Regional Health Assessment Report

Prepared for the REACH Healthcare Foundation

Prepared by MARC

A report on the health status and access to care for the uninsured and other vulnerable populations in the REACH catchment area.

MARC
Mid-America Regional Council

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Introduction

The REACH Healthcare Foundation has requested an analysis of the health and social conditions of uninsured and other vulnerable populations in the Kansas City metropolitan area and their access to health care services. The report that follows was prepared by the Mid-America Regional Council in response to this request.

The report covers the following counties and cities: Johnson, Wyandotte, and Allen counties in Kansas and Jackson, Cass, and Lafayette counties in Missouri plus those portions of Clay and Platte counties that are within Kansas City. The study primarily provides an integration and analysis of secondary data that pertains to the health and health care of the medically underserved. The report focuses on the following areas:

- Numbers, status and characteristics of the uninsured in the REACH catchment area using the Public Use Microdata Sample (PUMS) of the American Community Survey provided by the U.S. Census Bureau
- Demographic data on vulnerable populations within the target area
- Health and disease data and trends most pertinent to vulnerable populations
- Access to care data and trends for those in vulnerable populations
- An analysis of the above data in order to identify emerging issues or geographic areas of concern including the top three issues for each county
- The report includes health profiles for each of the counties

The report is intended as a starting point for further discussions and analysis concerning the nature of medically vulnerable populations in the region, their health characteristics and vulnerabilities, and their ability to access appropriate health care.

Status of the Uninsured

Defining the medically underserved

The Census Bureau now conducts the American Community Survey annually. This survey is designed to provide a large enough sample over a 5-year period that it can replace the so-called "long-form" of prior decennial censuses. Beginning in 2008, this survey added a question regarding the availability and type of health insurance for each member of the household.

For each person in the household, this question asks respondents to identify whether they currently covered by any of the following types of health insurance plans: through a current or former employer or union, purchased directly from an insurance company, Medicare for those who are over 65 or have certain disabilities, Medicaid or similar program for those with low incomes or disability, TriCare (military), VA (those who have ever enrolled or used VA health care), Indian Health Services, or other. If "other" is selected, respondents are to specify what kind of insurance it is. The Census Bureau then reallocates it to one of the seven allowed responses.

Those who do not select any of the types are considered to be uninsured. Because the insurance offered through Indian Health Services is not comprehensive, those who select only that insurance type are also counted by the Census Bureau as uninsured.

Because the ACS surveys 250,000 households per month nation-wide, it yields the largest sample ever provided to assess health care coverage. As, such, it produces reliable estimates annually for cities and counties more than 65,000 in population. All of the counties in the REACH area meet this population threshold, except for Allen County.

The standard tabulations from the 2008 ACS yield the following estimates of the insured and uninsured by county:

	Johnson	Leavenworth	Wyandotte	Cass	Clay	Jackson	Platte	Total
Total:	529,926	67,131	152,722	97,303	214,487	664,093	84,982	1,810,644
With health ins.	486,802	60,263	117,819	87,997	191,879	563,962	77,569	1,586,291
No health ins.	43,124	6,868	34,903	9,306	22,608	100,131	7,413	224,353
Unins. rate	8%	10%	23%	10%	11%	15%	9%	12%
Under 18 years:	138,146	18,679	43,526	25,351	55,488	169,751	20,817	471,758
With health ins.	131,085	17,949	37,017	24,496	52,382	153,968	20,195	437,092
No health ins.	7,061	730	6,509	855	3,106	15,783	622	34,666
Unins. rate	5%	4%	15%	3%	6%	9%	3%	7%
18 to 64 years:	338,591	40,934	93,511	61,417	136,302	414,177	56,222	1,141,154
With health ins.	303,168	34,796	65,396	52,966	117,275	330,596	49,476	953,673
No health ins.	35,423	6,138	28,115	8,451	19,027	83,581	6,746	187,481
Unins. rate	10%	15%	30%	14%	14%	20%	12%	16%
65 years or over:	53,189	7,518	15,685	10,535	22,697	80,165	7,943	197,732
With health ins.	52,549	7,518	15,406	10,535	22,222	79,398	7,898	195,526
No health ins.	640	0	279	0	475	767	45	2,206
Unins. rate	1%	0%	2%	0%	2%	1%	1%	1%

These data provide the most accurate calculation of the uninsurance rate for counties or metropolitan areas to date. The range of uninsurance rates is significant across counties, from Johnson County's 8

percent to Wyandotte County's 23 percent, nearly three times higher. The range is even more pronounced for children. Only 3 percent of Platte County's children are uninsured, while 15 percent of Wyandotte County's are. But uninsurance rates are highest for adults under the age of 65, ranging from 10 percent in Johnson to 30 percent in Wyandotte.

This data is clearly interesting, but it raises many questions concerning the reasons for the disparities. Unfortunately, this is the only data that is tabulated by the Census Bureau. More detailed characteristics of the insured and uninsured are not available at sub-state levels in their standard reports. In times past, we would simply be left with questions and suspicions.

However, in addition to the standard tabulations, the ACS also makes available a sample of the actual individual survey records with the individual identifiers removed to preserve confidentiality. This is called the Public Use MicroSample, or PUMS data, and it allows researchers to create their own custom tabulations. MARC accessed this data and prepared custom tabulations to produce the charts and statistics that follow.

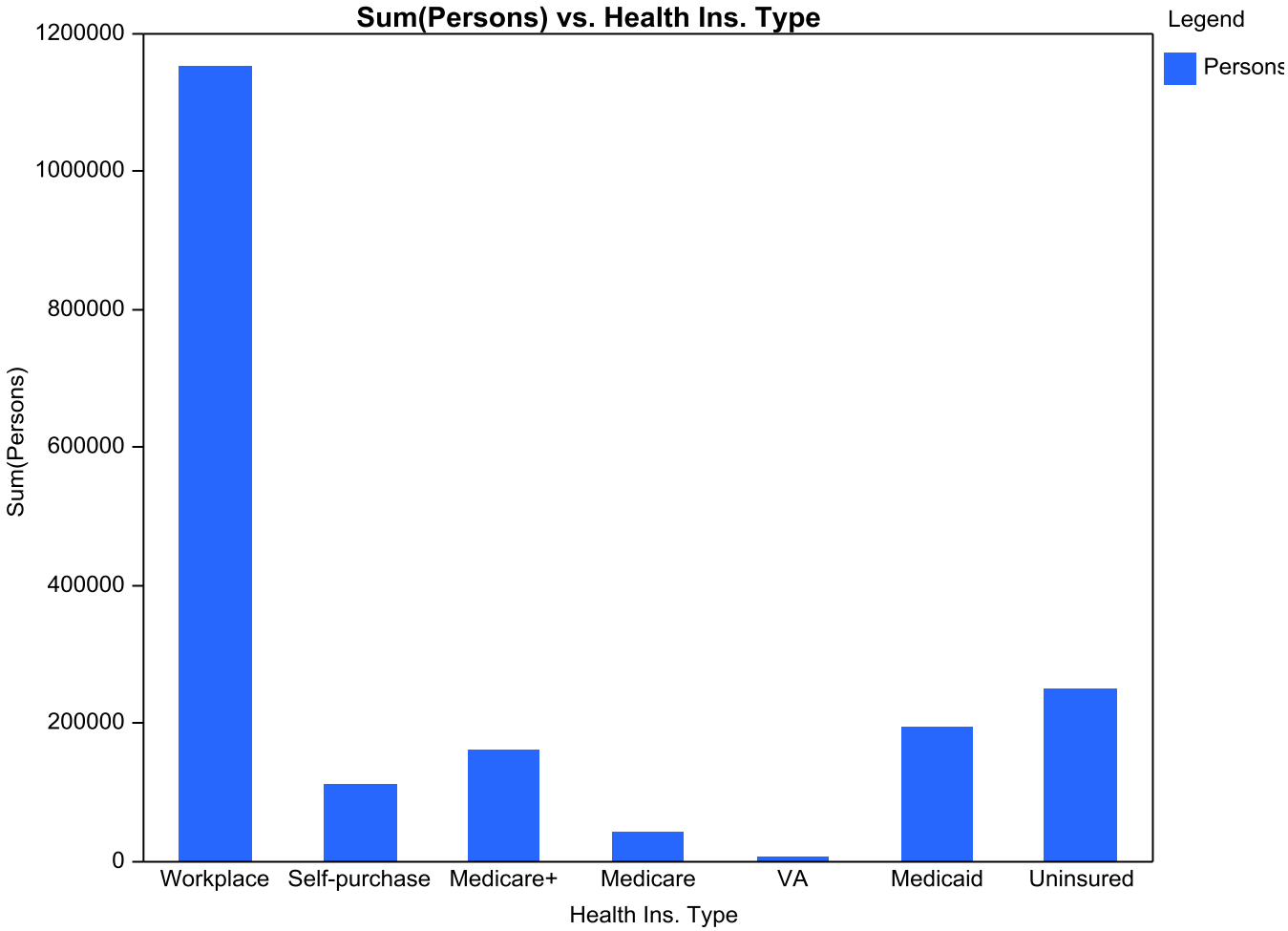
There is one major restriction, however, in using the PUMS data. The data are released only for geographic areas called PUMAs – Public Use Microsample Areas. These areas must be at least 100,000 in population, and they do not necessarily follow county boundaries. Maps of the PUMAs in the Kansas City region are presented in Appendix A. A table identifying each PUMA and the geographic area it covers can be found later in this section.

The other main difficulty with this data is that it requires designing custom cross-tabulations to use it, and the possible cross-tabulations are nearly endless. This required MARC to make some simplifying assumptions.

For example, respondents are allowed to select all insurance types that apply to the particular person in the household for whom they are answering, making multiple responses possible. No question is asked, however as to which type of insurance is primary. This can result in tabulating the data by any and all combination of insurance types, which would be confusing. Therefore MARC classified insurance holders as follows:

1) Those who selected Medicaid were assumed to use Medicaid as their primary insurance, even if they also had other types, and so were classified as "Medicaid".
2) Those not classified as "Medicaid" and selected only Medicare were categorized simply as "Medicare".
3) Those who were not classified a "Medicaid" and selected Medicare plus some other type of insurance were categorized as "Medicare+". Most of these had either insurance through the workplace in addition to Medicare, or they purchased additional insurance directly.
4) Those not yet classified (as per #1, #2, or #3 above) and who selected either insurance through an employer or union or through TriCare were classified as "Workplace."
5) Those not yet classified (as per #1, #2, #3, or #4 above) and who selected VA were classified as having VA insurance.
6) Those not yet classified and who selected purchasing directly from an insurance company were classified as "Self-purchase." These are those whose only insurance was self-purchased.
7) All others were classified as uninsured. This is because the Census Bureau classifies those with insurance through the Indian Health Service as uninsured as this insurance is not considered to be comprehensive.

Based on these classifications, approximately 1.2 million people in the PUMAs that contain REACH counties have health insurance through their workplace, while about 250,000 people are uninsured. Medicaid recipients total about 195,000. Close to 164,000 people have Medicare plus some other type of insurance, while about 45,000 people have Medicare alone. Roughly 112,000 people purchase health insurance directly from insurers as their primary coverage.



Typically, the medically underserved might be defined as those on Medicaid plus the uninsured. But that over three-quarters (78 percent) of the people on Medicare seem to also need a supplement to Medicare while the remaining quarter (actually, 22 percent) of Medicare recipients have only Medicare suggests that the latter group may also have issues with respect to levels of coverage. Similarly, those whose primary insurance is self-purchased may have a financial incentive to under-purchase insurance and so be underserved. The PUMs data allows us to look at the characteristics of these groups in relation to traditionally underserved groups, like those on Medicaid and the uninsured, as well as in relation to those with insurance through their employer, to see whom they most resemble. This may then provide some insight into the extent these other groups should be categorized as underserved.

A detailed analysis, based on the PUMS data, of insurance status by population characteristics and geography can be found in Appendix A. Following is a summary of the outcome of that analysis.

Those with workplace-provided health insurance are roughly 83 percent white, significantly higher than the 77 percent in the aggregation of PUMAs as a whole. The diversity of those on Medicaid and the uninsured are markedly higher than the other groups. Those on Medicaid are 58 percent white, 29 percent African American, and 11 percent Hispanic. Those who are uninsured have a slightly smaller percentage of whites, 55 percent. Hispanics, however, are the largest minority group, accounting for 24 percent of the uninsured. Blacks comprise 18 percent of the uninsured, while Asians are 3 percent.

Another category of interest is employment. Those on Medicaid and those who are uninsured show significantly different distributions of employment status, both from the other categories and from each other. Approximately 87 percent of those on Medicaid are not in the labor force, i.e., the are not employed or unemployed and looking for work. By contrast, two-thirds of those who are uninsured are in the labor force, with 56 percent working while 11 percent are looking for work.

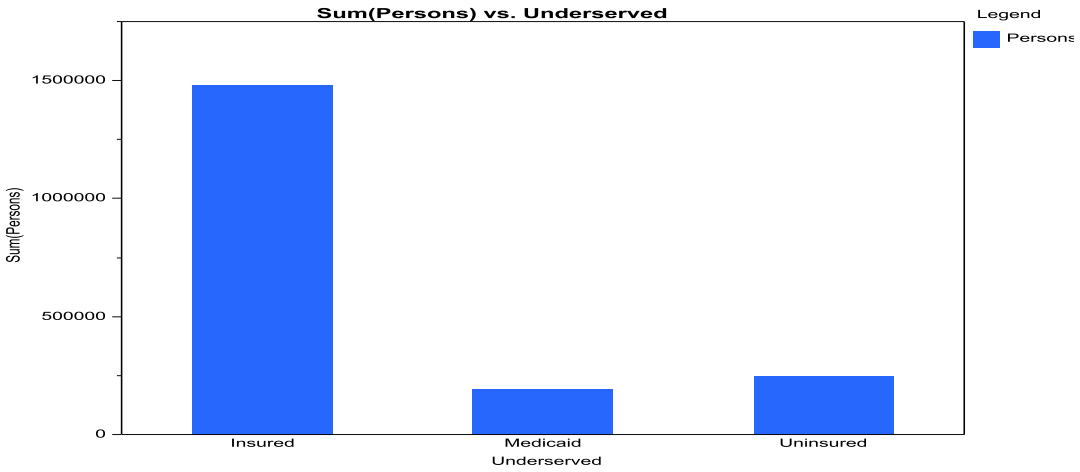
Finally is a look at incomes as it relates to insurance status. Those obtaining their insurance through the workplace have a plurality in the highest income group. Those who self-purchase insurance have higher proportions in the lowest income groups and so lower proportions of individuals in the highest income group. Interestingly, the income distribution of those with Medicare plus some other kind of insurance closely matches those who purchase insurance directly, despite their differing work profiles. Still, those with only Medicare are, in fact, significantly poorer than those supplementing it.

By far the poorest groups are the uninsured and those on Medicaid. About 58 percent of the uninsured have incomes below 200 percent of poverty, while slightly more than three-quarters of those on Medicaid do. In fact, nearly half of those on Medicaid – 47 percent – have incomes below 100 percent of the federal poverty level. More than one-quarter (28 percent) of the uninsured live in households below the poverty line. This compares to 3 percent of those who get insurance through the workplace, seven percent who are on Medicare plus some supplement, and 18 percent of those who are on Medicare alone.

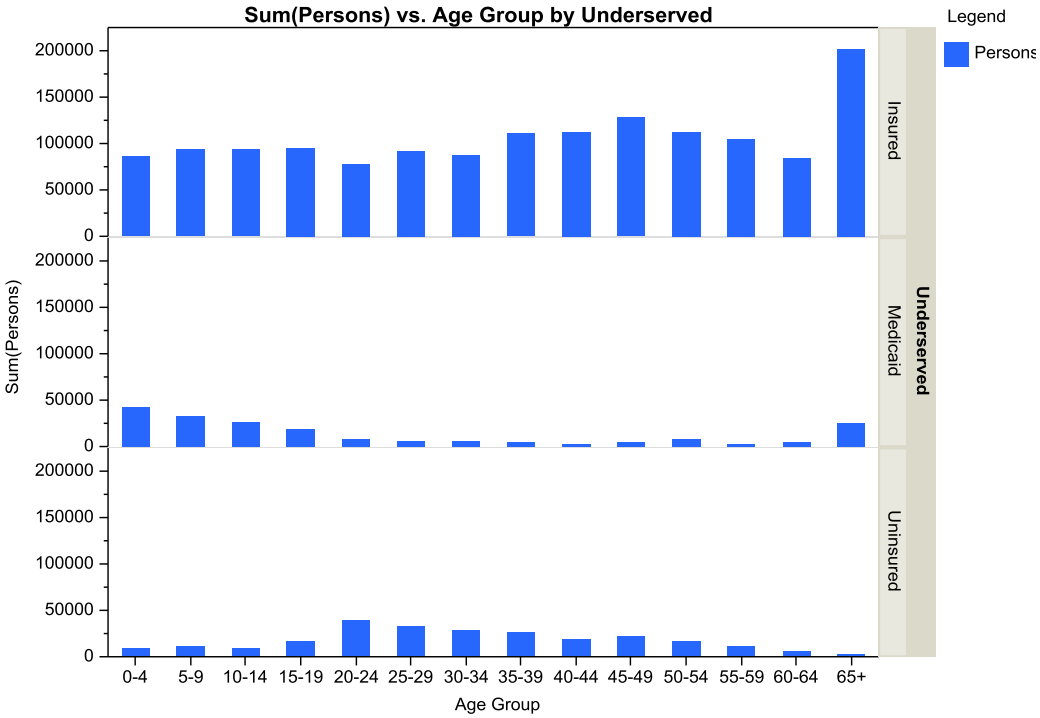
Those who purchase insurance directly are somewhat poorer, work somewhat less and are slightly older than those who receive it through the workplace; these differences are insufficient to suggest they suffer from a level of distress that would cause them to be considered medically underserved. Similarly, while those who only have Medicare are more likely to be disabled and poorer, the level of disparity compared to those who can supplement Medicare with other insurance is insufficient to conclude that they are likely to be medically underserved. *The remainder of the analysis will therefore concentrate on those on Medicaid and those who are uninsured as our working definition of the medically underserved.*

Characteristics of the medically underserved

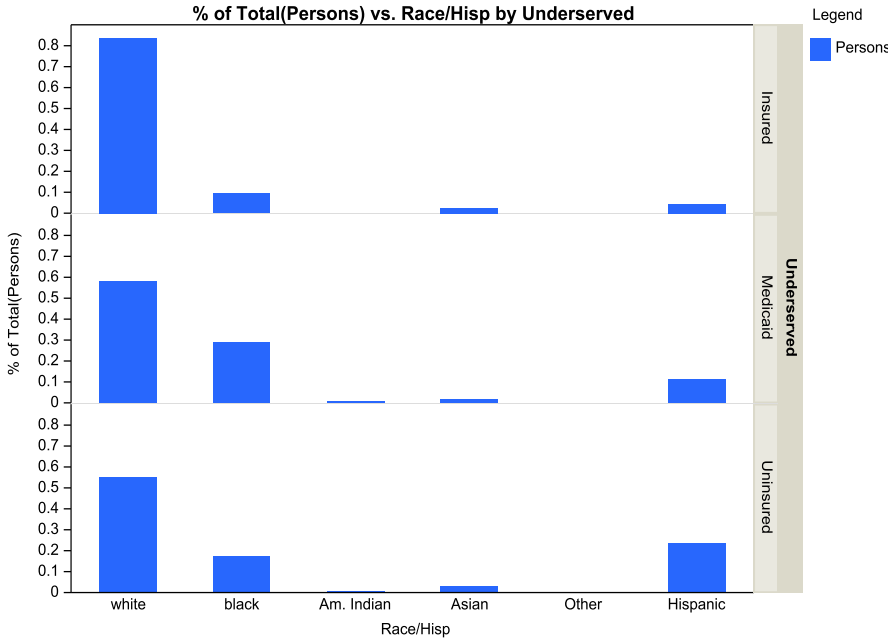
As a result of the analysis above, for purposes of this study the medically underserved will be considered to be composed of those on Medicaid and those who are uninsured. In the following graphs, these two groups are compared to the rest of the population who generally have adequate access to health care.



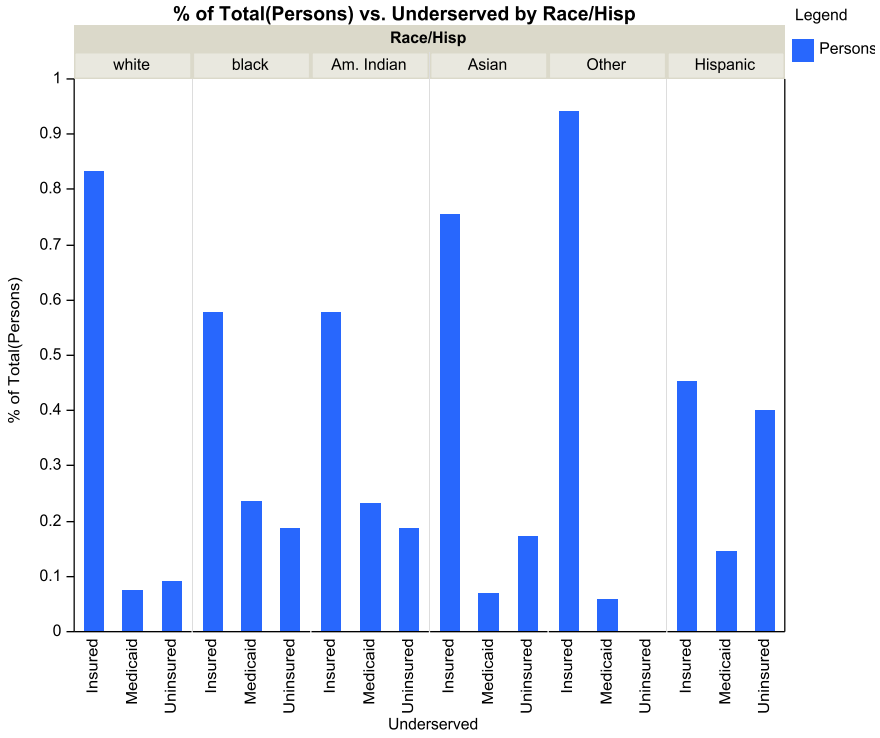
Approximately 1.5 million individuals in the PUMAs including the REACH service area are adequately covered by insurance. This amounts to about 77 percent of the total population in the area. However, there are approximately 445,000 persons, or 23 percent, who are medically underserved by the above definition.



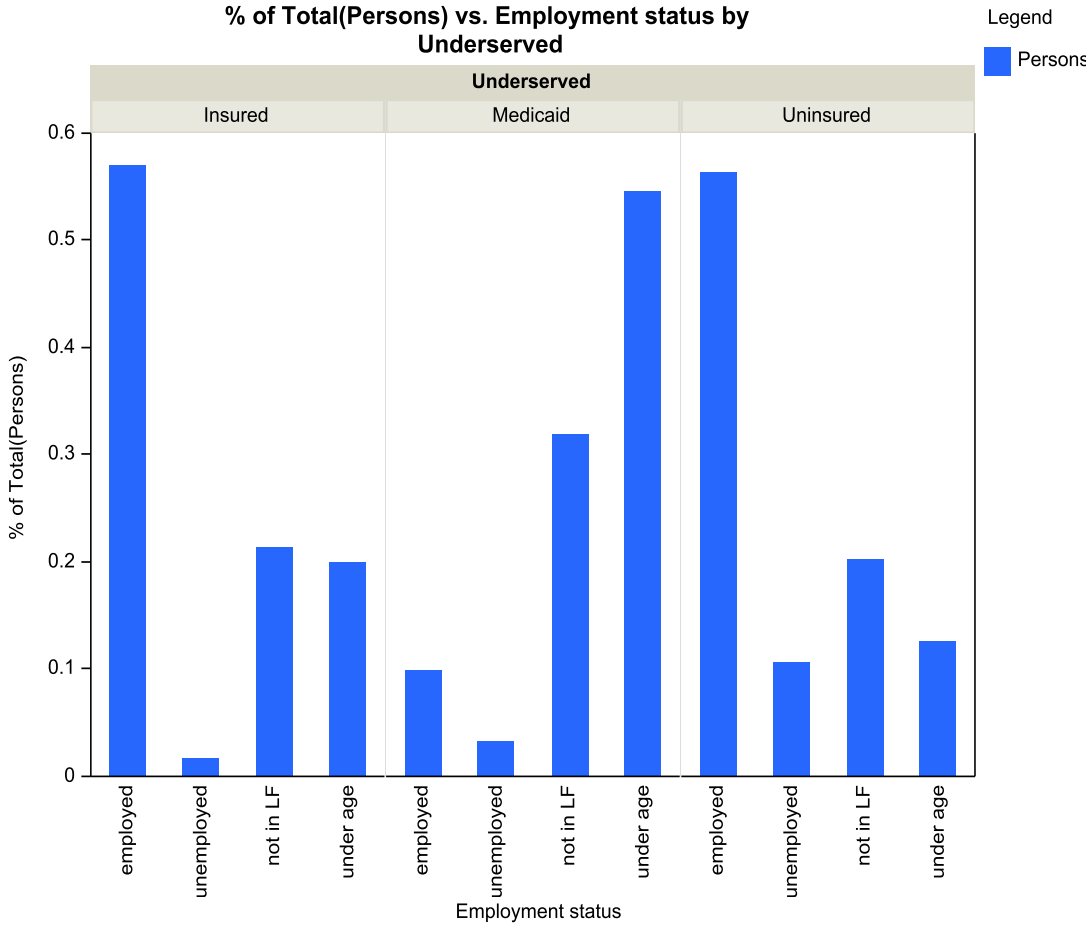
The age distributions of the three groups are markedly different. Those with adequate health insurance show a bulge in the middle-aged years, mirroring the peak of the baby boom generation. The median age for the insured is 43. (The large peak is the 65 and over population which comes from aggregating the 65-69, 70-74, 75-79, 80-84 and 85+ age groups into one.) On the other hand, those on Medicaid are primarily young children, with a median age of 16. The age distribution of uninsured occupies a position in between the other two, primarily composed of young-adults and having a median age of 31.



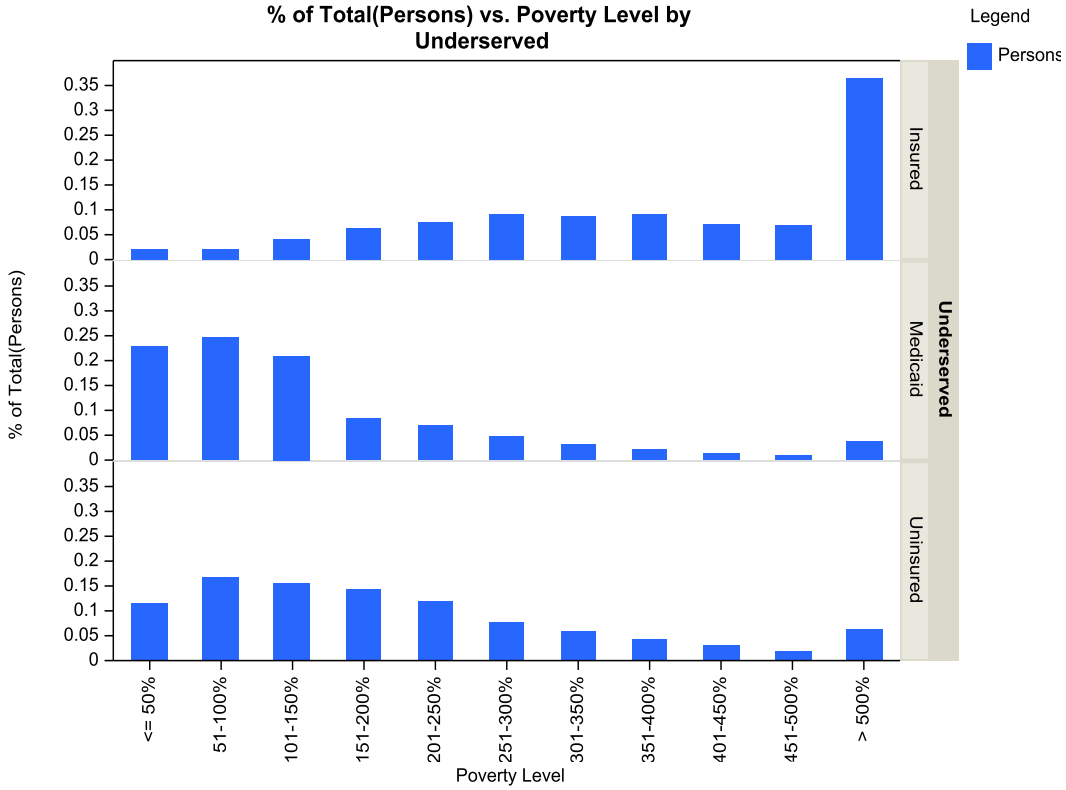
The distribution by race and Hispanic origin also differ markedly between the insured, those on Medicaid and the uninsured. The insured are overwhelmingly (84 percent) white. While a majority of Medicaid recipients and the uninsured are also white, the proportions are significantly less, at 58 percent and 55 percent, respectively. While both categories of underserved populations have a similar white/non-white distribution, they differ markedly in their composition of minorities. Blacks outnumber Hispanics about 2.5 to 1 among Medicaid recipients. On the other hand, Hispanics outnumber blacks among the uninsured by a ratio of 1.36 to 1.



By changing the axes on the chart at the top of the previous page, we can look at the distribution of insurance coverage by race, rather than the distribution of race within insurance coverage groupings. This allows us to calculate that 83 percent of whites are insured, compared to 58 percent of blacks, 58 percent of American Indians, and 76 percent of Asians. (The Other racial category has too few observations for the percentages calculated to be considered statistically reliable). By contrast, fewer than half of Hispanics – 45 percent – are insured. Among Hispanics, 40 percent are uninsured, more than twice the uninsurance rate of any other racial or ethnic group. The groups participating most heavily in Medicaid, at rates near 25 percent, are African Americans and American Indians. This compares the 15 percent rate of Hispanics and 8 percent rate of Whites.



When we look at the entire population, including children under16 years of age (who are too young to join the labor force) and those who are not actively looking for work, we get a picture of how the three groups differ greatly in their employment patterns. First, the uninsured have an employment rate (i.e., the number of uninsured who are employed divided by the total number of uninsured individuals) that is about the same as the insured, 56 percent vs 57 percent respectively. The two groups differ primarily in the fact that the insured are comprised of a significantly smaller proportion of unemployed individuals and a significantly larger proportion of children under labor force age than the uninsured. Second, the vast majority (nearly seven out of eight, or 87 percent) of those on Medicaid are not in the labor force at all, and majority of recipients (55 percent) are children not yet of labor force age.



The medically underserved population is much poorer than the insured population. Whereas the median household income of the insured is $63,000 per year (2008 dollars), the median uninsured household earns $27,000 while the median household on Medicaid earns $12,768. When translated into percentages of the Federal Poverty Level (FPL), which takes into account the size of the household and the number of children, the median insured household has an income that is 406 percent of the FPL while the median uninsured household and median household on Medicaid have incomes of 150 percent and 102.5 percent of the FPL, respectively.

Alternatively, we can look at the percent of each group that is below the FPL or 200 of the FPL, common reference levels for participation in public and non-profit programs. Whereas only 4.5 percent of insured individuals live in poverty, i.e., households with income below the FPL, 28 percent of the uninsured and 47 percent of Medicaid recipients live in poverty. Similarly, only 15 percent of insured individuals live households with incomes under 200 percent of poverty, while 58 percent of the uninsured and 77 percent of those receiving Medicaid have household incomes below this level.

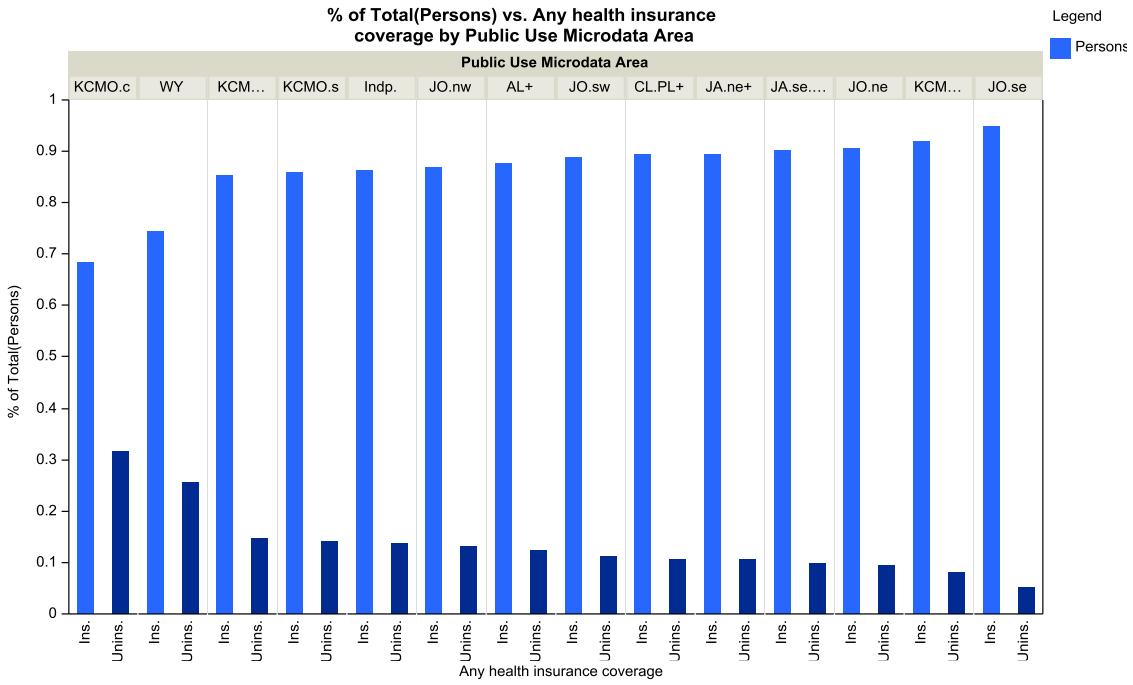
Where are the medically underserved? Analysis by PUMA

We now look at the location of the medically underserved using the PUMA geography. These areas must be at least 100,000 in population, and they do not necessarily follow county boundaries. The following table describes the correspondence between PUMAs and the counties included in the REACH service area.

PUMA	Table ID	Description
Kansas		
500	WY	Wyandotte County
601	JO.nw	NW Johnson County (west of Antioch, north of I-435/K-10)
602	JO.ne	NE Johnson County (east of Antioch, north of I-435)
603	JO.sw	SW Johnson County (approx. Olathe, Gardner, Edgerton, Spring Hill areas)
604	JO.se	SE Johnson County (approx. Blue Valley SD area)
1500	AL+	Allen County, plus Anderson, Bourbon, Elk, Linn, Wilson and Woodson Counties
Missouri		
800	CL.PL+	Northland excl. KCMO – (i.e., non-KCMO Platte, non-KCMO Clay, Clinton Counties)
901	JA.ne+	NE Jackson + Lafayette (approx. Raytown, Blue Springs, Oak Grove, Grain Valley areas)
902	JAse.CA	SE Jackson + Cass (approx. Grandview, Lee's Summit, Greenwood, Lake Lotowana areas)
1001	KCMO.n	KCMO North of the Missouri River
1002	KCMO.c	KCMO Core (River to about 39th St.)
1003	KCMO.m	KCMO Midtown (39th St. to about 83rd St.)
1004	KCMO.s	KCMO South (83rd St. to Jackson County Line)
1100	Indp.	Independence

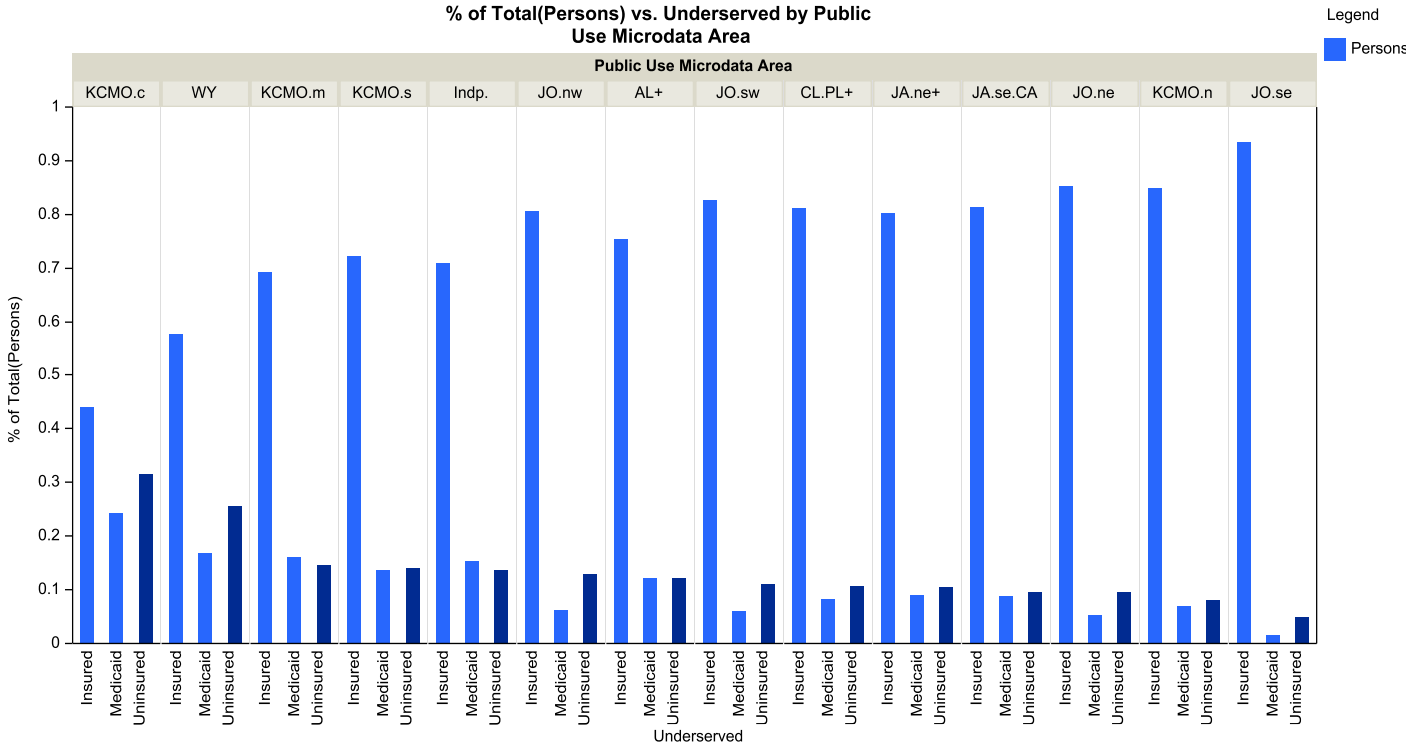
The Table ID column provides the identification used in tables below to identify each of the PUMAs.

The following chart examines the proportion of residents in each PUMA that are uninsured. It is sorted in descending order by this uninsurance rate. This ordering is used for all subsequent charts.



Wyandotte County has the largest number of uninsured. But at nearly one-third (32 percent), the core area of Kansas City, Missouri has the highest proportion of its population that is uninsured. Southeast Johnson County, roughly the Blue Valley School District, has the lowest number and proportion of uninsured (5 percent).

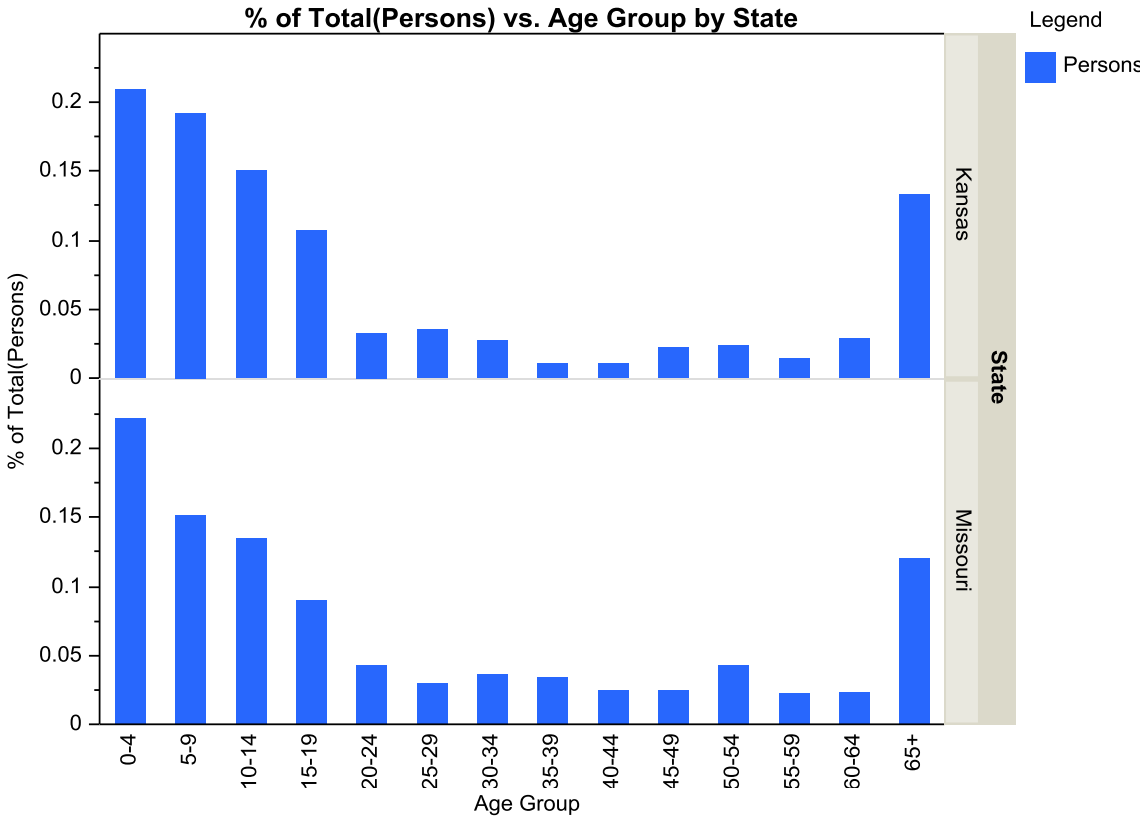
Note that this chart treats those on Medicaid as part of the insured population in order to emphasize the relative concentrations of the uninsured, highlighted in dark blue.



Here, Medicaid recipients are broken out from the insured, illustrating that there is a high degree of correlation between the location of concentrations of the uninsured and those on Medicaid. Those PUMAs with the largest proportions of the uninsured tend to have the largest proportions of Medicaid recipients as well.

Medicaid by State

Because of differences in Medicaid eligibility for the states of Kansas and Missouri, it would be interesting to examine if Medicaid participation varies significantly by state. The ACS PUMS data allows such an examination. (Note: this analysis only uses the PUMAs defined for the REACH service area, not the entirety of the two states.)



Comparing the age distributions of recipients by state reveals they are marginally different. The vast majority of recipients are children in both states – 64 percent in Kansas and 59 percent in Missouri. Missouri appears to have a slightly higher percentage of working age adults on Medicaid than Kansas.

MARC conducted an extensive analysis of the differences in Medicaid participation rates in the two states accounting for differences in income and age distributions. This analysis can be found in Appendix B. Based on this analysis it is apparent that Missouri's poorest citizens participate in Medicaid at a higher rate than their counterparts in Kansas. In Kansas, about 36 percent of individuals in households with incomes at or below the poverty level poverty receive Medicaid, compared to 42 percent in Missouri. Similarly, for individuals at or below 200 percent of the FPL, 25 percent receive Medicaid in Kansas versus 31 percent in Missouri.

The "Bulletproof"

Finally, some people may not have insurance as a matter of pure choice. These can be identified as those who are healthy enough to not need insurance and wealthy enough to afford it if they wanted it.

How many such individuals are there in the REACH region? For purposes of this study, we defined such "bulletproof" individuals as those between the ages of 18 and 26 with incomes above 400 percent of poverty who are uninsured.

According the ACS PUMS, there are about 7,700 such individuals in the REACH service area, or 12 percent of the nearly 66,000 uninsured individuals between the ages of 18 and 26 and about 3 percent of the 250,000 total number of uninsured individuals in the REACH region.

Regional Health Profile

The regional health profile is composed of three elements: (1) demographic, social, and economic characteristics of vulnerable populations; (2) health characteristics and trends for vulnerable populations; and (3) access to health care services for those in vulnerable populations. This information is provided for the entire REACH catchment area and by county. Appendix E of this report contains a health profile for each of the counties based on the data in this report. Appendix C contains charts and tables that provide more detailed information related to the elements discussed in this section. Ppendix D contains references for the data sources. (Please note that for much of this data we reference all of Clay and Platte counties even though the REACH area includes only those parts that are within the city limits of Kansas City. This was done in order to keep consistency across the data since much of the health data in particular is only available at a county level.)

Demographic, Social, and Economic Characteristics of Vulnerable Populations

The area REACH covers is very diverse extending from the large, mainly urban counties of Jackson County, MO and Wyandotte County, KS to the rural counties of Lafayette, MO and Allen, KS and the suburban counties of Johnson, KS and Cass, Clay and Platte, MO. Table 1 gives a general demographic breakdown of the counties and the rate at which their populations are changing based on U.S. Census Bureau data.

	Allen, KS	Johnson, KS	Wyandotte, KS	Cass, MO	Clay, MO	Jackson, MO	Lafayette, MO	Platte, MO	**REACH Area**
1990 Population	14,638	355,021	162,026	63,808	153,411	633,234	31,107	57,867	1,471,112
2000 Population	14,385	451,086	157,882	82,092	184,006	654,880	32,960	73,781	1,651,072
2009 Population	13,203	542,737	155,085	100,184	228,358	705,708	32,572	90,688	1,868,535
% Change 1990-2009	-10%	53%	-4%	57%	49%	11%	5%	57%	22%
Percent of REACH area	0.7%	29.0%	8.3%	5.4%	12.2%	37.8%	1.7%	4.9%	100.0%
Square Miles	505	480	156	703	409	616	639	427	3,935
Pop. per Square Mile	26.14	1,130.70	994.13	142.51	558.33	1,145.63	50.97	212.38	474.85

Of greatest interest are the vulnerable populations that may be especially subject to health risks and that have trouble accessing health care. These populations include the elderly, young people, those who are low income, minorities, those who are linguistically isolated, the homeless, and the undocumented population. Each of these populations may have particular vulnerabilities and methods for dealing with these vulnerabilities. The information below comes from the U.S. Census Bureau unless otherwise noted.

Population over 65

Within the REACH area there are slightly more than 200,000 people age 65 or over, or just under 11% of the total population. The age distribution is fairly evenly distributed throughout the 8 counties but the more rural counties do have higher portions of their populations age 65 or over (Allen 18%, Lafayette 16% and Cass 12%). Although this population is well covered due to Medicare they may have issues related to access to care because of a lack of availability of physicians or due to transportation issues.

Population under 18
The population under 18 in the REACH area is over 466,000 or 25% of the total. This is the same as the national figure of 25%. There is not much disparity among the counties in terms of the portion of the population under age 18. Wyandotte County has the highest percentage at 28% while Lafayette has the lowest at 23%. While certain health issues are more concerning for younger populations such as matters related to pregnancy, immunizations, and violence, given the equal distribution of this population this appears not be a factor across counties.

Population in Poverty
In the REACH area there are nearly 179,887 people living below the federal poverty level. This accounts for 9.6% of the area's total population. There are over 450,000 people (25% of the total) who are below 200% of the poverty level. This is significant because the 200% of poverty threshold is a commonly used breakpoint for eligibility for safety net services. Overall the poverty rate in the REACH area compares favorably to the nation. Nationwide 13% of the population is below the poverty threshold while 31% are below 200% poverty. There is significant variance in poverty rates among the counties in the REACH area. Wyandotte County has the highest poverty rate at nearly 20% (43% at the 200% poverty level), while Johnson County has the lowest at 4% (14% at the 200% level). In addition to Wyandotte County, the poverty rates (for both the 100% and 200% levels) are greater than the national rates in Allen and Jackson counties. A complete table of poverty statistics can be found in Appendix B.

An important trend is that poverty is growing in the REACH area. As evidenced by the table below the number of those in poverty grew in every county between 2000 and 2008. Also it should be noted that this population is growing at the highest rate in the suburban counties of Johnson, Clay and Platte.

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte	REACH
2000 Pop in 100% Pov	2,093	15,323	25,773	4,664	9,898	76,808	2,816	3,477	140,852
2008 Pop in 100% Pov	NA	23,174	30,073	4,853	15,196	95,850	3,962	6,779	179,887
% Increase in 100% Pov 2000 to 2008	NA	51.24%	16.68%	4.05%	53.53%	24.79%	40.70%	94.97%	27.71%

2000 U.S. Census and 2008 American Community Survey

Linguistic Isolation
Individuals who cannot speak or understand English very well can be at a severe disadvantage when obtaining health care. When compared to the nation, linguistic isolation is not that large an issue. Roughly 5% of all Americans are linguistically isolated. In the REACH area just 2% of the population is considered linguistically isolated. Wyandotte County, at 7%, is the only county in the REACH area to have a higher percentage of linguistic isolation than the nation. Of those who are linguistically isolated, the majority speak Spanish (62%). While on a relative basis linguistic isolation does not appear to be a big issue, it still affects nearly 18,000 individuals in the area and over 10,000 in Wyandotte and Jackson counties alone.

Minority Populations
The REACH area population is less racially diverse than the nation's. Twenty five percent of the REACH population is non-white compared to 35% nationwide. However, this represents over 450,000 residents. Black non-Hispanics make up the largest non-white portion at 12% followed by Hispanics at 8%. There is wide variance in the racial makeup amongst the counties in the REACH area. Wyandotte County is majority minority with 53% of its population being non-white. Jackson County is the second most racially diverse at 34% or roughly the same percentage as the nation. The more rural counties in the REACH area

have very small minority populations. Allen and Lafayette counties have a minority population that makes up only 6% of the total. Cass County has a 10% minority population.

Homeless

By their very nature there is not conventional data available on the homeless population. The Mid-America Assistance Coalition (MAAC) does keep track of clients that report to their agencies that they are homeless. MAAC reports that from July 1, 2009 to June 30, 2010 their agencies reported 7,770 unduplicated homeless individuals for the Reach area. However, this figure almost assuredly undercounts the homeless population because it only counts homeless individuals that appear at a social service agency in the MAAC system.

Undocumented

The undocumented are even more difficult to estimate. MARC contacted Hispanic organizations in the metropolitan area, but they were not able to provide an estimate. State estimates are available through the Pew Hispanic Center, most recently for 2008. According to the report "A Portrait of Unauthorized Immigrants in the United States" published April 14, 2009 there are an estimated 45,000 unauthorized immigrants in Missouri and 70,000 in Kansas (presumably this high number is due migrant labor in the western part of the state). To estimate the number of unauthorized immigrants in the REACH area we used linguistic isolation data from the Census Bureau. Assuming the unauthorized immigrant population would be well represented in the Spanish speaking linguistically isolated population, (Linguistic isolation is defined as the inability to speak English "very well") we were able to estimate an undocumented population of 43,000 in the REACH counties with the vast majority living in Jackson, Wyandotte and Johnson counties. Nationally, males make up 60 percent of the unauthorized immigrant population and children make up 13 percent. Eighty percent of unauthorized immigrants are employed compared to a national labor participation rate of 65 percent for all Americans.

Health Characteristics of Vulnerable Populations

The intent of this subsection is to identify the leading health issues facing the region and particularly facing vulnerable populations. To do this the section looks at the magnitude of leading health issues, the distribution of those health issues across counties and populations, the trends associated with these health issues, and the severity of the issue particularly as it relates to national averages. It should be noted at the outset that often health data is not reported by population characteristics. Health indicators are reported in this section regardless of characteristics associated with them if they were felt to be potentially significant for vulnerable populations. When possible these health characteristics are associated with relevant demographic, social, and economic characteristics. A more thorough discussion of the correlation of health data with population characteristics can be found in the analysis section of this report.

The first issue looked at is deaths and whether its occurrence indicates either special problems with regard to severity or distribution. Life expectancy for the REACH area ranges from 73.2 for Wyandotte County to 80.3 for Johnson County, with the U.S. figure being 76.5. An even bigger disparity exists across the region in terms of death rates, ranging from an annual rate of 703.8 deaths per 100,000 for Johnson County to a high of 1062.5 for Wyandotte County.

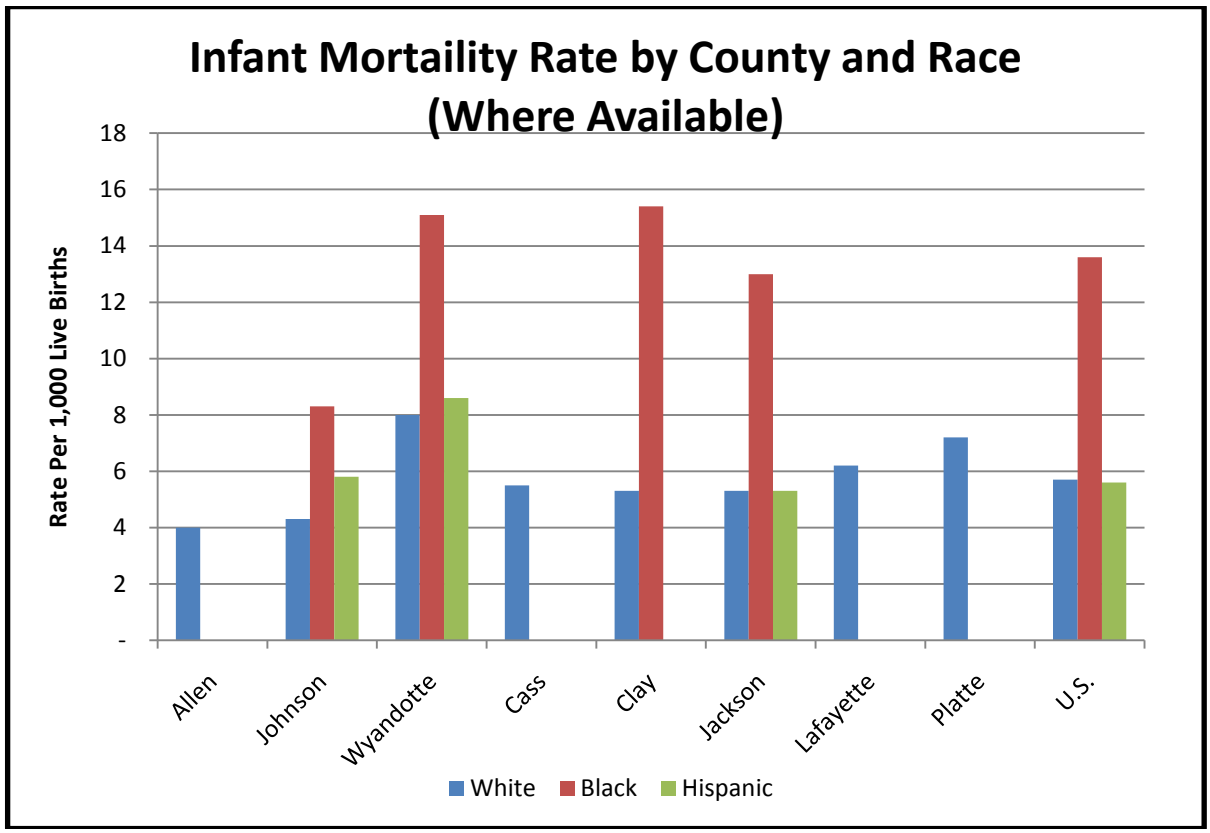
An important measure used in the County Health Rankings is Years of Potential Life Lost (YPLL), which is a measure of the rates of premature death. It is the number of years of life prior to age 75 lost within a geographic area due to premature death and is expressed as the number of years lost per 100,000

population. These rates range from a high of 10,724 YPLL/100,000 population for Allen County and 10,619 for Wyandotte County to 4,667 YPLL/100,000 population for Johnson County.

Infant mortality also varies across the REACH area from a high of 10.2 deaths per 1,000 live births in Wyandotte County to a low of 3.8 in Allen County, based on 2005 HHS data. The U.S. rate is 6.8 deaths per 1,000 live births. However, this disparity is amplified when considering race. For counties where data was available the ratio of the black infant mortality rate to the rate for all population groups ranges from 1.5 to 2.7. A report published by the Kansas City, MO Health Department in 2007 on infant mortality noted that it had been steadily declining reaching a low in 2005 of 7.3 deaths per 1,000 live births. This is slightly lower than the 2005 rate of 7.5 deaths per 1,000 live births reported for Jackson County by HHS. A quote from this study sums up well the major risk factors associated with infant mortality:

> "Overall, birth mothers whose infants died were more likely to be a non-Hispanic black, to be less than 20 years old, to be unmarried, to have less than a high school education, to have an unintended pregnancy, to not have received prenatal care in the first trimester, to not have received any prenatal care, to have engaged in pregnancy-smoking, to have used drugs during pregnancy, and to be enrolled in Medicaid. Among non-Hispanic black women, those whose infants die were more likely to unmarried, have an unintended pregnancy, and have received no prenatal care."

The following chart illustrates the distribution of infant mortality by race across the REACH area.

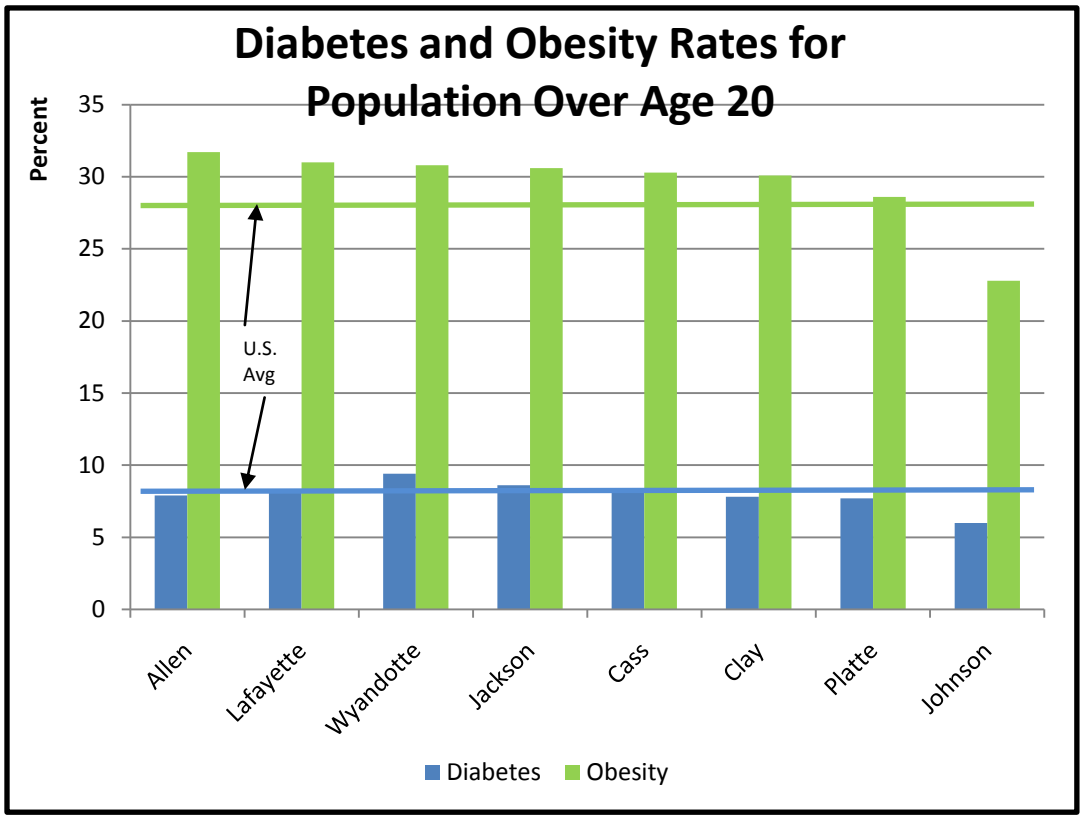


There is considerable variation across the counties when examining the different causes of death. The causes examined included breast cancer, colon cancer, lung cancer, coronary heart disease, stroke, suicide, and homicide. The first item noticed with regard to the distributions of the causes of death is that Johnson County ranks the lowest in death rates for every cause except strokes. Each cause of death has its own distribution. Adding up the causes of death from the five disease related causes shows that the highest rates of death are for Allen (358.6 annual deaths/100,000 population) and Lafayette counties (375.5 annual deaths/100,000 population) with Johnson County having the lowest overall rate of death (244.6 annual deaths/100,000 population). A complete table can be found in Appendix C.

Another measure of community health is related to pregnancy and births. For the REACH area the percent of all births that are low birth weight ranges from 6.1 percent to 8.1 percent of all births, with the national figure being 7.9%. Premature births also fall into a fairly tight range (9.7 to 12.3 percent), none of which exceeds the national figure. Teen pregnancy shows a greater variation with a number of counties exceeding the national figure. The teen pregnancy rate varies from 6.6 percent in Wyandotte County to 1.2 percent in Johnson County. The national figure is 3.4 percent.

Obesity has become a leading condition and leading indicator of health outcomes. Using CDC National Diabetes Surveillance System estimates for 2007 all of the counties in the REACH area had obesity rates of about 30 percent of the population except for Johnson County which was 23 percent. The same data set indicates that between 2004 and 2007 every county in the REACH area experienced increases in obesity rates of at least 10 percent (Wyandotte County) and as high as 24 percent (Allen County).

The chart below illustrates the distribution across the REACH area of both diabetes and obesity.



CDC National Diabetes Surveillance System estimates for 2007

The CDC database also provides similar information for rates of diabetes. In 2007 diabetes rates ranged from a low of 6 percent of the total population (Johnson County) to a high of 9.4 percent (Wyandotte County). The remaining counties are clustered between 7.7 and 8.6 percent. The national rate is 10.7 percent for adults age 20 or older. Diabetes rates increased in every county, except Johnson, from 2004 to 2007. The increases were all 10 percent or less except for Wyandotte County where diabetes occurrence increased by 21 percent.

Obesity provides a convenient bridge between health outcomes as outlined above and health inputs. Health inputs include the environment and individual behaviors. It should be noted that not infrequently these are related. For example eating unhealthy food is an individual behavior, but it might be facilitated by the lack of access to healthy foods.

The percent of persons reporting that they do not exercise is quite closely correlated with the obesity figures with Johnson County performing best at 16.7 percent and Wyandotte County the worst at 37.3 percent. Smoking represents another major health risk that is related to individual behavior. Smoking rates vary between 15.6 percent in Lafayette County to 28.2 percent in Wyandotte County.

Data on mental health is not as readily accessible as physical health. However, there are some measures that begin to provide a picture of mental health in the region and its distribution across the REACH area. The CDC Behavioral Risk Factor Surveillance System (BRFSS) does provide information on how many days in the last 30 days a person judged their mental health to be poor. The data ranges from a low of 1.9 days in Lafayette County to 3.9 days in Jackson County.

The County Health Status Indicators of the U.S. Department of Health and Human Services provides two measures related to mental health; an estimate of the number of people age of 18 or older experiencing a major depressive episode and an estimate of the number of people 12 and over that were recent (past month) drug users based on 2006-2007 data. It is estimated that 110,965 persons in the region suffered from a major depressive episode with a fairly even distribution in terms of percentages of the adult population across the REACH area. This represents are rate for the region of 8.5 percent. The national rate for this figure is 7.34 percent.

It is estimated that 82,414 persons age 12 and over were recent drug users in the REACH area, again with a fairly even distribution across the adult population. This represents 5.6 percent of the population 12 and over. The national rate for illicit drug use is 8.14 percent.

There is not an extensive amount of information available on oral health condition at the county level. The CDC Behavioral Risk Factor Surveillance System (BRFSS) does provide some data for the region and its three most populous counties. They report that for 2008 28.9 percent of Johnson County respondents had a permanent tooth extracted, that 52.5 percent of Wyandotte County respondents had a tooth extracted and 48.2 percent of Jackson County respondents had a tooth extracted. The figure for the region as a whole is 40.8 percent and the national figure is 43.9 percent.

There is some data available on oral health at a state level. The PEW Center on the States issued a report, *The Cost of Delay, State Dental Policies Fail One in Five Children*, in February 2010. The report used eight benchmarks to grade states giving states that met only half of the benchmarks a grade of C, the grades received by both Kansas and Missouri. According to the report “Kids ages 2 to 11 whose families live below the federal poverty level are twice as likely to have untreated decay as their more affluent peers.”

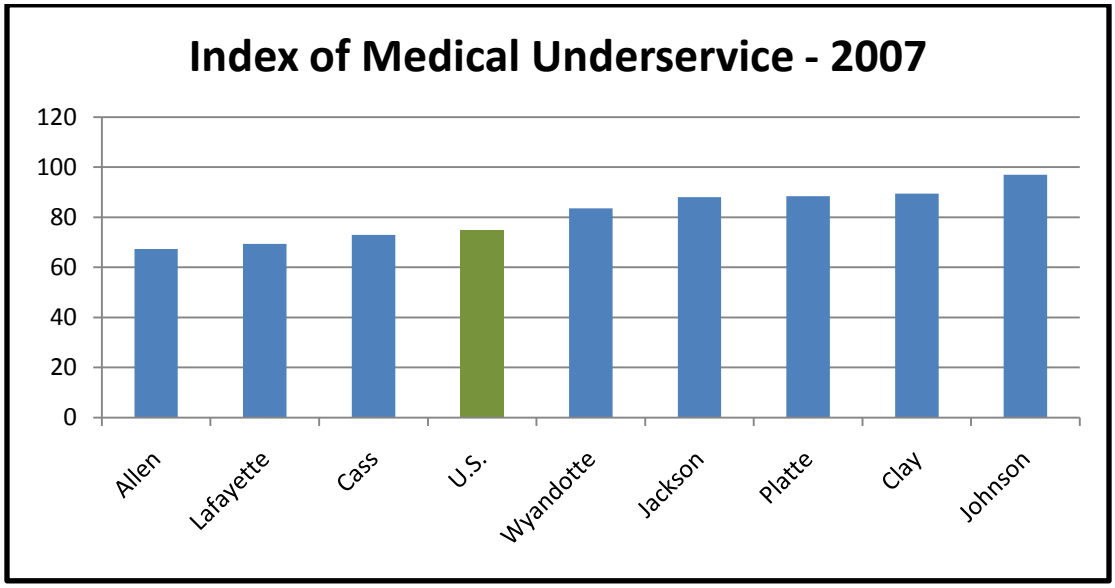
Access to Health Care for Vulnerable Populations

This is the area of analysis where the least data exists and it is most difficult to draw firm conclusions. Where possible the report has used secondary data from federal, state, and local sources. The report also references the Regional Health Care Initiative: *Findings, Conclusions, and Recommendations* report which includes data from a safety net clinic survey conducted in 2007.

The U.S. Department of Health and Human Services generated an Index of Medical Underservice by county. The index is a composite of weighted scores assigned to 4 characteristics.

1. Primary care Physicians per population ratio
2. Percent of population 65 and over
3. Percent of population in poverty
4. Infant mortality rate

The IMU scale is from 0 to 100, where 0 represents completely underserved and 100 represents best served or least underserved. Under the established criteria, each service area found to have an IMU of 62.0 or less qualifies for designation as an MUA.



US Dept of Health and Human Services 2007

According to the index, no county in the REACH is considered a medically underserved area. The 3 more rural counties are the closest to being MUAs and have lower index scores than the US as a whole.

This variation is primarily due to a variation in physicians in the counties. The U.S. figure for primary care physicians (family, internal medicine, and pediatricians) is 54.6 physicians per 100,000 population. The three rural counties range from 29.9 to 44.7 primary care physicians per 100,000 population. The remaining counties range from 69.5 to 124.6. There is an even greater disparity in specialists with the rural counties ranging from 0 to 18.4 specialists per 100,000 population, while the more urban counties have specialist ratios as high as 286.9. The national figure is 31.7 specialists per 100,000 population. Also

it should be noted that the physician distribution can be skewed due to large hospitals, such as KU Medical Center in Wyandotte County.

Dentists exhibit a similar distribution across the counties with the rural counties having dentist ratios ranging from 27.5 to 37.3 dentists per 100,000 population while the urban counties range from 81.6 to 97.7. The exception is Wyandotte County with 35.7 dentists per 100,000 population. The national figure is 33.0 dentists per 100,000 population. Also the CDC Behavioral Risk Factor Surveillance System (BRFSS) does provide some indication of access to dentists in terms of the percent of persons that visited a dentist within the last year (2008) for the three most populous counties; Johnson (81.4%), Wyandotte (64.4%), and Jackson (62.9%), with the entire metro area being 69.1%.

Access to mental health services is even less well documented. The Index of Medical Underservice indicates that Allen and Cass counties have no psychiatrists and Lafayette County has just two. Psychiatrists per 100,000 population varies from 0 in the rural counties to 20.7 in Johnson County and 17.5 in Wyandotte County (again this might be influenced by the presence of the KU Medical Center).

Mental health beds especially, for long-term care, have been declining. MARC is in the process of surveying mental health facilities in order to provide a single website with information on service and bed availability. However, this data is not yet available. However, the Medicaid Consortium in Kansas does have a listing of facilities with beds available for children. The beds within the REACH area or with close access for children total 364 as of May, 2010. A list of the facilities can be found in Appendix C.

MARC commissioned a study in 2009 by Health Management Associates to assess behavioral health services in the region. The report is too lengthy to summarize here, but does contain a review of past assessments and a set of 17 findings and 8 recommendations. The report, which is referenced in Appendix C, should be reviewed.

Access to care for vulnerable populations, particularly those who are uninsured or on Medicaid, means access to safety net providers. In 2007 MARC conducted a survey of primary care safety net providers. The survey indicated that there were 33 clinics (still valid today) and that the safety net providers saw 101,592 patients through a total of 267,786 visits. MARC believes that this has probably not substantially changed in the last three years. However, this does not tell the whole story. Safety net hospitals, particularly Truman Medical Centers and Children's Mercy provide a substantial amount of primary care to vulnerable populations. At the time that the survey was done in 2007 primary care visits and patients through safety net hospitals was not available. This is an important element in the safety net picture and the Safety Net Collaborative hopes to include this data in a report in the spring of 2011. Appendix C includes a map of the 33 safety net clinics.

MARC conducted a survey of wait times for clinics to get a sense of the accessibility of primary care safety net services. Seven clinics were able to respond to the survey. Each clinic uses a different approach to scheduling appointments and different criteria for granting appointments. There is no consistent pattern across the clinics. One or two report the ability to accommodate appointments within

a one to two week period. However, some of the clinics either are unable to accommodate some of the requests for non-urgent care appointments or have wait times of as long as 43 days. Also several clinics are either not taking new patients or restrict the number of new patients they can accommodate. Most of the clinics report that they try to accommodate urgent care visits and most make arrangements to have some slots available for walk-ins. However, most of the clinics report that they cannot accommodate all urgent care requests and will refer to other safety net clinics or to EDs.

One perspective on access to care is to look at ED visits by vulnerable populations. In 2007 MARC was able to examine 2006 ED data, less one hospital, provided by the Missouri and Kansas Hospital Associations. The data indicated that in 2006 there were 123,800 visits by those classified as no-pay, most of which are uninsured. This represented 18 percent of all ED visits. At that time, based on estimates of the uninsured in the metropolitan area developed by MARC, the uninsured comprised 13 percent of the overall population. This indicated that the uninsured were using the ED at a rate almost 40 percent higher than their proportion of the general population. The data further indicated that Blacks accounted for 25 percent of ED visits, but only 13 percent of the general population. Although this was somewhat higher for no-pay (31 percent) than for those who paid (24 percent), still even Blacks who paid for care (the insured) used the ED at a rate almost twice their proportion of the population. The opposite was true for Hispanics who made up 7 percent of the population, but only about 5 percent of ED visits.

Analysis

It is the intent of this section of the report to connect the different data elements that have been reported and draw some conclusions relevant to the health of vulnerable populations and their ability to access health care. The focus in this section is three-fold: (1) identification of specific issues in the region and within each county; (2) identification of variations in population characteristics across the counties and their relationship to the health of vulnerable populations and their access to care; and (3) identification of trends that might indicate emerging issues.

The first element of the analysis is to realize there are significant numbers of vulnerable populations within the REACH area and generally these populations are growing. The most significant number with respect to health and health care is that, using recent American Community Survey PUMS data, approximately 445,000 people in the REACH area are either uninsured or receive Medicaid. This is 24 percent of the overall REACH area population. This should be considered the floor for the population that is medically vulnerable within the region.

The population of the medically vulnerable is poorer than the general population and somewhat younger. However, there are differences between its two major components, the uninsured and Medicaid. Two-thirds of those who are uninsured are employed while 87 percent of those on Medicaid are not in the labor force. The medically vulnerable are significantly more diverse than the population as a whole, but again there are some differences between those receiving Medicaid and those who are uninsured. Thirty percent of those on Medicaid are African American while only 12 percent are Hispanic. These numbers are somewhat reversed when considering the uninsured. Hispanics are the largest minority group accounting for 25 percent of the uninsured while Blacks comprise 19 percent of the uninsured. In all cases these proportions are considerably higher than their proportion of the overall population.

Examination of the PUMS data did reveal that one fifth of those on Medicare have no supplemental insurance. This population is more socio-economically distressed than those on Medicare with supplemental insurance. This population is not nearly distressed as those on Medicaid or uninsured, but this could be a potential health care issue in the future.

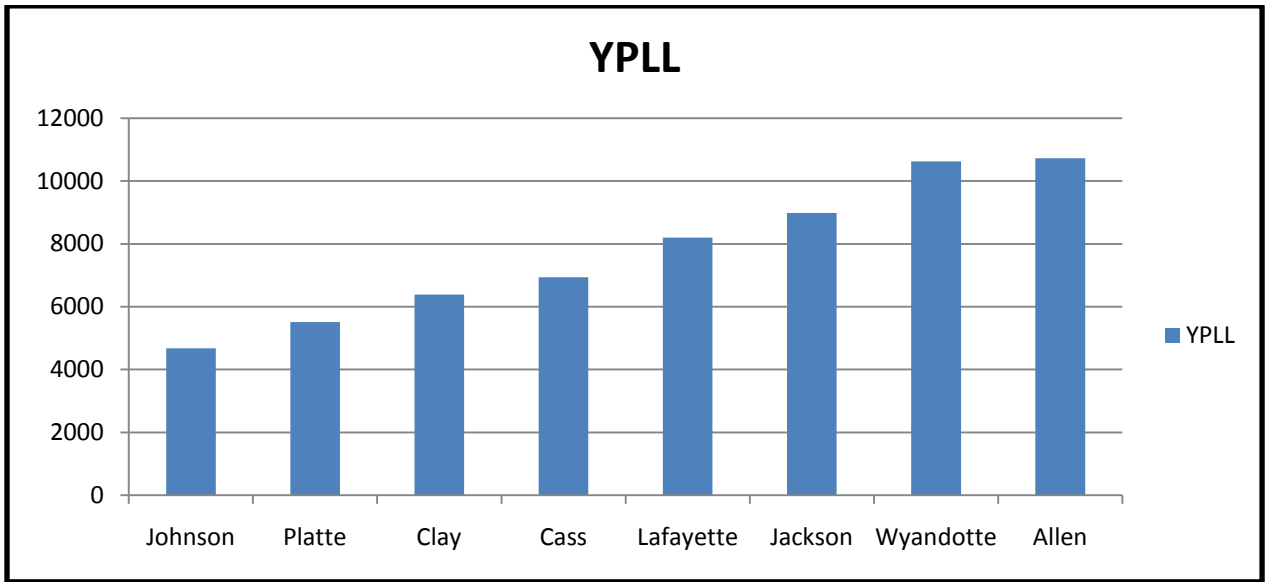
This population overlaps a number of specific vulnerable populations including those in poverty, those over 65 or under 18, those who are linguistically isolated, the homeless and those who are undocumented. A large percent of each of these populations may be either uninsured or on Medicaid, but there is undoubtedly a significant portion of each of these populations who are not uninsured or on Medicaid, but because of their status can be considered potentially medically underserved. For example the undocumented and many of the homeless do not fall within official uninsured and Medicaid numbers, but are still medically vulnerable and potential clients of the safety net system.

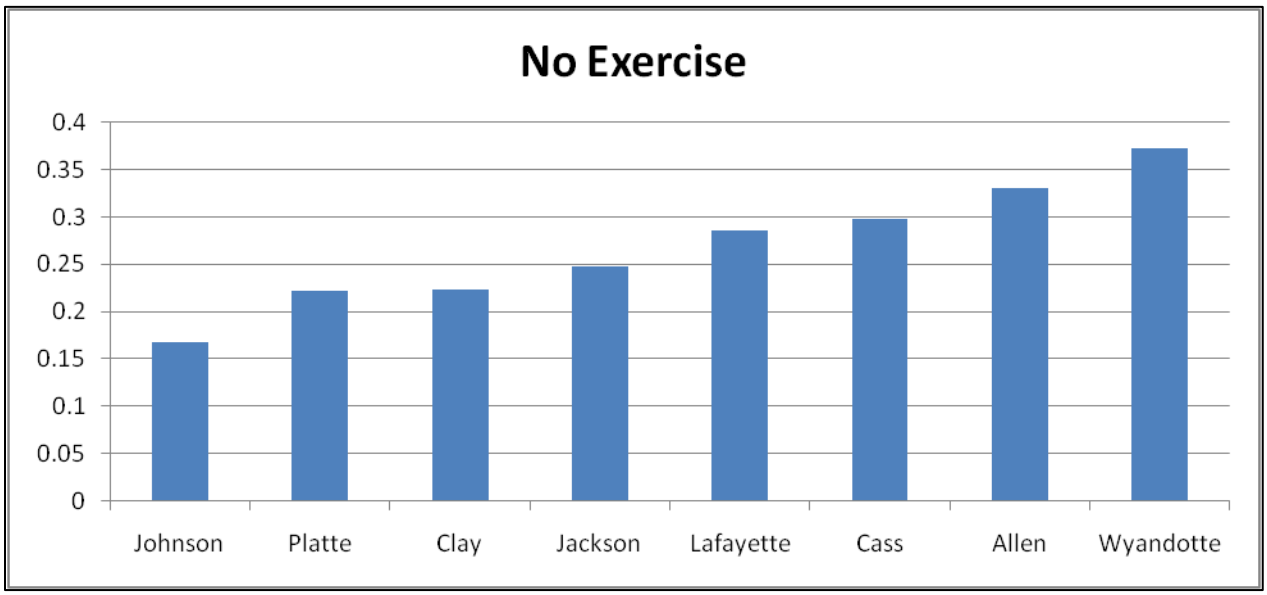
Finally, these vulnerabilities often cross-cut a specific patient greatly increasing the complexity of their situation and the complexity of providing care. For example a person may be low income, uninsured, and be linguistically isolated.

The question is not whether there are significant numbers of vulnerable residents residing in the REACH area, but to what extent do these vulnerabilities correlate with health conditions and challenge their access to health care. The data in the previous section shows a high correlation between vulnerable

populations and health outcomes and ability to access health care. Johnson County, the county with the highest income, highest level of education attainment and the county with the lowest percent in poverty also has the longest life expectancy, the lowest death rate, and the lowest percentage reporting poor health days. On the other end of the scale Wyandotte County with the highest rate of poverty and majority minority population has the shortest life expectancy, highest death rate and the highest percentage reporting poor health.

The chart below illustrates the variation found across counties and the correlation between counties with high rates of poverty and health outcomes, in this case Years of Potential Life Lost (YPLL) per 100,000 population.





A similar correlation is evident between vulnerable populations and environmental and behavior conditions. For example the chart on the previous page illustrates the relationship across counties with regard to the percent of people that report that they do not exercise.

However, this chart also reveals another correlation identified between health outcomes, health behavior, health care access and rural counties. This variation is particularly pronounced when we look at the number of physicians available to the community and the Index of Medical Underservice. The three counties that scored below the national average were the three rural counties Lafayette, Allen, and Cass.

This illustrates the two primary disparities that are evident across the counties in the REACH area. The first is that there is a high correlation between socio-economic distress and poor health outcomes. Just as Johnson County has the best health outcomes Wyandotte County, and to a lesser degree Jackson County, have some of the worst health outcomes. Although beyond the scope of this report we anticipate that this is due to a complex combination of poor environmental conditions, such as lack of access to fresh foods; poor behavioral habits, such as high smoking rates; and a variety of barriers to accessing care including lack of insurance, lack of transportation, and language barriers. Thus these populations find that they are more prone to severe and complicating health conditions; they are more likely to let these conditions fester because of the difficulty of accessing care due to cultural, financial, or physical barriers; and once they do access care they present more complex issues for the safety net health care system to address.

The other disparity across counties is the correlation between rural counties and poor health outcomes and access to care. Allen and Lafayette Counties are particularly affected by this disparity. These rural counties have death rates from five leading diseases that actually exceed the death rates for the more socio-economically distressed counties. This correlation is presumed to be primarily driven by issues related to access to care and the simple lack of conveniently accessible physicians.

One key difference between these two disparities is the magnitude of the issue. For example in 2000 there were over 100,000 people in Jackson and Wyandotte Counties below the poverty level and less than 5,000 in Allen and Lafayette Counties. In addressing this issue of numbers one item regarding Johnson County should be pointed out. While the county has the best health and access to health care the number of people in vulnerable populations is growing. For example in 2008 there were more people below 200% of poverty in Johnson County (74,458) than in Wyandotte County (65,104).

It should be mentioned that the disparities evident for health outcomes also are evident when it comes to oral health and mental health. Counties with high vulnerable populations have higher incidents of poor mental health days and higher incidents of adult tooth extractions. Also the rural counties have far less access to both psychiatrists and dentists.

Health and health care disparities are especially marked for minority populations, particularly blacks. Blacks have a far higher infant mortality rate than whites or Hispanics. Blacks also use the ED at far higher rates than other population groups, even when they have insurance.

Consistent trend data was more difficult to come by, but some trends were evident. The number and rate of poverty is growing in the REACH area and in every county (except the percent in poverty declined slightly in Cass County, but the number increased) and it is growing faster than the population as a whole. While the population in the REACH area grew by 22 percent from 1990 to 2009 the number of persons in poverty grew almost 28 percent between 2000 and 2008; a higher growth in less than half the time. In addition the rate of increase in wealthier counties is higher than it is in counties with high numbers of vulnerable populations.

The other notable trend is in obesity rates and diabetes rates. Data indicates that adult obesity rates increased in every county between 2004 and 2007. The same data set from the CDC also indicates that diabetes rates increased in every county between 2004 and 2007 except Johnson County where it held constant. It would appear that with increasing numbers of those who are poor and increasing rates of obesity and diabetes that safety net clinics will see an increasing number of cases of obesity or diabetes related disease.

Although this report did not look at health reform and its impact on the health of vulnerable populations it is possible to draw a few inferences from the above data. Health reform will have a significant impact on health care for vulnerable populations and possibly an even greater impact on the safety net system that provides care to these populations. As indicated in the report a significant, but yet to be documented, amount of health care is provided to vulnerable populations by hospital related primary care clinics. It is believed that a large proportion of those receiving care through these clinics are on Medicaid. If an increasing number of residents of the area receive Medicaid it is presumed that these hospitals may expand their primary care clinics to serve this population, thus further increasing their proportion of the medically vulnerable that they serve. This outcome, of course, will be based in part on the reimbursement rates that are provided for such patients.

MARC did estimate the number of additional Medicaid recipients in the REACH area due to changes in eligibility contained in the health care reform legislation. The estimate, which is documented in Appendix C, is an additional 75,000 to 100,000 Medicaid recipients dependent on participation rates. This is about a 40 to 50 percent increase in Medicaid recipients within the REACH area.

There are a number of vulnerable populations that will find accessing health care after reform still difficult such as the homeless, undocumented, and those who are linguistically isolated. Also the increasing number of those in poverty will challenge the health care system, reformed or not, because they will continue to present with more complex conditions if issues around environment and behavior are not addressed.

Conclusion

The issue of providing health care and preventive services to vulnerable populations will continue to be a major problem for the REACH area. Key findings from this report are:

- A high percentage of the region's population (24%) are either uninsured or receiving Medicaid
- Vulnerable populations are increasing; in particular the number of persons in poverty is increasing in every county with the greatest increase coming in the wealthiest counties
- Vulnerable populations are spreading out as the region as a whole becomes more diverse
- There are considerable variations across counties in terms of socio-economic status, health outcomes, and access to care
- Poor health outcomes are highly correlated with poor socio-economic status in urban counties
- Poor health outcomes are highly correlated with poor access to care in rural counties
- Obesity and diabetes is increasing across the region
- Minority health is particularly adversely impacted by socio-economic status, by poor access to care, by environmental factors, and by behavior. However, Blacks and Hispanics appear to be impacted differently by these factors or respond differently to these impacts.

The lack of consistent access to meaningful data across time is a hindrance to accurately determining need, developing effective strategies, and determining the effectiveness of interventions. It would be helpful if states, federal agencies, county health departments, and the safety net community could develop a consistent monitoring system across the region. This will become increasingly important as health reform proceeds and it is necessary to align resources to new realities.

Appendix A
Analysis of PUMS Data

Status of the medically underserved

Defining the medically underserved

The Census Bureau now conducts the American Community Survey annually. This survey is designed to provide a large enough sample over a 5-year period that it could replace the so-called "long-form" of prior decennial censuses. Beginning in 2008, this survey added a question regarding the availability and type of health insurance for each member of the household.

For each person in the household, this question asks respondents to identify whether they currently covered by any of the following types of health insurance plans: through a current or former employer or union, purchased directly from an insurance company, Medicare for those who are over 65 or have certain disabilities, Medicaid or similar program for those with low incomes or disability, TriCare (military), VA (those who have ever enrolled or used VA health care), Indian Health Services, or other. If "other" is selected, respondents are to specify what kind of insurance it is. The Census Bureau then reallocates it to one of the seven allowed responses.

Those who do not select any of the types are considered to be uninsured. Because the insurance offered through Indian Health Services is not comprehensive, those who select only that insurance type are also counted by the Census Bureau as uninsured.

Because the ACS surveys 250,000 households per month nation-wide, it yields the largest sample ever provided to assess health care coverage. As, such, it produces reliable estimates annually for cities and counties more than 65,000 in population. All of the counties in the REACH area meet this population threshold, except for Allen County.

The standard tabulations from the 2008 ACS yield the following estimates of the insured and uninsured by county:

	Johnson	Leavenworth	Wyandotte	Cass	Clay	Jackson	Platte	Total
Total:	529,926	67,131	152,722	97,303	214,487	664,093	84,982	1,810,644
With health ins.	486,802	60,263	117,819	87,997	191,879	563,962	77,569	1,586,291
No health ins.	43,124	6,868	34,903	9,306	22,608	100,131	7,413	224,353
Unins. rate	8%	10%	23%	10%	11%	15%	9%	12%
Under 18 years:	138,146	18,679	43,526	25,351	55,488	169,751	20,817	471,758
With health ins.	131,085	17,949	37,017	24,496	52,382	153,968	20,195	437,092
No health ins.	7,061	730	6,509	855	3,106	15,783	622	34,666
Unins. rate	5%	4%	15%	3%	6%	9%	3%	7%
18 to 64 years:	338,591	40,934	93,511	61,417	136,302	414,177	56,222	1,141,154
With health ins.	303,168	34,796	65,396	52,966	117,275	330,596	49,476	953,673
No health ins.	35,423	6,138	28,115	8,451	19,027	83,581	6,746	187,481
Unins. rate	10%	15%	30%	14%	14%	20%	12%	16%
65 years or over:	53,189	7,518	15,685	10,535	22,697	80,165	7,943	197,732
With health ins.	52,549	7,518	15,406	10,535	22,222	79,398	7,898	195,526
No health ins.	640	0	279	0	475	767	45	2,206
Unins. rate	1%	0%	2%	0%	2%	1%	1%	1%

These data provide the most accurate calculation of the uninsurance rate for counties or metropolitan areas to date. The range of uninsurance rates is significant across counties, from Johnson County's 8 percent to Wyandotte County's 23 percent, nearly three times higher. The range is even more pronounced for children. Only 3 percent of Platte County's children are uninsured, while 15 percent of Wyandotte County's are. But uninsurance rates are highest for adults under the age of 65, ranging from 10 percent in Johnson to 30 percent in Wyandotte.

This data is clearly interesting, but it raises many questions concerning the reasons for the disparities. Unfortunately, this is the only data that is tabulated by the Census Bureau. More detailed characteristics of the insured and uninsured are not available at sub-state levels in their standard reports. In times past, we would simply be left with questions and suspicions.

However, in addition to the standard tabulations, the ACS also makes available a sample of the actual individual survey records with the individual identifiers removed to preserve confidentiality. This is called the Public Use MicroSample, or PUMS data, and it allows researchers to create their own custom tabulations. MARC accessed this data and prepared custom tabulations to produce the charts and statistics that follow.

There is one major restriction, however, in using the PUMS data. The data are released only for geographic areas called PUMAs – Public Use Microsample Areas. These areas must be at least 100,000 in population, and they do not necessarily follow county boundaries. Maps of the PUMAs in the Kansas City region are presented later in this appendix. A table identifying each PUMA and the geographic area it covers can be found later in this appendix.

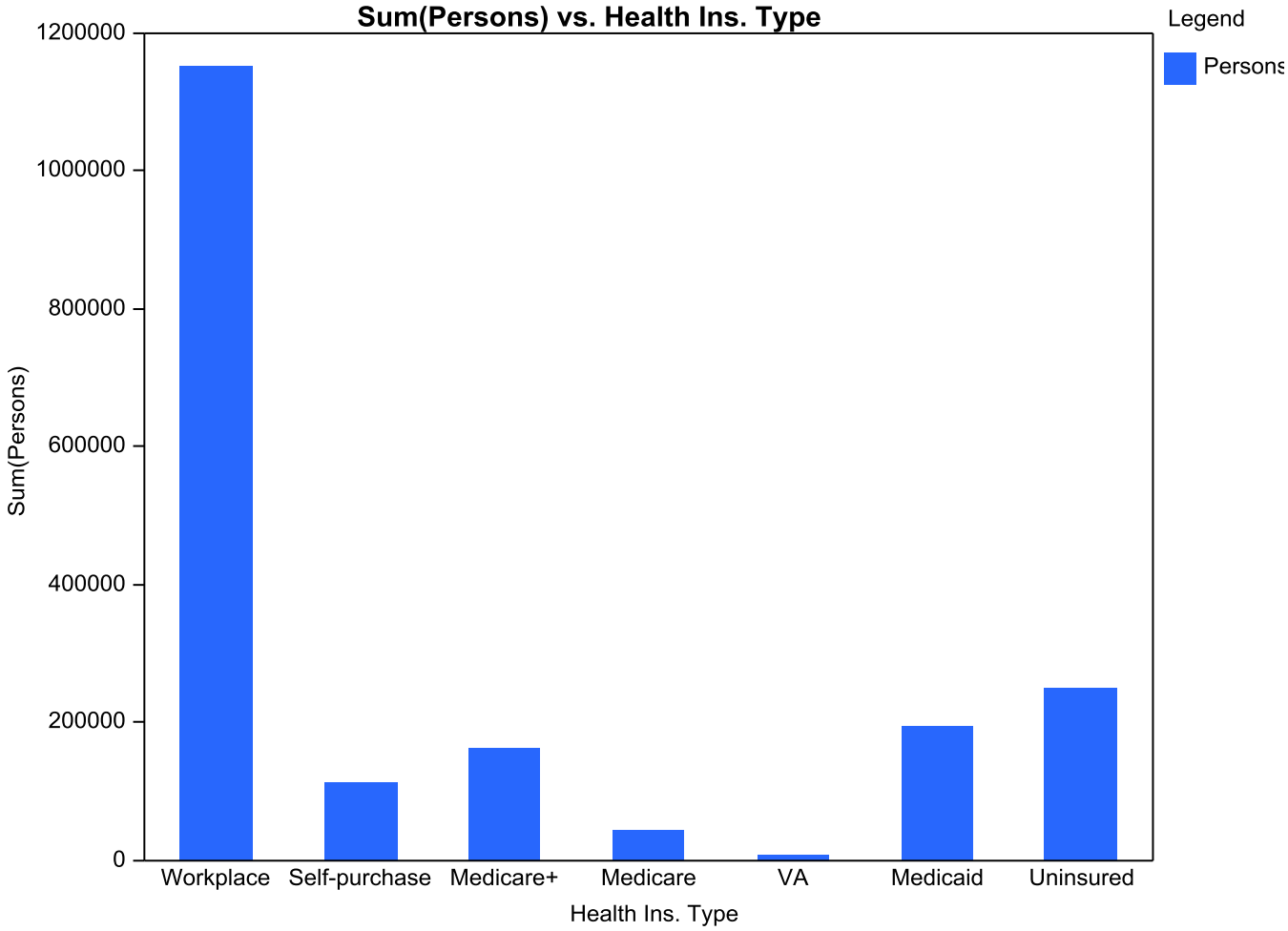
The other main difficulty with this data is that it requires designing custom cross-tabulations to use it, and the possible cross-tabulations are nearly endless. This required MARC to make some simplifying assumptions.

For example, respondents are allowed to select all insurance types that apply to the particular person in the household for whom they are answering, making multiple responses possible. No question is asked, however as to which type of insurance is primary. This can result in tabulating the data by any and all combination of insurance types, which would be confusing. Therefore MARC classified insurance holders as follows:

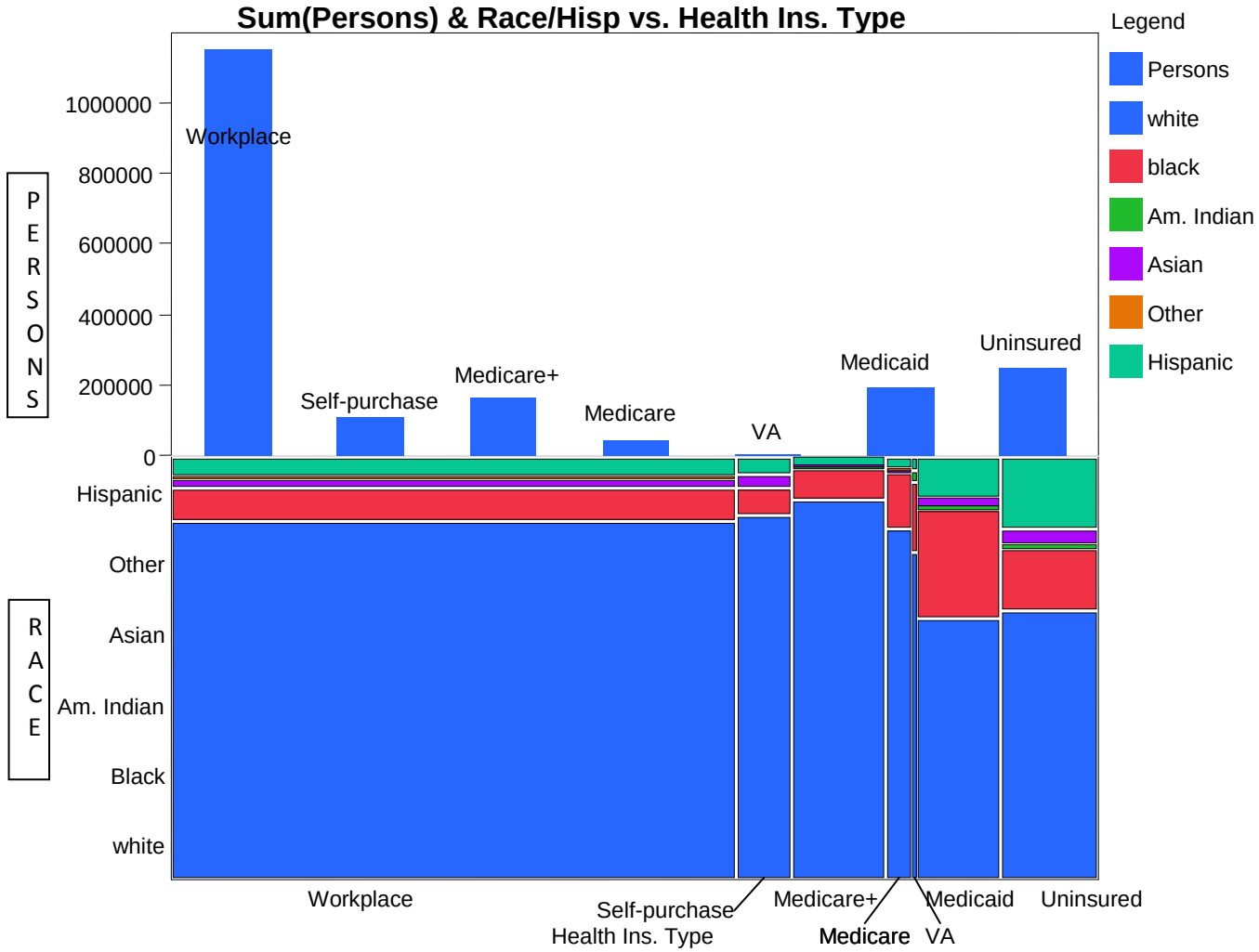
1) Those who selected Medicaid were assumed to use Medicaid as their primary insurance, even if they also had other types, and so were classified as "Medicaid".
2) Those not classified as "Medicaid" and selected only Medicare were categorized simply as "Medicare".
3) Those who were not classified a "Medicaid" and selected Medicare plus some other type of insurance were categorized as "Medicare+". Most of these had either insurance through the workplace in addition to Medicare, or they purchased insurance directly.
4) Those not yet classified (as per #1, #2, or #3 above) and who selected either insurance through an employer or union or through TriCare were classified as "Workplace."
5) Those not yet classified (as per #1, #2, #3, or #4 above) and who selected VA were classified as having VA insurance.
6) Those not yet classified and who selected purchasing directly from an insurance company were classified as "Self-purchase." These are those whose only insurance was self-purchased.

7) All others were classified as uninsured. This is because the Census Bureau classifies those with insurance through the Indian Health Service as uninsured as this insurance is not considered to be comprehensive.

Based on these classifications, approximately 1.2 million people in the PUMAs that contain REACH counties have health insurance through their workplace, while about 250,000 people are uninsured. Medicaid recipients total about 195,000. Close to 164,000 people have Medicare plus some other type of insurance, while about 45,000 people have Medicare alone. Roughly 112,000 people purchase health insurance directly from insurers as their primary coverage.



Typically, the medically underserved might be defined as those on Medicaid plus the uninsured. But that over three-quarters (78 percent) of the people on Medicare seem to also need a supplement to Medicare while the remaining quarter (actually, 22 percent) of Medicare recipients have only Medicare suggests that the latter group may also have issues with respect to levels of coverage. Similarly, those whose primary insurance is self-purchased may have a financial incentive to under-purchase insurance and so be underserved. The PUMs data allows us to look at the characteristics of these groups in relation to traditionally underserved groups, like those on Medicaid and the uninsured, as well as in relation to those with insurance through their employer, to see whom they most resemble. This may then provide some insight into the extent these other groups should be categorized as underserved.



This chart combines the prior bar chart with a mosaic chart underneath. The mosaic chart allows the easy comparison of the proportionate distribution of some characteristic across bars. The area of the mosaic section is proportionate to the bar's height, while its vertical divisions show the proportionate distribution. Here we examine race and Hispanic origin. It takes a bit of getting used to when one bar dominates all the others, as in this case, as the labels are spaced to match the bars rather than the mosaic section. The order of the labels is the same as the order of the bars, however, and the ease with which the distribution of demographic characteristics can be compared makes it worth the effort.

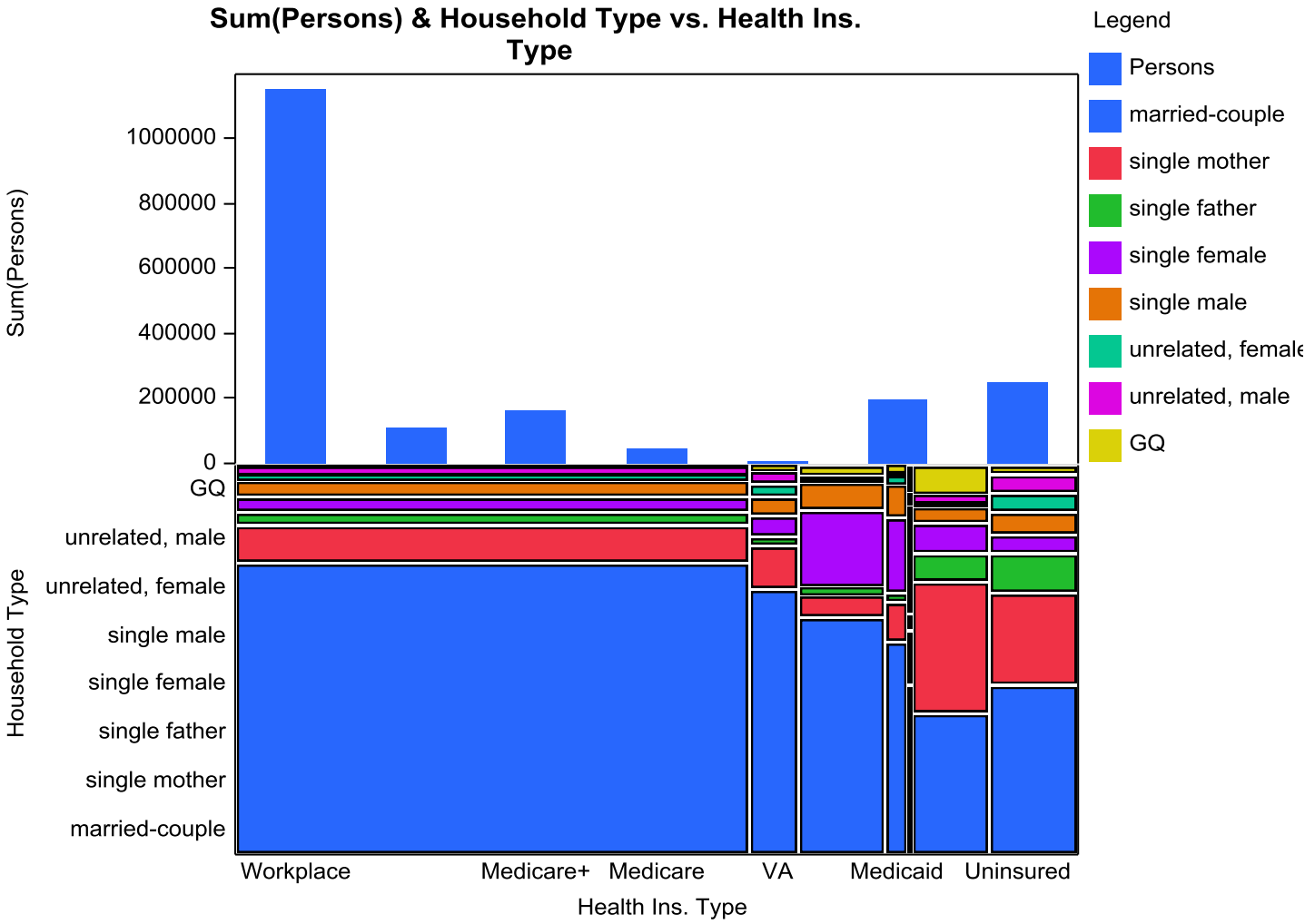
Because they are large as a proportion of the total population, those individuals with insurance provided through the workplace of one of their family members provide a useful standard of comparison for the other groups. In fact, one can't really understand who are the medically underserved without looking at them in relationship to other groups, at least at first.

Those with workplace-provided health insurance are roughly 83 percent white, significantly higher than the 77 percent in the aggregation of PUMAs as a whole. Those who self-purchase insurance have approximately the same distribution of race as those who get through the workplace. About 90 percent of those with Medicare and some other insurance are white, the most of any group. Those with

Medicare only are a significantly more diverse, as 79 percent are white while 18 percent are African American. Those with insurance through the VA (the very skinny mosaic section above) are about 73 percent white and 19 percent African American.

The diversity of those on Medicaid and the uninsured are markedly higher than the other groups. Those on Medicaid are 58 percent white, 29 percent African American, and 11 percent Hispanic. Those who are uninsured have a slightly smaller percentage of whites, 55 percent. Hispanics, however, are the largest minority group, accounting for 24 percent of the uninsured. Blacks comprise 18 percent of the uninsured, while Asians are 3 percent.

We now examine the household type in which individuals live:



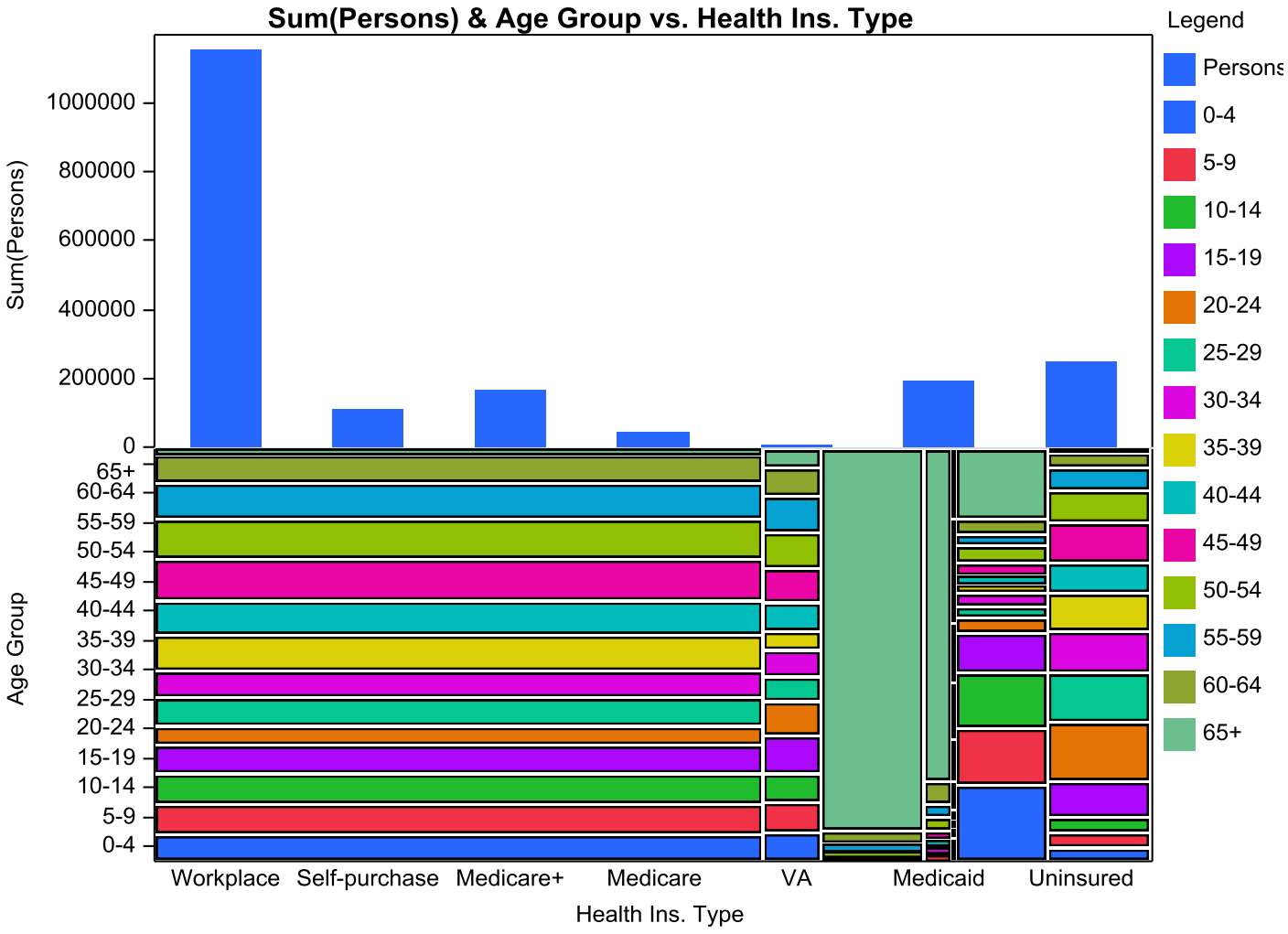
A similar kind of pattern emerges, with married-couple households being the predominant household type for those with insurance through their employer, while the diversity of household types generally increases as the graph moves from left to right. For individuals on Medicaid or the uninsured, married-couple households are no longer the majority household type, and for Medicaid recipients, they are no

longer the plurality. The proportion of individuals living in married-couple households drops from 72 percent for those who get their health insurance through the workplace to about half that for those on Medicaid, at 35 percent. About 39 percent of individuals who are uninsured live in married-couple households.

The household type with the largest number of Medicaid recipients is single mothers, accounting for 39 percent, with single fathers adding another 8 percent. Therefore, nearly half of those on Medicaid, 47 percent, are single parents. A significant fraction of those on Medicaid live in group quarters (GQ), which are likely to be group homes or nursing homes.

While singles and households comprised of unrelated individuals make up a small fraction of those on Medicaid, this is not true for the uninsured, where together they comprise about 21 percent of the uninsured population. Single-mother households account for 25 percent of the uninsured while single-father households account for 14 percent, for a total of 39 percent of the uninsured living in single-parent households.

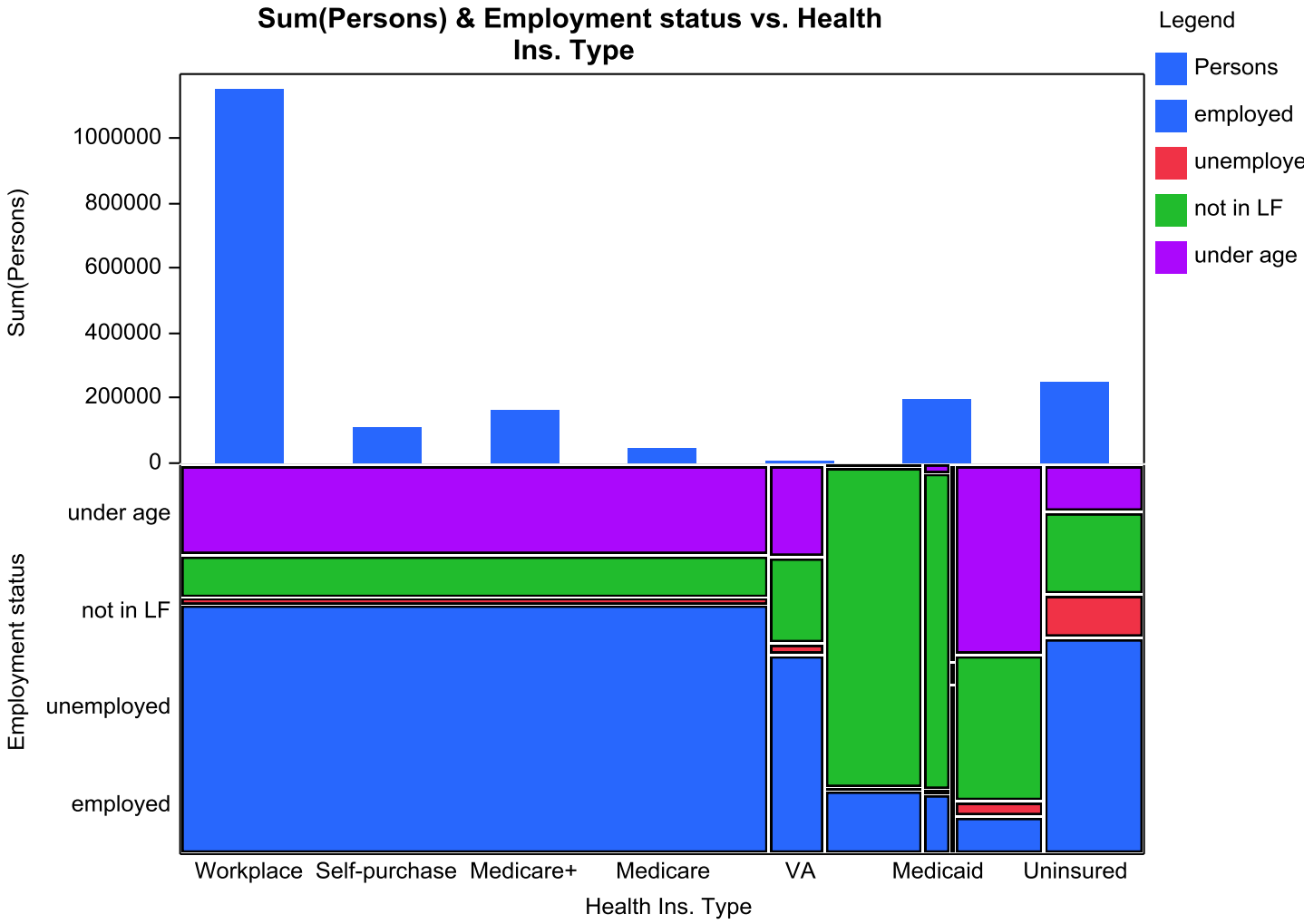
This suggests that Medicaid recipients and the uninsured have different age distributions, which we can now check:



This time the distributions do not change smoothly as we move from left to right. Those individuals receiving insurance through the workplace of one or more members of their household have a very diverse age structure, one that reflects the population as a whole, at least until the age of 65. This diversity is matched closely, but not exactly, by those who self-purchase insurance. The chief difference is the higher proportion of elderly whose primary insurance is purchased directly from insurers.

The group with the next most diverse age structure is the uninsured. Here, the most interesting difference is the expansion of the proportion of individuals in the young-adult years. Those on Medicaid are primarily the very young and the old. Those with insurance through the VA are primarily older individuals, while those on Medicare plus some other insurance are almost entirely elderly, as would be expected. Those whose sole insurance is Medicare have a somewhat more diverse age structure than the majority of Medicare beneficiaries, perhaps reflecting a higher prevalence of the disabled and others for whom Medicare is available before the age of 65.

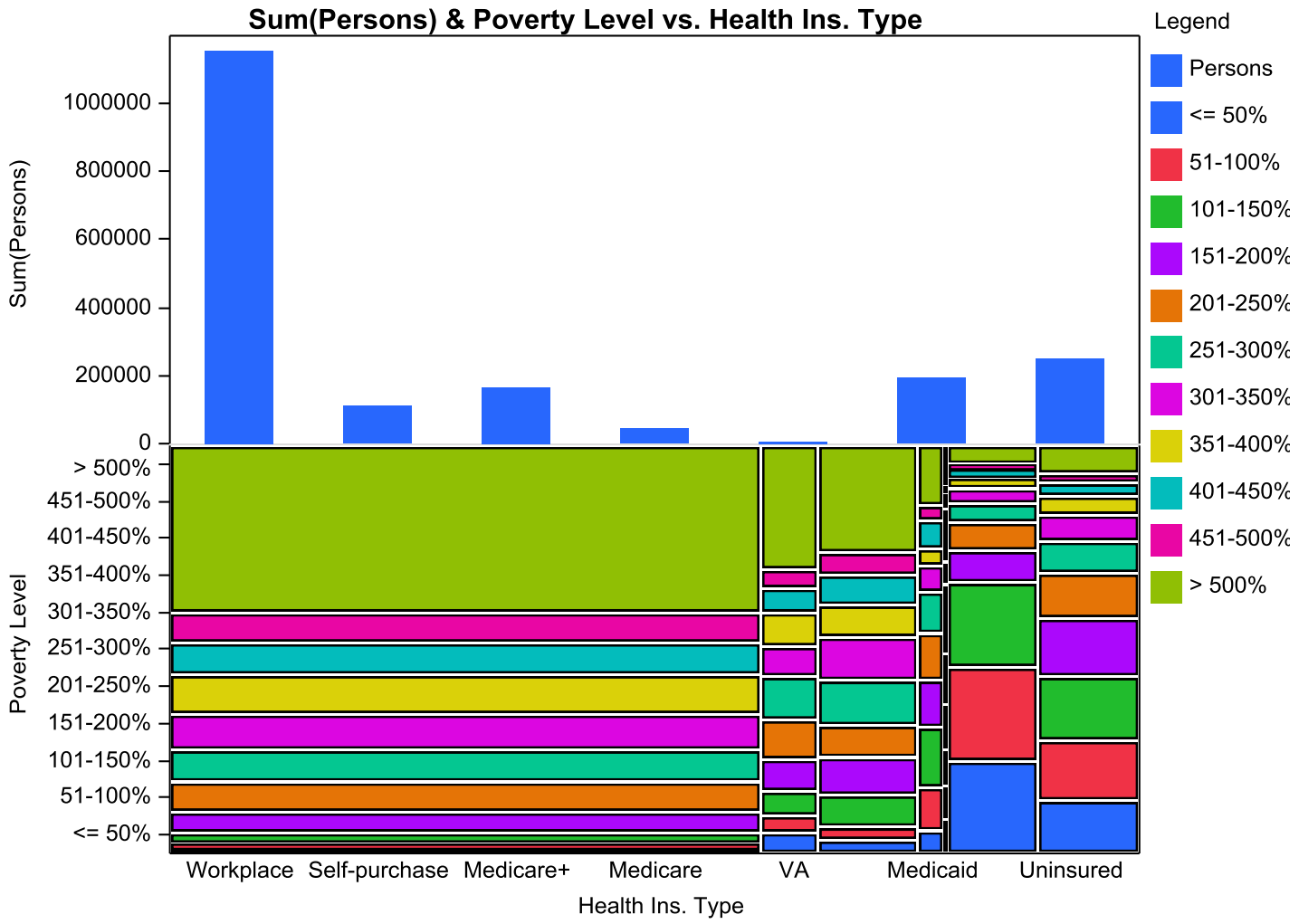
The differences in age composition suggest differences in labor force participation:



As might be expected, for those who receive health insurance through the workplace of a member of their household, individuals who are employed dominate the distribution, at 65 percent. The 10 percent who are not in the labor force and the 24 percent who are under the age of sixteen and so not able to participate in the labor force are generally the non-working spouses and children of those who are employed. Those who purchase insurance directly from the insurer have a similar distribution to those who get it through their workplace, though a somewhat higher proportion of adults don't participate in the labor force. Consequently, only a little over half the individuals who self-purchase health insurance are employed. Of course, both categories of those on Medicare are mostly not in the labor force, though about 15 percent are still employed.

Those on Medicaid and those who are uninsured show significantly different distributions of employment status, both from the other categories and from each other. Approximately 87 percent of those on Medicaid are not in the labor force, i.e., the are not employed or unemployed and looking for work. By contrast, two-thirds of those who are uninsured are in the labor force, with 56 percent working while 11 percent are looking for work.

Of course, this differential is reflected in the income data:



Here we are looking at the household income of each individual by health insurance type. The income is in terms of its percent of the federal poverty level. Using the federal poverty level allows easy comparison of poverty and non-poverty incomes for a variety of thresholds, up to 500 percent of poverty. It also provides a measure of income that adjusts for household size and the number of children or adults in the household.

The distribution of income again varies somewhat smoothly from right to left, with those obtaining their insurance through the workplace having a plurality in the highest income group. Those who self-purchase insurance have higher proportions in the lowest income groups and so lower proportions of individuals in the highest income group. Interestingly, the income distribution of those with Medicare plus some other kind of insurance closely matches those who purchase insurance directly, despite their differing work profiles. Still, those with only Medicare are, in fact, significantly poorer than those supplementing it.

By far the poorest groups are the uninsured and those on Medicaid. About 58 percent of the uninsured have incomes below 200 percent of poverty, while slightly more than three-quarters of those on Medicaid do. In fact, nearly half of those on Medicaid – 47 percent – have incomes below 100 percent of the federal poverty level. More than one-quarter (28 percent) of the uninsured live in households below

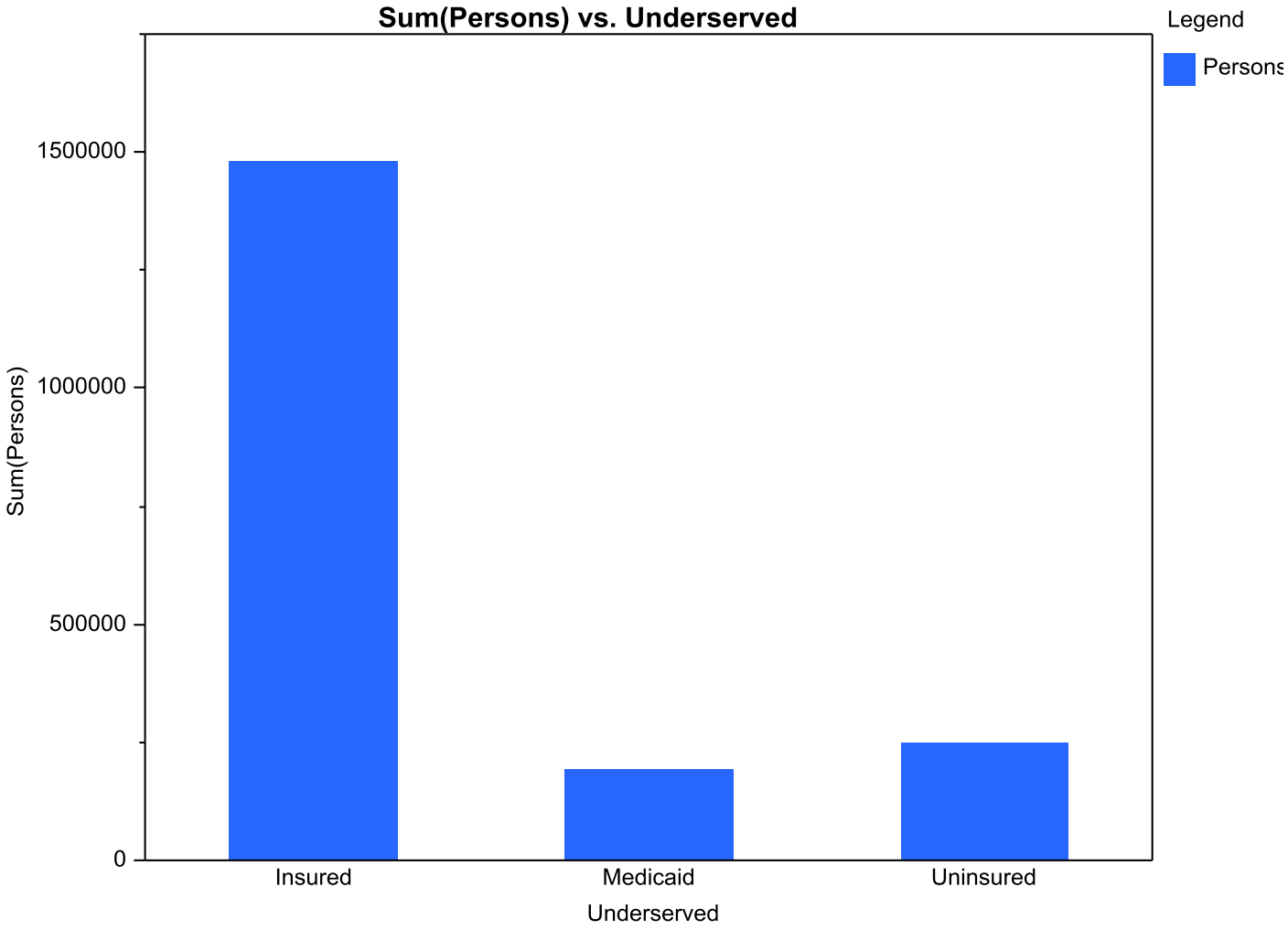
the poverty line. This compares to 3 percent of those who get insurance through the workplace, seven percent who are on Medicare plus some supplement, and 18 percent of those who are on Medicare alone.

Analysis:
First, while those who purchase insurance directly are somewhat poorer, work somewhat less and are slightly older than those who receive it through the workplace, these differences are insufficient to suggest they suffering from a level of distress that would cause them to be considered medically underserved. Similarly, while those who only have Medicare are more likely to be disabled and poorer, the level of disparity compared to those who can supplement Medicare with other insurance is insufficient to conclude that they are likely to be medically underserved. The remainder of the analysis will therefore concentrate on those on Medicaid and those who are uninsured as our working definition of the medically underserved.

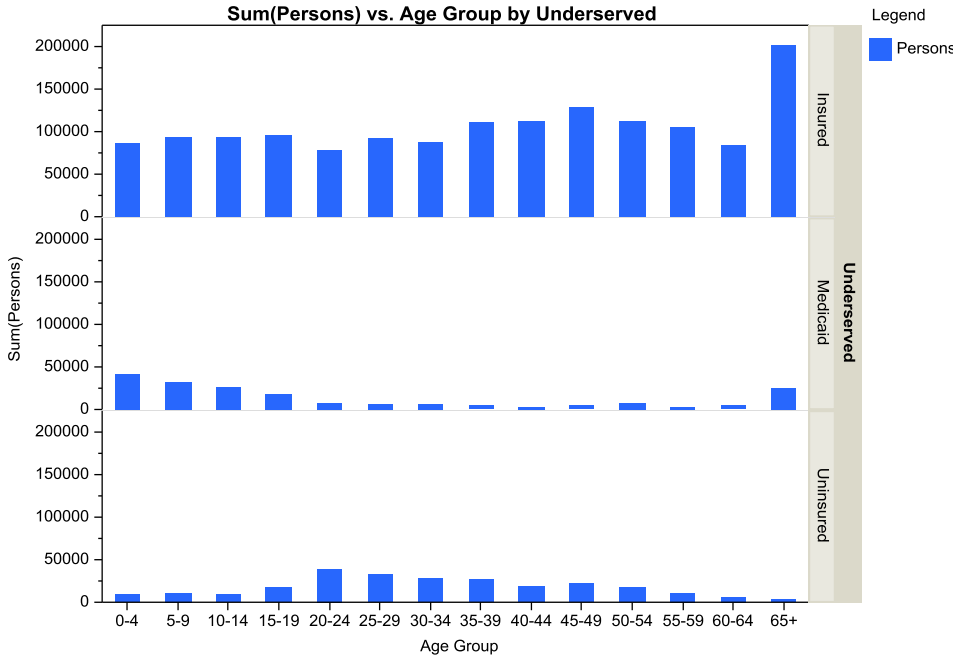
Second, the income and race data provide strong hints as to why Wyandotte County has the highest rate of uninsured and Johnson County has the lowest. Wyandotte County is much poorer and has a higher proportion of Hispanics, both of which are correlated with being uninsured.

Characteristics of the medically underserved

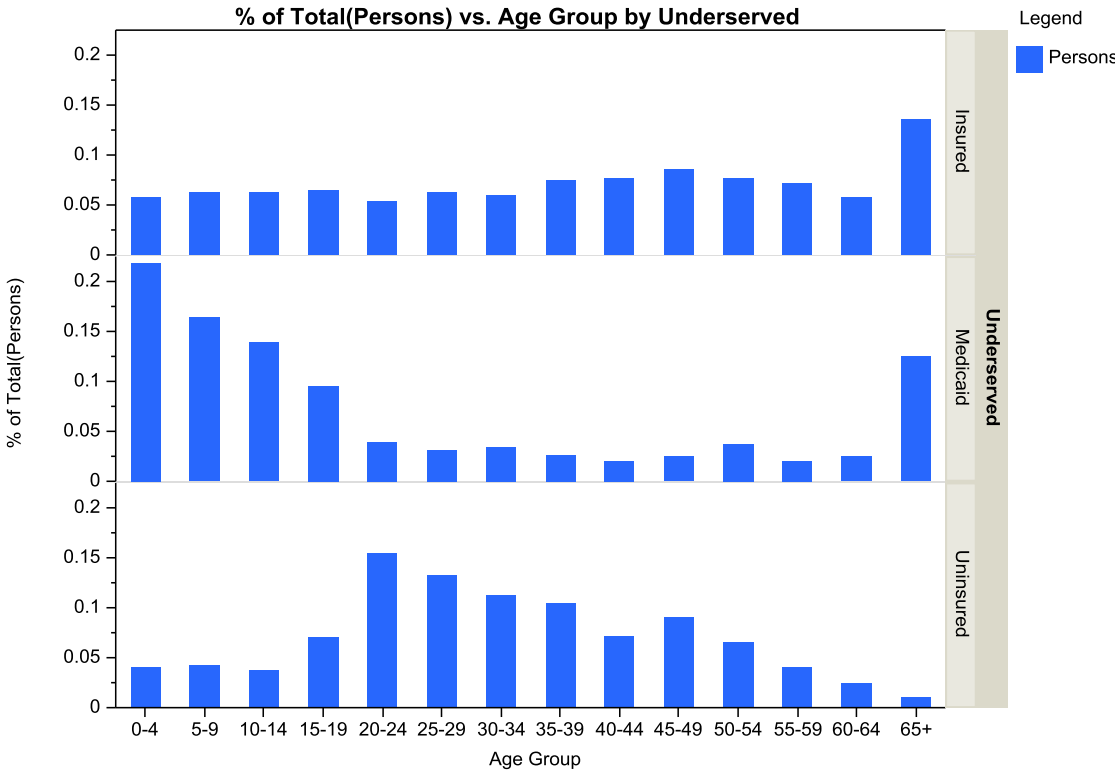
As a result of the analysis above, for purposes of this study the medically underserved will be considered to be composed of those on Medicaid and those who are uninsured. In the following graphs, these two groups are compared to the rest of the population who generally have adequate access to health care.



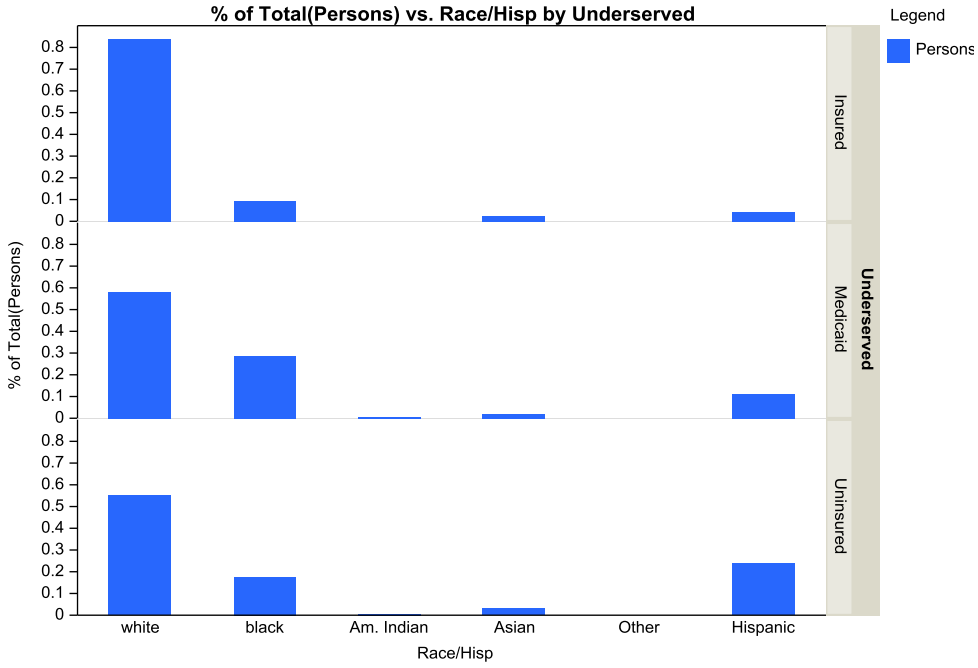
Approximately 1.5 million individuals in the PUMAs including the REACH service area are adequately covered by insurance. This amounts to about 77 percent of the total population in the area. However, there are approximately 445,000 persons, or 23 percent, who are medically underserved by the above definition.



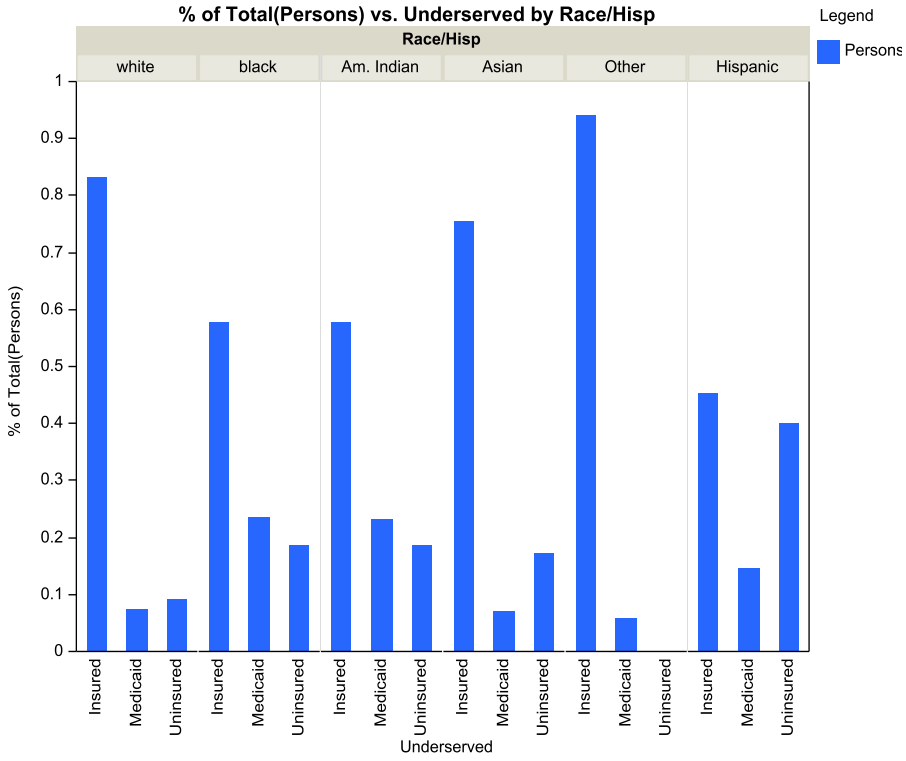
The age distributions of the three groups are markedly different. Those with adequate health insurance show a bulge in the middle-aged years, mirroring the peak of the baby boom generation. The median age for the insured is 43. (The large peak is the 65 and over population which comes from aggregating the 65-69, 70-74, 75-79, 80-84 and 85+ age groups into one.) On the other hand, those on Medicaid are primarily young children, with a median age of 16. The age distribution of uninsured occupies a position in between the other two, primarily composed of young-adults and having a median age of 31.



Here we normalize the distributions to account for the fact that there are many more insured individuals than those on Medicaid or uninsured. Each distribution sums to 1.0 (i.e., each row sums to 1.0 when adding the proportions from left to right), and the bars indicate the proportion of individuals in each age group for each distribution. This accentuates the differences between the different classifications of health care access. The insured are distributed by age much more evenly across ages than those on Medicaid or the uninsured. Medicaid primarily helps the young, and secondarily, the old. The uninsured, on the other hand, are concentrated in young adults, with roughly half the uninsured between the ages of 20 and 40.

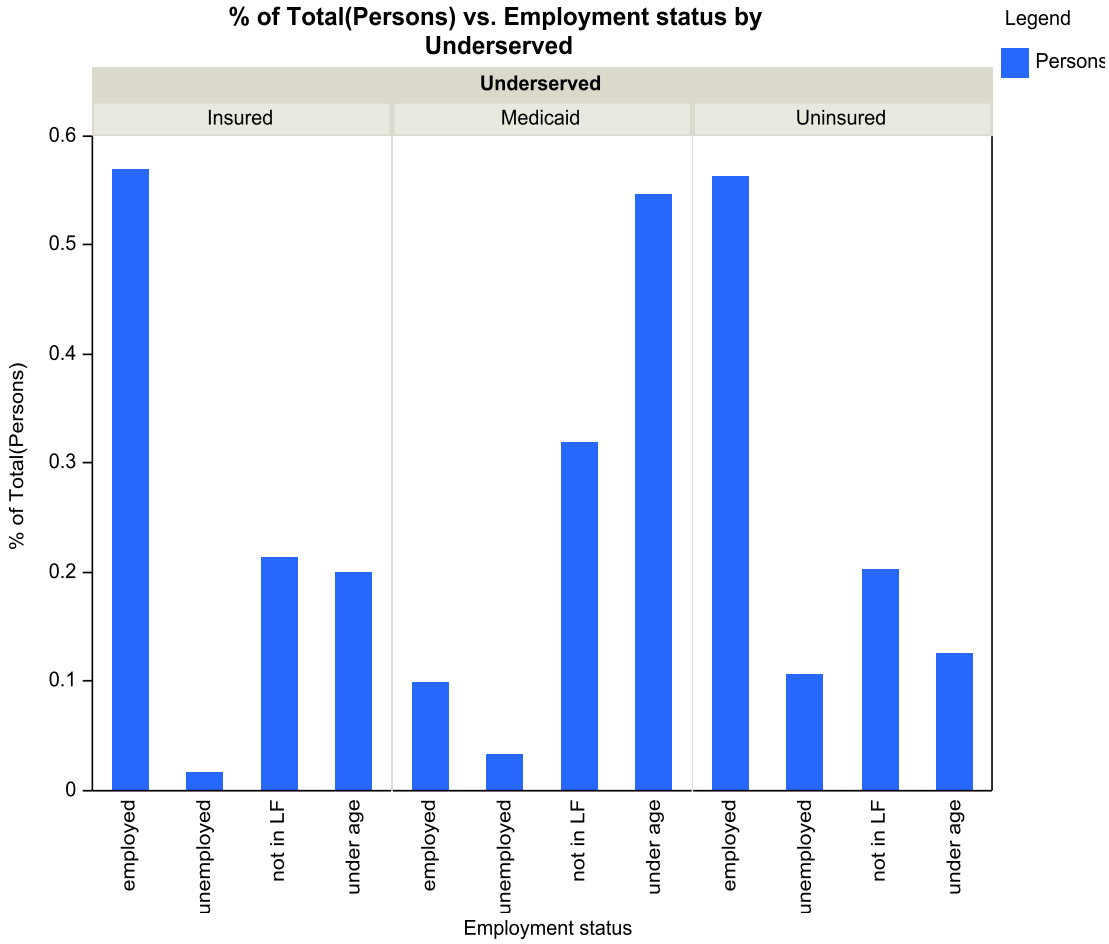


The distribution by race and Hispanic origin also differ markedly between the insured, those on Medicaid and the uninsured. The insured are overwhelmingly (84 percent) white. While a majority of Medicaid recipients and the uninsured are also white, the proportions are significantly less, at 58 percent and 55 percent, respectively. While both categories of underserved populations have a similar white/non-white distribution, they differ markedly in their composition of minorities. Blacks outnumber Hispanics about 2.5 to 1 among Medicaid recipients. On the other hand, Hispanics outnumber blacks among the uninsured by a ratio of 1.36 to 1.



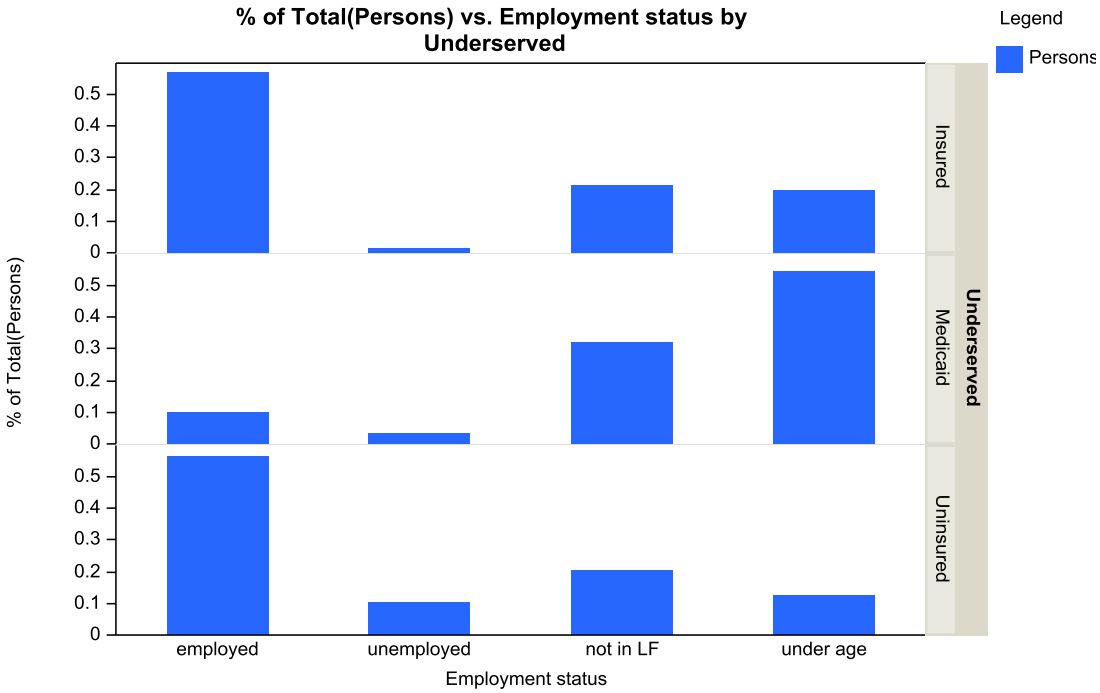
By changing the axes, we can look at the distribution of insurance coverage by race, rather than the distribution of race within insurance coverage groupings. This allows us to calculate that 83 percent of whites are insured, compared to 58 percent of blacks, 58 percent of American Indians, and 76 percent of Asians. (The Other racial category has too few observations for the percentages calculated to be considered statistically reliable). By contrast, fewer than half of Hispanics – 45 percent – are insured. Among Hispanics, 40 percent are uninsured, more than twice the uninsurance rate of any other racial or ethnic group. The groups participating most heavily in Medicaid, at rates near 25 percent, are African Americans and American Indians. This compares the 15 percent rate of Hispanics and 8 percent rate of Whites.

To be officially counted as part of the labor force, one must either be employed or unemployed and looking for work. The unemployment rate is simply the percentage of the labor force that is unemployed. Based on this definition, the unemployment rates vary widely among the insured, uninsured and Medicare recipients. As might be expected, given the large proportion of people who get their insurance through their employer, the percentage of individuals who are unemployed but insured is a scant 2.9 percent. This compares to an unemployment rate of 25 percent for Medicaid recipients, nearly nine times that of the insured. About 16 percent of the uninsured are unemployed.

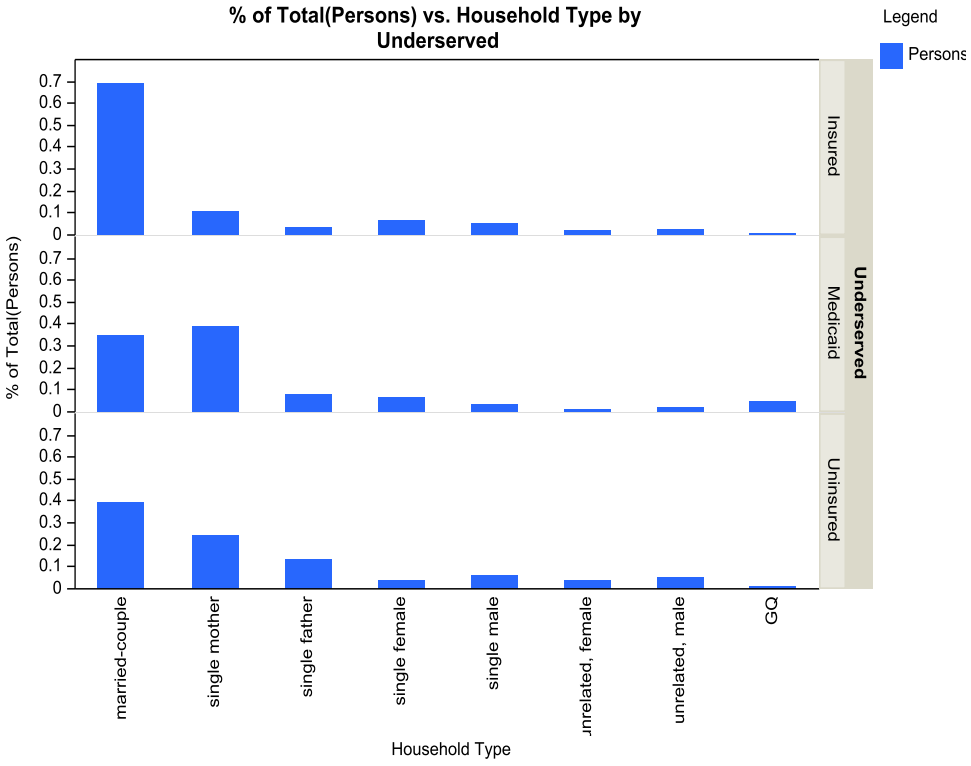


However, examining those officially in the labor force only tells part of the story. When we look at the entire population, including children under16 years of age (who are too young to join the labor force) and those who are not actively looking for work, a different picture emerges. First, the uninsured have an employment rate (i.e., the number of uninsured who are employed divided by the total number of uninsured individuals) that is about the same as the insured, 56 percent vs 57 percent respectively. The two groups differ primarily in the fact that the insured are comprised of a significantly smaller proportion of unemployed individuals and a significantly larger proportion of children under labor force age than the uninsured. Second, the vast majority (nearly seven out of eight, or 87 percent) of those on Medicaid are not in the labor force at all, and majority of recipients (55 percent) are children not yet of labor force age.

Another view of the same data follows:



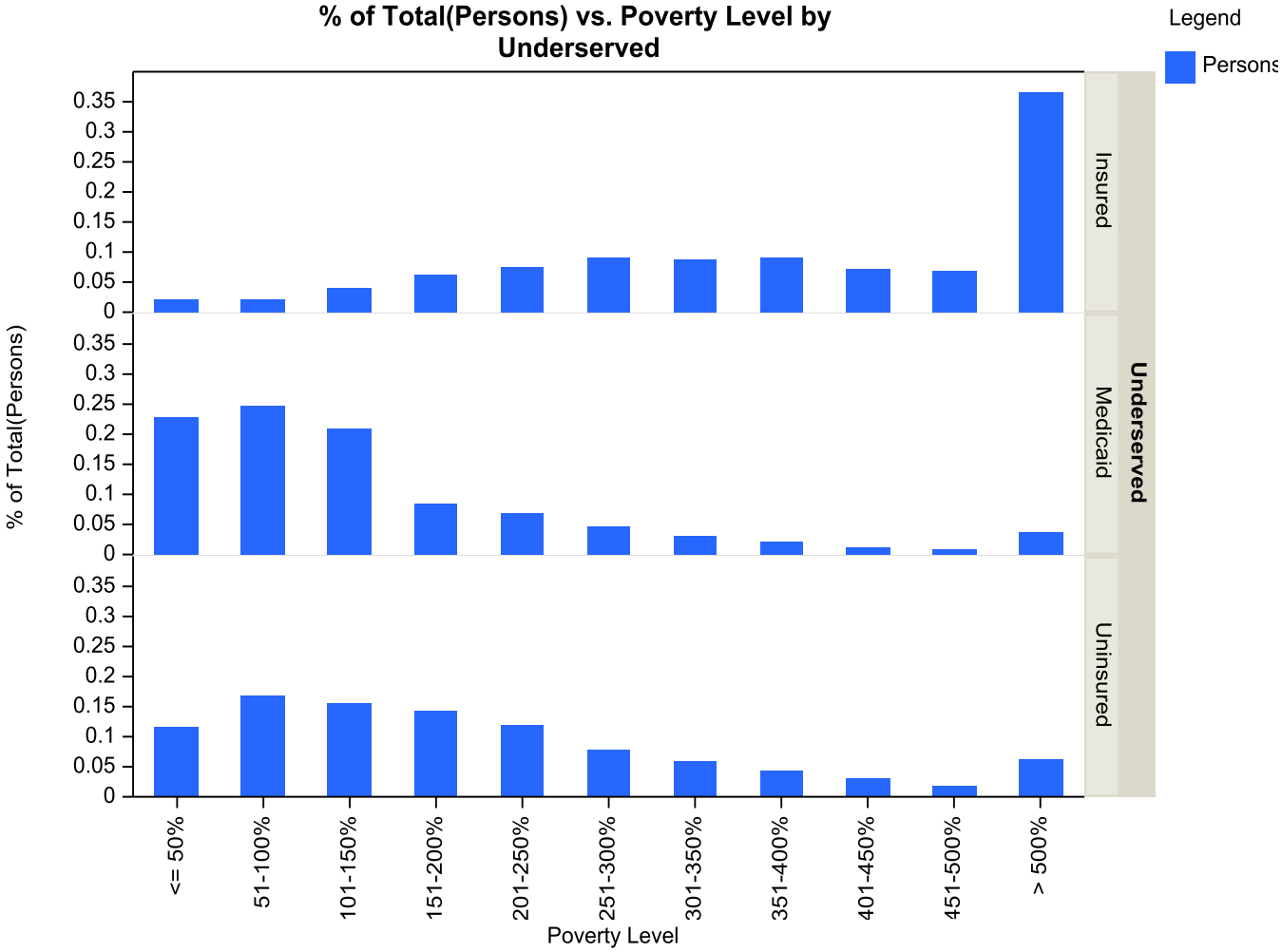
This view makes perhaps makes the employment status similarity between the insured and uninsured more apparent, as well as the difference between those two groups and those on Medicaid.



About 69 percent of insured individuals live in married-couple families while 11 percent live in families headed by a single mother and 3 percent live in families headed by a single father. This distribution of

living arrangements is vastly different from that experienced by the uninsured and those on Medicaid, of whom only 35 percent live in married-couple families or about half the rate of the insured. Meanwhile a plurality of Medicaid recipients – 39 percent – live in families headed by single moms and 8 percent live in households headed by single dads. Taken together, this means that single-parent families are home to nearly half of those receiving Medicaid (47 percent).

The distribution of household types for the uninsured again lies generally between those for the insured and persons on Medicaid, with 39 percent in married-couple families and 25 percent in families headed by single moms. But, at 14 percent, the uninsured have the largest proportion of individuals living families headed by single dads. Taken together, 39 percent of the uninsured live in single parent household, a proportion equal to the number in married-couple households. Interestingly, fully 10 percent of the uninsured live in households composed of unrelated individuals, reflecting the prevalence of young adults in this population.

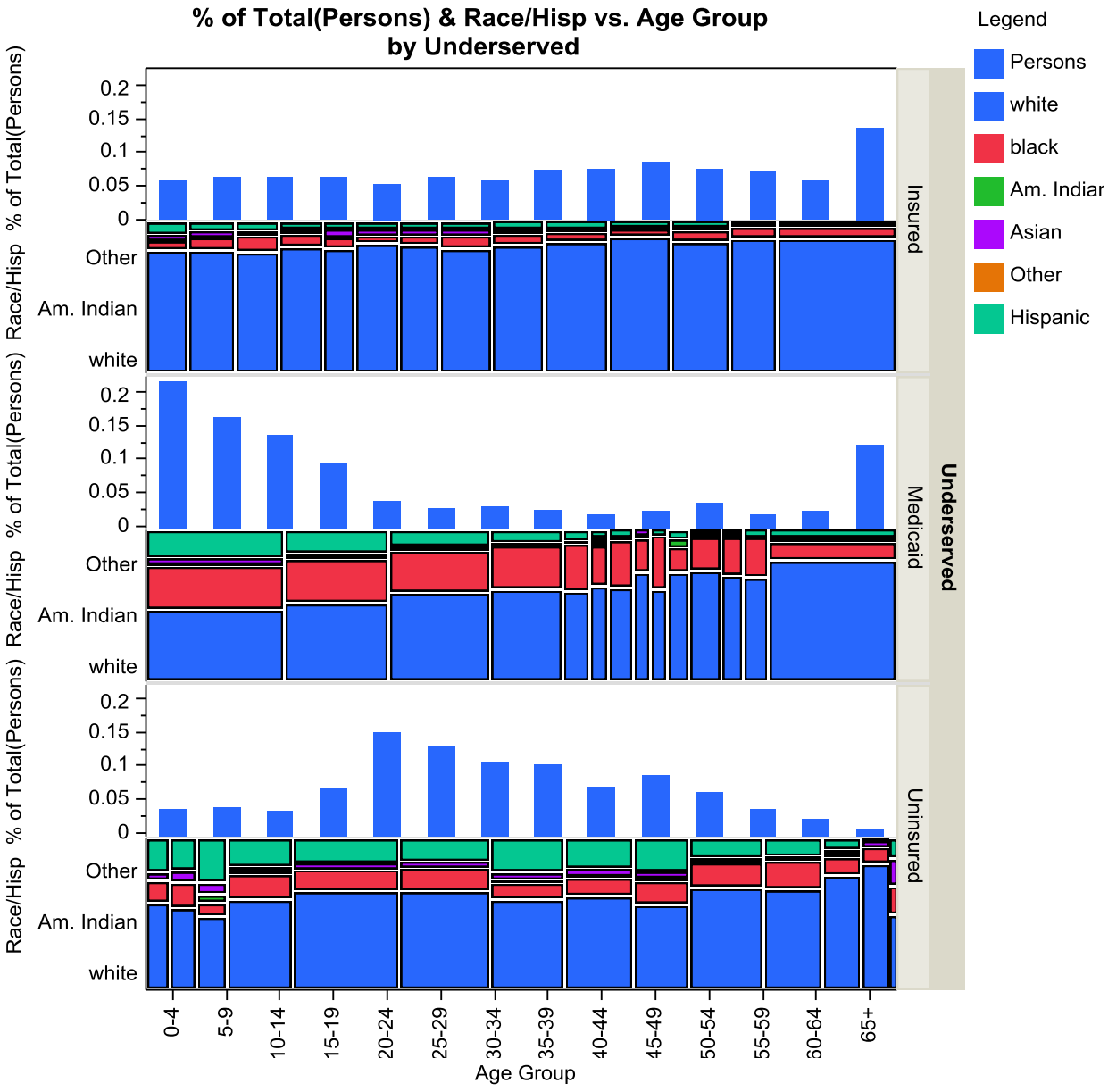


The medically underserved population is much poorer than the insured population. Whereas the median household income of the insured is $63,000 per year (2008 dollars), the median uninsured household earns $27,000 while the median household on Medicaid earns $12,768. When translated into percentages of the Federal Poverty Level (FPL), which takes into account the size of the household and the number of children, the median insured household has an income that is 406 percent of the FPL while the median uninsured household and median household on Medicaid have incomes of 150 percent and 102.5 percent of the FPL, respectively.

Alternatively, we can look at the percent of each group that is below the FPL or 200 of the FPL, common reference levels for participation in public and non-profit programs. Whereas only 4.5 percent of insured individuals live in poverty, i.e., households with income below the FPL, 28 percent of the uninsured and 47 percent of Medicaid recipients live in poverty. Similarly, only 15 percent of insured individuals live households with incomes under 200 percent of poverty, while 58 percent of the uninsured and 77 percent of those receiving Medicaid have household incomes below this level.

Examining characteristics of individual age and income groups among the medically underserved

The following sequence of charts adds a mosaic chart underneath each age group to display the distribution of a particular characteristic within each age category. The first chart examines racial composition.

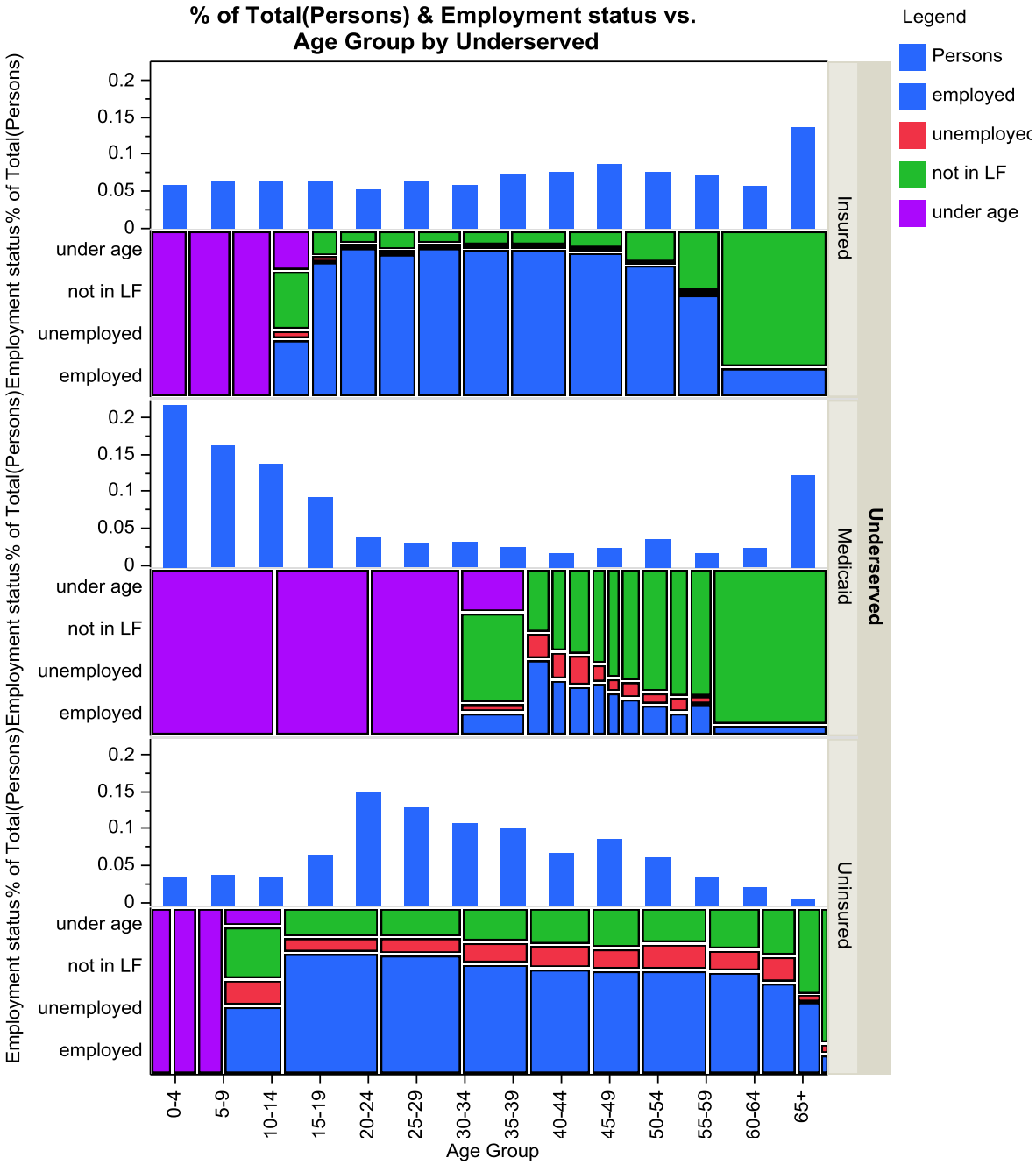


Recall that the width of the each mosaic section is proportionate to the height of the bar it is representing, but the labels line up with the vertical bars. Therefore, to find the race composition for a particular age group, one must count mosaic sections from the left or the right and match this up with the appropriate age group.

Despite this inconvenience in getting the labels to line up, the mosaic charts are useful for spotting racial patterns in the age data. For example, the white percentage of those on Medicaid increases as age increases, while the Hispanic portion decreases. The black proportion, on the other hand is relatively stable across age groups. This pattern also holds for the insured, though it is much less obvious because of the low proportion of the insured that are minorities.

By contrast, for those who are uninsured the racial shares show no discernable pattern by age for any of the race/ethnic groups, at least until the age of 55.

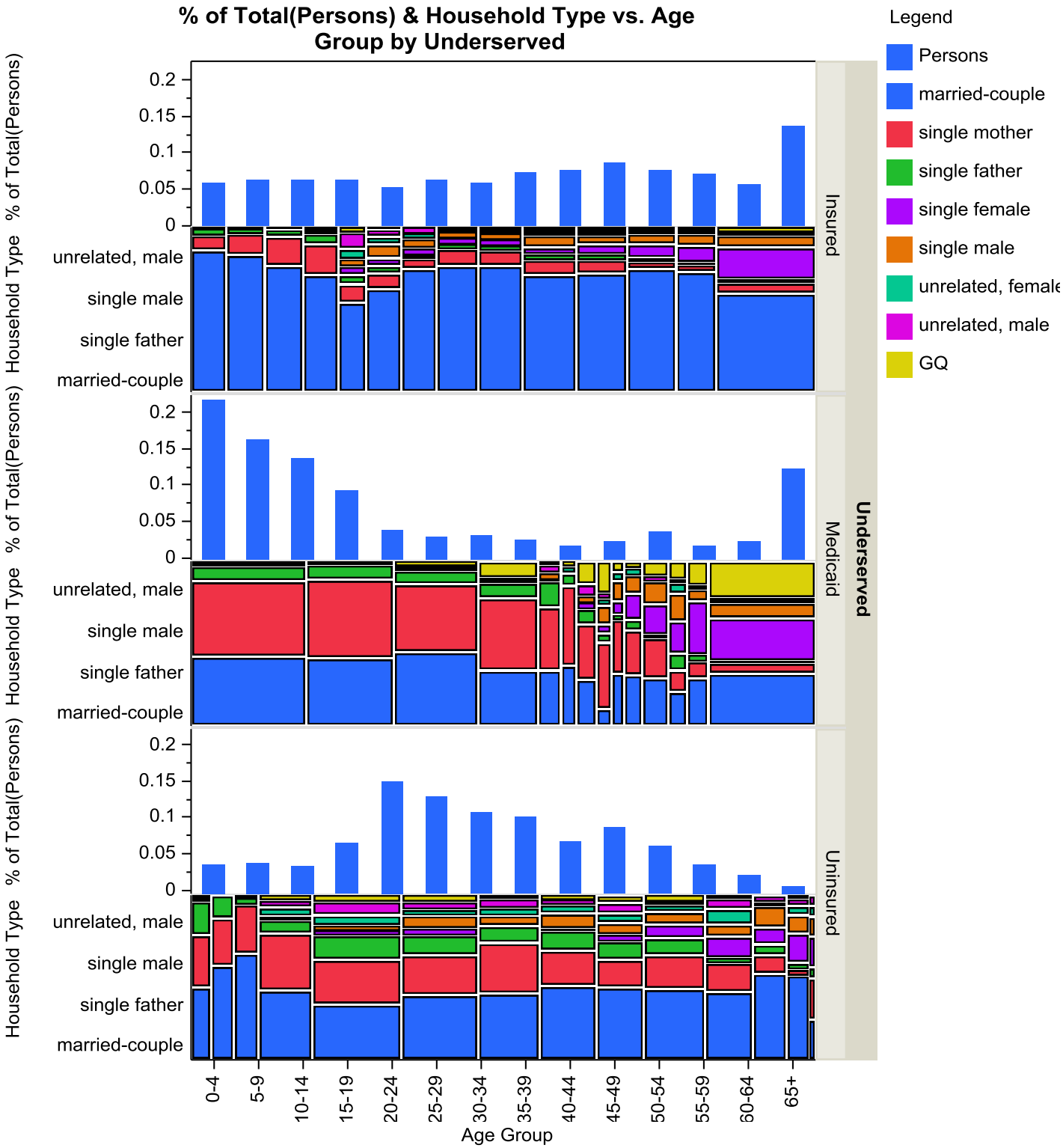
Next we examine the employment status of the medically underserved by age:



Because those on Medicaid are mostly either young or old, they are either under the age of 16 and so underage, or retired and not in the labor force. What is interesting, but not unexpected given the income guidelines for receiving Medicaid, is the proportion of people in prime working years are not in the labor force. Only for those aged 20-24 is this proportion less than 50 percent.

By contrast, the labor force participation rates by age for the uninsured follow the same basic pattern as the insured, where most of those of working age do, in fact, work. However, the uninsured are not as successful at finding work as the insured and so have a significantly higher proportion who are either unemployed or out of the labor force at nearly every age group.

The following chart examines the household type of the individuals within each age group for the insured, uninsured and those on Medicare:

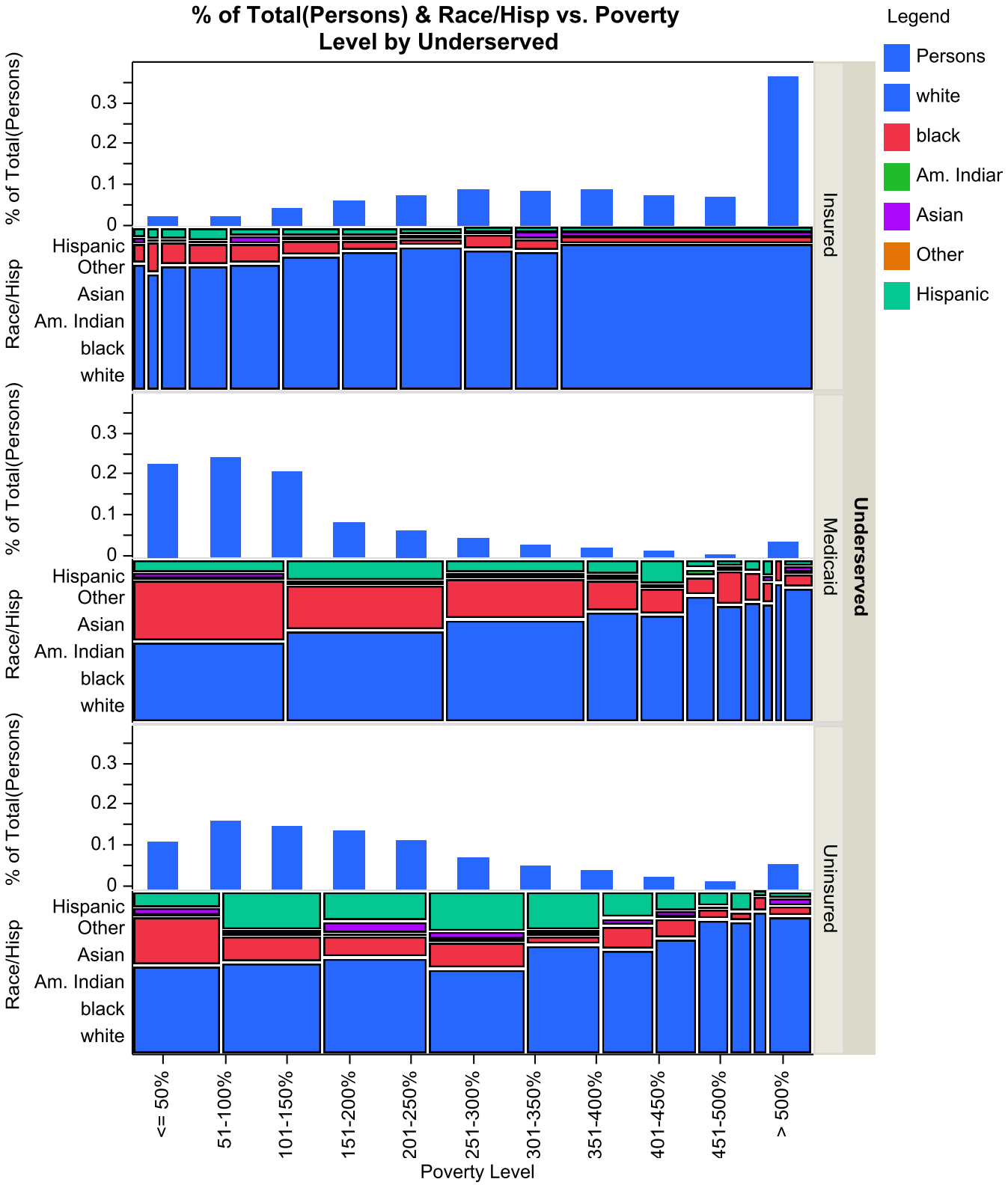


Note that for the insured, the household type tends to follow a traditional life cycle. The vast majority of children live in married-couple families, although the proportion of children living with single mothers increases as the children age. In the young adult years, housing types are much more varied as they leave home and start households on their own, either with roommates or alone, but the proportion of those living in married-couple families never drops below 50 percent. The married-couple percentage rebounds in the middle-aged years, then slowly drops as the proportion of single female households increases, probably due to superior female life expectancy. Still, the married-couple household type remains the majority throughout the age distribution.

The composition of household types by age follows a much different pattern for those on Medicaid and the uninsured. For those on Medicaid, the most prevalent household type for ages under 40 is single mothers. Combining single mothers and single dads into a single parent household type, an outright majority of individuals on Medicaid live in single parent families in most age groups up to the age of 50. After that point, the share of individuals living in single-female households and in group quarters (GQ) begins to rise at the expense of single-mother families, while the share living in married-couple families remains constant. For the elderly, group quarters most likely means nursing homes and long-term care facilities.

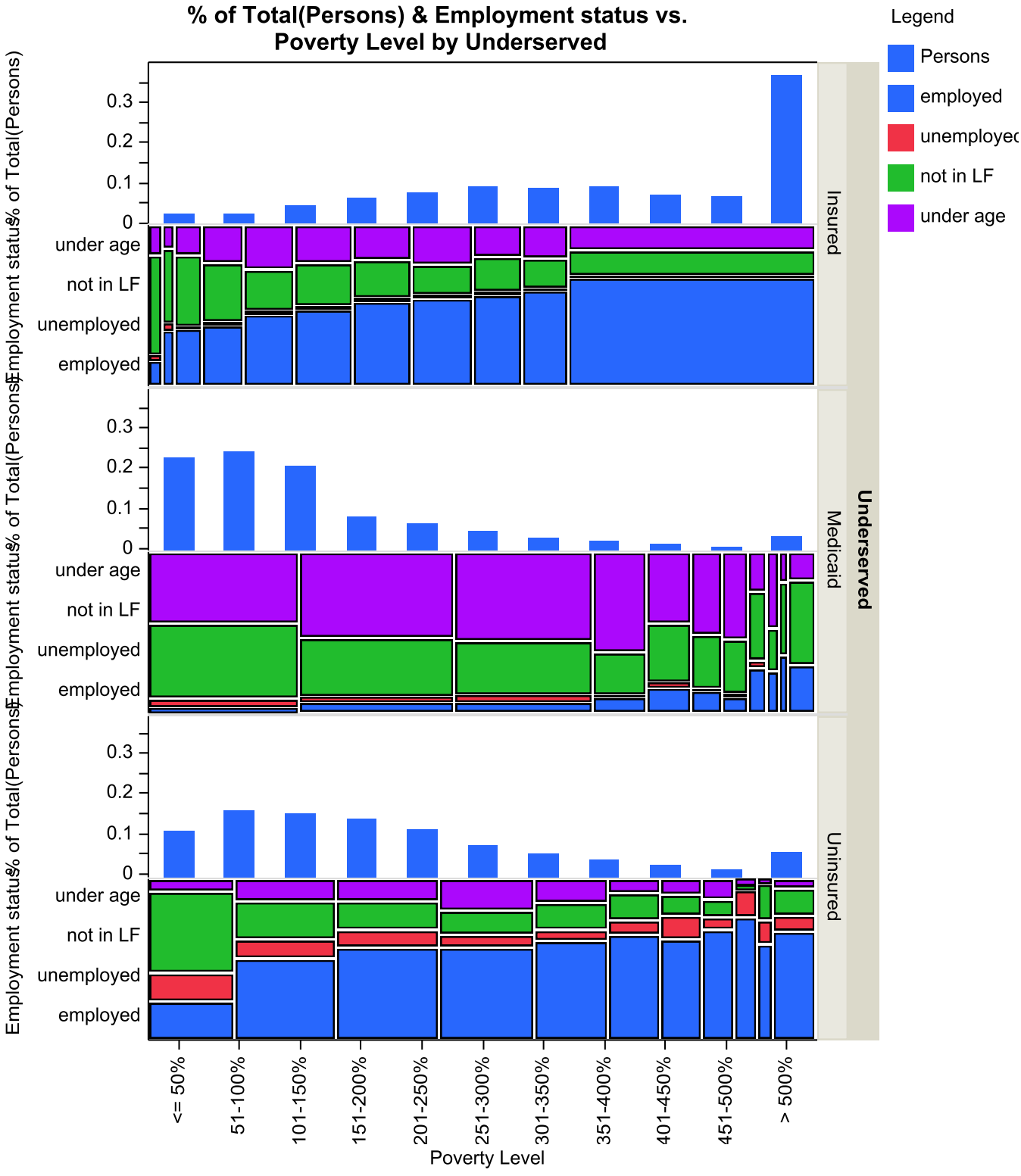
For those who are uninsured, individuals living in married-couple families are the plurality in virtually every age group, with single moms being the second most common household type. However, single dads are also a prevalent household type among the uninsured, at least until the age of 50. If single moms and single dads are combined into a single parent household type, then single-parent households are the plurality of household type for uninsured individuals aged birth to 4 and 15 to 35.

We now examine the demographic characteristics of the medically underserved by income group:



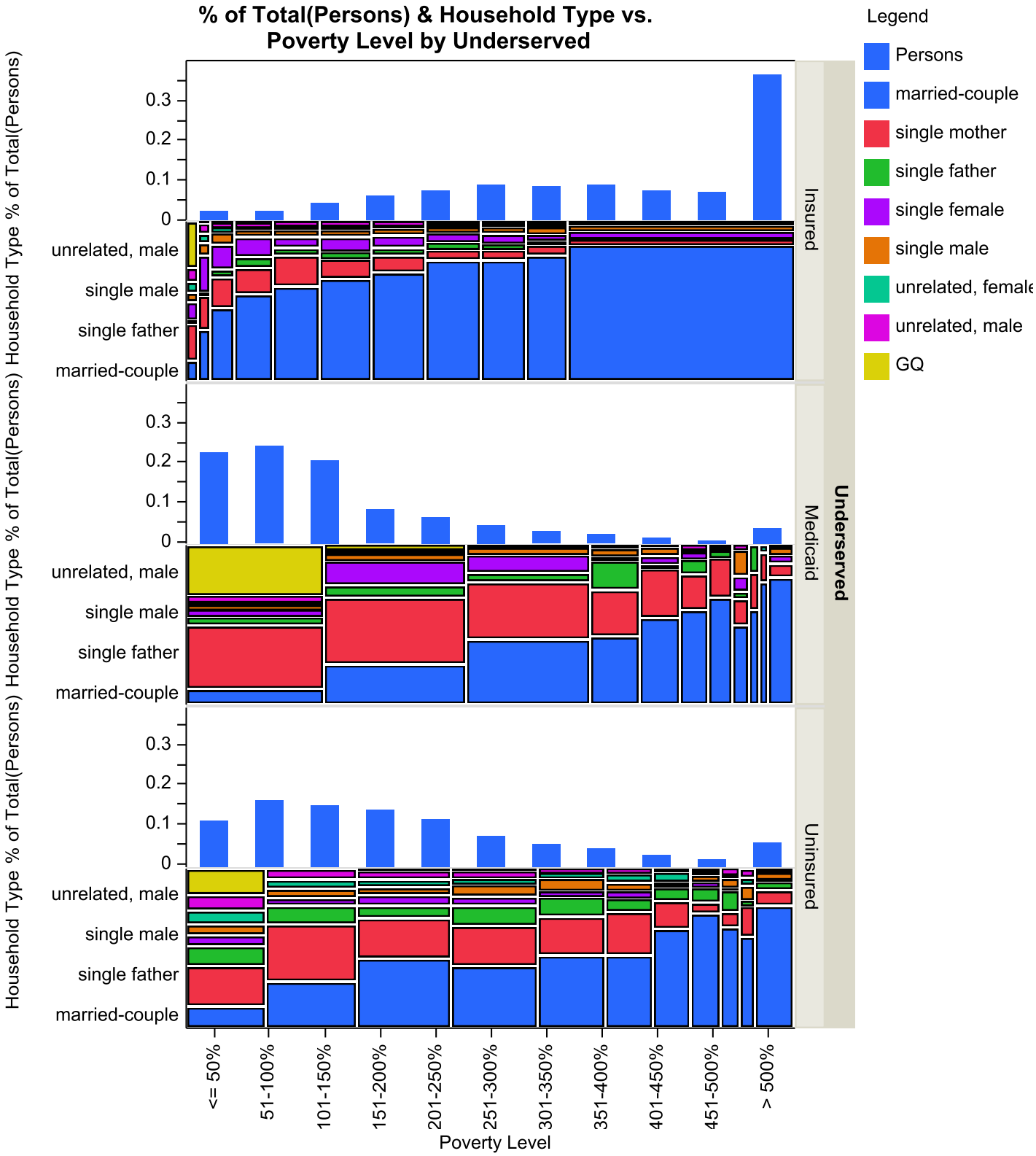
Whether insured, uninsured or on Medicaid, there is a strong tendency for the share of individuals who are white to increase as incomes go up and for the share of minorities to go up as incomes go down. However, for the uninsured, this tendency isn't consistent until incomes reach 200 percent of the FPL. That blacks are the a largest minority across virtually all income groups among those on Medicaid while Hispanics are the largest minority across virtually all income groups among the uninsured is readily apparent. But the Hispanic share appears to decline less quickly with income when compared to the African American share.

Next we examine the employment status across income groups for the insured, uninsured and those on Medicaid:



Employment status, of course, has a strong relationship to income. This is especially true for insured individuals who, after all, primarily get their insurance through an employer. But it is equally true for the uninsured, whose employment status distribution differs from the insured mainly in the fact that at every income more of the uninsured are out of work but looking for work, and so counted as unemployed. Again, with an employer-based health insurance system, this makes sense and demonstrates the health insurance impact of losing one's job. As would also be expected, the relationship between working and income levels for those on Medicaid is much weaker since the majority of recipients are children and the elderly. Nonetheless, those who do have higher incomes while on Medicaid do also have a greater tendency to work.

Finally we examine income by household type for the insured, uninsured and Medicaid recipients:



Again a strong relationship between income and household type is observed for all three groups, with higher proportions of married couple families being associated with higher incomes and singles and

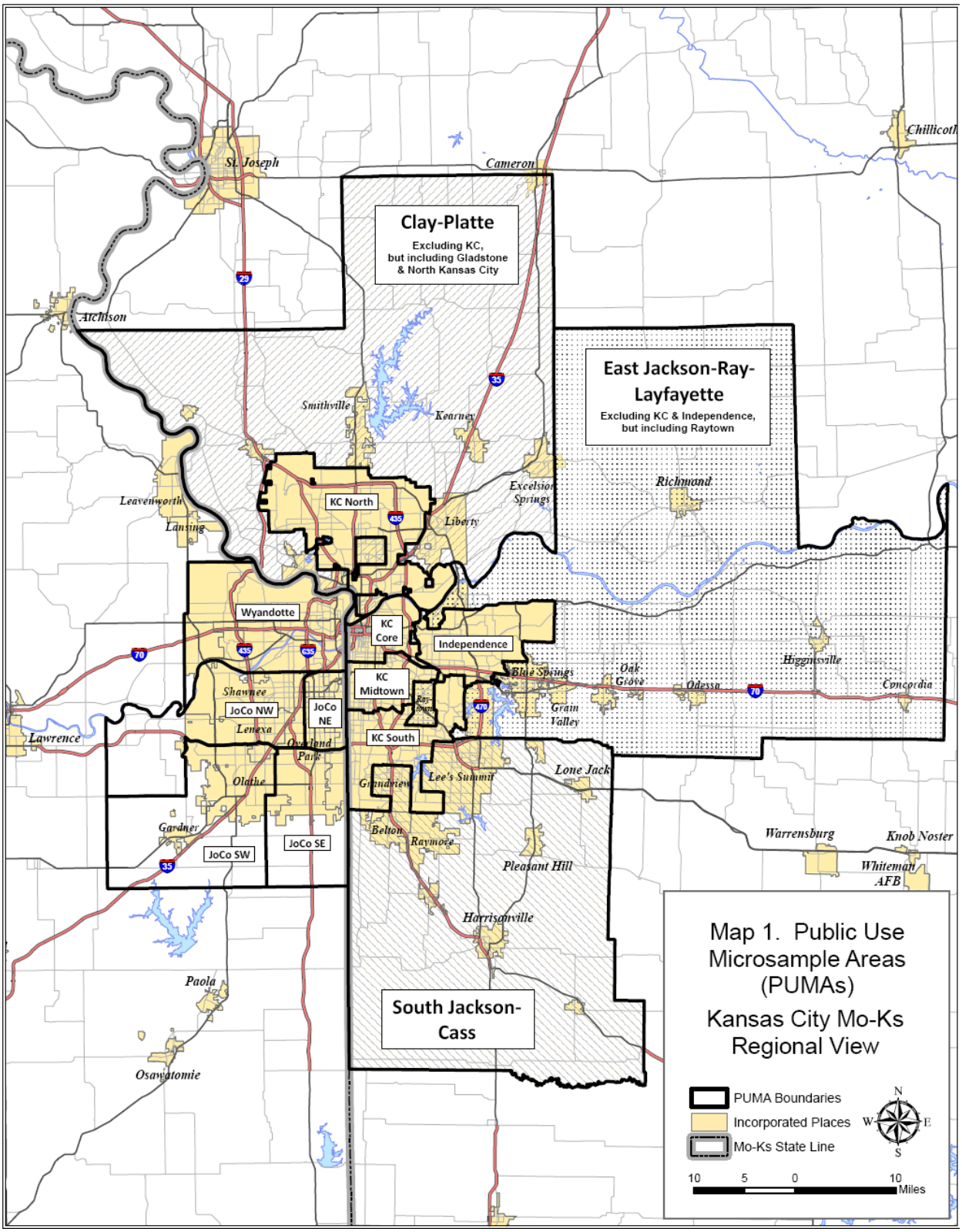
single-parent families being associated with lower incomes. Those with insurance are much more likely to live in married-couple families regardless of income than the other two groups. And, while the uninsured have an employment distribution similar to the insured, they have a household composition distribution much more similar to those on Medicaid. Finally, it appears that the group quarters population comprises a large fraction of the poorest individuals, regardless of whether or not they have adequate insurance.

Where are the medically underserved? Analysis by PUMA

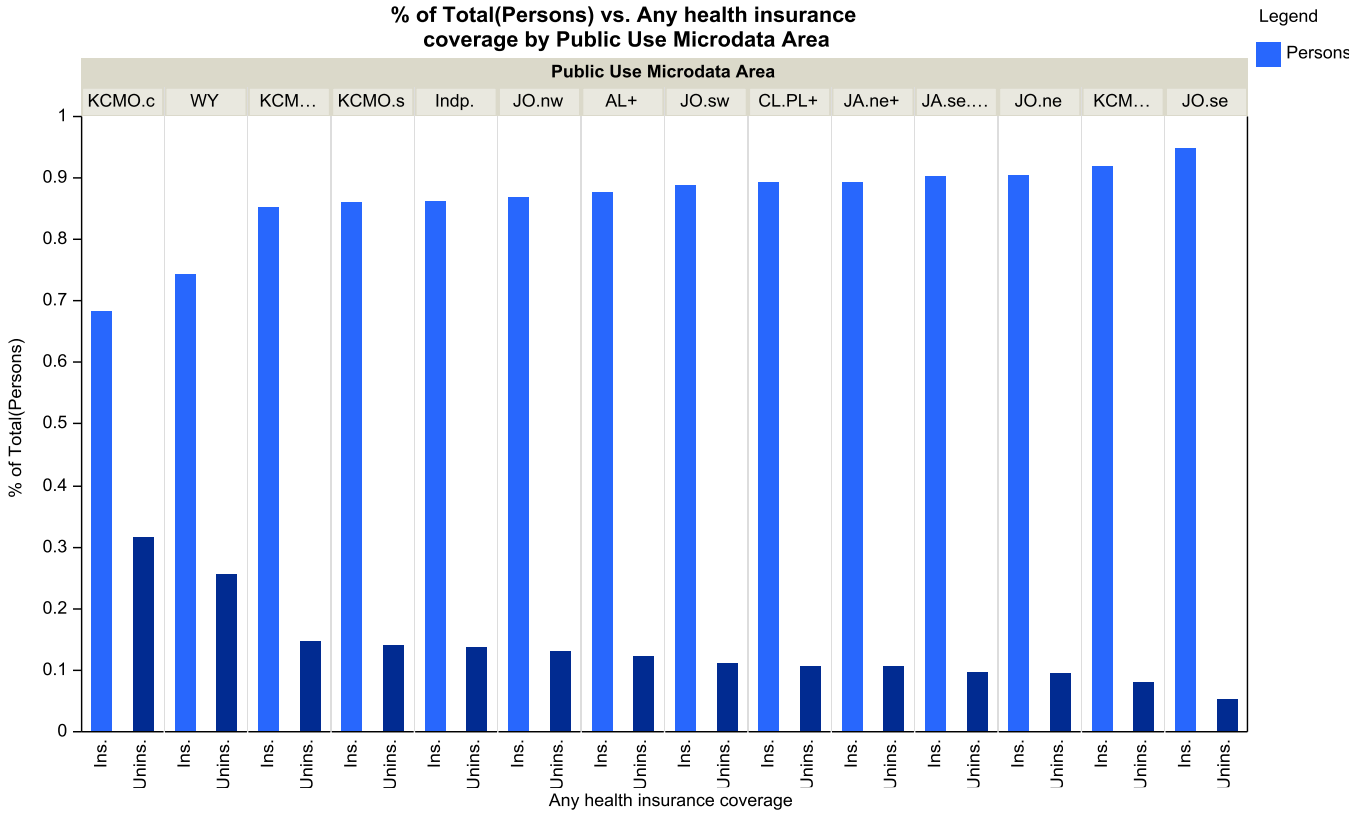
We now look at the location of the medically underserved using the PUMA geography. These areas must be at least 100,000 in population, and they do not necessarily follow county boundaries. The following table describes the correspondence between PUMAs and the counties included in the REACH service area.

PUMA	Table ID	Description
Kansas		
500	WY	Wyandotte County
601	JO.nw	NW Johnson County (west of Antioch, north of I-435/K-10)
602	JO.ne	NE Johnson County (east of Antioch, north of I-435)
603	JO.sw	SW Johnson County (approx. Olathe, Gardner, Edgerton, Spring Hill areas)
604	JO.se	SE Johnson County (approx. Blue Valley SD area)
1500	AL+	Allen County, plus Anderson, Bourbon, Elk, Linn, Wilson and Woodson Counties
Missouri		
800	CL.PL+	Northland excl. KCMO – (i.e., non-KCMO Platte, non-KCMO Clay, Clinton Counties)
901	JA.ne+	NE Jackson + Lafayette (approx. Raytown, Blue Springs, Oak Grove, Grain Valley areas)
902	JAse.CA	SE Jackson + Cass (approx. Grandview, Lee's Summit, Greenwood, Lake Lotowana areas)
1001	KCMO.n	KCMO North of the Missouri River
1002	KCMO.c	KCMO Core (River to about 39th St.)
1003	KCMO.m	KCMO Midtown (39th St. to about 83rd St.)
1004	KCMO.s	KCMO South (83rd St. to Jackson County Line)
1100	Indp.	Independence

A map of the PUMAs can be found on the following page. The Table ID is the identification used in each of the tables that follows the map.

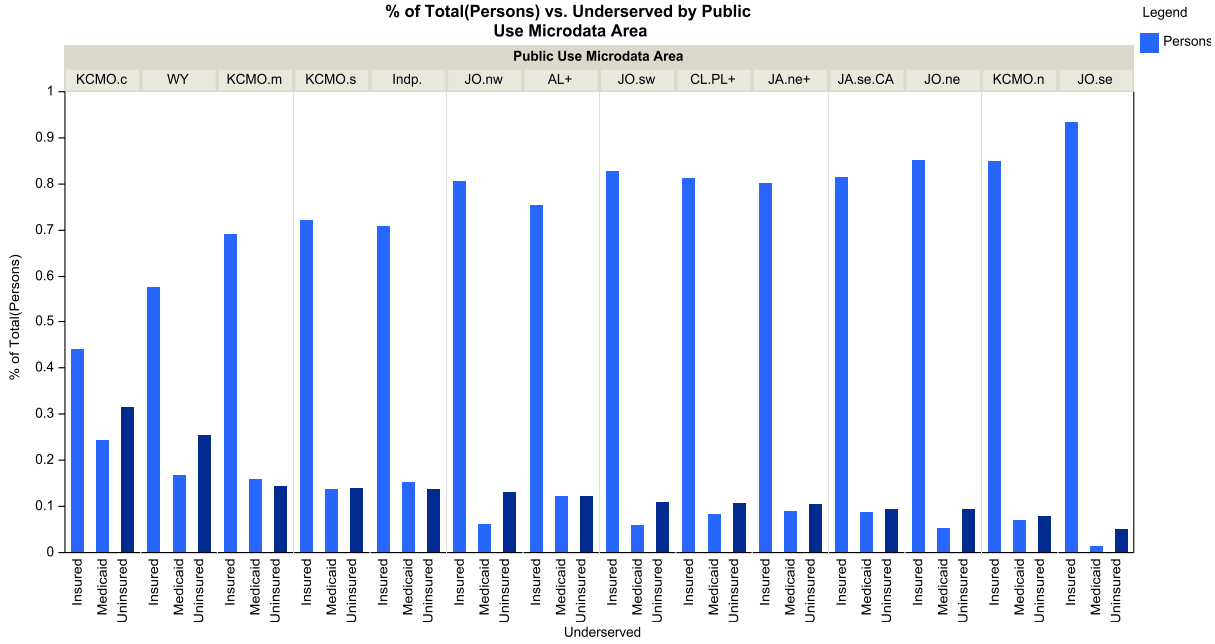

Clay-Platte
Excluding KC, but including Gladstone & North Kansas City
East Jackson-Ray-Layfayette
Excluding KC & Independence, but including Raytown
South Jackson-Cass
KC North
KC Core
KC Midtown
KC South
Wyandotte
Independence
JoCo NW
JoCo NE
JoCo SW
JoCo SE
St. Joseph
Cameron
Chillicothe
Atchison
Smithville
Kearney
Excelsior Springs
Richmond
Liberty
Leavenworth
Lansing
Shawnee
Lenexa
Overland Park
Olathe
Lawrence
Gardner
Grandview
Belton
Raymore
Lee's Summit
Lone Jack
Grain Valley
Blue Springs
Oak Grove
Odessa
Higginsville
Concordia
Warrensburg
Knob Noster
Whiteman AFB
Pleasant Hill
Harrisonville
Paola
Osawatomie
Map 1. Public Use Microsample Areas (PUMAs)
Kansas City Mo-Ks Regional View
PUMA Boundaries
Incorporated Places
Mo-Ks State Line
N
W
E
S
10 5 0 10
Miles

The following chart examines the proportion of residents in each PUMA that are uninsured. It is sorted in descending order by this uninsurance rate. This ordering is used for all subsequent charts.

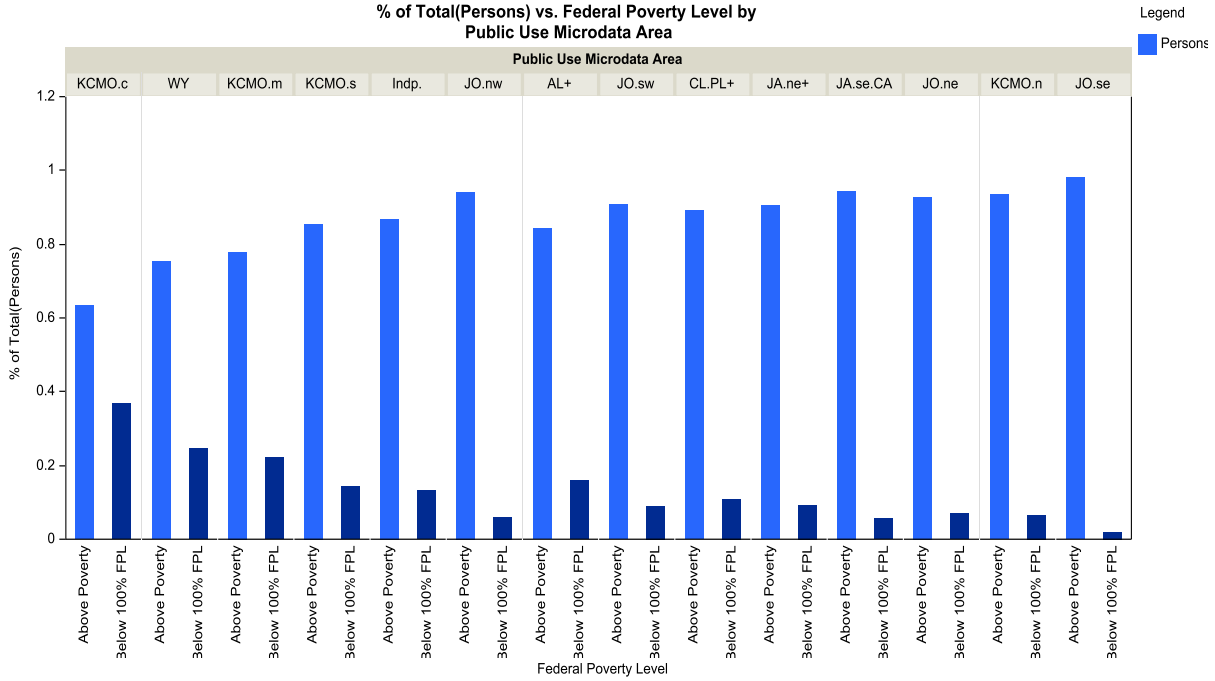


Wyandotte County has the largest number of uninsured. But at nearly one-third (32 percent), the core area of Kansas City, Missouri has the highest proportion of its population that is uninsured. Southeast Johnson County, roughly the Blue Valley School District, has the lowest number and proportion of uninsured (5 percent).

Note that this chart treats those on Medicaid as part of the insured population in order to emphasize the relative concentrations of the uninsured, highlighted n dark blue.

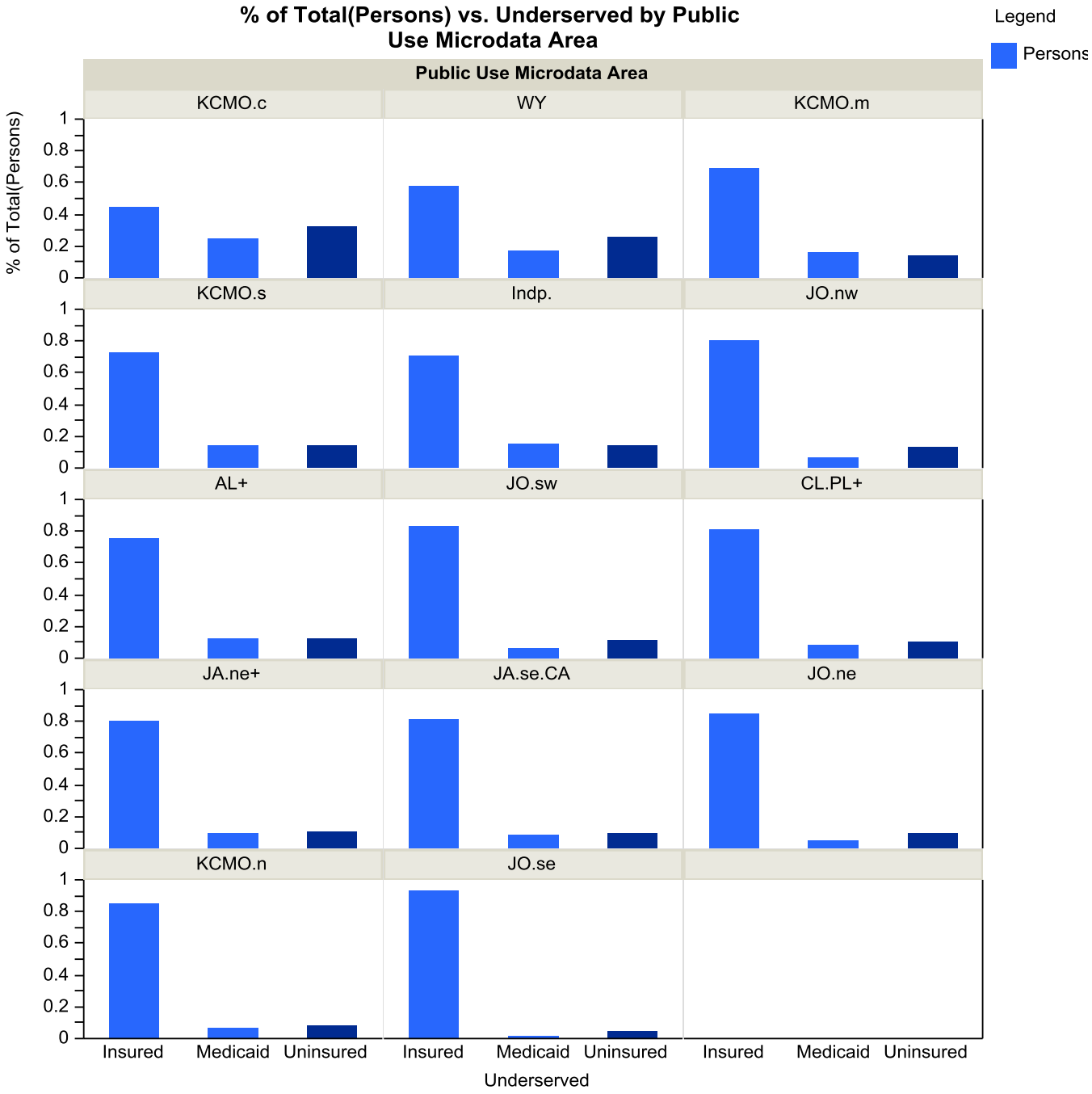


Here, Medicaid recipients are broken out from the insured, illustrating that there is a high degree of correlation between the location of concentrations of the uninsured and those on Medicaid. Those PUMAs with the largest proportions of the uninsured tend to have the largest proportions of Medicaid recipients as well.



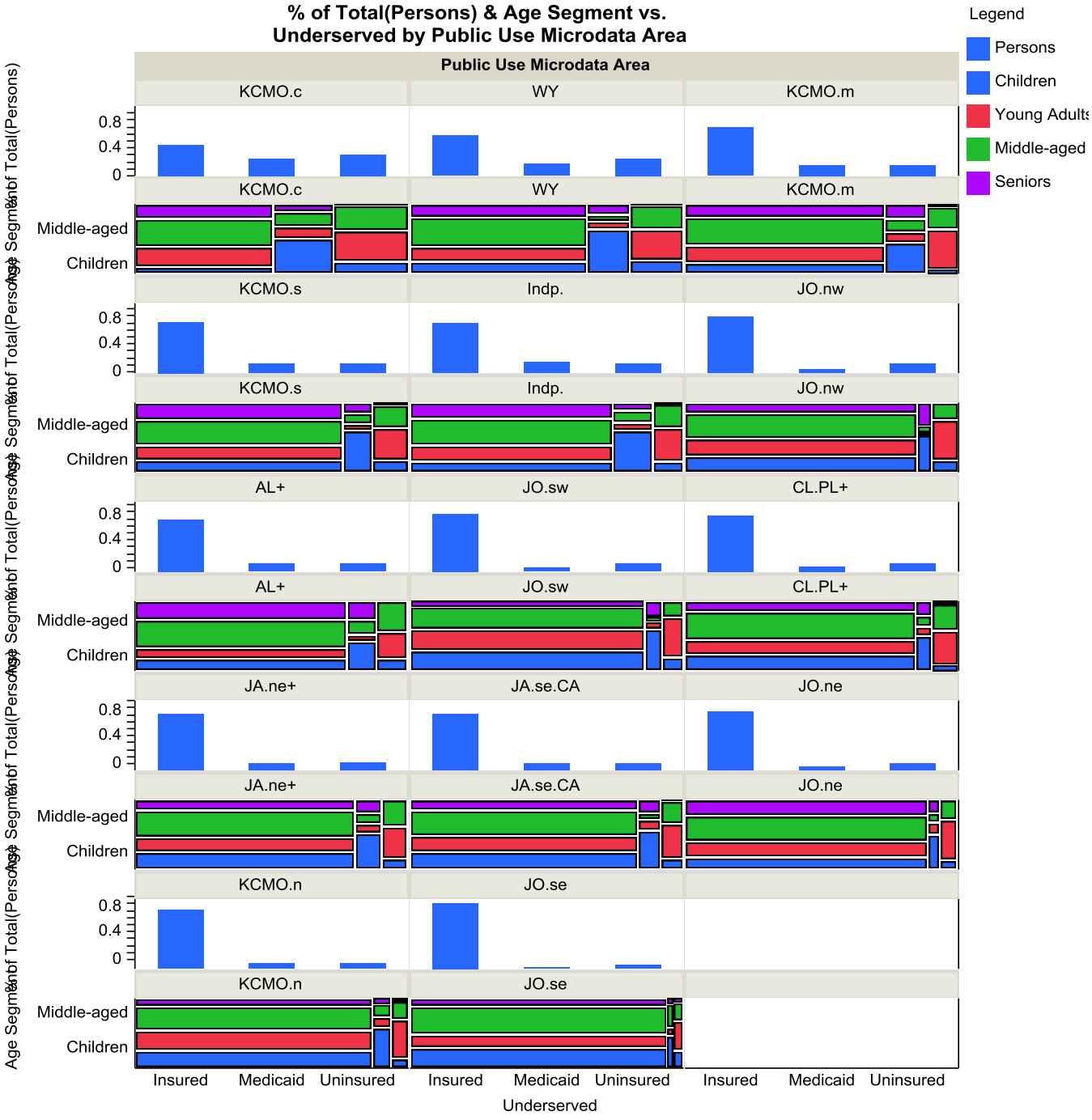
This is because those PUMAs with the highest proportions of the uninsured also tend to have the highest proportions of people living in poverty.

Here is the same data as in the first chart showing the insured, uninsured and Medicaid populations by PUMA, sorted by the proportion that is uninsured.



While the prior format made easier comparing the levels of the bars across PUMAs, this format is more legible for showing demographic characteristics of the different populations by PUMA.

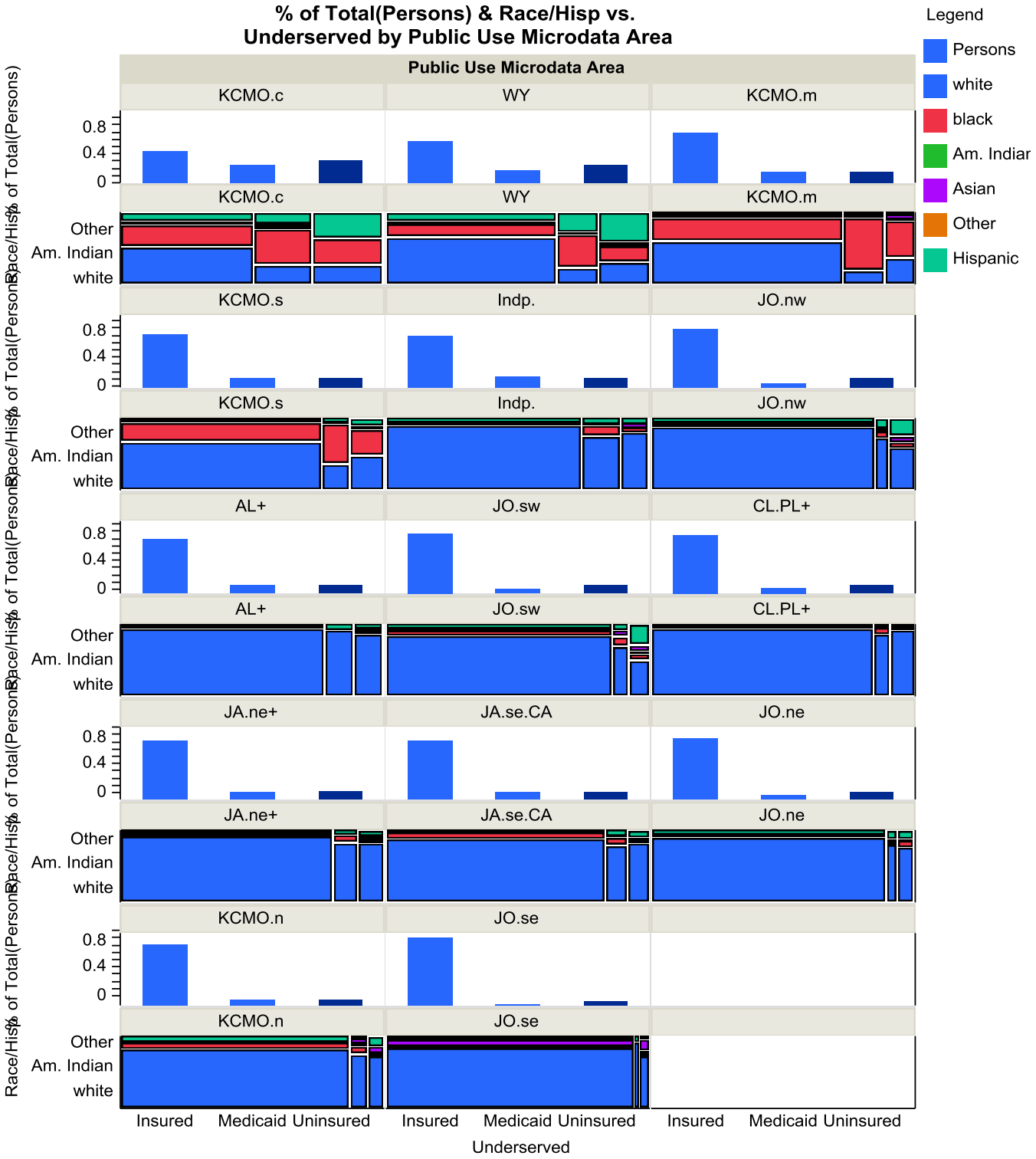
First, we examine the broad age composition of the insured, uninsured and Medicaid populations by PUMA.



Children are defined as under 18 years of age. Young Adults are between the ages of 18 and 39, inclusive. Middle age is defined as between 40 and 64. Seniors are ages 65 and over. That Medicaid recipients are primarily children holds true for every PUMA. That young adults are the largest component of the uninsured is true for every PUMA except the one containing Allen county, where there are more people uninsured who are middle-aged. The three KCMO PUMAs south of the Missouri

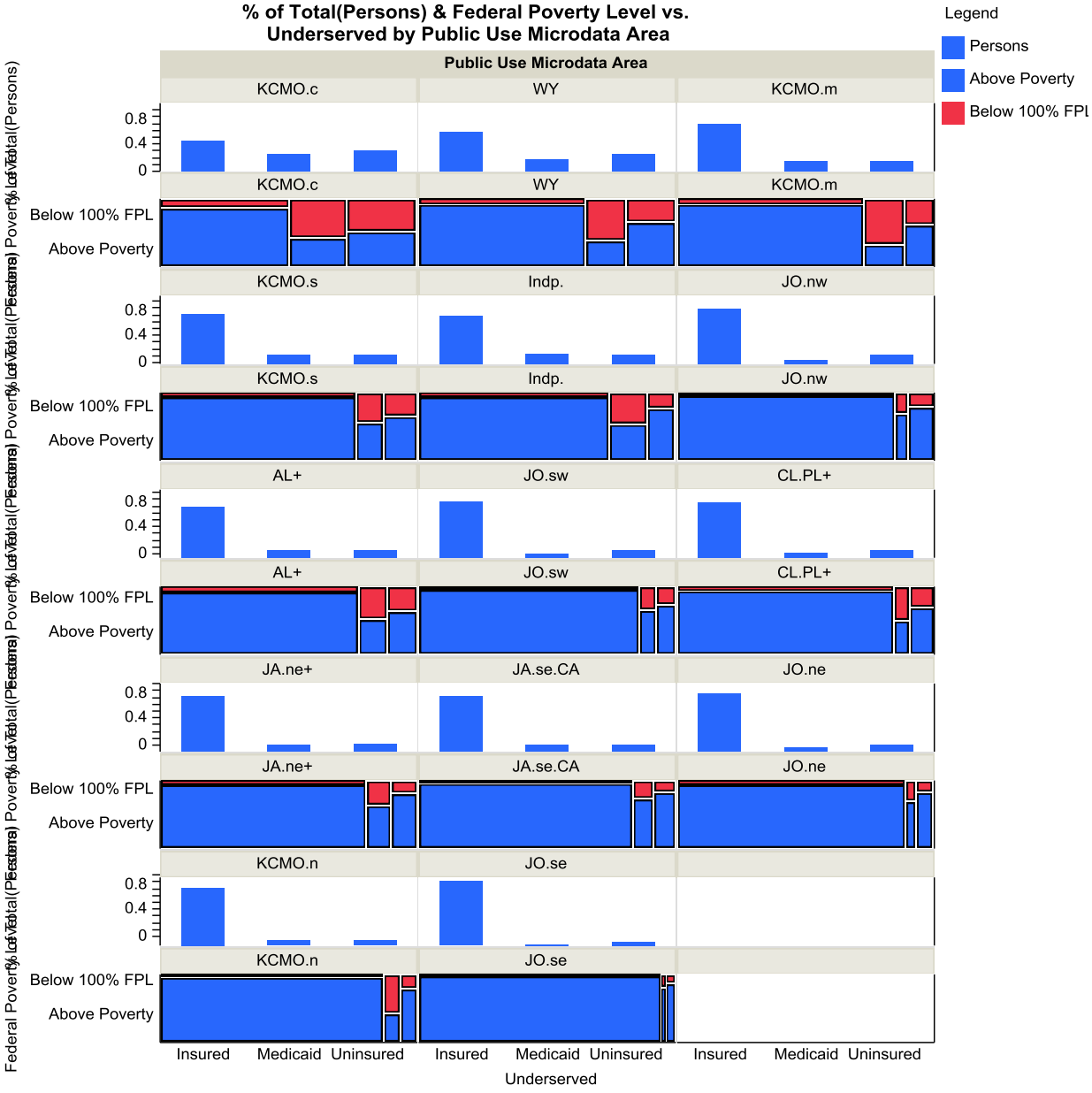
river, the Wyandotte county, Independence, Allen county and northeast Johnson County PUMAs have the largest concentrations of seniors. However, in general, the age distributions across the PUMAs are relatively similar.

Next, we examine the racial composition of the insured, uninsured and Medicaid populations by PUMA.



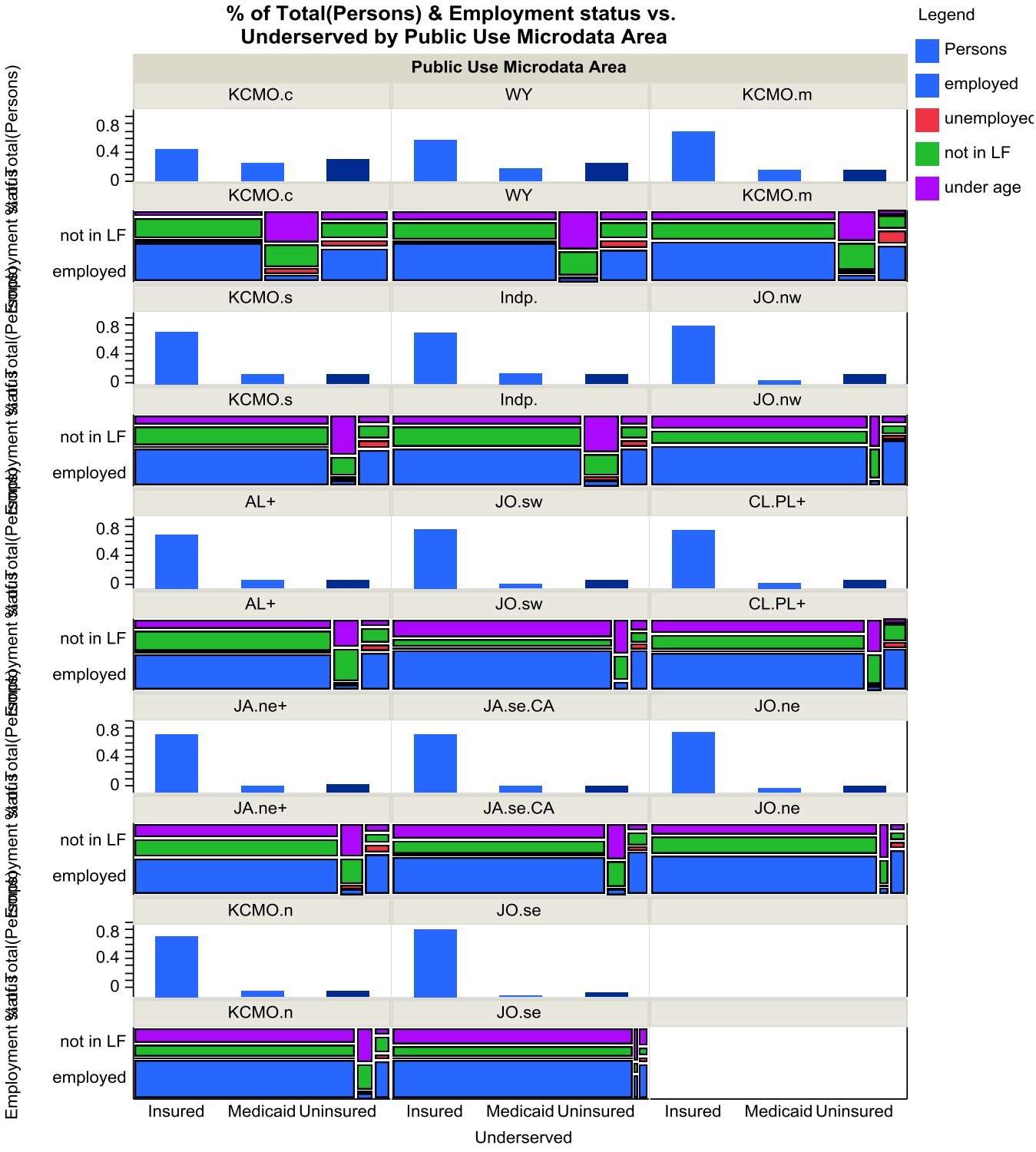
The race distribution across PUMAs varies widely, unlike the age distribution. The PUMAs with the greatest number of underserved populations are also the most racially and ethnically diverse. In fact, even within each PUMA, those who are uninsured or receiving Medicaid are always more racially and ethnically diverse than those who are well-served.

High proportions of minorities are not the only things spatially correlated with high proportions of populations who are medically underserved. Such a correlation can also be observed with respect to poverty.



Even in the poorest PUMAs, like the KCMO core and the Wyandotte county PUMAs, those who are insured have a low poverty rate. In every PUMA, poverty rates are substantially higher in the medically underserved populations, making it likely they have a common cause – lack of a full-time job with benefits.

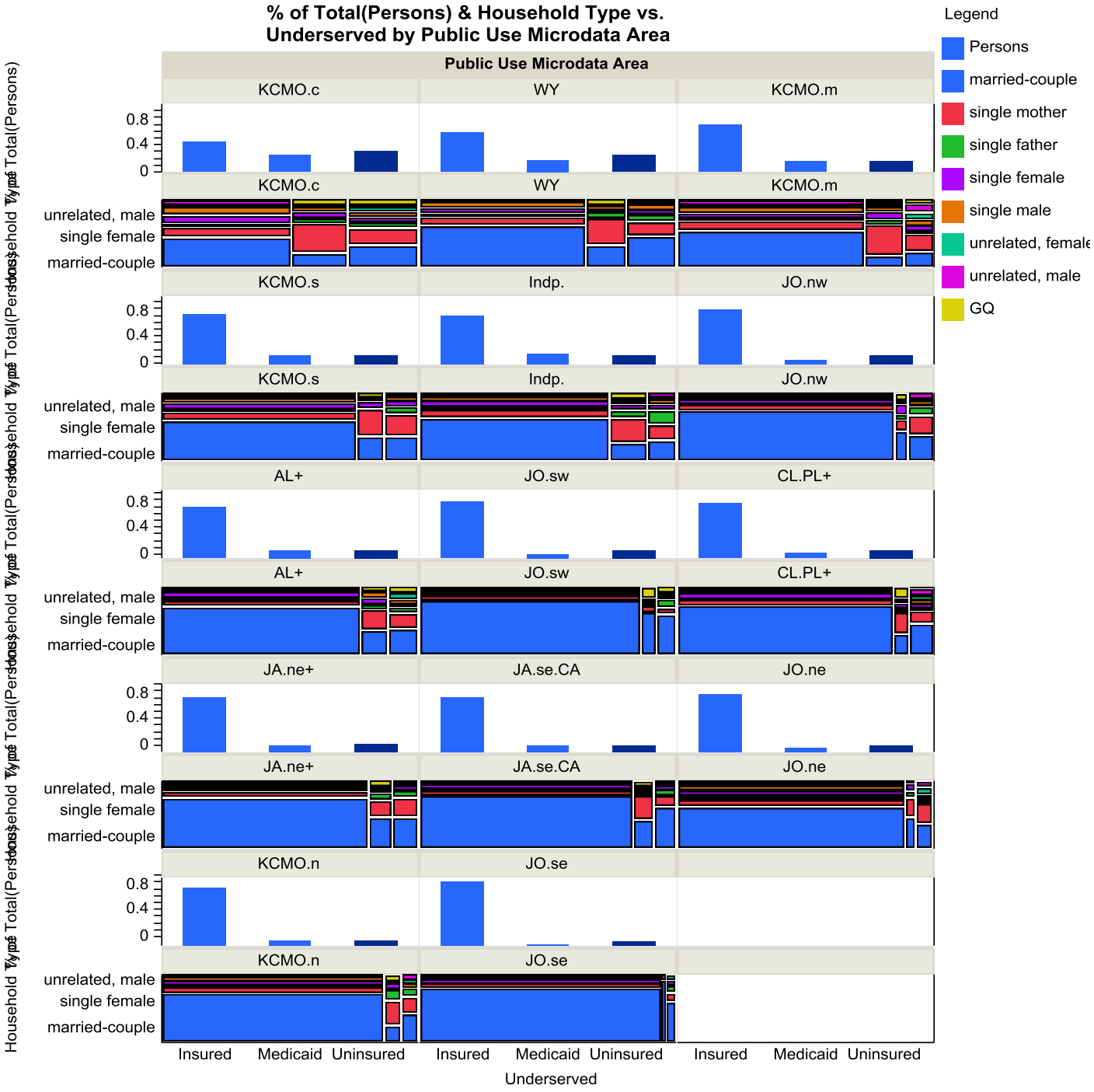
One thing we can say is that the correlation with poverty is not just due to having or not having any job. Here we examine employment status by PUMA for each health care access population:



Note that both across and within each PUMA, the proportion of the insured and uninsured who are employed is very similar across PUMAs and within them. The uninsured tend to have relatively more

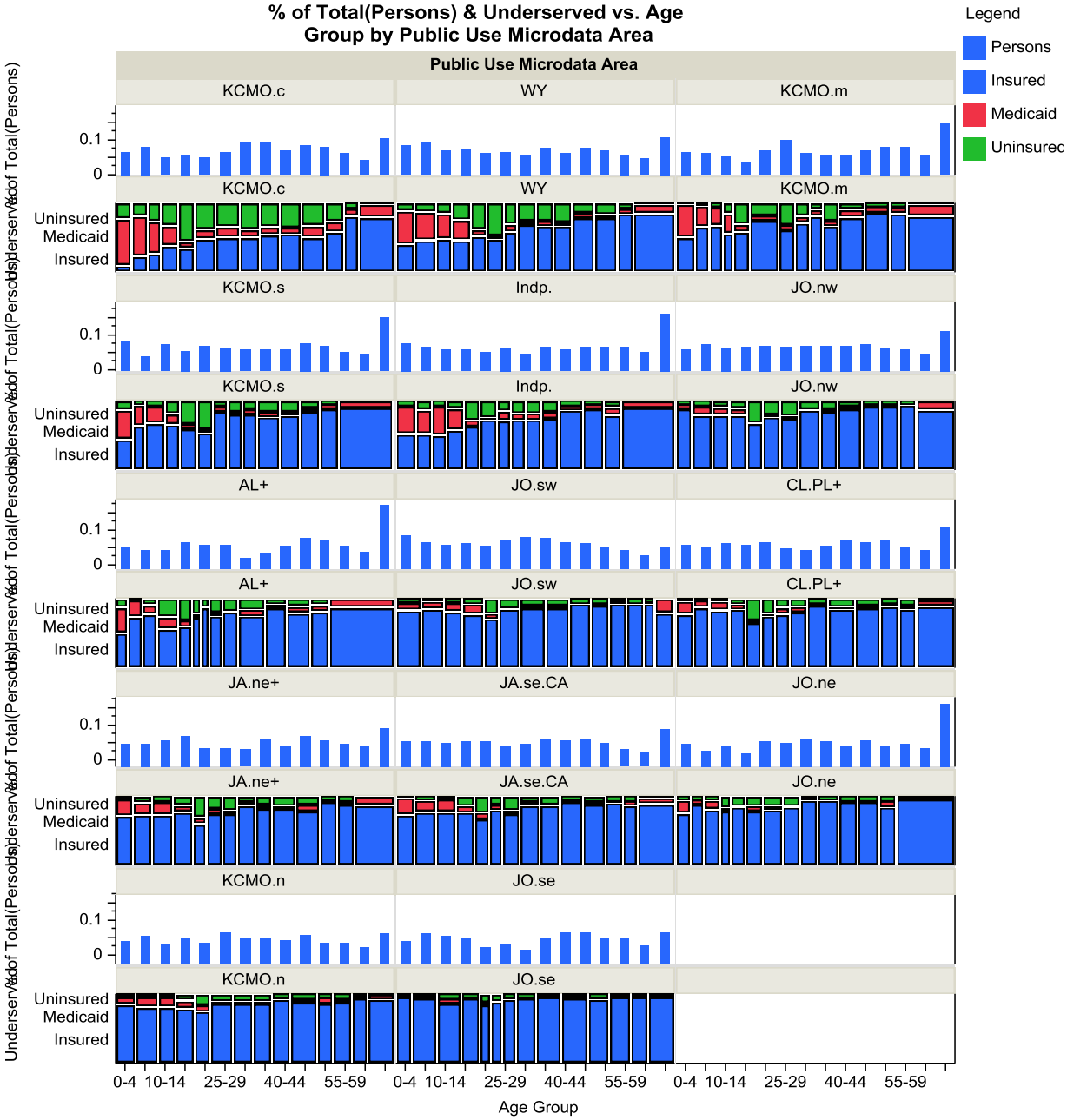
unemployed individuals than the employed, but fewer who are not in the labor force, so the proportion of the population working is approximately the same between the insured and uninsured in every PUMA. This makes it most likely that the jobs held by the uninsured tend to be less than full time and for significantly lower pay than the jobs held by the insured. The correlation between Medicaid recipients and poverty is easily explained, since low incomes are a requirement for receiving Medicaid. In each PUMA, the vast majority of individuals on Medicaid are not working, most of whom are children too young to participate in the labor force.

The next chart examines the distribution of household types in each PUMA:



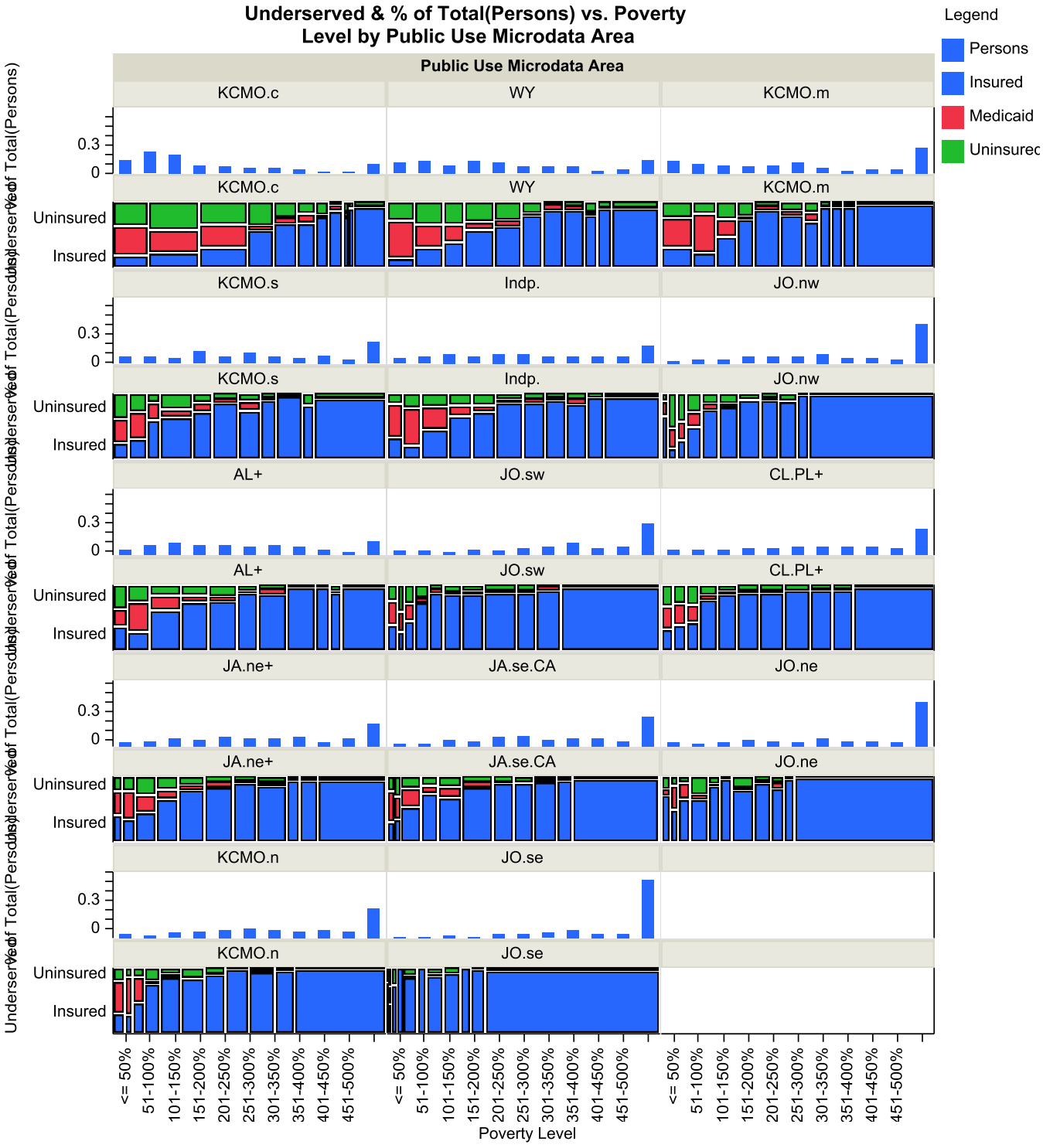
In every PUMA the uninsured and those on Medicaid live in a wider diversity of household types than the insured. Interestingly, the diversity of the insured's household types also increases with increasing proportions of medically underserved. One exception to this generalization is the northeast Johnson County PUMA, which has relatively low proportions of medically underserved populations but a high level of household diversity among the insured.

Access to Health Care within Age and Income Groups, by PUMA



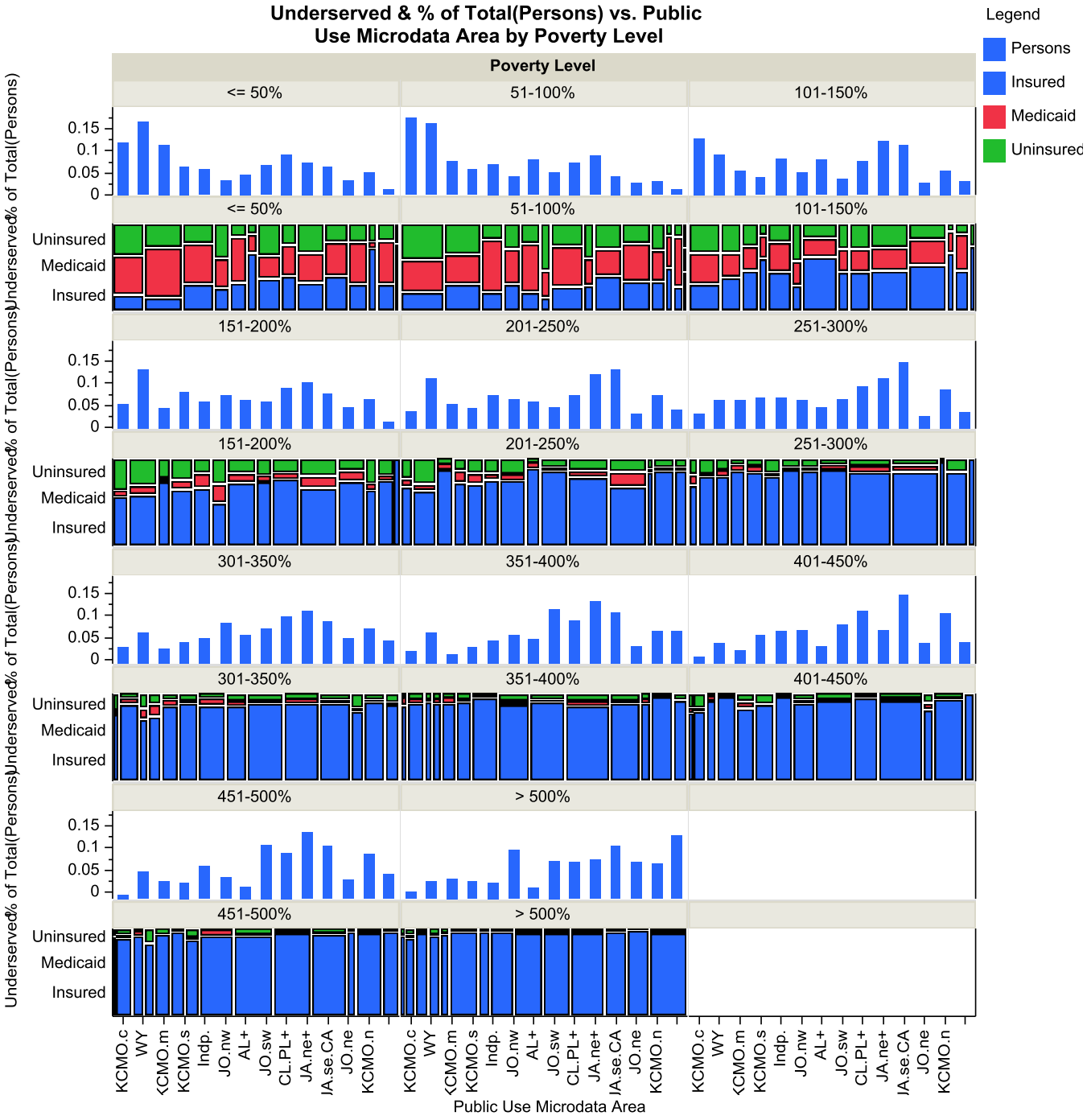
The chart above examines the health care access characteristics by age group. It becomes clear that some geographic disparities become even more pronounced when the data is disaggregated by age. For example, in the KCMO core, 89 percent of children under 5 are medically underserved while only 2 percent are in southeast Johnson County. This largely due to the relatively higher concentration of children on Medicaid in the KCMO core.

The underserved tend to be younger than those who are well-served. This holds true by PUMA as well as overall. As age increases, the proportion of those who are underserved decreases in most PUMAs. The effect is most pronounced for those PUMAs with the largest proportion of the underserved.
Next we examine access to health care within income groups across PUMAs:



In this case, instead of a disparity in health care access when comparing the same group across PUMAs, there is remarkable uniformity. As would be expected, in every PUMA, the lowest income groups have the highest concentration people who are uninsured or on Medicaid. This suggests that the question of health care access is much more related to income than to geography.

This can be checked by switching the position of PUMAs and income groups on the graph:

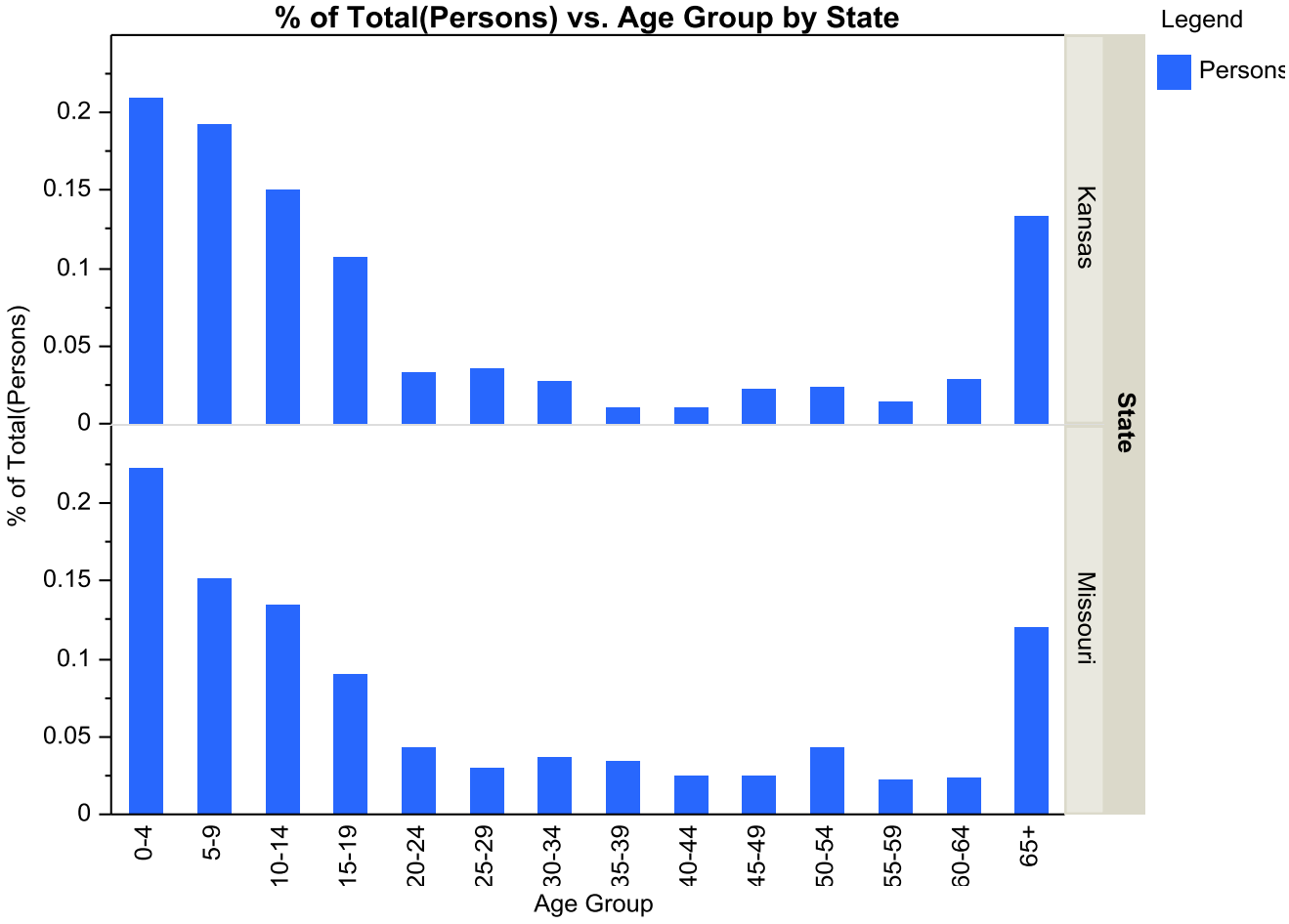


By examining PUMAs within income groups rather than income groups within PUMAs, it appears that the proportion of individuals who are medically underserved is indeed more related to income than to PUMA. Regardless of PUMA, within each income class, the proportion of residents who are medically underserved is roughly the same. Conversely, across income classes the proportions of underserved vary markedly inversely with increases in income levels.

This conclusion must be qualified, and the qualification comes in the use of the word “roughly”. Upon closer examination, there is a slight upward tilt to the blue area (which represents the portion of the population that is *not* underserved). This tilt is most noticeable in the lower income groups, i.e., the levels that have significant numbers of the medically underserved. Recalling that PUMAs are sorted from high to low in order of their uninsurance rate, his implies there is a slight geographic effect, with wealthier PUMAs having fewer medically underserved individuals than would have been predicted by their incomes alone. However, the effect is small, almost too small to be noticed compared to the large correlation with income.

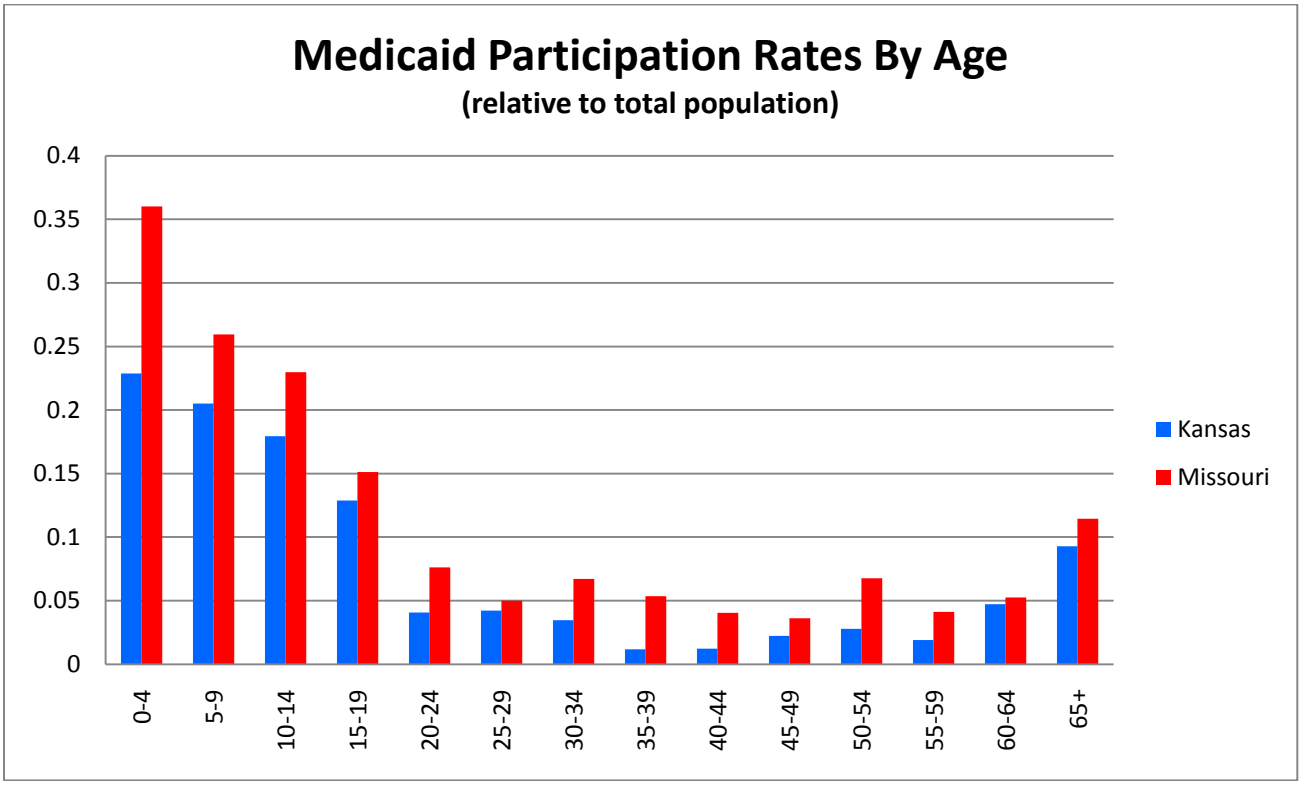
Appendix B
Analysis of Medicaid by State

Because of differences in Medicaid eligibility for the states of Kansas and Missouri, it would be interesting to examine if Medicaid participation varies significantly by state. The ACS PUMS data allows such an examination. (Note: this analysis only uses the PUMAs defined for the REACH service area, not the entirety of the two states.)



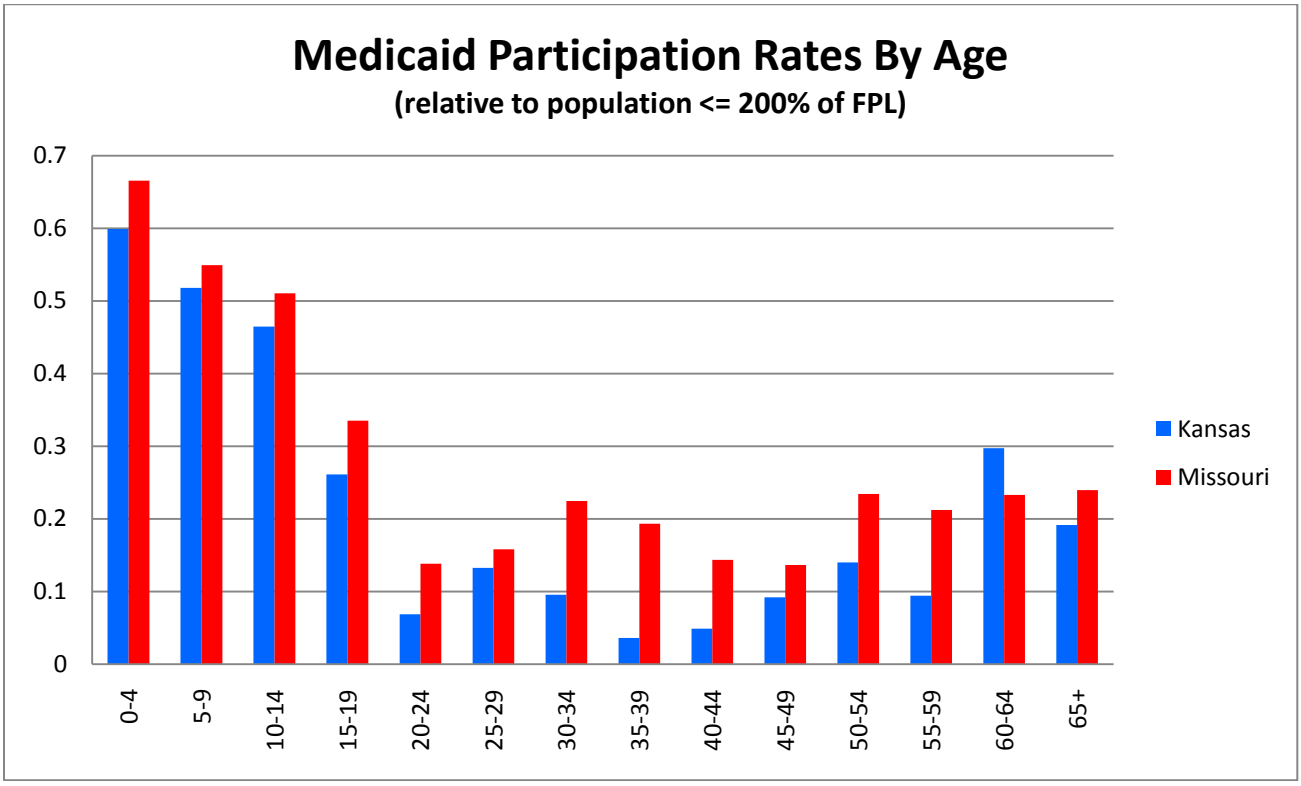
Comparing the age distributions of recipients by state reveals they are marginally different. The vast majority of recipients are children in both states – 64 percent in Kansas and 59 percent in Missouri. Missouri appears to have a slightly higher percentage of working age adults on Medicaid than Kansas.

But when we look at participation rates by age – that is, the proportion of the general population receiving Medicaid for each age group – significant differences emerge:



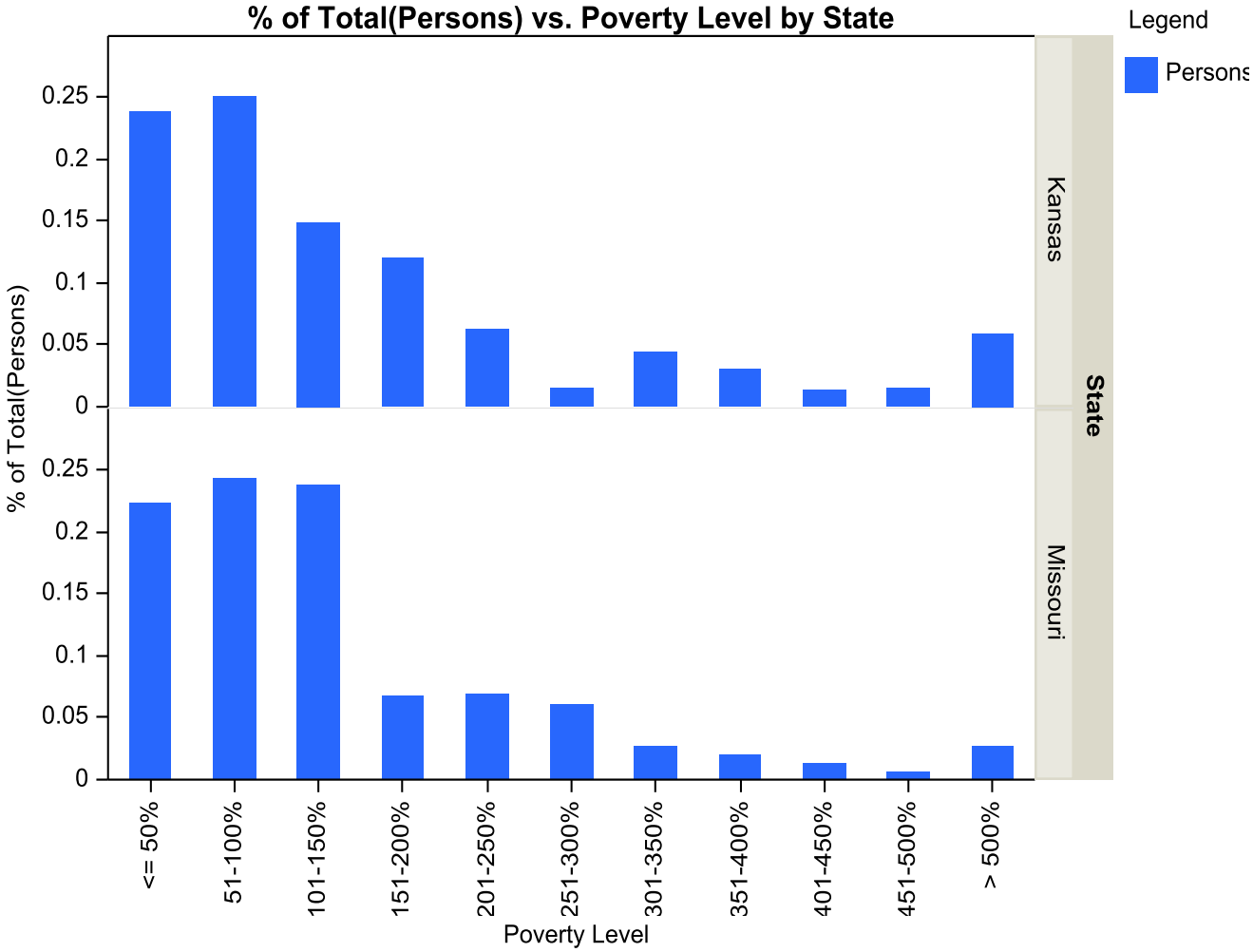
Missouri consistently provides a greater proportion of each age group with Medicaid than does Kansas. This is especially true for the youngest age group. However, this difference may simply reflect the fact that a greater proportion of the population in Missouri is poor.

To help control for this possibility, we calculate the participation rates as a proportion of only those individuals in households with incomes at or below 200 Percent of poverty:



When participation rates by age are computed as a proportion of those who live in households earning 200 percent of the FPL or less, they become much more similar, especially for children. However, Missouri's participation rate remains higher than Kansas's in every age group except one (those 60 to 64 years of age).

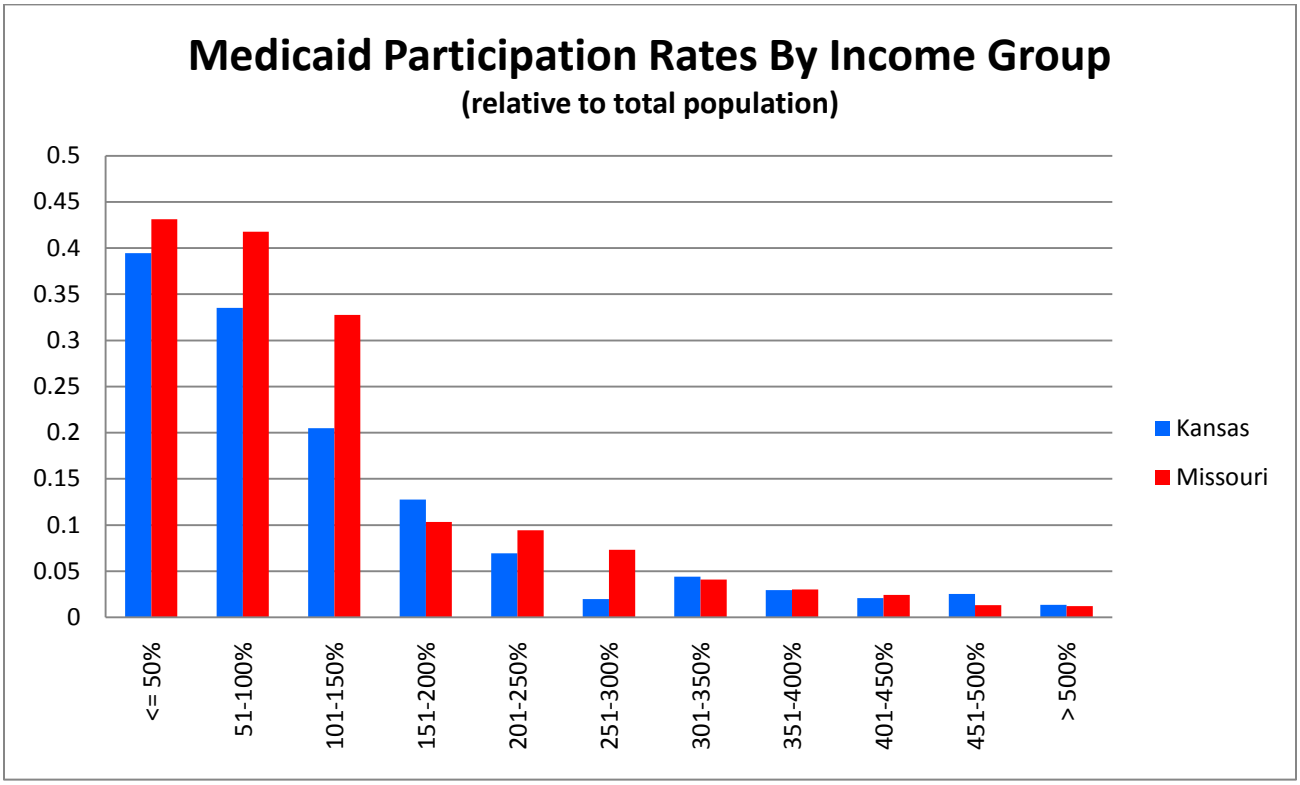
To ensure the different participation rates is a real difference between the states and not an artifact of a different distribution of income, let us examine participation by income group more directly:



There are some differences in the distribution of Medicaid recipients by income between the two states. More Missouri recipients have incomes between 101 and 150 percent of the FPL than Kansas – 24 percent vs. 15 percent, respectively. Similarly, more Missouri recipients have incomes between 251 percent and 300 percent of the FPL than Kansas, 6 percent vs 2 percent. On the other hand, a larger fraction of Kansas recipients, about 12 percent, have incomes between 151 and 200 percent of the FPL than Missouri, at 7 percent. Also, Kansas provides Medicaid to those with incomes more than 5 times the FPL more often than Missouri, accounting for 7 percent vs. 2 percent of recipients.

It is difficult to interpret the meaning of such differences, however. What is clear is that when examining the proportion of recipients who are poor by standard definitions of poverty, i.e., 100 percent and 200 percent of the FPL, the numbers for the two states are very similar: 49 percent of Kansas recipients are at or below the FPL, compared to 47 percent of Missouri recipients. In the same fashion, 76 percent of Kansas recipients are at or below 200 percent of the FPL compared to 77 percent of Missouri recipients.

To fully control for income differences between the states, however, we need to calculate participation *rates* by income group:



It still is apparent that Missouri provides Medicaid to its poorest citizens at a higher rate than Kansas. In Kansas, about 36 percent of individuals in households with incomes at or below the poverty level poverty receive Medicaid, compared to 42 percent in Missouri. Similarly, for individuals at or below 200 percent of the FPL, 25 percent receive Medicaid in Kansas versus 31 percent in Missouri.

Appendix C
Tables and Maps

Demographics

Poverty Growth 2000 - 2008

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte	REACH
2000 Pop	14,385	451,086	157,882	82,092	184,006	654,880	32,960	73,781	1,651,072
2000 Pop in Poverty 100%	2093	15,323	25,773	4,664	9,898	76,808	2,816	3,477	140,852
% in Poverty 100%	14.55%	3.40%	16.32%	5.68%	5.38%	11.73%	8.54%	4.71%	8.53%
2000 Pop in Poverty 200%	5258	48,238	59,592	15,251	31,138	185,206	8,942	10,449	364,074
% in Poverty 200%	36.55%	10.69%	37.74%	18.58%	16.92%	28.28%	27.13%	14.16%	22.05%
2008 Pop		527,363	151,561	97,248	213,273	660,768	31,673	84,378	1,766,264
2008 Pop in Poverty 100%		23,174	30,073	4,853	15,196	95,850	3,962	6,779	179,887
% in Poverty 100%		4.39%	19.84%	4.99%	7.13%	14.51%	12.51%	8.03%	10.18%
2008 Pop in Poverty 200%		74,458	65,104	18,496	43,429	217,588	10,137	16,669	445,881
% in Poverty 200%		14.12%	42.96%	19.02%	20.36%	32.93%	32.01%	19.76%	25.24%
Increase in 100% Poverty 2000 to 2008	NA	7,851	4,300	189	5,298	19,042	1,146	3,302	39,035
% Increase in 100% Poverty 2000 to 2008	NA	51.24%	16.68%	4.05%	53.53%	24.79%	40.70%	94.97%	27.71%
Increase in 200% Poverty 2000 to 2008	NA	26,220	5,512	3,245	12,291	32,382	1,195	6,220	81,807
% Increase in 200% Poverty 2000 to 2008	NA	54.36%	9.25%	21.28%	39.47%	17.48%	13.36%	59.53%	22.47%

U.S. Census Bureau 2000 & American Community Survey 2008

Vulnerable Populations 2005

	No High School Diploma	Unemployed	Severely Work Disabled	Major Depression	Recent Drug User
Allen	1,572	395	403	871	686
Johnson	17,123	13,030	6,393	31,281	24,368
Wyandotte	25,394	6,599	3,579	9,268	7,635
Cass	8,210	2,357	1,535	6,077	4,470
Clay	15,131	5,039	4,261	13,108	9,395
Jackson	72,781	21,862	12,894	42,752	30,443
Lafayette	4,501	931	656	2,188	1,562
Platte	4,541	2,051	1,398	5,420	3,855
REACH	149,253	52,264	31,119	110,965	82,414

Health and Human Services, 2005

State Level Figures from Pew Hispanic Center and ACS 2008

Illegal Immigration Pop 2009		Undocumented Pop	Linguistically Isolated
	MO	45,000	11,824
	KS	70,000	17,542

To estimate the undocumented population per county we took the percent of each state's linguistically isolated population for each county. For example, Johnson County has 12% of Kansas' linguistically isolated population. This percent multiplied by the states undocumented figure gives an estimate for the county undocumented population.

County Level Linguistically Isolated and Undocumented Calculation

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte		REACH
Total Ling Isolated	8	2114	3746	102	609	4313	23	85		17725
Lang Iso as Pct of State	0.05%	12.05%	21.35%	0.86%	5.15%	36.48%	0.19%	0.72%		
Undocumented	32	8,436	14,948	388	2,318	16,414	88	323		42,947

Source: Pew Hispanic Center, American Community Survey 2008

2000 Linguistic Isolation figures were substituted for Alen, Cass and Lafayette as 2008 ACS figures were not available

Health

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte	U.S.
Life Expectancy (Years)	76.4	80.3	73.2	77.3	77.1	75.2	76.2	78.6	76.5
Deaths per 100,000	908.4	703.8	1062.5	890.1	863.8	911.6	951.3	815.4	898.6

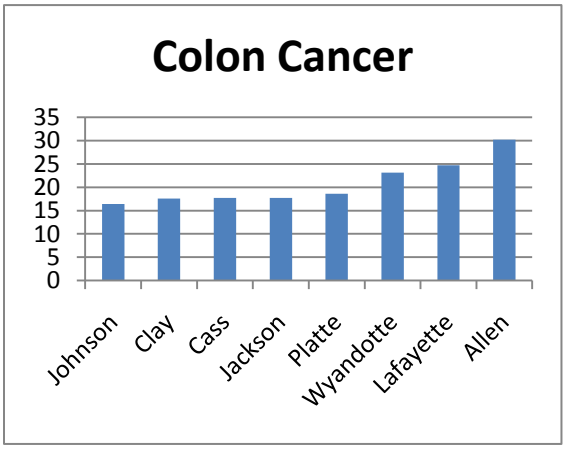
Health and Human Services

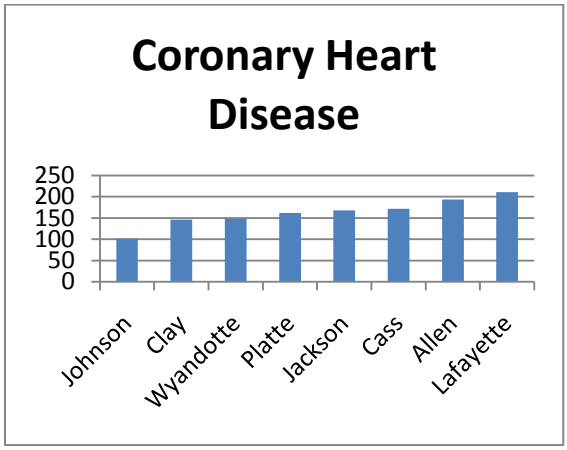
YPLL=Years of Potential Life Lost/100,000 population (2010)

	YPLL
Johnson	4677
Wyandotte	10619
Allen	10724
Jackson	8987
Clay	6389
Cass	6934
Platte	5509
Lafayette	8204

	Breast Cancer (Female)	Colon Cancer	Coronary Heart Disease	Homicide	Lung Cancer	Stroke	Suicide	Combined	Combined*
Johnson	23.9	16.4	101.6	1.9	47.7	55	10.7	257.2	244.6
Platte	24.2	18.6	161.6	4.2	56.7	48.2	11.1	324.6	309.3
Cass	25	17.7	171.8	3.6	64.4	64.1	11	357.6	343
Allen	26.6	30.2	193.2	N	63.5	45.1	19.5	378.1	358.6
Wyandotte	26.7	23.1	148.6	25.9	79.3	70.8	17.1	391.5	348.5
Clay	26.8	17.6	146.5	4.4	58.6	54.6	12.9	321.4	304.1
Jackson	27.8	17.7	168.1	14.6	60.3	57.7	13.3	359.5	331.6
Lafayette	30.3	24.7	210.4	N	63.4	46.7	N	375.5	375.5

Death rates per 100,000 population * Less Suicide and Homicide





Diabetes and Obesity Rates

	Age Adjusted Diabetes % Pop over 20		Age Adjusted Obesity % Pop over 20	
	2007	2004	2007	2004
Johnson	6	6	22.8	18.7
Wyandotte	9.4	7.8	30.8	28
Allen	7.9	7.2	31.7	25.5
Jackson	8.6	7.9	30.6	25.3
Clay	7.8	7.3	30.1	26.7
Platte	7.7	7.2	28.6	25.2
Cass	8.4	8.1	30.3	27.2
Lafayette	8.3	7.7	31	26.8

Centers for Disease Control and Prevention: National Diabetes Surveillance System

Birth Measures

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte	U.S.
% Low Birth Weight	6.2%	6.1%	7.9%	6.3%	6.8%	8.1%	6.1%	6.1%	7.9%
% Very Low Birth Weight	0.6%	0.9%	1.5%	1.2%	1.3%	1.6%	0.9%	1.1%	1.4%
% Premature Births	10.6%	9.7%	11.6%	9.7%	11.3%	12.3%	10.5%	10.1%	12.3%
% Birth to Women Under 18	6.5%	1.2%	6.6%	3.0%	2.4%	4.4%	4.4%	1.7%	3.4%
% Births to Women Over 40	0.9%	2.9%	1.4%	1.7%	1.5%	1.8%	1.3%	2.5%	2.6%
% Births to Unmarried Women	37.3%	14.9%	53.5%	26.3%	26.0%	44.8%	32.9%	22.6%	34.6%
% No Care in 1st Trimester	12.7%	5.9%	20.4%	8.8%	9.2%	12.2%	9.6%	8.2%	16.0%

U.S. Department of Health and Human Services, 2003

Infant Mortality Rate (deaths per 1,000 live births)

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte	U.S.
Infant Mortality Total	3.80	4.50	10.10	5.40	5.70	7.50	5.90	7.20	6.8
Infant Mortality White	4.00	4.30	8.00	5.50	5.30	5.30	6.20	7.20	5.7
Infant Mortality Black	N	8.30	15.10	N	15.40	13.00	N	N	13.6
Infant Mortality Hispanic	N	5.80	8.60	N	N	5.30	N	N	5.6
Infant Mortality Neonatal	1.90	3.00	7.20	3.10	3.10	5.30	2.50	5.10	4.6
Infant Mortality Post-Neonatal	1.90	1.50	2.90	2.30	2.50	2.20	3.40	2.10	2.2

U.S. Department of Health and Human Services, 2003

Risk Factors (percent of Pop)

	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte
No Exercise	33.1%	16.7%	37.3%	29.8%	22.3%	24.7%	28.6%	22.2%
Few Fruits/Vegetables	N	79.4%	83.1%	80.9%	78.9%	78.9%	82.0%	78.9%
Smoker	26.6%	16.6%	28.2%	25.7%	25.1%	25.8%	15.6%	20.6%
High Blood Pressure	N	18.9%	26.5%	30.2%	21.7%	25.8%	N	17.7%

U.S. Department of Health and Human Services, 2000 to 2006

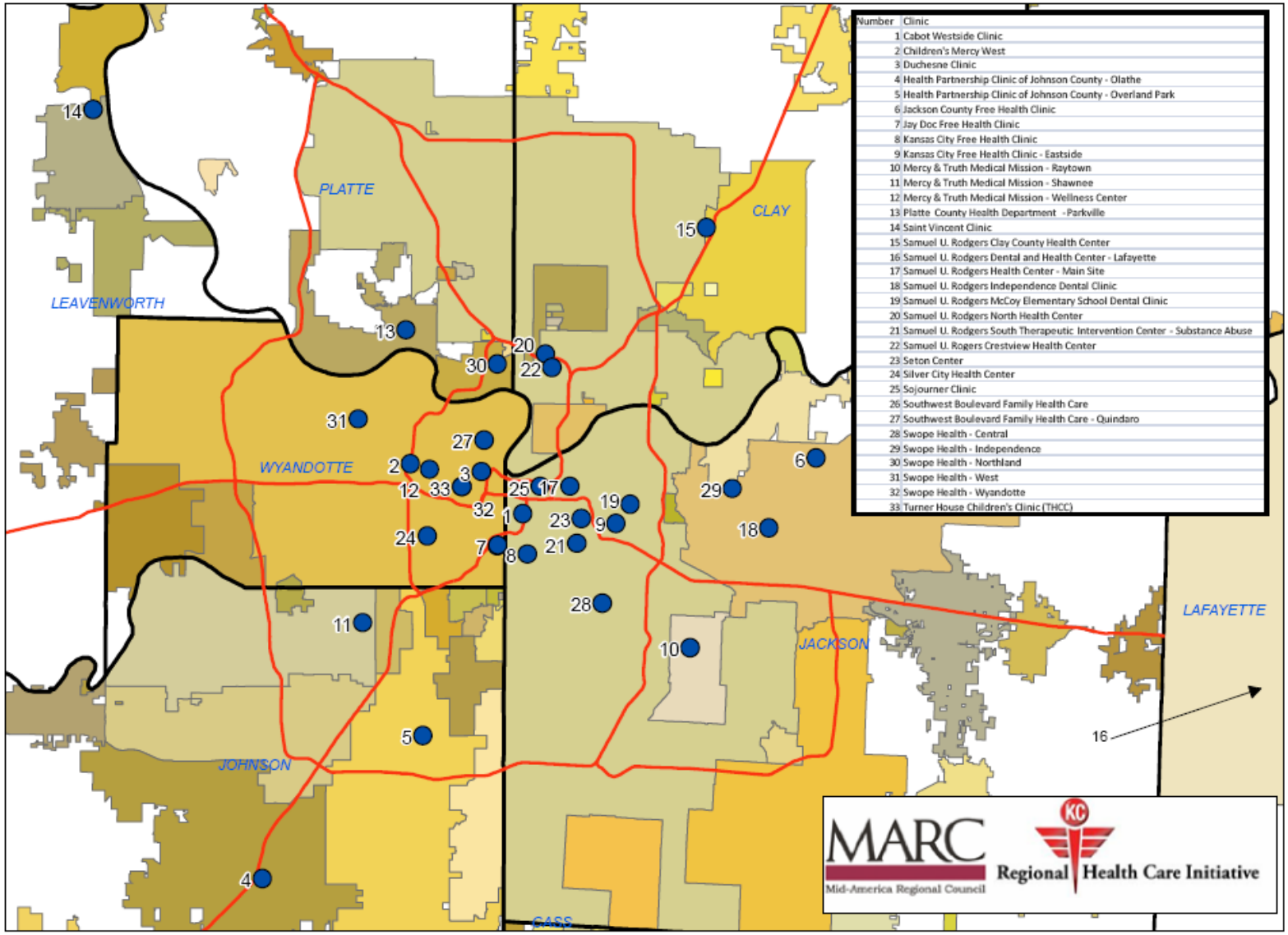
Access to Care

Primary Care Physicians

	U.S.	Allen	Johnson	Wyandotte	Cass	Clay	Jackson	Lafayette	Platte
Total									
Number	13	6	656	129	29	152	605	13	59
Phys/pop (number of physicians/100,000 population)	54.6	44.7	124.6	83.8	29.9	71.7	90.7	39.8	69.5
General Practice/Family Practice Physicians									
Number	9	6	279	61	24	83	255	13	29
Phys/pop	33.8	44.7	53.0	39.6	24.7	39.2	38.2	39.8	34.2
Internal Medicine Physicians									
Number	3	0	232	36	4	40	195	0	18
Phys/pop	11.1	0.0	44.1	23.4	4.1	18.9	29.2	0.0	21.2
Pediatricians									
Number	1	0	145	32	1	29	155	0	12
Phys/pop	4.3	0.0	27.6	20.8	1.0	13.7	23.2	0.0	14.1

AMA 2007

Kansas City Safety Net Clinic Locations (2010)



Number	Clinic
1	Cabot Westside Clinic
2	Children's Mercy West
3	Duchesne Clinic
4	Health Partnership Clinic of Johnson County - Olathe
5	Health Partnership Clinic of Johnson County - Overland Park
6	Jackson County Free Health Clinic
7	Jay Doc Free Health Clinic
8	Kansas City Free Health Clinic
9	Kansas City Free Health Clinic - Eastside
10	Mercy & Truth Medical Mission - Raytown
11	Mercy & Truth Medical Mission - Shawnee
12	Mercy & Truth Medical Mission - Wellness Center
13	Platte County Health Department - Parkville
14	Saint Vincent Clinic
15	Samuel U. Rodgers Clay County Health Center
16	Samuel U. Rodgers Dental and Health Center - Lafayette
17	Samuel U. Rodgers Health Center - Main Site
18	Samuel U. Rodgers Independence Dental Clinic
19	Samuel U. Rodgers McCoy Elementary School Dental Clinic
20	Samuel U. Rodgers North Health Center
21	Samuel U. Rodgers South Therapeutic Intervention Center - Substance Abuse
22	Samuel U. Rogers Crestview Health Center
23	Seton Center
24	Silver City Health Center
25	Sojourner Clinic
26	Southwest Boulevard Family Health Care
27	Southwest Boulevard Family Health Care - Quindaro
28	Swope Health - Central
29	Swope Health - Independence
30	Swope Health - Northland
31	Swope Health - West
32	Swope Health - Wyandotte
33	Turner House Children's Clinic (THCC)

Estimate of New Medicaid Recipients as a Result of Health Care Reform

The following process was used to estimate the additional residents of the two states within the REACH area that would participate in Medicaid due to the Medicaid eligibility rate rising to 133 percent of the Federal Poverty Level which is a part of the health care reform legislation. This analysis uses the PUMS data for the REACH area.

1. All records except for those in households between 33 and 133 percent of poverty were filtered out. That leaves 244,725 persons.
2. Those aged 65 and above were then filtered out. That leaves 215,462 persons.
3. Those who were already on Medicare or Medicaid were filtered out. That leaves 130,029 persons.
4. This amount was then split into those residing in Kansas (54,274) and those residing in Missouri (75,755).
5. Kaiser's assumed "Standard" participation rate of 57% was then applied. This produces an estimate of 74,116 new enrollees total, 30,936 in Kansas and 43,180 in Missouri.
6. Kaiser's assumed "Enhanced Outreach" participation rate of 75% was then applied. This produces an estimate of 97,521 new enrollees total, 40,706 in Kansas and 56,816 in Missouri.

Estimated Additional Medicaid Participants

		Assumed participation rates	
	Potential	57%	75%
Kansas	54,274	30,936	40,706
Missouri	75,755	43,180	56,816
Total	130,029	74,117	97,522

Psychiatric Residential Treatment Facility with Children's Beds

Crittenton Children's Center
Kansas City,
Population: Coed ages 12 through 19
Beds: 73, 12 beds available for Kansas Children.

KVC Behavioral Healthcare
Kansas City, KS
Population: JO and CINC co-ed, ages 6-18
Beds: 36

Lakemary Center, Inc.
Paola, KS
Population: Borderline, Mild, Moderate, Severe MR/DD including Autistic spectrum, Co-ed
Beds: 64 (17 female, 47 male)

Marillac Center for Children
Overland Park, KS
Population: JO and CINC, co-ed, ages 6-17
Beds: 52

Niles Group Home for Children
Kansas City, MO
Population: JO and CINC co-ed, ages 6-17
Beds: 20

Ozanam Home for Boys
Kansas City, MO
Population: JO and CINC, co-ed, ages 12-18
Beds: 60 (20 female, 40 male)

Spofford Home
Kansas City, MO
Population: JO and CINC co-ed, ages 4 – 12
Beds: 12

TLC For Children and Families, Inc.
Olathe, KS
Population: JO and CINC co-ed., ages 11 - 18
Beds: 47

Appendix D
References

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Appendix E
County Health Profiles

County Health Profiles are attached as a separate document.