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Characteristics of Rural Medicaid Recipients, 2012, 35 States**Key Findings****Characteristics**

- 22% of Medicaid enrollees lived in a rural area; half of rural enrollees lived in large rural counties.
- 51.8% of all enrollees were children; this proportion was lower among rural enrollees (50.9%).
- More than two-thirds (67.1%) of rural enrollees were white, compared to only 38.5% of urban enrollees.

Eligibility

- A larger proportion of rural enrollees (18.6%) than urban enrollees (15.5%) were eligible because of a disabling condition.
- Enrollees who were black, Hispanic, or American Indian/Alaska Native had smaller proportions eligible within the aged category and higher proportions of eligible children.

Enrollment

- 63.5% of the study population was enrolled for all 12 months of 2012; this was slightly higher among rural enrollees than urban ones (64.0% vs. 63.4%).
- The proportion enrolled in fee-for-service Medicaid for the full year was higher among rural enrollees and increased as rurality increased.

INTRODUCTION

Medicaid offers significant health care access and coverage to millions of low-income and vulnerable Americans. As of October 2017, Medicaid provided health care coverage for 68.2 million Americans (and an additional 5.96 million via the Children's Health Insurance Program CHIP)¹; more than half of all enrollees are children¹. The characteristics of those enrolled are not well documented,² with data regarding the age, gender, race/ethnicity, or rurality of enrollees being sparse. MACPAC provides information regarding eligibility categories and expenditures but little in the way of demographic distributions of these characteristics. In particular, a detailed analysis of enrollees by rural residence is not typically presented, especially by personal characteristics.

The purpose of this brief is to examine the characteristics of Medicaid enrollees prior to Medicaid expansion in 2014, using enrollment and claims data from the Medicaid Analytic Extract Files. Although Medicaid is administered by individual states, data files are provided to the Research Data Assistance Center of the Centers for Medicare & Medicaid Services. Because states vary in the timing of claims and enrollment data submission, researchers have to make trade-offs between timeliness and thoroughness of data. When this research was initiated, 2012 data were available for 35 states, the most robust sample at the time. This sample, though somewhat dated, allowed for a detailed examination of Medicaid populations in the pre-Medicaid expansion period. Details on the methods and sample can be found in the Technical Appendix.

Characteristics and Residence

Across the 35 states studied, 22.4% of Medicaid enrollees lived in rural areas. Half of rural enrollees (50.3% of all rural enrollees, 11.2% of total enrollees) lived in large rural areas, followed by 29.0% (6.5% of total) in small rural, and 20.7% (4.6% of total) in isolated rural areas (See Figure 1).

Rural Medicaid enrollees differed from their urban counterparts across the demographic variables available in the data (See Table 1, next page).

Across the states studied, more than half of enrollees were children (51.8%), and 8.7% were age 65 or older. Compared with urban enrollees, a higher proportion of rural enrollees were over the age of 65 (9.5% vs. 8.4% urban), and proportionately fewer were 18 or younger (50.9% vs. 52.0%). As rurality increased, the proportion of enrollees over the age of 65 increased, to a high of 10.6% in isolated rural areas. Correspondingly, the proportion 18 and under decreased to a low of 49.9% in isolated rural areas.

Figure 1: Distribution of Study Population by Rurality, 35 states, 2012, n=50,027,866

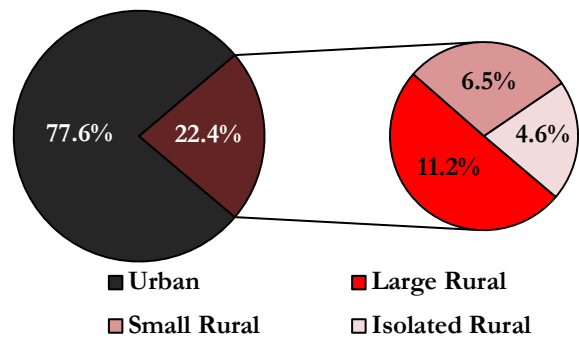
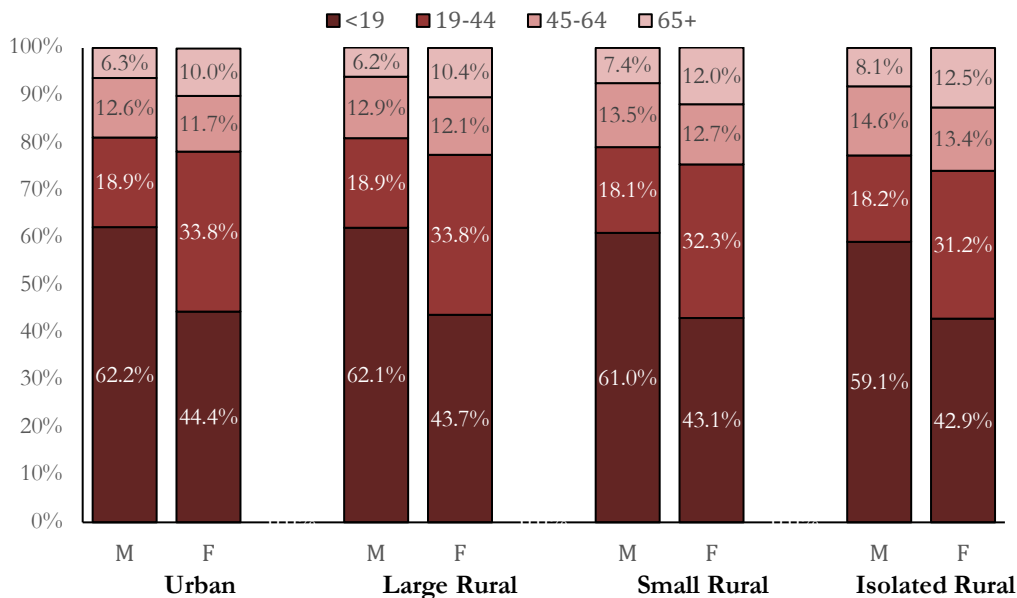


Figure 2: Age Distribution of Medicaid Beneficiaries, by Gender and Rurality, 2012



Note on the reporting of statistical significance in this report series: Statistical significance emerges from the difference between two values and the size of the populations for which the differences are calculated. Because this research is based on more than 50 million observations, all comparisons are significant unless values are nearly identical. Thus, our discussion addresses differences large enough to be meaningful in a policy or clinical context.

Gender differences across rurality were small. The proportion of beneficiaries that was female was high overall (57.4%) and was slightly higher among rural residents, with a high of 57.7% in large rural areas. Isolated rural residents had a lower proportion of females than both other rural areas and urban areas (56.8%). Age also differed by gender (See Figure 2); a higher proportion of male than female enrollees were 18 or younger (61.9% vs. 44.2%). In 2012, Medicaid eligibility among non-disabled adults was generally limited to pregnant women and individuals with specific disorders, such as cancer, leading to low male enrollment among working age adults. These restrictions did not apply to children. The proportion of enrollees aged 65 and older was higher among females than males (10.3% vs. 6.4%) and also increased as rurality increased.

The race/ethnicity profiles of rural versus urban enrollees differed markedly. Among rural enrollees, 67.1% of the enrollees were white, compared to 38.5% among urban enrollees. Urban areas had a much larger proportion of enrollees categorized as non-Hispanic black (28.7% vs. 15.3% for rural), Hispanic (21.3% vs. 8.7%), and Asian/Pacific Islander (4.0% vs. 0.5%) than rural areas, whereas rural areas had a higher proportion of American Indian/Alaska Native (2.4% vs. 0.5% for urban) and other (6.9% vs. 6.7%) than urban areas.

Differences also existed within rural areas. As rurality increased, the proportion of enrollees reported as white or American Indian/Alaska Native increased, whereas the proportion that was non-Hispanic black or Hispanic decreased.

Table 1: Characteristics of Medicaid Recipients, by Rurality, 35 States*, 2012

	Total (n=50,027,866)	Urban (n=38,844,588)	All Rural † (n=11,183,278)	Large Rural † (n=5,622,991)	Small Rural † (n=3,246,161)	Isolated Rural † (n=2,314,126)
Age						
<19	51.8	52.0	50.9	51.5	50.7	49.9
19-44	27.3	27.5	26.7	27.5	26.3	25.6
45-64	12.3	12.1	12.9	12.4	13.0	13.9
65+	8.7	8.4	9.5	8.7	10.0	10.6
Sex						
Female	57.4	57.4	57.5	57.7	57.6	56.8
Male	42.6	42.6	42.5	42.3	42.4	43.2
Race/Ethnicity						
NH White	44.9	38.5	67.1	65.6	66.7	71.3
NH Black	25.7	28.7	15.3	16.2	16.2	11.5
Hispanic	18.5	21.3	8.7	10.2	8.0	5.9
NH AI/AN	1.0	0.5	2.4	1.5	2.4	4.5
NH A/PI	3.2	4.0	0.5	0.7	0.4	0.3
NH Other	6.7	6.9	6.1	5.8	6.2	6.5

† Significantly different from urban for all categories, $p < 0.05$

* The following states are not included in the data, by region: Northeast: NH, ME. Midwest: KS, ND. South: LA. West: AZ, CA, CO, ID, NM, UT

Eligibility, Enrollment, and Residence

In 2012, prior to Medicaid expansion as allowed under the Affordable Care Act, Medicaid eligibility was restricted to five specific categories, as well as through waivers that expanded eligibility in any of the categories (See Technical Appendix). Each state sets their criteria for inclusion in each of the following five basic categories; each beneficiary was assigned to a single category by the state in which they were enrolled.

- **Adult:** Non-disabled persons between the age of 18 and 64 living below state poverty level guidelines. These guidelines generally allowed higher income for women during pregnancy and postpartum than for men or non-pregnant women. In many states, childless non-disabled adults were not eligible for Medicaid regardless of poverty level prior to 2014.
- **Aged:** Persons over age 65 who met poverty guidelines.
- **Children:** Children meeting income requirements could participate in Medicaid or its companion program, the State Children’s Health Insurance Program (CHIP).
- **Disabled:** Adults who are blind or disabled and who meet poverty guidelines.
- **Other:** Special programs for screening and care for particular conditions, such as individuals covered under the Breast and Cervical Cancer Prevention Act of 2000. These programs affect proportionately few enrollees.

Across all areas, the single largest group of Medicaid beneficiaries was children, with proportions ranging from 51.6% in urban ZCTAs to 49.6% in isolated rural areas (See Figure 3 and Table 2). The biggest differences between rural and urban areas in 2012 were in the smaller proportion of individuals who qualified for Medicaid as impoverished adults, and the higher proportion qualified through disability, in rural communities. These differences become accentuated as rurality increases. Thus, whereas 25.2% of all urban enrollees were working-age adults, this proportion declined to 21.4% in isolated rural areas. Conversely, individuals who receive Medicaid because of disability accounted for 15.5% of urban enrollees but 19.0% of enrollees in the isolated rural communities.

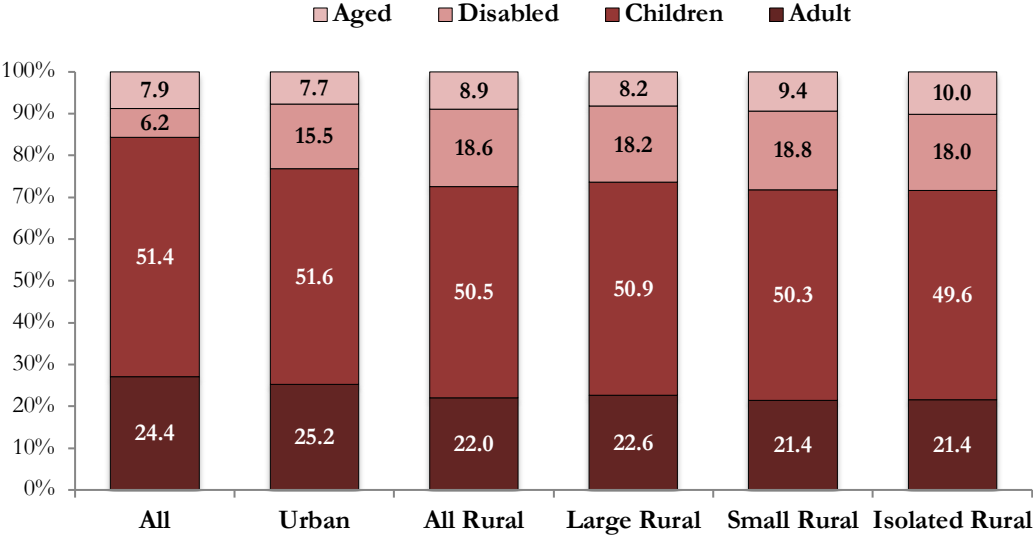


Table 2: Distribution of Enrollment by Eligibility Types, by Race/Ethnicity and Rurality, 35 states*, 2012, in percentages

	Total (n=50,027,866)	Urban (n=38,844,588)	All Rural (n=11,183,278)	Large Rural (n=5,622,991)	Small Rural (n=3,246,161)	Isolated Rural (n=2,314,126)
White						
Aged	9.4	9.2	9.8	9.0	10.2	10.8
Disabled	18.1	17.7	18.8	18.7	18.8	19.1
Children	46.8	46.4	47.5	47.4	47.7	47.4
Adult	25.7	26.6	23.8	24.7	23.2	22.5
Other	0.1	0.1	0.1	0.1	0.1	0.1
Black						
Aged	5.8	5.4	8.6	7.5	9.5	10.9
Disabled	17.1	16.6	20.1	19.1	20.6	22.4
Children	52.3	52.3	52.1	53.2	51.6	49.1
Adult	24.8	25.7	19.2	20.1	18.3	17.5
Other	0.1	0.1	0.1	0.1	0.1	0.1
Hispanic						
Aged	6.0	6.2	4.6	4.7	4.5	4.3
Disabled	7.6	7.8	5.9	6.2	5.6	5.6
Children	64.3	63.4	72.2	71.5	72.8	73.6
Adult	22.0	22.6	17.3	17.5	17.1	16.5
Other	0.0	0.0	0.0	0.0	0.0	0.0
AI/AN						
Aged	4.5	5.1	4.1	4.0	4.1	4.1
Disabled	11.6	13.0	10.5	12.6	11.0	8.6
Children	57.8	53.7	61.1	59.0	61.7	62.4
Adult	25.9	28.1	24.2	24.4	23.1	24.8
Other	0.1	0.1	0.1	0.1	0.1	0.1
AI/PI						
Aged	13.6	13.8	10.6	10.6	11.0	10.0
Disabled	5.8	5.7	9.8	8.8	11.1	12.8
Children	42.1	41.6	55.2	55.7	54.8	53.5
Adult	38.4	38.9	24.3	24.8	23.0	23.7
Other	°	°	°	°	°	°
Other						
Aged	9.4	9.7	7.9	7.1	8.2	9.3
Disabled	29.2	28.1	33.5	33.8	35.1	30.8
Children	46.7	47.5	43.6	44.7	42.2	42.9
Adult	14.7	14.6	14.9	14.3	14.5	17.0
Other	0.0	0.0	0.1	0.1	0.1	0.1

° Suppressed because of small sample sizes.

*The following states are not included in the data, by region: Northeast: NH, ME. Midwest: KS, ND. South: LA. West: AZ, CA, CO, ID, NM, UT

The distribution of beneficiaries by eligibility type differed by race/ethnicity across levels of rurality (See Table 2). Notably, black, Hispanic, or American Indian/Alaska Native populations had smaller proportions eligible within the aged category and higher proportions of eligible children. The proportion enrolled in the aged category increased with rurality for whites and blacks only and decreased for the other groups. Enrollment for children decreased slightly as rurality increased for black and other categories yet increased for Hispanics, American Indians/Alaska Natives, and Asian/Pacific Islanders. Nearly three-fourths (73.6%) of Hispanic enrollees who lived in isolated rural areas were children compared to less than half (47.4%) among whites.

All non-white populations (except for the ‘other’ category) had lower proportions of beneficiaries eligible by having a disabling condition; the percentage of Hispanics eligible because of a disabling condition was less than half that of whites (7.6% vs. 18.1%, respectively).

Discontinuous enrollment in Medicaid—dropping in and out of coverage—has been associated with adverse health outcomes for both children³ and adults.^{4,5,6} Table 3 displays the proportions of the study population who are full versus part-year enrollees by enrollment duration and type. Overall, 63.6% of the enrollees studied participated in Medicaid for all 12 months of 2012; this was slightly higher among rural enrollees than urban ones (64.1% vs. 63.4%). Of those enrolled for the full year, the majority were enrolled in an health maintenance organization (HMO) for all or part of the year. The proportion enrolled in fee-for-service (FFS) Medicaid for the full year was higher among rural enrollees and increased as rurality increased. Among those enrolled for less than 12 months, differences based on residence were modest.

Table 3: Enrollment Duration and Type of Medicaid Recipients, by Rurality, 35 States*, 2012

Enrollment Duration	Total (n=50,027,866)	Urban (n=38,844,588)	All Rural † (n=11,183,278)	Large Rural † (n=5,622,991)	Small Rural † (n=3,246,161)	Isolated Rural † (n=2,314,126)
Full year	63.6	63.4	64.1	63.7	64.6	64.1
FFS	29.7	27.9	35.8	34.9	35.6	38.3
HMO	53.2	55.0	47.1	47.5	48.0	44.9
FFS/HMO	17.1	17.1	17.1	17.7	16.4	16.8
Partial year	36.4	36.6	36	36.2	35.5	35.9
FFS	32.2	31.4	34.8	34.0	34.6	37.1
HMO	35.1	34.6	36.7	36.7	37.7	35.2
FFS/HMO	32.7	33.9	28.5	29.3	27.7	27.7

†Significantly different from urban for all categories, $p < 0.05$

*The following states are not included in the data, by region: Northeast: NH, ME. Midwest: KS, ND. South: LA. West: AZ, CA, CO, ID, NM, UT

Conclusions

This brief examined the characteristics, eligibility categories, and enrollment duration of a sample of Medicaid enrollees from 2012, prior to Medicaid expansion. The analysis focused on rurality, only infrequently in the literature to this point. Findings stress the importance and need of residence-based analyses to continue in the future.

First, the demographic characteristics of rural enrollees differed from those of urban enrollees in several ways, most notably in racial/ethnic composition. White Medicaid enrollees made up the majority of the rural enrollee population (67.1%), whereas they were a minority in urban areas (38.5%). This reflects the overall demographics of rural America: in 2014, rural populations were 79.5% white compared to 60% of urban populations.⁷

Race/ethnicity and rurality were associated with the distribution of 2012 Medicaid enrollees across eligibility categories. Overall, rural populations were slightly more likely to be eligible because of age or a disabling condition than were urban populations. Among white and black enrollees, eligibility through aged status was more likely for rural than for urban residents; among Hispanic and American Indian/Alaska Native groups, however, the opposite was true. Similarly, white and black rural enrollees were more likely than their urban peers to qualify because of disability; again the opposite was true for Hispanic and American Indian/Alaska Native populations.

Children were the largest subgroup of Medicaid enrollees in the 2012 sample studied, accounting for 51.4% of all enrollees. The Hispanic Medicaid population was most heavily slanted toward children, with their proportion in the populations increasing from 63.4% in urban areas to 73.6% in the most rural communities. Although it is possible that many Hispanic adults may not qualify for Medicaid, these individuals may also seek care at lower rates and thus not encounter providers who encourage qualified individuals to apply. Hispanic adults were markedly more likely than white adults to lack a usual source of care in 2012-2013 (32.6% versus 19.2%) and to report no health care visits during the past year (24.0% versus 16.1%).⁸

Not surprisingly, enrollment in a managed care plan/HMO was lower among rural residents, either for part or all of the year. Given the lower managed care penetration rates and lower population density within rural areas, the availability of such plans is likely to be lower in these areas. In addition, state-by-state differences in policy will affect this enrollment, with some states mandating larger populations to enroll in managed care plans than others. Regardless, these plans have important implications in regards to utilization and access to care that may differ among rural populations.

The current report could not adequately examine regional differences. Because of reporting gaps, the West was underrepresented in the 35 studied states. Thus, comparisons across regions were avoided, as they would likely be biased in some unknown way.

Finally, analyses using Medicaid data files compiled at the Research Data Assistance Center (ResDAC), although worthwhile, are hampered by the lateness of the data. Data in the current report (2012) are five years old. States contribute to the ResDAC files at their own pace. Attempts to improve the timeliness of these data, and to maintain an ongoing updated profile of Medicaid enrollees of this type, would have great utility for the formation of Medicaid policy.

TECHNICAL NOTES

Data sources

This analysis used the Medicaid Analytic Extract (MAX) Personal Summary File for 2012. The 2012 data included 100% sample for Medicaid data from 35 states (AK, AL, AR, CT, DE, FL, GA, IA, IL, IN, KY, MD, MI, MN, MO, MS, MT, NC, NE, NJ, NV, NY, OH, OK, OR, PA, SC, SD, TN, TX, VA, VT, WA, WV, and WY).

The study population was limited to Medicaid recipients who remained alive for the entirety of 2012 with further exclusions for enrollees with missing data for variables of interest, not enrolled in Medicaid (0 months of Medicaid enrollment), and negative values for length of stay, Medicaid covered days, or expenditures. Medicaid recipients with greater than 365 days for length of stay or Medicaid covered days were analyzed as 365 days. Institutionalized beneficiaries were not excluded.

This population (N=50,027,866) was used to calculate the distribution of Medicaid recipients by rurality, race/ethnicity, and for key demographics of interest. Medicaid recipient sub-populations were defined based on length of enrollment (full year or partial year), type of enrollment (managed care vs. fee-for-service) and eligibility type (aged, disabled, TANF children, TANF adults, and Other). Eligibility categories are defined below.

Geographic definitions

Our geographic analysis is based on the recipients' residence using ZIP Code Census Tract approximation (ZCTA). Rurality was defined using Rural Urban Commuting Area (RUCA) Codes, which categorize ZCTA's by population and commuting patterns. We assigned recipients to the following geographic categories: Urban (RUCA Codes 1 – 3), Large rural (Codes 4 – 6), Small rural (Codes 7 – 9), and Isolated rural (Code 10). (ZCTAs were developed by the University of Washington. For detailed definitions, see <http://depts.washington.edu/uwruca/>).

Eligibility Categories, Based upon the Medicaid Eligibility code

Aged	Disabled	Child	Adult	Other
11 = Aged, Cash	12 = Blind/Disabled, Cash	14 = Child (Not Child Of Unemployed Adult, Not Foster Care Child), Eligible Under Section 1931 Of The Act	15 = Adult (Not Based On Unemployment Status), Eligible Under Section 1931 Of The Act	3a = Individual Covered Under The Breast And Cervical Cancer Prevention Act Of 2000, Poverty
21 = Aged, Medically needy	22 = Blind/Disabled, Medically need	16 = Child Of Unemployed Adult, Eligible Under Section 1931 Of The Act	17 = Unemp. Adult, Eligible Under Section 1931 of The Act	99 = Unknown Eligibility
31 = Aged, Poverty	32 = Blind/Disabled, Poverty	24 = Child, Medically need	25 = Adult, Medically need	
41 = Other Aged	42 = Other Blind/Disabled	34 = Child, Poverty (Includes Medicaid Expansion SCHIP Children)	35 = Adult, Poverty	
51 = Aged, Section 1115 Demonstration Expansion	52 = Disabled, Section 1115 Demonstration Expansion	44 = Other Child	45 = Other Adult	
		48 = Foster Care Child	55 = Adult, Section 1115 Demonstration Expansion	
		54 = Child, Section 1115 Demonstration Expansion		

REFERENCES

- ¹ See <https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-enrollment-data/report-highlights/index.html>
- ² See https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/DualEnrollment_2006-2015.pdf
- ³ Slade EP, Wissow LS, Davis M, Abrams MT, Dixon LB. Medicaid lapses and low-income young adults' receipt of outpatient mental health care after an inpatient stay. *Psychiatr Serv.* 2014 Apr 1;65(4):454-60.
- ⁴ Dawes AJ, Louie R, Nguyen DK, Maggard-Gibbons M, Parikh P, Ettner SL, Ko CY, Zingmond DS. The impact of continuous Medicaid enrollment on diagnosis, treatment, and survival in six surgical cancers. *Health Serv Res.* 2014 Dec;49(6):1787-811. .
- ⁵ Banerjee R1, Ziegenfuss JY, Shah ND. Impact of discontinuity in health insurance on resource utilization. *BMC Health Serv Res.* 2010 Jul 6;10:195.
- ⁶ O'Malley CD, Shema SJ, Clarke LS, Clarke CA, Perkins CI. Medicaid status and stage at diagnosis of cervical cancer. *Am J Public Health.* 2006 Dec;96(12):2179-85.
- ⁷ Bennett KJ, Lin Y-H, Yuen M, Leonhirth D, Probst JC. *Vulnerable Rural Counties: The Changing Rural Landscape, 2000 – 2010.* South Carolina Rural Health Research Center Findings Brief, May, 2016.
- ⁸ US Department of Health and Human Services. *Health US 2014.* Washington, DC. Tables 68 & 71.