



Clay illustration by Lily Offit; Photographed by Ben Denzer

Colorectal Cancer Screening During COVID-19: FIT testing as the Suggested Solution

Aleeza J. Leder Macek B.Sc.¹

¹New York University Grossman School of Medicine

Correspondence should be addressed to aleeza.ledermacek@nyulangone.org

Abstract

In March 2020, healthcare in the United States changed, with primary care and preventative care, particularly colorectal cancer screening, grinding to a halt. COVID-19 brought to the forefront the racial healthcare disparities in the United States with the pandemic disproportionately affecting minority communities, reflecting the well-established disparities in colorectal cancer outcomes which are expected to be exacerbated by the lack of screening. This article aims to promote the use of FIT testing for colorectal cancer screening during this pandemic particularly for minority communities. Studies have shown that FIT tests have a high sensitivity and specificity, are inexpensive, and have better adherence than colonoscopies. Given the cancellation of many screening colonoscopies and the potential risk of leaving the house for a procedure, implementation of a FIT screening program appears to be the best intervention for maintaining colorectal cancer screening during COVID-19 and preventing the cancer disparities from worsening.

In March 2020, the American Cancer Society issued guidance which cancelled or delayed most screening colonoscopies, leaving both physicians and patients to balance the dangers of COVID-19 against missing this important cancer screening appointment.^{1,2} At the same time, COVID-19 began sweeping across the country, bringing racial disparities in healthcare in the United States to the forefront. African Americans make up only 13% of the population but over 20% of the COVID-19 cases, while Latinx individuals make up only 17% of the population but 32% of COVID-19 cases.³ These disparities also resulted in increased mortality from COVID-19 as compared to White Americans, with African Americans having more than two times the mortality rate than White Americans and both Latinx and Native American populations having higher mortality rates as well.^{2,3} Interestingly, this pattern mimicked the well-established disparities in cancer outcomes between Black and White Americans, particularly with colorectal cancer^{3,4}. African Americans have a 23% higher incidence and 47% higher mortality of colorectal cancer despite many of the successes in colorectal cancer screening^{3,4}. Therefore, it is of utmost priority to continue cancer screening in these populations during this pandemic to curtail this disparity.

Colorectal cancer screening has had a profound impact on the incidence, morbidity and mortality associated with colorectal cancer.^{5,6} One study completed by the Kaiser Permanente Northern California healthcare system demonstrated a 25.5% reduction in colon cancer incidence and 52.4% reduction in mortality from 2000 to 2015 after the implementation of a colorectal cancer screening program.⁶ Despite the screening's success, colorectal cancer still kills approximately 50,000 people a year as the second leading cause of cancer in the United States, with the mortality rate of White Americans being only 2/3 of that of Black Americans.⁵ One of the contributing factors to this continuing high

mortality rate and disparity is the lack of adherence to colorectal cancer screening, only exacerbated by the COVID-19 pandemic restrictions.^{2,7} This article aims to promote a specific alternative to the use of colonoscopy for colorectal cancer screening and the importance in maintaining cancer screening rates during the COVID-19 pandemic particularly for minority communities.

The United States Preventive Services Task Force provides comprehensive recommendations for colorectal cancer screening.⁸ In their recommendations, they list the many options for CRC screening: guaiac-based fecal occult blood test (gFOBT); fecal immunochemical test (FIT); computed topography colonography (CTC); flexible sigmoidoscopy and colonoscopy. FIT and gFOBT are both chemical tests which test for the presence of blood in the stool because cancers and polyps of the lower intestines often bleed as stool is passed by them.^{5,8} As one of the first colorectal cancer screening tests created, gFOBT is simple, inexpensive and widely accessible; importantly, randomized controlled trials have demonstrated a 32% reduction in mortality with the use of annual screening.⁵ Despite these many promising results, gFOBT has been moving out of favor due to its low one-test sensitivity (~50%) and positive predictive value (~3-10%), with many opting instead for the similar FIT screening.⁵ FIT is able to measure specifically colonic blood, can be performed at home, requires only one fecal sample, and has a greater sensitivity and specificity than gFOBT (79% and 94%, respectively).⁵ In one study, FIT testing was shown to reduce colorectal cancer incidence by 22% over a period of 11 years, and a recent pooled meta-analysis demonstrated its 95% accuracy of detecting colorectal cancer along with a 59% reduction in mortality.⁵ Colonoscopy is the most invasive method of screening for colorectal cancer, it is the gold standard due to its ability to detect and prevent colorectal cancer, decreasing the incidence of cancer up to 90%.⁸ Lastly, CT colonography (CTC)

and flexibly sigmoidoscopy are both methods used to actually “see” the colon but are less widely available or utilized than stool tests or colonoscopies due to their cost and comparable sensitivities and specificities.^{5,8}

Thus, it is not surprising that many healthcare systems are increasingly offering FIT/gFOBT as their first line colorectal cancer screening modality because of the cost-effectiveness, value and willingness of patients to adhere.⁹⁻¹¹ Many systems have also seen increased adherence to colorectal cancer screening by mailing FIT envelopes directly to patients, so they can take the test without leaving their home^{10,11}. Importantly, a randomized control trial has shown that patients who are recommended for gFOBT, or are given a choice between gFOBT or colonoscopy, are almost twice as likely to adhere to the screening recommendation than those who have been recommended only the colonoscopy.¹² Other studies have similarly identified that at least 10% more participants were adherent to screening when they were offered FIT as opposed to colonoscopy.^{9,13} Given the differing adherence rates, some models have indicated that public health programs offering FIT could save four times as many lives as those offering colonoscopy⁸. Unfortunately, the universal recommendation of colonoscopy could reduce adherence to colorectal cancer screening especially in minority groups who disproportionately bear the burden of colorectal cancer incidence and mortality.

Although these results have demonstrated the real utility and promise of FIT testing, colonoscopy is currently the preferred method for colorectal screening by medical professionals in the United States because of its proven results, efficacy and treatment utility.^{8,12,13} Despite its effectiveness, colonoscopy screening adherence is not as high as it needs to be¹². Studies have shown that both patient, provider and system-wide factors influence this lag^{14,15}. Patients often cite concerns about the invasiveness of the procedure, the discomfort/time of bowel prep and

embarrassment about the procedure, while providers are more concerned with cost and insurance status. African American patients in particular were less likely to undergo colonoscopy than White Americans.^{14,15} During the COVID-19 pandemic the reasons to avoid colonoscopy grew: just leaving the house conferred a risk of contracting COVID-19, entering the hospital or interacting with healthcare providers, and receiving an invasive procedure were even scarier.

Many things have changed, especially in regard to primary and preventive medical care, since March of 2020 when the COVID-19 pandemic began in earnest in the United States. There has been a significant decrease in all colorectal cancer screening during this time period, largely due to a reduction in colonoscopies—up to 86% decrease according to one estimate.^{2,7} This year-long disruption alone could result in an estimated 10,000 excess deaths due to colon and breast cancer due to the lapse in preventive screenings¹. Concurrently, many federally-qualified health programs, which serve many of the underserved and uninsured, halted in-person procedures or pick up/drop off of FIT/gFOBT tests to stop the spread of COVID-19; these same and similar programs did not have the resources to implement the mailing programs that have proven effective as a substitute.² Many minority patients have also been disproportionately financially-affected by COVID-19, which in turn made seeking out healthcare and expensive screening procedures farther down the list of priorities.⁴

The past year has taught us that we need to implement evidence-based and value-based methods for colorectal cancer screening with high patient adherence so that a 1-year lapse of in-person visits will not result in the projected excess deaths and have such a profound impact on cancer incidence and mortality. During COVID-19, the FIT test seems to be what our patients want and need as a test that meets their tolerance for comfort and cost, especially now when they feel

unsafe leaving their homes. It is important that health centers create the necessary infrastructure now to allow patients to have safe and affordable options for colorectal cancer screening; for most this is not a colonoscopy, but rather the FIT.

POTENTIAL CONFLICTS OF INTEREST:

None.

REFERENCES

1. Sharpless NE. COVID-19 and Cancer. *Science*. 2020;368(6497):1290
2. Balzora S, Issaka RB, Anyane-Yeboah A, Gray DM, May FP. Impact of COVID-19 on colorectal cancer disparities and the way forward. *Gastrointestinal Endoscopy*. 2020; 92(4): 946-950
3. Carethers JM, Sengupta R, Blakey R, Ribas A, D'Souza G. Disparities in Cancer Prevention in the COVID-19 Era. *Cancer Prev Res*. 2020; 13(11): 893-896
4. Tsai MH, Xirasagar S, de Groen, PC. Persisting Racial Disparities in Colonoscopy Screening of Persons with a Family History of Colorectal Cancer. *J. Racial and Ethnic Health Disparities*. 2018; 5: 737-746
5. Issa IA, Noureddine M. Colorectal cancer screening: An updated review of the available options. *World journal of gastroenterology*. 2017;23(28): 5086-5096.
6. Levin TR, Corley DA, Jensen CD, et al. Effects of Organized Colorectal Cancer Screening on Cancer Incidence and Mortality in a Large Community-Based Population. *Gastroenterology*. 2018;155(5): 1383-1391.e5.
7. Myint A, Hilda O, Lee S, et al. Impact of the COVID-19 Pandemic on Colorectal Cancer Screening Rates and Modalities in a Large Integrated Health System *Am J Gastroenterol*. 2020;115: S154-S155
8. Bibbins-Domingo K, Grossman DC, Curry SJ, et al. Screening for Colorectal Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2016;315(23):2564-75.
9. Singal AG, Gupta S, Tiro JA, et al. Outreach invitations for FIT and colonoscopy improve colorectal cancer screening rates: A randomized controlled trial in a safety-net health system. *Cancer*. 2016;122:456-463.
10. Coronado GD, Petrik AF, Vollmer WM et al. Effectiveness of a Mailed Colorectal Cancer Screening Outreach Program in Community Health Clinics: The STOP CRC Cluster Randomized Clinical Trial. *JAMA Intern Med*. 2018;178(9):1174-1181.
11. Charlton ME, Mengeling MA, Halfdanarson TR, et al. Evaluation of a Home-Based Colorectal Cancer Screening Intervention in a Rural State. *J Rural Health*. 2014;30(3): 322-332.
12. Inadomi JM, Vijan S, Janz NK, et al. Adherence to colorectal cancer screening: a randomized clinical trial of competing strategies. *Arch Intern Med*. 2012;172(7):575-82.
13. Quintero E, Castells A, Bujanda L, et al. Colonoscopy versus Fecal Immunochemical Testing in Colorectal-Cancer Screening. *NEJM* 2012;366: 697-706
14. Coleman Wallace DA, Baltrus PT, Wallace TC, Blumenthal DS, Rust GS. Black white disparities in receiving a physician recommendation for colorectal cancer screening and reasons for not undergoing screening. *J Healthcare Poor Underserved*. 2013;24(3): 1115-24.
15. Harewood GC, Wiersema MJ, Melton LJ. A prospective, controlled assessment of factors influencing acceptance of screening colonoscopy. *Am J Gastroenterol*. 2002;97(12): 3186-3194,