



American Society for Gastrointestinal Endoscopy Colorectal Cancer Screening Project National Summit

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(footnotes appear on last page of article)

The colorectal cancer (CRC) screening rate in the United States has increased in the last 10 years as a result of national guidelines, mandates, and coverage requirements, yet the follow-up or completion colonoscopy rate (defined here as completing a colonoscopy after receipt of abnormal stool-based test [SBT] results) for uninsured and underinsured patients remains unacceptably low.^{1,2} The American Society for Gastrointestinal Endoscopy (ASGE) has consequently launched the “CRC Screening Project” to ensure that underserved patients who have an abnormal stool-based CRC screening test receive a timely completion colonoscopy given that early detection of CRC has a 90% 5-year survival rate.^{3,4} A central part of this effort was a National CRC Screening Summit hosted by the ASGE at its Institute for Training and Technology in Downers Grove, Illinois in August 2023. This seminal event featured presentations by leading experts including gastroenterologists, allied healthcare professionals, health services researchers, and advocacy experts. This article highlights some of the Summit’s key messages, outcomes, and takeaways.

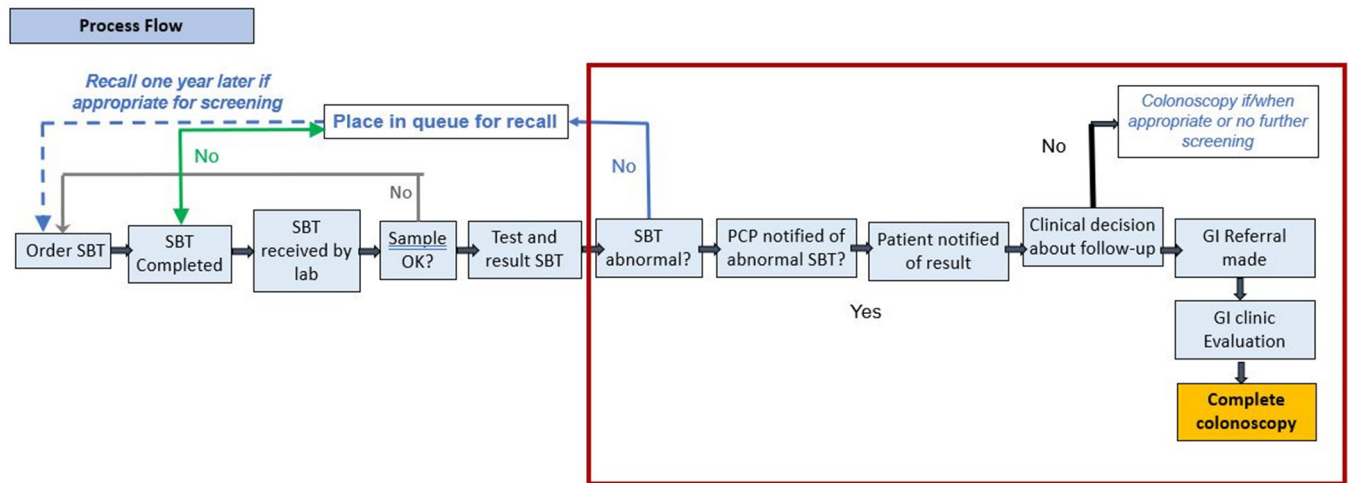
According to the American Cancer Society’s (ACS) Colorectal Cancer Statistics 2023 report, CRC is the third most common cancer and the second leading cause of cancer-related deaths in the United States. In 2023, more than 150,000 people were diagnosed with CRC and more than 52,000 died from the disease.⁵ Of these, 19,550 (11%) were diagnosed under age 50 years and 3750 (7%) died before age 50.⁶ Approximately \$24.3 billion were spent on CRC treatment in the United States in 2020, the second-highest spending for any cancer, accounting for 12% of all cancer treatment costs.

CRC screening guidelines have changed as the disease has become more prevalent in younger people, a condition referred to as “early-onset CRC.” CRC in patients younger

than age 55 accounted for 11% of all CRC in 1995 and increased to 20% of all CRC by 2019.⁵ By 2020, it was estimated that 11% of CRC and 15% of rectal cancers occurred in patients who were under age 50. The incidence rate in people aged 45 to 49 is now similar to the incidence rate observed in 50-year-olds before routine CRC screening began in the 1990s.⁷ The increase in CRC among younger people is believed to be because of complex interactions involving lifestyle, diet, and obesity.^{5,8} In response, the American Cancer Society reduced its recommended CRC screening age from 50 to 45 in 2018, and the U.S. Preventive Services Task Force followed suit in 2021. In 2022, the U.S. Multi-Society Task Force on Colorectal Cancer, which represents the ASGE, American College of Gastroenterology, and American Gastroenterological Association, adopted the recommendation that every patient at average risk for CRC should be screened for the disease beginning at age 45, no longer restricting this recommendation to African American people.^{3,4}

The incidence and mortality of CRC varies by race and ethnicity. Although the all-race incidence and death rates for CRC in the United States are 36.5 and 13.4 per 100,000, respectively, those numbers climb to 42.6 and 18.1, respectively, for African Americans and 49.2 and 17.4, respectively, for Native Americans and Alaskan Natives.³ According to Doubeni et al,⁹ research suggests some of these disparities may be attributable to modifiable causes including dietary choices, sedentary lifestyle, obesity, and smoking. Their research also showed that people with lower socioeconomic status are more likely to get CRC regardless of other risk factors. CRC survival discrepancies among different population groups can be attributed to differences in health insurance coverage,¹⁰ as CRC is more common in populations with less access to early detection and treatment.⁹ Improving early diagnosis of CRC can help address racial and ethnic

Clinical Steps to Diagnostic Follow-up After Stool-based CRC Screening



SBT= stool-based test

Adapted from: Robertson et al, Gastro; 2017.
NIH/NCI R03CA230947-01A1.

Figure 1. Multiple steps are needed to complete stool-based screening. CRC, Colorectal cancer; SBT, stool-based test; PCP, primary care provider; PPV, positive predictive value.

disparities as well as those arising in underserved rural areas because CRC diagnosed at a localized stage allows for comparable survival rates across racial and ethnic groups.¹¹

CRC SCREENING OPTIONS

Colonoscopy offers diagnostic and interventional capabilities in a single procedure, whereas SBTs like fecal occult blood testing, fecal immunochemical testing (FIT), and multitarget stool DNA testing (mt-sDNA) are the first part of a 2-step screening process.⁵ The U.S. Multi-Society Task Force on Colorectal Cancer set the completion colonoscopy benchmark at 80% compliance for people who have abnormal SBT results.¹² Health systems that have achieved >80% screening rates tend to offer at least 1 stool-based screening modality.⁶ SBTs are usually more accessible and cost-effective in the appropriate clinical setting,¹³ but if a stool-based CRC screening test yields an abnormal result, a completion colonoscopy is necessary to evaluate the patient for polyps and CRC. Several steps must be coordinated and carried out to achieve a completion colonoscopy (Fig. 1). Failing to get a completion colonoscopy within 6 to 9 months after an abnormal SBT has been associated with a higher incidence of cancer, advanced stage at presentation, and mortality.¹³⁻¹⁶ Thus, the value of stool-based testing is negated when the completion colonoscopy is not performed in a timely manner.

In July 2024, the U.S. Food and Drug Administration approved Shield, Guardant Health's blood test (Palo Alto, Calif, USA) for CRC screening. As this test is used for CRC screening, it will be interesting to study how it is used, follow-up after abnormal results, and, ultimately, its impact.

COMPLETION COLONOSCOPY BARRIERS

In 2023, Mohl et al¹⁷ published the results of a study finding that only 56% of patients have a completion colonoscopy within a year after an abnormal SBT (Fig. 2). The same study showed that some populations have significantly lower completion colonoscopy rates, including black and Asian patients, patients who are covered by Medicare or Medicaid (vs commercial insurance), and those who have an abnormal FIT (vs mt-sDNA test) result.

The reasons for low completion colonoscopy rates or delays are multifactorial and complex. Screening colonoscopy rates have historically been lower for some populations because of cost and accessibility. Noninvasive options such as SBTs often represent a practical option for patients who lack health insurance or access to care.^{12,18} It is likely these tests will become more common as they become more convenient, cost-effective, and accurate.

A study by the U.S. Veterans Administration found that of the completion colonoscopy barriers that were reported, 49% were related to patients, 16% were related

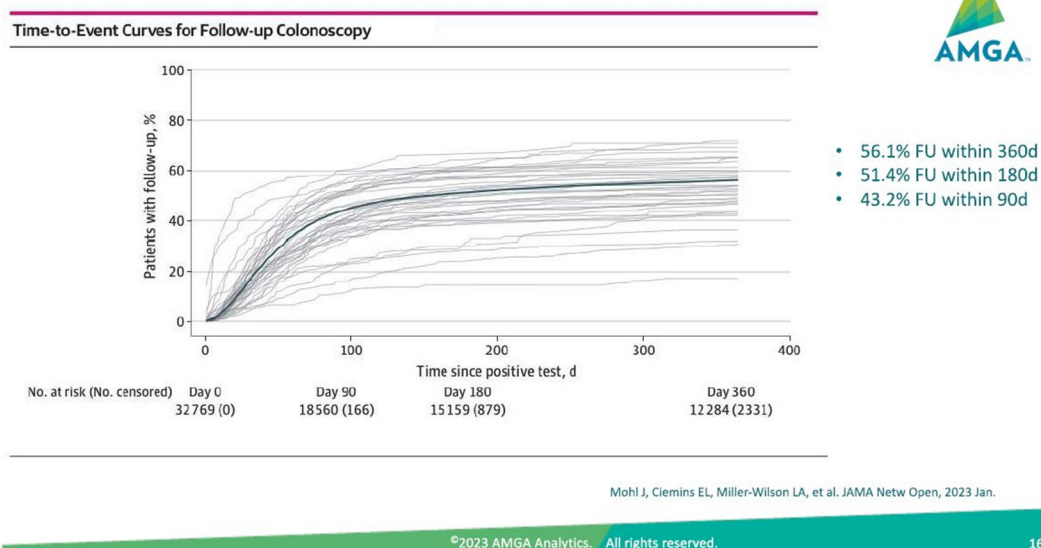


Figure 2. Timing of follow-up colonoscopies. *FU*, Follow-up.

to healthcare providers, and 12% were related to health systems (the balance being multifactorial).¹⁹ The most common patient-related barrier in this study was the patient's decision to decline a colonoscopy (35%). Meanwhile, a retrospective electronic medical record review of patients between the ages of 50 and 64 years who had an abnormal FIT result at a safety-net health system between 2010 and 2013 found that 57% of these barriers were attributed to patients, 18% to providers, and 22% to systems.²⁰

Studies have found that patient-related barriers can take many forms, including fear and anxiety about the procedure and bowel preparation regimen, cost, and health insurance, even when the SBT and colonoscopy are provided free of charge.²¹⁻²⁵ Cooper et al²³ showed higher compliance with completion colonoscopy after mt-sDNA (71.5%) compared with an abnormal FIT (46.7%). The finding of better colonoscopy completion rates after mt-sDNA as compared with FIT has also been shown in other studies.¹⁷ Interestingly, Cooper et al concluded that a combination of provider-level and system-level issues were more frequent barriers for abnormal FIT results, with provider unawareness of the results and lack of internal tracking mechanisms being significant factors. Although the study could not determine the reasons for the differences in follow-up between the 2 types of SBTs, they noted the differences persisted even after adjustments for demographic characteristics such as insurance coverage. It is important to note that mt-sDNA testing uses a patient navigator to encourage patients to return the testing kits and includes a notification system to ordering physicians, which may help emphasize the importance of follow-up and improve communication of abnormal results.

TABLE 1. Facilitators and barriers to follow-up

Facilitators to follow-up
Integration with the electronic health record
Transparent reporting
Ease of referral
Dedicated staff
Anticipatory guidance
Barriers to follow-up
Lack of an integrated gastroenterology department
Breakdown in communicating results and follow-up scheduling

In a recent retrospective study, Burns et al²⁶ found that less than two-thirds of patients with an abnormal FIT result had the International Classification of Diseases, Tenth Revision, code R19.5 (abnormal FIT) added to the medical record within 30 days. The study found that patients with an abnormal FIT who had the R19.5 code added to the medical record within 90 days were significantly more likely than other patients with an abnormal result and without the code to have a completion colonoscopy within 6 months (40.9% vs 16.8%, $P < .001$). This study suggests that adding the R19.5 code can be a strategy to document abnormal FIT results and help increase the likelihood of a completion colonoscopy.²⁶

Exacerbating matters is the finding that providers may not be aware of the abnormal SBT result, suggesting completion colonoscopy rates are low because of a lack of adequate internal tracking and monitoring mechanisms.^{17,27,28} One study conducted in 2021 discovered that common systems-level CRC screening barriers included the lack of

Address barriers at systems then individual levels

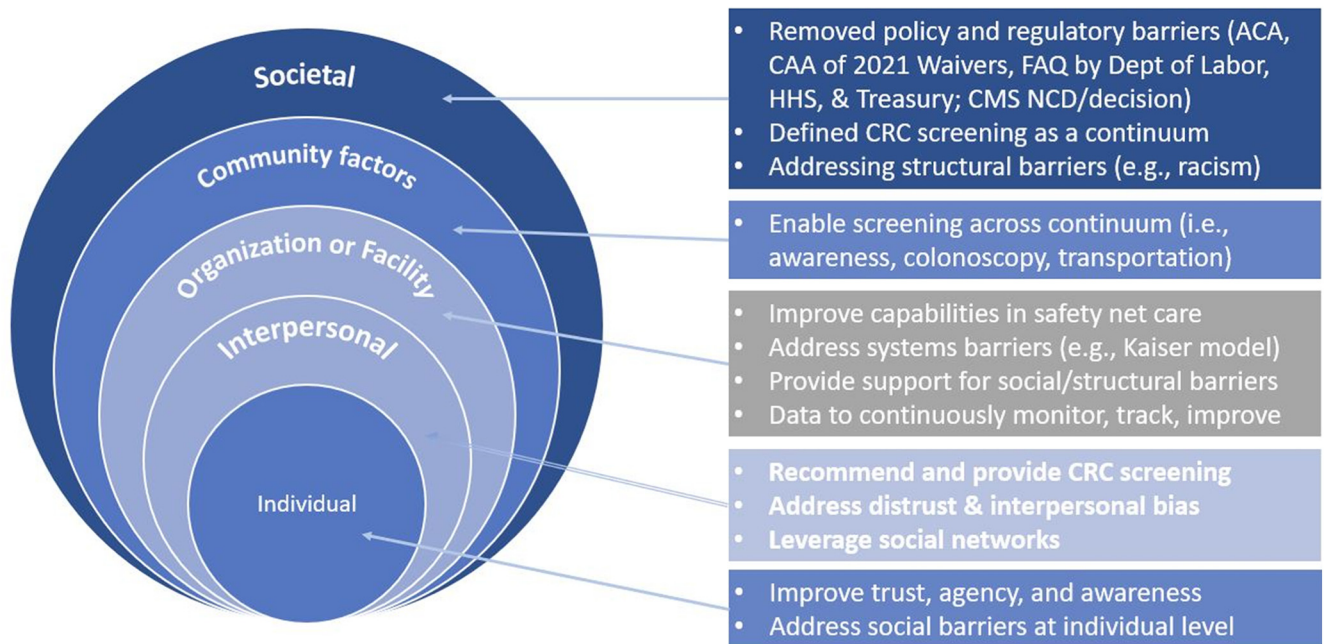


Figure 3. Factors influencing barriers to completion. *ACA*, Affordable Care Act; *CAA*, Consolidated Appropriations Act of 2021; *FAQ*, frequently asked questions; *HHS*, U.S. Department of Health and Human Services; *CMS*, Centers of Medicare & Medicaid Services; *NCD*, national coverage determinations; *CRC*, colorectal cancer.

an order for colonoscopy after an abnormal SBT result and missed preprocedure appointments.²³ For example, a patient may not be able to schedule a completion colonoscopy with a gastroenterologist without an order or referral from a primary care provider. Further, complex scheduling steps, like requiring gastroenterology clinic visits or precolonoscopy appointments before colonoscopy, can delay or hinder completion colonoscopies. Although some patients may require these types of visits because of anticoagulant use, history of anesthetic reaction, or medical complexity, many patients may be able to use a direct endoscopy or open-access referral system.

Patient navigators at 2 large national Centers for Disease Control and Prevention–funded CRC screening programs reported that key barriers included personal and cultural factors like a lack of awareness about the process (81%), lack of health insurance (78%), embarrassment about or fear of a cancer diagnosis or procedure (72%), and a lack of transportation (76%).²⁹ Multiple quantitative studies (electronic health records and surveys of patients, providers, healthcare systems, and navigators), qualitative studies (interviews and focus groups), and mixed methods studies place the most persistent completion colonoscopy barriers into 3 categories: logistical (complexity in scheduling), financial (cost with or without health insurance), and personal (fear related to the procedure, getting a cancer diagnosis, or bowel preparation).¹⁸ Related to medical practices and health systems, the American Medical Group Association noted that CRC

screening barriers can include nonintegrated gastroenterology departments, breakdowns in communicating test results, poor follow-up scheduling practices, and lack of a standardized process or anticipatory guidance for next steps in the event of an abnormal SBT result.³⁰

The greatest overall concern is that patients who fail to get a completion colonoscopy have increased risk of death and advanced-stage CRC.^{5,6,13-15,25} Meester et al²⁹ showed that in cases of abnormal FIT results, every month that a completion colonoscopy is delayed was associated with a .1 per 1000 person increase in the cancer incidence. Time to completion colonoscopy is also an important factor. A study tracking more than 70,000 patients with abnormal FIT results found no significant difference in overall CRC risk or advanced CRC if the completion colonoscopy was performed within 10 months as compared with 8 to 30 days; however, it did find a higher risk of CRC and advanced stage disease if the completion colonoscopy was performed after 10 months.¹⁷ Table 1 and Figure 3 provide an overview of barriers and suggested actions or system-level changes that can serve to remove barriers to facilitate completion colonoscopy.

STRATEGIES TO INCREASE COMPLETION COLONOSCOPY RATES

One of the consensus outcomes of the ASGE Summit was that quality metrics have great potential to increase

ASGE 'CRC Screen' Project: The Solution (Goals)



Figure 4. Goals of the CRC Screening Project. *CRC*, Colorectal cancer.

TABLE 2. Recommendations made during Summit for CRC Screening Project on a scale from 1 to 5

Recommendations	Importance
Update progress in 1 year	4.7
Use community healthcare workers to connect culturally with patients	4.6
Bring in additional health equity experts	3.2

CRC, Colorectal cancer.

the completion colonoscopy rate. Today's performance measures typically only address initial CRC screening rates. The National Committee on Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS) measure encourages private health insurers to compete on CRC screening because they know it is a performance measure that can affect their rating. The HEDIS measure is currently used by private insurers to evaluate adults who are aged 50 to 75 years who have been screened for CRC using an annual fecal occult blood testing, a DNA SBT every 3 years, a flexible sigmoidoscopy every 5 years, a colonoscopy every 10 years, or a CT colonography every 5 years. The universal data set that federally qualified health centers (FQHCs) use to track CRC screening and care for the Centers for Medicare & Medicaid Services (CMS) adult core set evaluates screening use but not follow-up after an abnormal stool-based screening result.³¹

In his presentation during the ASGE Summit, Samir Gupta, MD, MSCS, AGAF, from the University of California

San Diego and the San Diego Veterans Affairs Healthcare System, emphasized that a CMS quality metric to track and measure completion colonoscopies would result in significantly better health outcomes, reduce the liability associated with missed abnormal results, and optimize the role of the gastroenterologist in the CRC screening process. Effecting this kind of change requires research and analysis investment, including studying its feasibility, implementation, and resource requirements. Successfully incorporating completion colonoscopy into stool-based CRC screening quality metrics will incentivize higher rates of completion as the process will lead to greater visibility among the public, improved care will be promoted in public health messaging, payers may respond to higher quality ratings, and providers may be motivated by increased reimbursement to follow up with patients.

A study by Ciemins et al³² developed and tested an additional, complementary completion measure to the current HEDIS CRC screening measure, which tracks completion colonoscopy for patients with an abnormal SBT result. The CRC screening completion measure assessed the rates of completion colonoscopy within 6 months for adults aged 45 to 75 years with an abnormal initial stool-based CRC screening test. The study also allowed for the opportunity to study disparities affecting CRC screening and care. These findings suggest that a measure on follow-up colonoscopy after an abnormal result of a SBT for CRC is warranted based on low current performance rates and high feasibility, validity, and measurement reliability. They

TABLE 3. Summit recommendations and survey results about ways to increase CRC screening [beyond the CRC Screening Project] on a scale from 1 to 5

	Importance
Advocate for funding to cover patient navigation after abnormal tests	4.8
Support a new quality measure	4.7
Develop a quality measure for a positive noncolonoscopic test, including social determinants of health	4.7
Establish a new Healthcare Effectiveness Data and Information Set metric for abnormal test results	4.5
Minimize wait times and low conversion rates for people with positive first-order tests	4.5
Encourage states, insurers, and payers to make high screening rates a standard	4.5
Increase use and interventions of patient navigators	4.4
Increase provider education on abnormal SBT results	4.4
Improve provider-to-patient education for when a SBT is indicated and follow up steps for abnormal results	4.4
Increase primary care provider awareness	4.4
Bring stakeholders together to take responsibility for quality measure	4.4
Help federally qualified health centers develop partnerships with gastroenterologists to facilitate follow-up	4.4
Encourage Medicare and other insurers to provide patient navigation after an abnormal test result	4.4
Form partnerships with gastroenterology groups, primary care providers, Accountable Care Organizations, American Medical Group Association, the National Cancer Institute, and cancer centers	4.3
Develop action plans to move beyond talking and toward solutions	4.3
Improve education and messaging on colonoscopy preparation and preparation hesitancy	4.2
Take leadership role as screening expands to SBTs, blood-based tests, and multi-cancer early detection tests	4.2
Acknowledge multiple screening options per the U.S. Preventive Services Task Force	4.2
Ensure Centers for Medicare & Medicaid Services' communications (eg, FAQs) reflect a commitment to health equity for all patients	4.2
Increase funding for national Colorectal Cancer Prevention and Treatment program	4.2
Promote need for providers and health systems to report follow-up rates	4.2
Develop reportable measure for abnormal SBT result follow-up	4.2
Work with Fight CRC to develop materials on cost-sharing	4.1
Encourage gastroenterologists to address health disparities by urging their uninsured patients who need a follow-up colonoscopy to enroll in Medicaid	4.1
Conduct demonstration project on rolling out navigation efficiently and effectively	4.1
Look for opportunities to reduce patient cost-sharing	4.1
Develop plan for all gastroenterology practices to contribute to health equity efforts	4.0
Get health system buy-in on performance measures like reporting and pay	4.0
Establish health equity criteria for ASGE endoscopy centers of excellence	3.9
Disseminate quality metrics to federally qualified health centers	3.9
Use "abnormal" vs "positive" for CRC stool-based test results	3.9
Help develop national and/or local navigation services for patients	3.8
Work with primary care societies to increase awareness	3.8
Provide special recognition (eg, ASGE's Endoscopy Unit Recognition Program) for practices that donate services	3.7
Encourage ASGE members to donate follow-up colonoscopies for uninsured and underinsured patients	3.6
Use "completion colonoscopy," or "required colonoscopy," for follow-up of abnormal SBT results vs "diagnostic colonoscopy" or "follow-up colonoscopy"	3.6
Use pilots to increase overall CRC screening	3.6
Develop plan for screening test for asymptomatic individuals	3.4

CRC, Colorectal cancer; SBT, stool-based test; ASGE, American Society for Gastrointestinal Endoscopy.

found the measure feasible to institute, and the median of healthcare organizations had a completion colonoscopy rate of 47.9% within 6 months; however, the range across the 38 healthcare organizations they studied was 13.1%

to 69.9%. Lower completion colonoscopy rates were observed among black and Hispanic patients as well as those with Medicaid or Medicare insurance. Further testing is underway through 20 health systems

TABLE 4. ASGE CRC Screening Project Advisory Council

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ASGE, American Society for Gastrointestinal Endoscopy; CRC, colorectal cancer.

participating in a national CRC Screening Best Practices Learning Collaborative.³⁰

Another key consideration that emerged during ASGE's Summit is that healthcare practices and systems can increase completion colonoscopy rates by formally identifying staff who are dedicated to the effort, including a care coordinator and/or "champion." Transparent reporting processes, integrated electronic health records, tracking mechanisms, referral systems, and standardized follow-up communication processes are also crucial. Practices should develop checklists and frequently asked questions for patients with abnormal SBT results and their primary care providers.

ASGE's CRC SCREENING PROJECT AND NATIONAL SUMMIT

The goal of the ASGE's CRC Screening Project is to ensure that underserved patients with abnormal stool-based CRC screening tests receive timely completion colonoscopies (Fig. 4). The ASGE selected Community Health Care Systems, Inc (CHCS), which is an FQHC in Georgia, and MedChi Network Services (MNS) to administer its developmental projects. CHCS and MNS will each identify and assist hundreds of uninsured and underinsured patients to get screened for CRC using a DNA SBT. CHCS and MNS will support these patients with navigators who will guide them through the full continuum of care at no cost to the patients.

The ASGE, CHCS, and MNS are collaborating on the project with an array of key stakeholders, including physicians and allied healthcare professionals, patient navigators, legislators and regulators, state and local advocacy organizations, and community leaders. The ASGE will use the results of this project to develop a roadmap and model

public policy and advocacy that can be replicated in other states.

The 2023 ASGE Summit featured presentations by leading experts who addressed best practices to increase completion colonoscopy rates for underserved patients. The project Advisory Council ranked the recommendations that were submitted by the summit breakout groups during the Summit and in a postmeeting survey on a scale of 1 to 5 to refine the project and suggest other ways the ASGE can help increase CRC screening (Tables 2 and 3). In addition to the quality performance measure, some of the highest-rated recommendations included advocating for funding to cover patient navigation after abnormal tests; minimizing wait times and low conversion rates for people who have positive first-order tests; encouraging states, insurers, and payers to make high screening rates a standard; increasing the use of patient navigators; raising primary care provider awareness on abnormal SBT results; improving provider-to-patient education; and helping FQHCs develop partnerships with gastroenterologists to facilitate completion colonoscopies.

The video recordings and presentations from the Summit are available on the ASGE's "GI LEAP" platform. The ASGE also hosted summits to educate state legislators and other key stakeholders in Georgia and Maryland in 2023. Chaired by ASGE Past President Jennifer Christie, MD, MASGE, the project Advisory Council features 16 of the nation's leading gastroenterologists (Table 4). The project is funded by an unrestricted grant from Exact Sciences, with additional support from Ironwood Pharmaceuticals and Braintree, A Part of Sebel Pharmaceuticals. Visit [ASGE.org/CRC](https://www.asge.org/CRC) for details on the ASGE's CRC Screening Project.

DISCLOSURE

The following authors disclosed financial relationships: P. Hosseini-Carroll: Advisory board and speaker for Janssen. R. B. Issaka: Consultant for Guardant Health, Inc. F. P. May: Consultant for Exact Sciences, Medtronic, Geneoscopy, Free-nome, Guardant, and Natura. D. K. Rex: Research support from Boston Scientific and Olympus America Corp; consultant for Olympus America and Exact Sciences; honoraria from Sebel Pharmaceuticals, Boston Scientific, and Laborie Medical Technologies. J. A. Christie: Consultant for Olympus America; advisory board for Takeda Pharmaceuticals and Neurogastrix Inc. All other authors disclosed no financial relationships. Research support for this study was provided by an unrestricted grant from Exact Sciences, with additional support from Ironwood Pharmaceuticals and Braintree, A Part of Sebel Pharmaceuticals.

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Abbreviations: ASGE, American Society for Gastrointestinal Endoscopy; CHCS, Community Health Care Systems, Inc; CRC, colorectal cancer; FIT, fecal immunochemical testing; FQHC, federally qualified health center; HEDIS, Healthcare Effectiveness Data and Information Set; MNS, MedChi Network Services; ms-sDNA, multitarget stool DNA testing; SBT, stool-based test.

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