

**PUBLISHED ABSTRACT**

# Epidemiology of Colorectal Cancer Screening Completers and Non-Completers at an Urban Primary Care Practice

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## Background

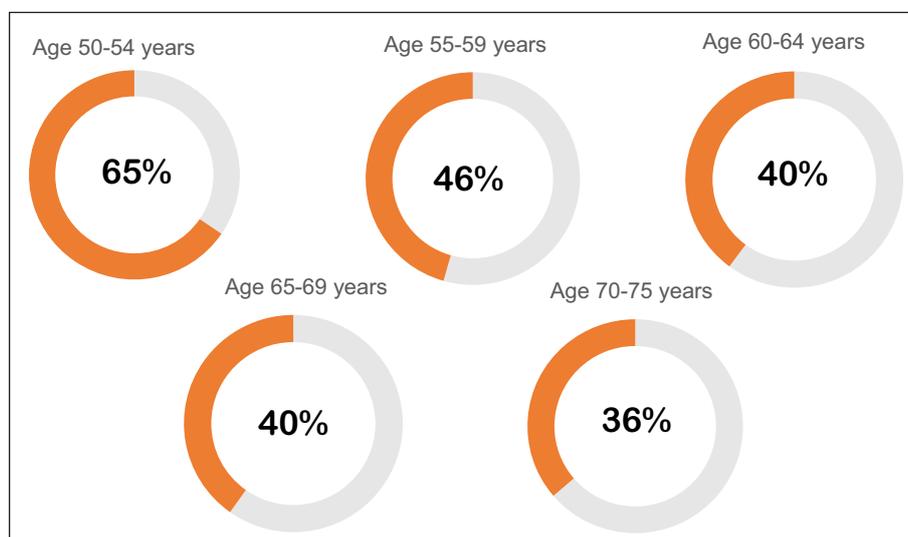
Colorectal cancer is the second leading cause of cancer-related deaths in men and women in the United States. In an urban multi-clinic primary care practice, we want to conduct interventions to target non-completers of colorectal cancer (CRC) screening. We will evaluate the percentage of patients who are up to date on their CRC screening and compare characteristics between completers and non-completers to design interventions that engage non-completers in preventive health screening.

## Methods

We conducted a cross-sectional study using Epic-generated patient reports in January 2020 in an urban primary care practice. It consists of 5 different practices set in various socioeconomic neighborhoods in NYC, including two HIV primary care practices. Completion of CRC screening is defined as satisfying USPSTF guidelines for CRC screening. We evaluated the following characteristics between completers vs non-completers of CRC screening: age groups (every 5 years), sex, zip code, hierarchical condition categories (HCC) score, presence of value-based insurance coverage, method of CRC screening, and presence of PCP visit within the last 1 year or 3 years. We used the frequency and univariate functions in SAS 9.4 to analyze the data.

## Results

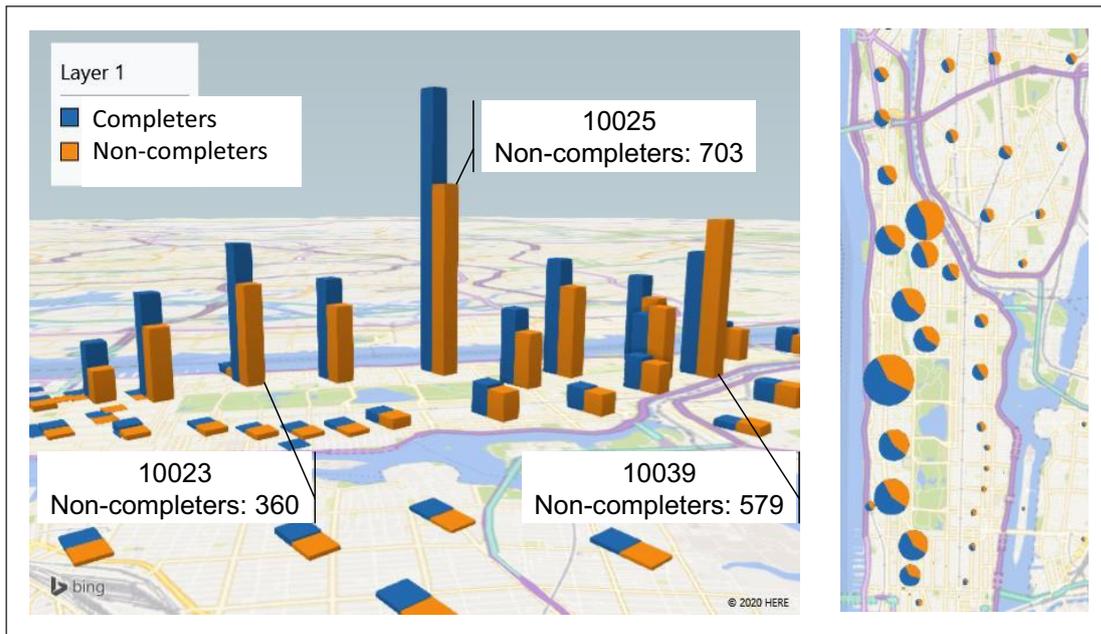
Overall CRC screening completion rate is 53%, with 98% choosing a procedural-based screening mechanism (eg. colonoscopy). Non-completion of CRC screening is 65% for age 50 to 54 years, 46% or ages 55 to 59 years, 40% for ages 60 to 64 years, 40% for ages 65 to 69 years, 36% for ages 70 to 75 years (See **Figure 1**).



**Figure 1:** Percentage of non-completion of CRC screening by age group.

Heat map shows multiple zip codes with >200 patients who have yet to undergo CRC screening (See **Figure 2**). The HCC score is 0.48 points higher ( $p < 0.001$ ) among completers as compared to non-completers. The odds of being screened for CRC for female sex is 1.30 (95% CI of 1.22 to 1.39) times of the odds of being screened for CRC for male sex.

The odds of completing CRC screening in patients who have seen a PCP within one year is 2.98 (95% CI of 2.77 to 3.20) times higher than the odds of completing CRC screening in patients who did not see a PCP within one year. The odds of completing CRC screening in patients who have seen a PCP within three years is 3.32 (95% CI of 3.08 to 3.57) times higher than the odds of completing CRC screening in patients who did not see a PCP within three years. The odds of completing CRC screening in patients who have value-based insurance contracts is 1.97 (95% CI of 1.81 to 2.14) times higher than the odds of completing CRC screening than patients who do not have value-based insurance contracts (See **Table 1**).



**Figure 2:** Completers and non-completers of CRC screening by zip code.

**Table 1:** Odds ratio of completers and non-completers of CRC screening for a variety of patient characteristics.

	Odds Ratio	95% CI
Male	1	
Female	1.3	1.22–1.39
Not seen provider in 1 yr	1	
Seen provider within 1 yr	2.98	2.77–3.20
Not seen provider in 3 yrs	1	
Seen provider within 3 yrs	3.32	3.08–3.57
Non value-based contract	1	
Value-based contract	1.97	1.81–2.14

**Conclusions**

Our needs assessment reveals that the overall CRC screening rate of 53% is below that of the national average at 68%, and much improvement is needed to increase CRC screening rates. These results will help us to target outreach efforts to focus on younger, male, and healthier patients who have not had recent contact with our primary care team. Given the low utilization of stool-based tests, it is an area of opportunity for intervention, especially during the unprecedented COVID pandemic.

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