

In Search of a Perfect Solution to Ensure that “No Colon Is Left Behind”

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It is well known that blacks suffer a disproportionately higher burden from colorectal cancer (CRC) [1, 2]. However, the root cause of the problem and hence, the perfect solution to eliminate this major public health problem is unclear. Several possible causes have been identified as contributory to this problem but can be broadly classified into three domains: healthcare access, healthcare utilization and biological differences.

Healthcare access differences: CRC screening is an elective medical care. Therefore, having healthcare insurance is *sine qua non* for getting optimal medical care including CRC screening. In the United States, blacks tend to have lower socioeconomic status and lack health insurance coverage. This has been associated with lower CRC screening rates [3].

Healthcare utilization differences: Research has shown that blacks tend to underutilize healthcare resources when compared with whites even within the same healthcare system [4, 5]. Some of the reasons underlying this difference may be care provider factors such as lack of CRC screening recommendations [6] or patient factors due to mistrust of the medical system and poorer healthcare education [7]. Adoptions of medical advances also lag behind among blacks [8].

Biological differences: Studies have suggested that CRC burden differences may be due to differences in tumor biology by race. The prevalence of CRC risk factors including economic factors is fairly comparable between Hispanics and blacks, yet Hispanic Americans consistently

have lower CRC incidence and mortality when compared to non-Hispanic whites and blacks [1, 2]. Earlier age of CRC diagnosis, late stage presentation and proximal location of CRC have been reported among blacks as compared to whites [9, 10].

However, most studies that have investigated CRC disparity by race have been limited by non-screening populations, small sample sizes, single institution experience, retrospective designs, and lack of histopathologic diagnosis [2–11].

The critical challenge is to understand the differential contributions of these three domains to CRC disparity by race such that interventions can be prioritized accordingly. Unfortunately, no study has evaluated this. The ongoing Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial (PLCO) provided an opportunity to evaluate two of these three domains within the same cohort of participants who underwent trial sponsored flexible sigmoidoscopy and suggested that healthcare utilization differences may be playing more of a role than biology [12].

At the present time, stakeholders have adopted different strategies to address this public health problem. The Center for Disease Control established the Colorectal Cancer Control Program (<http://www.cdc.gov/cancer/crccp/about.htm>) which will provide funding to 25 states and four tribes across the United States in order to increase CRC screening rates to 80% in the funded states by 2014. The District of Columbia Cancer Consortium also instituted an ongoing 1 year DC Screen for Life program to educate 1,000 DC residents and provided funds to screen 600 uninsured and underinsured 50–64-year-old DC residents with colonoscopy and fecal immunochemical tests (DC Screen for Life: <http://cancer.howard.edu/patients/screening.htm>; <http://www.cdc.gov/cancer/npcr/success/south/dc/dc1.htm>). In New York, a 20% improvement in colonoscopy screening in New York City

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with significant decrease in screening disparities across several sociodemographic characteristics including race-ethnicities was reported within 5 years of a comprehensive citywide campaign to improve CRC screening between 2003 and 2007 [13]. The aforementioned efforts targeted the domains of access and utilization. Another approach targeted biological differences and led to the recommendation that blacks should begin CRC screening from age 45 years (rather than the widely accepted 50 years of age for average risk persons) [14, 15]. However, this recommendation was not adopted by all [16, 17]. A major concern among opponents of this recommendation is that it creates another level of complexity for CRC screening amidst an already crowded field of various screening recommendations based on age, CRC screening modality, family history of polyps or CRC and personal history of colon polyps [17]. Which approach or combination of approaches will provide timely and cost effective reduction in incidence and mortality from CRC among blacks? This is unknown.

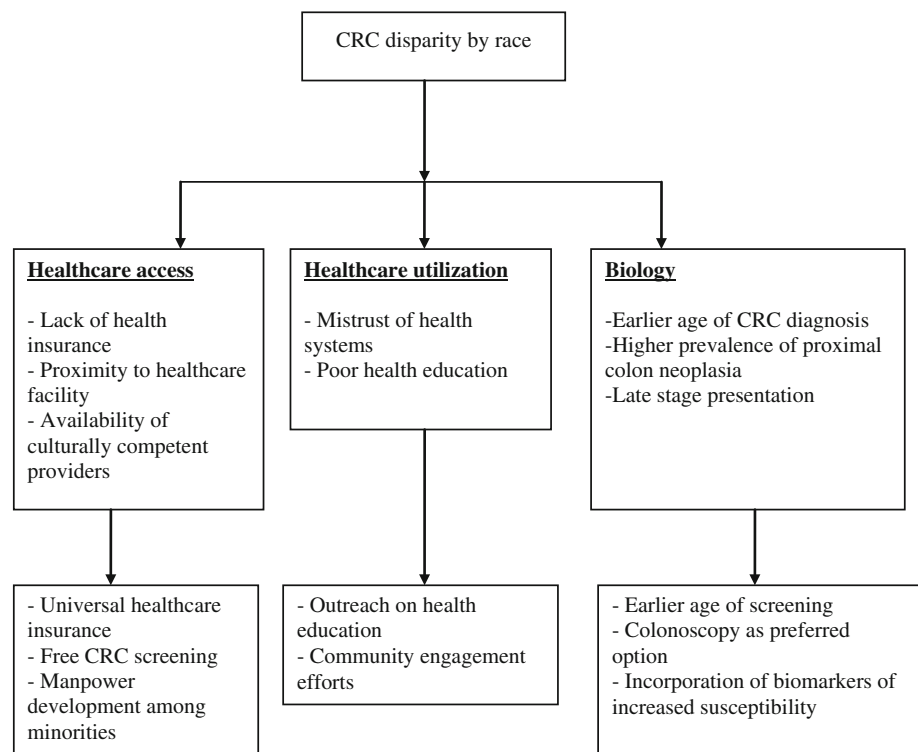
In this issue of the journal, Friedenberget al. [18] examined the yield and distribution of adenomas at complete screening colonoscopy among 45–49-year-old black patients and compared the findings with 50–59-year-old black and white patients who underwent screening colonoscopy in their institution in the same time period. The authors reported that the prevalence of adenoma among 45–49-year-old blacks, 50–59-year-old blacks and 50–59-year-old whites was 37.8, 42.9, and 38.5%, respectively

(P value = 0.43). There were also no statistically significant differences in the prevalence of proximal adenoma and advanced adenoma.

Although this study cannot definitively answer questions regarding the utility of screening blacks starting from age 45, it provides some evidence that CRC disparities by race may not be due to increased prevalence of precursor lesions among blacks. Although this study is limited by its retrospective design, relatively small sample size and being a single institution experience, the careful selection of average-risk patients who underwent complete colonoscopy for screening purposes with optimal bowel preparations makes the reported findings hard to ignore. If these findings are confirmed in larger, well-designed prospective studies, the implication of this would be that priority should be given to healthcare access and utilization domains in resource allocation to eliminate CRC disparities by race.

Unfortunately, none of the ongoing or completed CRC screening trials can adequately address CRC disparities by race. PLCO is the only CRC screening trial that enrolled a large number of blacks, but it is limited by the use of flexible sigmoidoscopy for screening and cannot be definitive in terms of biological differences regarding the proximal colon. The ongoing colonoscopy screening trials (<http://www.clinicaltrials.gov>; identifiers NCT00906997 and NCT00883792) are based in Europe and very few black participants are anticipated to be enrolled. Prospective studies that are designed specifically to answer

Fig. 1 Solutions based on domains of colorectal cancer (CRC) disparity by race



questions on the differential contributions of the underlying causes of CRC disparity by race in a well-defined cohort are needed to guide intervention efforts. Thus, if there are no differences in utilization and yield of colorectal neoplasia, then the problem to address will be universal access; if there are differences in utilization but not in yield of screening, then health education to increase utilization will be essential. But if the difference is only in biology then tailored intervention such as different screening recommendations by race may be warranted (Fig. 1).

Until the differential contributions of the root causes of CRC disparity by race are well established, it is worthwhile for local communities with low CRC screening rates to examine, adapt and adopt an “Urban Model,” similar to what was utilized in New York City. This model involved a strong commitment from the Department of Health and Mental Hygiene leading to the establishment of a coalition of stakeholders called the Citywide Colon Cancer Control Coalition, which carries out a comprehensive campaign that focuses on increasing colonoscopy screening and targets underscreened groups [13]. There is a need to increase access to screening and to increase outreach efforts targeting minorities, including getting cancer education to schools to create more awareness among the youth. It is indeed quite challenging to proffer a perfect solution to a problem that is not clearly understood. In the end, perhaps, optimal access and utilization of healthcare resources by blacks will unmask biological difference by race in a meaningful manner.

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