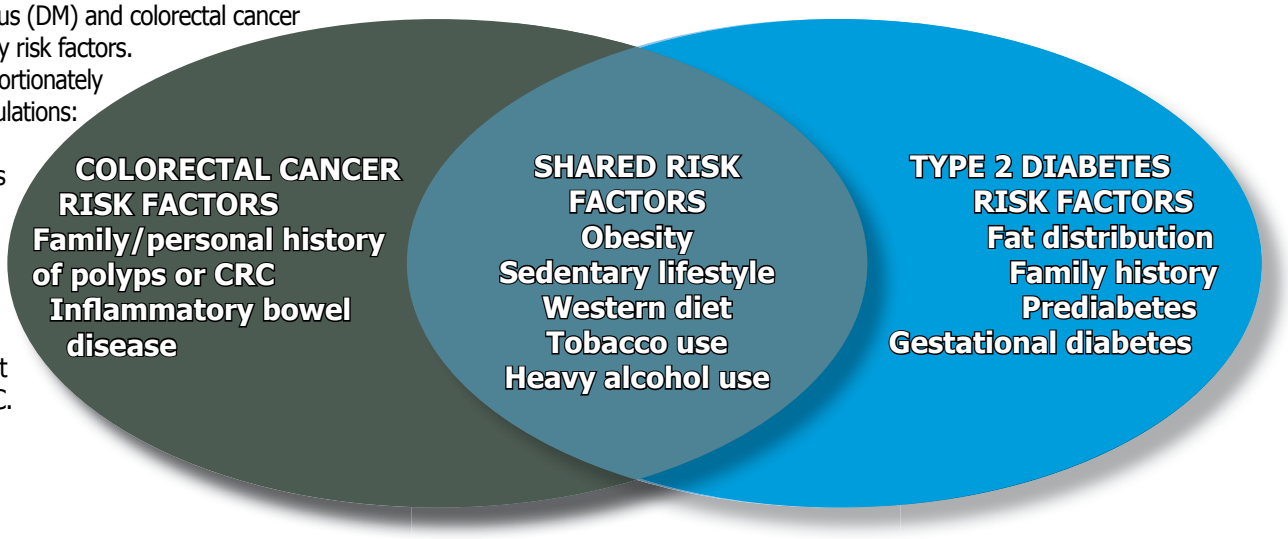
Diabetes and Colorectal Cancer

Shared Risk, Shared Screening

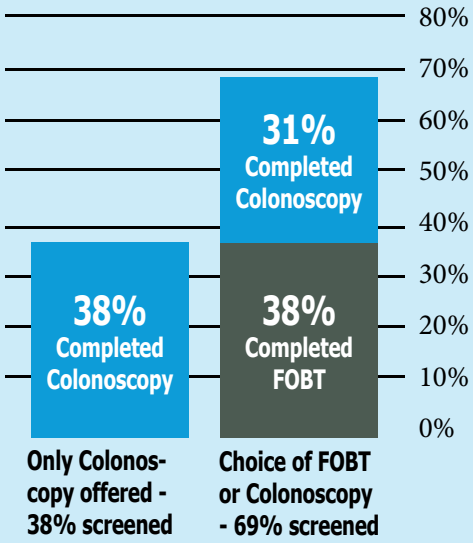
RISK FACTORS

Diabetes Mellitus (DM) and colorectal cancer (CRC) share many risk factors. They also disproportionately affect similar populations: people over 50, African Americans and those with a higher body mass index. Patients with diabetes also have a 30 percent higher risk of CRC.



Why offer a Fecal Immunochemical Test (FIT)?

1. Screen more patients: Patients offered a choice between a colonoscopy and a stool test are more likely to be screened. FIT tests appeal to patients that have barriers to colonoscopy such as fear and aversion, inadequate insurance coverage, and inability to provide transportation to a screening site or to take time off from work.



2. Generous reimbursement for completed tests: Take-home FIT/iFOBT screening is covered by major insurers in Alabama, including Blue Cross Blue Shield of Alabama, Medicaid and Medicare. Medicare reimburses $21.86 for a completed test. CPT Code: G0328QW

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3. Prevent colorectal cancer, the second leading cause of cancer deaths in Alabama: From 2006-2010 42.7 percent of CRC diagnoses in Alabama were made at the late stage [8]. Widespread screening could find many of these cancers earlier, when they are easier to treat.

For more information on the FIT contact the Alabama Department of Public Health FITWAY Colorectal Cancer Prevention Program at 334-206-3336. www.adph.com/fitway

CAUSALITY

Diabetes is a possible cause of colorectal cancer. In the World Journal of Gastroenterology, Olga Giouleme, Michael D. Diamantidis and Mario G. Katsaros presented research on the idea that pathophysiological mechanisms may explain the link, particularly the insulin-like growth factor (IGF-1)-hyperinsulemia theory, which "implies that elevated insulin and free IGF-1 levels support the proliferation of colon cells, thereby leading to a survival benefit, resulting in colorectal cancer [1]." This study and others in the American Journal of Epidemiology and Springer Science Business Media also discuss the possibility that slower bowel transit time may contribute to CRC by allowing carcinogenic fecal contents such as bile acids, ammonium acetate, and fecapentaene-12 to contribute to DNA and other cellular damage in the colon [2-4].

The Springer study, authored by Lei Sun and Shiying Yu, also noted that "hyperglycemia may promote carcinogenesis, because glycolysis is essential for tumor energy metabolism and can generate oxidative stress [4]."

1. Giouleme O., Diamantidis M.D., Katsaros M.G. Is diabetes a causal agent for colorectal cancer? Pathophysiological and molecular mechanisms. World Journal of Gastroenterology 2011, 17 (4): 444-4448.

2.Coughlin S.S., Calle E.E., Teras L.R., et. al. Diabetes Mellitus as a Predictor of Cancer Mortality in a Large Cohort of US Adults. American Journal of Epidemiology 2004, 159 (12): 1160-1167.

3. Will J.C., Galuska D.A., Vinicor F., et. al. Colorectal Cancer: Another Complication of Diabetes Mellitus? American Journal of Epidemiology 1998, 147 (9): 816-825.

4. Sun L., Yu S. Diabetes Mellitus Is an Independent Risk Factor for Colorectal Cancer. Springer Science Business Media.

MORTALITY

Several studies suggest that a positive association exists between diabetes and mortality from colorectal cancer[5]. One study reported a 1.5-fold increased risk of death from colorectal cancer among diabetic patients[6]. Screening with recommended practices (colonoscopy every 10 years, sigmoidoscopy every 5 years, or annual FIT/iFOBT or high-sensitivity guaiac) leads to detection of colorectal cancer at an early stage, when it is more treatable.

Data show that late stage, or distant and regional, diagnoses account for nearly half of all CRC diagnoses in Alabama[7]. This diagnosis rate is significantly worse for the African American population. The five year survival rate for early diagnoses, *in situ* and localized, is over 90 percent.

The five-year survival rate drops significantly for regional cancers, to only 70.4 percent. For distant cancers, which account for approximately 23 percent of all CRC cases among African Americans, the survival rate is just 12.5 percent[7].

EHR AND CRC SCREENING

Using electronic health records (EHR) to identify a CRC screening population can be challenging. Depending on the type of EHR system a provider uses, significant shortcomings in list generation and data sets may occur.

Most EHR systems sort best by diagnosis and have more flexibility with health maintenance tables and flowsheets than they do with clinical decision support and alerts.

To overcome these weaknesses, consider screening the diabetic population, rather than the entire 50-75 age group.

Add CRC screening, for example a FIT/iFOBT, to the required tests for diabetic patients in the flowsheet or health maintenance table common for patients with a DM diagnosis.

CLINICAL QUALITY MEASURES

CRC screening is also a clinical quality measure (CQM) **(NQF 0034/PQRI 113)** that meets three Meaningful Use Stage 1 EHR objectives at once. A provider that chooses CRC screening for CQM could also qualify for $44,000 in incentives from Medicare or $63,750 from Medicaid depending on the patient population.

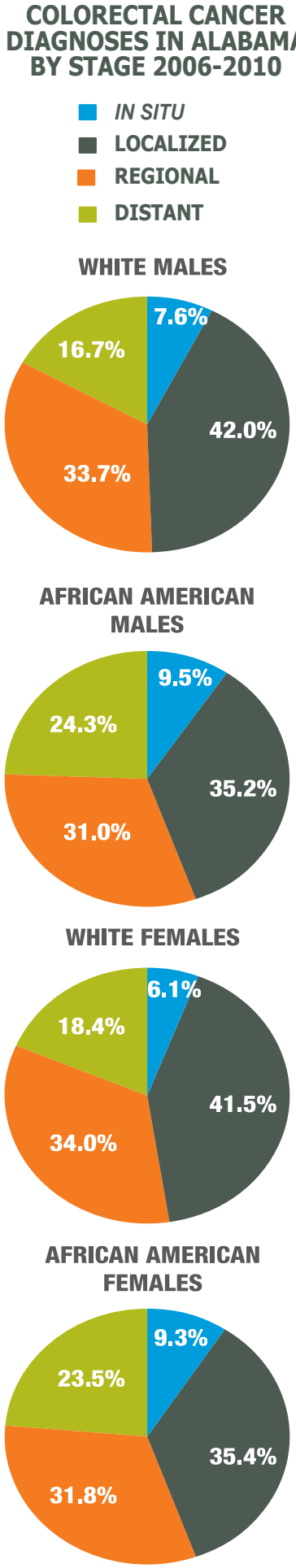
CRC Screening meets the following objectives as a clinical quality measure:

- Professional core objective
  - Report ambulatory clinical quality measures to the Center for Medicare and Medicaid Services (CMS)
- Eligible professional menu objective - Generate list of patients by specific condition to use for quality improvement
  - Send patient reminders as needed for preventative and follow-up care

For offices that have moved into Meaningful Use Stage 2, other objectives can be used while raising CRC screening rates:

- Menu objective
  - Record patient family health history. (*Use this objective to separate average risk patients who are eligible for the FIT from high risk patients who need a colonoscopy.)*
- Core objective
  - Use clinically relevant information to identify patients who should receive reminders for preventative/ follow-up care
  - Incorporate clinical lab-test results into certified EHR technology

Every EHR system has different capabilities and limitations. Contact your EHR vendor if you have questions about how to accomplish these and other goals.



5.Larsson S.C., Orsini N., Wolk A. Diabetes Mellitus and Risk of Colorectal Cancer: A Meta-Analysis. Journal of the National Cancer Institute 2005, 97(22):1679-1687.

6. Weiderpass E., Gridley G., Nyren O., et. al. Diabetes mellitus and risk of large bowel cancer. Journal of the National Cancer Institute 1997, 89: 660-661.

7. Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) Research Data (2006-2010), Alabama Statewide Cancer Registry, released November 2013.

8. Inadomi J.M., et. al. Adherence to Colorectal Cancer Screening A Randomized Clinical Trial of Competing Strategies. Arch Intern Med 2012;172(7):575-582.