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COVID-19 Report Series: Senior Isolation Risk

The Institute of State & Regional Affairs and the Pennsylvania Population Network

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Introduction

The COVID-19 pandemic has shed light on the vulnerabilities of the aging population in the United States. Research suggests that various elements of social isolation are related to individual health outcomes [1,2]. The variation across this group, however, is often overlooked, which makes addressing the disparities in their needs challenging regardless of the presence of a medical crisis. Almost a fifth of Pennsylvania's population is 65 years of age or older, many of whom reside in rural counties. Thus, this report was created to help understand how various aspects of isolation vary spatially across Pennsylvania.

A variety of other organizations and researchers have explored this topic utilizing a number of indicators. America's Health Rankings index for social isolation is constructed of five measures: poverty, living alone, marital status, disability, and independent living difficulty [3]. Other research has highlighted the role of poverty, living alone, being unmarried, disability, transportation, social support, personal health, migration, childlessness, and expenses [4,5,6].

In order to highlight which counties have seniors at a higher risk for loneliness and social isolation, we collected data for indicators relating to issues of **finances** (at or below poverty line and housing cost burden), **living arrangements** (moved recently, living alone, and widowed or divorced), **community access** (food, transportation, internet) and **individual barriers** (disability, language, and mental health) from the U.S. Census Bureau, the U.S. Department of Agriculture, and the Centers for Disease Control and Prevention (CDC).

The following sections and maps present the results of the Senior Isolation Index as well as each indicator used to develop the index for each of Pennsylvania's counties. Hover over the icon in the bottom left of the map frame to view the legend.

Senior Isolation Index

The Senior Isolation Index (SII) was created by ranking 11 data indicators for Pennsylvania's 67 counties, each of which are explored in further depth later in the report. Ranks were averaged across the three categories listed above (finances, living arrangements, and resource access) and those averages were averaged again for the final score.

The final scores were normalized using the total number of counties (67) to develop a score from 1 to 100, where 1 represented a senior population that had a low risk for isolation and 100 represented a senior population that had a high risk for isolation. Figure 1 reports the SII scores by county as well as the data used to build the index. For additional information on ranks, see Table 1 in the Appendix.

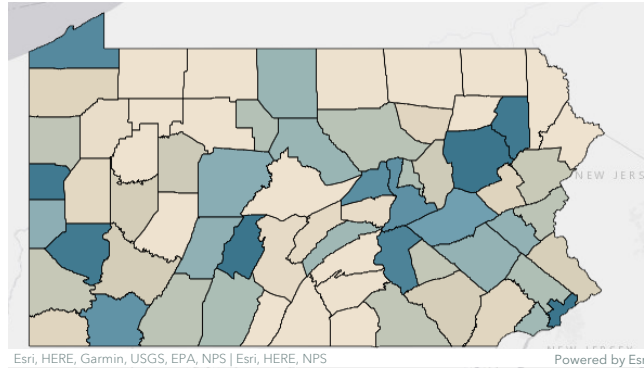


Figure 1. Results of Senior Isolation Index score.

Index scores ranged from 28.5 in Forest County to 87.3 in Philadelphia County. Fourteen counties had SII scores below 40.0 while a dozen had SII scores greater than 60.0. Among the lowest risk counties following Forest were Wayne (29.7), Wyoming (31.8), Fulton (33.5), and Adams (33.6). Among the highest risk counties following Philadelphia were Luzerne (75.7), Blair (71.5), Lackawanna (69.3), and Lawrence (69.3)

Despite having the second-highest percentage of seniors with at least one disability and poor access to broadband internet, a large percentage of Forest County seniors had access to affordable housing, food, and personal vehicles, making the county the least at risk for senior isolation.

Philadelphia was identified as the highest risk due to ranking highest in six indicators (poverty, personal vehicle access, disability, limited English, widowed or divorced, and poor mental health), and second-highest in two additional indicators (housing cost burden and living alone).

Finances

Seniors Living in Poverty

Seniors living in poverty are significantly more likely to be socially isolated [7]. Figure 2 displays the distribution of senior households living below the poverty line by county according to the U.S. Census Bureau's American Community Survey.

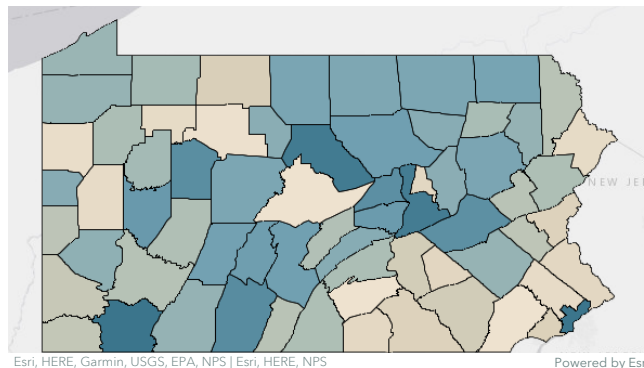


Figure 2. Senior householders below the poverty line by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Philadelphia county had the highest percentage senior households living in poverty (19.5%). Philadelphia was followed by Fayette (12.0%), Clinton (11.8%), Northumberland (11.8%), and Bedford (11.2%). Cumberland county had the lowest percentage of senior households living in poverty (5.0%). Following Cumberland county were Chester (5.4%), Centre (5.5%), Elk (6.2%), and Mercer (6.4%).

Seniors with Housing Cost Burden

Seniors who experience a high housing cost burden often lack discretionary income to participate in social activities, leading to an increased risk of isolation [5]. Housing cost burden is typically defined as households which pay 30 percent or more of their monthly income on housing costs (i.e., rent or mortgages). Figure 3 shows the percentage of older individuals with housing cost burden by county according to the U.S. Census Bureau's American Community Survey.

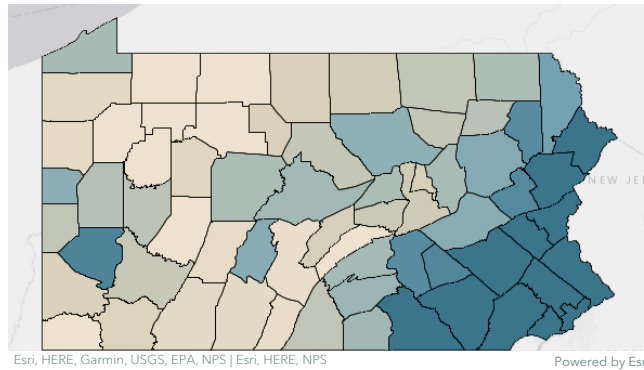


Figure 3. Population 65 and over with housing cost burden by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Monroe county had the largest share of seniors experiencing housing cost burden (41.8%). Following Monroe county were Philadelphia (39.3%), Delaware (39.2%), Montgomery (39.1%), and Bucks (39%). Forest county had the lowest share of seniors with housing cost burden (13.8%). Forest was followed by Elk (19.1%), Clarion (19.7%), Warren (20.2%), and Venango (20.2%).

Living Arrangements

Seniors Living Alone

Seniors who live alone are at a higher risk of loneliness and isolation [8]. Figure 4 displays the percentage of those in the 65 and older population that live alone by county according to the U.S. Census Bureau's American Community Survey.

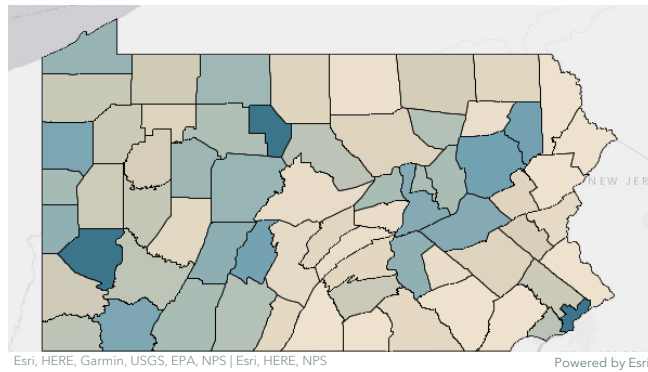


Figure 4. Population 65 and over living alone by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Cameron county had the highest proportion of seniors living alone (37.4%). Following Cameron were Philadelphia (36.1%), Allegheny (35.8%), Luzerne (32.6%), and Lackawanna (32.6%). Monroe county had the lowest proportion of seniors living alone (21.1%). Following Monroe were Pike (22.7%), Chester (24.4%), Lancaster (24.4%), and Wayne (24.6%).

Widowed and Divorced Seniors

Widowed and divorced seniors report worse overall health than married seniors or seniors who never married [9]. Figure 5 shows the distribution of those 65 and older who have been widowed or divorced by county according to the U.S. Census Bureau's American Community Survey.

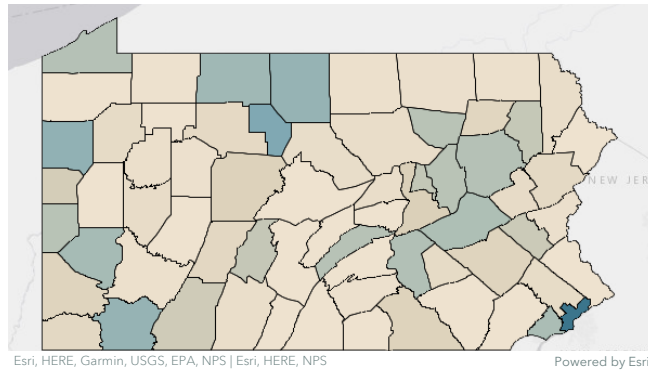


Figure 5. Population 65 and over that have been widowed or divorced by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Philadelphia had the greatest percentage of seniors that have been widowed or divorced (46.3%). Cameron (41.9%), Mercer (41.1%), Fayette (40.9%), and Potter (40.9%) followed Philadelphia. Pike county had the lowest percentage of seniors that have been widowed or divorced (30.3%). Following Pike were Franklin (32.2%), Snyder (32.3%), Fulton (32.3%), and Lancaster (32.5%).

Seniors Who've Recently Moved

Seniors who have recently moved are at a higher risk of loneliness and isolation as they leave family, friends, and other support networks behind [5]. Figure 6 displays the percentage of seniors that have recently moved (within past five years) by county according to the U.S. Census Bureau's American Community Survey.

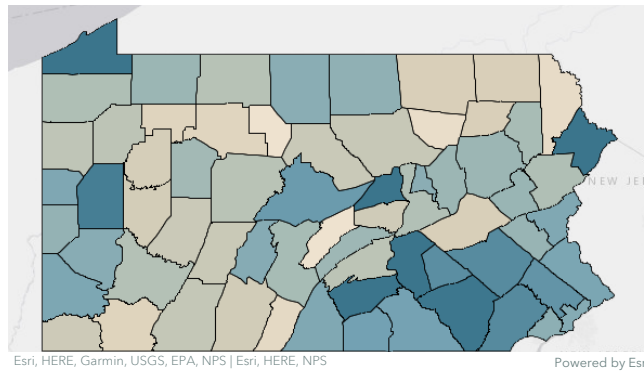


Figure 6. Population 65 and over who moved in past five years by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Dauphin had the greatest percentage of seniors that recently moved (8.5%). Following Dauphin were Cumberland (8.4%), Union (8%), Erie (8%), and Pike (8%). Cameron had the lowest percentage of seniors who recently moved (1.6%). Following Cameron were Mifflin (2%), Sullivan (2.4%), Wayne (2.6%), and Fulton (2.8%).

Community Access

Seniors Experiencing Food Insecurity

Food insecurity is defined by the U.S. Department of Agriculture as a, “household level economic and social condition of limited access to food [10].” Figure 7 shows the percentage of those 65 and older experiencing food insecurity by county as determined by the U.S. Department of Agriculture’s Economic Research Service.

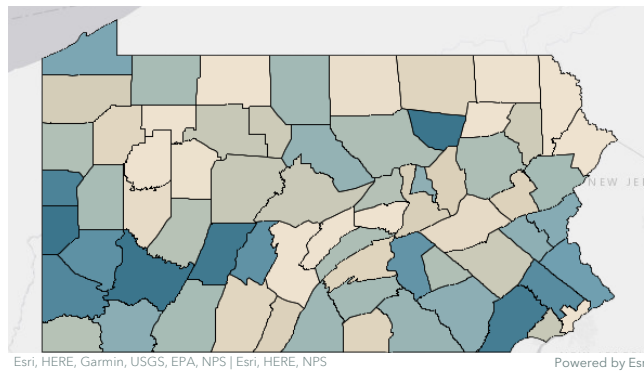


Figure 7. Population 65 and over experiencing food insecurity by county in Pennsylvania, U.S. Department of Agriculture (2015).

Sullivan county had the highest percentage of seniors experiencing food insecurity (8.5%). Following Sullivan were Beaver (6.8%), Westmoreland (5.8%), Cambria (4.9%), and Chester (4.8%). Philadelphia had the lowest percentage of seniors with food insecurity (0.2%). Philadelphia was followed by Forest (0.3%), Huntingdon and Wyoming (0.5%), and Pike (0.7%).

Seniors with No Vehicle

Seniors with no vehicle have limited access to goods and services as well as fewer opportunities for social interaction, factors which contribute to loneliness and isolation [5,6]. Figure 8 shows the percentage of those 65 and older that

do not have a vehicle by county according to the U.S. Census Bureau's American Community Survey.

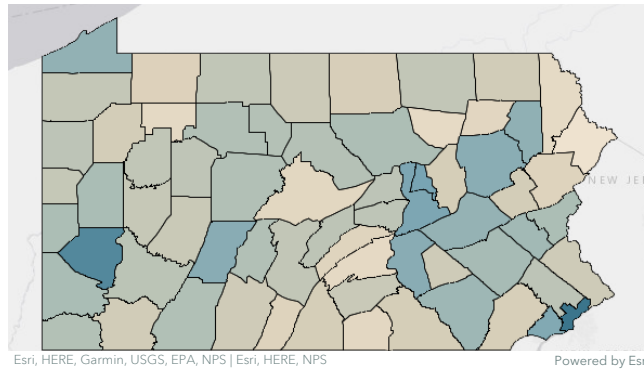


Figure 8. Population 65 and over with no vehicle access by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

More than a third of seniors in Philadelphia (36.9%) do not have a vehicle. Allegheny (18.4%) has the second highest percentage of seniors without a vehicle. Montour (16.0%), Northumberland (15.7%), and Delaware (15.3%) followed Philadelphia and Allegheny. The county with the lowest percentage of seniors without a vehicle was Pike (4.9%) followed by Sullivan (6.7%), Wayne (6.7%), Perry (6.8%), and Forest (6.9%).

Seniors with No Computer or Internet

Seniors without access to the internet have fewer opportunities to connect with family and friends or participate in online communities, contributing to loneliness and isolation [11]. Figure 9 shows the percentage of those 65 and older that have no computer or internet services by county according to the U.S. Census Bureau's American Community Survey.

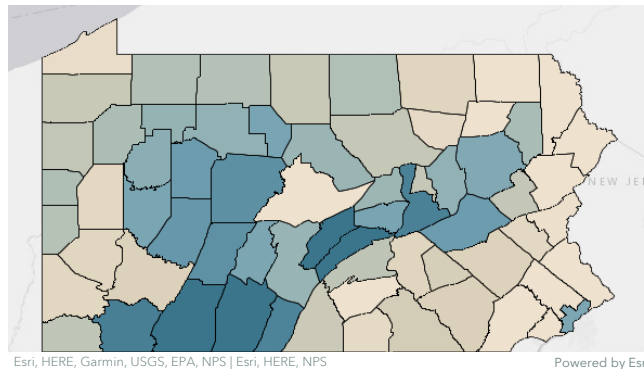


Figure 9. Population 65 and over with no computer or internet access by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Juniata had the highest rate of seniors with no access to a computer or internet (45.4%). Juniata was followed by Somerset (45.3%), Bedford (45.2%), Mifflin (45.2%) and Fayette (44.2%). The county with the lowest rate was Chester County (19.5%). Chester was followed Pike (20.3%), Bucks (22.3%), Montgomery (22.3%), and Wayne (26.4%).

Individual Barriers

Seniors with Disabilities

Seniors with physical or cognitive disabilities are more likely

to experience loneliness or isolation despite a greater need for support [3]. Figure 10 shows the percentage of those 65 and older with at least one disability by county according to the U.S. Census Bureau's American Community Survey.

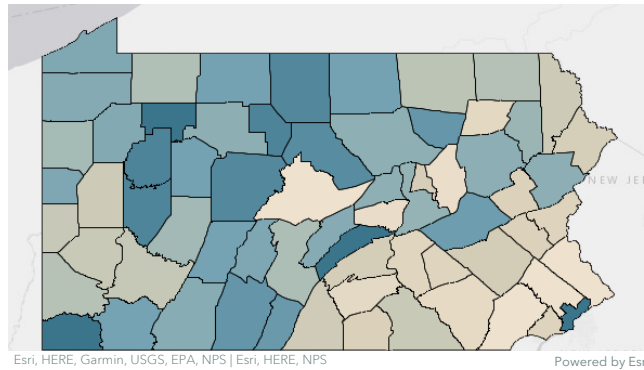


Figure 10. Population 65 and over with at least one disability by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

Philadelphia County had the highest percentage of seniors with disabilities (42.6%). Philadelphia was followed by Forest (41.2%), Greene (40.6%), Juniata (40.1%), and Cameron (39.2%). Chester County had the lowest percentage of seniors with disabilities (27.2%). Chester was followed by Montgomery (28.8%), Centre (29.4%), Bucks (29.6%), and Columbia (30.6%).

Seniors with Limited English

Seniors with limited English proficiency are more likely to be socially isolated, especially when they live alone or reside in a household with other limited English speakers [12]. Figure 11 shows the percentage of those 65 and older with limited English, or those who speak English less than "very well", by county according to the U.S. Census Bureau.

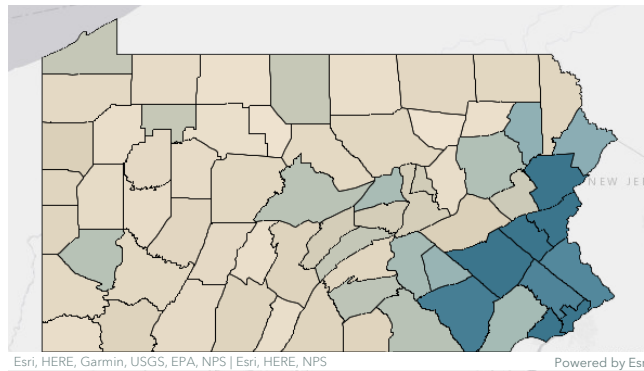


Figure 11. Population 65 and over with limited English by county in Pennsylvania, U.S. Census Bureau (2014-2018 ACS).

The county with the highest percentage of seniors with limited English was Philadelphia (13.4%). Following Philadelphia were Lehigh (8.1%), Berks (6.0%), Monroe (5.6%), and Northampton (5.3%). These counties were concentrated in eastern and southeastern of Pennsylvania. Cameron and Sullivan Counties both had no seniors with limited English (0.0%). They were followed by McKean (0.1%), Wyoming (0.2%), and Elk (0.2%).

Seniors Experiencing Poor Mental Health

There is a strong association between isolation, loneliness, and mental health [1,2,8]. Figure 12 shows the percentage of

seniors who had one or more poor mental health days in the past month according to the CDC's Behavioral Risk Factor Surveillance System (BRFSS).

Due to sampling limitations, BRFSS data are not typically reported at the single county level except for in highly populated counties. Therefore, in instances where counties are aggregated to a region, the region value was reported for individual counties in that region. For instance, the Dauphin-Lebanon BRFSS Region had reported 26.0% of seniors having at least one poor mental health day in the past month. Therefore, in the index scoring and the map below, the region's percentage (26.0%) was assigned to both Dauphin and Lebanon.

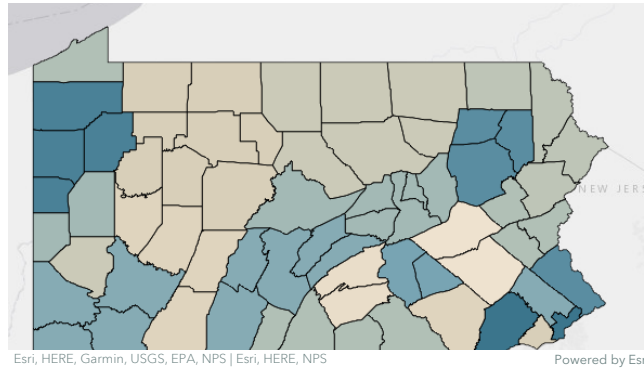


Figure 12. Population 65 and over with one or more poor mental health days in the last month by county in Pennsylvania, CDC (2017-2019 BRFSS).

Philadelphia had the highest percentage of seniors who experienced one or more poor mental health days in the past month (31.0%). Philadelphia was followed by Chester (30.0%) and the Crawford-Lawrence-Mercer-Venango BRFSS Region (29.0%). The Berks-Schuylkill BRFSS Region had the lowest percentage of seniors who experienced one or more poor mental health days (14.0%) followed by the Cumberland-Perry BRFSS Region (16.0%).

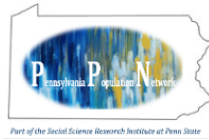
Conclusion

According to data from week 12 of the U.S. Census Bureau's weekly Household Pulse Survey, approximately 2 out of 5 seniors (40.0%) were not able to stop or control their worry related to COVID-19 for several days or more in the past week. Over a quarter (28.9%) delayed medical care due to the pandemic.

About 1 in 5 seniors (22.0%) have lost employment income or live in households with someone who has experienced a loss of employment income since March 13, 2020. Over a quarter of all seniors (27.4%) who were still required to make mortgage payments had less than "high" confidence that they would be able to make their mortgage payment on time. Among seniors who received or will receive a stimulus payment, over three-quarters (77.0%) used or planned to use the payment toward expenses or paying off debts.

Seniors are among the most vulnerable of populations in our state and nation, and the adaptations that enable us to combat COVID-19 also exacerbate existing issues of loneliness among our senior population. Understanding variation in dimensions of isolation are imperative regardless of the presence of a health crisis but are amplified in such times. This information is useful for highlighting need across the Commonwealth and may be used to develop localized programs to combat such issues.

Acknowledgements



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Appendix

Ranks and Averages for PASDC Senior Isolation Index

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NAME	POVERTY	BURDEN	FINANCE	ALONE
Forest	9	1	5	27
Wayne	24	50	37	5
Wyoming	34	34	34	11
Fulton	26	11	19	18
Adams	10	43	27	7
Elk	4	2	3	45
Pike	8	56	32	2
Perry	32	41	37	20
Indiana	29	8	19	19
Centre	3	42	23	14
Warren	35	4	20	31
Susquehanna	53	36	45	22
Clarion	36	3	20	29
Bradford	49	30	40	30
Tioga	48	24	36	9
McKean	17	7	12	51
Franklin	30	32	31	6
Cumberland	1	44	23	36
Venango	33	5	19	35
Snyder	58	26	42	13

Table: Pennsylvania State Data Center • Source: PASDC • [Get the data](#) • Created with [Datawrapper](#)

Ranks and Averages for PASDC Senior Isolation Index (rounded). Lower ranks (closer to 1) represent conditions where isolation is likely lower (e.g., Cumberland ranks 1 in our poverty measure due to having the lowest share of senior households living in poverty).

References & Data

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U.S. Census Bureau. (2014-2018). *American Community Survey*. Accessed via data.census.gov. Tables include:

- B17017: Poverty status in the past 12 months by household type by age of householder.
- B25072: Age of householder by gross rent as a percentage of household income in the past 12 months.
- B25093: Age of householder by selected monthly owner costs as a percentage of household income in the past 12 months.
- B09021: Living arrangements of adults 18 years and over by age.
- B12002: Sex by marital status by age for the population 15 years and over.
- B25128: Tenure by age of householder by year householder moved into unit.
- B25045: Tenure by vehicles available by age of householder.
- B28005: Age by presence of a computer and types of internet subscription in household.
- B18101: Sex by age by disability status.
- B16004: Age by language spoken at home by ability to speak English for the population 5 years and over.

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<https://www.ers.usda.gov/>.

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