAs with an extra level of training about chronic disease conditions affecting their clients. PCAs learn about warning signs and symptoms of nearing health crisis and receive practical information about what to do and who to call to help prevent or better manage their clients’ health crises.

The training consists of 13 self-paced online modules:
1. Introduction to the Home Care Specialist Training
2. Congestive Heart Failure
3. Dehydration
4. Pneumonia
5. Incontinence and Urinary Tract Infections
6. Heart Attack
7. Chronic Obstructive Pulmonary Disease
8. Hypertension
9. Stroke
10. Diabetes
11. Dementia and Mental Status Change
12. The Final Phase of Life
13. Falls

The Home Care Specialist training course is provided at no cost. Upon completion, PCAs earn a Home Care Specialist certificate. This course and additional information is available online at: https://sph.sc.edu/hcs
The overall goal of the Carolina Center on Alzheimer’s Disease and Minority Research (CCADMR) is to increase the diversity of the research workforce focused on population health and determinants of ADRD disparities through sustained infrastructure that will support underrepresented and minority (URM) faculty focused on the health and well-being of minority elders. The Specific Aims are to:

1. increase the capacity of URM scholars to advance the science on the sociocultural, behavioral, and environmental factors that influence ADRD outcomes in order to reduce ADRD-related disparities, with a focus on African Americans, and
2. advance the science of ADRD research focused on population health and determinants of ADRD disparities through research education in population-based, secondary data analysis, interdisciplinary co-mentoring teams, well-established strategies for recruitment of AD-RCMAR Scientists, and education on Health Disparities and Minority Aging Research.

The CCADMR is a state-wide collaboration, providing mentorship and education on determinants of ADRD disparities using population-based datasets for URM faculty throughout South Carolina, at the three major research institutions, including University of South Carolina (UofSC), Medical University of South Carolina (MUSC), and Clemson University (CU), and three Historically Black Colleges and Universities (HBCUs), including Allen University, Claflin University, and South Carolina State University.
E. Graduate Scholar in Aging Research Awards Program

• SPONSOR: Gerry Sue and Norman J. Arnold Institute on Aging

The Arnold School of Public Health is in its third year of the annual Graduate Scholar in Aging Research Awards Program. Through the generous support of Norman and Gerry Sue Arnold, the Arnold School of Public Health is committed to developing future leaders in aging research. In response, the Arnold School has established this award which will recognize up to two outstanding graduate students who exemplify the highest standards of scholarship focused on aging.

F. Arnold Aging Lecture Series

• SPONSOR: Gerry Sue and Norman J. Arnold Institute on Aging

OSA in the Arnold School of Public Health hosted two dynamic speakers to deliver the Annual Arnold Aging Lecture in 2018 and 2019, respectively. The first lecture was delivered on March 29, 2018 by Dr. Kenneth M. Langa on the topic of “Exploring the Risk of Alzheimer’s Disease: Epidemiological Evidence from Around the World.” His presentation is available online at https://youtu.be/xehFQFeALtc. The second lecture was delivered by Dr. Keith Whitfield on the topic of “Biobehavioral Insights on Health and Aging Among African Americans” on March 28, 2019. Dr. Whitfield’s presentation is available online at https://youtu.be/kfRNdeM0yeE. The 2020 lecture was postponed due to COVID-19 but it will be rescheduled for a future date.
OSA Directory

Core Team

Daniela Friedman, Co-Director

Daniela Friedman, Professor and Chair of the Department of Health Promotion, Education, and Behavior, is the Co-Director of the Arnold School of Public Health's OSA. She is a leader in gerontology and community-engaged health promotion in South Carolina, dedicated to improving health literacy and reducing health disparities among older adults across the state. Dr. Friedman’s federally unded research networks, including the Centers for Disease Control and Prevention-funded South Carolina Healthy Brain Research Network and South Carolina Cancer Prevention and Control Research Network, are focused on the communication and dissemination of evidence-based health messages and programs. Dr. Friedman also directs the university-wide Certificate of Graduate Study in Health Communication.

Lee Pearson, Co-Director

Lee Pearson has more than 20 years of experience in addressing public health priorities in South Carolina, including a specific focus on the unique needs of the state’s aging population. In 2014, he helped to lead a statewide taskforce on long-term care. Dr. Pearson holds a doctor of public health degree in health promotion, education and behavior, as well as a graduate certificate in gerontology. He serves as the co-director of OSA. In that role, he works with the entire OSA team to advance the core mission and promote expanded opportunities with collaborative partners. In addition to his role with OSA, Dr. Pearson is the associate dean for operations and accreditation in the Arnold School of Public Health, and he chairs the board of the SC chapter of the Alzheimer’s Association. He has previously served on the Joint Legislative Committee to Study Services, Programs and Facilities for the Aging.

Mindi Spencer, Associate Director of Research

Mindi Spencer is an Associate Professor in the Department of Health Promotion, Education, and Behavior, with a joint appointment in the Institute for Southern Studies. Broadly, her research focuses on how cultural and psychosocial factors influence health in older adulthood. She also conducts research on caregiving and mental health among American Indian and African American elders. Dr. Spencer is the Principal Investigator of the “Youth Empowered Against HIV!” Project and a partner in the “Equalize Health” LGBT cultural competence training program for health care providers. Dr. Spencer serves on the Lt. Governor’s Alzheimer’s Resource Coordination Center and on the Minority Task Force of the Gerontological Society of America.

Maggi Miller, Registry Manager

Maggi Miller has almost 15 years of experience in aging-related public health research and practice. She received her MS in health promotion from the University of Delaware and a PhD in epidemiology from the University of South Carolina Arnold School of Public Health. She is a research assistant professor in the Department of Epidemiology and Biostatistics. At the OSA, Dr. Miller manages the SC Alzheimer’s Disease Registry and focuses on aging research and program evaluation. Her research interests include Alzheimer’s disease and related disorders and caregivers of individuals with dementia.
**Megan Mason, Program Coordinator**

Megan Mason began her career in the aging field in Adult Protective Services with the West Virginia Department of Health and Human Resources, and then as an Adult Services Program Specialist for the State. She has developed and revised policies, monitored legislative session to determine its impact on vulnerable adults, and educated professionals on elder abuse, neglect, and financial exploitation. Megan is a graduate of Marietta College with a Bachelor of Arts in Psychology, and West Virginia University with a Master of Social Work and a Graduate Certificate in Gerontology. She is also a Licensed Master Social Worker in the State of South Carolina and is an advocate for building capacity in the areas of domestic violence, human trafficking, elder abuse, and social work.

**Matthew Lohman, Assistant Professor**

Dr. Lohman is an Assistant Professor of Epidemiology in the Department of Epidemiology and Biostatistics and is a core faculty member of the OSA. His primary research areas are in psychiatric epidemiology, gerontology, geriatric mental health services, and the epidemiology of adverse health outcomes such as falls, hospitalizations, and acquired disabilities among older adults. Dr. Lohman is particularly interested in the role of long-term care services and settings, such as nursing homes and home health care nursing, in the prevention of age-related cognitive and physical decline. He currently teaches epidemiological methods and scientific writing for masters and doctoral students.

**Katherine Leith, Research Associate**

Dr. Leith has been working and teaching in the fields of social work, aging, and public health for more than 20 years. She has extensive experience in both academia and community practice. Initially, Dr. Leith worked as social work case manager for the NC Department of Mental Health, as coordinator of an adult day program for persons with mental illness and intellectual disabilities. Later she served as medical social worker at a SC dialysis clinic. Her most recent clinical practice was with the SC Department of Mental Health, as social work supervisor at Bryan Psychiatric Hospital, Forensics. After joining the University of South Carolina, Dr. Leith collaborated with several SC state agencies, where she served as evaluator on a number of evidence-based community prevention programs, primarily in the areas of mental health, chronic disease self-management education, and falls prevention. She also taught, and continues to teach, Social Welfare and Policy, Human Behavior in the Social Environment, Social Work Research, Aging, and Advanced Practice courses in the College of Social Work and in Public Health, as well as for Simmons College, Boston, MA. Dr. Leith also serves as course lead and tutor for Apollon University in Bremen, Germany and grant reviewer /panel chair for ACL, ACF, and CMS. She is an associate editor for Frontiers in Public Health. She also directs the Certificate for Graduate Study in Aging at the University of South Carolina.

**Stephanie Ureña, Postdoctoral Fellow**

Stephanie Ureña is a Postdoctoral Research Fellow in the Department of Health Promotion, Education, and Behavior and the Office for the Study of Aging within the Arnold School of Public Health. Her research centers on the ways social factors shape population health and well-being, with an emphasis on aging, life course processes, health disparities, and Alzheimer’s disease and related dementias. A special focus of her research is on the implications of military service for the long-term health of U.S. veterans, which received federal funding from the National Institute on Aging. Dr. Ureña holds an MPH, is trained in sociology, gerontology, and demography, and is an affiliate of the Carolina Consortium on Health, Inequalities, and Populations (CHIP) at the University of South Carolina.
Dana AlHasan, Doctoral Student

Dana AlHasan is a PhD student in the Department of Epidemiology and Biostatistics and an Arnold School of Public Health Graduate Scholar in Aging Research. She is interested in the role neighborhood characteristics play in influencing incidence of dementia and Alzheimer’s disease, as well as depression among dementia caregivers. As an Arnold School of Public Health Graduate Scholar, Dana is working to understand how neighborhoods can be designed to accommodate those with dementia.

Chelsea Larsen, Doctoral Student

Chelsea Larsen is a PhD candidate in the Department of Exercise Science and an Arnold School of Public Health Graduate Scholar in Aging Research. She received her Master of Public Health in Physical Activity and Public Health from the University of South Carolina in 2013. Her research interests include the health of caregivers of individuals with dementia and effective technology utilization in behavioral lifestyle interventions.

Nicholas Resciniti, Doctoral Student

Nicholas Resciniti is a PhD student in the Department of Epidemiology and Biostatistics and an Arnold School of Public Health Graduate Scholar in Aging Research. He has a passion for the field of Aging and Alzheimer’s, with a focus on early life factors and bio-behavioral markers. Nicholas is also with a student researcher with OSA.

Sydney Smith, Masters Student

Sydney Smith is a Master of Science in Public Health student in Biostatistics at the Arnold School of Public Health. She is working with the OSA as the SC Alzheimer’s Disease Registry Assistant. She graduated from Clemson University with a B.S. in Mathematical Science with emphasis areas in statistics and financial mathematics and with a minor in Business Administration.
Affiliate Faculty

OSA is proud of its strong partnerships with faculty who represent multiple disciplines from across the UofSC campus.

ARNOLD SCHOOL OF PUBLIC HEALTH

OFFICE OF THE DEAN

Sara Corwin, Associate Dean for Undergraduate Student Affairs

EPIDEMIOLOGY & BIOSTATISTICS

Monique Brown, Assistant Professor
Angela Liese, Professor
Myriam Torres, Clinical Associate Professor

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Delia West, Professor
Sara Wilcox, Professor
Chih-Hsiang “Jason” Yang, Assistant Professor

COLLEGE OF SOCIAL WORK

Sue Levkoff, Endowed Chair, SeniorSMART Center for Economic Excellence
Otis Owens, Assistant Professor

SCHOOL OF MEDICINE

Donna Ray, Clinical Assistant Professor of Internal Medicine
Advisors

The OSA benefits from numerous partnerships and the active input of stakeholders from across South Carolina. The key advisors listed below provide strategic guidance on the mission and overall direction of OSA.

Community

Teresa Arnold, AARP
Darryl Broome, Advisor on Aging Services and State Policy
Marti Colluci, Leeza's Care Connection
Brenda Hyleman, Aging Life Care Professional
Beth Sulkowski, Alzheimer's Association South Carolina
Sam Waldrep, Advisor on Aging Services and State Policy

Research and Clinical

James W. Davis, MD, Memory Health Program, PRISMA Health Upstate Network
Julius Fridriksson, PhD, Arnold School of Public Health, Department of Communication Sciences and Disorders
Jacobo Mintzer, MD, MBA, Roper St. Francis
Collaborators/Partners

The OSA collaborates with many organizations and agencies to improve the lives of older adults in South Carolina. These partnerships strengthen the OSA’s ability to fulfill its mission through the sharing of resources and expertise.


**Alzheimer's Resource Coordination Center**: [http://aging.sc.gov/programs/ARCC/Pages/default.aspx](http://aging.sc.gov/programs/ARCC/Pages/default.aspx)

**Centers for Medicare and Medicaid Services**: [http://www.cms.hhs.gov/default.asp](http://www.cms.hhs.gov/default.asp)

**Clemson University Institute for Engaged Aging**: [http://www.clemson.edu/centers-institutes/aging/](http://www.clemson.edu/centers-institutes/aging/)

**Department of Health and Human Services**: [https://www.scdhhs.gov/](https://www.scdhhs.gov/)

**Healthy Brain Research Network**: [http://prevention.sph.sc.edu/projects/braincenter.html](http://prevention.sph.sc.edu/projects/braincenter.html)

**Leeza's Care Connection**: [http://www.leezascareconnection.org/](http://www.leezascareconnection.org/)

**Palmetto Health/UofSC School of Medicine Division of Geriatrics**: [http://internalmedicine.med.sc.edu/patientcare/geriatrics.asp](http://internalmedicine.med.sc.edu/patientcare/geriatrics.asp)

**South Carolina Area Health Education Consortium**: [http://www.scahec.net/](http://www.scahec.net/)

**South Carolina Center on Aging**: [http://academicdepartments.musc.edu/neuro-research/research/centers/aging/](http://academicdepartments.musc.edu/neuro-research/research/centers/aging/)

**South Carolina Department on Aging**: [https://aging.sc.gov/](https://aging.sc.gov/)

**South Carolina Department of Health and Environmental Control**: [www.scdhec.net/](http://www.scdhec.net/)

**South Carolina Department of Health and Human Services**: [https://www.scdhhs.gov/](https://www.scdhhs.gov/)

**South Carolina Department of Mental Health**: [https://scdmh.net/](https://scdmh.net/)

**South Carolina Health Care Association**: [www.schca.org](http://www.schca.org)

**South Carolina Institute of Medicine and Public Health**: [http://www.imph.org](http://www.imph.org)

**South Carolina Respite Coalition**: [http://www.scrspitecoalition.org/](http://www.scrspitecoalition.org/)

**The Carolinas Center for Medical Excellence**: [http://www.thecarolinascenter.org/](http://www.thecarolinascenter.org/)


**University of South Carolina College of Social Work**: [http://www.cosw.sc.edu/](http://www.cosw.sc.edu/)
Any state or local agency may request the registry staff to provide specific data summaries (without identifiers). These requests are handled on an individual basis and will be provided free of charge.

Contact Dr. Maggi Miller, Registry Manager, at chandlmj@mailbox.sc.edu for further information.