**RESULTS:** For individuals who initiated screening at age 45 with reported adherence, triennial mt-
and 50 were assessed by McNemar
assessed for pre-Medicare eligible and Medicare eligible years (ages 65

**METHODS:** Screening strategies were simulated for individuals free of diagnosed colorectal cancer at age 40 and screened between 50–75 years. White boxes indicate 10% positive difference with mt-sDNA versus FIT. Dark gray boxes indicate >10% negative difference with mt-sDNA versus FIT.

[279] Figure 1. Percent difference in predicted life-years gained (LYG) per 1000 individuals assuming 100% adherence for triennial multitarget stool DNA (mt-sDNA) and annual fecal immunochemical test (FIT) at assumed adherence rate intervals for follow-up colonoscopy (COL) in individuals free of diagnosed colorectal cancer at age 40 and screened between 50–75 years. White boxes indicate 10% positive difference with mt-sDNA versus FIT. Dark gray boxes indicate >10% negative difference with mt-sDNA versus FIT.

### S0280

**Lowering the Colorectal Cancer Screening Age Improves Predicted Outcomes in Pre-Medicare and Medicare Populations in the CRC-AIM Microsimulation Model**

Deborah A. Fisherpresenter, MD, MHS1, Leila Saoud, PhD2, Lila J. Finney Rutten, PhD, MPH3, A. Burak Ozbay, PhD, MBA2, Paul J. Limburg, MD, MPH3.

1University of Minnesota, Minneapolis, MN;2Exact Sciences Corporation, Madison, WI;3Mayo Clinic, Rochester, MN.

**INTRODUCTION:** Most US guidelines recommend average risk colorectal (CRC) screening for ages 50–75. An increasing CRC incidence among younger populations renders critical the need to evaluate the potential benefit of earlier CRC screening initiation. Using the validated CRC-AIM microsimulation model, we estimated the impact of lowering the CRC screening initiation age on outcomes for triennial multitarget stool DNA (mt-sDNA) and annual fecal immunochemical test (FIT) at assumed adherence rate intervals for follow-up colonoscopy (COL) in individuals free of diagnosed colorectal cancer at age 40 and screened between 50–75 years. White boxes indicate 10% positive difference with mt-sDNA versus FIT. Dark gray boxes indicate >10% negative difference with mt-sDNA versus FIT.

[280] Figure 1. Life-years gained (LYG) with triennial mt-sDNA and annual FIT assuming reported or perfect adherence and screening start ages of 45 or 50 years.

### S0281

**Improvement in Adenoma Detection Using a Novel Artificial Intelligence-Aided Polyp Detection Device**

Azim Shalhoub, MD, MPH, Daniel Colucci, MD, Lavi Eriksen, MD, MPH, Brian, A. Burak Ozbay, PhD, MBA, Lila J. Finney Rutten, PhD, MPH, A. Burak Ozbay, PhD, MBA, Lila J. Finney Rutten, PhD, MPH.

1University of Minnesota, Minneapolis, MN;2Iterative Scopes, Cambridge, MA;3Brigham & Women's Hospital, Boston, MA;4Concord Hospital, Concord, NH;5Mount Auburn Hospital, Cambridge, MA.

**INTRODUCTION:** Detecting colorectal neoplasia is the goal of high-quality screening and sur-
veilliance colonoscopy, as reflected by high adenoma detection rate (ADR) and adenomas per colonoscopy (APC). In addition, recent studies have highlighted the importance of sessile serrated lesions (SSLs) as precursors to colon cancer. The aim of our study was to prospectively evaluate the pilot performance of a novel AI-aided polyp detection device (APDD) in improving ADR, APC, and detection of SSLs during routine colonoscopies in a real-world setting. Finally, we assessed the increase in resection of hyperplastic polyps relative to adenomas and SSLs as defined by true histology rate (THR).

**METHODS:** We compared ADR, APC, and detection of SSLs in a cohort of outpatients undergoing routine high resolution colonoscopy with and without the use of a real-time APDD (Iterative Scopes, Cambridge, MA). Patients undergoing colonoscopy with our APDD were prospectively enrolled in a single arm, open label study. The results were compared with a historical cohort performed by the same endoscopists at the same practice. All rectal polyps were examined histologically. This study was approved by an institutional review board.

**RESULTS:** 83 patients (28 screening, 55 surveillance) undergoing colonoscopy at an outpatient endoscopy center were prospectively enrolled and outcomes compared with 283 historical control patients (117 screening, 166 surveillance). Overall, ADR with and without APDD was 54.2% and 40.6% respectively (P = 0.028) and 53.6% and 30.8% respectively in screening exams (P = 0.014). Overall, APC with and without APDD was 1.46 and 1.01 respectively (P = 0.104) and 1.18 and 0.50 respectively in screening exams (P = 0.02). In addition, overall sessile serrated lesion per colonoscopy (SSLPC) with and without APDD was 0.24 and 0.14 respectively (P = 0.178) and 0.43 and 0.09 respectively in screening exams (P = 0.034). THR with and without APDD was 73.8% and 78.4% respectively (P = 0.463) and 73.0% and 71.0% respectively in screening exams (P = 0.731).

**CONCLUSION:** A novel APDD increased the ADR and APC in a cohort of patients undergoing screening and surveillance colonoscopy without concomitant increase in hyperplastic polyp resection. Additionally, there was improvement in detection of SSLs in screening patients. AI-aided colonoscopy has the potential for improving the outcomes of patients undergoing colonoscopy.
Adenoma Detection Rates for Colonoscopy and Associated Factors: Results From a U.S. Sample Using the GIQuIC Registry

Aasma Shaukat, MD, MPH1, Jennifer Holub, MS2, Irving Pike, MD, FACG3, Mark Pochapin, MD4, David A. Greenwald, MD, FACG5, Colleen Schmitt, MD6, Glenn Eisen, MD7.

1University of Minnesota, Minneapolis, MN; 2GIQUIC, Bethesda, MD; 3Creek, Walnut Creek, CA; 4NYU, New York, NY; 5Mount Sinai Hospital, New York, NY; 6Chattanooga GI, Chattanooga, TN; 7Oregon Clinic, Oregon, OR.

INTRODUCTION: Adenoma Detection rate (ADR) is an established quality indicator for screening colonoscopy. However, reported ADRs are highly variable across practices, and national or population-based estimates are not available. The aim of our study was to study the ADR, variability of rates over time and factors associated with detection rates of ADR in a national sample of patients undergoing colonoscopy using the GIQuIC registry.

METHODS: We used colonoscopies submitted to the GIQuIC registry from 2014 to 2018 on adults ages 50–89. Only the first colonoscopy record per patient was included. Indications for colonoscopy were categorized as screening, diagnostic and surveillance. We used hierarchical logistic models to study factors associated with ADR.

RESULTS: A total of 2,646,833 colonoscopies were performed by 1,169 endoscopists during the study period. The average ADR for screening colonoscopies per endoscopist was 36.80% (SD 10.21), 44.08 (SD 10.98) in males and 31.20 (SD 9.65) in females. Adjusted to the US population, the ADR was 39.08%. There was a significant increase in ADR from screening colonoscopies over the study period from 33.93% in 2014 to 38.12% in 2018. Clinically significant factors associated with higher ADR were age (OR 1.28; 95% CI 1.27–1.29 for 60–69; 1.57, 95% CI 1.55–1.58 for 70–79 compared to 50–59 years), male gender (OR 1.57; 95% CI 1.56–1.58), surveillance indication (vs. screening; OR 1.24; 95% CI 1.22, 1.26) and longer withdrawal times (11 minutes vs. ≤6 minutes) (OR 10.07; 95% CI 9.51–10.66).

CONCLUSION: Population based estimates of detection rates of ADR are 36.60% and have increased over time. Factors associated with ADR were patient age, gender and longer withdrawal time.

A Single Center Review of Patients With a Positive Multi-Target Stool DNA Test and Negative Colonoscopy

Nicholas Talabiska, BS1, Marika Bergenstock, DO1, Claire Pedrosa, MD1, David Talabiska, DO1, Joshua Stiehenberge, DO1.

1Geisinger Medical Center, Danville, PA.