Rates of Follow-up Colonoscopy After Positive Stool-Based Screening Test for Colorectal Cancer

HSD115

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BACKGROUND

Colorectal cancer (CRC) is the third leading cause of new cancer cases and cancer deaths in the United States (US). Based on 2023 estimates, more than 106,000 colon cancer cases and 46,000 rectal cancer cases will be diagnosed in the US, and the number of people with a death due to these cancers will exceed 52,000.[1]

After conducting a systematic review of the benefits and harms of screening for CRC, the US Preventive Services Task Force (USPSTF) concluded that CRC screening has substantial net benefit in adults 50 to 70 years and moderate net benefit in adults 45 to 49 years.[2] USPSTF guidelines from 2016 recommend CRC screening for all adults 50 to 75 years; these guidelines were updated in 2021 to lower the screening age to start at 45 years.[2,3]

Risk and benefits vary by screening strategy. While stool-based tests (SBTs) including fecal immunochemical tests (FIT), high-sensitivity guaiac fecal occult blood tests (gFOBT), and stool DNA (sDNA) tests can be used for initial screening, a positive SBT requires follow-up with colonoscopy to achieve the benefits of CRC screening.[2]

A prior study found a less than optimal rate of follow-up colonoscopy among patients with a positive SBT (65%) and variations in the follow-up rate by SBT type (72% for sDNA tests vs. 46%v for FIT).[4]

As this prior study was conducted with data from 2006 through the first half of 2020, we were interested in assessing these outcomes using more recent data.

OBJECTIVE

The objective of this study was to assess follow-up colonoscopy rates within 6 months after a positive SBT overall, by insurance type (commercial or Medicare Advantage), and by calendar year (2017, 2018, 2019, 2020, 2021, and January through October 2022).

METHODS

Data source

- De-identified laboratory result data linked with de-identified administrative claims for commercially insured and Medicare Advantage enrollees in the OptumLabs Data Warehouse

Study design

- Descriptive, retrospective analysis
- Study period – January 1, 2017 to October 31, 2022
- Index date – Date of the first valid positive SBT result in a calendar year in the study period
- Baseline period – 360 days prior to the index date
- Follow-up period – 180 days after the index date

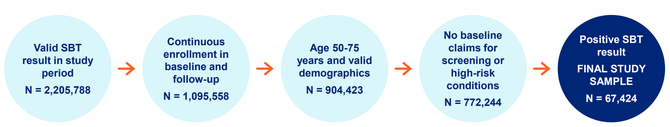
Inclusion criteria

- Age ≥50 to 75 years (based on 2016 USPSTF guidelines to align with the study timeframe)
- ≥1 valid positive laboratory test result for a SBT in the study period
  - SBT results were identified with the following Logical Observation Identifiers Names and Codes (LOINC®): 12503-9, 14563-1, 14564-9, 14565-6, 2335-8, 27396-1, 29771-3, 50196-5, 57803-9, 57905-2, 58453-2, 77353-1, 77354-9, 80372-6
- Continuous enrollment in the baseline and follow-up periods
- No claims with a procedure code for a SBT or screening procedure in the baseline period
- No claims with a diagnosis code for a high-risk condition (CRC, ulcerative colitis, Crohn's disease, history of colon polyps) in the baseline period

Outcome measure

- Follow-up colonoscopy rate – Calculated as the percentage of patients with a positive SBT who had ≥1 claim for a colonoscopy in the 180-day follow-up period after the positive SBT
  - Colonoscopy claims were identified with the following Current Procedural Terminology (CPT®) codes: G0105, G0121, 45378-45398

Figure 1. Study sample identification and attrition



RESULTS

Follow-up colonoscopy rates among positive tests were 47% overall between 2017 and 2022.

From 2017 to 2022, rates increased from 39% to 57%.

Higher follow-up colonoscopy rates were observed with commercial than Medicare Advantage insurance.

Figure 2. Follow-up colonoscopy rates among positive tests by calendar year, overall and by commercial or Medicare Advantage insurance type

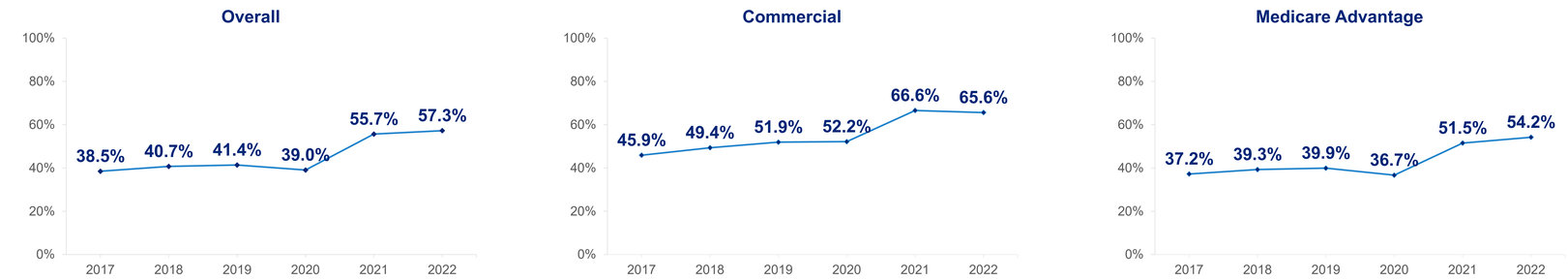


Table 1. Demographics of patients with a positive SBT in the study sample by calendar year

	Total N=67,424	2017 N=10,069	2018 N=9,881	2019 N=9,806	2020 N=8,926	2021 N=17,715	2022 (Jan to Oct) N=11,027
Age							
Mean (SD)	66.6 (6.7)	67.0 (6.5)	67.1 (6.4)	67.2 (6.2)	66.8 (6.5)	65.8 (7.1)	66.1 (7.0)
Median	68	69	69	69	68	68	68
Sex							
Female, n (%)	34,277 (50.8%)	4,992 (49.6%)	4,907 (49.7%)	4,938 (49.6%)	4,502 (50.4%)	9,256 (52.2%)	5,752 (52.2%)
Insurance type							
Commercial, n (%)	13,254 (19.7%)	1,464 (14.5%)	1,404 (14.2%)	1,190 (12.1%)	1,361 (15.2%)	4,884 (27.6%)	2,951 (26.8%)
Medicare Advantage, n (%)	54,170 (80.3%)	8,605 (85.5%)	8,477 (85.8%)	8,616 (87.9%)	7,565 (84.8%)	12,831 (72.4%)	8,076 (73.2%)

DISCUSSION

- Rates of follow-up colonoscopy among patients with a positive SBT were within the ranges observed in a previous study (65% overall, 72% for sDNA and 46% for FIT).[4]
- Further research is needed to assess factors that contributed to the higher rates of follow-up colonoscopy observed in 2021 and 2022 versus earlier years including:
  - Examination of results by SBT type to determine whether variations were due to a different distribution of SBT type across the calendar years.
  - Examination of results by benefit design or coverage of SBT and colonoscopies to determine whether benefit coverage factors contributed to the changes over time.
- Higher follow-up colonoscopy rates among commercial plan enrollees were also noted in a previous study which found generally higher rates among the younger, commercial population.[4]
- While our study used a 6-month timeframe for evaluating follow-up colonoscopies after a positive SBT, higher follow-up colonoscopy rates may have been observed with a longer follow-up. We conducted a sensitivity analysis using a 12-month follow-up in the subset of patients with 12 months of follow-up continuous enrollment and found a slightly higher overall rate of colonoscopy (53%).
- As some quality measure evaluations include a longer list of CPT codes for colonoscopy procedures than used in this study (other lists include codes for colonoscopies through stoma),[5] we conducted a sensitivity analysis of follow-up colonoscopies using this broader procedure code list and found minimal difference (<0.1%) in the follow-up colonoscopy rate. The minimal impact from these additional codes may be explained by the exclusion of high-risk patients from our study sample.
- Barriers to follow-up colonoscopy were not able to be assessed in this claims data analysis. Further research is needed to understand factors that contribute to low screening completion rates including social determinants of health, financial barriers, and access to colonoscopy procedure sites.

CONCLUSIONS

- Follow-up colonoscopy rates among patients with positive SBT improved from 2017 to 2022 but remain suboptimal.
- In 2021-2022, 43% of patients with a positive SBT did not complete the recommended follow-up colonoscopy and did not receive the benefits of CRC screening.
- Future studies are warranted to investigate differences in follow-up colonoscopy rates by SBT type and barriers to colonoscopy.

References

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