



# ASSESSMENT OF COLORECTAL CANCER SCREENINGS AND DISEASE PREVALENCE IN ARKANSAS

ACHI

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## Background

Colorectal cancer (CRC) is the third most commonly diagnosed cancer and third deadliest cancer among men and women in Arkansas and the United States. From 2014 to 2018, Arkansas had the fifth-highest annual average rate of new CRC cases at 44.0 per 100,000 persons and the eighth-highest annual average rate of deaths at 15.6 per 100,000 persons.<sup>1,i</sup> The American Cancer Society estimates that 1,500 Arkansans will be newly diagnosed with CRC and 500 Arkansans will die from CRC in 2021.<sup>2</sup>

Since the mid-1980s, overall CRC incidence and death rates have declined nationally, in part due to the uptake in CRC screenings. However, not all groups are experiencing these declines. For example, the trends indicate the incidence rates per 100,000 persons for persons age 49 or under and ages 50 to 64 rose an average of 2.2% and 1.0% each year from 2012 to 2016, respectively.<sup>ii</sup> However, the incidence rate fell by an average of 3.3% each year for persons age 65 or older.<sup>i</sup> Differences are also apparent between racial and ethnic groups: Since the 1980s, CRC incidence and death rates have remained considerably higher among Blacks than among Whites and Hispanics.<sup>3</sup>

In Arkansas, the trend for overall CRC incidence rates per 100,000 persons was stable at an average increase of 0.3% each year from 2013 to 2017. Among Arkansans age 49 and under, the incidence rate was stable at an average increase of 3.4% each year in the same five-year period; however, it declined by an average of 1.8% each year among Arkansans age 50 and over.<sup>4</sup>

Advances in screenings for colorectal cancer, particularly stool-based tests, have likely increased adherence to screening recommendations,<sup>3</sup> as these tests are relatively simple to administer, less expensive and less invasive than traditional equipment-based diagnostic tools (e.g., colonoscopy), and can be done in an outpatient setting or patient's home. These tests include the fecal immunochemical test (FIT), high-sensitivity guaiac-based fecal occult blood test (gFOBT), and multitargeted stool DNA test (Cologuard).

Despite the increased accessibility of stool-based testing, CRC screening remains low compared to screenings for breast and cervical cancers. Barriers to screening include patient fear, lack of appropriate insurance coverage, absence of a primary source of health care, failure of providers to provide screening recommendations, lack of transportation, language barriers, and lack of information about available resources or recommendations. Notably, these barriers may be prevalent in populations that traditionally lack socioeconomic and educational resources, such as low-income communities and minority communities.<sup>3</sup>

Recognizing the importance of CRC screenings, the Arkansas General Assembly enacted Act 779 of 2021, which will lower the age range for covered colorectal cancer preventive screenings from 50 and above to 45 and above, effective Jan. 1, 2022. The new law will also prohibit cost-sharing for a follow-up colonoscopy — a colonoscopy performed at any time after a positive or abnormal result from a non-colonoscopy colorectal cancer screening test. The

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<sup>i</sup> Rates are age-adjusted to the 2000 U.S. population standard.

<sup>ii</sup> Appendiceal tumors not included.

law will apply to most individual and group insurance policies, including those covering Medicaid expansion beneficiaries through the Arkansas Works program and the state and public school employee health benefit plan. Act 779 aligns with the U.S. Preventive Service Task Force’s (USPSTF) updated CRC screening recommendation released May 18, 2021, which adds ages 45 to 49 to the ages for which CRC screening is recommended. For that age group, CRC is a “B” recommendation — a service that has “high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.”<sup>5</sup> This change requires CRC screenings to be covered as preventive services without cost-sharing, as mandated by the Affordable Care Act for USPSTF A and B recommendations for non-grandfathered private health insurance plans, Medicare, Medicaid expansion plans, and traditional Medicaid plans.<sup>6</sup>

## **Purpose of the Report**

At the request of Fight Colorectal Cancer, ACHI conducted an assessment to identify gaps in access to colorectal screenings, including those related to follow-up colonoscopies and cost-sharing. Fight Colorectal Cancer is a patient-empowerment and advocacy organization with a mission to cure colorectal cancer through patient support, policy change, and research. The assessment examined current prevalence of and access to colorectal cancer (CRC) screenings and CRC disease incidence. ACHI also projected the number of Arkansans ages 45 to 49 who could be screened based on the final 2021 USPSTF recommendation to lower the CRC screening age to 45. Where available, ACHI generated demographic and geographic profiles to identify differences in marginalized or underserved populations.

More specifically, this report provides an assessment of the following:

- The number of persons in Arkansas for whom a non-invasive CRC screening test (FIT, gFOBT, Cologuard) claim was paid.
- The number of persons in Arkansas for whom a non-invasive CRC screening test and follow-up colonoscopy claim was paid.
- The number of persons who had a copay for a follow-up colonoscopy.
- The number of persons diagnosed with CRC by age, including ages 45–49.
- The number of late-stage CRC diagnoses by age.
- The number of persons ages 45 to 49 who would be screened based on the final USPSTF recommendation.

## **Analytic Approach**

This assessment analyzed commercial coverage, traditional Medicaid (including the state’s Medicaid expansion program, Arkansas Works), and Medicare medical claims of Arkansas residents ages 50 to 75 and 45 to 49 who met the guidelines for a colorectal cancer screening based on the 2020 USPSTF recommendation.<sup>7</sup> Arkansans included in the study population for the study duration of January 2017 to December 2018 were assessed for evidence of any history of stool-based tests and follow-up colonoscopies. For the purposes of the assessment, a follow-up colonoscopy was defined as a colonoscopy completed within six months of a stool-

based test. Stool-based tests included guaiac fecal occult blood tests (gFOBT), fecal immunochemical tests (FIT), and the stool DNA test Cologuard.

For individuals ages 50 to 75 who were screened and had follow-up colonoscopies, screening rates and counts for stool-based tests and follow-up colonoscopies were computed by coverage type, time to follow-up colonoscopy (one, three, or six months), race (Medicare only), and urban or rural geographic area. As current Medicare data are available through December 2018, follow-up colonoscopies within six months of an abnormal stool-based test that occurred after June 30, 2018, may not be reflected in the data reported to the Arkansas All-Payer Claims Database (APCD). Consequently, analyses regarding follow-up colonoscopies within six months in 2018 that include Medicare data are preliminary and only includes stool-based test data for Jan. 1 through June 30, 2018.<sup>iii</sup> Data for stool-based tests and follow-up colonoscopies within six months for full-year 2018 are available for Medicaid/Arkansas and commercial coverage analyses.

Claims payment and evidence of any cost-sharing for a stool-based test were assessed for variation by payer type and test type. Screening rates and counts for individuals ages 45 to 49 were also computed to project the stool-based test and follow-up colonoscopy rates and counts for persons ages 45 to 49.

To assess CRC incidence and the number of late-stage diagnoses by age group, ACHI analyzed cancer data from the Arkansas Cancer Registry. Colon and rectum recodes from SEER Site Recode ICD-O-3/WHO 2008 were used to identify the number of individuals who had a CRC diagnosis in 2016 and 2017. See Appendix A for the SEER codes used to identify localized, advanced or late-stage, and unstaged diagnoses.

## DATA SOURCES

Data for the assessment were obtained from the Arkansas Healthcare Transparency Initiative's All Payer Claims Database (APCD), which is housed by ACHI. The APCD contains data for the majority of healthcare-covered lives in Arkansas including medical, pharmacy, and dental claims and enrollment and provider files, as well as death and birth certificates and cancer registry data. The version of the APCD used for this analysis includes data from 2013 through December 2018 for Medicare and 2013 through June 2020 for Arkansas Medicaid, fully-insured private payers, and self-insured payers receiving state funds. The cancer registry data is from January 2013 through December 2017. Data are submitted to the APCD on a quarterly basis pursuant to a mandate authorized by the Arkansas Healthcare Transparency Initiative Act of 2015. The data include some geographic and demographic information and a unique identifier permitting tracking of an individual over time and across datasets, but they do not include direct personal identifiers such as name or street address.

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<sup>iii</sup> For the time to follow-up colonoscopy analysis, the dates were extended for follow-up colonoscopies that occurred within one month or three months from the stool-based test in partial-year 2018. These dates include: Jan. 1, 2020, through Nov. 30, 2020, for the one-month analysis and Jan. 1, 2020, through Sept. 30, 2020, for the three-month analysis.

## STUDY POPULATION

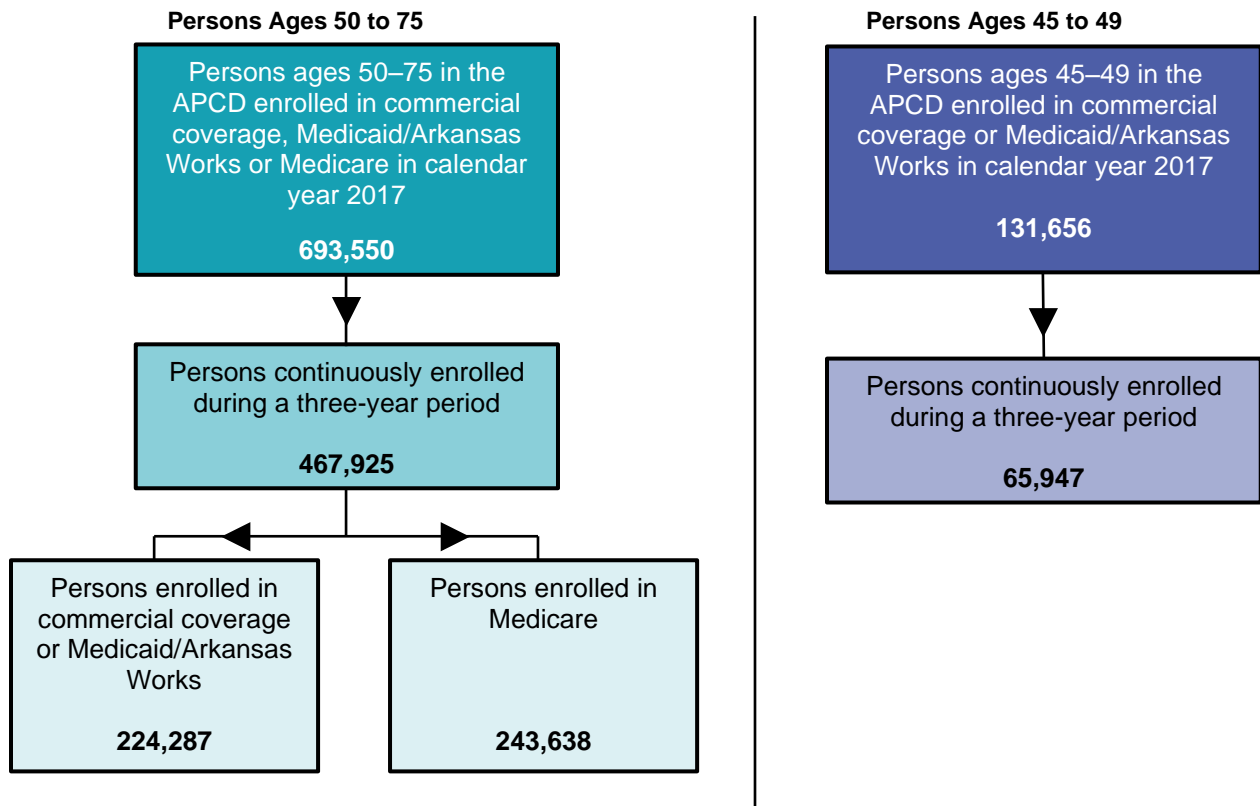
The overall study population included persons enrolled in commercial coverage, Medicaid (including Medicaid expansion/Arkansas Works), and Medicare. Figure 1 shows the flow of the individuals from the APCD who were included in the study population for year 2017. The study population flow is only displayed for the 2017 cohort because this is the first year of overlap for the selected overall study periods for commercial coverage and Medicaid/Arkansas Works enrollees and the Medicare enrollee population.

To be included in our overall study population, individuals had to be continuously enrolled for the entire study period; therefore, the individuals present in the 2017 cohort are included in subsequent study years. Because this analysis includes separate age groups and multiple study years, some individuals in the 45-to-49-year-old age group moved into the 50-to-75-year-old age group into subsequent study years.

The inclusion criteria among the commercial coverage and Medicaid/Arkansas Works enrollees included individuals age 45 as of Jan. 1, 2017, to age 75 as of Dec. 31, 2019, who were continuously enrolled from 2017 to 2019. “Continuously enrolled” is defined as having no gap in coverage or having one coverage gap of 45 days or less.

For Medicare enrollees, the inclusion criteria included individuals who reached age 65 as of Jan. 1, 2016, to age 75 as of Dec. 31, 2018, and who were continuously enrolled from 2016 to 2018.

**FIGURE 1: FLOW CHART OF THE STUDY POPULATION, 2017**



## LIMITATIONS

As with any claims-based data analysis, this analysis is subject to inherent provider-level billing and coding variation. While this is a known limitation of healthcare claims-based data analysis, the team at ACHI uses evidence-based research methods and conducts multi-layer data and analytic validation processes. Additionally, as discussed above, analyses with follow-up colonoscopies within six months in 2018 that include Medicare data are preliminary and only include stool-based test data for Jan. 1, 2018, through June 30, 2018, due to availability of Medicare data.

The data did not allow us to assess whether stool-based tests that were administered resulted in a positive screen, but follow-up colonoscopies observed in the the data were in the range of reported positive screens for gFOBTs, FITs, and Cologuard.<sup>8,9,10</sup> The data also did not take into account individuals who needed a follow-up colonoscopy but did not receive one.

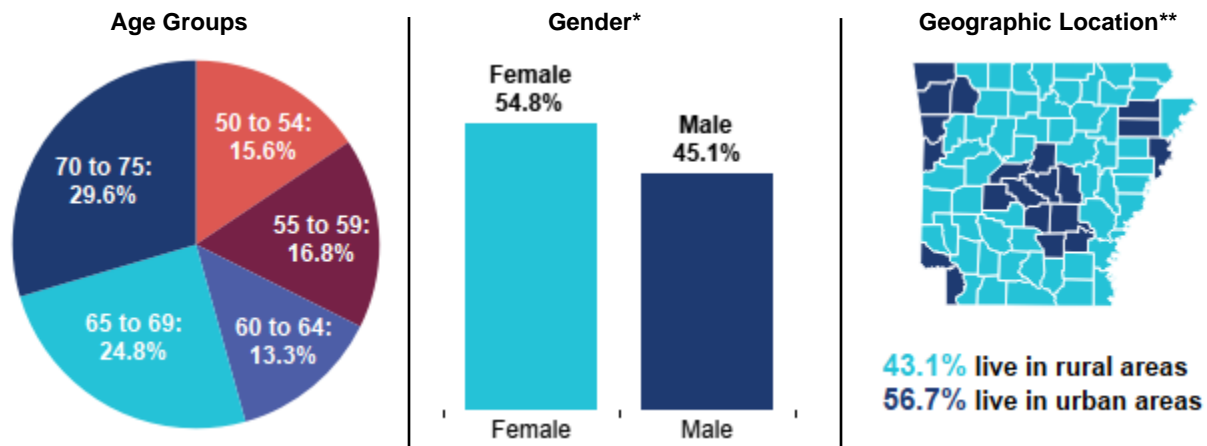
Claims-based costs of follow-up colonoscopies are not included in this report due to resource limitations and the complexity of defining all costs associated with a follow-up colonoscopy (across multiple claim lines), as opposed to identifying follow-up colonoscopy occurrences based on singular procedure codes. Assessment of costs associated with follow-up colonoscopies warrants further analysis.

## Findings

The overall study population beginning in 2017 included 467,925 individuals ages 50 to 75 who were enrolled in commercial, Medicaid (including the Medicaid expansion/Arkansas Works population), or Medicare coverage. Nearly 16% (73,008) of the study population were ages 50 to 54, 16.8% (78,436) were ages 55 to 59, 13.3% (62,277) were ages 60 to 64, 24.8% (115,899) were ages 65 to 69, and 29.6% (138,305) were ages 70 to 75. More than half, 54.8% (256,636), were female, and 45.1% (211,196) were male. Fifty-seven percent of the study population lived in an urban area (265,546), and 43.1% (201,480) lived in a rural area. 2017 characteristics displayed below are representative of overall study period characteristics due to the previously described continuous enrollment inclusion criteria (Figure 2).

**FIGURE 2: STUDY POPULATION CHARACTERISTICS, 2017**

**Study Population: 467,925**

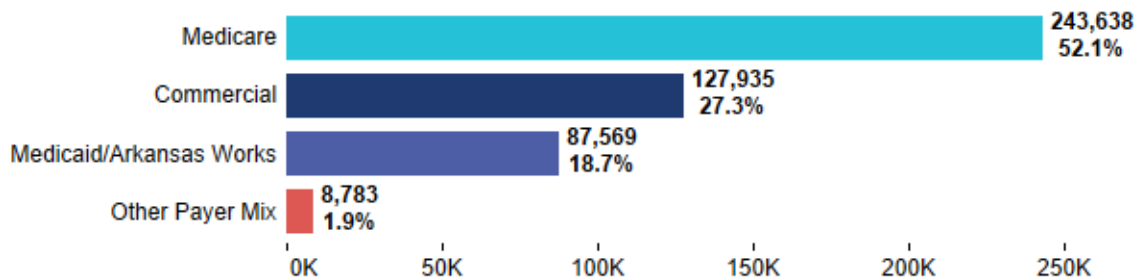


\* 93 individuals had an unknown gender classification.

\*\* 899 had missing information.

Figure 3 shows the number and percentage of unique individuals in the study population who were enrolled in commercial coverage, Medicaid/Arkansas Works, transitioned between those two coverage types (“other payer mix”), or Medicare in 2017. Approximately 52% (243,638) of the study population were enrolled in Medicare, 27.3% (127,935) were enrolled in commercial coverage, and 18.7% (87,569) were enrolled in Medicaid/Arkansas Works.

**FIGURE 3: STUDY POPULATION HEALTH COVERAGE ENROLLMENT BY PAYER TYPE, 2017**



### THE NUMBER OF PATIENTS IN ARKANSAS FOR WHOM A NON-INVASIVE CRC SCREENING TEST (FIT, GFOBT, COLOGUARD) CLAIM WAS PAID

For the study population ages 50 to 75 (467,925), 23,182 individuals, or 5.0%, had a stool-based test in 2017 (Figure 4). About 91% (21,155) of those individuals had stool-based tests that were paid for by a commercial payer, Medicaid/Arkansas Works, or Medicare (Appendix B). The overwhelming majority of individuals with a payer-paid stool-based test, 96.1% (20,328), had their tests fully paid, and 3.9% (827) of those individuals had partially paid tests.

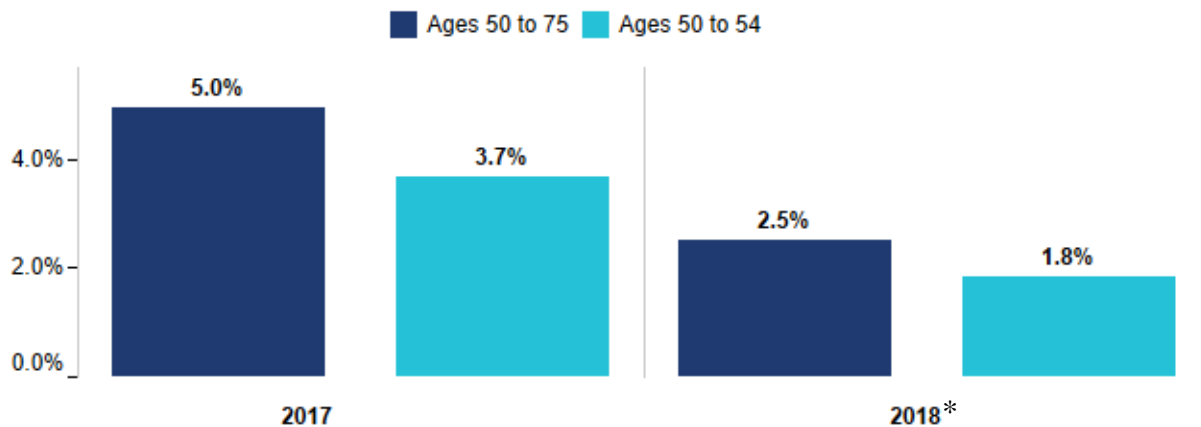
Partial-year 2018 data indicate the percentage of individuals ages 50 to 75 who had a stool-based test was 2.5% (12,005). Of the individuals who had stool-based tests, 88.5% (10,619) had tests paid for by their payer. Similarly to the 2017 data, 96.4% (10,238) of individuals with payer paid stool-based tests had their tests fully paid and 3.6% (381) of those individuals had partially paid tests.

Among individuals in the population sub-group of ages 50 to 54 (73,008), the percentage of individuals who had a stool-based test in 2017 was lower at 3.7% (2,689) (Figure 4). Eighty-six percent (2,302) of individuals in this age group had their stool-based tests paid for by a payer in 2017. The majority of the individuals with payer-paid stool-based tests, 93.5% (2,153), had their tests fully paid, and 6.5% (149) of those individuals had partially paid tests.

Partial-year 2018 data indicate the percentage of individuals ages 50 to 54 who had a stool-based test was 1.8% (1,284). Of the individuals who had stool-based tests, 79.4% (1,019) had tests paid for by their payer. Ninety-five percent (968) of individuals with payer-paid stool-based tests had their tests fully paid, and 5% (51) of those individuals had partially paid tests.



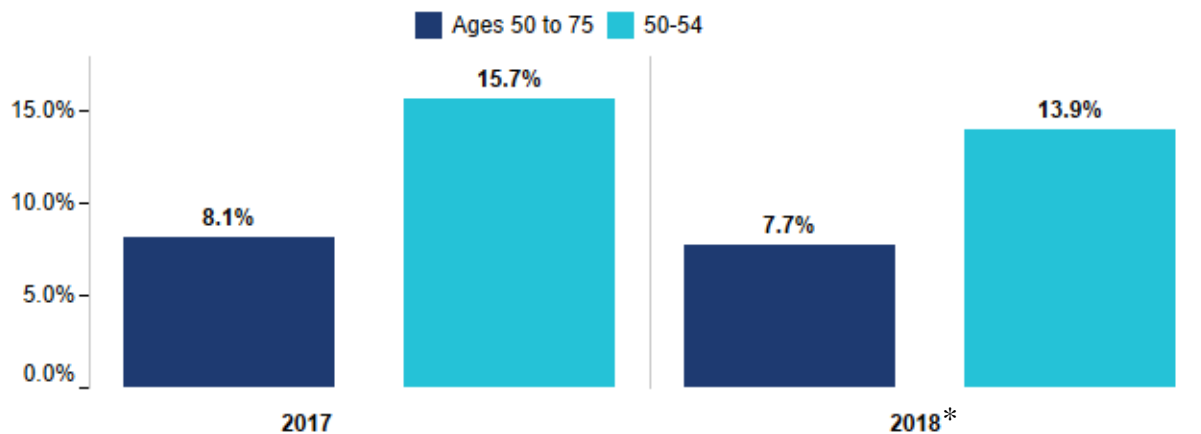
**FIGURE 4: PERCENTAGE OF INDIVIDUALS AGES 50 TO 75 WHO HAD STOOL-BASED TESTS**



\* Data from January 1, 2018, to June 30, 2018.

Eight percent (1,879) of individuals ages 50 to 75 who had a stool-based test in 2017 had out-of-pocket costs (Appendix B). The percentage was higher for the individuals in the 50 to 54 age subgroup at 15.7% (422) (Figure 5). Partial-year 2018 data show the percentage of individuals who had out-of-pocket costs was 7.7% (922) for individuals ages 50 to 75 and 13.9% (179) for individuals ages 50 to 54.

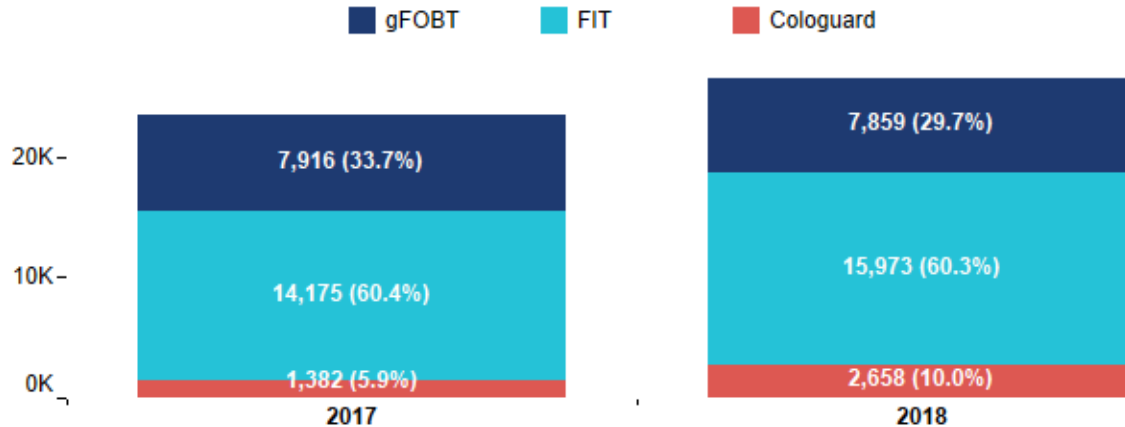
**FIGURE 5: PERCENTAGE OF INDIVIDUALS AGES 50–75 WHO HAD STOOL-BASED TESTS AND OUT-OF-POCKET COSTS**



\* Data from January 1, 2018, to June 30, 2018.

The most widely used stool-based test for CRC screening was the FIT at 60% in 2017 and 2018. Cologuard tests made up 5.9% (1,382) of tests in 2017 and increased to 10% (2,658) in 2018. The percent of gFOBT tests decreased from 33.7% (7,916) in 2017 to 29.7% (7,859) in 2018 (Figure 6).

**FIGURE 6: PROPORTION OF STOOL-BASED TESTS ADMINISTERED BY TEST TYPE, 2017–2018**



\* Full-year 2018 data for all payers.

### NUMBER OF PATIENTS IN ARKANSAS FOR WHOM NON-INVASIVE CRC SCREENING TESTS AND FOLLOW-UP COLONOSCOPY CLAIMS WERE PAID

Among the 23,182 individuals ages 50 to 75 who had stool-based tests in 2017, 12% (2,780) had follow-up colonoscopies within six months (Figure 7). About 96% (2,673) of those individuals had follow-up colonoscopies that were paid for by a commercial payer, Medicaid/Arkansas Works, or Medicare. The majority of individuals with payer-paid follow-up colonoscopies, 61.9% (1,655), had their tests partially paid, and 38.1% (1,018) of those individuals had fully paid follow-up colonoscopies.

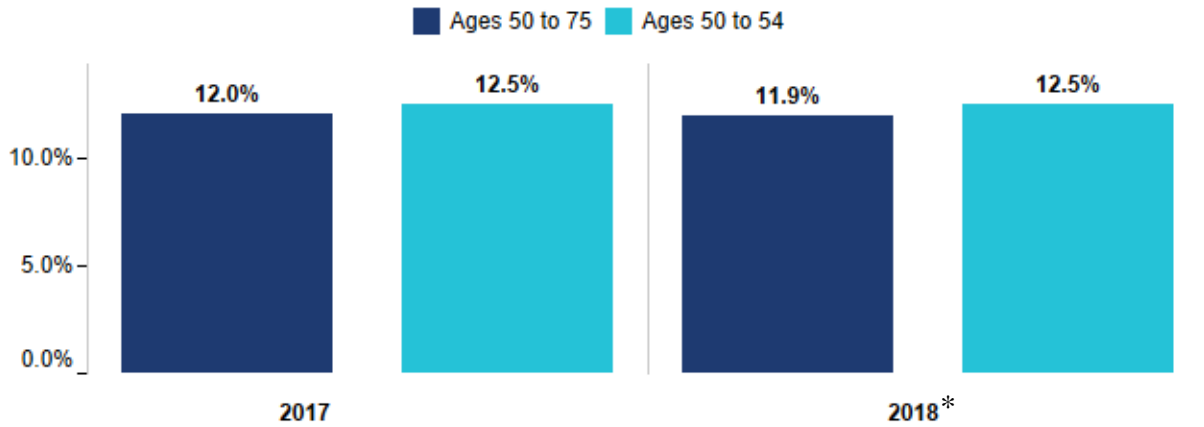
Results were similar for partial-year 2018. Nearly 12% (1,431) of individuals who had stool-based tests (12,005) from Jan. 1, 2018, through June 30, 2018, had follow-up colonoscopies. About 96% (1,366) of those individuals had follow-up colonoscopies that were paid for by a payer. Sixty-one percent (835) of individuals with payer-paid follow-up colonoscopies had their procedures partially paid, and 38.9% (531) of those individuals had fully paid follow-up colonoscopies.

For individuals ages 50 to 54 who had stool-based tests (2,689), the percentage of individuals who had follow-up colonoscopies was 12.5% (335) in 2017. About 91% (306) of those individuals had follow-up colonoscopies that were paid for by a payer. Unlike the results for the entire study population of individuals ages 50 to 75, a higher percentage of individuals ages 50 to 52 had their follow-up colonoscopies fully paid for by a payer: 71.6% (219). Twenty-eight percent (87) had partially paid follow-up colonoscopies.

For partial-year 2018, the results were comparable for individuals ages 50 to 54. One hundred sixty (12.5%) individuals had follow-up colonoscopies after a stool test (1,284). Ninety-one percent (146) of individuals in this age group had their follow-up colonoscopies paid for by a payer (Appendix B). Seventy-three percent (107) of individuals with payer-paid follow-up

colonoscopies had their procedures fully paid and 26.7% (39) of those individuals had partially paid follow-up colonoscopies.

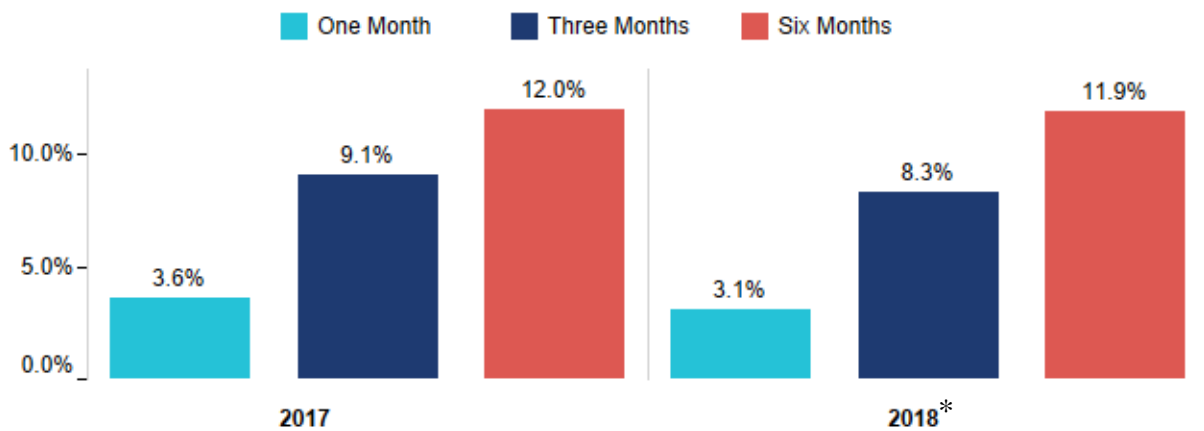
**FIGURE 7: PERCENTAGE OF INDIVIDUALS AGES 50–75 WHO HAD FOLLOW-UP COLONOSCOPIES**



\* Data from January 1, 2018, to June 30, 2018.

Figure 8 shows the percentage of individuals ages 50 to 75 who had a follow-up colonoscopy within one month, three months, or six months of a stool-based test. For 2017 and partial-year 2018, fewer than 4% (827 of 23,182 individuals and 740 of 24,262 individuals, respectively) had a follow-up colonoscopy within one month of a stool-based test. These percentages increase to 9.1% and 8.3% for 2017 and partial-year 2018, respectively, (2,100 of 23,182 individuals and 1,625 of 19,511 individuals, respectively) at three months and to around 12% at six months (2,780 of 23,182 individuals and 1,431 of 12,005 individuals, respectively).

**FIGURE 8: PERCENTAGE OF INDIVIDUALS AGES 50–75 WHO HAD A FOLLOW-UP COLONOSCOPY WITHIN ONE MONTH, THREE MONTHS, OR SIX MONTHS OF A STOOL-BASED TEST**

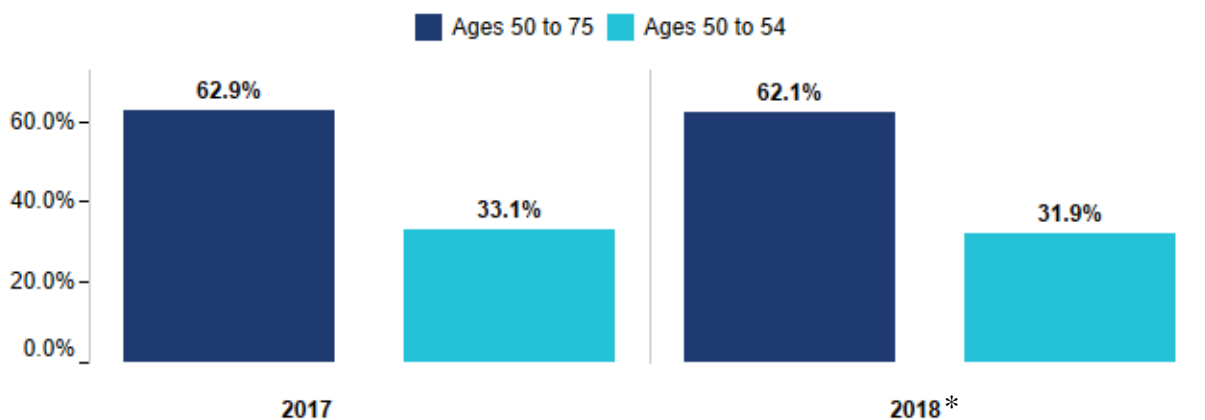


\* Data for one-month analysis are from Jan. 1, 2018, through Nov. 30, 2018; data for the three-month analysis are from Jan. 1, 2018, through Sept. 30, 2018; and data for the six-month analysis from Jan. 1, 2018, to June 30, 2018.

## NUMBER OF PATIENTS WHO HAD COPAYS FOR FOLLOW-UP COLONOSCOPIES

Among those ages 50 to 75 who had follow-up colonoscopies (2,780) in 2017, 1,749 (62.9%) of individuals had out-of-pocket costs. (Figure 9). There were similar results at 62.1% of individuals for partial-year 2018. These percentages were lower for those ages 50 to 54, at 33.1% (111 of 335 individuals) in 2017 and 31.9% (51 of 160 individuals) in partial-year 2018. Average cost-sharing per patient for a follow-up colonoscopy could not be calculated for this report because cost-sharing amounts applicable to the colonoscopy procedure itself could not be isolated.

**FIGURE 9: PERCENTAGE OF INDIVIDUALS AGES 50–75 WHO HAD FOLLOW-UP COLONOSCOPIES AND OUT-OF-POCKET COSTS**



\* Data from January 1, 2018, to June 30, 2018.

## PAYER TYPE

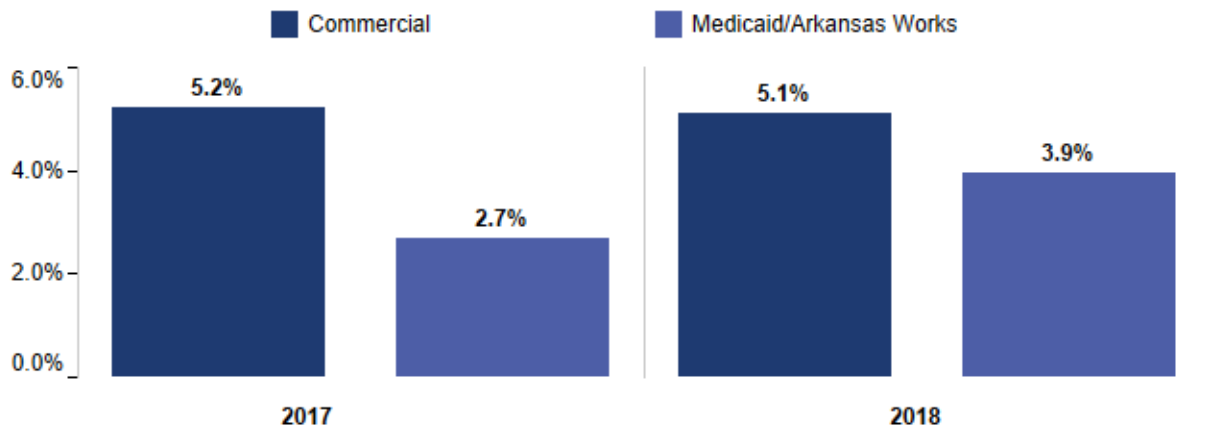
To provide a more meaningful look at enrollee experiences by payer type, and due to the availability of only partial-year data for Medicare, this subsection of the report shows separate analyses for years 2017 to 2018 for commercial and Medicaid/Arkansas Works enrollees ages 50 to 75 and only 2017 data for Medicare enrollees ages 65 to 75 (Appendix C). This subsection of the report includes individuals unique to each payer type and does not include individuals who fall into the “Other Payer Mix” category in Figure 3.

### Commercial Coverage and Medicaid/Arkansas Works

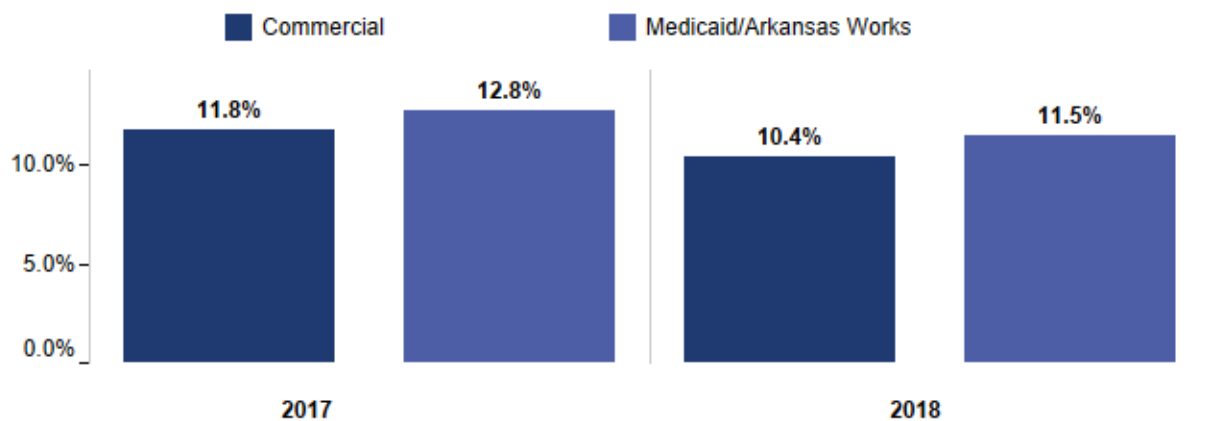
Among the unique individuals ages 50 to 75 who were enrolled in commercial coverage or Medicaid/Arkansas Works, individuals enrolled in Medicaid/Arkansas Works had the lower rate of stool-based testing in 2017 and 2018. Only 2.7% (2,352) of the 87,569 unique Medicaid/Arkansas Works enrollees had a stool-based test, compared to 5.2% (6,680) of the 127,935 unique commercial coverage members in 2017. In 2018, the rates were 3.9% (3,506) for the 89,064 unique Medicaid/Arkansas Works enrollees and 5.1% (6,950) for the 136,219 unique commercial coverage enrollees (Figure 10).

However, the percentages of individuals who had follow-up colonoscopies in each payer group were similar, between 10% and 13% in 2017 and 2018. For Medicaid/Arkansas Works, 301 (12.8%) had follow-up colonoscopies in 2017 and 402 (11.5%) in 2018. Among commercial coverage enrollees, 787 (11.8%) had follow-up colonoscopies in 2017 and 726 (10.4%) in 2018 (Figure 11).

**FIGURE 10: PERCENTAGE OF UNIQUE INDIVIDUALS AGES 50–75 WHO HAD STOOL-BASED TEST SCREENINGS BY PAYER**



**FIGURE 11: PERCENTAGE OF UNIQUE INDIVIDUALS AGES 50–75 WHO HAD FOLLOW-UP COLONOSCOPIES BY PAYER**

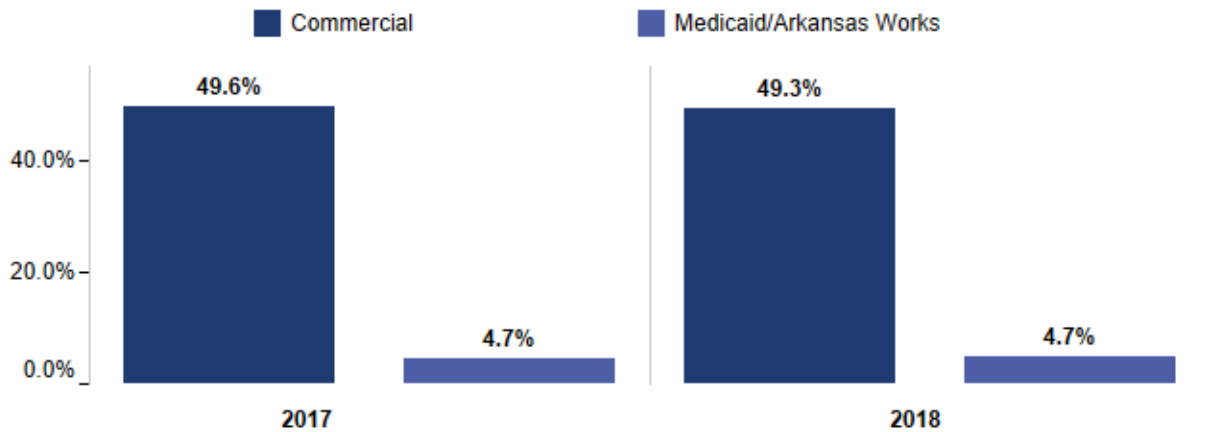


In 2017, 20.4% (1,361) of commercial members had out-of-pocket costs associated with their stool-based tests in 2017 and 19.5% (1,353) in 2018. For Medicaid/Arkansas Works enrollees, less than 1% had out-of-pocket costs.

Notably, the disparity was higher when comparing out-of-pocket costs for follow-up colonoscopies. Nearly half of commercial members had out-of-pocket costs for follow-up colonoscopies in 2017 and 2018, compared to 4.7% for Medicaid members (Figure 12). Specifically, 14 of 301 Medicaid/Arkansas Works enrollees had out-of-pocket costs in 2017

and 19 of 402 had out-of-pocket costs in 2018. For commercial enrollees, 390 of the 787 enrollees who had follow-up colonoscopies had out-of-pocket costs in 2017 and 358 of 726 had out-of-pocket costs in 2018.

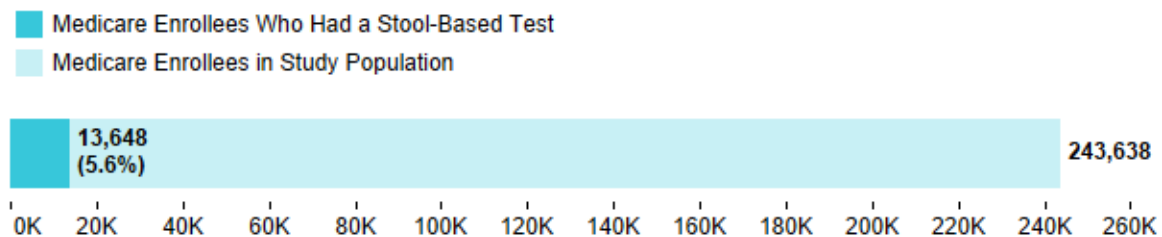
**FIGURE 12: PERCENTAGE OF INDIVIDUALS AGES 50–75 WHO HAD FOLLOW-UP COLONOSCOPIES AND OUT-OF-POCKET COSTS BY PAYER, 2017 TO 2018**



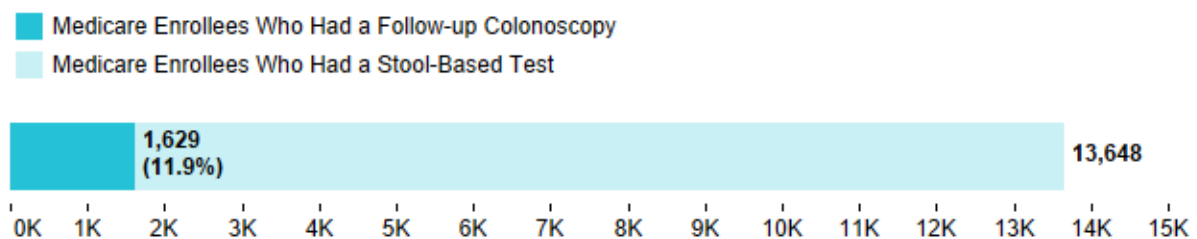
### Medicare

Among the 243,638 unique individuals ages 65 to 75 enrolled in Medicare, 5.6% (13,648) had a stool-based test in 2017 (Figure 13). The percentage of individuals who had a follow-up colonoscopy was 11.9% (Figure 14).

**FIGURE 13: PERCENTAGE OF MEDICARE ENROLLEES AGES 65–75 WHO HAD STOOL-BASED TEST SCREENINGS, 2017**

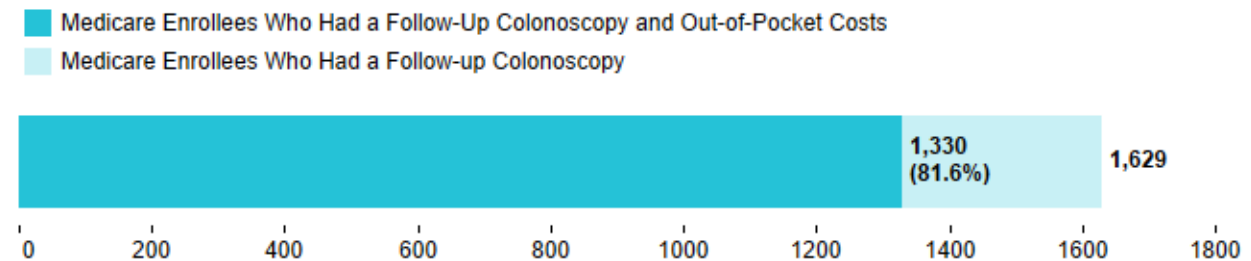


**FIGURE 14: PERCENTAGE OF MEDICARE ENROLLEES AGES 65–75 WHO HAD FOLLOW-UP COLONOSCOPIES, 2017**



Fewer than 4% of Medicare enrollees had out-of-pocket costs for a stool-based test in 2017 (465). Notably, 81.6% (1,330) of Medicare enrollees who had a follow-up colonoscopy had out-of-pocket costs in 2017 (Figure 15).

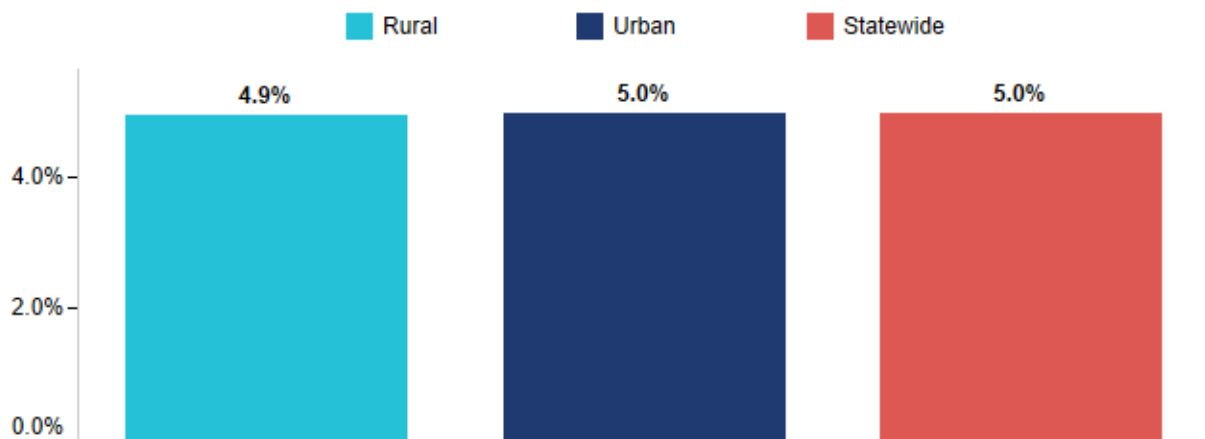
**FIGURE 15: PERCENTAGE OF MEDICARE ENROLLEES AGES 65–75 WHO HAD FOLLOW-UP COLONOSCOPIES AND OUT-OF-POCKET COSTS BY PAYER, 2017**



## GEOGRAPHIC LOCATION

Rates of Arkansans ages 50 to 75 who had a stool-based test screening by urban or rural geographic location are similar. In 2017, the percentage of individuals living in urban areas (265,546) who had a stool-based test was 5.0% (13,203), compared to 4.9% (9,943) among individuals living in rural areas (201,480). This was similar to the state percentage of 5.0% (Figure 16).

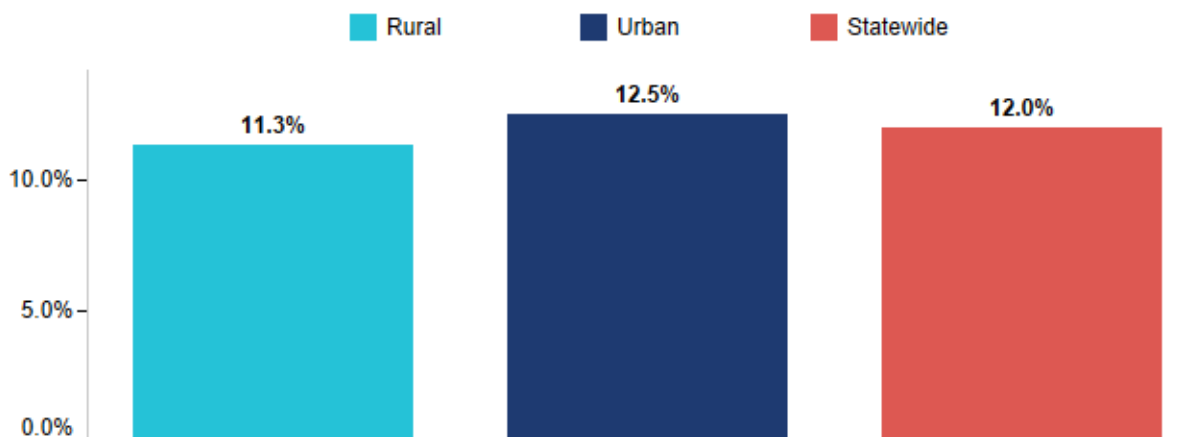
**FIGURE 16: PERCENTAGE OF ADULTS AGES 50–75 WHO HAD STOOL-BASED TESTS BY GEOGRAPHIC LOCATION, 2017**



\* 899 individuals did not have an urban or rural designation.

The percentages of individuals who had a follow-up colonoscopy after a stool-based test screening in 2017 were also similar across individuals in urban areas, rural areas, and statewide at 12.5% (1,651), 11.3% (1,121) and 12.0%, respectively (Figure 17).

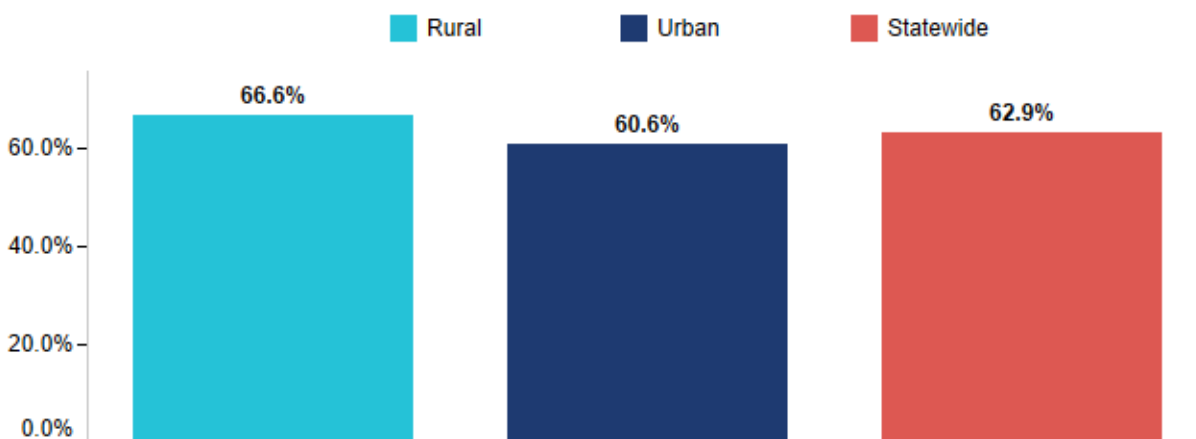
**FIGURE 17: PERCENTAGE OF ADULTS AGES 50–75 WHO HAD FOLLOW-UP COLONOSCOPIES BY GEOGRAPHIC LOCATION, 2017**



\* 899 individuals did not have an urban or rural designation.

The percentages of individuals who had a follow-up colonoscopy with out-of-pocket costs were also similar at 60.6% (1,000) among those in urban areas, 66.6% (747) among those in rural areas, and 62.9% statewide (Figure 18).

**FIGURE 18: PERCENTAGE OF ADULTS AGES 50–75 WHO HAD FOLLOW-UP COLONOSCOPIES AND OUT-OF-POCKET COSTS BY GEOGRAPHIC LOCATION, 2017**



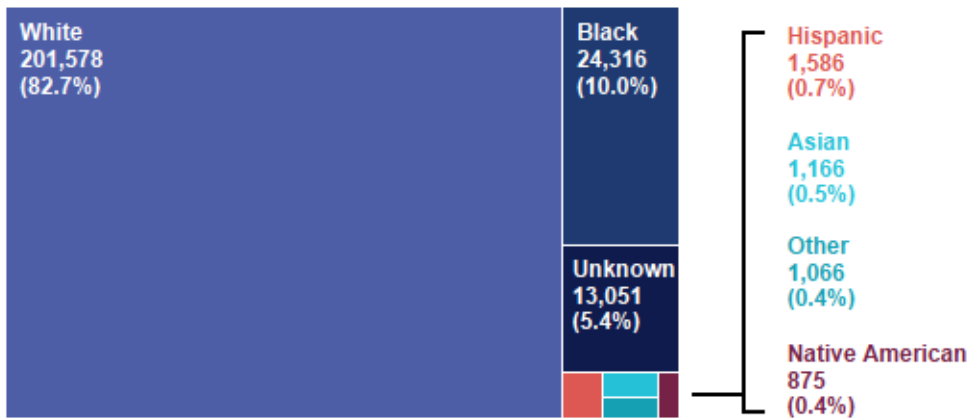
\* 899 individuals did not have an urban or rural designation.

## RACE AND ETHNICITY

Race and ethnicity CRC screening data are available for individuals ages 65 to 75 who had Medicare coverage in 2017. Figure 19 shows the proportions of individuals in the study population with Medicare coverage by race.



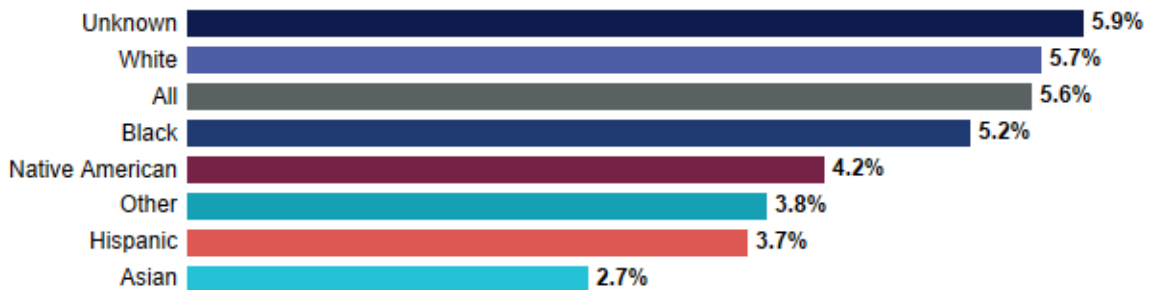
**FIGURE 19: TOTAL MEDICARE ENROLLEES IN THE STUDY POPULATION BY RACE**



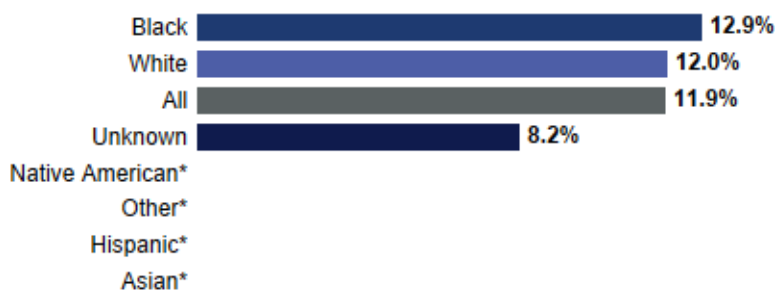
Among the 13,648 individuals who had a stool-based test in 2017, 83.8% were White, 9.3% were Black, 5.7% had an unknown race/ethnicity, 0.4% were Hispanic, 0.3% were Native American, 0.3% were another race, and 0.2% were Asian.

Figure 20 shows that the percentages of individuals with Medicare coverage who were screened by a stool-based test within each racial or ethnic group in 2017. The racial and ethnic groups that had the highest percentage were: Whites (5.7%), Blacks (5.2%), and individuals who did not have a known race or ethnicity (5.9%). The percentage for all Medicare enrollees in the study population was 5.6%. Figures 21 and 22 show, for each racial group, the percentage of individuals who had a follow-up colonoscopy and what percentage of those individuals had out-of-pocket costs.

**FIGURE 20: PERCENTAGE OF MEDICARE ENROLLEES WHO HAD STOOL-BASED TESTS BY RACE, 2017**



**FIGURE 21: PERCENTAGE OF MEDICARE ENROLLEES WHO HAD FOLLOW-UP COLONOSCOPIES BY RACE, 2017**



\* Data suppressed.

**FIGURE 22: PERCENTAGE OF MEDICARE ENROLLEES WHO HAD FOLLOW-UP COLONOSCOPIES AND OUT-OF-POCKET COSTS BY RACE, 2017**



\* Data suppressed.

## NUMBER OF PATIENTS AGES 45 TO 49 WHO WOULD BE SCREENED BASED ON THE USPSTF RECOMMENDATION

In 2017, 1,119 (1.7%) Arkansans ages 45 to 49 had a stool-based test screening. Of these individuals, 451 (40.3%) had out-of-pocket costs and 732 (65.5%) had stool-based tests paid for by a commercial payer, Medicaid/Arkansas Works, or Medicare.<sup>iv</sup> The majority of individuals who had payer paid stool-based tests, 86.5% (633), had fully paid tests. About 14% (99) had partially paid tests.

About 10% (106) of those who had a stool-based test had a follow-up colonoscopy within six months. Eighty-seven percent (92) of individuals had their follow-up colonoscopies paid for by a payer in 2017. Fifty-nine percent (54) of individuals with a payer paid stool-based test had their tests fully paid and 41.3% (38) of those individuals had partially paid tests.

<sup>iv</sup> The numbers and percentages of individuals with out-of-pocket costs and payer paid stool-based tests or follow-up colonoscopies are not mutually exclusive. For example, an individual may have both a partially paid stool-based test and out-of-pocket costs or both a partially paid follow-up colonoscopy and out-of-pocket costs.

Forty-eight percent (51) of individuals who had a follow-up colonoscopy had out-of-pocket costs.<sup>iv</sup>

Based on the 2017 rate of screening among 50-to-54-year-olds, 2,429 Arkansans ages 45 to 49 are projected to be screened in 2022 based on the 2021 final USPSTF recommendation. However, the total number of individuals screened may be smaller in 2022 as it will be the first year of screening for this age group. Of these individuals, 304 are estimated to have a follow-up colonoscopy.

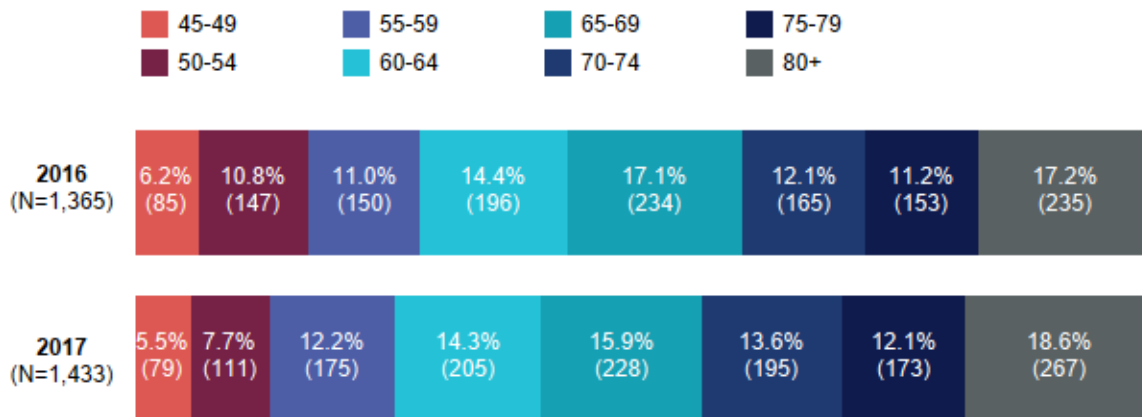
### NUMBER OF PATIENTS DIAGNOSED WITH CRC BY AGE

In 2016, 1,473 Arkansans were diagnosed with CRC. Among persons age 45 and older (n=1,365), those in the 80-and-older age group and the 65-to-69 age group made up the largest proportions of the total individuals with a CRC diagnosis at 17.2% and 17.1%, respectively. Individuals in the 45-to-49 age group made up the smallest proportion at 6.2% of all individuals diagnosed with CRC (Figure 23).

In 2017, the number of Arkansans diagnosed with CRC increased to 1,518. Of this, 1,433 were persons age 45 or older. Similar to the prior year, those in the 80-and-older and 65-to-69 age groups were the highest proportions of the individuals diagnosed, at 18.6% and 15.9%, respectively, and individuals in the 45-to-49 age group made up the smallest proportion at 5.5%.

Appendix D shows the age-adjusted incidence rates by age group for persons age 45 and older.

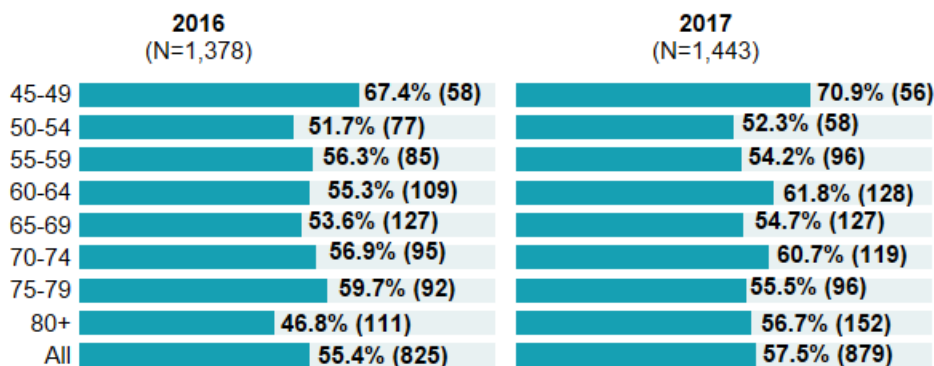
**FIGURE 23: PROPORTION OF INDIVIDUALS AGE 45 AND OLDER DIAGNOSED WITH ANY STAGE OF COLORECTAL CANCER BY AGE GROUP, 2016–2017**



## NUMBER OF LATE-STAGE CRC DIAGNOSES BY AGE

In 2016 and 2017, there were 1,488 and 1,528 any-stage CRC diagnoses, respectively. Over half of all CRC diagnoses in both years were late-stage diagnoses (55.4% in 2016 and 57.5% in 2017). Among those age 45 and older (n=1,378), all but one age group had percentages of late-stage diagnoses above 50% in 2016. In 2017, among those 45 and older (n=1,443), all age groups had over 50% of the diagnoses in the late stage. The percentages of late-stage diagnoses were highest among persons in the 45-to-49 age group at 67.4% in 2016 and 70.9% in 2017 (Figure 24).<sup>v</sup>

**FIGURE 24: PROPORTION OF LATE-STAGE COLORECTAL CANCER DIAGNOSES, BY AGE GROUP, 2016–2017**



\* The CRC diagnoses are not mutually exclusive. An individual may have more than one CRC tumor diagnosis.

<sup>v</sup> Some of the age groups below age 45 had higher proportions of late-stage diagnoses. However, for the purposes of this report, only age groups 45 and older are shown.

## Discussion

This assessment presents CRC incidence among individuals ages 50–75 enrolled in commercial coverage, Medicaid/Arkansas Works, or Medicare; utilization of and out-of-pocket costs for colorectal cancer stool-based screening and follow-up colonoscopies by age and payer type; and a projection of future utilization for persons ages 45 to 49 based on new USPSTF recommendations. Although no statistical-significance tests were performed on the results in the report, there are some important observations to highlight for purposes of advancing policy.

- There was a considerable increase in the utilization of Cologuard as a screening tool from 2017 to 2018. Cologuard represented 5.9% of all tests administered in 2017 and 10% in 2018. This suggests either a change in coverage of the test among payers or a change in test preference by providers or patients.
- The percentage of individuals in the age 50–54 subgroup who received a stool-based test in 2017 (3.7%) was lower than the percentage of individuals receiving a stool-based test in the overall study population of individuals ages 50–74 (5.0%). This suggests that access barriers may be more prevalent in younger populations. Indeed, individuals in the 50–54 age subgroup experienced out-of-pocket costs more often (15.7% in 2017, 13.9% in 2018) compared to those in the entire study population (8.1% in 2017, 7.7% in 2018). This could be the result of differences between the coverage policies of commercial coverage and those of Medicare, which is coverage that individuals in the subgroup are unlikely to have.
- Individuals covered by Medicaid/Arkansas Works were less likely to have received a stool-based test across both years (2.7% in 2017, 3.9% in 2018) compared to those in commercial coverage (5.2% in 2017, 5.1% in 2018). This could be the result of a number of factors, including differential coverage/exposure to cost-sharing in the traditional Medicaid program (Arkansas Works enrollees are in private plans that are required to cover screening at no cost) or other access barriers commonly observed in low-income communities and communities of color. Among Medicare enrollees ages 65–75 in 2017, those whose race was unknown (5.9%) or White (5.7%) were slightly more likely to have received a stool-based test than the total study population (5.6%), while those whose race was Black (5.2%), Native American (4.2%), Hispanic (3.7%), or Asian (2.7%) were less likely than the total study population to have received a stool-based test in the same year.
- The rate of follow-up colonoscopies observed in the study population (12.0% in 2017, 11.9% in 2018) was similar to what would be expected, given that the reported positivity rates for stool-based screening tests range from 2.4% to 28% among gFOBTs and FITs<sup>8</sup> and 12.2% to 16.1% for Cologuard.<sup>9,10</sup> The rate of follow-up colonoscopies for the 50–54 age subgroup was only slightly higher than the rate for the overall population. There was only minor variation in the rates of follow-up colonoscopies by payer type and rurality. Among Medicare enrollees ages 65–75 in 2017, those whose race was Black (12.9%) or White (12.0%) were slightly more

likely than the total study population to have received a follow-up colonoscopy, while those whose race was unknown (8.2%) were less likely to have received a follow-up colonoscopy. Due to data suppression requirements, however, observations on these findings are limited.

- Among those who had a follow-up colonoscopy, more than three in five enrollees (62.9% in 2017, 62.1% in 2018) had out-of-pocket costs. Roughly half of commercial plan enrollees in 2017 and 2018 had out-of-pocket costs, while Medicaid/Arkansas Works enrollees had much more limited exposure to out-of-pocket costs (4.7% of enrollees in 2017 and in 2018). This suggests that the impact of the out-of-pocket cost protections in Act 779 of 2021 will be substantial among those enrolled in commercial plans, including those in plans offered to Arkansas Works beneficiaries. Among Medicare enrollees ages 65–75 in 2017, more than four in five (81.6%) had out-of-pocket costs for a follow-up colonoscopy. Since the majority of screening procedures occur in Medicare populations, Medicare policy change is critical to eliminating financial barriers for access to follow-up colonoscopies. Medicare enrollees whose race was unknown (68.8%) were less likely to be exposed to cost-sharing for a follow-up colonoscopy when compared to the total study population (81.6%), while cost-sharing exposure for those whose race was White (82.2%) or Black (81.0%) were comparable to cost-sharing exposure for the total study population. Again, data suppression requirements limit findings based on race.
- In 2016 and 2017, there were 1,488 and 1,528 CRC diagnoses, respectively, in Arkansas for all age groups. More than half, 55.4% in 2016 and 57.5% in 2017, of all the CRC diagnoses were late-stage. The highest percentages of late-stage diagnoses were among the 45-to-49 age group, at 67.4% in 2016 and 70.9% in 2017. This suggests that extension of recommended screenings to ages 45 to 49 by the USPSTF could have a substantial impact on early detection.
- Based on the 2017 rate of screening and follow-up colonoscopies among 50-to-54-year-olds, 2,429 Arkansans ages 45 to 49 are projected to be screened in 2022 based on the 2021 final USPSTF recommendation. However, the total number of individuals screened may be smaller in 2022 as it will be the first year of screening for this age group. Of these individuals, 304 are estimated to go on to have a follow-up colonoscopy.

Since the start of the coronavirus disease 2019 (COVID-19) pandemic, there have been disruptions and delays to cancer diagnoses and treatment. For example, delays due to supply chain disruption, medicine shortages, or a reduction in the healthcare workforce staff.<sup>11,12</sup> Continued observation of changes in utilization and out-of-pocket costs are warranted to assess the impact of 2021 legislative changes, USPSTF recommendations, and COVID-19 pandemic.

## Appendices

### APPENDIX A: SEER CODE DESCRIPTIONS FOR CRC STAGE AT DIAGNOSIS

Code	Description	Stage
0	In situ	Localized
1	Localized	Localized
2	Regional, direct extension only	Advanced
3	Regional, regional lymph nodes only	Advanced
4	Regional, direct extension and regional lymph nodes	Advanced
7	Distant	Advanced
8	Benign, borderline	*
9	Unstaged	Unstaged

\* In this analysis we did not observe any cases of colorectal cancer that had an associated stage code of 8, for benign or borderline. An associated stage designation was not assigned for this code.

### APPENDIX B: INDIVIDUALS AGES 50–75 IN THE STUDY POPULATION WHO HAD STOOL-BASED TEST SCREENINGS AND FOLLOW-UP COLONOSCOPIES

Age Group	Year	Study Population	Persons Who Had a Stool-Based Test			Persons Who Had an Associated Follow-Up Colonoscopy		
			Had a Stool-Based Test	Had a Payer Paid Test	Had Out-of-Pocket Costs	Had a Follow-Up Colonoscopy	Had a Payer Paid Follow-Up Colonoscopy	Had Out-of-Pocket Costs
50-75	2017	467,925	23,182	21,155	1,879	2,780	2,673	1,749
50-75	2018*	481,135	12,005	10,619	922	1,431	1,366	888
50-54	2017	73,008	2,689	2,302	422	335	306	111
50-54	2018*	70,235	1,284	1,019	179	160	146	51

\* Data from January 1, 2018, to June 30, 2018.

## APPENDIX C: INDIVIDUALS AGES 50–75 WHO HAD STOOL-BASED TEST SCREENINGS AND FOLLOW-UP COLONOSCOPY BY PAYER

Payer Type	Year	Study Population	Persons Who Had a Stool-Based Test		Persons Who Had an Associated Follow-Up Colonoscopy	
			Had a Stool-Based Test	Had Out-of-Pocket Costs	Had a Follow-Up Colonoscopy	Had Out-of-Pocket Costs
Commercial	2017	127,935	6,680	1,361	787	390
Commercial	2018	136,219	6,950	1,353	726	358
Medicaid/ AR Works	2017	87,569	2,352	*	301	14
Medicaid/ AR Works	2018	89,064	3,506	*	402	19
Medicare	2017	243,638	13,648	465	1,629	1,330

\*\* Data suppressed.

## APPENDIX D: NUMBER AND AGE-ADJUSTED INCIDENCE RATE OF COLORECTAL CANCER DIAGNOSES BY AGE GROUP

Age Group	2016		2017	
	Number of Persons	Age-Adjusted Incidence Rate (per 100,000 persons)	Number of Persons	Age-Adjusted Incidence Rate (per 100,000 persons)
45-49	85	3.31	79	3.12
50-54	147	4.59	111	3.51
55-59	150	3.75	175	4.37
60-64	196	4.33	205	4.43
65-69	234	5.23	228	4.95
70-74	165	4.53	195	5.19
75-79	153	5.03	173	5.50
80+	235	6.93	267	7.81



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