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4 **The impact of COVID-19 on colorectal cancer disparities and the way forward**
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4 **ABSTRACT**
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6 In response to the COVID-19 pandemic, the United States Surgeon General advised all
7 hospitals and ambulatory care centers to delay nonurgent medical procedures and surgeries.
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9 This recommendation, echoed by a multigastroenterology society guideline, led to the
10 suspension of colonoscopies for colorectal cancer (CRC) screening and surveillance. Although
11 this temporary suspension was necessary to contain COVID-19 infections, we as
12 gastroenterologists, patient advocates, and CRC researchers have witnessed the downstream
13 impact of COVID-19 and this recommendation on CRC screening, research, and advocacy.
14
15 These effects are particularly noticeable in medically underserved communities where CRC
16 morbidity and mortality are highest. COVID-19 related pauses in medical care, as well as shifts
17 in resource allocation and workforce deployment, threaten decades worth of work to improve
18 CRC disparities in medically underserved populations. In this perspective, we present the
19 unique challenges COVID-19 poses to health equity in CRC prevention and provide potential
20 solutions as we navigate these uncharted waters.
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40 **Introduction**
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42 The coronavirus disease 2019 (COVID-19) has led to a global pandemic with over 7.5
43 million infected and 420,000 deaths.² This healthcare crisis has also underscored persistent
44 inequities, including the highest rates of COVID-19 infections and deaths in African-American
45 and Hispanic communities.^{3,4} Although minimizing morbidity and mortality from the disease
46 remains the top priority of clinicians, researchers, and policy makers, it is important to rigorously
47 assess and address the profound clinical and public health impact of COVID-19 on other
48 aspects of health and healthcare.
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57 Colorectal cancer (CRC) provides a valuable lens through which we can view the
58 deleterious effects of COVID-19 on non-COVID related diseases in medically underserved
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4 populations, defined as groups that have experienced health and healthcare inequities due to
5 social determinants of health.⁵⁻⁸ CRC is the most common gastrointestinal malignancy and
6 disproportionately affects medically underserved populations. Specifically, African Americans
7 and Native Americans have the highest incidence of CRC⁹; African Americans have the highest
8 rate of CRC-related death,⁹ and Hispanics have CRC screening rates far below whites and
9 African Americans.⁹ Some progress has been made to increase awareness and implement
10 interventions that address inequities in CRC screening and outcomes, but there is more work to
11 be done. In this perspective, we highlight how COVID-19 threatens to undo this progress and
12 offer potential solutions to these challenges during the COVID-19 era (**Table 1**).

23 24 25 26 **CRC screening for the underserved**

27
28 COVID-19 has substantially impacted CRC screening programs in federally qualified
29 health centers (FQHCs) and other resource-constrained settings. A mandatory shift in priorities
30 to contain and mitigate COVID-19 sharply reduced clinical visits and the capacity to provide
31 non-urgent primary care and endoscopic services.¹⁵ As a result, the volume of CRC screening
32 dropped substantially—by up to 86% according to an early estimate.¹⁶

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40 For medically underserved populations with already limited access to preventive health
41 services, completing CRC screening is an even greater challenge now and will remain so for the
42 foreseeable future.

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46 **Federally Qualified Health Centers:** FQHCs in the United States are funded by the
47 federal government to provide primary care and preventive services to over 22 million low-
48 income, uninsured, and underinsured individuals annually. In FQHCs and other resource-
49 constrained settings, the fecal immunochemical test (FIT) and fecal occult blood test (FOBT) are
50 the preferred screening modalities due to low cost, availability, and high patient participation,¹⁷
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4 new ways to screen without placing patients at risk for contracting COVID-19. Although mailed
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6 FIT outreach is an evidence-based strategy to improve CRC screening participation, such
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8 programs are sparse among FQHCs given up-front financial costs and hurdles to successful
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10 implementation.¹⁸⁻²⁰

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13 As we emerge from the immediate aftermath of the pandemic, FQHCs should consider
14
15 implementing mailed FIT outreach programs, which can be funded internally or through external
16
17 sources related to COVID-19 relief. In FQHCs where mailing noninvasive screening tests is not
18
19 an option, mechanisms to establish safe protocols for patients to pick up and return FIT/FOBT
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21 kits, which might include contact-free drop-off boxes for FIT kits, should be used.

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24 **Follow-up after abnormal FIT/FOBT:** CRC screening with FIT/FOBT is effective when
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26 patients with abnormal (ie, positive) results complete a colonoscopy to assess for precancerous
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28 and cancerous lesions.^{17,21} A longer time to colonoscopy after an abnormal FIT result is
29
30 associated with a higher risk of CRC and more advanced stage of disease.²² For the 5% to 14%
31
32 of FQHC patients with abnormal FIT results, colonoscopy coordination with outside
33
34 gastroenterologists and health centers is currently challenging due to reductions in endoscopy
35
36 capacity, strains on health systems, and inadequate health insurance coverage.^{17, 23-28} Until
37
38 endoscopy units regain full capacity, FQHCs must identify gastroenterology partners willing to
39
40 assist in care coordination until colonoscopy completion. FQHCs and gastroenterology partners
41
42 can stratify patients with the highest CRC risk by prioritizing those with the earliest abnormal FIT
43
44 results, the highest quantitative FIT values, and/or those who have developed interval
45
46 symptoms associated with CRC.^{17,19,22}

47 48 49 50 51 52 53 **CRC research in the underserved**

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55 Research studies have highlighted that individuals from medically underserved
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57 populations are less likely to receive counseling to complete screening,³¹ have less access to
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59 preventive care and CRC treatment after diagnosis,³² are less likely to complete diagnostic
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4 colonoscopy after abnormal FIT,²⁶ and are also less likely to receive colonoscopy surveillance
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6 after curative CRC treatment.^{33,34} Given the impact of COVID-19 on our research activities, we
7
8 propose the following solutions for individuals facing similar challenges (**Table 1**).
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11 **Community-based research:** Community-Based Participatory Research (CBPR) is a
12
13 frequently used research tool that builds strong partnerships between research teams (often
14
15 within academic medical centers) and community-based practices. CBPR ensures that the
16
17 communities most affected by diseases of interest are represented through collaboration,
18
19 shared decision-making power, and mutual ownership of the research process and products.³⁵
20
21 However, increased use of telehealth to limit spread of COVID-19 has substantially limited
22
23 CBPR efforts and recruitment of patients for CRC screening studies. Among medically
24
25 underserved populations, research participation is further challenged by less access to digital
26
27 platforms, disproportionate unemployment, unstable housing, and, in some cases, the need to
28
29 continue to work as an essential worker.³⁶⁻³⁸
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33 In order to protect medically underserved populations from COVID-19 and maintain
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35 progress in CRC disparities research, we propose several recommendations. Whenever
36
37 possible, research activities should use the most accessible form of technology (eg, prioritizing
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39 use of telephones over video conferencing for meetings) and conducted at times most
40
41 convenient for participants (eg, before or after typical work hours). CRC investigators should
42
43 also request signature waivers for projects that involve minimal risk as determined by local
44
45 Institutional Review Boards. As the number of COVID-19 cases decline, CRC researchers
46
47 should use a tiered approach to re-engage community partners. An example might begin with
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49 communication to express solidarity and assess readiness followed by an offer to use available
50
51 digital platforms to reignite research projects if interest remains. Engagement with community
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53 partners should acknowledge their time with reasonable incentives whenever possible. Our own
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55 work has signaled that community partners are eager to re-engage in prevention research
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57 because of the potential impact of COVID-19 screening interruptions on CRC outcomes.
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4 **External factors:** Many specialists who are board-certified in Internal Medicine were
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6 called to assist healthcare systems during the peak of the pandemic. While appropriately
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8 answering this call, doing so meant time away from usual research activities. Solutions to these
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10 challenges include informing funding agencies of changes in clinical practice that affect usual
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12 protected research time and developing budgetary scenarios should COVID-19 delay planned
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14 research activities by 6 months, 12 months, or more.
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20 **Engagement, advocacy, and policy**

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22 Community engagement in advocacy, policy, and outreach are critical to increasing
23
24 public knowledge about CRC in medically underserved communities. COVID-19 has disrupted
25
26 community engagement activities at local and national levels, raising concern that the
27
28 momentum to address disparities will decline. We advocate for creative tactics from influential
29
30 organizations, national medical societies, health systems, and policy makers to offset
31
32 awareness and advocacy efforts affected by the pandemic (**Table 1**).
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34

35 **Community outreach and engagement:** In 2000, the “Katie Couric Effect” was
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37 described after Couric completed a screening colonoscopy on national television.^{39,40} Earlier this
38
39 year, actor Will Smith shared a video about his colonoscopy experience and encouraged all, but
40
41 particularly African American men, to do the same.⁴¹ Unfortunately, the impact of Smith’s video
42
43 is unlikely to materialize as activities that would have cemented the importance of this act,
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45 including educational tours through inflatable colons and low-to-no cost screening colonoscopy
46
47 programs during Colorectal Cancer Awareness Month, were canceled due to COVID-19.
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51 The absence of community outreach and engagement (COE) events in 2020 presents
52
53 an unforeseen challenge in relaying the importance of CRC screening to vulnerable
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55 communities. African Americans, Native Americans, and Hispanic people, who are at highest
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57 risk for CRC, are also at highest risk of contracting and dying from COVID-19.^{3,4,42} In the midst
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59 of the COVID-19 pandemic, the death of George Floyd and many other unarmed black people
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4 has ignited civil unrest and activism around the country. It is of no surprise that these
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6 communities would be hesitant to engage in CRC screening at this time. However, as cancer
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8 persists despite these challenges, we must acknowledge these immediate apprehensions, work
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10 within our organizations to contribute solutions that address systemic racism, while delivering a
11
12 balanced message about the importance of CRC screening. Cognizant of this reality, the
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14 Colorectal Cancer Alliance (CCA) transitioned financial assistance programs intended to provide
15
16 CRC screening and care into a financial assistance fund for low-income individuals with COVID-
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18 19.⁴³ Institutions and organizations involved in COE must also develop strategies to foster trust
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20 and re-engage medically underserved communities in CRC screening.
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24 **Advocacy and policy:** Legislative support brings national visibility to CRC prevention
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26 and results in policy changes that are vital to decrease disparities. Several Washington, D.C.
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28 lobby events organized by gastroenterology societies, nonprofit organizations, and advocacy
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30 groups during Colorectal Cancer Awareness Month were cancelled. Among these, the 2020
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32 Fight CRC's Call-on-Congress—a 3-day advocacy event to advocate for increased funding for
33
34 expanded screening services in medically underserved communities—transitioned its event to a
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36 virtual forum. In light of COVID-19, we must harness the power of virtual platforms and social
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38 media for advocacy events and policy campaigns whenever possible. Although a physical
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40 presence on Capitol Hill has strong impact, we must continue to promote our messages through
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42 alternative avenues until we can safely resume in-person advocacy efforts.
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48 **Conclusion**

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51 As gastroenterologists, researchers, and patient advocates, we have observed the
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53 unequal impact that COVID-19 has had on medically underserved populations and now prepare
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55 for the likely downstream effects on CRC prevention through reduced access to care,
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57 suspended research efforts, and limited opportunities for COE and advocacy. The only way to
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59 avoid an exacerbation of CRC disparities due to COVID-19 is to devise a new way forward. It is
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4 critical that we take actionable steps to preserve existing efforts and cultivate new tactics that
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6 maintain momentum in CRC prevention. In the likely event that COVID-19 remains a backdrop
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8 for all healthcare until vaccines and treatments are available, we look forward to working with
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10 community partners, health institutions and professional societies to develop strategies to
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12 improve long-standing disparities in CRC incidence, screening, and outcomes.
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Table 1: Summary of areas related to CRC prevention in the medically underserved that have been impacted by COVID-19 and potential solutions

Impacted Area	Potential Solutions
CRC Screening	
CRC screening participation	<ul style="list-style-type: none"> • Encourage use of non-invasive screening modalities • Increase use of mailed FIT outreach programs • Establish safe protocols to pick up and return FIT kits
Follow-up after abnormal FIT/FOBT screening	<ul style="list-style-type: none"> • Identify gastroenterologist partners to improve coordination of care • Prioritize patients with the earliest abnormal FIT results, highest quantitative FIT values, and/or the development of interval symptoms associated with CRC.
CRC-Related Research Activities	
Community-based research	<ul style="list-style-type: none"> • Leverage the most accessible technology to sustain communication • Engage consistently with community partners • Obtain waiver of signature for minimal risk studies • Provide incentives where appropriate
External factors	<ul style="list-style-type: none"> • Alert funding programs early of changes in projected research • Develop contingency budgets for funded projects
Engagement, Advocacy, and Policy	
Community Outreach and Engagement (COE)	<ul style="list-style-type: none"> • Use existing platforms to provide COVID-19 information and offer aid programs • Extend CRC awareness events to year-round • Seek timely and innovative opportunities to serve medically underserved populations
Advocacy and Policy	<ul style="list-style-type: none"> • Shift advocacy events and policy campaigns to virtual platforms whenever possible • Use social media platforms, calls and letters to connect with policy makers

Abbreviations:

CRC = colorectal cancer

ASGE = American Society for Gastrointestinal Endoscopy

AGA = American Gastroenterological Association

ACG = American College of Gastroenterology

AASLD = American Association for the Study of Liver Diseases

FQHC = federally qualified health centers

FIT = fecal immunochemical test

FOBT = fecal occult blood test

CBPR = Community-Based Participatory Research

COE = community outreach and engagement

CRCCP = Colorectal Cancer Control Program



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