

# Differences in Preventive Care Among Rural Residents by Race and Ethnicity

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## Key Findings

- For nearly every preventive care service we examined, there were significant differences in use by race and ethnicity among rural residents.
- American Indian/Alaskan Native people were the most likely rural residents to have gotten a flu shot in the past 12 months (50%); flu shot rates for all other rural residents were less than 50%, with the lowest rates among Hispanic rural residents (31%).
- Non-Hispanic White rural residents were more likely than other rural residents to have ever had a breast exam (90%), mammogram (81%), colorectal exam (54%), or Pap smear (52%).

## Purpose

Disparities in preventive care by both rural-urban location and by race and ethnicity are well-documented in the literature, as discussed below, but less is known about whether there are differences in health care use among rural residents by race and ethnicity. In this brief, we address that gap by examining differences in preventive care among rural residents by race and ethnicity.

## Background and Policy Context

Rural areas have long been racially and ethnically diverse, and this diversity has increased in recent decades, with a growth in immigrant populations in rural areas.<sup>1,2</sup> Yet, most research on rural health focuses on rural-urban disparities, without an explicit focus on within-rural differences in health by race and ethnicity. In that research on rural-urban disparities in health, rural residents tend to fare worse on most measures, including mortality, health status, access to care, and use of preventive services.<sup>3-5</sup>

As part of the Centers for Disease Control and Prevention's Morbidity and Mortality Weekly Report (MMWR) 2017 series on rural health, James and colleagues published a paper highlighting racial and ethnic disparities in several measures of health and health care access among adult residents of rural, non-core counties (rural counties without any town of 10,000 or more people).<sup>6</sup> This study found disparities in health and access to care to be most pronounced among people of color and American Indian/Alaskan Native people, as compared to non-Hispanic White. However, this study did not include rural micropolitan residents (residents of rural counties with towns between 10,000 and 50,000 people).<sup>6</sup>

Other research has found variation among rural residents in use of preventive care use, including a

study by the University of Kentucky's Rural and Underserved Health Research Center, which found considerable variation by state in receipt of flu vaccines<sup>7</sup> and prior work by the University of Minnesota's Rural Health Research Center, which found that rural residents were less likely than urban residents to receive several preventive services, such as cancer screenings.<sup>5</sup> These studies illuminate issues in accessing preventive care for rural residents, but do not offer sufficient information on racial and ethnic disparities in care receipt among rural residents.

Preventive care is care designed to prevent illness or detect health issues early, and it is a fundamental measure of health care quality that is essential for population health. Preventive care includes vaccinations, cancer screenings, and routine care. Understanding where disparities in access to and use of preventive services by race and ethnicity exist will signal where to focus policy and practice efforts to improve the health of rural populations. This brief uses 10 years of data from the National Health Interview Survey to illuminate whether there are differences in preventive care by race and ethnicity among rural residents.

## Approach

Data for this brief came from the 2008-2017 waves of the National Health Interview Survey (NHIS).<sup>8</sup> We accessed NHIS data that is not available for public use through the University of Minnesota Restricted Data Center. As a result, we were able to use finer measures of geography to identify rurality, which are otherwise unavailable in the public use files. We used county to merge data on indicators of rurality in order to identify residents as living in rural areas, defined as both non-core (no population center of 10,000 or more) and micropolitan (population center of 10,000-less than 50,000) areas, using the NCHS county rurality designations.

For this analysis, we examined bivariate differences among rural residents across the 10-year pooled sample (n=46,739) by race and ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, American Indian/Alaskan Native, Asian, and other race/multiple races). We analyzed differences across seven measures of preventive service use available in the NHIS (chosen because of

their importance for health and their availability in the data). These included two types of vaccinations: flu shot in past 12 months and ever had pneumonia vaccine, as well as five types of cancer screenings: ever had breast exam, ever had colorectal exam, ever had mammogram, ever had Pap smear, and ever had prostate-specific antigen (PSA) blood test for prostate cancer. Not all questions were asked of all survey respondents; rather, they were asked of those respondents from the target population for that service (e.g., receipt of flu shot was asked of everyone, PSA blood test was asked of men ages 40 and over, mammography and Pap smear questions were asked of women falling into the appropriate age ranges for each test.) Importantly, clinical guidelines around who to screen – and how – for various conditions have changed over the study period, and thus sampling frames changed too. This analysis did not assess appropriateness of service use, but rather measured whether there are differences in the use of these services among rural residents by race and ethnicity.

Chi-squared tests were used to detect significant differences by race and ethnicity and differences by year among rural residents. We used sampling weights to account for the complex sampling design and conducted all analyses in Stata v.15.

## Results

### *Differences in Vaccination Rates*

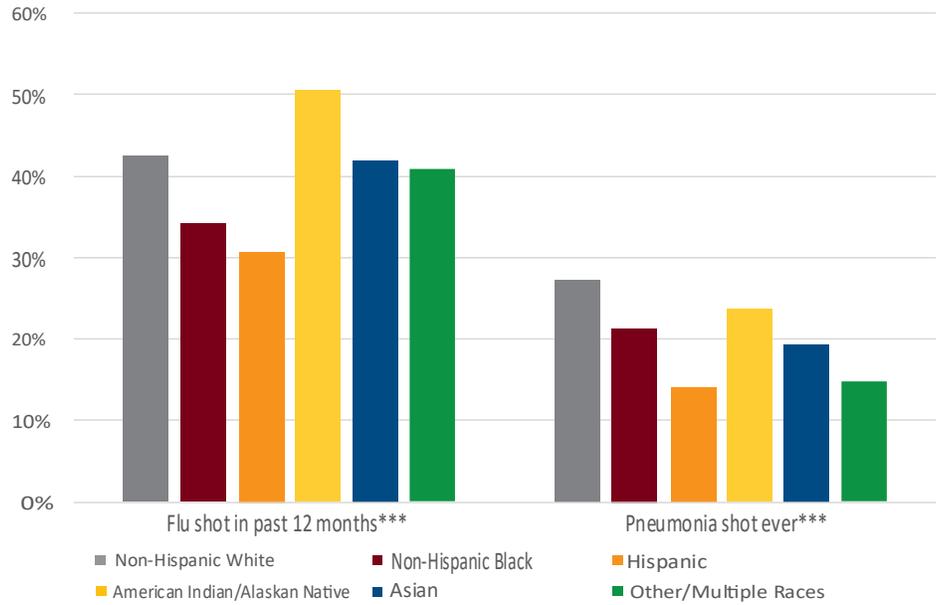
American Indian/Alaskan Natives were the most likely to have had a flu vaccine in the past year (50.4%). For all other racial and ethnic groups, flu vaccination rates were less than 50%, with the lowest rates among Hispanic rural residents (30.4%). (See Figure 1.) Non-Hispanic White rural residents were the most likely to have ever had a pneumonia vaccine (27.3%), followed by American Indian/Alaskan Native rural residents (23.6%). Again, the lowest rates of vaccination for pneumonia were among Hispanic rural residents (13.5%).

### *Differences in Cancer Screenings*

For each of the five types of cancer screenings we assessed, non-Hispanic White rural residents were the most likely to be screened, with the highest rates for Pap smears (94.3% of non-Hispanic White rural women age 18+ had ever had one) and breast exams (89.9% of non-Hispanic white rural women age 30+

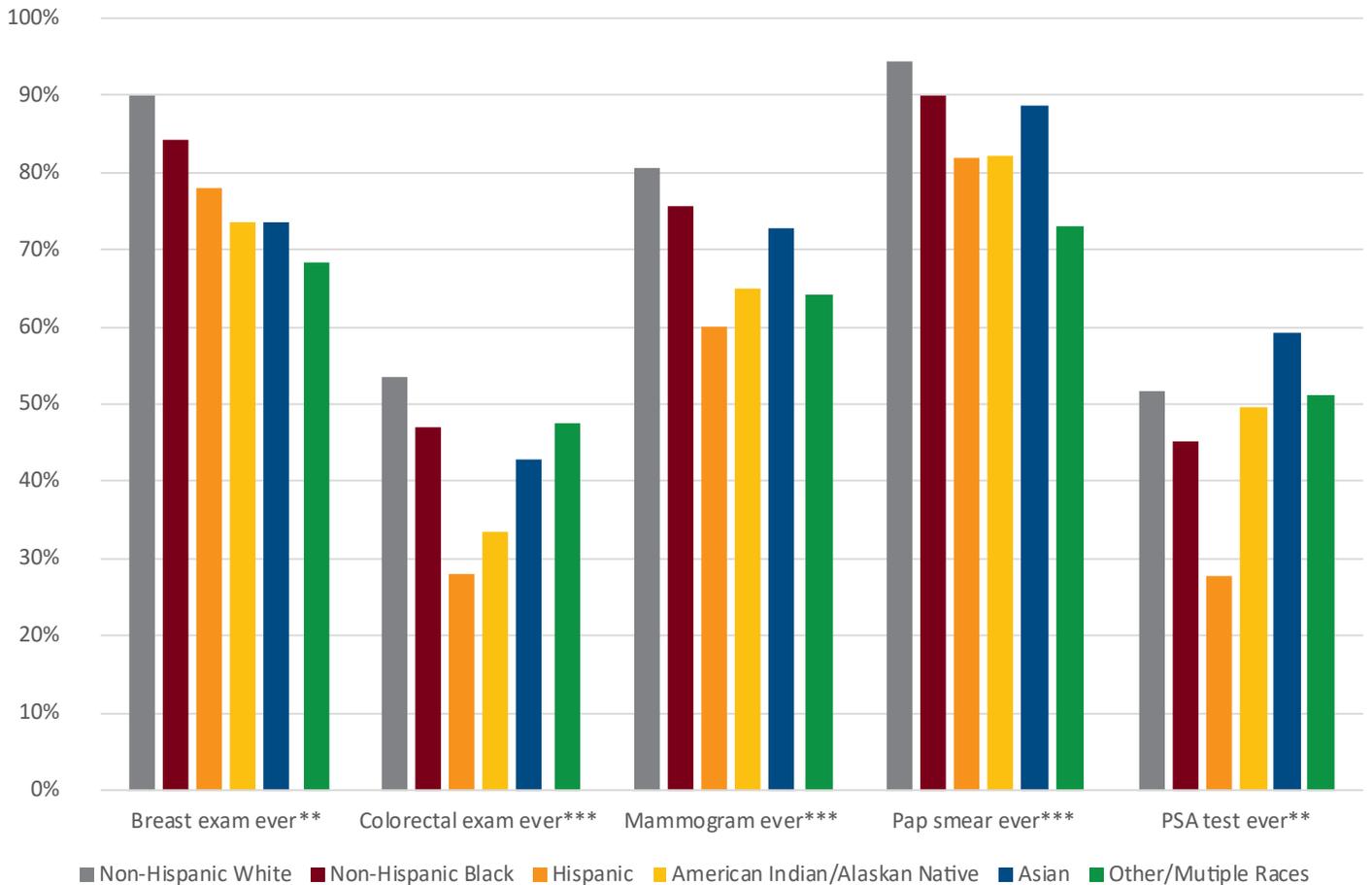
had ever had a physical breast exam). The lowest rates of cancer screenings were found among Hispanic rural residents and rural residents in the other/multiple races category. See Figure 2 for more details.

**Figure 1: Vaccination Rates Among Rural Residents by Race and Ethnicity**



\*\*\*p<0.001

**Figure 2: Cancer Screening Rates Among Rural Residents by Race and Ethnicity**



\*\*p<0.01, \*\*\*p<0.001

## Discussion and Implications

In this brief, we identified significant differences among rural residents in vaccinations and cancer screenings – two of the most widely used forms of preventive care. Among rural residents, Native American/Alaskan Native residents had the highest rate of flu vaccination, and non-Hispanic White residents had the highest proportion of cancer screenings (with the exception of PSA test). Meanwhile, rural Hispanic residents had the lowest rate of preventive care use compared to other races/ethnicities, which may increase their risk for later illness, including vaccine-preventable illness or undetected cancer.

The fact that rural non-Hispanic White residents have the highest rates of preventive care on most of these measures is consistent with prior research.<sup>6</sup> The finding that Native American/Alaskan Native rural residents had the highest rate of flu vaccination may be indicative of efforts within the Indian Health Service (IHS) to increase rates of vaccination and is consistent with other research showing higher rates of flu vaccination among IHS patients compared with the general population.<sup>9</sup> (Notably, this differs from overall rates of flu vaccination among both rural and urban Native American/Alaskan Native individuals together, which tends to be lower than the US average.<sup>10</sup>) Indeed, the IHS serves approximately 2.5 million Native Americans/Alaskan Natives, roughly half of the total population of tribal members.<sup>11</sup> The majority of those services are in rural locations.<sup>12</sup>

Lower rates of preventive care for rural Hispanic residents are potentially problematic, and indicate a population that may require targeted support. Low rates of preventive care among rural Hispanic residents may derive from multiple factors, including financial access barriers such as comparatively lower rates of health insurance coverage and higher rates of health insurance churn. They might also stem from, as well as demographic factors, including like a younger age distribution, and political factors such as immigration status and eligibility for publicly-funded programs, including health insurance.<sup>13</sup>

Overall, these findings signal concerning disparities in access to care by race and ethnicity among rural residents. Further, differences in preventive care may lead to later health disparities caused by

not having access to vaccinations and/or by not detecting cancer early. Indeed, such disparities are borne out in research showing racial and ethnic disparities in vaccination, cancer rates, and, ultimately, in mortality.<sup>14</sup>

There is long standing evidence that members of racial and ethnic minority groups are at greater risk for poorer health outcomes and are more likely to lack access to preventive care services.<sup>6,15</sup> The finding that there are racial and ethnic disparities in rural cancer screening rates adds to a substantial body of research documenting racial and ethnic inequities in access to adequate health care.<sup>16</sup> The reasons for these disparities are myriad, including differences in access to insurance, health care workforce and quality of care, as well as geographic variation in care and population composition. Underlying all of these issues, however, is deeply-entrenched structural racism—the policies and practices in which societies foster racial discrimination, through mutually reinforcing inequitable systems.<sup>17</sup> The ability or inability to access preventive health services may certainly be entrenched in systemic inequity. This study suggests that rural areas are not immune to racism in health care, and that policy attention is needed to achieve health equity for all rural residents.

While the findings from this brief add important evidence to the growing body of work on racial and ethnic inequities in health and health care, more work is still needed. We relied on cross-sectional data and did not adjust for socio-demographic or regional differences, both of which may attenuate or exacerbate the disparities found here. Further, we did not adjust for distance to or availability of primary care providers who provide these screenings. Finally, we cannot tease out the causal mechanisms at play here. Still, the finding that there are racial and ethnic differences in preventive care among rural residents is concerning, regardless of the causes.

To ensure racial and ethnic health equity in rural America, programs and policies to improve health require attention to the intersection of race and geography in order to effectively reduce risks.

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