Access in Brief: Use of Cervical, Breast, and Colon Cancer Tests among Adult Medicaid Enrollees

Advances in cancer screening now make it possible to detect cervical, breast, and colon cancers at an early stage, allowing for early intervention and better outcomes. Colorectal screening in particular has been shown to be cost effective for some populations (Lansdorp-Vogelaar et al. 2011). Cervical cancer screening has been credited with dramatic reductions in the incidence of cervical cancer (Saslow et al. 2012). And breast cancer screening has been associated with increased detection of early-stage cancers and reduced mortality (Smith et al. 2015).

The U.S. Preventive Services Task Force (USPSTF) recommends the following screening regimens:

- screening for cervical cancer with cytology (Pap smear) in women age 21–65 every three years or—for women age 30–65 who want to lengthen the screening interval—screening with a combination of cytology and human papillomavirus (HPV) testing every five years;
- biennial mammography screening for women age 50–74; and
- screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy in adults age 50 through 75 (USPSTF 2016).[1] Time periods recommended for each test differ. Fecal occult blood tests should be performed annually; sigmoidoscopy every five years and colonoscopy every ten years.

Although states are not required to cover these tests through Medicaid, most choose to do so (Wilensky and Gray 2013). In addition, the Patient Protection and Affordable Care Act (ACA, P.L. 111-148, as amended) mandates screening for cervical, breast, and colon cancer with no cost sharing for Medicaid enrollees in the new adult group in states that expand their Medicaid programs to these previously uninsured adults. Poor and low-income women, irrespective of insurance status, may have access to cervical and breast cancer screening through the Breast and Cervical Cancer Mortality Prevention Act of 1990 (P.L. 101-354), which directed the Centers for Disease Control and Prevention (CDC) to create the National Breast and Cervical Cancer Early Detection Program (NBCCEDP).[2] CDC also funds colorectal screening for low-income individuals through a demonstration program (CDC 2016). States may provide other diagnostic, screening, preventive, and rehabilitative services under their state plans, including cancer screening tests (CMS 2016).

How do Medicaid beneficiaries fare when it comes to cancer screening and diagnostic testing? To answer this question, MACPAC analyzed data from the National Health Interview Survey (NHIS), the largest

national health survey that can be used to compare rates of cancer testing among adults who are enrolled in Medicaid, who have private coverage, and who are uninsured.[3] MACPAC's analysis found the following:

- The likelihood of women with Medicaid coverage receiving a Pap smear was similar to or greater than that of privately insured women, depending on their income or disability status, and more likely than uninsured women during the recommended period.
- Among women age 50–64 with incomes greater than 138 percent of the federal poverty level (FPL), those with Medicaid coverage were in general less likely than those with private insurance to receive a mammogram; but among Medicaid-covered women in the same age range with incomes below 138 FPL, mammography rates were more similar between the insurance groups.
- Among men and women age 50–64, those with Medicaid coverage were less likely to report having one of three colorectal cancer tests during the appropriate time period than those with private insurance.
- Adults enrolled in Medicaid and adults with private coverage reported higher rates of all three types of cancer test (Pap smear, mammogram and colorectal test) examined here than did uninsured adults, controlling for race and ethnicity, income, and disability status.[4]

Cancer Tests by Insurance Status

Income level

Previous research has shown that adults with low incomes (less than or equal to 138 percent FPL) report lower rates of Pap smears, mammography, and colorectal tests or procedures than higher-income adults (NCHS 2015). In addition, among individuals diagnosed with various types of cancer, Medicaid enrollees and uninsured adults present with later stages of cancer and have worse outcomes than privately insured adults (Parikh-Patel et al. 2015, Walker et al. 2014, Farkas et al. 2012, Halpern et al. 2008). It is not clear, however, if differences in outcomes reflect lower screening rates or if they are due to other factors, such as an inability to access services, an inability to afford costs associated with diagnosis and treatment, or differences in treatment between low-income and higher-income populations. Moreover, even when controlling for many of these factors, Medicaid-enrolled and uninsured patients with certain types of cancer have later diagnoses and higher cancer-related death rates than privately insured patients (Niu et al. 2013, Robbins et al. 2010).

To find out if reported differences in cancer testing rates between adults with Medicaid coverage and with private insurance were reduced when similar income groups were compared, we examined the data in relation to income level (less than or equal to 138 percent FPL or greater than 138 percent FPL). It is important to note that due to factors such as those mentioned above, similar test rates across insurance groups do not necessarily lead to similar outcomes across insurance groups.

Pap smear. In general, women age 19–64 reported having had a Pap smear in the past three years at rates higher than 65 percent regardless of whether they had Medicaid or private insurance (Figure 1). Uninsured women were significantly less likely to report having had a Pap smear in the past three years.

Among low-income women, the percentage with a Pap smear was higher for women with Medicaid than for those with private insurance. Among higher-income women, privately insured women had slightly higher utilization rates than women with Medicaid in 2005 but by 2013, rates among women with private insurance had decreased and the difference was no longer statistically significant. However, higher-income privately insured women were more likely to report having a Pap smear than low-income privately insured women.

Since 2010, Pap smear rates for both privately insured women and Medicaid-enrolled women have been decreasing (Figure 1). The decrease might be due in part to a change in guidelines for the periodicity of testing. In 2012 the American Cancer Society and the USPSTF changed the recommendation from a conventional Pap smear every year or a liquid-based Pap test every two years to either type of test every three to five years depending on risk factors and medical history (ACS 2015, USPSTF 2012).

FIGURE 1. Percentage of Women Age 19–64 with Pap Smear in Past Three Years, by Insurance Status, 2005, 2008, 2010, 2013
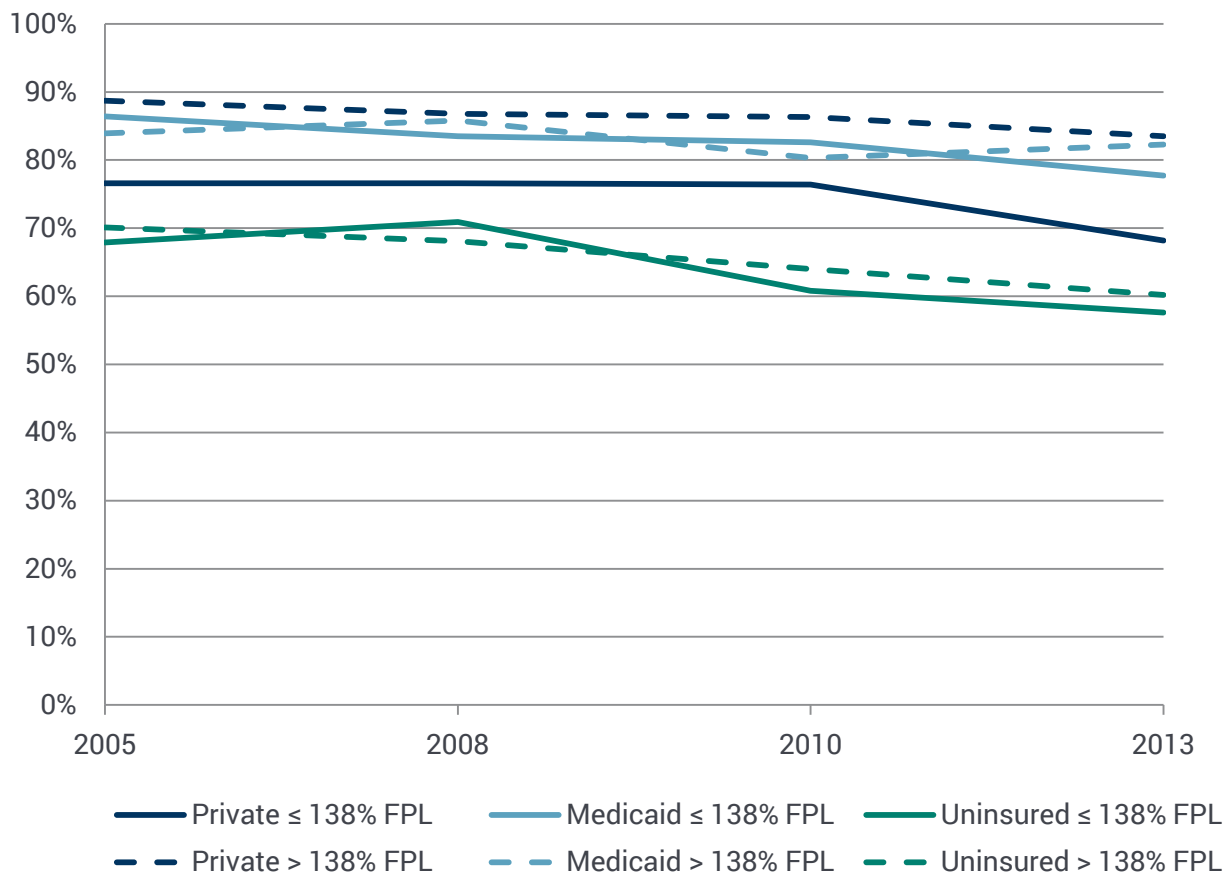
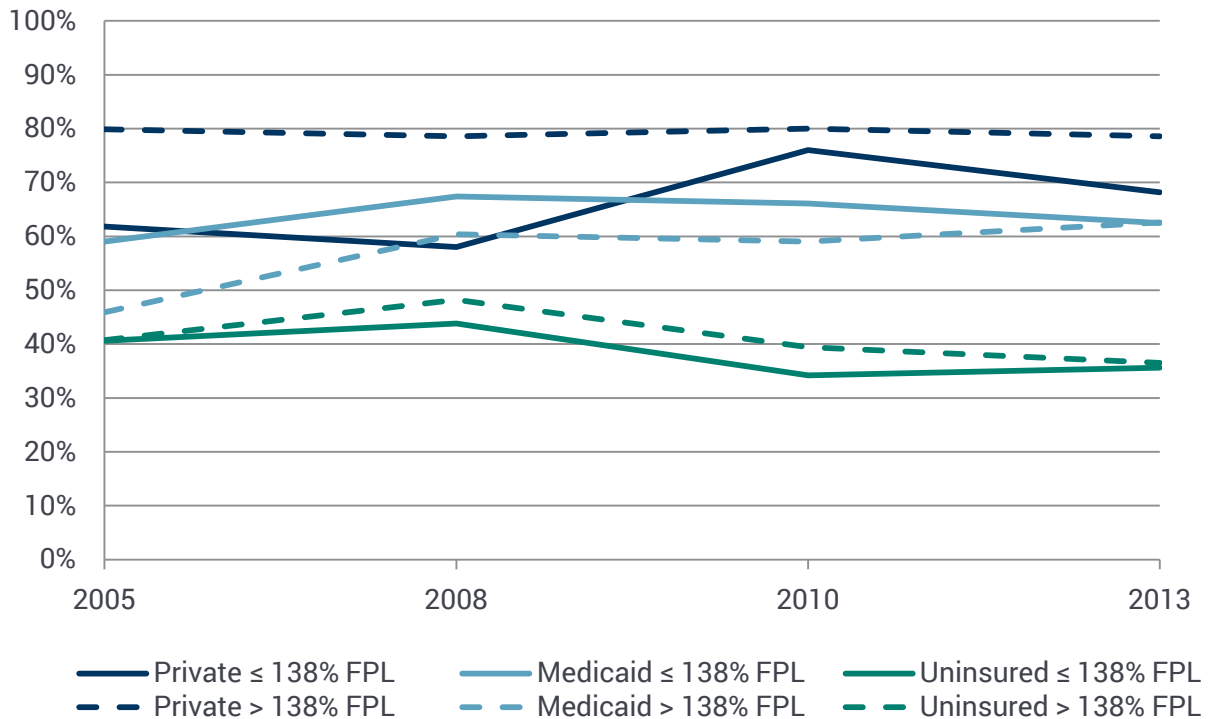**Note:** FPL is federal poverty level. See Data and Methods for a description of each cancer test.
Source: MACPAC, 2015, analysis of National Health Interview Survey, selected years.

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Mammography. In 2013, women age 50–64 with Medicaid were less likely to have had a mammogram in the past two years than privately insured women, but more likely than those who were uninsured (Figure 2). Mammography rates in 2013 did not differ by income category for women with Medicaid coverage (at 63 percent). However, among privately insured women, those with higher incomes were more likely to report having a mammogram than those with low incomes.

In 2005, mammography rates were similar between low-income women with Medicaid and those with private insurance, at around 60 percent. From 2008 to 2010, mammography rates increased for low-income women with private coverage and remained relatively stable for low-income women with Medicaid coverage; by 2013 low-income women with private coverage reported higher rates of mammography in the past two years than women with Medicaid coverage.

Throughout the time period studied, higher-income women with private insurance reported higher rates of mammography than higher-income women with Medicaid. The difference narrowed slightly over time with an increase in mammography rates between 2005 and 2008 for higher-income women with Medicaid coverage.

FIGURE 2. Percentage of Women Age 50–64 with a Mammogram in Past Two Years, by Income Level and Insurance Status, 2005, 2008, 2010, 2013

Note: FPL is federal poverty level. See Data and Methods for a description of each cancer test.
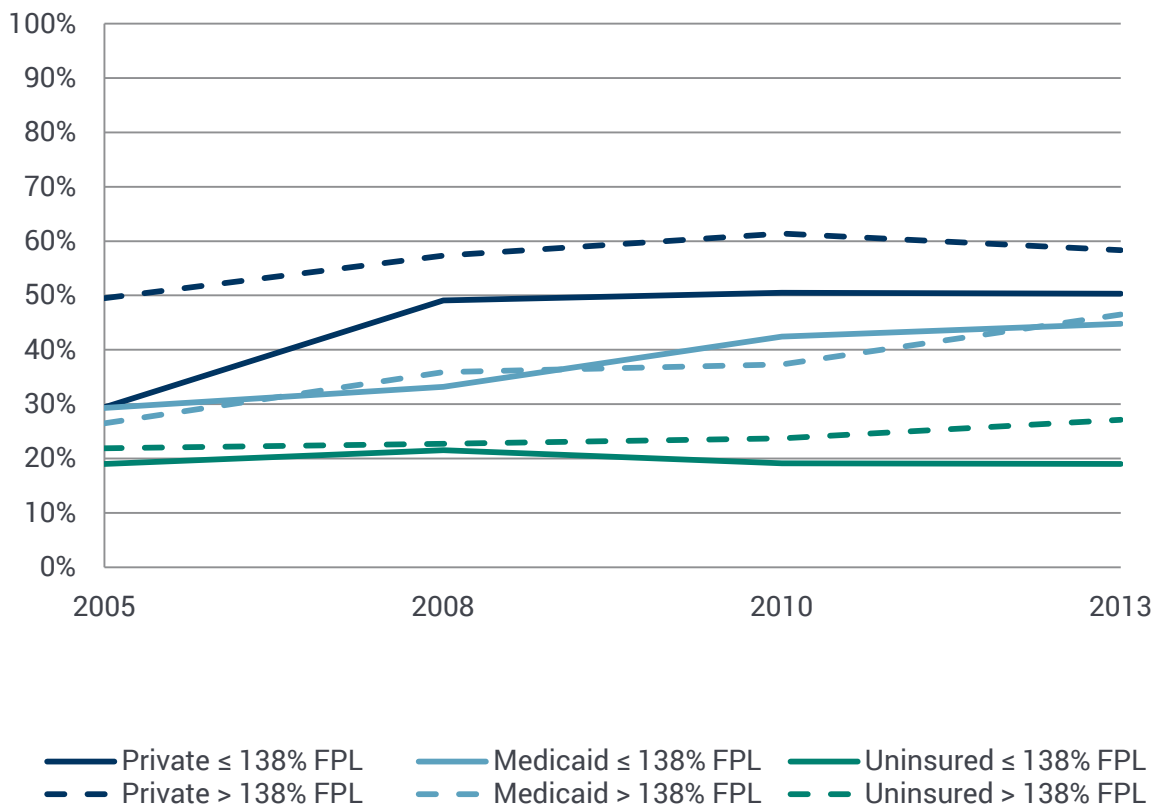**Source:** MACPAC, 2015, analysis of National Health Interview Survey, selected years.

Colorectal cancer tests. Among adults age 50–64, privately insured adults with incomes above 138 percent FPL had the highest rates of colorectal cancer tests (colonoscopy, flexible sigmoidoscopy, or blood stool), followed by low-income privately insured adults (Figure 3). Adults with Medicaid coverage reported lower rates of testing than adults covered by private insurance regardless of income level, and uninsured adults had the lowest rates of colorectal cancer tests.

The share of Medicaid enrollees who in 2013 reported having had a colorectal cancer test in the appropriate time period did not differ significantly by income level (44 percent for low-income and 47 percent for higher-income adults).

Rates of testing increased for all but the uninsured low-income adults between 2005 and 2010 and leveled off in more recent years. Less than a third of all uninsured adults had any of the recommended colorectal tests during the time period.

FIGURE 3. Percentage of Adults Age 50–64 with Any Type of Colorectal Cancer Test, by Income Level and Insurance Status, 2005, 2008, 2010, 2013

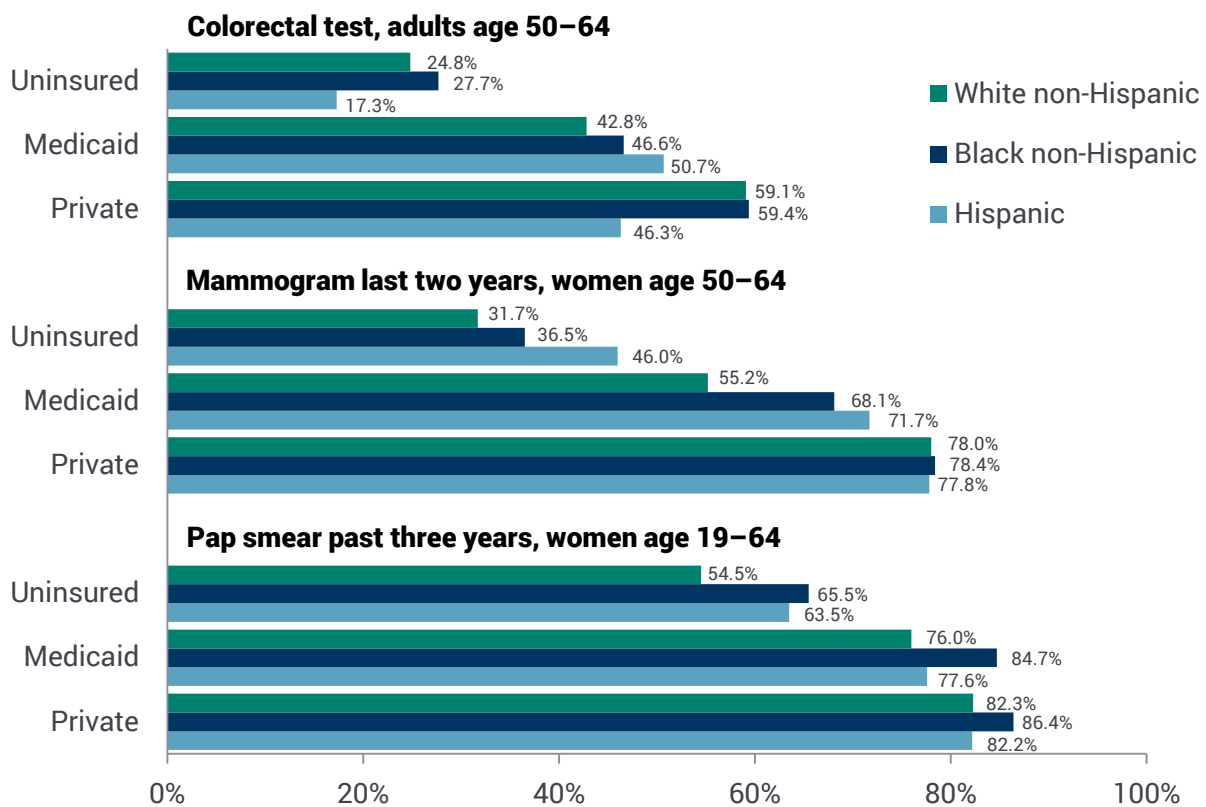**Notes:** FPL is federal poverty level. FPL is federal poverty level. See Data and Methods for a description of each cancer test.
Source: MACPAC, 2015, analysis of National Health Interview Survey, selected years.

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Race and ethnicity

Black adults are less likely to have an early diagnosis of cancer and more likely to have higher mortality rates, raising questions as to whether race alone is a primary determinant or if higher mortality rates might stem from other factors, such as access barriers, including inadequate or lack of insurance coverage, that might be associated with delays in early diagnosis (DeSantis et al. 2016, Siegel et al. 2015, Aizer et al. 2014). We examined whether differences in cancer test rates were narrowed when controlling for insurance category—that is, whether lower test rates were explained in part by insurance status among people of different races and ethnicities.

FIGURE 4. Adult Cancer Test Rates (Colorectal Test, Mammogram, and Pap Smear), by Race and Ethnicity and Insurance Status, 2013

Colorectal test, adults age 50−64

	White non-Hispanic	Black non-Hispanic	Hispanic
Uninsured	24.8%	27.7%	17.3%
Medicaid	42.8%	46.6%	50.7%
Private	59.1%	59.4%	46.3%

Mammogram last two years, women age 50−64

	White non-Hispanic	Black non-Hispanic	Hispanic
Uninsured	31.7%	36.5%	46.0%
Medicaid	55.2%	68.1%	71.7%
Private	78.0%	78.4%	77.8%

Pap smear past three years, women age 19−64

	White non-Hispanic	Black non-Hispanic	Hispanic
Uninsured	54.5%	65.5%	63.5%
Medicaid	76.0%	84.7%	77.6%
Private	82.3%	86.4%	82.2%

Notes: See Data and Methods for a description of each cancer test.
Source: MACPAC 2015 analysis of National Health Interview Survey, 2013.

Among black non-Hispanic and white non-Hispanic adults age 50−64, those with private insurance were more likely to report ever having any type of colorectal cancer test than those with Medicaid coverage or with no insurance coverage (Figure 4). Among Medicaid enrollees age 50−64, Hispanic adults had higher colon cancer test rates than their black non-Hispanic and white non-Hispanic counterparts. Uninsured adults were less likely to have had a cancer test in all three racial and ethnic groups.

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Among white non-Hispanic women age 50–64, those with private insurance coverage were more likely to report having a mammogram in the past two years than those with Medicaid coverage and those who were uninsured. Among women with Medicaid coverage, mammography rates for black non-Hispanic and white non-Hispanic women with Medicaid coverage were not significantly different (due in part to small sample sizes for this narrow age range); Hispanic women had the highest test rates within this insurance category. Among privately insured women age 50–64, the percentage with a mammogram in the past two years did not differ by race.

Black non-Hispanic women age 19–64 with Medicaid or private coverage had higher rates of Pap smears in the past three years than did white non-Hispanic women and Hispanic women. The percentage of Hispanic women with Medicaid or private insurance with a Pap smear in the past three years was similar to the percentage for white non-Hispanic women with the same coverage type.

Disability

Evidence suggests that adults with disabilities, in particular those with substantial disabilities, are less likely to receive preventive services, including cancer tests (Merten et al. 2015). People with disabilities may encounter barriers when seeking preventive services, such as cost, access (inability to enter or to get to and from the facility), the health care provider's discomfort in treating persons with disabilities, and provider practice patterns that emphasize treatment over prevention for patients with disabilities. We examined whether the receipt of preventive services differed by insurance status for this population. For the purposes of this analysis, disability was defined by self-report of physical and cognitive problems that affect an individual's ability to work, provide self-care, move, or interact socially.

Among adults age 50–64 with a disability, privately insured adults were more likely to report receiving the recommended colorectal cancer tests (colonoscopy, flexible sigmoidoscopy, or fecal occult blood stool test) in the recommended time period than Medicaid-enrolled or uninsured adults (Figure 5). There was no significant difference in the percentage of adults who reported having a colorectal test between Medicaid-enrolled adults with a disability and Medicaid-enrolled adults without a disability.

Among women age 50–64 with disability, those with private insurance were more likely to have had a mammogram in the past two years than those with Medicaid coverage. Among women age 50–64 with no disability, rates of mammogram testing in the past two years did not differ significantly between those with private insurance and those enrolled in Medicaid (in part due to the small sample of women age 50–64 with no disability who reported Medicaid coverage).
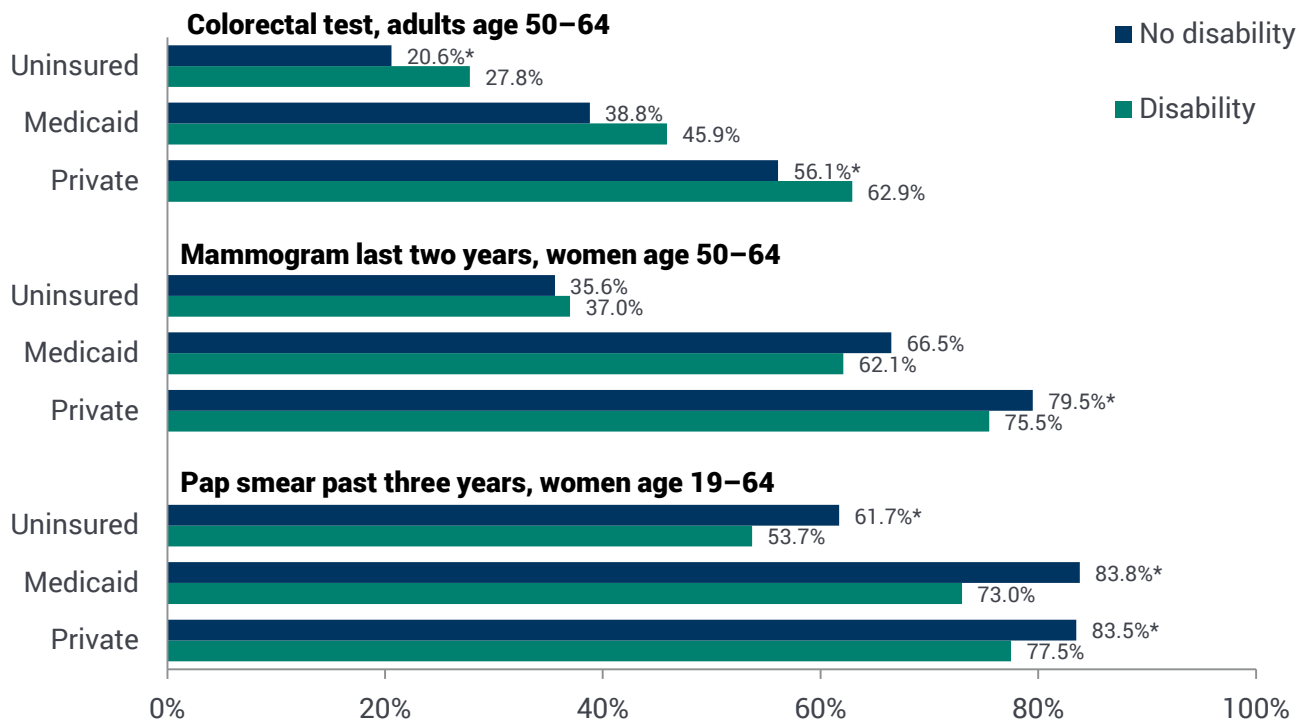
Mammography rates for women age 50–64 with Medicaid coverage were similar between those who did and did not report a disability. Among women age 50–64 with private insurance, those with no disability were significantly more likely to have had a mammogram in the past two years than those with a disability.

Women without a disability were more likely to have a pap smear in the last three years, regardless of their source of coverage. Among women age 19–64 without a disability, those with Medicaid coverage were as likely as those with private insurance to have had a Pap smear in the past three years. Privately insured

women with a disability were slightly more likely to have had a Pap smear than Medicaid-enrolled women with a disability.

FIGURE 5. Adult Cancer Screening and Diagnostic Test Rates (Colorectal Test, Mammogram, and Pap Smear), by Disability Status and Insurance Status, 2013

Colorectal test, adults age 50−64

■ No disability
■ Disability

Uninsured	20.6%* / 27.8%
Medicaid	38.8% / 45.9%
Private	56.1%* / 62.9%

Mammogram last two years, women age 50−64

Uninsured	35.6% / 37.0%
Medicaid	66.5% / 62.1%
Private	79.5%* / 75.5%

Pap smear past three years, women age 19−64

Uninsured	61.7%* / 53.7%
Medicaid	83.8%* / 73.0%
Private	83.5%* / 77.5%

0%   20%   40%   60%   80%   100%

Notes: For the purposes of this analysis, disability was defined by self-report of physical and cognitive problems that affect an individual's ability to work, provide self-care, move, or interact socially. See Data and Methods for a description of each cancer test.
* Difference from disability, within insurance status, is significant at the 0.05 level.
Source: MACPAC 2015 analysis of National Health Interview Survey, 2013.

Data and Methods

All differences discussed in the text of this report were computed using Z tests and are significant at the 0.05 level.

Data sources

Data for this report come from the NHIS and the Household Component of the Medical Expenditures Panel Survey (MEPS-HC). NHIS data were collected continuously throughout the year for the Centers for Disease Control and Prevention's National Center for Health Statistics by interviewers from the U.S. Census Bureau. The NHIS collects information about the health and health care of the U.S. civilian non-

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institutionalized population. Interviews are conducted at respondents' homes, and follow-up interviews may be conducted by phone. The MEPS-HC is a nationally representative longitudinal survey that collects detailed information on health care use and expenditures, health insurance, and health status, as well as on a wide variety of social, demographic, and economic characteristics for the U.S. civilian non-institutionalized population. For more information on the NHIS, see http://www.cdc.gov/nchs/nhis/about_nhis.htm. For more information on the MEPS-HC see http://www.meps.ahrq.gov/mepsweb/about_meps/survey_back.jsp.

Insurance coverage

The following hierarchy was used to assign individuals with multiple coverage sources to a primary source: Medicare, private, Medicaid, other, uninsured for the past 12 months. Not separately shown are the estimates for those covered by any type of military health plan or other government-sponsored program. Coverage source is defined as of the time of the survey interview. Because an individual may have multiple coverage sources and because sources of coverage may change over time, responses to survey questions may reflect characteristics or experiences associated with a coverage source other than the one assigned in this brief. Private health insurance coverage excludes plans that cover only one type of service, such as accident or dental insurance. The Medicaid category also includes persons covered by other state-sponsored health plans. Individuals were defined as uninsured if they did not have any private health insurance, Medicaid, State Children's Health Insurance Program (CHIP) coverage, Medicare, state- or other government-sponsored health plan, or military plan during the past year. Individuals were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accident or dental coverage only.

Disability

In the NHIS, an adult is classified as having a disability if, based on a series of questions, they report any of the following:

- limitations or difficulties in movement (walking, standing, bending or kneeling, reaching overhead, or using the hands and fingers);
- sensory or emotional limitations (e.g., feelings that interfere with accomplishing daily activities);
- limitations in mental functioning that are associated with a health problem (e.g., confusion or difficulties remembering);
- self-care limitations;
- social limitations; or
- work limitations.

Questions on cancer tests

Respondents were asked about cancer screening and diagnostic tests. This analysis does not distinguish whether these tests were for screening or diagnostic purposes. Questions used to identify whether a respondent had a cancer test come from the sample adult component, where one adult from the family is

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selected for a series of in-depth questions. These questions were not asked every year, but were asked in 2005, 2008, 2010, and 2013.

Pap smear. Women age 18 and older were asked: "Have you EVER HAD a Pap smear or Pap test? When did you have your test?" The month and year of the most recent test are recorded.

Mammography. Women age 30 and older were asked: "Have you EVER HAD a mammogram? When did you have your MOST RECENT mammogram?" The month and year of the most recent test are recorded.

Colorectal cancer tests. All sample adults age 40 and older were asked: "Have you EVER HAD a colonoscopy? Have you EVER HAD a sigmoidoscopy? [Recall that a sigmoidoscopy is similar to a colonoscopy but the doctor checks only part of the colon and you are fully awake.] Have you EVER HAD a blood stool test, using a home test kit?" For each of the three colorectal tests, the month and year of the most recent test are recorded. Data reported here reflect tests performed during the recommended time period, which is fecal occult blood tests annually, sigmoidoscopy every five years, and colonoscopy every ten years.

Endnotes

[1] Other professional and scientific organizations such as the American Cancer Society and the American College of Obstetricians and Gynecologists may publish recommendations with different age groups and periodicity schedules, but all of them recommend these tests for some age groups on some regular schedule (Smith et al. 2015, ACS 2015).

[2] CDC requires states to give low income women priority in the provision of services. Services include clinical breast examinations, mammograms, pap tests, pelvic examinations, HPV tests, diagnostic testing if results are abnormal, and referrals to treatment. The program currently funds all 50 states, the District of Columbia, 5 U.S. territories, and 11 American Indian/Alaska Native tribes or tribal organizations (CDC 2016).

[3] Only non-institutionalized adults were included in this analysis.

[4] Survey data do not allow differentiation of whether these tests were done solely for screening purposes or because there was a suspected problem and the test was considered diagnostic.

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