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Advisory Council on Aging

South Dakota's

Long Term Care Study Update

Final Report

Presented on May 28, 2015

History of Abt Long Term Care Study

2007 Long Term Care Study examined:

- Evaluation of utilization and cost of services to the aging population across the continuum.
- Projected future long term care needs and capacity.
- Identified and recommended policy options based on best practices.

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Key Findings from 2007 Long Term Care Study

The study identified several key findings which included:

- Rapidly aging population - number of elders projected to double including elderly disabled.
- Geographic mismatch between the places where services existed and the places where the elderly population was expected to grow over the next 20 years.
- Historically high rates of nursing home bed utilization and low rates of use of home and community-based services compared to national indicators.

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Key Findings from 2007 Long Term Care Study (Con't)

The study identified several key findings which included (Continued):

- Rural and frontier areas faced particularly low availability of home and community based services (adult day facilities, senior centers, nutrition programs, homemaker services, and in-home services).
- Aging skilled nursing facilities.
- Labor force not keeping pace with growth of elders – particularly direct care workers.

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Policy Recommendations of 2007 LTC Study

Study included several policy recommendations and identified three scenarios to address future demand for services:

- Scenario 1 – do nothing.
- Scenario 2 – take moderate steps to address future demand.
- Scenario 3 – take aggressive approach to address future demand.

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2008 LTC Task Force Recommendations

2008 - Task Force charged with developing recommendations and use most aggressive approach to addressing future demand. The Task force developed seven recommendations:

1. Develop a Single Point of Entry system for long-term care services.
   - Completed - Aging Disability Resource Center (ADRC) model implemented in October 2009.

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100 member Workgroup
3 sub committee
HCBS Right sizing

2008 LTC Task Force Recommendations

2. Expand and enhance existing home and community-based services.
   - Ongoing - enhancements through Adult Services and Aging waiver renewal. Implementing Money Follows the Person to transition individuals from nursing homes to community-based services where appropriate. Convened provider workgroup to develop rule changes to facilitate serving individuals with dementia in assisted living settings.

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Adult companion services added to waiver

2008 LTC Task Force Recommendations (Continued)

3. Implement an access critical nursing facility model.
   - Completed - legislation (SB140 – 2011 session) formally established access critical designation.
4. Right-size the nursing facility industry by realigning moratorium bed levels to reflect projected demand for nursing facility services.
5. Expand nursing facilities through a Request for Proposals (RFP) process developed by state agencies for areas in the state that will need additional nursing facility services.
   - Completed - legislation (SB196 – 2012 session) to allow for expansion of high need areas through an RFP process.

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2008 LTC Task Force Recommendations (Continued)

6. Maintain a sustainable financial infrastructure for the current and future system of care. Workgroup could not come to consensus on approach.
7. Collect data and analyze the need for additional assisted living facilities.
   - In progress.

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2015 Abt Long Term Care Study

2015 Long Term Care Study updated projections for demographic trends, service delivery challenges; and project future demand for long term care services.

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Key Findings from 2015 Update

Elderly Population Estimates:

- Growth in elders has slowed relative to 2007 projections with elderly population expected to grow by 84% in the year 2035.
- Growth rates for elderly and disabled are again projected to be higher West River vs East River.
- Rapid City and Sioux Falls continue to see greatest growth rates as seniors migrate toward more urban areas and medical centers.

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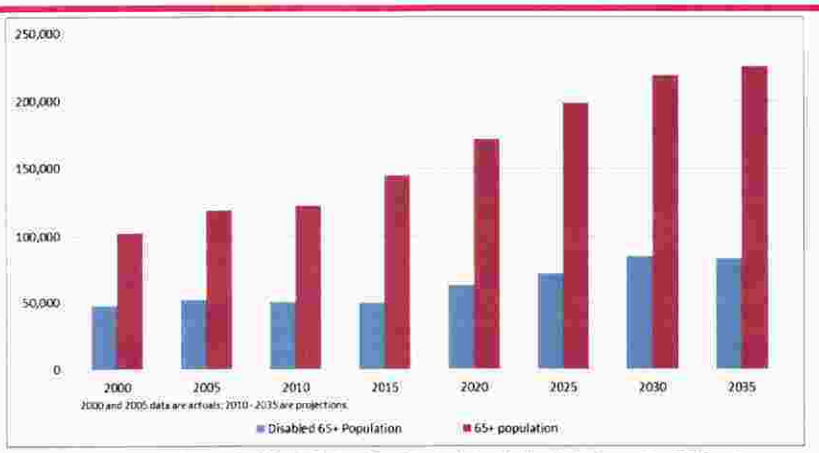
Projections of SD Elderly and Disabled Population



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, 2010 and American Community Survey.

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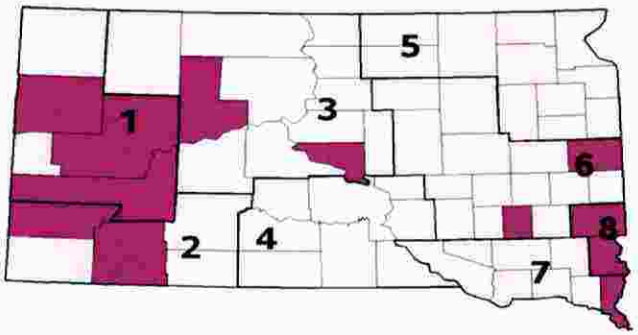
SD Counties Where Elderly Population is Expected to Double from 2010 to 2035 (in Dark Pink)



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, 2015

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Key Service Delivery Challenges

Nursing Homes: Nursing home capacity and utilization rates have continued to drop both in South Dakota and nationwide since the release of the first study.

- Nursing home utilization
  - 2007 Study – 6.4% utilization
  - 2015 Study – 4.7% utilization

% of Population

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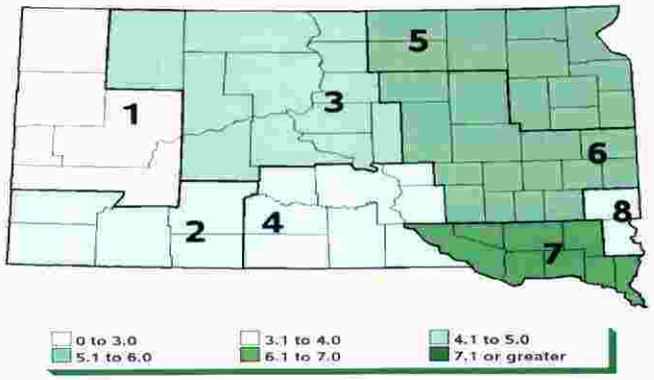
Number of Licensed Beds in Use per 100 Elderly Individuals - SD 2014



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, South Dakota's Nursing Facilities Data, and Nursing Home Compare.

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Key Service Delivery Challenges

Nursing Homes: Nursing home capacity and utilization rates have continued to drop both in South Dakota and nationwide since the release of the first study.

- Nursing home capacity per 100 elderly
  - 2007 Study - SD 10th in the nation with 61 licensed beds per 1,000 elders
  - 2015 Study – SD 16th in the nation with 48 licensed beds per 1,000 elders

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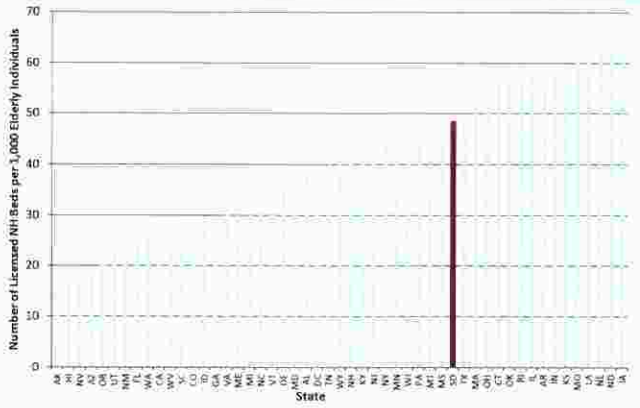
National Comparison of State Nursing Home Capacity 2011



Source: Abt Associates' analysis of Henry J. Kaiser Family Foundation's Nursing Home Beds data and American Community Survey data. South Dakota utilization rates appear in red

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Key Service Delivery Challenges (Continued)

Assisted Living: Assisted living capacity has increased slightly:

- 2007 study – SD 16th in the nation for available assisted living beds.
- 2015 study – SD 15th in the nation for available assisted living beds.

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PASSR
Pre Admission Screening
Appropriately placed in right environment.

Key Service Delivery Challenges (Continued)

Home Health Care: South Dakota continues to have the 2nd fewest Medicare skilled home health episodes:
- 2007 study – SD 2nd lowest in the nation for Medicare skilled care utilization.
- 2015 study – SD remains 2nd lowest nationally.

Home and Community-Based Care: No evidence of perceptible shifts in availability of home and community based services.

from Start of Service to end of Service Part "A" Has to be Home bound

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Projections of Future Demand for Nursing Home Services - 3 Scenarios

Scenario A: Nursing home utilization rate will remain at its 2010-2014 average level of 4.7 percent of the elderly population.
- Assumes assisted living and community based services utilization remain at current levels.
- Given more recent trends in declining nursing home utilization – Scenario A likely overstated relative to nursing home demand.

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Projections of Future Demand for Nursing Home Services - 3 Scenarios (Continued)

Scenario B: Nursing home utilization rate will decline by 0.09 percentage points per year, or approximately one half the 2000-2014 rate of decline.

- Assumes recent nursing home utilization decline will moderate and not continue to decline at current rates.
- Assumes elders will increasingly seek out alternatives to nursing home care.
- SD must take additional steps to increase community based service capacity.

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Projections of Future Demand for Nursing Home Services - 3 Scenarios (Continued)

Scenario C: Nursing home utilization rate will decline by 0.14 percentage points per year, reaching a rate of 1.2 percent by 2035. Assumes recent nursing home utilization decline will moderate and not continue to decline at current rates.

- Assumes elders will seek out alternatives to nursing home care at higher rate than Scenario B.
- SD must take additional steps to increase community based service capacity.

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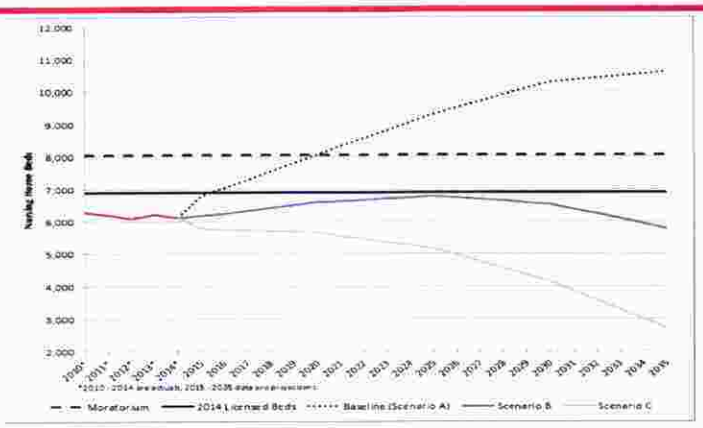
Forecast Number of SD Nursing Home Beds, 3 Scenarios 2000 - 2035



Source: Abt Associates' analysis of South Dakota's Nursing Facilities Data and South Dakota Department of Social Services' Nursing Home Occupancy Report

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Conclusions and Recommendations

- Policy changes made by the state have successfully accelerated the decline in nursing home utilization, reducing the gap relative to national utilization rates. Assisted living utilization has increased in parallel, but no concurrent increases in skilled Medicare home health or home and community-based services have occurred.
- SD should continue to utilize options counseling through the ADRC to educate consumers and families about community-based care alternatives, in attempts to reduce nursing home admissions.

Educating Consumers to Reduce # to N.H.

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Conclusions and Recommendations (Continued)

- Continue to expand and enhance HCBS and other community based care.
- Further explore care preferences and gather more information regarding informal or other supports that elders are utilizing in lieu of seeking assistance from state programs.

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Next Steps

- Released updated 2015 Abt Study and key findings.
- Formed workgroup to explore options to increase availability of community-based services and further explore information or other supports currently being utilized.

HCBS
Workgroup.

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Final Report

Final

Evaluating Long-Term Care Options for South Dakota: Update

January 11, 2015

Prepared for:

Department of Social Services

State of South Dakota

Division of Adult Services and Aging

700 Governors Drive

Pierre, SD 57501

Submitted by:

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Executive Summary

In 2007, Abt Associates Inc. ("Abt") was commissioned by South Dakota's Department of Social Services (DSS) to assess and evaluate the State's long-term care (LTC) system. Key findings from the Final Report from that study, "*Evaluation of Long-Term Care Options for South Dakota*," were as follows:

- Rapid projected growth in the elderly and disabled elderly population was expected to drive a sharp increase in the demand for LTC services.
- Elderly population growth was anticipated to be higher in the West River than the East River region, with counties around the Sioux Falls and Rapid City metropolitan areas experiencing the most dramatic growth.

Prior Report

Evaluation of Long-Term Care Options for South Dakota – Final Report

Released November 9, 2007

Available online at http://dss.sd.gov/news/2007/Final%20Report%20SD%20LTC%2011-9-07%20.pdf

- Existing State LTC capacity was judged insufficient to meet the coming demand, with nursing homes needing to be replaced and rebalanced, and assisted living capacity, home health care services, and home and community based services (HCBS) additionally requiring expansion.
- LTC workforce growth was additionally failing to keep pace with anticipated demand.

Subsequently, in 2008, the Department of Social Services initiated a Task Force on Long Term Care Services and Supports in South Dakota to address the analysis and opportunities brought forth in the Long Term Care Report. The Task Force was charged with making recommendations towards expansion of HCBS, right-sizing the LTC system, and remedying financing issues. Stakeholders including government agencies, providers, legislators, and other interested parties met over a period of months to make recommendations for South Dakota to move forward in improving access to services. Since the Task Force released its *"Final Report - Meeting the Continuum of Care Needs of the Elderly in South Dakota"* in November 2008, the State has taken steps to complete some of the Task Force's recommendations including:

- Implementation of a "no wrong door" Aging and Disability Resource Center (ADRC);
- Passage of legislation (Senate Bill (SB) 196) to amend the existing moratorium statute to allow for expansion of beds in areas of the state identified as being in high need for additional nursing facility services through a request for proposals (RFP) process, accompanied by an update to administrative rules to coincide with the moratorium statute change, following the Task Force's criteria for access critical designations; and
- Implementation of the Money Follows the Person rebalancing demonstration.

Other notable initiatives in recent years include:

- Renewal and expansion of the Adult Services and Aging (ASA) HCBS waiver;
- Establishment of a Medicaid Solutions Workgroup focused specifically on HCBS to develop recommendations on different service models to meet the needs of individuals requiring supports

and services in the least restrictive and most appropriate environment, analyze opportunities available through the federal government, and explore reimbursement models;

- Convening of a Dementia Care Workgroup to address concerns about Assisted Living regulations; and
- Adoption of the Health Homes model to serve South Dakotans with chronic conditions or behavioral health conditions.

It is in this changing policy context that the Department of Social Services has commissioned Abt to perform an update of selected analyses from the 2007 report. In particular, using up-to-date data collected since the release of the prior report, we have performed the following tasks:

Task 1: Updating Demographic Trend Challenges. Under this task, we updated projections of trends in the State elderly and disabled population over the next 20 years (through 2035), updating and extending the projections through the year 2025 appearing in Section 4.1.1 of the prior report.

Task 2: Updating Service Delivery Challenges. Under this task, we examined geographic variation in the distribution of LTC services across the State, including nursing homes, assisted living, home health, and HCBS. These analyses provide updated snapshots that may be directly compared to those appearing in Section 4.2 of the prior report.

Task 3: Projecting Future Demand for Long-Term Care Services. Finally, under this task we analyzed several alternative scenarios for future growth in demand for LTC services, particularly focused on identifying areas with the highest projected future unmet need. These analyses update parallel scenarios reported in Section 4.4 of the prior report.

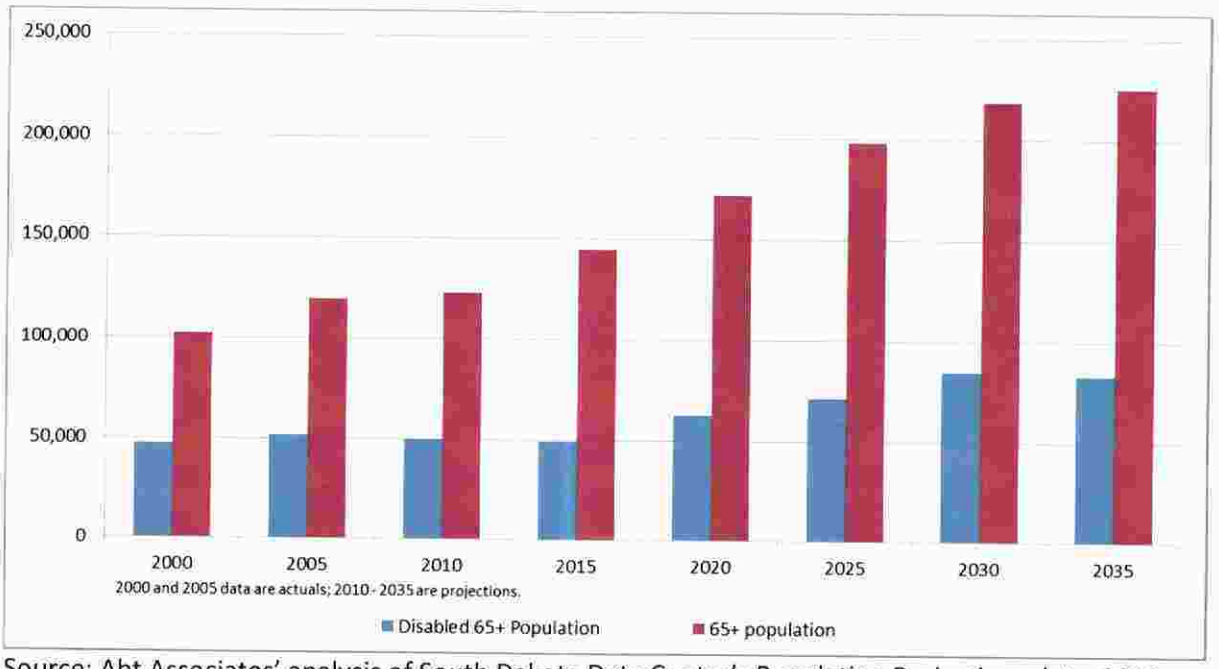
Demographic Trend Challenges

Exhibit E-1 (next page) shows actual population totals for 2000-2010 accompanied by updated population projections through the year 2035.

Through the 2010 decennial Census, actual growth in the elderly and elderly disabled populations was somewhat lower than projections in the prior report. Accordingly, the South Dakota State Data Center has revised projected growth rates modestly downward since that time. Based on these revised estimates, we now project that:

- The number of elders (over age 65) will increase by about 84 percent in the year 2035 relative to decennial Census totals in the year 2010, increasing by approximately 103,000 to 226,000.
- The number of disabled elders will peak in 2030, increasing by about 33,000 to 85,000, or 71 percent higher than the decennial Census year 2010 total; by 2035, this number will fall slightly as the relative proportion of younger elderly individuals (aged 65-74) increases in relation to the proportion of older elderly individuals (aged 75+).

Exhibit E-1. Projections of South Dakota's Elderly and Disabled Population (2000-2035)



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, 2010 and American Community Survey.

Although projected growth in the elderly population overall has slowed relative to past projections, it remains the case that growth rates and associated demand for LTC services are not evenly balanced across the State. Local LTC services will be stressed both by growth in the numbers of seniors as well as by high rates of growth in demand for care. Overall, the geographic variation in growth rates across Economic Assistance Regions in this updated report is similar to that seen in the prior report. In particular:

- Growth rates for the elderly and disabled elderly population are again projected to be greater in West River (Regions 1 and 2) than East River (Regions 5 through 8).
- The regions including the Sioux Falls metropolitan area (Region 8) and the Rapid City/Northwest counties (Region 1) continue to exhibit the fastest rates of anticipated growth, as well as the largest growth in the overall numbers of elders. However, as with total projected Statewide growth, overall growth rates from 2010 to 2035 are now projected to be more moderate than those previously projected for Regions 1 and 8 for the years 2000 to 2025 in the prior report.
  - Specifically, the Region 1 elderly population was previously projected to grow by 250 percent from 2000 to 2025; updated projections now indicate a 110 percent increase from 2010 to 2035.
  - For Region 8, the elderly population was projected to increase 235 percent from 2000 to 2025, as compared to a 170 percent increase from 2010 to 2035 in the updated projections.
- Growth in both Region 1 and Region 8 continues to be fueled by the migration of seniors from frontier areas towards urban areas and medical centers.

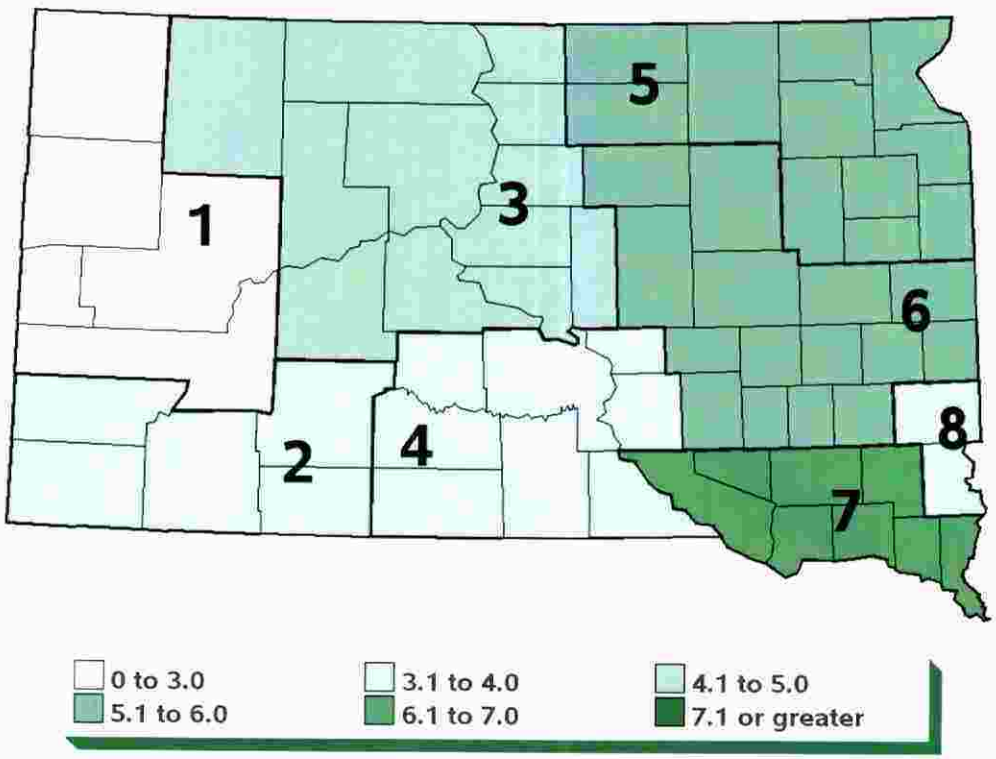
- In 2000, there were 22 counties where the elderly population exceeded 20 percent of total residents in the county. By 2010, there were 42 counties where the elderly population exceeded 20 percent of total residents.
- By 2035, in all but 10 South Dakota counties elders will make up over 20 percent of the population. In 27 counties, elders will be over 40 percent of the local population. Even in the growing population centers, around Sioux Falls and Rapid City, elders will make up 29-30 percent of residents.

Service Delivery Challenges

We gathered updated information to describe recent trends in delivery of LTC services, including nursing homes, assisted living, home health, and home and community-based services (HCBS).

Nursing Homes. Nursing home capacity and utilization rates have continued to drop both in South Dakota and nationwide since the release of the final report. In 2006, the most recent data available for the prior report, South Dakota ranked tenth in the nation in terms of nursing home utilization, with 61 licensed beds per 1,000 elders. By 2011, that number had dropped substantially to 48 licensed beds per 1,000 elders, sixteenth nationwide. Though South Dakota's utilization rates remain higher than national averages, the drop in utilization between 2006 and 2011 indicates that the gap is shrinking.

Exhibit E-2. Number of Licensed Beds in Use per 100 Elderly Individuals, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data; South Dakota's Nursing Facilities Data, and Nursing Home Compare.

The number of licensed nursing facility beds in use per 100 elderly individuals has declined slightly from 2003-2005 levels, with a minimum of 2.6 beds in use per 100 elderly individuals in Economic Assistance Region 1 and a maximum of 6.4 beds in use per 100 elderly individuals in Economic Assistance Region 7. As in the prior report, utilization rates are substantially higher in the East River regions (5 through 8) than in the West River regions (1 and 2).

Assisted Living. Relative to other states, South Dakota ranked 16th for available assisted living beds in 2010, at 3.4 available beds per 100 elderly individuals. This represents a slight increase in the number of available beds from roughly 3 per 100 elderly individuals in 2004, which placed South Dakota 15th among the states at that time. All regions of the State displayed growth in the total number of assisted living beds since the last report, but substantial geographic variation remains.

Home Health Care. South Dakota continues to have the 2nd fewest Medicare skilled home health episodes of the 50 states, with just over 5 episodes per 100 elderly individuals. There is little evidence of a shift in geographic patterns in Medicaid- and Medicare-certified home health agencies or visits since the prior report.

Home and Community-Based Care. Home and community based services are a critical support component to allow elders to remain in the community as long as possible. Since the prior report, we do not see evidence of perceptible shifts in availability of home and community based services in South Dakota: adult day facilities, senior centers, nutrition programs, homemaker services, and in-home service clients all remain at similar, relatively low levels.

Projecting Future Demand for Long-Term Care Services

Based on the most recent available data, we estimate that, since the year 2000, nursing home utilization rates as a percentage of the elderly population in South Dakota have declined from 6.4 percent to 4.7 percent (2010-2014 average). This compares to a somewhat slower nationwide decline from 4.2 percent to 3.2 percent over approximately the same interval. Our projections of future demand for LTC services extrapolate from recent State trends to characterize demand under several different possible future scenarios for nursing home utilization.

- Scenario A: Our baseline projections assume that nursing home utilization rates persist at recent levels. In particular, we assume that the nursing home utilization rate will **remain at its 2010-2014 average level of 4.7 percent of the elderly population**.

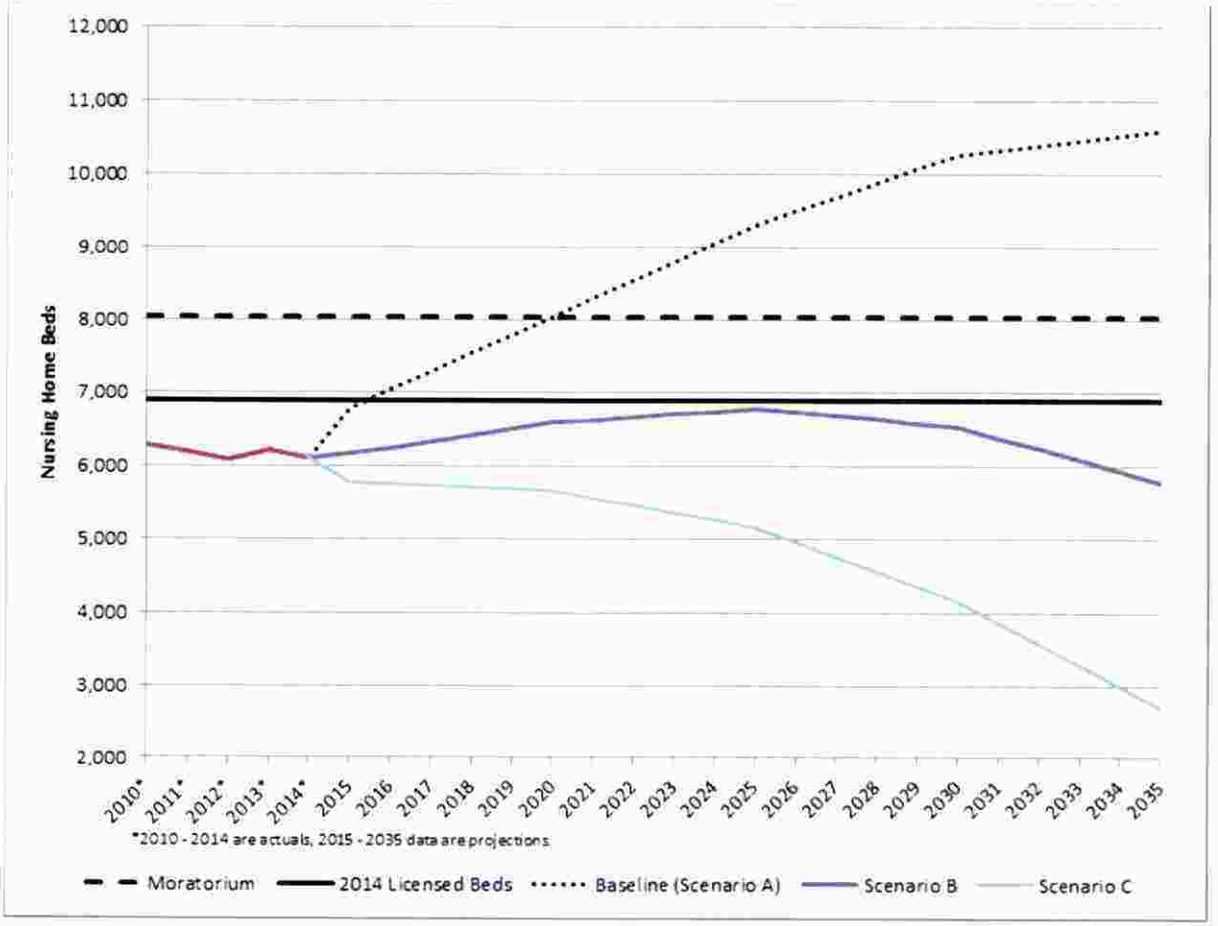
  This projection scenario methodology mirrors the baseline projections provided in the 2007 Final Report to enable direct comparison. However, we note that, given the recent sharp decline in nursing home utilization in South Dakota as described above, it appears unlikely that future utilization rates will in fact remain fixed at this level as assumed. The two alternative future scenarios considered below, which assume continued declines in utilization rates moving forward, may therefore more realistically depict actual future trends.

- Scenario B: Under the first alternative future scenario we consider, we assume that the recent steep decline in nursing home utilization rates in South Dakota relative to national trends will moderate somewhat in coming years. In particular, we assume that the nursing home utilization rate will **decline by 0.09 percentage points per year, or approximately one half the 2000-2014 rate of decline**.

- Scenario C: Under the second alternative future scenario we consider, we assume that nursing home utilization rates in South Dakota will continue to decline more steeply than recent national trends, ultimately converging to national average rates by 2035. In particular, we assume that the nursing home utilization rate will **decline by 0.14 percentage points per year, reaching a rate of 1.2 percent by 2035**.

Nursing Homes. Exhibit E-3 shows projections for total nursing home population for each scenario. Under the baseline scenario, the nursing home population continues to rise through 2035 with the increase in the elderly and elderly disabled populations, but under the two alternative scenarios the population is actually forecast to *decrease* by 2035. These projected decreases occur when the declining utilization rate falls far enough to compensate for the continued increase in the elderly and disabled elderly populations. In particular, under Scenario B, the projected nursing home population reaches a maximum of 6,776 in the year 2025 before declining to 5,776 in 2035; under Scenario C, the projected nursing home population declines continually from its current level to reach 2,709 in 2035.

Exhibit E-3. Forecast Number of South Dakota Nursing Home Beds, 3 Scenarios, 2000 – 2035



Source: Abt Associates' analysis of South Dakota's Nursing Facilities Data and South Dakota Department of Social Services' Nursing Home Occupancy Report.

Assisted Living. Under our two alternative scenarios, the decline in nursing home utilization is partially offset by an increase in assisted living utilization. Under Scenario B, our mid-point forecast, assisted living utilization rates would rise from 2.6% in the year 2000 to 3.6% in 2035. Under the baseline Scenario A, projected demand for beds will only marginally exceed supply so long as capacity continues to increase in line with its recent 1.5% annual trend; from 2025 to 2030 projected demand is just slightly higher than projected capacity, but by 2035 the gap closes once more. However, if nursing home utilization rates decline consistent with our more reasonable assumptions under the two alternative scenarios, demand for assisted living beds will exceed supply well before 2020.

Home and Community-Based Services. As in our prior report, in all scenarios considered, the numbers of community-dwelling disabled seniors will increase, driven by population changes, higher projected health levels, individual preferences, or policy changes that could promote increases in home and community based care options. However, we see little evidence of substantial increases in provision of HCBS relative to levels observed in our 2007 report, and South Dakota continues to lag behind national averages. It is clear that further aggressive rebalancing efforts will be required to support increasing numbers of community-dwelling seniors in the future.

Conclusions

It is clear that recent policy changes in South Dakota have successfully accelerated the decline in nursing home utilization, substantially reducing the gap relative to national utilization rates. Assisted living utilization has increased in parallel, but we do not observe concurrent increases in skilled Medicare home health or HCBS.

These results naturally lead to speculation on how the needs of individuals are being met in light of decreasing nursing home utilization without a correlating increase in the use of formal supports. Per the Department of Social Services, South Dakota ranked within the top five states nationwide in market penetration for private long term care insurance as of June 2013, potentially indicating one way in which residents are bridging the gap. Increased use of informal supports by family and friends may also play a role, though we cannot formally assess this possibility in the context of this report.

Under all hypothetical future scenarios considered, further efforts will be required to meet future demand for LTC services outside the nursing home setting. The State must clearly maintain its focus on rebalancing the long-term services and supports systems (LTSS), through:

- Continuing to utilize options counseling through the ADRC to educate consumers and families about community-based care alternatives, in attempts to reduce nursing home admissions;
- Continuing to expand and enhance the availability of HCBS and potentially State Plan-funded community-based care; and
- Exploration of the care preferences and knowledge base of elders and their caregivers, as well as gathering information on the informal support networks that people are currently utilizing in lieu of seeking assistance from state programs.

1. Introduction

In 2007, Abt Associates Inc. ("Abt") was commissioned by South Dakota's Department of Social Services (DSS) to assess and evaluate the State's long-term care (LTC) system. Key findings from the Final Report from that study, "*Evaluation of Long-Term Care Options for South Dakota*," were as follows:

- Rapid projected growth in the elderly and disabled elderly population was expected to drive a sharp increase in the demand for LTC services.
- Elderly population growth was anticipated to be higher in the West River than the East River region, with counties around the Sioux Falls and Rapid City metropolitan areas experiencing the most dramatic growth.

Prior Report

Evaluation of Long-Term Care Options for South Dakota – Final Report

Released November 9, 2007

Available online at http://dss.sd.gov/news/2007/Final%20Report%20SD%20LTC%2011-9-07%20.pdf

- Existing State LTC capacity was judged insufficient to meet the coming demand, with nursing homes needing to be replaced and rebalanced, and assisted living capacity, home health care services, and home and community based services (HCBS) additionally requiring expansion.
- LTC workforce growth was additionally failing to keep pace with anticipated demand.

Subsequently, in 2008, the Department of Social Services initiated a Task Force on Long Term Care Services and Supports in South Dakota to address the analysis and opportunities brought forth in the Long Term Care Report. The Task Force was charged with making recommendations towards expansion of HCBS, right-sizing the LTC system, and remedying financing issues. Stakeholders including government agencies, providers, legislators, and other interested parties met over a period of months to make recommendations for South Dakota to move forward in improving access to services. Since the Task Force released its *"Final Report - Meeting the Continuum of Care Needs of the Elderly in South Dakota"* in November 2008, the State has taken steps to complete some of the Task Force's recommendations including:

- Implementation of a "no wrong door" Aging and Disability Resource Center (ADRC);
- Passage of legislation (Senate Bill (SB) 196) to amend the existing moratorium statute to allow for expansion of beds in areas of the state identified as being in high need for additional nursing facility services through a request for proposals (RFP) process, accompanied by an update to administrative rules to coincide with the moratorium statute change, following the Task Force's criteria for access critical designations; and
- Implementation of the Money Follows the Person rebalancing demonstration.

Other initiatives also bear mentioning. A Medicaid Solutions Workgroup convened during the 2011 Legislative Session to engage stakeholders to provide input and develop strategies to manage Medicaid expenditures in South Dakota and to develop recommendations to enhance the Medicaid program. The workgroup focused specifically on HCBS to develop recommendations on different service models to meet the needs of individuals requiring supports and services in the least restrictive and most appropriate environment, analyze opportunities available through the federal government,

and explore reimbursement models. The State has since implemented Money Follows the Person (as noted above) to help recipients of Medicaid transition from long-term care institutions to HCBS. Additionally, South Dakotans with chronic conditions or behavioral health conditions are now eligible to receive Health Home services through the creation of the Health Homes model.

In addition, the renewal of the Adult Services and Aging (ASA) Home and Community Based Services Waiver in October 2011 included an expansion to offer additional services of adult companionship and environmental accessibility adaptations. These services enable individuals to function with greater independence within their home.

Finally, a Dementia Care Workgroup convened following the 2013 Legislative Session to address concerns about Assisted Living regulations. The South Dakota Department of Health recently initiated the formal rules process to amend administrative rules regarding assisted living centers. The proposed changes would allow assisted living centers to admit and retain residents requiring dining assistance or needing additional staff for up to total assistance to complete activities of daily living or to turn or raise in bed and to transfer.

It is in this changing policy context that the Department of Social Services has commissioned Abt to perform an update of selected analyses from the 2007 report. In particular, using up-to-date data collected since the release of the prior report, we have updated forecasts of demographic trends in the elderly and disabled elderly population; descriptive findings on the current state of service delivery; and projected future demand for LTC services. In the remainder of this report, we first briefly describe study methods. We then summarize the results of these updated analyses, including a comparison with prior findings where relevant. We then conclude with a brief discussion of potential policy implications.

2. Methods

Abt Associates was contracted by the State to update analyses to assess and evaluate South Dakota's LTC system needs through the following three tasks.

Task 1: Updating Demographic Trend Challenges. Under this task, we updated projections of trends in the State elderly and disabled population over the next 20 years (through 2035), updating and extending the projections through the year 2025 appearing in Section 4.1.1 of the prior report.

Task 2: Updating Service Delivery Challenges. Under this task, we examined geographic variation in the distribution of LTC services across the State, including nursing homes, assisted living, home health, and HCBS. These analyses provide updated snapshots that may be directly compared to those appearing in Section 4.2 of the prior report.

Task 3: Projecting Future Demand for Long-Term Care Services. Finally, under this task we analyzed several alternative scenarios for future growth in demand for LTC services, particularly focused on identifying areas with the highest projected future unmet need. These analyses update parallel scenarios reported in Section 4.4 of the prior report.

In the remainder of this section, we describe the methodology and data sources for each of these three tasks in greater detail.

2.1 Task 1: Updating Demographic Trend Challenges

The elderly and the disabled are the two population cohorts most relevant for understanding South Dakota's future LTC needs. Our population projections include noninstitutionalized elderly and disabled individuals residing in the community or in assisted living facilities, as well as institutionalized elderly and disabled residing in nursing homes.

Noninstitutionalized Elderly Population Projections. Estimates of the 2010 noninstitutionalized elderly population come from the decennial U.S. Census. Our projections of growth in the noninstitutionalized elderly population through 2035 are based on data from the South Dakota State Data Center, as in the prior report.

In updating our analyses, we additionally reviewed population projections from the U.S. Census as a possible alternative data source; however, the Census program (Interim State Population Projections) to develop population projections at the county level was discontinued in 2005, so up-to-date county-level projections were not available. We therefore elected to continue using the South Dakota State Data Center projections.

We note, that, consistent with our review of data sources for the prior report, the State Data Center projections predict a higher rate of population growth in the elderly population for the state as a whole than do the Census projections. In particular, Census estimates project a 71 percent increase in the population aged 65 years or older between 2010 and 2035, as compared to a projected 89 percent increase in the State Data Center figures. For 2010, actual decennial Census elderly population totals for the State were approximately midway in between the older Census and State Data Center projections as cited in our prior report; while we cannot draw firm conclusions from this single data

point, it seems reasonable to consider the State Data Center projections as a likely upper bound on anticipated population growth.

Institutionalized Elderly Population Projections. 2008-2014 data on nursing home occupancy provided by South Dakota formed the base for our projections of the institutionalized elderly population. Trends in nursing home average daily census over that interval were extrapolated to produce estimates of the institutionalized population through 2035.

Disability Rates for Noninstitutionalized Population. We calculated the disability rate for the noninstitutionalized population by gathering disabilities data from 2008-2012 5-year American Community Survey (ACS) Summary File. The ACS provides estimates of disability rates separately for females 65-74, females 75+, males 65-74, and males 75+.

Note that disability estimates for our prior report were drawn from the 2000 decennial Census. The 2010 decennial Census no longer provides disability estimates at the county level. For this reason, we have turned to the ACS as an alternative data source for up-to-date disability estimates. Disability rates from the ACS for the noninstitutionalized elderly population range from 37-38 percent, as compared to the 43 percent rate from the 2000 Census as used in the prior report.

We applied the ACS disability rates to the population counts from corresponding age category and gender groups from the State Data Center projections to obtain projections of the total number of noninstitutionalized disabled by county. Note that this method implicitly assumes that disability rates within each age group and gender category will remain constant through 2035.

Our projections of the disabled population also include estimates of the assisted living population extrapolated from 2003-2005 Health Care Facilities reports and 2014 Assisted Living bed count survey data provided by South Dakota.

Disability Rates for Institutionalized Population. In the prior 2007 report, we assumed a 96 percent disability rate among nursing home residents, based on the 2004 National Nursing Home Survey (NNHS). Since the NNHS is no longer updated, for this report we have instead used data from the Center for Medicare & Medicaid Services (CMS) Nursing Home Compare website on disability rates in South Dakota nursing homes. In particular, we now assume a disability rate of 74 percent based on the average proportion of South Dakota nursing home residents requiring assistance with one or more activities of daily living (ADL) in 2011-2013. We applied this rate to the institutionalized population projections from the Nursing Home Facility data to obtain counts of the disabled institutionalized population by county.

Summary. For quick reference, the summary table below provides an overview of data for our population projections under this task.

Data Source	Description
South Dakota State Data Center	65+ noninstitutionalized population projections
American Community Survey	Noninstitutionalized population disability rates
Nursing Home Occupancy Reports (2008-2014)	Institutionalized population
CMS Nursing Home Compare (2009-2013)	Institutionalized population disability rates
South Dakota DSS Survey Data (2014)	Assisted Living Facilities population (2014)
South Dakota Facilities Reports (2003-2005)	Assisted Living Facilities population (2003-2005)

2.2 Task 2: Updating Service Delivery Challenges

To analyze service delivery challenges, we assessed the availability of and need for services in nursing homes, assisted living, home health, and home and community-based services.

Nursing Homes. To compare South Dakota nursing home utilization rates to national rates, we utilized 2011 (the most recent) data available from the Kaiser Family Foundation[1] to determine the number of nursing home beds in each state. We calculated the utilization rate by dividing by the elderly population – 65 and over – in each state from the American Community Survey 2011 1-year dataset.

We also relied upon 2008 – 2014 Nursing Home occupancy data and 2009 – 2012 Nursing Facility Patient Origin data provided by South Dakota to estimate licensed beds in use, maximum licensed beds, and nursing home travel patterns. South Dakota also provided data on nursing home case mix and current moratorium beds.

Assisted Living. We utilized Assisted Living Center survey data provided by South Dakota to identify licensed assisted living beds by county.

Home Health. To compare South Dakota's home health episodes to national figures, we used summary administrative data on Medicare home health visits from the CMS Chronic Conditions Data Warehouse (CCW) as provided by the Centers for Disease Control and Prevention (CDC) Health Indicators Warehouse. Medicaid- and Medicare certified home health agencies serving each South Dakota county were identified using data from Home Health Compare.

Adult Day Services. We accessed South Dakota's Department of Social Services website to identify adult day services available by county.

Senior Citizens Centers, Adult Nutrition Programs, and In-Home Providers. South Dakota provided us with a recent list (April 2014) of Senior Citizens Centers in South Dakota as well as data on Nutrition Programs and unduplicated In-Home Providers.

Summary. For quick reference, the summary table below provides an overview of data sources for our descriptive analysis of service delivery challenges.

Data Source	Description
CDC Health Indicators Warehouse	Medicare Home Health Episodes by State
Adult Day Services (DSS website)	Adult Day Services by County
American Community Survey	Elderly Population by State
South Dakota DSS Survey Data	Licensed Assisted Living Beds
Home Health Compare	Medicaid- and Medicare-Certified Home Health Agencies
Kaiser Family Foundation	Nursing Home Utilization Rates by State
Nursing Facility Patient Origins (provided by DSS)	Nursing Home Travel Patterns
Nursing Home Compare	Nursing Facility Case Mix

[1] Accessible at http://kff.org/other/state-indicator/number-of-nursing-facility-beds/.

Data Source	Description
Nursing Home Occupancy Reports (2008-2014)	Licensed beds in use, maximum licensed beds
Senior Citizens Centers, Adult Nutrition Programs, Homemaker Agencies, and In-Home Provider consumers (provided by DSS)	Home and community based services provider by county; listing of homemaker agencies is made up of those agencies with an established relationship with the State to provide home health services and is not an all-inclusive list.

2.3 Task 3: Projecting Future Demand for Long-Term Care Services

Under Task 3, we project future demand for LTC services based on projections of the elderly and disabled elderly population as produced under Task 1, and extrapolations from recent LTC service utilization levels and trends as described under Task 2.

Nursing Home Utilization. Based on the most recent available data, we estimate that, since the year 2000, nursing home utilization rates as a percentage of the elderly population in South Dakota have declined from 6.4 percent to 4.7 percent (2010-2014 average). This compares to a somewhat slower nationwide decline from 4.2 percent to 3.2 percent over approximately the same interval.[2] Our projections of future demand for LTC services extrapolate from recent State trends to characterize demand under several different possible future scenarios for nursing home utilization.[3]

- Scenario A: Our baseline projections assume that nursing home utilization rates persist at recent levels. In particular, we assume that the nursing home utilization rate will **remain at its 2010-2014 average level of 4.7 percent of the elderly population**.

  This projection scenario methodology mirrors the baseline projections provided in the 2007 Final Report to enable direct comparison. However, we note that, given the recent sharp decline in nursing home utilization in South Dakota as described above, it appears unlikely that future utilization rates will in fact remain fixed at this level as assumed. The two alternative future scenarios considered below, which assume continued declines in utilization rates moving forward, may therefore more realistically depict actual future trends.

- Scenario B: Under the first alternative future scenario we consider, we assume that the recent steep decline in nursing home utilization rates in South Dakota relative to national trends will moderate somewhat in coming years. In particular, we assume that the nursing home utilization rate will **decline by 0.09 percentage points per year, or approximately one half the 2000-2014 rate of decline**.

- Scenario C: Under the second alternative future scenario we consider, we assume that nursing home utilization rates in South Dakota will continue to decline more steeply than recent national trends, ultimately converging to national average rates by 2035. In particular, we assume that the

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2 National utilization data are only available through the year 2012.

3 Note that, unlike demand scenarios in the prior Final Report, these projections extrapolate from both recent State trends and national trends. In this sense, these projections represent an improvement over those from the prior report, for which data availability limited our ability to make use of more relevant State-level data.

nursing home utilization rate will **decline by 0.14 percentage points per year, reaching a rate of 1.2 percent by 2035**.

Assisted Living Utilization. Under the baseline scenario (Scenario A), utilization of assisted living is also assumed to continue at its current 2010-2014 average level, or 2.6 percent of the elderly population. Under the two alternative scenarios, in contrast, assisted living demand is assumed to rise as a greater proportion of elders and disabled elders seek alternative LTC services. In particular, we assume that one half of individuals residing in nursing homes under the baseline scenario who no longer reside in nursing homes under each alternative scenario instead seek assisted living services, while the other half remain in the community.

Disability Rates. Our estimates of disability rates rely on existing data on current disability rates in each setting. In particular, for nursing homes, we use data from 2011-2013 as reported by Nursing Home Compare to estimate the current distribution of limitations in activities of daily living (ADLs) in South Dakota nursing homes. For assisted living, we assume that the current distribution of ADL limitations in South Dakota assisted living facilities is consistent with national data from the Centers for Disease Control and Prevention (CDC) National Survey of Residential Care Facilities (NSRCF) for 2010, the most recent available data.

Under the baseline scenario, the distribution of ADL limitations in each setting is then assumed to remain constant over time. Under the two alternative scenarios, we assume that those individuals residing in nursing homes under the baseline scenario who no longer reside in nursing homes under the alternative scenarios will be comprised of individuals with the highest functional status. That is, individuals with 0 or 1 ADL limitations will be the first to exit nursing homes to seek alternative care, followed by those individuals with 2 ADL limitations, and so on.

Comparing Supply and Demand. Finally, under each scenario, we compare projected future demand to existing supply at the county level in order to characterize gaps and excesses. For nursing homes, we assume supply is limited at current moratorium levels in each county, though as noted above we are aware that, in practice, SB 196 permits the Department of Health to reallocate beds across nursing homes, and recent changes to administrative requirements allow the Department to solicit proposals from facilities to address unmet nursing home or nursing home bed needs in select areas. For assisted living, we assume that supply will increase by approximately 1.5 percentage points per year, consistent with our assumption in the prior report and in line with recently observed trends.

Summary. For quick reference, the summary table below provides an overview of data sources for our projections of future demand for LTC services

Data Source	Description
South Dakota State Data Center	65+ noninstitutionalized population projections
American Community Survey	Noninstitutionalized population disability rates
Nursing Home Facilities Files (provided by DSS)	Licensed nursing home beds in use (2000-2014)
Assisted Living Facilities Files (provided by DSS)	Licensed assisted living beds in use (2000-2014)
Nursing Home Compare	ADL limitations in South Dakota nursing homes
National Survey of Residential Care Facilities	ADL limitations in assisted living facilities

3. Demographic Trend Challenges

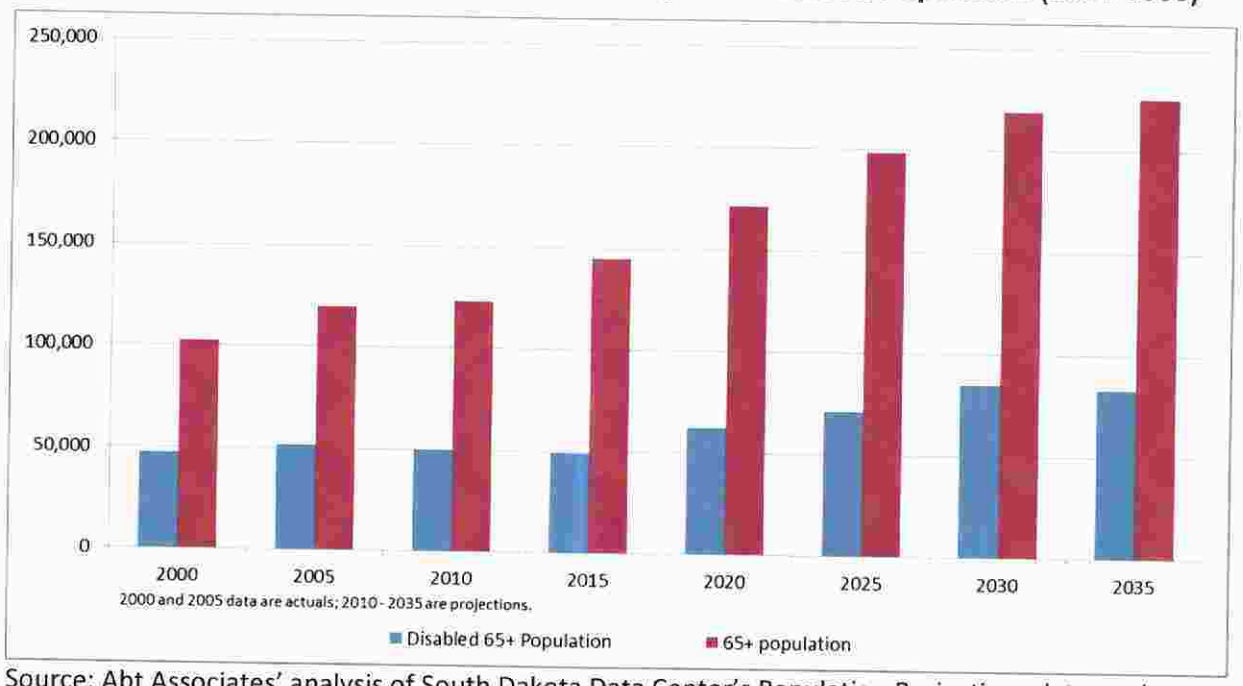
In this section, we describe updated projections of the elderly and elderly disabled populations in South Dakota through 2035, including a comparison to projections through 2025 as appearing in our prior 2007 report.

3.1 Statewide Population and Disability Rates

In the 2007 report, we projected a sharp increase in the demand for LTC services in South Dakota, driven by an increase in the number of individuals and disabled individuals over age 65. In particular, based on South Dakota State Data Center population projections, we previously anticipated an increase of roughly 100,000 elders between 2000 and 2025, paired with an increase of 50,000 or slightly fewer disabled elders over the same time period.

Exhibit 1 shows actual population totals for 2000-2010 accompanied by updated population projections through the year 2035.

Exhibit 1. Projections of South Dakota's Elderly and Disabled Population (2000-2035)



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey.

Through the 2010 decennial Census, actual growth in the elderly and elderly disabled populations was somewhat lower than projections in the prior report. Accordingly, the South Dakota State Data Center has revised projected growth rates modestly downward since that time. Based on these revised estimates, we now project that:

- The number of elders (over age 65) will increase by about 84 percent in the year 2035 relative to decennial Census totals in the year 2010, increasing by approximately 103,000 to 226,000.

- The number of disabled elders will peak in 2030, increasing by about 33,000 to 85,000, or 71 percent higher than the decennial Census year 2010 total; by 2035, this number will fall slightly as the relative proportion of younger elderly individuals (aged 65-74) increases in relation to the proportion of older elderly individuals (aged 75+).

3.2 Geographic Variation in Population Growth

Although projected growth in the elderly population overall has slowed relative to past projections, it remains the case that growth rates and associated demand for LTC services are not evenly balanced across the State.

As in the prior report, we have used DSS Economic Assistance Regions in our analyses of geographic differences in population growth, since they are large enough to capture significant economic and demographic trends but small enough so that they capture the significant diversity in LTC services and utilization across the State.[4] Exhibits 2 through 8 show projections of the numbers of elders (over age 65) in each of the eight DSS Economic Assistance Regions for the years 2010, 2015, 2020, 2025, 2030, and 2035, respectively. Projections are aggregated from county-level estimates produced by the South Dakota Data Center and the U.S. Census, and reflect projected in-migration, out-migration, and death rates for the population.

Local LTC services will be stressed both by growth in the numbers of seniors as well as by high rates of growth in demand for care: Exhibit 9 highlights counties where the population of seniors is expected to more than double between 2010 and 2035. Exhibits 10 through 16 describe growth in the numbers of disabled elders from 2010 to 2035, again by region. Exhibit 17 highlights counties where the population of disabled elders is expected to more than double between 2010 and 2035. Finally, Exhibits 18 and 19 summarize the population projections by Economic Assistance Region in tabular form.

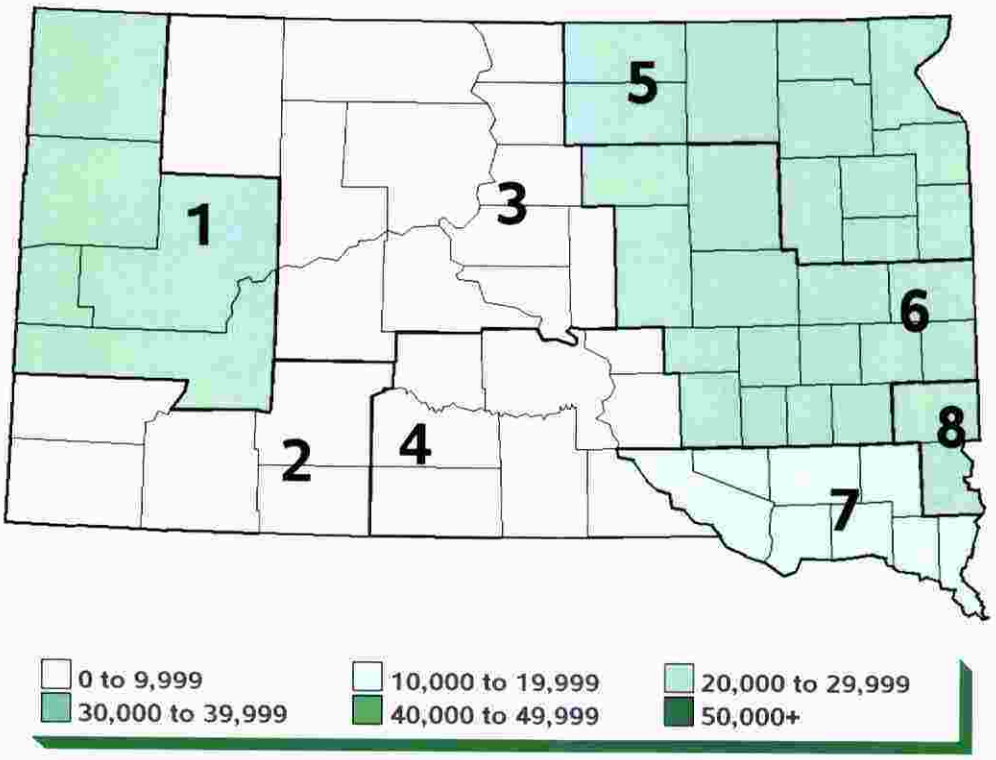
Overall, the geographic variation in growth rates across Economic Assistance Regions in this updated report is similar to that seen in the prior report. In particular:

- Growth rates for the elderly and disabled elderly population are again projected to be greater in West River (Regions 1 and 2) than East River (Regions 5 through 8).
- The regions including the Sioux Falls metropolitan area (Region 8) and the Rapid City/Northwest counties (Region 1) continue to exhibit the fastest rates of anticipated growth, as well as the largest growth in the overall numbers of elders. However, as with total projected Statewide growth, overall growth rates from 2010 to 2035 are now projected to be more moderate previously projected for Regions 1 and 8 for the years 2000 to 2025 in the prior report.
    - Specifically, the Region 1 elderly population was previously projected to grow by 250 percent from 2000 to 2025; updated projections now indicate a 110 percent increase from 2010 to 2035.

[4] Note that since the previous report, Turner County has moved from Economic Assistance Region 8 to Economic Assistance Region 7. This change does not substantively influence our findings, but should be noted when comparing figures for these two Economic Assistance Regions across the earlier 2007 report and these updated analyses.

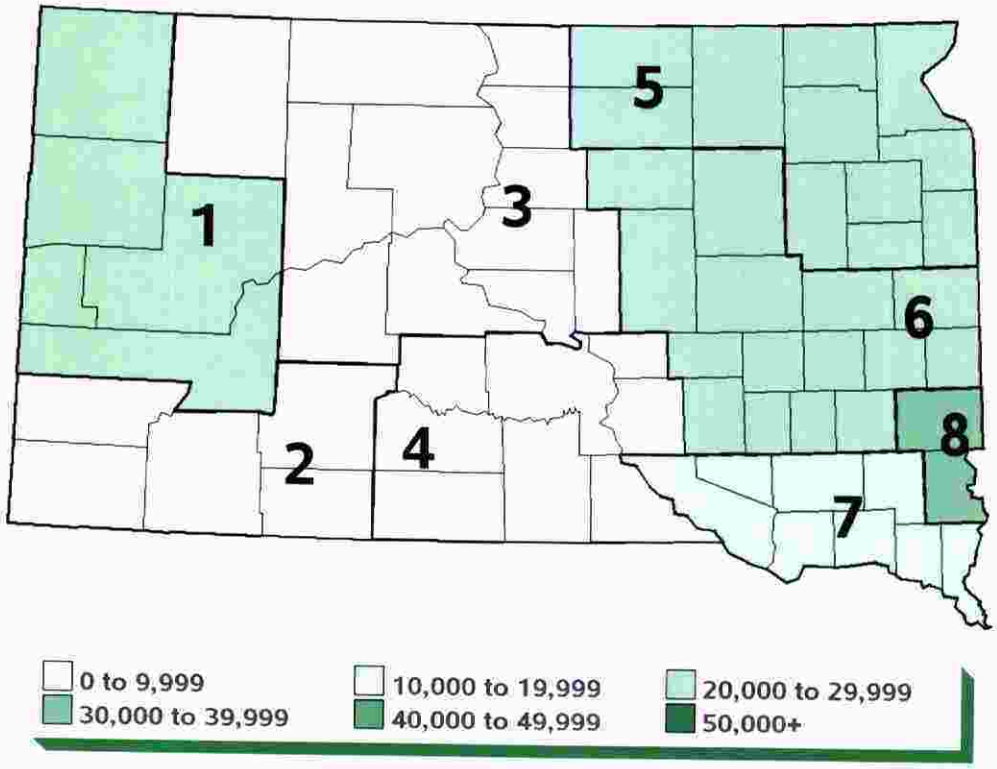
  - For Region 8, the elderly population was projected to increase 235 percent from 2000 to 2025, as compared to a 170 percent increase from 2010 to 2035 in the updated projections.
- Growth in both Region 1 and Region 8 continues to be fueled by the migration of seniors from frontier areas towards urban areas and medical centers.
- In 2000, there were 22 counties where the elderly population exceeded 20 percent of total residents in the county. By 2010, there were 42 counties where the elderly population exceeded 20 percent of total residents.
- By 2035, in all but 10 South Dakota counties elders will make up over 20 percent of the population. In 27 counties, elders will be over 40 percent of the local population. Even in the growing population centers, around Sioux Falls and Rapid City, elders will make up 29-30 percent of residents.

Exhibit 2. Number of Elderly Residents 65+, South Dakota, 2010



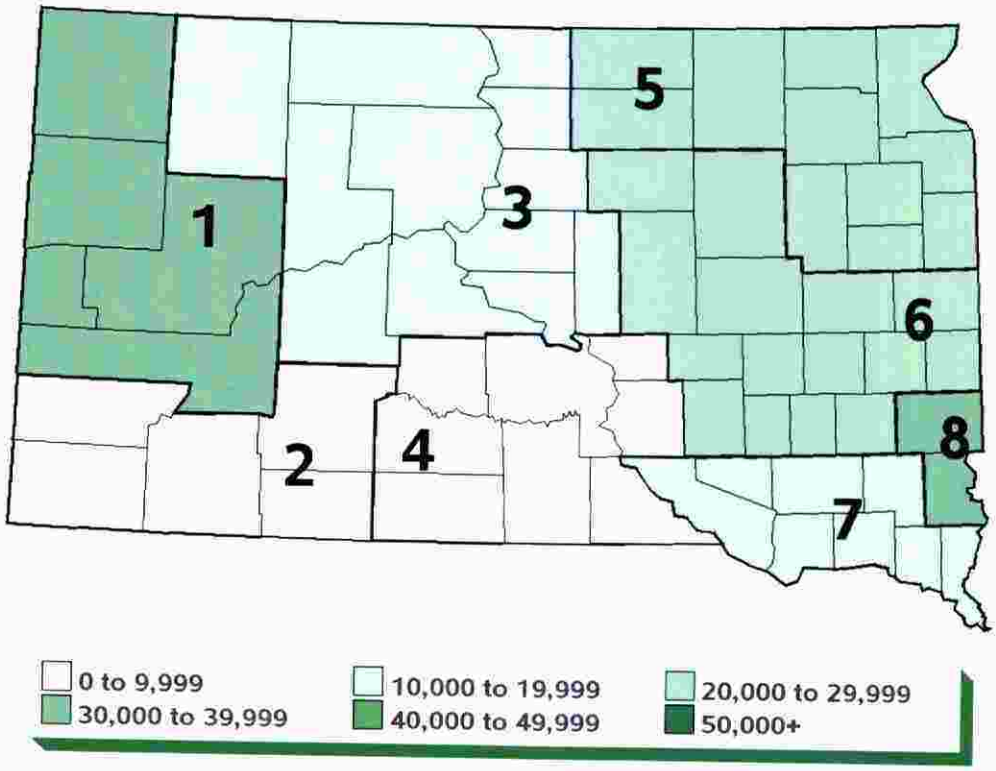
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 3. Number of Elderly Residents 65+, South Dakota, 2015



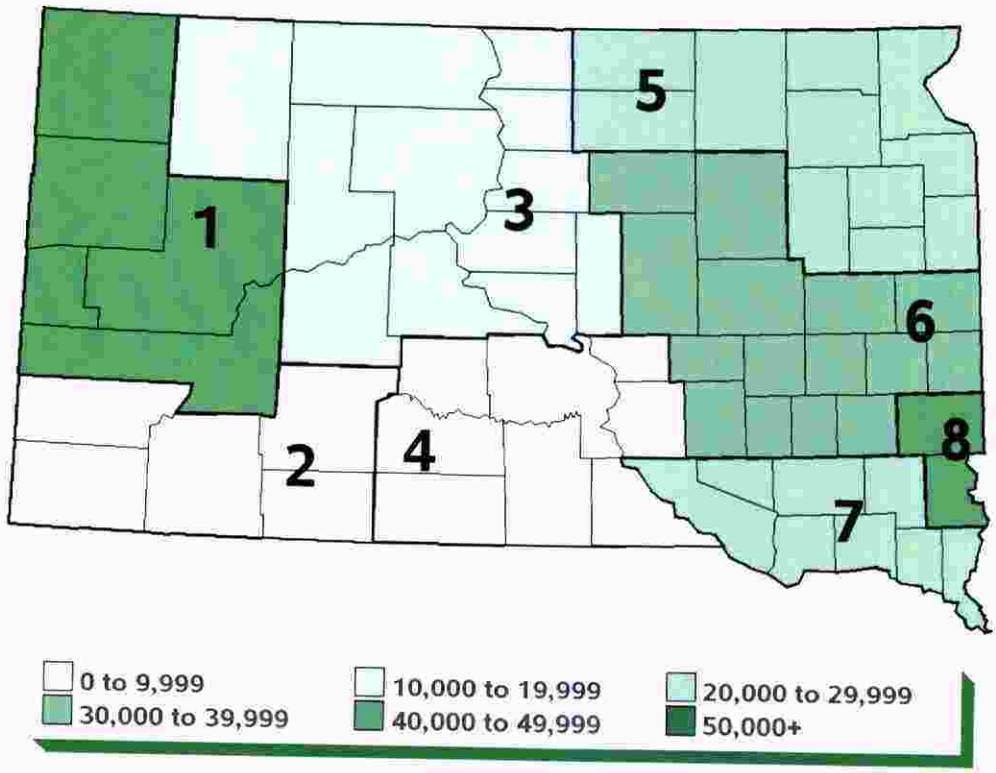
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 4. Number of Elderly Residents 65+, South Dakota, 2020



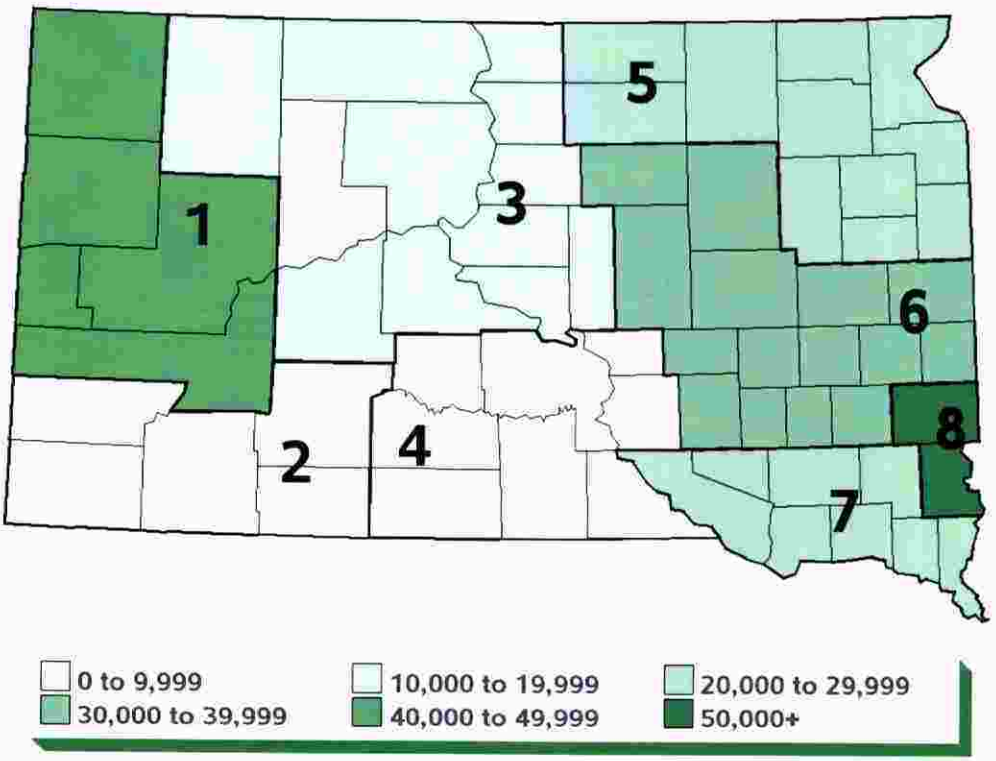
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 5. Number of Elderly Residents 65+, South Dakota, 2025



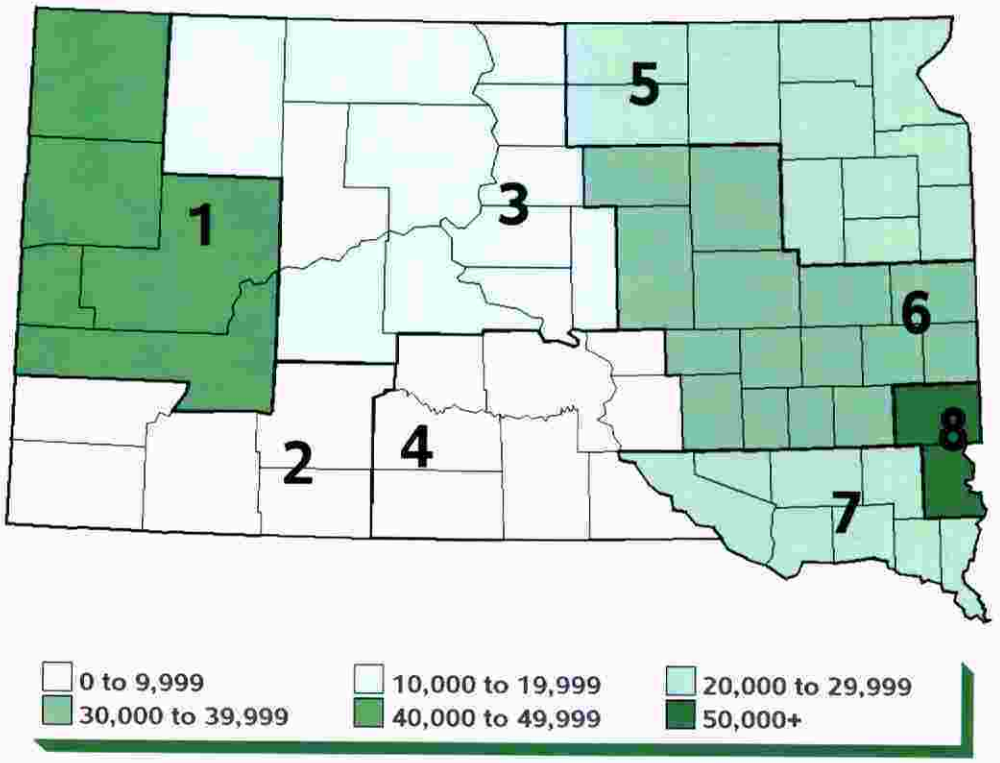
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 6. Number of Elderly Residents 65+, South Dakota, 2030



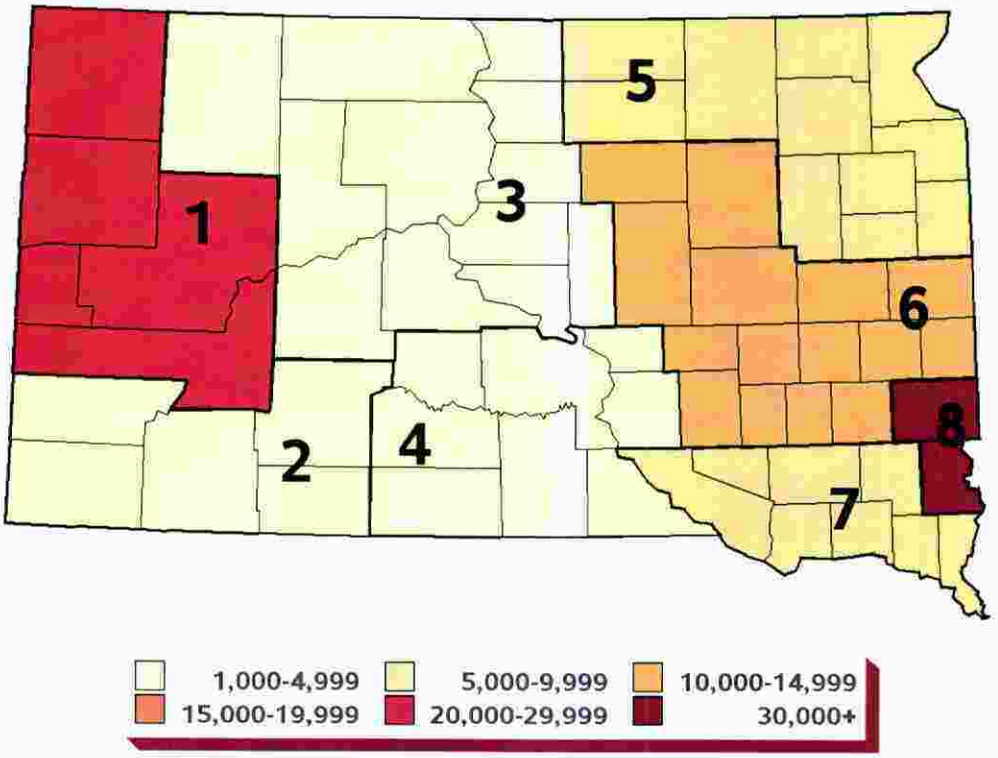
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 7. Number of Elderly Residents 65+, South Dakota, 2035



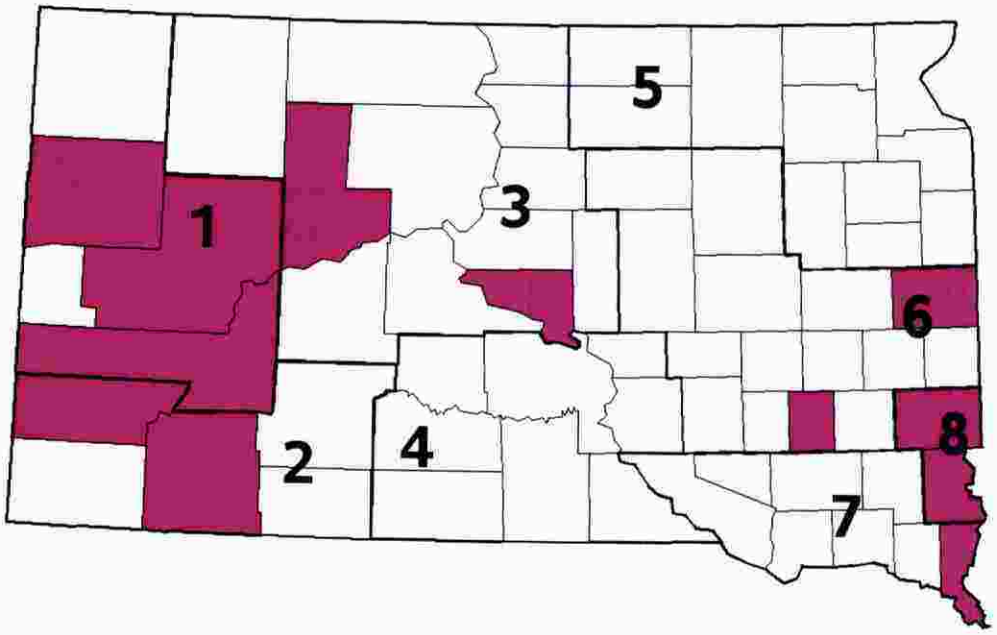
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 8. Increase in Number of Elderly 65+ Residents, South Dakota, 2010 – 2035



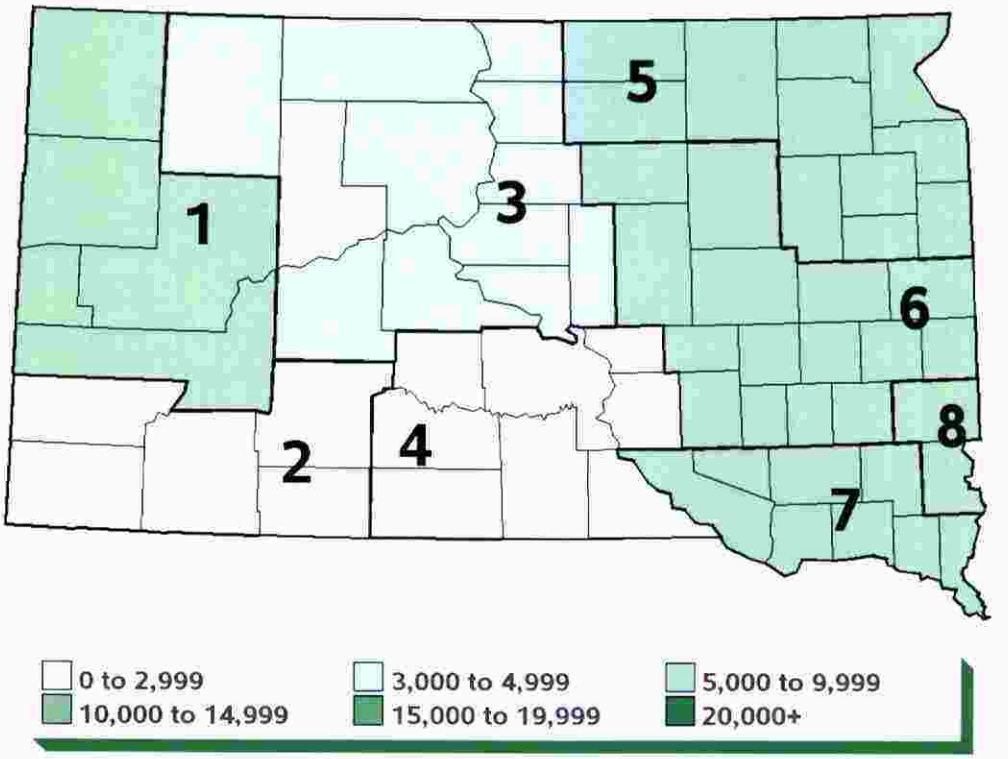
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 9. South Dakota Counties Where Elderly Population Is Expected to Double from 2010 to 2035 (in Dark Pink)



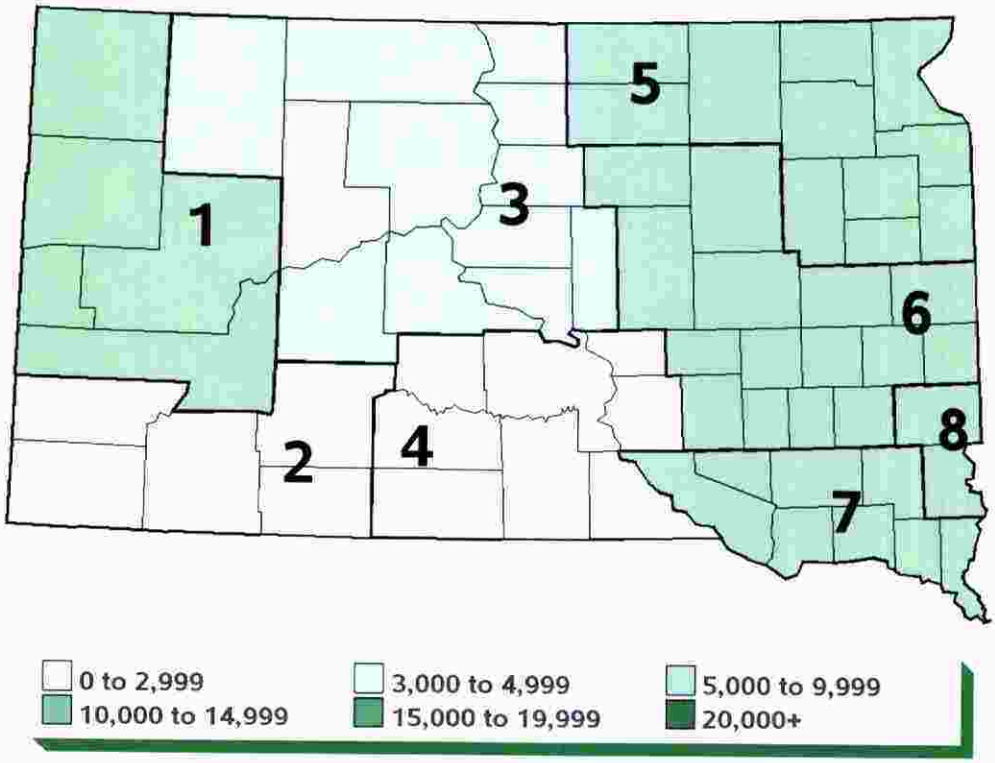
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 10. Number of Disabled Elderly Residents 65+, South Dakota, 2010



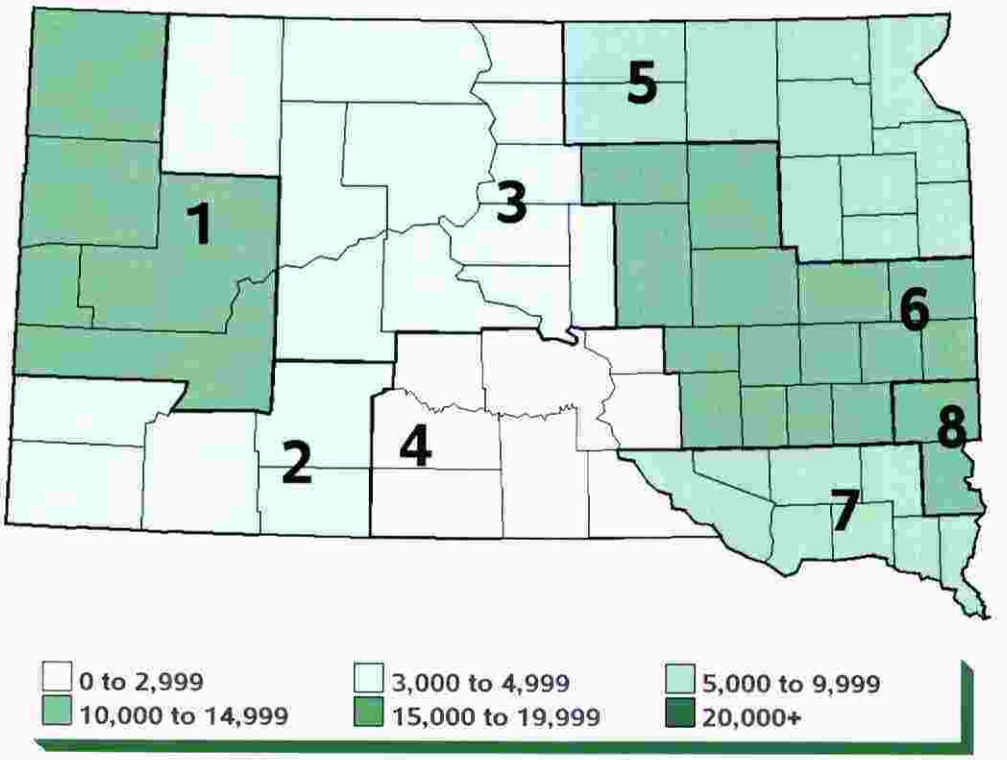
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 11. Number of Disabled Elderly Residents 65+, South Dakota, 2015



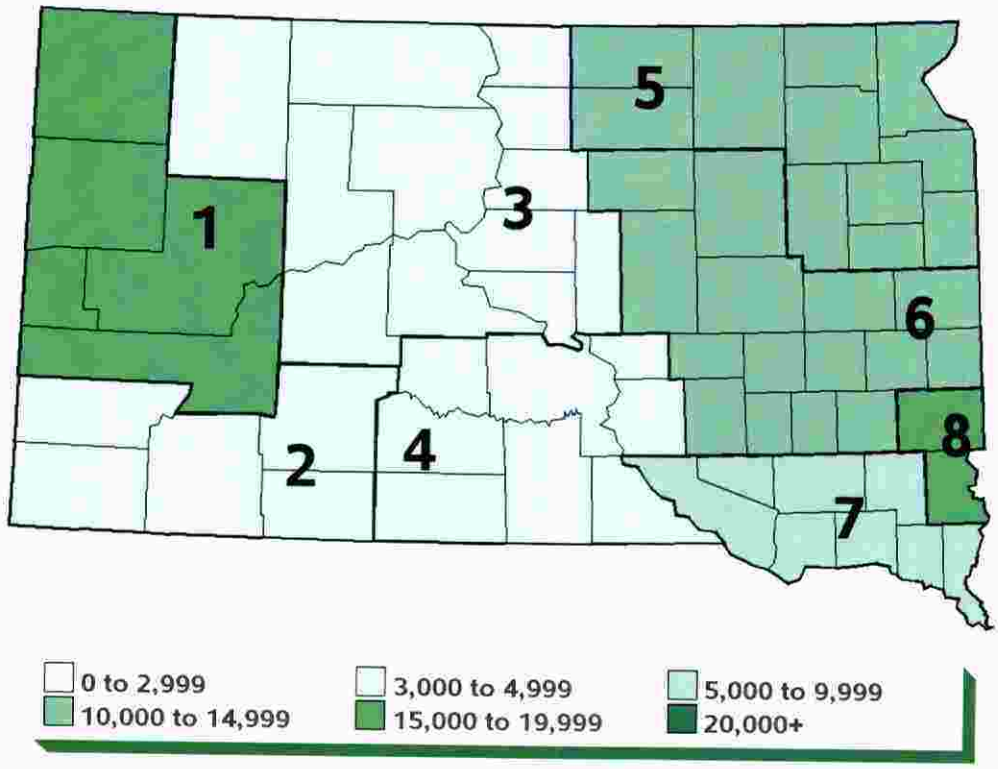
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 12. Number of Disabled Elderly Residents 65+, South Dakota, 2020



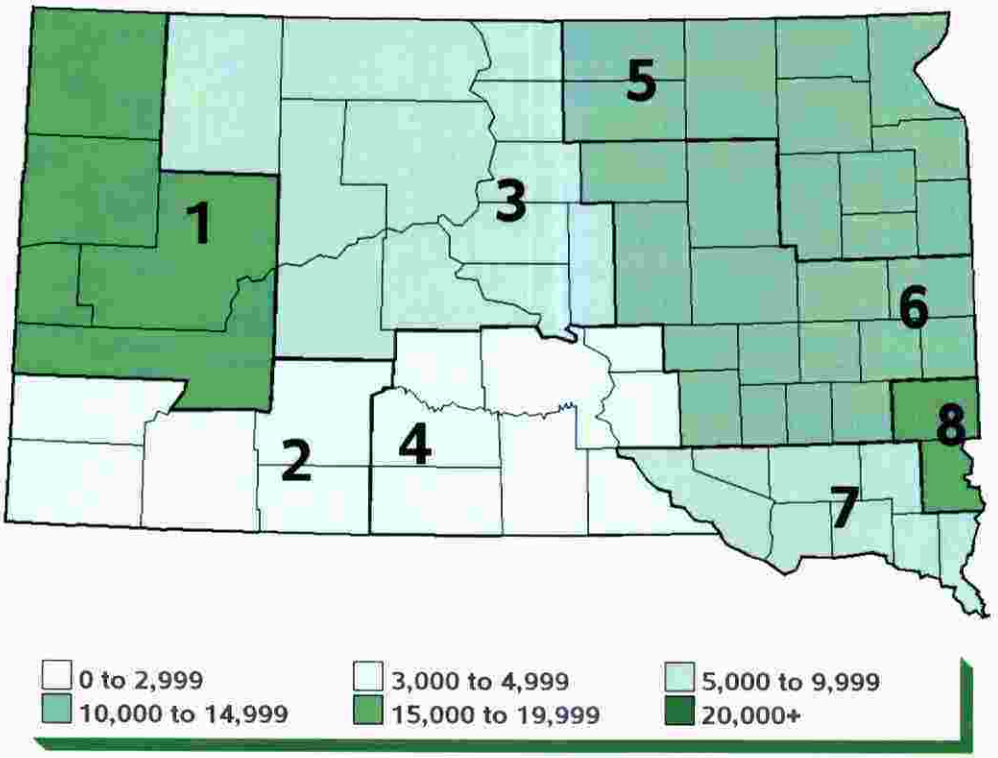
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 13. Number of Disabled Elderly Residents 65+, South Dakota, 2025



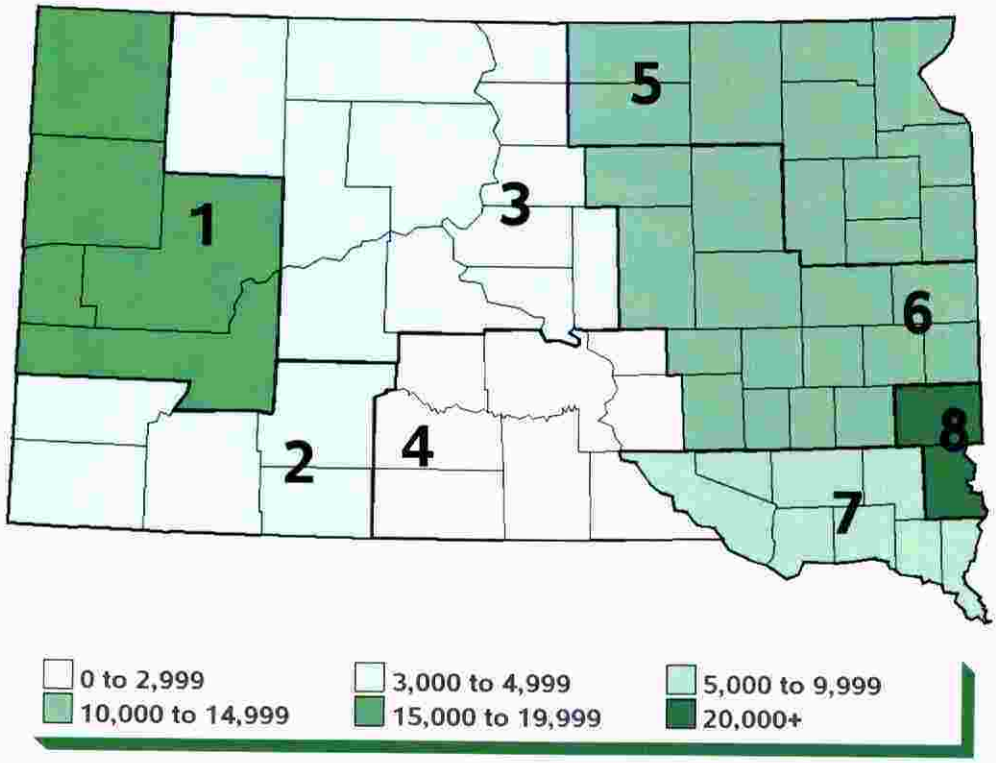
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 14. Number of Disabled Elderly Residents 65+, South Dakota, 2030



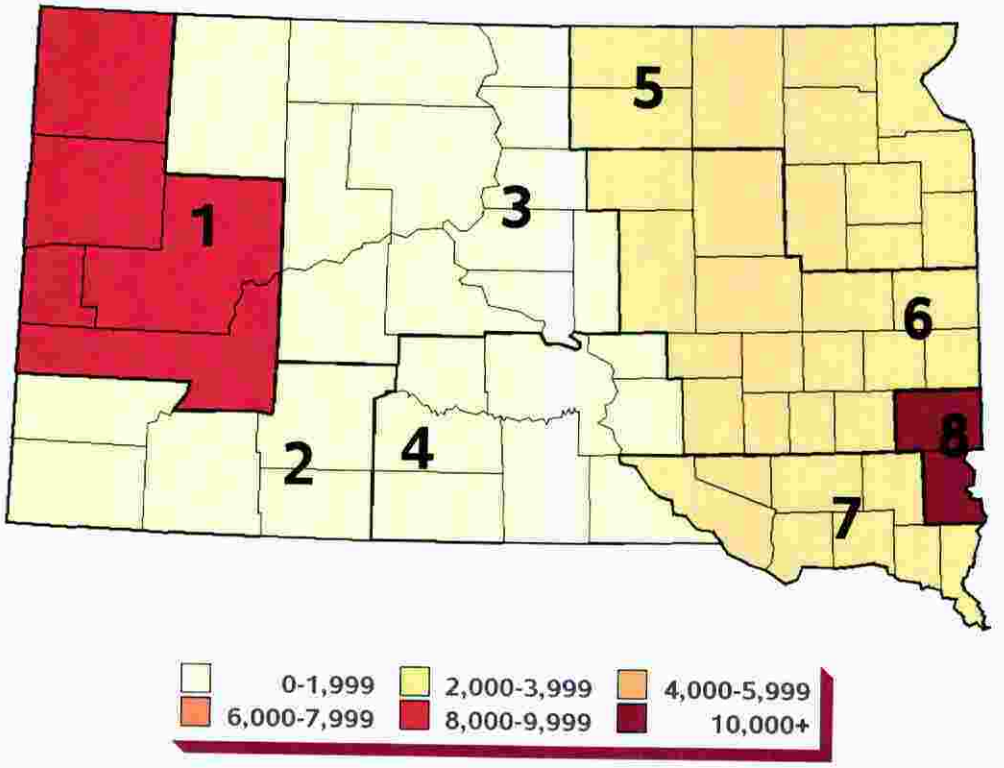
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 15. Number of Disabled Elderly Residents 65+, South Dakota, 2035



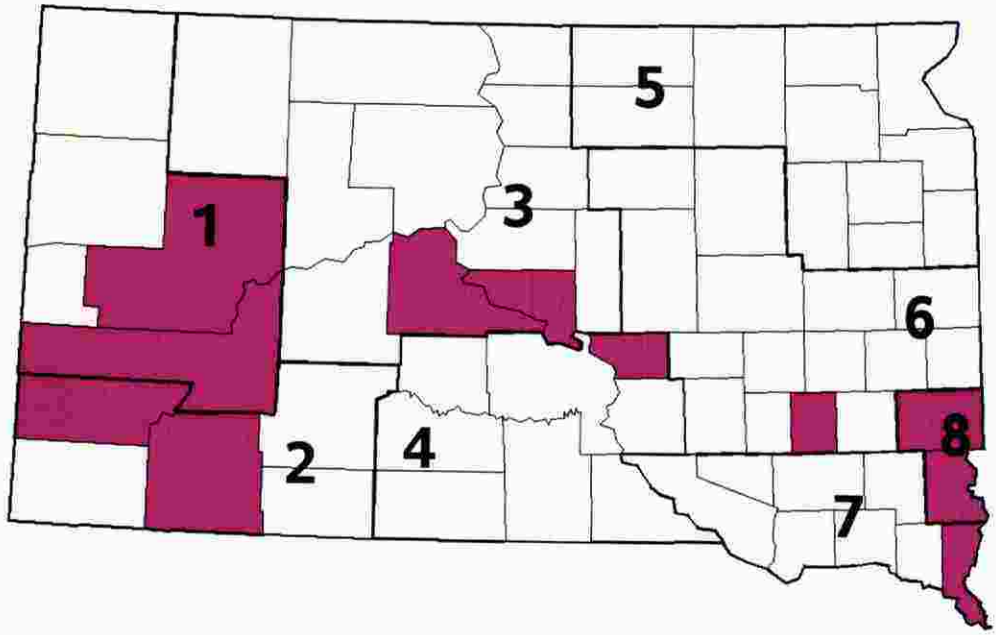
Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 16. Increase in Number of Disabled Elderly 65+ Residents, South Dakota, 2010 – 2035



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 17. South Dakota Counties where the Elderly Disabled Population is expected to double from 2010 to 2035 (in Dark Pink)



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

Exhibit 18. Projections of Elderly 65+ Population, South Dakota, by Economic Assistance Region, 2010-2035

EAR	2010	2015	2020	2025	2030	2035
1	23,156	28,770	35,615	42,176	46,797	48,258
2	5,173	6,474	7,805	8,870	9,500	9,566
3	8,310	9,419	10,595	11,716	12,198	11,792
4	5,071	5,569	6,116	6,591	6,642	6,179
5	20,838	23,130	25,908	28,518	30,164	29,634
6	21,096	23,450	26,919	30,193	32,022	31,620
7	15,301	17,222	19,586	22,010	23,645	23,950
8	23,917	30,541	38,981	48,467	57,917	64,746
Total	122,862	144,575	171,527	198,542	218,886	225,744

Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data.

Exhibit 19. Projections of Disabled Elderly 65+ Population, South Dakota, by Economic Assistance Region, 2010-2035

EAR	2010	2015	2020	2025	2030	2035
1	9,155	9,938	12,739	15,409	18,298	18,563
2	2,065	2,335	3,005	3,357	3,879	3,763
3	3,404	3,392	4,111	4,439	5,094	4,809
4	2,511	2,472	2,845	3,124	3,386	2,999
5	8,508	7,898	9,725	10,353	12,061	10,963
6	8,633	8,070	10,055	10,747	12,631	11,629
7	6,307	5,666	7,160	7,670	9,253	8,531
8	9,187	9,358	12,571	16,021	20,255	21,556
Total	49,770	49,129	62,211	71,120	84,857	82,812

Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, and American Community Survey data.

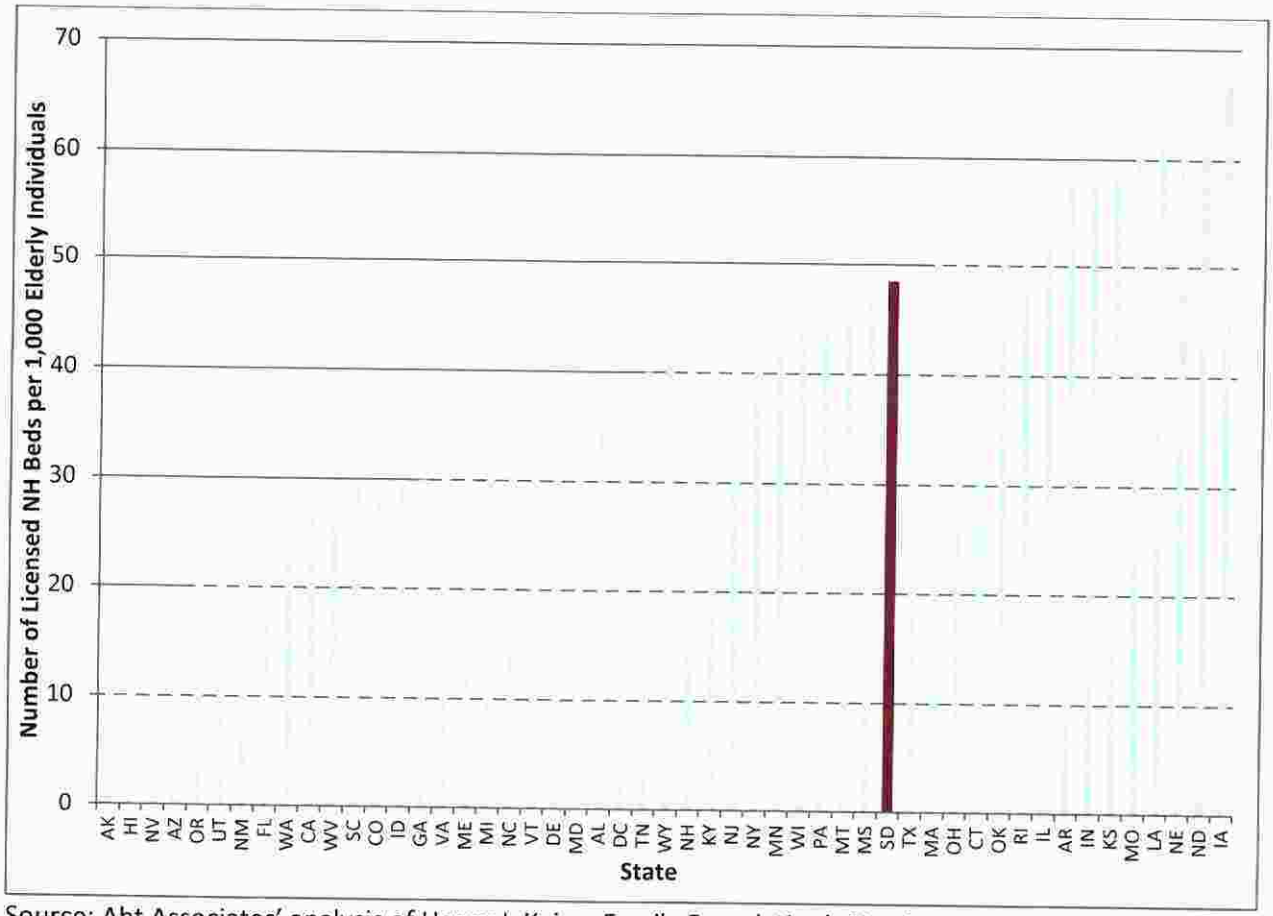
4. Service Delivery Challenges

This section provides evidence on the distribution of existing LTC services across South Dakota, and considers that service distribution in relation to projected future demands on the LTC system. As in the prior report, we discuss services at the State level and also examine geographic variation, making use of the DSS Economic Assistance Regions for most analyses. In particular, we focus on variation in service availability, gaps in coverage and mismatches between where services are and where the growth in the population of elders is the greatest.

4.1 Nursing Homes

Nursing home capacity and utilization rates have continued to drop both in South Dakota and nationwide since the release of the prior final report. In 2006, the most recent data available for the prior report, South Dakota ranked tenth in the nation in terms of nursing home capacity, with 61 licensed beds per 1,000 elders. By 2011, that number had dropped substantially to 48 licensed beds per 1,000 elders, sixteenth nationwide (Exhibit 20). Though South Dakota's capacity remains higher than national averages, the drop between 2006 and 2011 indicates that the gap is shrinking.

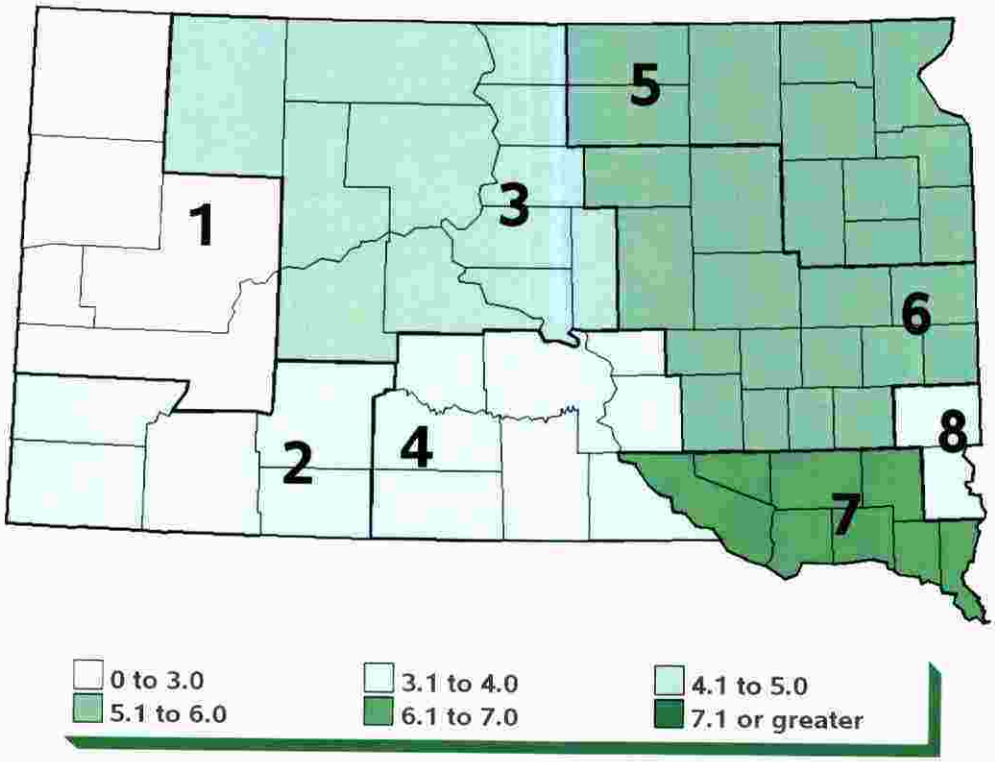
Exhibit 20. National Comparison of State Nursing Home Capacity, 2011



Source: Abt Associates' analysis of Henry J. Kaiser Family Foundation's Nursing Home Beds data and American Community Survey data. South Dakota utilization rates appear in red.

The number of licensed nursing facility beds in use per 100 elderly individuals has declined slightly from 2003-2005 levels, with a minimum of 2.6 beds in use per 100 elderly individuals in Economic Assistance Region 1 and a maximum of 6.4 beds in use per 100 elderly individuals in Economic Assistance Region 7. As in the prior report, utilization rates are substantially higher in the East River regions (5 through 8) than in the West River regions (1 and 2).

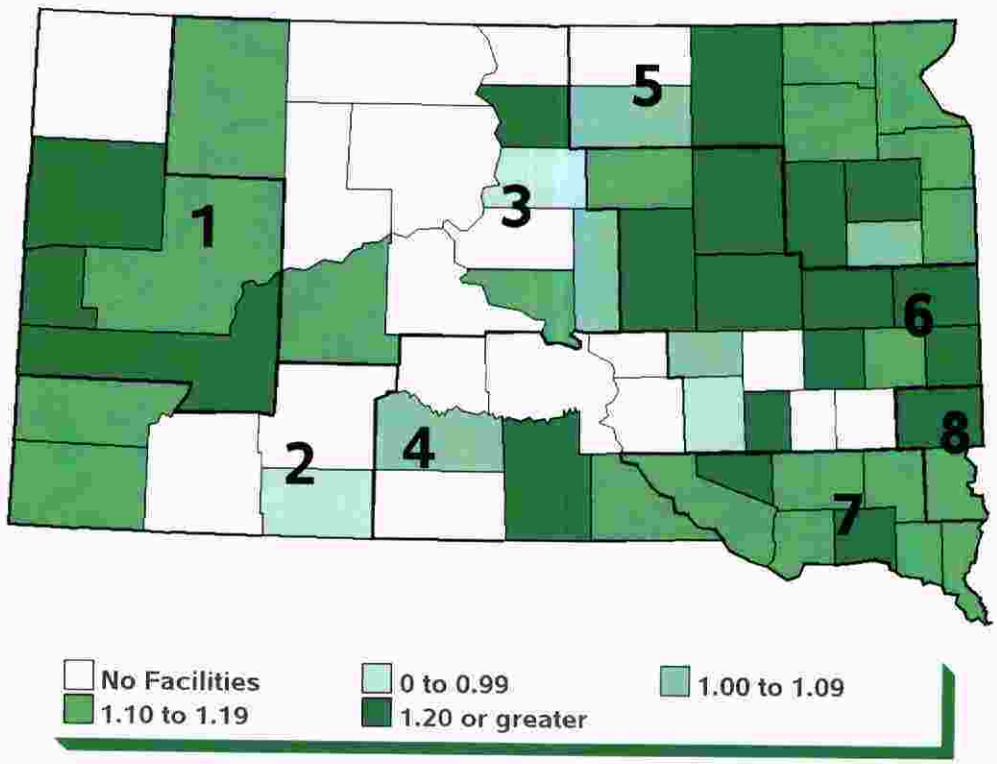
Exhibit 21. Number of Licensed Beds in Use per 100 Elderly Individuals, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota's Nursing Facilities Data and Nursing Home Compare data.

Medicaid case mix weights reflect the severity or complexity of care needs among nursing home residents. In 2013, case mix weights have risen somewhat from the 2005 values as documented in our prior report; however, the geographic distribution remains similar, with the highest case mix weights in the same counties (Exhibit 22). This suggests that constraints on service delivery remain in the same geographic regions as in the prior report; it could additionally suggest that less-impaired individuals are differentially moving to less intensive LTC settings, such as assisted living.

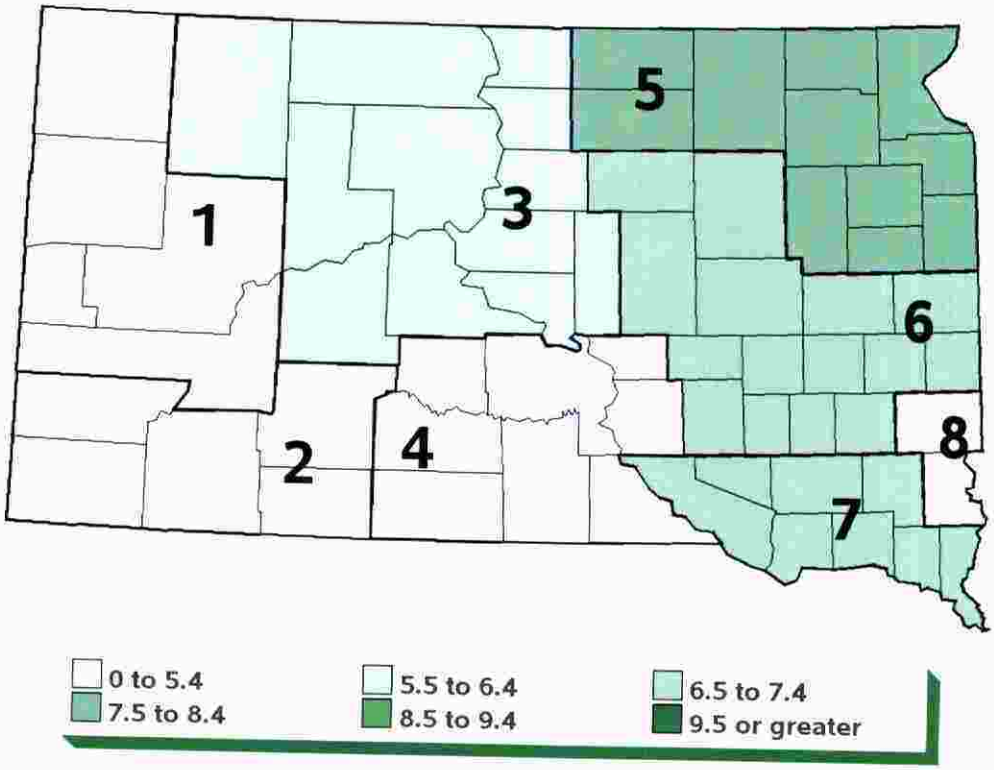
Exhibit 22. Nursing Facility Medicaid Case Mix Variation by County, South Dakota, 2013



Source: Abt Associates' analysis of South Dakota's Nursing Facilities Case Mix Data.

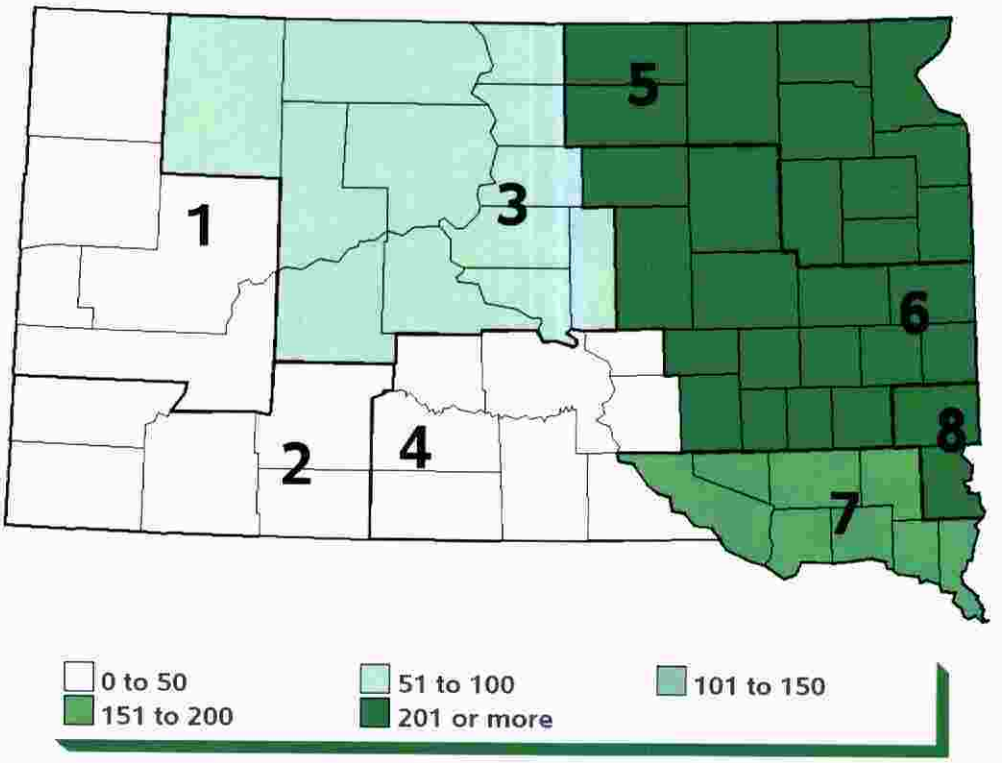
Although the passage of SB196 in 2012 has facilitated some geographic shifts in moratorium beds, the overall distribution of moratorium beds per 100 elderly residents (Exhibit 23) has remained similar since the prior report. It is therefore unsurprising that the East River region of the State (Regions 5 through 8) continues to have the greatest moratorium bed capacity and the greatest difference between moratorium bed capacity and the number of licensed beds that have recently been in use (Exhibit 24), with lower capacity and a smaller difference in West River. As growth of the elderly population is still projected to be largest in urban areas around Sioux Falls and Rapid City, additional shifting of beds may be required to appropriately accommodate the growing number of seniors.

Exhibit 23. Number of Nursing Facility Moratorium Beds per 100 Elderly Individuals, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota's Nursing Facilities Data, South Dakota Department of Social Services' Occupancy Report, and Nursing Home Compare data.

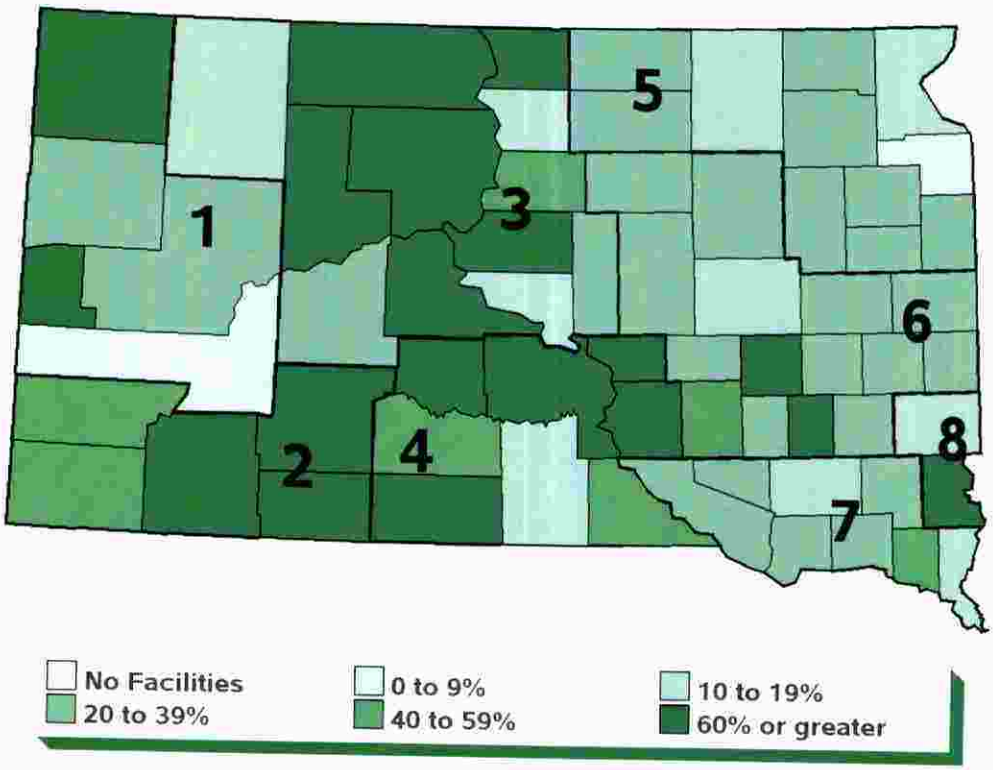
Exhibit 24. Difference between Moratorium and Maximum Licensed Nursing Facility Beds, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota's Nursing Facilities Data, South Dakota Department of Social Services' Occupancy Report, and Nursing Home Compare data.

Finally, in general, nursing home travel patterns in 2012 (Exhibit 25) remained similar to patterns in the 2007 report, with relatively few South Dakotans leaving their home counties overall. Those that did leave their counties tended to reside in higher-occupancy counties and/or counties with older nursing homes, indicating a continued preference for newer facilities.

Exhibit 25. Nursing Home Travel Patterns, South Dakota, 2012



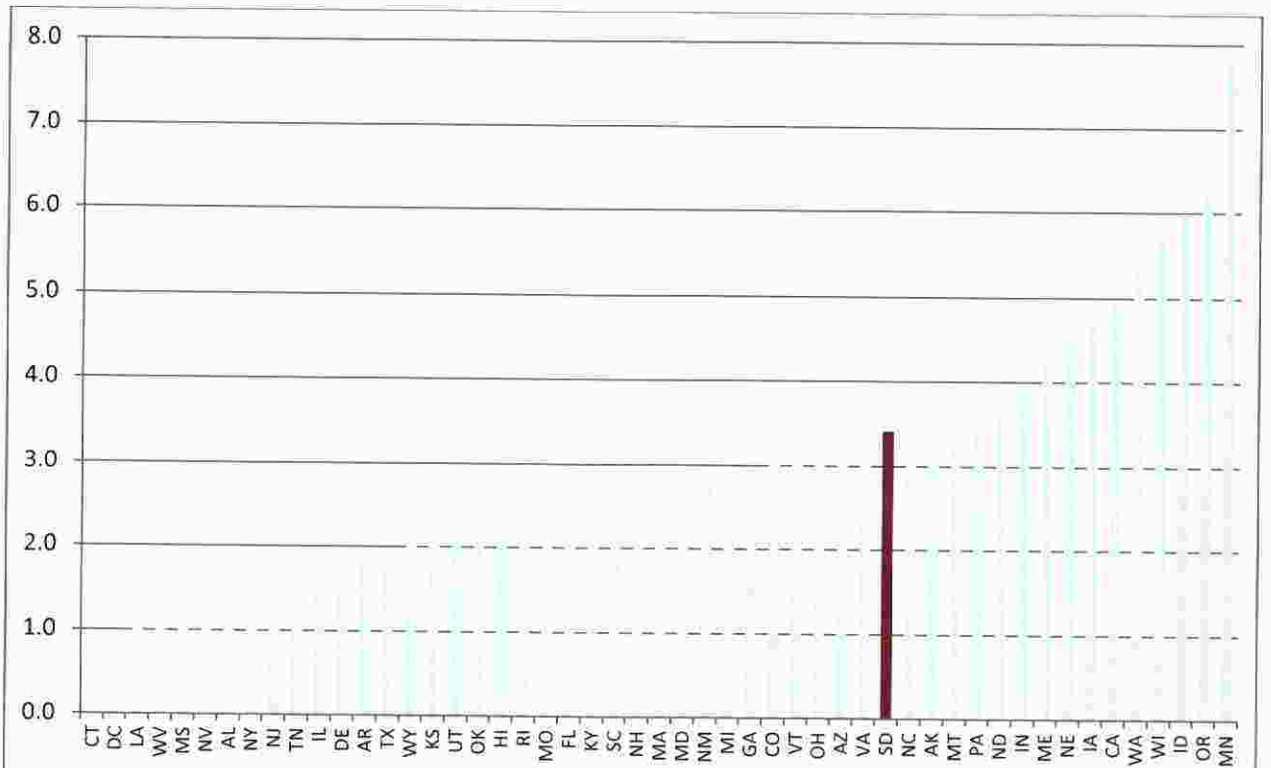
Source: Abt Associates' analysis of South Dakota's Nursing Facility Patient Origin Data.

4.2 Assisted Living

Relative to other states, South Dakota ranked 16th for available assisted living beds in 2010, at 3.4 available beds per 100 elderly individuals (Exhibit 26). This represents a slight increase in the number of available beds from roughly 3 per 100 elderly individuals in 2004, which placed South Dakota 15th among the states at that time.

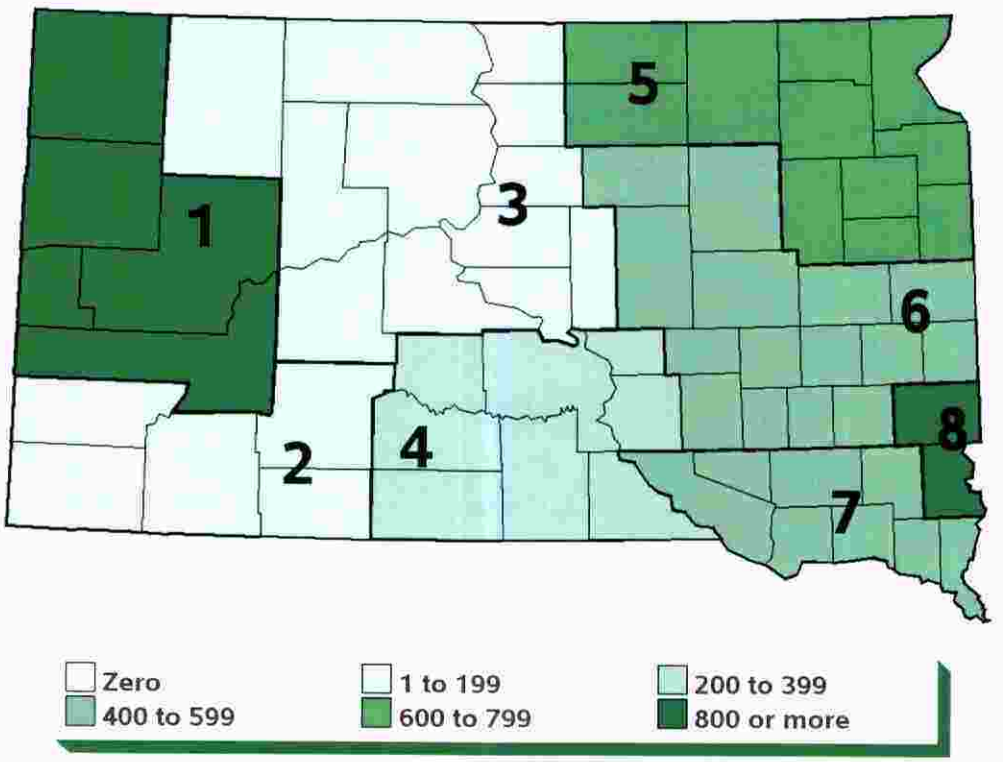
All regions of the State displayed growth in the total number of licensed assisted living beds since the last report, but substantial geographic variation remains (Exhibits 27 and 28).

Exhibit 26. National Comparison of Available Assisted Living Beds per 100 Elderly Individuals by State, 2010



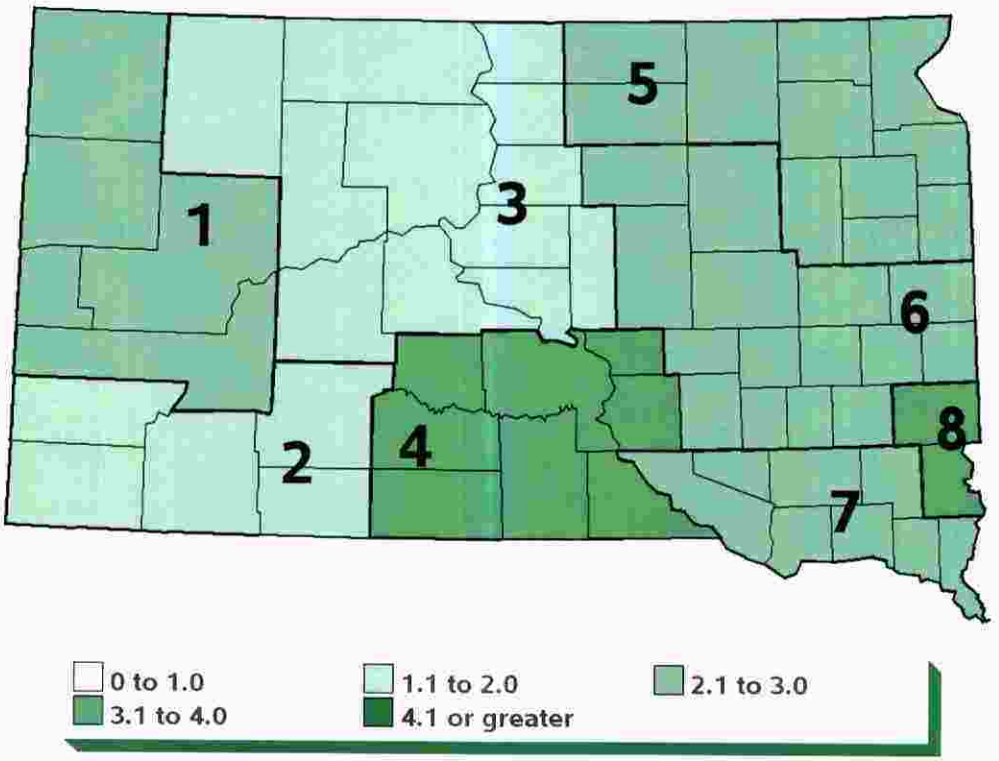
Source: Abt Associates' analysis of AARP's Assisted Living and Residential Care in the United States data, 2010. South Dakota beds per 100 elderly individuals shown in red.

Exhibit 27. Number of Licensed Assisted Living Beds, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota's Assisted Living Data.

Exhibit 28. Number of Licensed Assisted Living Beds per 100 Elderly Individuals, South Dakota, 2014

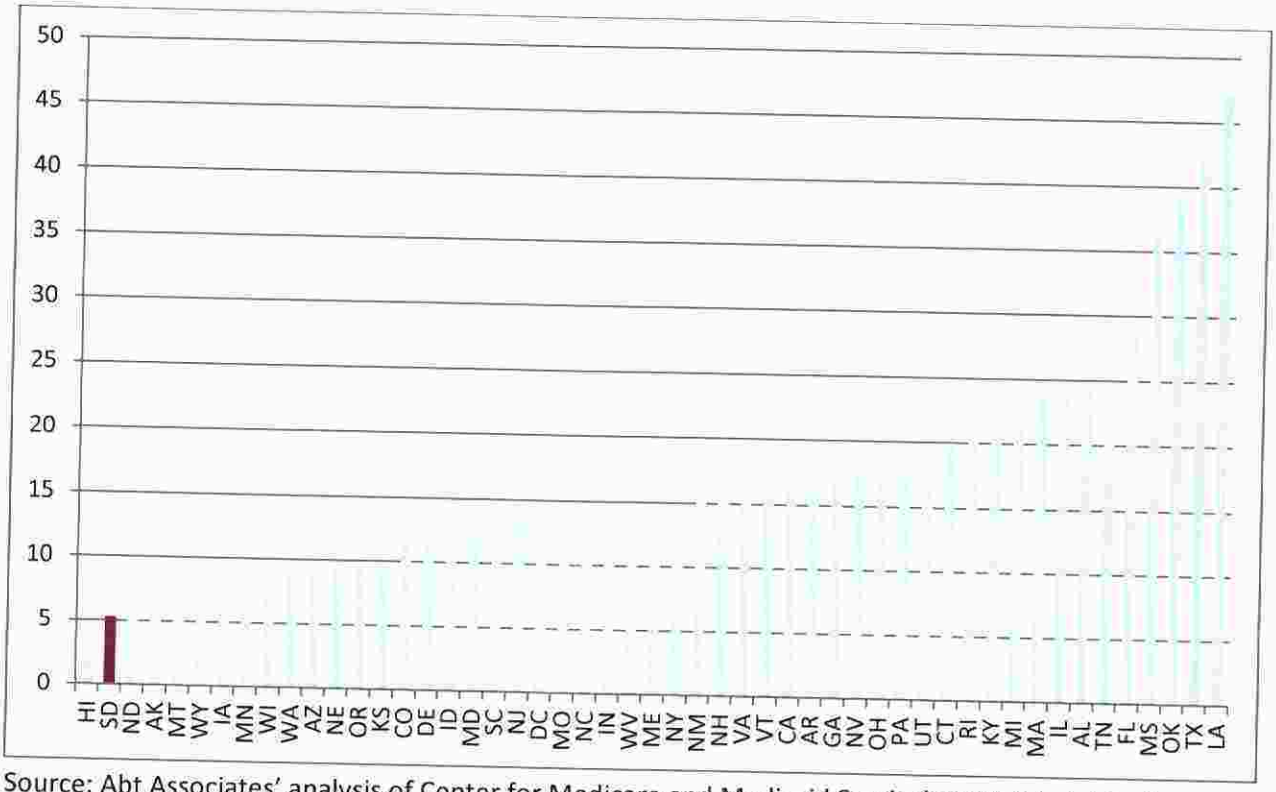


Source: Abt Associates' analysis of South Dakota's Assisted Living Data, and South Dakota Data Center's Population Projections data.

4.3 Home Health Care

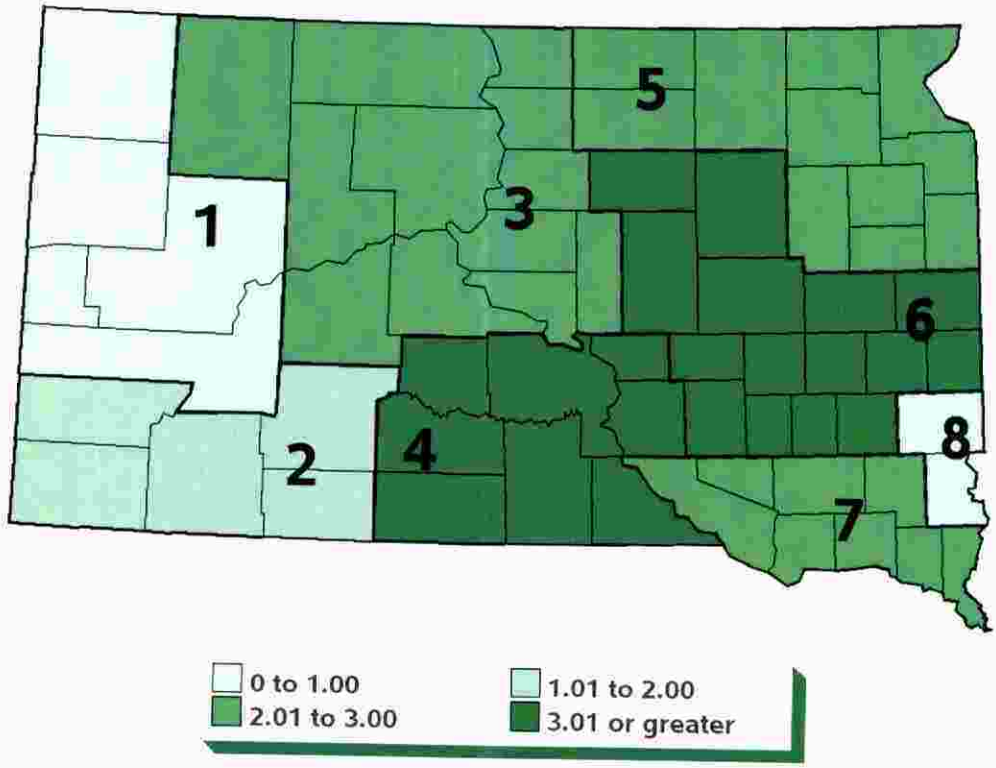
South Dakota continues to have the 2nd fewest Medicare skilled home health episodes of the 50 states, with just over 5 episodes per 100 elderly individuals, compared to a national average of 16 (Exhibit 29). There is little evidence of a shift in geographic patterns in Medicaid- and Medicare-certified home health agencies (Exhibit 30) or visits (Exhibit 31) since the prior report.

Exhibit 29. Number of Medicare Skilled Home Health Episodes per 100 Elderly Individuals by State, 2012



Source: Abt Associates' analysis of Center for Medicare and Medicaid Service's CCW Administrative Claims summary data as provided by the Centers for Disease Control and Prevention Health Indicators Warehouse (healthindicators.gov). South Dakota episodes per 100 elderly individuals shown in red.

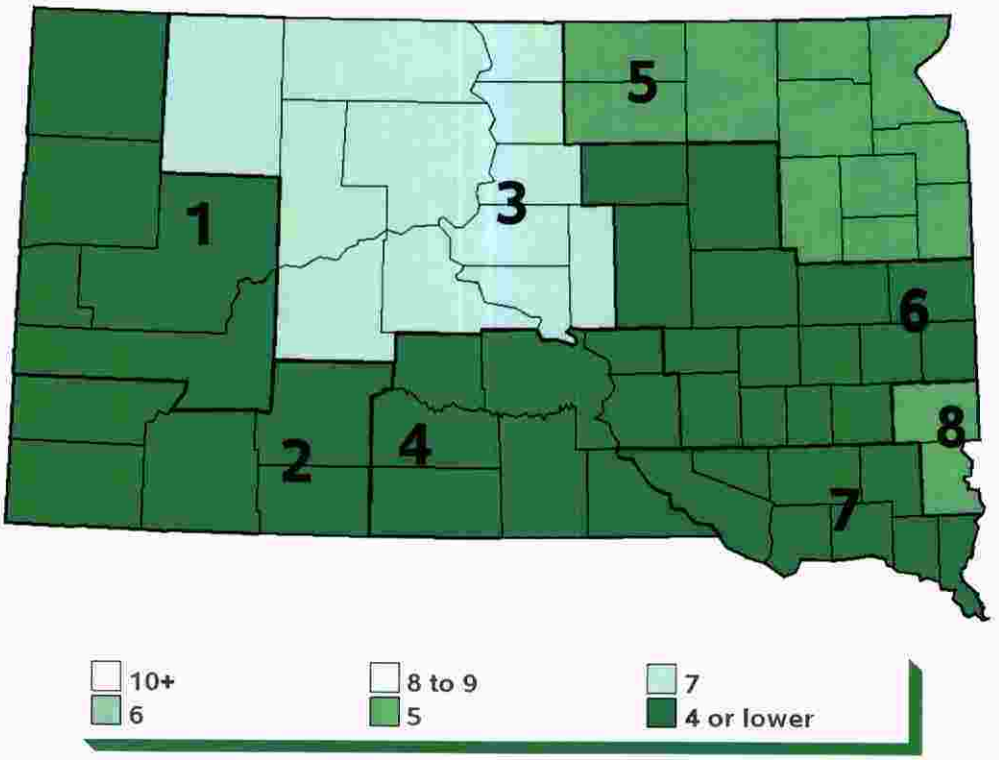
Exhibit 30. Number of Medicaid- and Medicare-Certified Home Health Agencies per 1,000 Elderly Individuals, South Dakota, 2014



Source: Abt Associates' analysis of Home Health Compare data.

Notes: The map shows the number of Medicaid- and Medicare-Certified Home Health Agencies that serve each county. Many Home Health Agencies serve more than one county; therefore, adding up agencies serving each county will not result in the total number of agencies in South Dakota. This map also includes agencies that are headquartered outside the state of South Dakota, but are listed as serving certain counties in South Dakota.

Exhibit 31. Number of Medicaid and Medicare Home Health Episodes per 100 Medicare Beneficiaries, South Dakota, 2014



Source: Abt Associates' analysis of Center for Medicare and Medicaid Service's CCW Administrative Claims summary data as provided by the Centers for Disease Control and Prevention Health Indicators Warehouse (healthindicators.gov).

4.4 Home and Community Based Services

Home and community based services are a critical support component to allow elders to remain in the community as long as possible. Since the prior report, we do not see evidence of perceptible shifts in availability of home and community based services in South Dakota: adult day facilities (Exhibit 32), senior centers (Exhibits 33 and 34), nutrition programs (Exhibit 35), homemaker services (Exhibit 36), and in-home service clients (Exhibit 37) all remain at similar, relatively low levels.

In short, across the State, and particularly in rural and frontier areas, there is limited availability of home and community based care. Clearly, a major barrier to providing community based care is the lack of a sufficiently sized community in many parts of the state. Briefly, in 2014:

- 43 counties have no adult day facilities with an established relationship with the State[5],
- 6 counties have 0 senior centers and 20 have just 1 senior center[6],
- 1 county has 0 nutrition programs and 25 have just 1 nutrition program[7], and
- Although every county in South Dakota is served by a DSS-affiliated homemaker agency, 36 counties have no DSS-affiliated homemaker agencies located in their borders.[8]

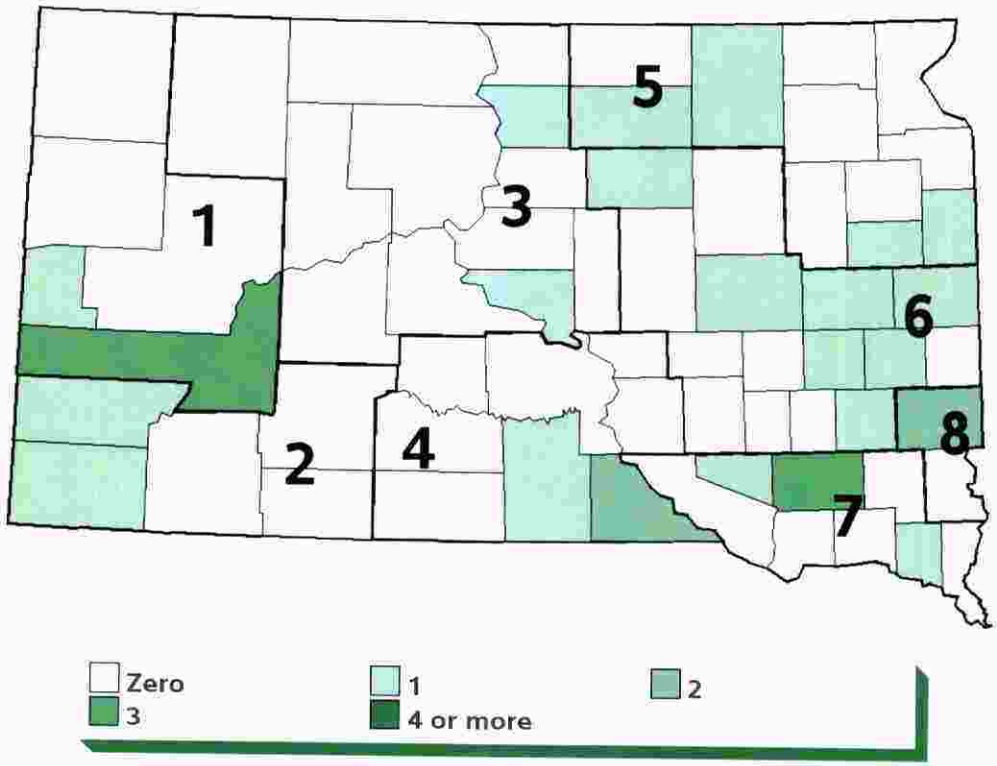
[5] Includes Adult Day Services Programs that have an established relationship with the State to provide adult day services; not an all-inclusive list.

[6] Includes centers appearing in listing of senior centers maintained by DSS; these senior centers do not receive state funding.

[7] Senior nutrition programs funded by Title III-C and/or Title VI (Older Americans Act direct funding to the tribes).

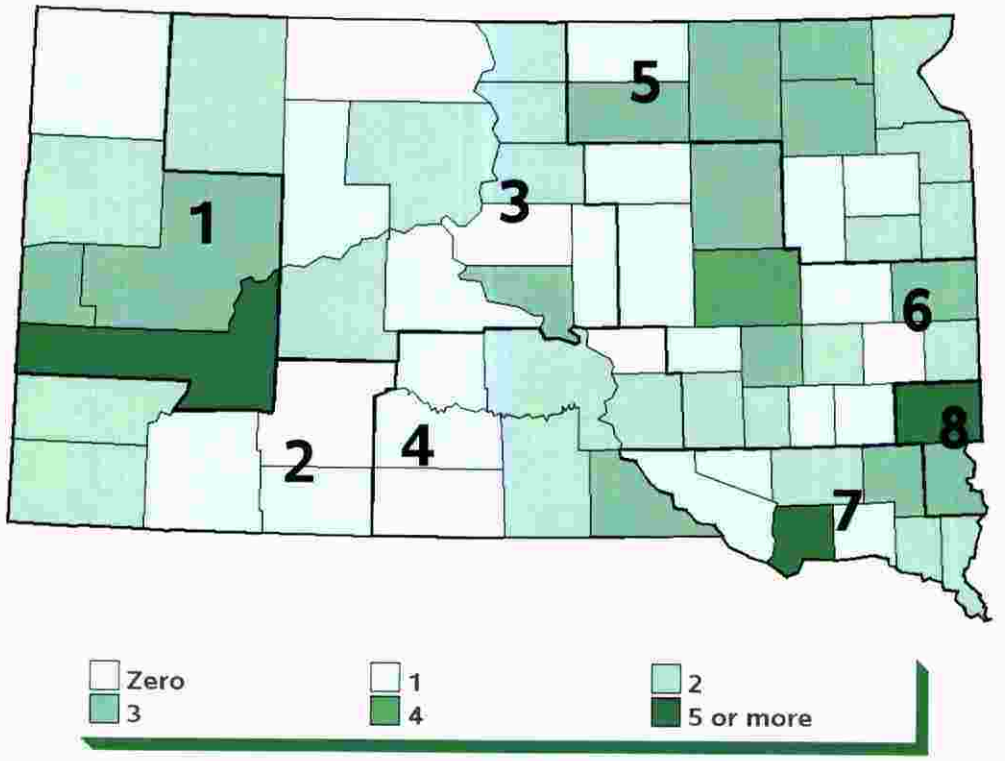
[8] Includes only homemaker agencies with existing relationship with DSS.

Exhibit 32. Number of Adult Day Facilities by County, South Dakota, 2014



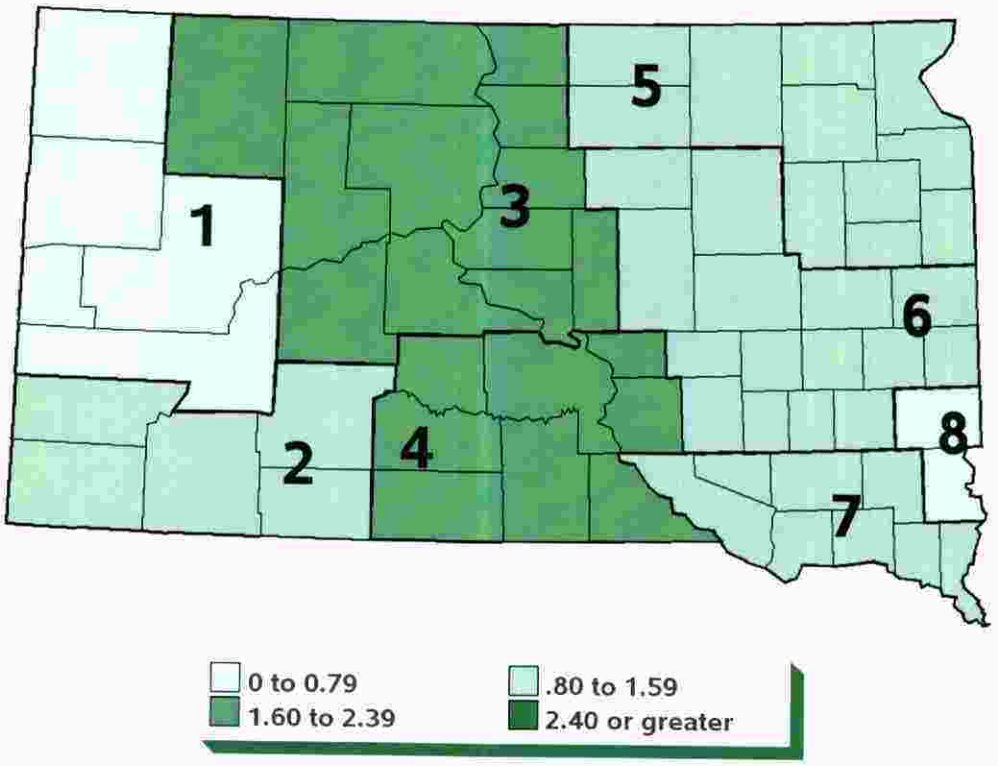
Source: Abt Associates' analysis of South Dakota's Adult Day Services Listing; includes Adult Day Services Programs that have an established relationship with the State to provide adult day services, and is not an all-inclusive list.

Exhibit 33. Number of Senior Citizens Centers by County, South Dakota, 2014



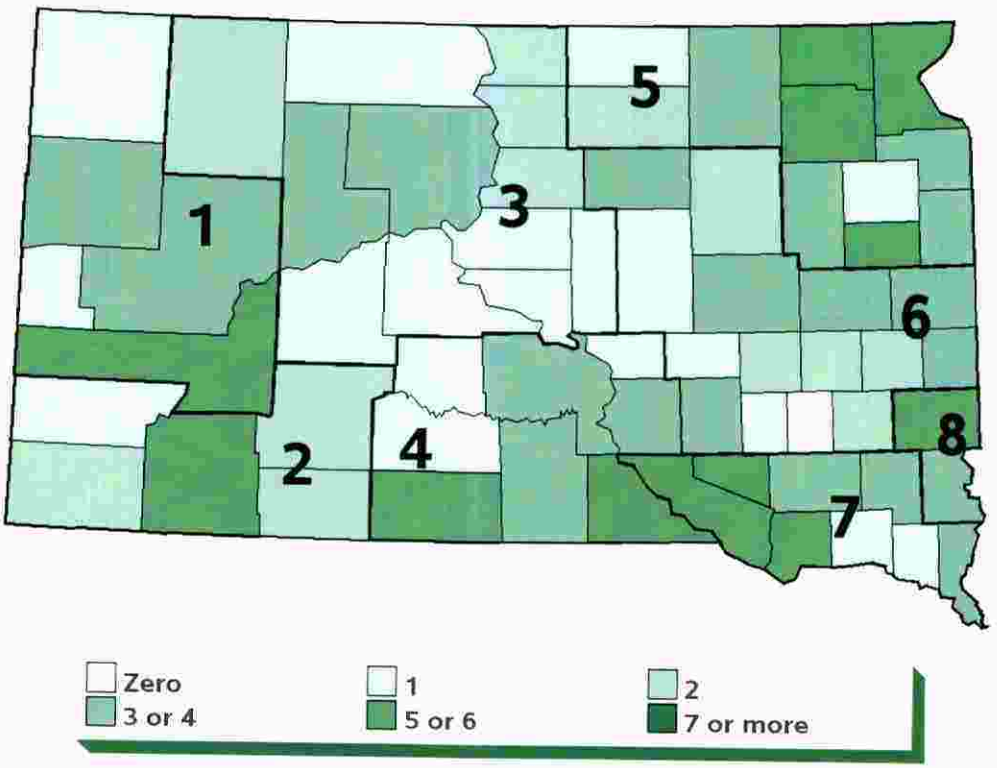
Source: Abt Associates' analysis of South Dakota's List of Senior Citizens Centers, 4/30/2014; listing maintained by DSS, but Senior Centers do not receive state funding.

Exhibit 34. Number of Senior Citizens Centers per 1,000 Elderly Individuals, South Dakota, 2014



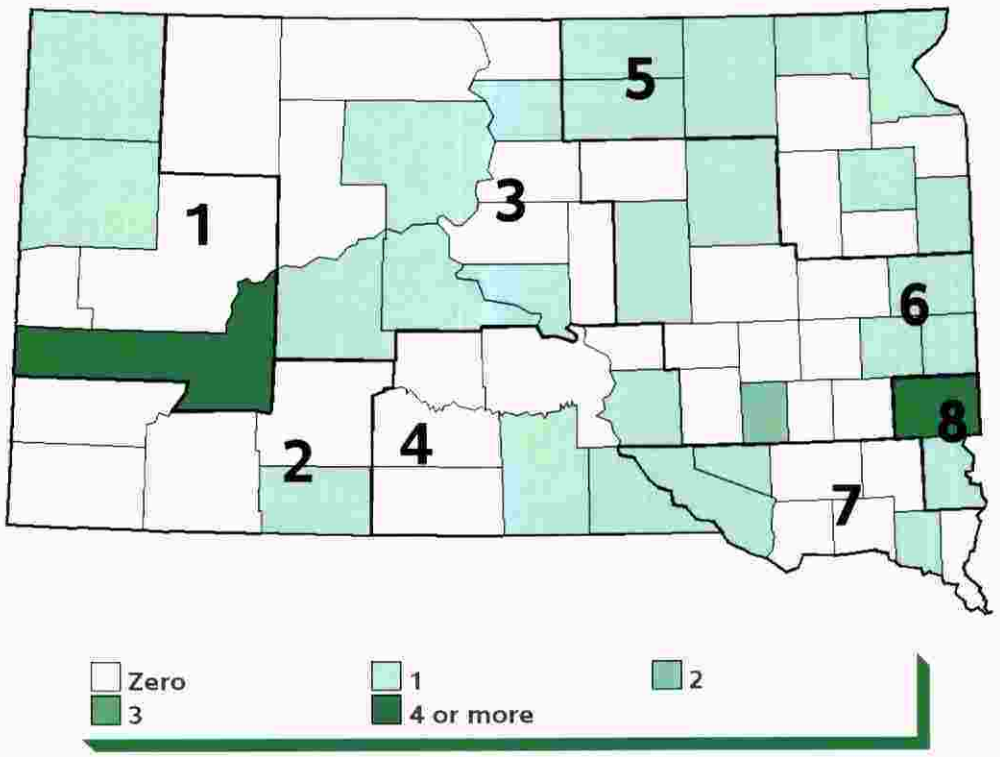
Source: Abt Associates' analysis of South Dakota's List of Senior Citizens Centers, 4/30/2014 and South Dakota Data Center's Population Projections data; listing maintained by DSS, but Senior Centers do not receive state funding.

Exhibit 35. Number of Nutrition Projects Serving Each County, South Dakota, 2014



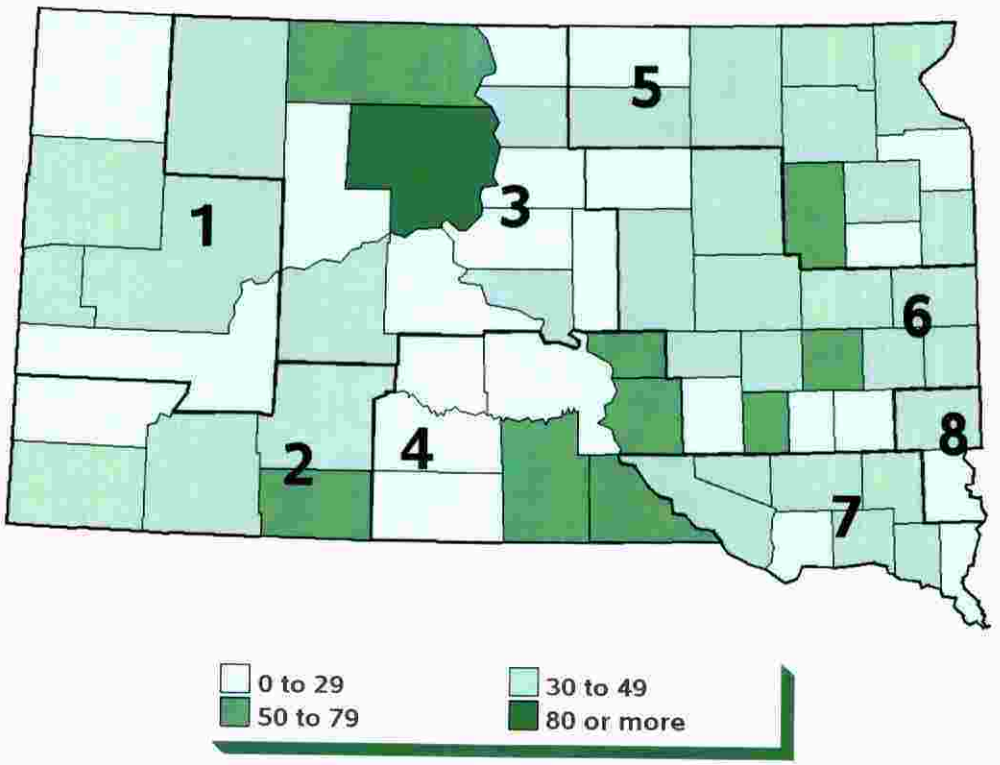
Source: Abt Associates' analysis of South Dakota's III-C sites data; includes senior nutrition projects funded by Title III-C and/or Title VI (Older Americans Act direct funding to the tribes).

Exhibit 36. Number of DSS-Affiliated Homemaker Agencies Located in Each County, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota's In-home provider agencies data; includes only homemaker agencies with existing relationship with DSS. While every county is served by at least one DSS-affiliated homemaker agency, 36 counties have no DSS-affiliated homemaker agencies located within their borders.

Exhibit 37. In-Home Service Clients per 1,000 Elderly Individuals by County, South Dakota, 2014



Source: Abt Associates' analysis of South Dakota's HCBS Consumers data; includes only consumers served by DSS-affiliated providers.

5. Projecting Future Demand for Long-Term Care Services

As described in greater detail in the methods section, we developed several forecast scenarios to describe projected future demand for LTC services under a variety of assumptions about future utilization rates. Unlike the projections in the prior 2007 report, these updated projections are based on actual State-level trends from 2010 through the present; in the prior report, historical trend data were unavailable at the State level, so our forecasts necessarily relied on national trend data only. In this sense, these updated projections represent an improvement on our prior forecast methodology, as they are based on more complete local knowledge.

In particular, we developed three alternative forecast scenarios, described in greater detail in Section 2.3:

Scenario A: Baseline/Status Quo. Under this baseline scenario, we assume that nursing home and assisted living utilization rates hold fixed at average 2010-2014 levels as described under Task 3[9]:

- Nursing home utilization as percent of elderly population = 4.7 percent
- Assisted living utilization as percent of elderly population = 2.6 percent

Scenario B: Nursing home utilization continues to decline at a moderated rate. Under this alternative scenario, a decline in disability and substitution to assisted living and HCBS contribute to a continued decline in nursing home utilization at approximately half the rate of recent declines.

- Nursing home utilization falls at a rate of 0.09 percentage points per year, or approximately one half the 2000-2014 rate of decline.
- The decline in nursing home utilization is partially offset by a rise in the assisted living utilization rate, with the lowest functional status individuals who would otherwise have resided in nursing homes instead entering assisted living, and the remainder remaining in the community.

Scenario C: Nursing home utilization continues to decline at a rapid pace, converging to national average rates by 2035. Under this alternative scenario, aggressive state policy encouraging further substitution of assisted living and HCBS continues to drive nursing home utilization rates down at a rapid pace.

- Nursing home utilization falls at a rate of 0.14 percentage points per year, reaching a rate of 1.2 percent by 2035.
- The decline in nursing home utilization is partially offset by a rise in the assisted living utilization rate, with the lowest functional status individuals who would otherwise have resided in nursing homes instead entering assisted living, and the remainder remaining in the community.

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[9] This projection scenario methodology mirrors the baseline projections provided in the 2007 Final Report to enable direct comparison. However, we note that, given the recent sharp decline in nursing home utilization in South Dakota as described above, it appears unlikely that future nursing home utilization rates will in fact remain fixed at this level as assumed. The two alternative future scenarios, which assume continued declines in utilization rates moving forward, may therefore more realistically depict actual future trends.

5.1 Projected Demand for Nursing Home Care

Exhibit 38 provides estimates of projected growth in nursing home utilization through the year 2035 under the baseline scenario, which as noted above assumes utilization rates hold constant at 2010-2014 levels. As noted above, this simple assumption may be unrealistic given the continued sharp decline in utilization rates we have seen in recent years across the state; however, we present the results of the baseline model to enable direct comparison with the prior report.

Note that because utilization rates are assumed to be unchanged, these baseline forecasts are driven entirely by growth in the elderly population over time and do not take into account the state's current nursing home bed moratorium, or possible future changes in disability rates, family composition, income, or other factors potentially influencing utilization. Under this simple projection methodology, the nursing home population is projected to rise to 10,595 by the year 2035, a 72% increase from average 2010-2014 levels.

Exhibit 38. Projected South Dakota Nursing Home Utilization Rates under Scenario A (Baseline) – Utilization Rates Hold Constant at 2010-2014 Average

	Elderly Population	Elderly Disabled Population	Nursing Home Population	As % of Elderly Population	As % of Disabled Elderly Population
Actual Nursing Home Utilization:					
2000	108,131	46,957	6,974	6.4%	14.9%
2005	119,313	51,783	6,732	5.6%	13.0%
2010 - 2014	131,526	49,514	6,173	4.7%	12.5%
Projected Nursing Home Utilization:					
2015	144,575	49,129	6,785	4.7%	13.8%
2020	171,527	62,211	8,050	4.7%	12.9%
2025	198,542	71,120	9,318	4.7%	13.1%
2030	218,886	84,857	10,273	4.7%	12.1%
2035	225,744	82,812	10,595	4.7%	12.8%

Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, American Community Survey data, and Nursing Home Compare data.

The baseline scenario assumes that nursing home utilization rates will remain unchanged. In contrast, recent years have seen a relatively steep decline in nursing home utilization rates in South Dakota (a drop from 6.4 percent to 4.7 percent between 2000 and average 2010-14 levels), and it seems reasonable to expect that this decline will continue. The two alternative projection scenarios we consider therefore incorporate more realistic assumptions, and assume a continued future decrease in utilization rates.

However, it is unclear whether or not the current rate of decline is sustainable: at some point, only individuals with fairly extensive functional limitations will remain in nursing homes, and such individuals may not be able to receive appropriate care in alternative settings. We therefore consider two alternative scenarios for the projected rate of decline: Scenario B assumes that the rate of decline

will moderate over the coming decades to one half the current rate, while Scenario C assumes a continued rapid pace of decline, with South Dakota ultimately converging to national utilization rates in the year 2035.

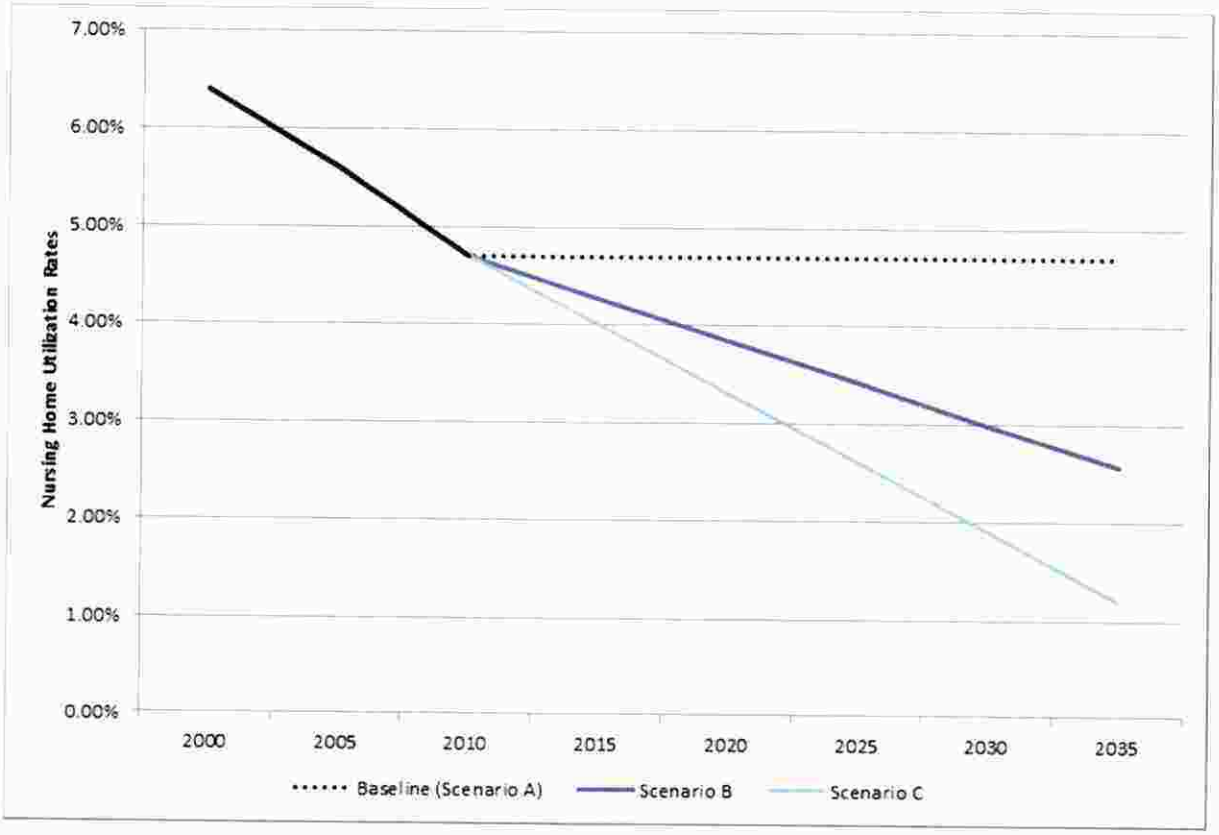
Exhibit 39 summarizes projected nursing home utilization rates for the year 2035 under the three scenarios, and Exhibit 40 graphically depicts time trends in nursing home utilization rates under each scenario from 2000 through 2035. Under the baseline scenario, the nursing home utilization rate stays fixed at its current rate of 4.7 percent through 2035, while under Scenarios B and C, it falls to 2.6 percent and 1.2 percent, respectively.

Exhibit 39. Projected South Dakota Nursing Home Utilization Rates, 2035

	Estimated Nursing Home Population	As % of Elderly Population	As % of Disabled Elderly Population
Baseline Scenario A: Flat Utilization Rates	10,595	4.69%	12.79%
Alternative Scenario B: Nursing home utilization falls at a rate equal to recent trends	5,776	2.56%	6.98%
Alternative Scenario C: Nursing home utilization falls to the national average by 2035	2,709	1.20%	3.27%

Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, American Community Survey data, and Nursing Home Compare data.

Exhibit 40. Projected South Dakota Nursing Home Utilization Rates; 3 Scenarios, 2000 – 2035

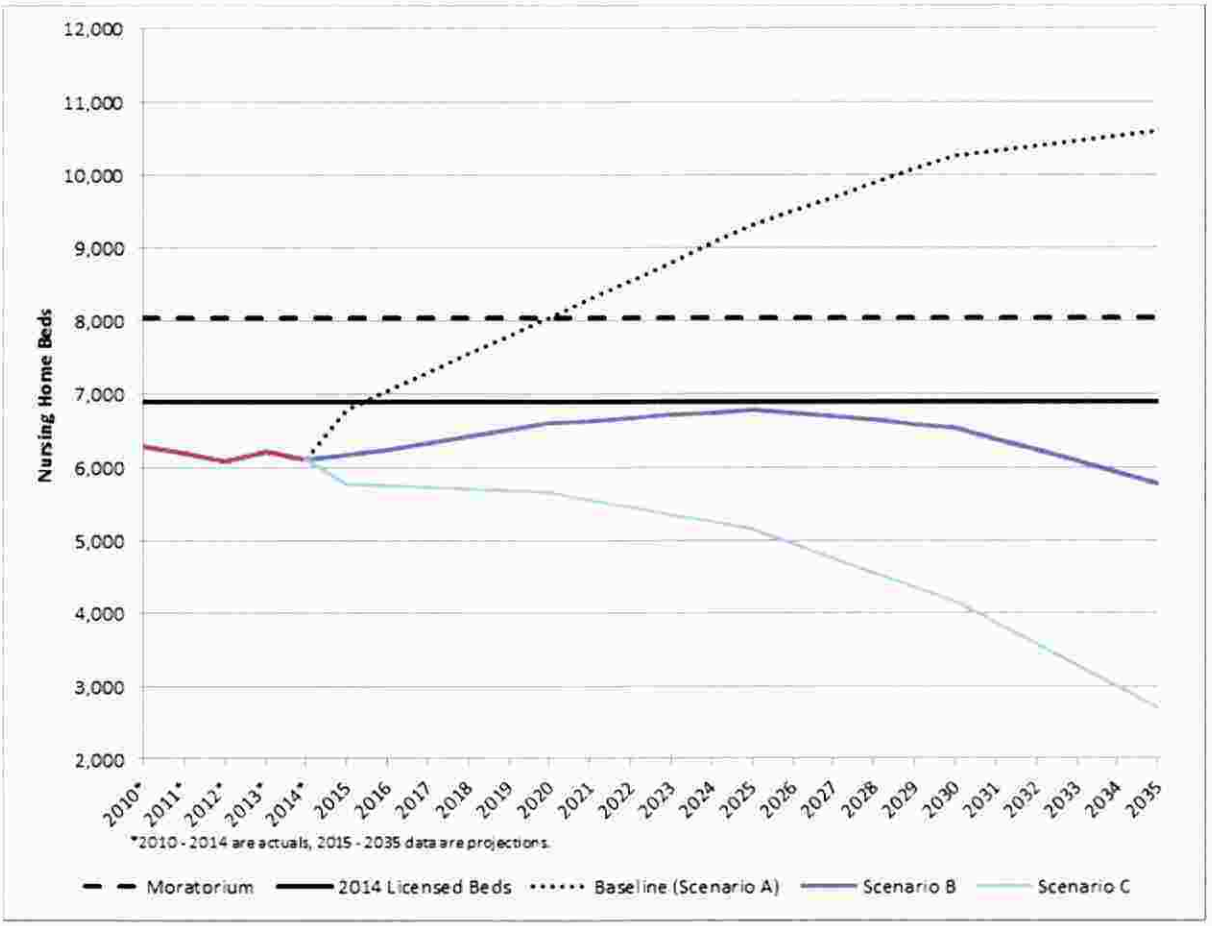


Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, American Community Survey data, and Nursing Home Compare data.

Exhibit 41 shows projections for total nursing home population for each scenario consistent with these projected utilization rates. Notice that while under the baseline scenario, the nursing home population continues to rise through 2035 with the increase in the elderly and elderly disabled populations, under the two alternative scenarios the population is actually forecast to *decrease* by 2035. These projected decreases occur when the declining utilization rate falls far enough to compensate for the continued increase in the elderly and disabled elderly populations. In particular, under Scenario B, the projected nursing home population reaches a maximum of 6,776 in the year 2025 before declining to 5,776 in 2035; under Scenario C, the projected nursing home population declines continually from its current level to reach 2,709 in 2035.

Finally, note that while demand for nursing home beds will soon exceed available moratorium beds under Scenario A, in contrast, if utilization rates continue to decline as projected under Scenarios B and C, demand will remain well below moratorium levels.

Exhibit 41. Forecast Demand for South Dakota Nursing Home Beds, 3 Scenarios, 2000 – 2035



Source: Abt Associates' analysis of South Dakota's Nursing Facilities data and South Dakota Department of Social Services' Nursing Home Occupancy Report.

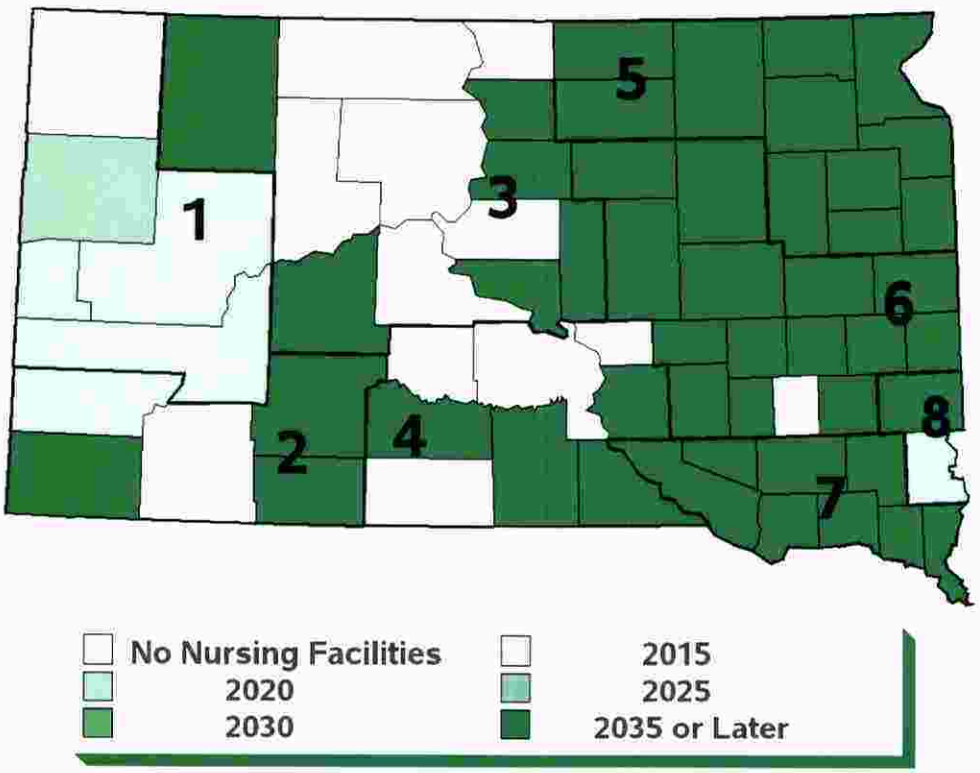
In the remainder of this section, we focus primarily on future projections under Scenario B, which makes more conservative assumptions about the future rate of decline in nursing home utilization than Scenario C, while still assuming that decline will continue as seems most likely, unlike the assumption of fixed utilization rates under Scenario A.

As Exhibit 42 illustrates, there is substantial geographic variation in the projected gap between supply and demand across the State, and even across closely-adjacent counties.

Counties in the Rapid City area, which as noted above is projected to experience high growth in elderly and disabled elderly populations, face a particularly acute need, with demand projected to exceed supply of moratorium beds in surrounding counties as soon as 2015 under both Scenarios A and B, and by 2020 under Scenario C, which assumes a more rapid decline in utilization rates. In the Sioux Falls area, also expected to face rapid growth in elderly and disabled elderly populations, Lincoln County also faces acute supply constraints, with demand exceeding moratorium beds in 2015 under all three scenarios, although demand in neighboring Minnehaha County is slightly less acute, with demand exceeding moratorium beds in 2015 under Scenario A only, but not until 2020 under Scenario B and not until 2025 under Scenario C.

A substantial number of counties in the eastern and central parts of the state are not expected to become supply-constrained before 2035.

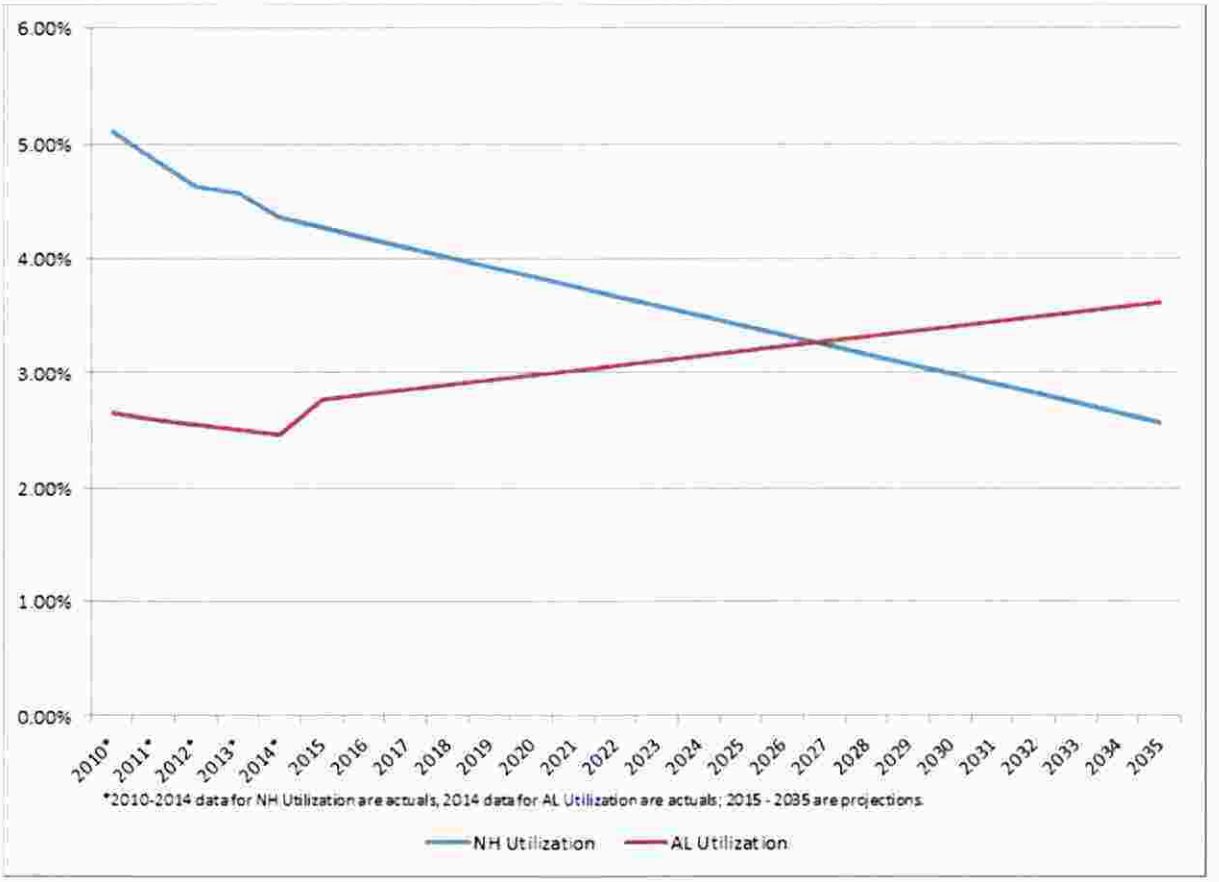
Exhibit 42. Under Scenario B, When Does South Dakota County-Level Demand Exceed Supply of Moratorium Beds?



5.2 Projected Demand for Assisted Living

Under our two alternative scenarios, the decline in nursing home utilization is assumed to be partially offset by an increase in assisted living utilization. Exhibit 43 shows how use of assisted living services must rise as nursing home utilization is reduced. We present results for Scenario B, since it is a mid-point forecast; under this scenario, assisted living utilization rates would rise from 2.6% in the year 2000 to 3.6% in 2035.

Exhibit 43. Substitution between Assisted Living and Nursing Home Care in South Dakota: Scenario B

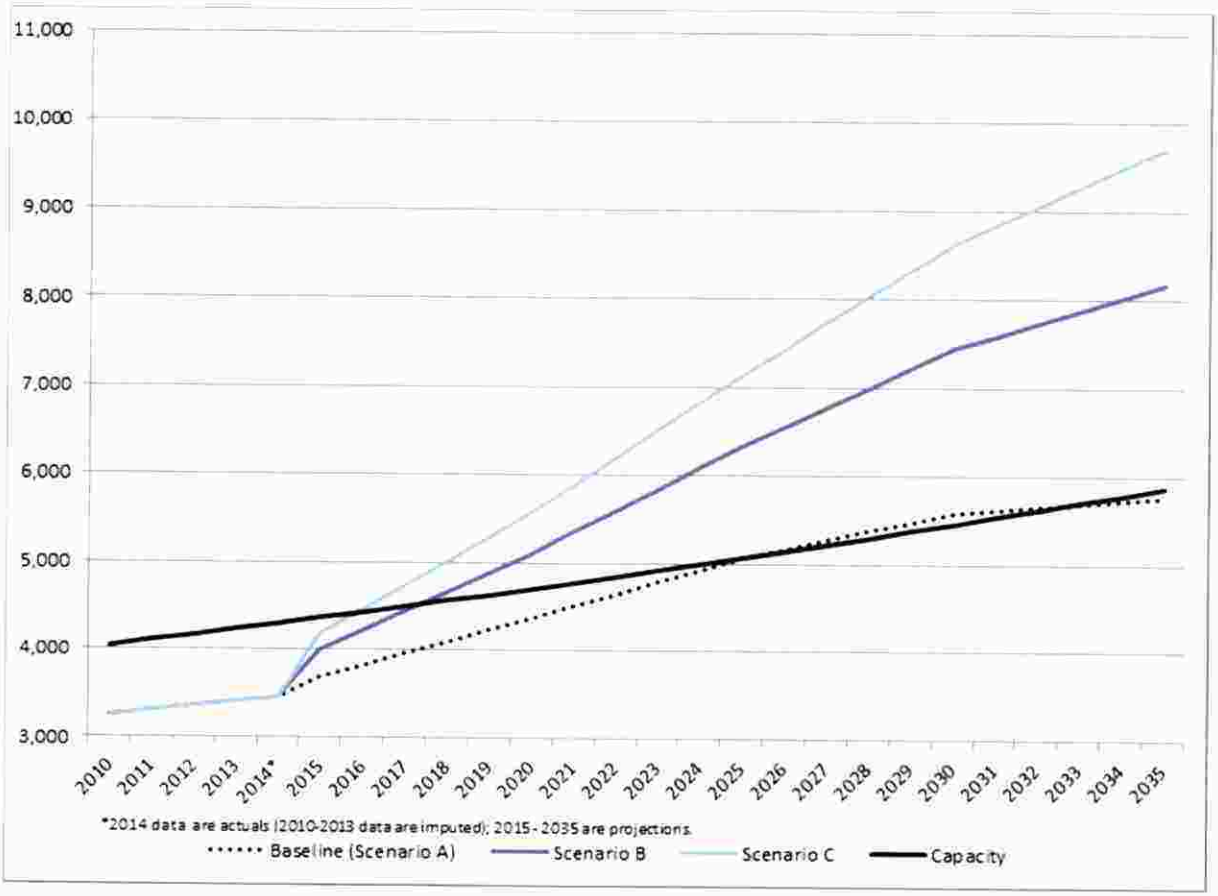


*2010 – 2014 represents the average utilization over that time period.

Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data, South Dakota's Nursing Facilities data, Nursing Home Compare data, and South Dakota's Assisted Living Facilities data.

Exhibit 44 shows how projected assisted living utilization rates under each scenario translate to demand for assisted living beds. Under the baseline Scenario A, projected demand for beds will only marginally exceed supply so long as capacity continues to increase in line with its recent 1.5% annual trend; from 2025 to 2030 projected demand is just slightly higher than projected capacity, but by 2035 the gap closes once more. However, if nursing home utilization rates decline consistent with our more reasonable assumptions under the two alternative scenarios, demand for assisted living beds will exceed supply well before 2020.

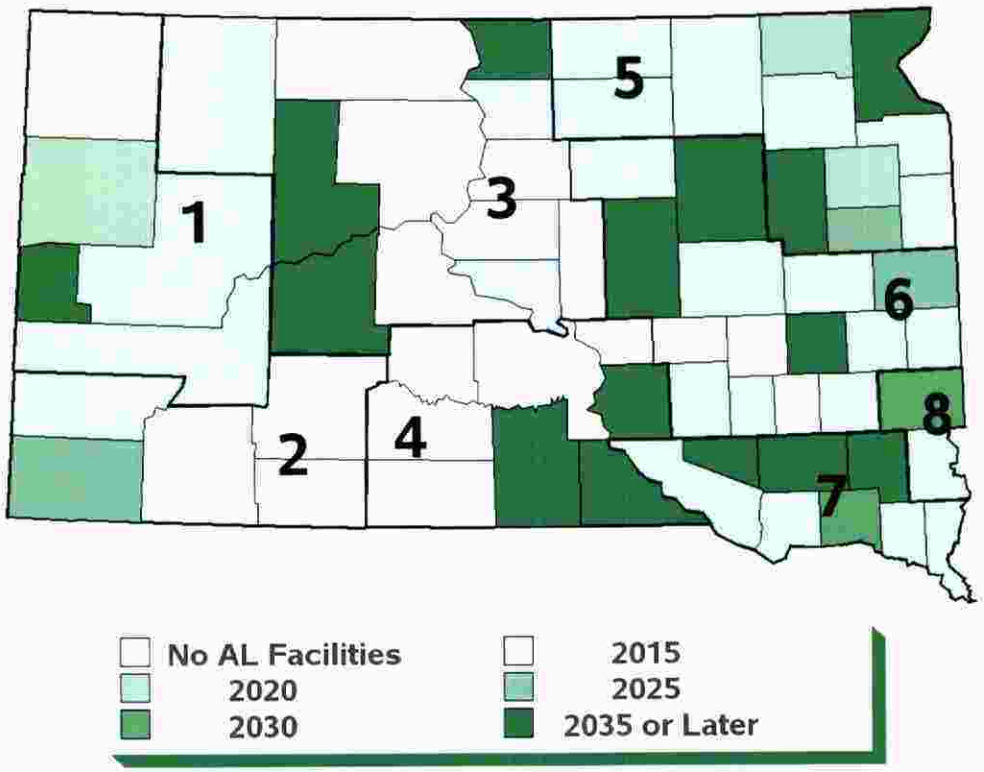
Exhibit 44. Projected Supply and Demand of Assisted Living Beds, South Dakota, 2000 – 2035



Source: Abt Associates' analysis of South Dakota's Assisted Living Facilities data.

Exhibit 45 shows geographic variation in the projected gap between supply of and demand for assisted living beds by county. As with nursing homes, supply constraints appear to be somewhat more acute in the western and central part of the State.

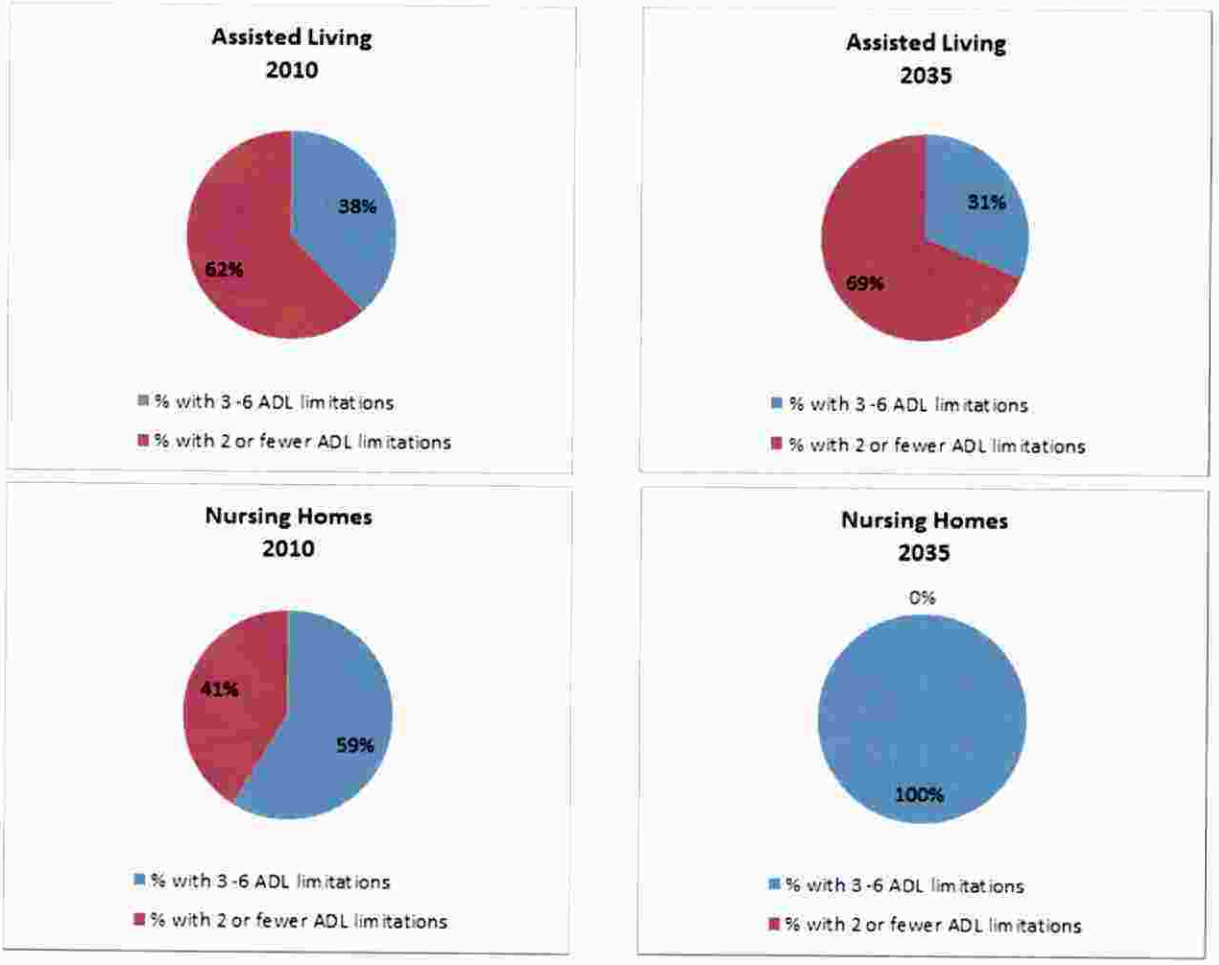
Exhibit 45. Under Scenario B, When Does South Dakota County-Level Demand Exceed Supply of Assisted Living Beds?



Source: Abt Associates' analysis of South Dakota's Assisted Living Facilities data.

As nursing home utilization rates fall, only those with the greatest functional limitations will remain in the nursing home setting, with individuals of higher functional status moving to other forms of care such as assisted living or HCBS. Exhibit 46 compares patient complexity in terms of ADL limitations within assisted living and nursing home settings between 2010 (actual) and 2035 (projected). Under Scenario B, we project that the great majority of individuals with 2 or fewer ADL limitations will exit nursing home settings by the year 2035, along with a sizable number of individuals with 3 or more functional limitations as nursing home capacity becomes too constrained to serve their needs. While actual differences in functional status across settings may not be as stark as our projections suggest, the fact remains that, if nursing home utilization continues to decline, even at a moderated rate as under Scenario B, by 2035 the number of individuals with 3 or more functional limitations will exceed the number of individuals accommodated in nursing homes. Future efforts to continue reduction of nursing home utilization should include protections to ensure those in greatest need of clinical and functional support can still access appropriate care in nursing home settings.

Exhibit 46. Changing Complexity of Residents in South Dakota Nursing Homes and Assisted Living, 2010 – 2035



Source: Abt Associates' analysis of South Dakota's Assisted Living Facilities data, Nursing Facilities data, and Nursing Home Compare data.

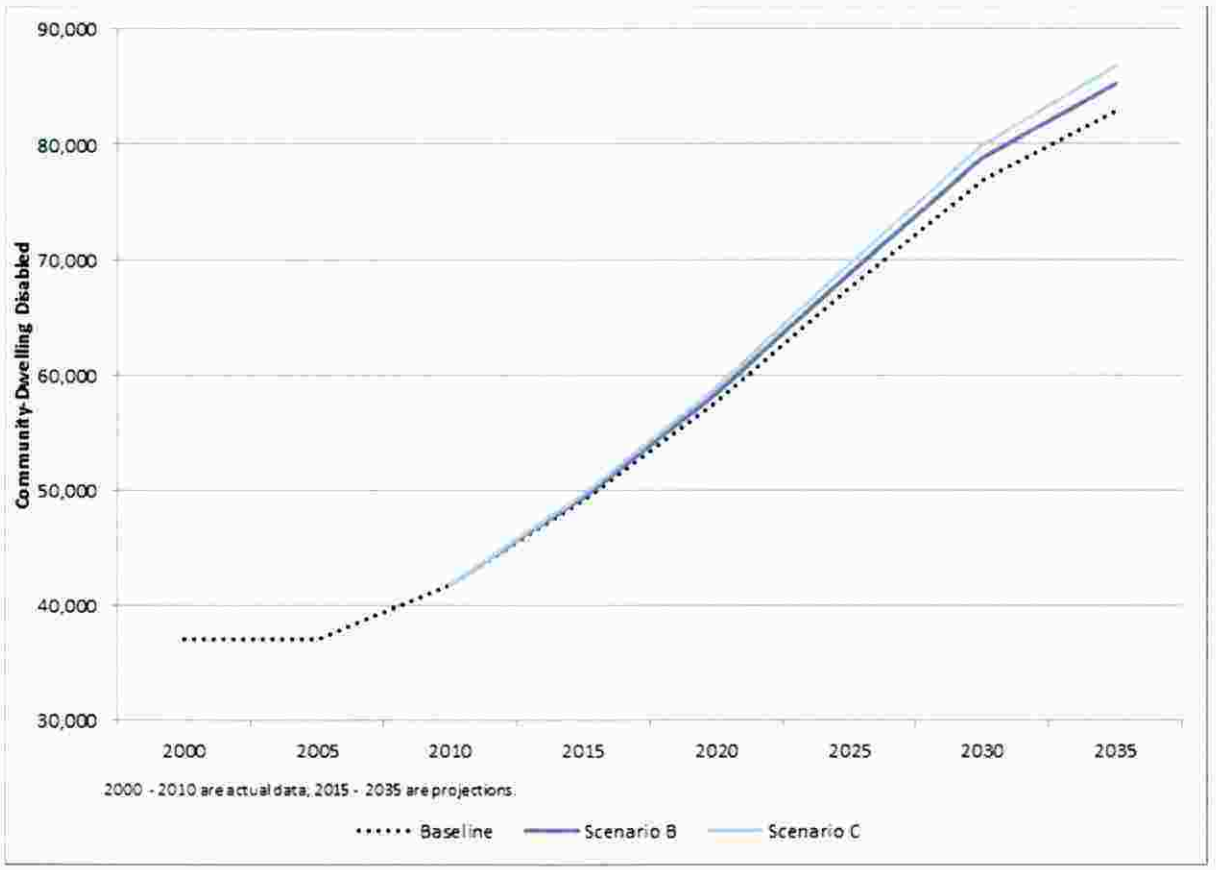
5.3 Home and Community Based Services

As in our prior report, in all scenarios considered, the numbers of community-dwelling disabled seniors will increase, driven by population changes, higher projected health levels, individual preferences, or policy changes that could promote increases in home and community based care options.

Exhibit 47 depicts the increase in community-based disabled seniors under the baseline forecast and the two alternative scenarios, which assume aggressive efforts to rebalance care will continue. Under all scenarios, the community-dwelling senior population will rise by approximately 40,000-45,000 by the year 2035.

As seen in Sections 4.3 and 4.4, we see little evidence of substantial increases in provision of HCBS relative to levels observed in our 2007 report, and South Dakota continues to lag behind national averages. It is clear that further aggressive rebalancing efforts will be required to support increasing numbers of community-dwelling seniors in the future.

Exhibit 47. Numbers of Community-Dwelling Seniors in South Dakota Will Rise, 2000 – 2035



Source: Abt Associates' analysis of South Dakota Data Center's Population Projections data and American Community Survey data.

6. Conclusions

It is clear that recent policy changes in South Dakota as described in the introduction have successfully accelerated the decline in nursing home utilization, substantially reducing the gap relative to national utilization rates. Assisted living utilization has increased in parallel, but we do not observe concurrent increases in skilled Medicare home health or HCBS.

These results naturally lead to speculation on how the needs of individuals are being met in light of decreasing nursing home utilization without a correlating increase in the use of formal supports. Per the Department of Social Services, South Dakota ranked within the top five states nationwide in market penetration for private long term care insurance as of June 2013, potentially indicating one way in which residents are bridging the gap. Increased use of informal supports by family and friends may also play a role, though we cannot formally assess this possibility in the context of this report. Under all hypothetical future scenarios considered, further efforts will be required to meet future demand for LTC services outside the nursing home setting. The State must clearly maintain its focus on rebalancing the long-term services and supports systems (LTSS), through:

- Continuing to utilize options counseling through the ADRC to educate consumers and families about community-based care alternatives, in attempts to reduce nursing home admissions;
- Continuing to expand and enhance the availability of HCBS and potentially State Plan-funded community-based care; and
- Exploration of the care preferences and knowledge base of elders and their caregivers, as well as gathering information on the informal support networks that people are currently utilizing in lieu of seeking assistance from state programs.