

Colorectal Cancer Screening in Black Men: Recommendations for Best Practices

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Screening for colorectal cancer has been demonstrated to reduce colorectal cancer mortality. Blacks have a higher mortality from this malignancy, particularly men, yet screening rates in this population are often found to be lower than in whites. A modest literature demonstrates effective interventions that can increase screening rates in blacks; however, results are not consistent and ongoing work is required. Most work has not addressed specific barriers to screening in black men. Given the lack of studies on black men only, this study evaluated the state of research in the black population using a PubMed search. The authors provide commentary that proposes increased (1) state and local government support for collaborative programs with healthcare organizations, including patient navigation; (2) augmented community-organizing efforts to generate more attention to the need for colorectal cancer screening in the black community, with a focus on black men; and (3) federal research funding to promote investigation into new interventions and evaluation of existing ones. Specific recommendations for black men include lowering the screening age to 45 years, increasing access to health care, the use of patient navigators, and improved reporting and monitoring of colorectal cancer screening rates.

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INTRODUCTION

Blacks with colorectal cancer (CRC) are diagnosed at an earlier age, have a later stage at presentation, higher overall mortality, and worse 5-year overall survival compared with whites. Blacks also have an increased incidence of CRC. Multiple explanations have been proposed, ranging from a biological predisposition to socioeconomic factors that preclude compliance with screening guidelines, to unhealthy behaviors (e.g., obesity, tobacco use, poor diet, physical inactivity), to mistrust of the healthcare system. Attempts to decrease the burden of disease have focused primarily on improved screening. Multiple screening techniques are available to accommodate patient preferences and concerns. This paper reviews the research on CRC screening in the black population, with a focus on black men. Using PubMed, publications on CRC in blacks or African Americans were searched. Retrospective studies, prospective trials, literature reviews,

qualitative research (i.e., interviews or focus groups), and editorial articles were reviewed for CRC screening interventions in the U.S. A formal systematic review, however, was not performed. Using available published research and reports, in this special article, the authors identify what they believe to be best practices to increase CRC screening rates among blacks, with a focus on black men. They include lowering the screening age to 45 years, increasing access to health care, the use of patient navigators, improved reporting and monitoring of CRC

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screening rates, and greater collaboration and engagement among government agencies, public health/healthcare organizations, and black communities.

RESEARCH ON COLORECTAL CANCER SCREENING AMONG BLACKS, WITH A FOCUS ON BLACK MEN

Colorectal Cancer Incidence in Black Men

According to the American Cancer Society, CRC incidence rates in the U.S. are highest among black men, with an incidence of 58.3 per 100,000 in non-Hispanic black men compared with an incidence of 46.9 per 100,000 among all men.¹ The highest rates of CRC incidence among non-Hispanic black men are seen in Mississippi (74.4 per 100,000), Nebraska (71.6 per 100,000), and Louisiana (70.3 per 100,000),² where CRC screening rates tend to be lower.³ Non-Hispanic black men also have increased mortality rates, at 25.9 per 100,000 compared with 17.7 per 100,000 among all men with CRC in 2010–2014.² Over the last decade, in people aged older than 50 years, incidence rates have decreased by 32% and CRC death rates have also decreased by 34%, largely because of increased access to screening. Concomitantly, the black–white gap in CRC mortality has begun to narrow. In black men, the incidence of CRC has decreased each year between 2003 and 2012, but the annual percentage change is less compared with white men (–3.0 vs –3.3). CRC mortality also has shown a more gradual decrease in black men compared with white men over the same time interval (–2.5 vs –3.0); however, in black women, annual declines are greater than those seen in white women.⁴

Colorectal Cancer Screening in Blacks, With a Focus on Black Men

Screening for CRC has been rigorously demonstrated to decrease cancer-specific mortality on a population basis. The American Cancer Society has estimated that 50% of CRC deaths could have been prevented with screening compliance among all eligible patients in the population. Based on National Health Interview Survey data, blacks have slightly lower rates of screening completion (55.6% vs 59.2%).⁵ The efficacy of screening modalities has not been rigorously evaluated in black populations, and not in black men specifically. However, the premise of screening—early detection of cancer and removal of adenomatous polyps (cancer precursors)—holds true in blacks, because they tend to have higher rates of adenomas detected on a screening colonoscopy. Compared

with white men, black men also have larger adenomas detected on average-risk screening exams.⁶ Blacks tend to develop more right-sided cancers, which suggests that flexible sigmoidoscopy, an accepted and rigorously studied option for screening, may be inadequate because it evaluates only the rectum and the left-side of the colon.⁷

Lowering the Recommended Age for Colorectal Cancer Screening in Blacks, With a Focus on Black Men

In the U.S., current guidelines recommend screening for CRC at age 50 years. There are several accepted modalities for screening, including colonoscopy, annual fecal immunohistochemical testing (FIT) cards to detect blood in the stool, flexible sigmoidoscopy, computed tomographic colonoscopy, and fecal DNA testing.⁸ All of the less-invasive screening modalities require a follow-up colonoscopy for positive test results.

Several professional societies have recommended screening at age 45 years in blacks. Until 2017, a lower screening age in this population was not recommended by the U.S. Multi-Society Task Force of CRC, which is a panel of gastroenterologists representing multiple professional societies.⁷ The American College of Gastroenterology has had its own recommendations for a screening age of 45 years in blacks since 2005, with a preference for colonoscopy over other (less-invasive) modalities.⁹ The U.S. Preventive Task Force does not recommend a lower screening age for blacks, indicating that “empirical data about the effectiveness of different screening strategies for these at-risk populations are not available.”¹⁰

Arguments in favor of screening at an earlier age are based upon the higher incidence in this population and the mean earlier age at diagnosis. An analysis of Surveillance, Epidemiology, and End Results (SEER) data from 2000 to 2011 showed that the age at which the slope of the incidence curve increased was 43 years for blacks compared with 47 years in non-Hispanic whites. This analysis used joinpoint regression models, stratifying for SES and geographic location, showing a joinpoint of 42 years in blacks of the lowest SES.¹¹ A separate analysis of black men was not done in this study. Another way of quantifying the impact of screening age on cancer detection determines that 10.6% of CRCs would be missed with a screening age in blacks of 50 years, compared with an estimated 5% that would be missed with a screening age of 45 years. In comparison, in a population of whites screened at age 50 years, only an estimated 5.5% of cancers would be missed.¹² A study using claims data on more than 180,000 blacks showed only 17.4% in those ages 45–49 years had been screened.¹³ In a South Carolina Federally Qualified Health Center (FQHC)

CRC screening program, in which 71% of 665 participants were black, and 29% were male, the adenoma detection rate among those aged 45–49 years was 26%.¹⁴ However, the diagnostic and therapeutic yield of CRC screening in this age group is understudied. Further research on lowering the screening age in blacks should stratify results by sex. Further data is necessary to strengthen the argument to professional organizations and insurers that screening in this age group needs to be covered.

Colorectal Cancer Screening Compliance in Black Men

Lowering the screening age to 45 years alone may not be sufficient to increase CRC cancer screening, as compliance is still a major barrier. The degree to which lower compliance is confounded by educational levels or SES or both is not clear. Targeting the barriers to screening is essential for the black population.¹⁵ In a recent systematic review of the literature, Bromley et al.¹⁶ used the domains of patient-, provider-, and healthcare system-level factors (described by the National Academy of Medicine, formerly known as the Institute of Medicine) to outline key barriers to colonoscopy-based screening in blacks, without a focus on black men. In the 19 publications reviewed, fear of procedures and lack of knowledge were the dominant patient-level barriers to screening. Healthcare provider lack of knowledge, as well as lack of a physician recommendation for screening, were identified as prominent provider-level barriers. Statewide interview data from California demonstrated that blacks are more likely to explain nonscreening behavior by reporting that providers did not make the recommendation.¹⁷ System-level barriers include costs, among both uninsured and insured patients. Indeed, one population-based analysis found no differences in screening between blacks and whites after adjusting for SES.¹⁸

Some studies suggest that blacks are more likely to be screened if offered stool-based testing instead of colonoscopy, although whether this preference is more pronounced in black men is not known.¹⁹ Very high rates of FIT test compliance (more than 80%) were seen in both arms of a randomized trial testing educational materials in a previously unscreened black population.²⁰ If a stool-based test is positive, follow-up colonoscopy is required, and if negative, repeated annual testing is required. In settings with effective screening infrastructure, high rates of repeated testing have been shown with annual testing.²¹ Follow-up colonoscopy in the case of a positive stool-based test may be less likely to occur in blacks, as shown in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening trial, which evaluated outcomes after a

positive flexible sigmoidoscopy. Follow-up rates in black patients were 10% lower than rates in whites.²²

Qualitative research has indicated reticence among both black and white men with regard to the invasive nature of the rectal exam and endoscopic procedures, sometimes because of cultural concepts of masculinity and homophobia, suggesting that increased efforts are needed to target these perceptions.^{23,24}

Some literature has described decreased utilization of cancer screening in those who experience or perceive racism in the healthcare environment. In a large survey study from California, blacks reported the highest rates of perceived general and health care racism (56% and 13%, respectively), with men more likely to report this than women. Those who reported racism were less likely to have completed recommended CRC screenings.²⁵ Limited research on unconscious/implicit bias among healthcare providers has demonstrated this to be of concern, with one study showing an impact on patient–physician interactions.^{26–28}

Efforts to Improve Colorectal Cancer Screening Rates in Blacks, With a Focus on Black Men

Patient navigators have been used to increase cancer screening among blacks.^{29,30} Patient navigation is defined as assistance with access and follow-through within the healthcare system. A unique community-based intervention was tested in a randomized trial in New York City (the MISTER B trial).³¹ Participants were black men aged older than 50 years recruited from barbershops. One arm of the trial included telephone-based patient navigation to support completion of CRC screening either with FIT or colonoscopy. Of the 740 men enrolled, 17% completed CRC screening in the patient navigator group, compared with 8.4% in the control group.³¹ The patient navigator's role was to complete two or more telephone sessions for education, potential logistic and psychosocial barriers to screening, and encouragement to make an appointment for screening. Follow-up calls could extend for 6 months, depending on the circumstances. Patient navigators were community health workers. In the Screening Colonoscopies for People Everywhere in South Carolina (SCOPE SC) program, patient navigation differed. In this program, funding was provided from the state to four FQHCs for patient navigators who were nurses and administrators accustomed to communicating with these patients. Navigators were trained in bowel preparation instructions; methods to help patients plan for the procedure; and details regarding referrals, resulting in an 85% completion rate among eligible patients at 1 year.¹⁴ Other patient navigation programs describe using a professional health educator within the clinic who

completes referral forms, helps with scheduling, reviews instructions for the preparation and subsequently reminds the patient of their procedure, and helps reschedule cancelled procedures.³² In short, patient navigation programs differ in the types of personnel used, mode of communication with the patient, and duration of interaction. With regard to CRC screening, the principles are to provide education; help with logistics; and interact with patients, eliciting and overcoming barriers.

Reports that healthcare providers fail to discuss screening requires further attention. Survey data from more than 200,000 Medicare beneficiaries found that blacks reported that they were less likely to get timely follow-up on tests, less likely to obtain help from primary care physicians on follow-up of care plans from other providers, and that their doctors were less likely to have medical records and other information about their care.³³ Research on innovative and sustainable programs to improve communication could be “low-hanging fruit” for reducing disparities. For example, one study demonstrated that, in conjunction with a video presented to black and Latino patients (75% female), increased patient-reported CRC screening discussions occurred if physicians received continuous quality improvement and communication skills training.³⁴

Other studied interventions in blacks include technology-based interventions in the clinic,³⁵ decision aids,³⁶ mass media techniques, and telephone-based interventions, which have been evaluated through prospective studies, including randomized trials.³⁷ Generalizability of all such studies will be inherently limited by the screening technique, local environment of patients, providers, and the healthcare system in which the studies were implemented.

Promising large-scale interventions have been demonstrated. For example, Delaware initiated the Screening for Life Program in 2004, which provided reimbursement for colonoscopy in uninsured residents. The program provided a nurse navigator and care coordinator at hospital sites, and emphasized reductions of racial disparities as part of its purpose. Screening in blacks increased from 48% to 74%, with concomitant decreases in incidence rates for CRC.³⁸ In New York City, the Department of Health and Mental Hygiene prioritized CRC screening and collaborated with the hospitals to form the Citywide Colon Cancer Control Coalition (C5 Coalition) in 2003, and one of its goals was to eliminate racial/ethnic screening disparities. This program, which included public and professional education campaigns and patient navigation, brought screening rates from 42% to 64% over 10 years, with no disparities between blacks and whites.³⁹ However, neither of these reports stratified results by sex, nor did they include screening of blacks under age 50 years.

In summary, lowering the recommended screening age in blacks does not appear to be harmful, and population-based observational data suggest that a lower screening age could bring parity to the expected effectiveness of colonoscopy at decreasing CRC mortality. The literature also suggests that targeting important socioeconomic and cultural barriers to CRC screening will be essential to improving compliance among black men and women.

BEST PRACTICES FOR INCREASING COLORECTAL CANCER SCREENING RATES AMONG BLACKS, WITH A FOCUS ON BLACK MEN

Federal Level

Federal efforts that increase access to health care are a good starting point to addressing socioeconomic and racial disparities. The Affordable Care Act of 2010 has resulted in decreased rates of uninsured people in the U.S. overall. Although blacks and Hispanics are more likely to be uninsured compared with whites, these gaps in uninsured have decreased from 2010 to 2015. However, approximately 15% of blacks between ages 18 and 64 years still report uninsured status.⁴⁰

Federal funding for research contributes to efforts in reducing disparities, and should focus on the following areas: systems-based interventions in healthcare organizations, quality of provider communication of screening recommendations, including assessment of unconscious bias, and community-based participatory research to discover and address other barriers to screening. Research that evaluates men as a separate population is important, given higher incidence of CRC compared with black women, and the relative underrepresentation of men in studies of screening in blacks.^{29,30,34–37}

Finally, through grants to state and local governments, the Centers for Disease Control and Prevention has supported numerous programs through its Colorectal Cancer Control Program.^{41,42} With a focus on patients with poor access to screening, this program was responsible for screening more than 5,000 people over 4 years, 23% of whom were black.⁴² Although the impact on screening nationwide is not known, this program may increase opportunities for screening in blacks, and through data sharing and evaluations, may provide models for local health plans to improve screening uptake in their communities.

State and Local Level

State and local governments have an opportunity to address screening disparities through administrative and financial support of programs and interventions, as seen

in Delaware's Screening for Life program.³⁸ Medicaid claims data can be used to identify patients on a state-wide level who have not completed CRC screening, allowing for targeted outreach. FQHCs provide care for approximately 25 million patients, who are disproportionately composed of racial and ethnic minorities, and those who are uninsured or have Medicaid. As 23% of patients at FQHCs are black, more than 5 million blacks seek care in these centers,⁴³ and they are high-yield settings for interventions, as blacks of low SES may more readily access these locations. A patient navigator project for blacks located at a Milwaukee FQHC was recently able to demonstrate a twofold increase in screening completion in this population.⁴⁴ A similar project in South Carolina, which served a population that was 71% black, achieved a remarkable 85% screening colonoscopy completion rate.¹⁴ However, neither study stratified results by sex.

Public reporting of screening disparities by healthcare organizations can go a long way toward raising awareness among healthcare providers and the community, simultaneously heightening consciousness within the leadership of organizations. Screening rates in blacks versus other races should be a quality measure, potentially with carefully constructed mandatory reporting. The Minnesota Department of Human Services, with a nonprofit organization, Minnesota Community Measurement, generates this type of report on an annual basis, entitled Healthcare Disparities Report.⁴⁵ This report evaluates all health plans in the state on quality measures, including rates of CRC screening, and has stimulated change at the healthcare organization level, emphasizing rates stratified by insurance status. A focus on stratifying screening rates by race/ethnicity could catalyze change, and although such efforts should evaluate the black population as a whole, stratification by sex can illustrate which health plans may need to focus more on men.

Not all programs designed to increase CRC screening in minority populations demonstrate success.^{46,47} The challenge of creating an effective program suggests that a quality improvement approach, for example, Plan, Do, Study, Act, would be high yield. This type of audit-feedback approach was used in the New York City program and considered a key element for success.³⁹ Researchers emphasize that blacks may be more responsive to programs that promote stool testing; however, this preference may vary between communities and how patients are invited for screening. An environment that has resources for colonoscopy and a relatively receptive black community may succeed with this modality. A community with scarce colonoscopy resources or better support for longitudinal tracking may be more

appropriate for a stool-card screening program. Overall, the message from gastroenterology associations for all patients is that "the best test is the one that gets done." A good program should accurately assess its resources and population, and simultaneously develop a campaign to address barriers of fear, lack of education, and physician mistrust.

Medical Community

Healthcare organizations are at the frontline of healthcare delivery, and with easy access to their patients, they can make an enormous difference in changing health behaviors at the population level. This is an untapped resource for disparities interventions. However, organizations focus on individuals rather than groups of patients, and without a strong "business" case for programs that address disparities, implementation will not be prioritized. Increased public pressure is a key incentive, and could potentially overcome concerns about how to provide funding for outreach or patient navigator programs.

Healthcare organizations are in a unique position to use the electronic health record to systematically track patients, prompt providers about noncompliant patients, and target counseling efforts. Tracked measures for both quality and value-based financial incentive programs used in other clinical care arenas are thought to have contributed to nationwide improvements in recommended practices, such as use of β -blockers for heart failure, statins for stroke, smoking-cessation counseling, and avoidance of some inappropriate screenings.⁴⁸ Such practices are promoted through pay-for-performance programs through insurers, and through endorsements from the National Quality Forum. Establishing measures in racial disparities, with subsequent tracking programs, could be investigated. This approach is understudied,⁴⁹ and policy approaches have not been developed. Any programs that track patients by race may be subject to distrust by blacks. This should be the subject of surveys and investigation. Thus far, this has not proven to be a concern in research interventions, at least. A careful program could, for example, be couched within a larger mission to improve screening within all members in a health plan.

Healthcare organizations should sponsor services for underserved communities. An example is San Diego, California's Project Access, a partnership between San Diego County and Kaiser Foundation Hospital, which gives underserved patients the opportunity for free CRC screening.⁵⁰ However, more work needs to address effective incentives for these programs, as funding is a clear limitation. Messages to encourage participation among black men may not need to be different from those that have

already been used to encourage all patients to participate in screening, but an emphasis on various options, including non-invasive options, may be more successful. Although further research on these techniques would be useful, it is possible that the highest-yield information could be program-specific and learned within evaluation of existing or new screening programs.

Insurance companies should provide coverage for screening tests in blacks at age 45 years. Publicity surrounding companies that emphasize or do not emphasize such coverage could draw more attention to the insurance industry's role in addressing healthcare disparities. Public attention and advocacy efforts around informing patients about their options have had a positive impact in the past, for example, in the case of breast reconstructive surgery after mastectomy among minority women with breast cancer.^{51,52} Increased public attention could be the most efficient way to leverage funding from insurance companies and healthcare organizations. Disparities in outcomes from a variety of diseases are amply reported in the medical literature, but only recently reported in the lay press.^{53,54} The widespread movement of Black Lives Matter represents an opportunity to highlight the importance of healthcare disparities and obligation of all segments of social institutions to address where feasible interventions exist.

Public Health

Public health can play a critical role in building support for the policies and strategies described above and identifying additional community-level strategies. Public health focuses on population health and has a long history of working with communities to promote policy changes. Public health workers have used community-organizing strategies to encourage the adoption of a wide range of policies, such as increasing access to healthy foods and physical activity⁵⁵; improving access to affordable health care⁵⁶; and addressing specific concerns, such as childhood obesity,⁵⁷ youth violence,⁵⁸ and alcohol availability⁵⁹ in communities.

Community organizing is a very dynamic process and includes seven key stages: community assessment, building a power base, expanding the base, developing a plan of action, implementing the action plan, maintaining the effort and institutionalize, and evaluation and dissemination.⁶⁰ Identifying community-driven solutions at each of these stages is at the heart of community organizing. As such, community organizing may be an important tool to build trust and identify comprehensive approaches to reducing CRC incidence and mortality that resonate in black communities. For example, community-organizing efforts can be useful in not only encouraging the adoption of policies that provide

increased funding for CRC screening, but also interventions that create spaces for black men to discuss their concerns regarding colonoscopy and the best channels for delivering messages regarding colonoscopy and other screening modalities (e.g., radio, sporting events, elders, or others held in high regard by the black community).

CONCLUSIONS

Disparities in CRC incidence and mortality show a significant need to improve attention to blacks. The best approach to this would be to improve screening rates in blacks, but black men require attention within these efforts, as they are underrepresented in research studies, suggesting that their participation may be harder to elicit. In this paper, the authors reviewed the research on CRC screening and recommended several best practices to increase screening rates in black men, including lowering the screening age to 45 years; increasing access to health care; the use of patient navigators; improving reporting and monitoring of CRC screening rates; and encouraging greater collaboration and engagement among government agencies, public health/healthcare organizations, and black communities. Increasing CRC screening rates among blacks will thus require a comprehensive and well-coordinated approach involving multiple sectors, including the medical community; public health and community-based organizations; and federal, state, and local governments. Community organizing may serve as a vehicle for engaging these groups and ensuring that strategies that emerge are community-driven. Further research in this area is key and should focus on effective and durable interventions.

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REFERENCES

1. American Cancer Society. *Colorectal Cancer Facts and Figures 2017–2019*. Atlanta, GA: American Cancer Society, 2017.

2. Siegel RL, Miller KD, Fedewa SA, et al. Colorectal cancer statistics, 2017. *CA Cancer J Clin*. 2017;67(3):177–193. <https://doi.org/10.1001/jama.2017.7630>.
3. Joseph DA, King JB, Miller JW, Richardson LC. Prevalence of colorectal cancer screening among adults—Behavioral Risk Factor Surveillance System, United States, 2010. *MMWR Suppl*. 2012;61(2):51–56.
4. DeSantis CE, Siegel RL, Sauer AG, et al. Cancer statistics for African Americans, 2016: progress and opportunities in reducing racial disparities. *CA Cancer J Clin*. 2016;66(4):290–308. <https://doi.org/10.3322/caac.21340>.
5. Shapiro JA, Klabunde CN, Thompson TD, et al. Patterns of colorectal test use, including CT colonography, in the 2010 NHIS. *Cancer Epidemiol Biomark Prev*. 2012;21:895–904. <https://doi.org/10.1158/1055-9965.EPI-12-0192>.
6. Lieberman DA, Williams JL, Holub JL, et al. Race, ethnicity, and sex affect risk for polyps >9 mm in average-risk individuals. *Gastroenterology*. 2014;147(2):351–358. <https://doi.org/10.1053/j.gastro.2014.04.037>.
7. Rex DK, Boland CR, Dominitz JA, et al. Colorectal cancer screening: recommendations for physicians and patients from the U.S. Multi-Society Task Force on Colorectal Cancer. *Am J Gastroenterol*. 2017;112:1016–1030. <https://doi.org/10.1038/ajg.2017.174>.
8. National Comprehensive Cancer Network. *NCCN Clinical Practice Guidelines in Oncology: Colorectal Cancer Screening, Version 2.2016*. Fort Washington, PA: National Comprehensive Cancer Network, Inc.; 2016.
9. Agrawal S, Bhupinderjit A, Bhutani M, et al. Colorectal cancer in African Americans. *Am J Gastroenterol*. 2005;100(3):515–523. <https://doi.org/10.1111/j.1572-0241.2005.41829.x>.
10. U.S. Preventive Services Task Force. Screening for colorectal cancer: U.S. Preventive Services Task Force recommendation statement. *JAMA*. 2016;315(23):2564–2575. <https://doi.org/10.1001/jama.2016.5989>.
11. Paquette IM, Ying J, Shah SA, Abbott DE, Ho S-M. African Americans should be screened at an earlier age for colorectal cancer. *Gastrointest Endosc*. 2015;82(5):878–883. <https://doi.org/10.1016/j.gie.2015.03.1899>.
12. Carethers JM. Screening for colorectal cancer in African Americans: determinants and rationale for an earlier age to commence screening. *Dig Dis Sci*. 2015;60(3):711–721. <https://doi.org/10.1007/s10620-014-3443-5>.
13. Waghray A, Jain A, Waghray N. Colorectal cancer screening in African Americans: practice patterns in the United States. Are we doing enough? *Gastroenterol Rep (Oxf)*. 2016;4(2):136–140. <https://doi.org/10.1093/gastro/gow005>.
14. Xirasagar S, Li Y-J, Burch JB, et al. Reducing colorectal cancer incidence and disparities: performance and outcomes of a screening colonoscopy program in South Carolina. *Adv Public Health*. 2014;2014:787282. <https://doi.org/10.1155/2014/787282>.
15. Gupta S, Shah J, Balasubramanian BA. Strategies for reducing colorectal cancer among blacks. *Arch Intern Med*. 2012;172(2):182–184. <https://doi.org/10.1001/archinternmed.2011.594>.
16. Bromley EG, May FP, Federer L, Spiegel BMR, van Oijen MGH. Explaining persistent under-use of colonoscopic cancer screening in African Americans: a systematic review. *Prev Med*. 2015;71:40–48. <https://doi.org/10.1016/j.ypmed.2014.11.022>.
17. May FP, Almaro CV, Ponce N, Siegel BMR. Racial minorities are more likely than whites to report lack of provider recommendation for colon cancer screening. *Am J Gastroenterol*. 2015;110:1388–1394. <https://doi.org/10.1038/ajg.2015.138>.
18. Shi L, Lebrun LA, Zhu J, Tsai J. Cancer screening among racial/ethnic and insurance groups in the United States: a comparison of disparities in 2000 and 2008. *J Health Care Poor Underserved*. 2011;22(3):945–961. <https://doi.org/10.1353/hpu.2011.0079>.
19. Inadomi JM, Vijan S, Janz NK, et al. Adherence to colorectal cancer screening: a randomized trial of competing strategies. *Arch Intern Med*. 2012;172:575–582. <https://doi.org/10.1001/archinternmed.2012.332>.
20. Christy SM, Davis SN, Williams KR, et al. A community-based trial of educational interventions with fecal immunochemical tests for colorectal cancer screening uptake among blacks in community settings. *Cancer*. 2016;122(21):3288–3296. <https://doi.org/10.1002/cncr.30207>.
21. Jensen CD, Corley DA, Quinn VP, et al. Fecal immunochemical test program performance over 4 rounds of annual screening: a retrospective cohort study. *Ann Intern Med*. 2016;164(7):456–463. <https://doi.org/10.7326/M15-0983>.
22. Laiyemo AO, Doubeni C, Pinsky PF, et al. Race and colorectal cancer disparities: health-care utilization vs. different cancer susceptibilities. *J Natl Cancer Inst*. 2010;102(8):538–546. <https://doi.org/10.1093/jnci/djq068>.
23. Winterich JA, Quandt SA, Grzywacz GJ, et al. Masculinity and the body: how African-American and white men experience cancer screening exams involving the rectum. *Am J Mens Health*. 2009;3(4):300–309. <https://doi.org/10.1177/1557988308321675>.
24. Rogers CR, Mitchell JA, Franta GJ, Foster MJ, Shires D. Masculinity, racism, social support and colorectal cancer screening uptake among African American men: a systematic review. *Am J Mens Health*. 2017;11(5):1486–1500. <https://doi.org/10.1177/1557988315611227>.
25. Shariff-Marco S, Klassen AC, Bowie JV. Racial/ethnic differences in self-reported racism and its association with cancer-related health behaviors. *Am J Public Health*. 2010;100(2):364–374. <https://doi.org/10.2105/AJPH.2009.163899>.
26. Haider AH, Schneider EB, Sriram N, et al. Unconscious race and social class bias among acute care surgical clinicians and clinical treatment decisions. *JAMA Surg*. 2015;150(5):457–464. <https://doi.org/10.1001/jamasurg.2014.4038>.
27. Penner LA, Dovidio JF, Gonzalez, et al. The effect of oncologist implicit racial bias in racially discordant oncology interactions. *J Clin Oncol*. 2016;34(24):2874–2880. <https://doi.org/10.1200/JCO.2015.66.3658>.
28. Williams DR, Wyatt R. Racial bias in health care and health: challenges and opportunities. *JAMA*. 2015;314(6):555–556. <https://doi.org/10.1001/jama.2015.9260>.
29. Horne HN, Phelan-Emrick DF, Pollack CE, et al. Effect of patient navigation on colorectal cancer screening in a community-based randomized controlled trial of urban African American adults. *Cancer Causes Control*. 2015;26(2):239–246. <https://doi.org/10.1007/s10552-014-0505-0>.
30. Myers RE, Sifri R, Daskalakis C, et al. Increasing colon cancer screening in primary care among African Americans. *J Natl Cancer Inst*. 2014;106(12):dju344. <https://doi.org/10.1093/jnci/dju344>.
31. Cole H, Thompson HS, White M, et al. Community-based, preclinical patient navigation for colorectal cancer screening among older black men recruited from barbershops: the MISTER B Trial. *Am J Public Health*. 2017;107(9):1433–1440. <https://doi.org/10.2105/AJPH.2017.303885>.
32. Christie J, Itzkowitz S, Lihau-Nkanza I, et al. A randomized controlled trial using patient navigation to increase colonoscopy screening among low-income minorities. *J Natl Med Assoc*. 2008;100(3):278–284. [https://doi.org/10.1016/S0027-9684\(15\)31240-2](https://doi.org/10.1016/S0027-9684(15)31240-2).
33. Martino SC, Elliott MN, Hambarsoomian K, et al. Racial/ethnic disparities in Medicare beneficiaries' care coordination experiences. *Med Care*. 2016;54(8):765–771. <https://doi.org/10.1097/MLR.0000000000000556>.
34. Dolan NC, Ramirez-Zohfeld V, Rademaker AW, et al. The effectiveness of a physician-only and physician-patient intervention on colorectal cancer screening discussions between providers and African American and Latino patients. *J Gen Intern Med*. 2015;30(12):1780–1787. <https://doi.org/10.1007/s11606-015-3381-8>.
35. Greiner KA, Daley CM, Epp A, et al. Implementation intentions and colorectal screening: a randomized trial in safety-net clinics. *Am J Prev Med*. 2014;47(6):703–714. <https://doi.org/10.1016/j.amepre.2014.08.005>.

36. Hoffman AS, Lowenstein LM, Kamath GR, et al. An entertainment-education colorectal cancer screening decision aid for African American patients: a randomized controlled trial. *Cancer*. 2017;123(8):1401–1408. <https://doi.org/10.1002/cncr.30489>.
37. Gupta S, Halm EA, Rockey DC, et al. Comparative effectiveness of fecal immunochemical test outreach, colonoscopy outreach, and usual care for boosting colorectal cancer screening among the underserved: a randomized clinical trial. *JAMA Intern Med*. 2013;173(18):1725–1732. <https://doi.org/10.1001/jamainternmed.2013.9294>.
38. Grubbs SS, Polite BN, Carney J, et al. Eliminating racial disparities in colorectal cancer in the real world: it took a village. *J Clin Oncol*. 2013;31(16):1928–1930. <https://doi.org/10.1200/JCO.2012.47.8412>.
39. Itzkowitz SH, Winawer SJ, Krauskopf M, et al. New York Citywide Colon Cancer Control Coalition: a public health effort to increase colon cancer screening and address health disparities. *Cancer*. 2016;122(2):269–277. <https://doi.org/10.1002/cncr.29595>.
40. HHS, Agency for Healthcare Research and Quality. 2015 National Healthcare Quality and Disparities Report and 5th Anniversary Update on the National Quality Strategy. Publication Number 16-0015. www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqdr/nhqdr15/2015nhqdr.pdf. Published 2016. Accessed November 1, 2017.
41. Seeff LC, Royalty J, Helsel WE. Clinical outcomes from the CDC's colorectal cancer screening demonstration program. *Cancer*. 2013;119(15 suppl):2820–2833. <https://doi.org/10.1002/cncr.28163>.
42. CDC. CDC Awards \$22,800,000 to Increase Colorectal Cancer Screening. www.cdc.gov/media/releases/2015/p0930-cancer-screening.html. Published September 30, 2015. Accessed November 1, 2017.
43. National Association of Community Health Centers. Community Health Center Chartbook, June 2017. Bethesda, MD: NACHC. www.nachc.org/wp-content/uploads/2017/06/Chartbook2017.pdf. Accessed May 10, 2018.
44. Martin RL, Tully M, Kos A, et al. Increasing colorectal cancer screening at urban FQHC using iFOBT and patient navigation. *Health Promot Pract*. 2017;18(5):741–750. <https://doi.org/10.1177/1524839917705127>.
45. Snowden AM, Edwards K, Foresman M, Xiong M. 2016 Health Care Disparities Report for Minnesota Health Care Programs. <https://mncm.org/wp-content/uploads/2017/03/2016-Disparities-Report-Final-2.28.2017.pdf>. Accessed November 1, 2017.
46. Davis SN, Christy SM, Chavarria EA, et al. A randomized controlled trial of a multicomponent, targeted, low-literacy educational intervention compared with a non-targeted intervention to boost colorectal cancer screening with fecal immunochemical testing in community clinics. *Cancer*. 2017;123(8):1390–1400. <https://doi.org/10.1002/cncr.30481>.
47. Thompson VLS, Drake B, James AS, et al. A community coalition to address cancer disparities: transitions, successes and challenges. *J Cancer Educ*. 2015;30(4):616–622. <https://doi.org/10.1007/s13187-014-0746-3>.
48. Levine DM, Linder JA, Landon BE. The quality of outpatient care delivered to adults in the United States, 2002 to 2013. *JAMA Intern Med*. 2016;176(12):1778–1790. <https://doi.org/10.1001/jamainternmed.2016.6217>.
49. Snowden AM, Kunerth V, Carlson AM, McRae JA, Vetta E. Addressing health care disparities using public reporting. *Am J Med Qual*. 2012;27(4):275–281. <https://doi.org/10.1177/106286061424078>.
50. Gupta S, Sussman DA, Doubeni CA, et al. Challenges and possible solutions to colorectal cancer screening for the underserved. *J Natl Cancer Inst*. 2014;106(4):dju032. <https://doi.org/10.1093/jnci/dju032>.
51. Garfein ES. The privilege of advocacy: legislating awareness of breast reconstruction. *Plast Reconstr Surg*. 2011;128(3):803–804. <https://doi.org/10.1097/PRS.0b013e3182221501>.
52. Mahmoudi E, Lu Y, Metz AK, Momoh AO, Chung KC. Association of a policy mandating physician-patient communication with racial/ethnic disparities in postmastectomy breast reconstruction. *JAMA Surg*. 2017;152(8):775–783. <https://doi.org/10.1001/jamasurg.2017.0921>.
53. Hoffman J. Wider racial gap found in cervical cancer deaths. *New York Times*. January 23, 2017.
54. Kaplan K. Women and minorities are less likely to get key stroke treatment, even when they're eligible, study says. *Los Angeles Times*. September 14, 2016.
55. Baskin ML, Gary LC, Hardy CM, Schoenberger YM, et al. Predictors of retention of African American women in a walking program. *Am J Health Behav*. 2011;35(1):40–50. <https://doi.org/10.5993/AJHB.35.1.4>.
56. Bezboruah KC. Community organizing for health care: an analysis of the process. *J Community Pract*. 2013;21(1–2):9–27. <https://doi.org/10.1080/10705422.2013.788328>.
57. Subica AM, Grills CT, Villaneuva S, Doubles JA. Community organizing for healthier communities: environmental and policy outcomes of a national initiative. *Am J Prev Med*. 2016;51(6):916–925. <https://doi.org/10.1016/j.amepre.2016.06.020>.
58. Kim-Ju G, Mark GY, Cohen R, Garcia-Santiago O, Nguyen P. Community mobilization and its application to youth violence prevention. *Am J Prev Med*. 2008;34(3 suppl):S5–S12. <https://doi.org/10.1016/j.amepre.2007.12.005>.
59. Wagenaar AC, Murray DM, Gehan JP, et al. Communities mobilizing for change on alcohol: outcomes from a randomized community trial. *J Stud Alcohol*. 2000;61(1):85–94. <https://doi.org/10.15288/jsa.2000.61.85>.
60. Wagenaar A, Gehan J, Jones-Webb R, et al. Communities mobilizing for change on alcohol: lessons and results from a 15-community randomized trial. *J Community Psychol*. 1999;27(3):315–326. [https://doi.org/10.1002/\(SICI\)1520-6629\(199905\)27:3<15::AID-JCOP6>3.0.CO;2-1](https://doi.org/10.1002/(SICI)1520-6629(199905)27:3<15::AID-JCOP6>3.0.CO;2-1).