
COLORECTAL CANCER SCREENING

U. S. Department of Health and Human Services
Health Resources and Services Administration



Contents

Quality Measure: Colorectal Cancer Screening	1
Measure Description	1
Part 1: Introduction	1
Performance Measurement: Colorectal Cancer Screening	2
Part 2: Characteristics for Success: Colorectal Cancer Screening	6
Part 3: Implementation of Quality Measure: Colorectal Cancer Screening	11
Critical Pathway for Colorectal Cancer Screening	12
Factors That Impact the Critical Pathway	16
Data Infrastructure: Colorectal Cancer Screening	20
Data Infrastructure to Monitor the Performance Measure—An Overview	20
Implementation: Colorectal Cancer Screening	21
Part 4: Improvement Strategies: Colorectal Cancer Screening	27
What Changes Can an Organization Make?	27
How Can an Organization Make Those Changes?	38
How Can an Organization Know That Changes Caused an Improvement?	41
Part 5: Holding the Gains and Spreading the Improvement	42
Holding the Gains	42
Spreading Improvement	43
Part 6: Supporting Information	43
Case Study	43
References	43
Additional Resources	45

QUALITY MEASURE: Colorectal Cancer Screening

The goals of this module are to provide a detailed overview of the **Colorectal Cancer Screening** clinical quality measure, outline the intended use for this measure, and highlight the benefits of implementing this measure into an organization's quality improvement (QI) program.

Measure Description

Name	Description	Numerator	Denominator	Source	Reference
Colorectal Cancer Screening	Percentage of adults 50-80 years of age who had an appropriate screening for colorectal cancer	Patients in the denominator who received one or more screenings for colorectal cancer	All patients 51 to 80 years of age during the measurement year	NQF	http://www.qualityforum.org/M MeasureDetails.aspx?actid=0&SubmissionId=394#k=colorectal%2520cancer%2520screening&e=0&sn&so=a&p=1&st=&sd=&mt=&cs=

Part 1: Introduction

Colon cancer is a common and lethal disease and the second leading cause of cancer death; consider the following:¹

- Colorectal cancer is the third most common cancer found in men and women.²
- The risk of colorectal cancer begins to increase after the age of 40 years and rises sharply at the ages of 50 to 55 years; the risk doubles with each succeeding decade, and continues to rise exponentially.³
- Despite advances in surgical techniques and adjuvant therapy, there has been only a modest improvement in survival for patients who present with advanced neoplasms.^{4,5}
- One out of every three adults over the age of 65 has colon polyps – these polyps can sometimes progress to colon cancer.⁶

Colorectal screening procedures have an important role in preventing colorectal cancer. Screening can detect precancerous polyps and removal can be done before the polyps become cancerous. Screening also identifies cancer early in the course of the disease when treatment is more effective and the chance of recovery is higher. When screening identifies a colorectal tumor in its early stages, the cost of treatment is often much less expensive than if the tumor is detected later in the course of disease.⁷ Screening also has a potentially significant impact on preventing mortality and morbidity with estimates of up to 60 percent of deaths from colorectal cancer prevented if everyone age 50 and older were screened regularly and treated

appropriately.⁸ Eighty percent of colorectal cancer may be preventable through removal of colon polyps during endoscopic colorectal screening.⁶

Although colorectal cancer screening continues to yield some improvement, significant challenges remain. Screening rates for colorectal cancer lag behind other cancer screening rates, even though research shows that screening with fecal occult blood testing (FOBT), sigmoidoscopy, or colonoscopy effectively detects early-stage cancer and polyps.⁹ Unfortunately, screening rates for colorectal cancer indicate fewer than half of men and women over age 50 are screened at the recommended intervals.¹⁰ Screening rates are higher in adults who are insured, better educated, non-Hispanic, or have a usual source of medical care.¹¹

Although the challenge is daunting, it is clear that experts *do* know what good colon cancer screening looks like and are continually increasing public knowledge about colon cancer screening. The scientific literature, centers of excellence in colon cancer screening, and the experience of health care organizations are consistent in pointing to common themes in screening for colon cancer. Effective primary and secondary preventive approaches must be developed to reduce the morbidity and mortality from colorectal cancer.

Performance Measurement: Colorectal Cancer Screening

Measuring performance allows an organization to document how effectively care is provided and lays the foundation for improvement.

Identifying patients aged 50 to 80 years for appropriate colon cancer screening allows an organization the opportunity to focus on systems which support appropriate preventive care in patients with average risk of colon cancer. Patients with risk factors, such as inflammatory bowel disease, prior history of polyps or colorectal cancer, and genetic predisposition, usually warrant screening for colorectal cancer at an earlier age. Consider the characteristics of a good performance measure and the Institute of Medicine (IOM) framework, [Envisioning the National Healthcare Quality Report](#):

- *Relevance*: Does the performance measure relate to a frequently-occurring condition or have a great impact on patients at an organization's facility?
- *Measurability*: Can the performance measure realistically and efficiently be quantified given the facility's finite resources?
- *Accuracy*: Is the performance measure based on accepted guidelines or developed through formal group decision-making methods?
- *Feasibility*: Can the performance rate associated with the performance measure realistically be improved given the limitations of the clinical services and patient population?

To ensure that a performance measure has these characteristics, it is often based on, or aligned with, current [evidence-based guidelines](#) and proven measures.

The **Colorectal Cancer Screening** measure aligns with measures endorsed by the [National Committee for Quality Assurance \(NCQA\)](#) and similar performance metrics used by HRSA grantees and programs.

HRSA Quality Measure: Colorectal Cancer Screening

Name	Description	Numerator	Denominator	Source	Reference
Colorectal Cancer Screening	Percentage of adults 50 to 80 years of age who had an appropriate screening for colorectal cancer	Patients in the denominator who received one or more screenings for colorectal cancer	All patients 51 to 80 years of age during the measurement year	NQF	http://www.qualityforum.org/Media/MeasureDetails.aspx?actid=0&SubmissionId=394#k=colorectal%2520cancer%2520screening&e=0&source=a&p=1&st=&sd=&mt=&cs=

As with all performance measures, there are essential inclusions, exclusions, and clarifications that are required to ensure that an organization collects and reports data in the same way. This allows an organization using the measure to compare itself with others. Detailed specifications for the measure, with descriptions of inclusion and exclusion criteria, are found in the section, **Part 3: Data Infrastructure: Colorectal Cancer Screening**.

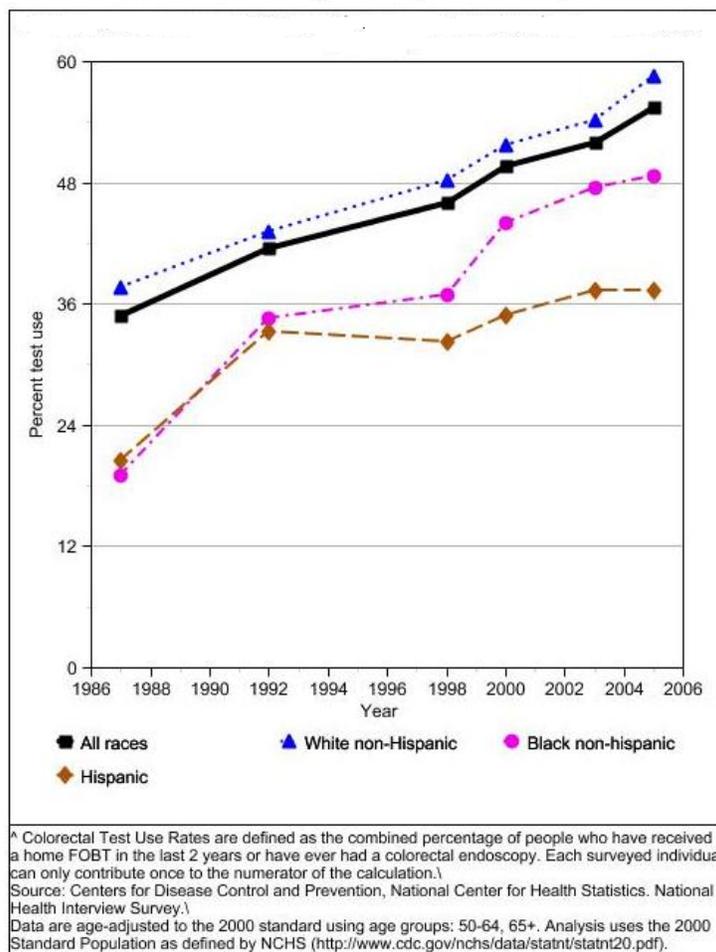
Improvement Experience: Colorectal Cancer Screening

As previously mentioned, the **Colorectal Cancer Screening** measure was chosen to align with existing national measures. The data demonstrating the experience with these measures is discussed briefly in this section.

In 2005, the Centers for Disease Control and Prevention (CDC) funded five colorectal cancer screening demonstration projects. The scope of the projects included colorectal cancer screening in adults ages 50 and older. The activities of the demonstration projects included grass roots efforts to increase awareness, screening, treatment, follow-up, and policy activation. Through these efforts, the cancer demonstration projects were able to increase the number of free colorectal cancer screenings offered; identify multiple community partners to provide secondary diagnostics and treatment, and influence State and county policy.¹²

Despite some improvements over time, colorectal cancer screening rates remain low. As indicated in **Figure 1.1**, colorectal cancer test use has shown a slight increase, especially between the years 1987 to 1992, 1998 to 2000, and 2003 to 2005. Since 1987, colorectal cancer test use has been rising in Whites. The rise of cancer test use in Blacks was attributed to overall significant increases between the years of 1987 to 1992 and 1998 to 2000. After a large rise of

cancer test use among Hispanics occurred between the years of 1987 to 1992, the trend has been stable.



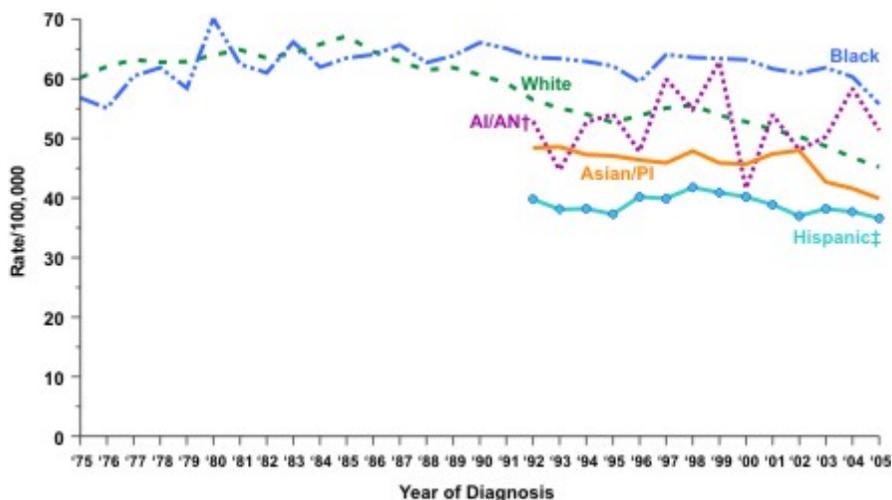
Adapted from NCQA State of Health Care Quality Report, 2009

Figure 1.1: Cancer Trends Progress Report 2007, Colorectal Test Used for Adults Ages 50 and Over by Race/Ethnicity (1987-2005)

In 2005, 25 percent of people aged 50 and older had a home FOBT within the past two years. This includes 18 percent of Hispanics, 24 percent of Blacks, and 26 percent of Whites. Among Asian women interviewed in California, 22 percent had a home FOBT within the past 2 years. In 2005, 50 percent of people aged 50 years and older had a colorectal endoscopy. This included 32 percent of Hispanics, 43 percent of Blacks, and 53 percent of Whites. Among Asian women interviewed in California, 53 percent had a colorectal endoscopy. In 2005, 59 percent of people aged 50 years and older had used a colorectal cancer test. This included 40 percent of Hispanics, 52 percent of Blacks, and 61 percent of Whites. Among Asian women interviewed in California, 60 percent had used a colorectal cancer test.¹³

In the United States, the burden of disease is distributed unequally among the poor and ethnic minorities. This is due to no or insufficient insurance, cultural influences, previous bad experiences that lead to mistrust in the health care system, logistical barriers, such as, lack of transportation or child care services, language or cultural differences with health care providers,

and limited knowledge about health care issues. Because these barriers exist, patients may not receive preventive health care services or may delay care until they are very ill. Therefore, minorities and people with low incomes tend to present to clinics with advanced-stage disease. For example, **Figure 1.2** shows that Blacks had the highest incidence rate for colorectal cancer; American Indian/Alaska Natives had the second highest incidence of colorectal cancer, followed by Whites, Asian/Pacific Islanders, and Hispanics.



Adapted from NCQA State of Health Care Quality Report, 2009

Figure 1.2: Colorectal Cancer - SEER Incidence Rates* by Race and Ethnicity, U.S., 1975–2005

Incidence source: Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute (NCI) 1975–1991 = SEER 9; 1992–2005 = SEER 13.

*Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population (19 age groups - Census P25-1130).

†Rates for American Indians/Alaska Natives are based on the CHSDA (Contract Health Service Delivery Area) counties.¹⁴

‡Hispanics are not mutually exclusive from whites, blacks, Asians/Pacific Islanders, and American Indians/Alaska Natives.

Incidence data for Hispanics are based on NHIA and exclude cases from the Alaska Native Registry.¹⁴

Additionally, the Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90 percent of the United States' managed health care plans and a growing number of Preferred Provider Option (PPO) plans to measure performance on important dimensions of care and service including colorectal cancer screening. The colorectal cancer screening measure estimates the percentage of adults 50 to 80 years of age who have had appropriate screening for colorectal cancer with any of the four following tests:

- FOBT during the measurement year
- Flexible sigmoidoscopy during the measurement year or during the four years prior
- Double contrast barium enema during the measurement year or during the four years prior
- Colonoscopy during the measurement year or during the nine years prior

While screening rates show a slight improvement as indicated in **Figure 1.3**, the 2009 State of Healthcare Quality report, inclusive of HEDIS data, clearly reflects that if screening for colon cancer were universal, around 18,800 lives would be saved every year.¹⁵

COLORECTAL CANCER SCREENING TRENDS, 2003–2008		
YEAR	COMMERCIAL	MEDICARE
2008	58.7	53.1
2007	55.6	50.4
2006	54.5	53.3
2005	52.3	53.9
2004	49.0	52.6
2003	47.4	49.5

Figure 1.3: Colorectal Cancer Screening Trends, 2003-2008

Being diagnosed at a later stage significantly decreases the five-year survival rate from 93 percent for stage I colon cancer to 8 percent for a stage IV tumor.¹⁶ Putting systems in place to track **Colorectal Cancer Screening** helps an organization to better understand how effectively it is able to provide preventive care for its patients. Systematically identifying and screening patients for colorectal cancer during the age ranges of increasing incidence will prevent cancer in many. Even for those who do develop colorectal cancer, there is a significant impact on morbidity and mortality by early detection and appropriate treatment.

Part 2: Characteristics for Success: Colorectal Cancer Screening

Organizations that were successful in improving **Colorectal Cancer Screening** for patients approached the issue in a systematic way, with careful attention to the factors that have an impact on patients with highest risk. Although clinics may differ in specific workflow, documentation, and staffing models, organizations that experienced successful improvement efforts shared these three fundamental characteristics:

1. Clear direction
2. Functional infrastructure for quality improvement
3. Commitment from leadership

1. Clear Direction

Successful organizations found that it is important to define clearly what they are trying to accomplish. Most often in improvement work, leadership defines an aim that guides an organization's efforts. An aim is a written, measurable, and time-sensitive statement of the accomplishments a team expects to achieve from its improvement efforts. The aim statement contains a general description of the work, the system of focus, and numerical goals. The aim statement includes a very specific indication of what success looks like and

may include guidance that further frames the work, including methodologies to be used and budgetary and staffing limitations. Examples of tools used by *QI teams* to create their aim statements include the [Aim Worksheet and the Aim Statement Checklist](#).¹⁷ Additional information, including tools and resources to assist an organization in developing its aim statement, can be found in the [Readiness Assessment and Developing Project Aims](#) module. A completed aim statement for the measure, **Colorectal Cancer Screening**, is shown in **Example 2.1: Assessing the Aim Statement for Southeast Health Center (SHC) Using the Aim Statement Checklist**.

The following hypothetical example provides an aim statement created by a QI team from a fictional health center called Southeast Health Center (SHC). The SHC QI team used the Aim Statement Checklist to assess its completed aim statement, which reassures the team it included the necessary components in the statement for its improvement project.

**Example 2.1: Assessing the Aim Statement for Southeast Health Center (SHC)
Using the Aim Statement Checklist**

Aim Statement: *Over the next 12 months, we will redesign the care systems of Southeast Health Center to increase the number of patients aged 50 to 80 years in Dr. Stallings's practice, so that greater than 55 percent of these patients are screened for colorectal cancer.*

Goal based on current reported screening rates as noted by NCQA.

Guidance:

- *No additional staffing will be required as a result of this improvement*
- *A key focus will be systems for patient outreach*

Here is an example of how Southeast Health Center evaluated its aim statement using the Aim Statement Checklist.

Aim Statement Checklist for Example 2.1:¹⁷

- ✓ What is expected to happen?
SHC: More patients will be screened for colorectal cancer
- ✓ Time period to achieve the aim?
SHC: 12 months
- ✓ Which system will be improved?
SHC: Care systems that improve colorectal cancer screening
- ✓ What is the target population?
SHC: Patients aged 50 to 80 years in Dr. Stallings's practice
- ✓ Specific numerical goals?
SHC: Greater than 55 percent will be screened for colorectal cancer
- ✓ Guidance, such as, strategies for the effort and limitations?
SHC: As noted, no new staff plus focus on patient outreach

Evaluating what others achieved provides appropriate context for choosing the numerical portion of an organization's aim. While the goal of screening *one hundred percent of patients for colorectal cancer screening* is optimal, an organization can set an appropriate and realistic goal based on the review of comparable data after consideration of the payer

mix of the patient population served. For some measures, it may be possible to find examples of benchmark data, which demonstrates the performance of a best practice. It is important to consider an organization's particular patient population when making comparisons to others' achievements. An organization may consider socioeconomic status and race/ethnicity of the population served, organizational size, payer mix, and other criteria in an effort to achieve an accurate comparison. Reviewing what others accomplished may help an organization to understand what is feasible to achieve. The numerical part of the aim should be obtainable, yet high enough to challenge the team to substantially and meaningfully improve. Additional guidance about setting aims can be found in the [Readiness Assessment and Developing Project Aims](#) module.

NCQA HEIDIS Data is one source to consider when choosing an aim or making performance comparisons for the measure, **Colorectal Cancer Screening**. The [NCOA State of Healthcare Quality Report](#) updates performance on this measure annually. Other sources of data for additional comparisons vary regionally but may include payers, State programs, aggregate HRSA program data, and State or regional quality improvement programs.

2. Functional Infrastructure for Quality Improvement

Successful organizations found that improvement work requires a systematic approach to measuring performance, testing small changes, and tracking the impact of those changes over time. This section describes four essential components of an infrastructure to support quality improvement efforts, including:

- Quality improvement teams
- Tools and resources
- Organizing improvements
- Building on the efforts of others by using changes that worked

There is considerable variation in how this infrastructure is created and maintained. It is important that each component is addressed in a way that fits an organization.

Quality Improvement Teams

Multidisciplinary QI teams are typically tasked to carry out this work. For improvement focused on **Colorectal Cancer Screening**, it is important to include a provider who wants to focus on increasing the number of patients who are screened for colorectal cancer, i.e., a *provider champion* for improvement.¹⁸ In addition to the provider champion, other appropriate members of a QI team may include:

- Nurses
- Case managers
- Patient outreach specialist
- [Patient navigator](#)
- Scheduling staff

- Information specialist
- Other staff involved in the patient care process, such as, receptionists, , administrative staff, medical assistants, pharmacists, and health coaches

It should be noted that patients can add great value to the QI process when prepared to participate in a meaningful way. The reference manual by the **National Quality Center (NQC)**, [A Guide to Consumer Involvement](#),¹⁹ has practical ideas to assist an organization on how to involve patients in its QI process.

There are no wrong answers here. Members of a team bring expert knowledge of the work they do for patients. Together, the team learns where and how its individual actions intersect and how each can have an impact on patients' care. The ability to think from a systems perspective and the will to improve colorectal cancer screening for patients are the primary prerequisites that contribute to a successful improvement team. A more advanced discussion on forming an improvement team can be found in the [Improvement Teams](#) module.

Tools and Resources

It is important that a QI team have the tools and resources necessary to achieve its established organizational aim. Some personnel may struggle with shifting from the daily work of patient care to their roles on the quality improvement team. Those challenges can be straight forward, such as, coordinating meeting times or developing content for the meetings to support the team's quality improvement efforts. Successful QI teams learned that organizing meetings efficiently is essential in their improvement efforts. Tools can help a QI team to structure meetings that focus its scheduled time on improvement efforts. Another useful tool includes one that displays data in a way that makes sense to the team members. Examples of templates and tools to track progress can be found in the [Managing Data for Performance Improvement](#) module. These types of tools are commonly used by improvement teams to remain focused on the work of improvement. The most important resource needs are uninterrupted time to focus on quality improvement and autonomy to test changes responsibly. Additional team resources and tools can be found in the [Improvement Teams](#) module.

Organizing Improvements

Successful organizations learned that planning an approach to change is essential. Change is, by nature, unsettling for some and presenting a clear direction and methodology can be reassuring. Most organizations with quality improvement experience adopted methodologies that help them organize their improvements.

As a QI team approaches improvement of **Colorectal Cancer Screening**, it should use quality models already embraced by its organization. For example, many organizations adopted the [Care Model](#) to organize their approaches to implementing quality improvement changes. Others successfully embraced the [FOCUS PDSA](#) approach. Both of these models provide a framework for a health care organization to plan and move

toward implementing its improvement efforts. There is no single model that is considered correct. Organizational alignment of methodology makes sense from the perspective of efficient training. A consistent quality improvement approach and the sharing of improvement ideas among members of a quality team can facilitate the replication of QI activities across an organization and maximize the impact of the overall QI program.

Just as organizations that are experienced in quality improvement activities adopted quality models that guide their work, many embraced a change methodology. A change methodology guides the actual change process, which involves managing *how* changes are made as opposed to *what* changes are made.

For some organizations, all changes are approved by a decision leader and then implemented. Others use a committee structure to evaluate and implement changes. Again, there is no right or wrong methodology, but one change methodology has been found to be particularly helpful in quality improvement is the [*Model for Improvement*](#). The Model for Improvement, developed by Associates in Process Improvement, is a simple, yet powerful, tool for accelerating improvement. The model is not meant to replace a change model that an organization may already be using, but rather to accelerate improvement. This model has been used successfully by health care organizations to improve many different health care processes and outcomes.

The *Model for Improvement* encourages small, rapid-cycle tests of changes. In improvement, this has a distinct advantage in decreasing the time it takes for changes resulting in improvement to be implemented. This methodology also directly involves the individuals who do the work, which provides additional insights into how to rapidly improve care processes.

Building on the Efforts of Others by Using Changes that Worked

One hallmark that successful organizations found beneficial in advancing their quality improvement programs is that everyone across the organization uses the same tools and language to make continuous improvements. A motto of many QI training leaders is "steal shamelessly." This is not the unethical, criminal intent, but instead the sense of "Why reinvent the wheel?" What does it mean to "steal shamelessly"? It means "stealing" or using what has worked in other organizations and "shamelessly" testing and implementing it to create rapid change in one's own organization.

Specific *change ideas* that worked for others to successfully improve **Colorectal Cancer Screening** are detailed later in this module in the **Changes that Work** section. Additionally, an organization that has improvement experience in another measurement area, such as, prenatal care, glycemic control, or immunizations, often adapts those successful tools to use with this measure.

3. Commitment from Leadership

For quality improvement efforts to be effective and sustained, leaders must show commitment to them. Typically, leaders may make a commitment to specific target areas for improvement once they consider the overall needs of the organization, requirements of funders, and how the proposed efforts align with the organization's mission and strategic plan. Leaders that consider quality improvement efforts as an "add-on" may be unable to maintain QI as a priority as other realities compete for the organization's attention and resources. Successful leaders in quality improvement integrate and align QI activities as part of their daily business operations.

A quality improvement team needs to have leadership commitment expressed in a tangible way. Often, it is an explicit dedication of resources, which may include team meeting time, data support, and specific planned opportunities that communicate actionable improvement suggestions to an organization's leadership. The authority of the improvement team and any constraining parameters should be clear. Detailed information highlighting the important role of leadership in a QI project can be found in the [Quality Improvement](#) module.

Below is a case study that is followed throughout the module and depicts the effort of one QI team as it focuses on improving the number of patients screened for colorectal cancer in its organization. The case study may be read in its entirety by [clicking here](#).

The Problem:

Southeast Health Center provides a full range of health services to several communities across a rural area in the southeastern United States. They are staffed by 3.5 FTE providers, 4 medical assistants (MAs) providing 3 FTEs, a part-time nurse, and a full-time receptionist who also functions as the medical records clerk. The clinic serves about 6,000 unduplicated individuals. Providers dictate notes and maintain paper charts. The clinic recently decided to consider using a registry system to better understand its colorectal cancer screening rates. The providers are very concerned about the low number of patients screened for colorectal cancer and want to understand how to help patients achieve better preventive care through colorectal cancer screening.

Part 3: Implementation of Quality Measure: Colorectal Cancer Screening

Before following the steps in Part 3, an organization should first make a commitment to increase the number of adults screened for colorectal cancer and complete the initial steps outlined in the previous section that include:

- Developing an aim statement
- Creating an infrastructure for improvement
- Obtaining commitment from leadership

Performance on this measure indicates how effectively all the steps of the processes used to deliver care work together so that colorectal cancer screening is optimized. Because there are so

many factors that can have an impact on screening of patients, it helps to visualize how these steps are mapped. The next section defines *Critical Pathway* and illustrates the application of this concept to test improvements to improve colorectal cancer screening in patients.

The case study continues...

The Approach:

The organization agreed to focus on improving colorectal cancer screening and chose to use the registry it had read about in the recent medical literature. The CEO recognized that resources needed to be dedicated to this effort but struggled to allocate them in challenging economic times. They agreed to allocate resources to see where they really were before committing to an improvement initiative. The team agreed to look further at the patients of one provider to better inform its decisions. The organization then made several critical decisions:

1. The team decided to focus on the **Colorectal Cancer Screening** clinical quality measure and target patients 50 to 80 years of age of one provider.
2. It invested resources to evaluate where it was regarding that particular measure and where it wanted to be based on national benchmarks.
3. It decided to limit this evaluation to the patients of one willing provider, Dr. Stalling.

For baseline information, it also agreed to allow one part-time MA, who was interested in technology, to take the registry tutorial and learn how to get important information into the registry.

Critical Pathway for Colorectal Cancer Screening

A critical pathway, also known as a clinical pathway, is a visual depiction of the process steps that result in a particular service or care. The sequence and relationship among the steps are displayed, which reveals a *map* of the care process. Additional information, including tools and resources regarding the mapping of care processes, can be found in the [Redesigning a System of Care to Promote QI](#) module. In an ideal world, the care process is reflective of evidence-based medical guidelines. Evidence-based medicine aims to apply the best available evidence gained from the scientific method for medical decision making.²⁰ A map of the care process steps that incorporates all of the known evidence and follows respected evidence-based medical guidelines can be considered the *idealized critical pathway*.

While the needs of individual patients should always be considered, clinical guidelines synthesize the best evidence into a pragmatic set of action steps that strive to provide the optimum health care delivery system. It is important to emphasize that clinical evidence and guidelines will evolve as knowledge progresses; therefore, the idealized critical pathway may evolve over time and not meet the needs of every individual. Clinical guidelines for **Colorectal Cancer Screening** for consideration include:

- American College of Gastroenterology Guidelines for Colorectal Cancer Screening²¹
- Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps²²
- Screening for Colorectal Cancer: U.S. Preventive Services Task Force Recommendation Statement²³

Note: The following points should be considered when using critical pathways:

- There can be more than one way to depict the idealized critical pathway.
- Authorities vary on critical issues that have an impact on important decisions in medicine, and there is latitude within guidelines for variation related to less critical matters.

It is important that an organization agrees on the guidelines with which to align. There are no specific guidelines that address processes to improve Colorectal Cancer Screening, but a number of references provide available evidence. An organization may interpret the evidence that has an impact on Colorectal Cancer Screening differently than illustrated in Figure 3.1. If so, creation of a different schematic that reflects its interpretation of the best evidence is encouraged. References are located in *Part 6: Supporting Information* at the end of this module.

In **Figure 3.1**, the schematic for **Critical Pathway for Colorectal Cancer Screening** incorporates available evidence and represents an idealized critical pathway for care to optimize colorectal cancer screening. The boxes represent typical steps in care delivery. If these steps happen reliably and well, effective care is delivered.

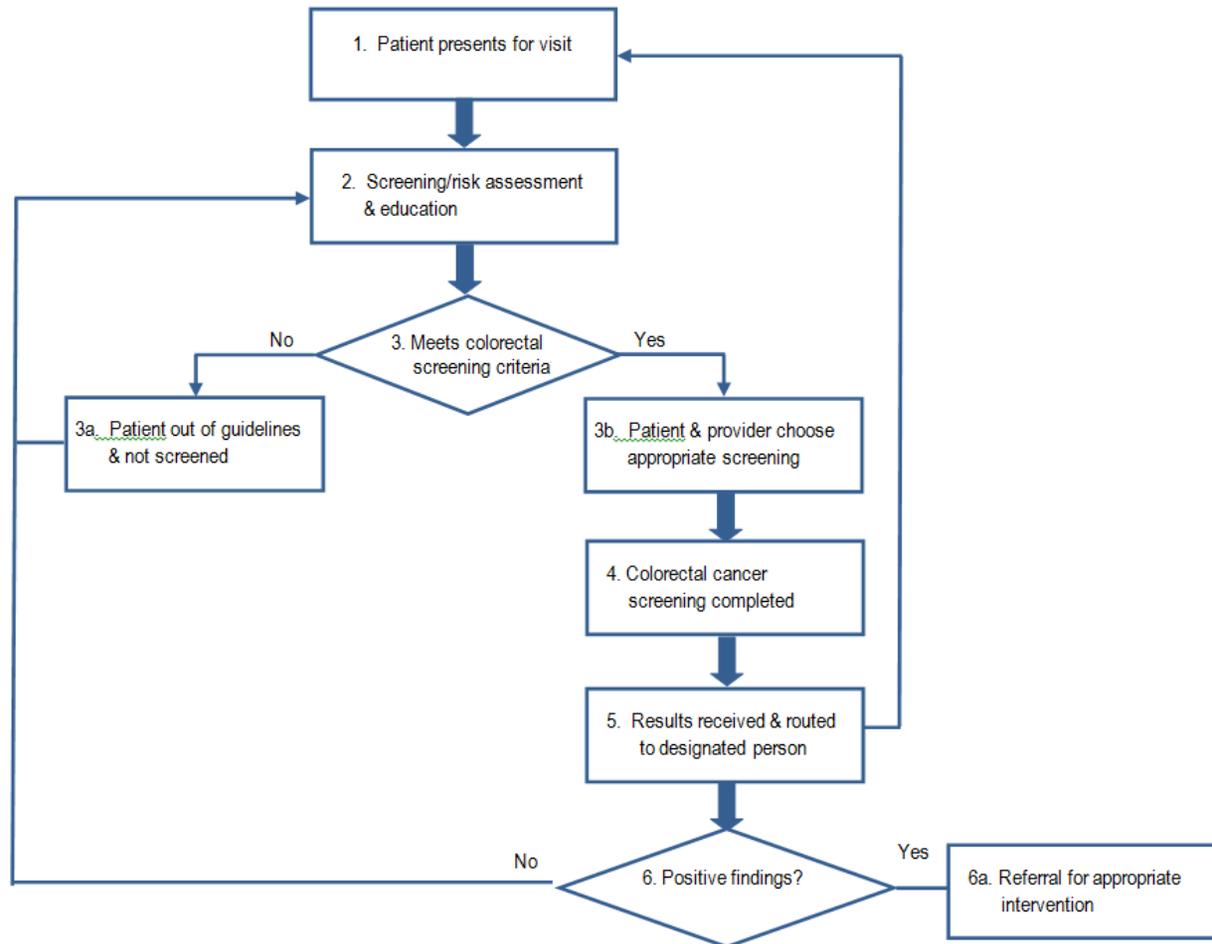


Figure 3.1: Critical Pathway for Colorectal Cancer Screening

Note: The critical pathway depicted is based on the measure as described. It should be understood that once a patient is released back to primary care, the screening process based on evidence-based guidelines is cyclical and the patient would continue to receive screening, risk assessment, and education.

Walkthrough of the Idealized Critical Pathway

The steps illustrated in the schematic reflect a system that is working well. It is helpful to understand these steps in more detail and how they relate to improved **Colorectal Cancer Screening**:

1. Every patient encounter presents an opportunity for risk assessment and education.
2. Prescreening and education using the recommended clinical guidelines that are tailored toward the patient's risk serves as an opportunity for prevention. Prescreening and education can occur during a visit to the clinician, a preventative service visit, or during outreach to patients who have a history of not coming in for visits.
3. Determine if the patient meets the screening criteria using evidence-based guidelines. One useful tool to assist in risk assessment for patients 50 to 80 years of certain race/ethnicity categories has been the [Colorectal Cancer Risk Assessment Tool](#). Although the **Colorectal Cancer Screening** clinical quality measure measures patients ages 50 to 80, patients younger than 50 years of age may warrant screening if they are at higher risk. Patients with the following conditions often require screening prior to age 50: ulcerative colitis, Crohn's disease, Familial adenomatous polyposis (FAP), Hereditary Nonpolyposis Colorectal Cancer (HNPCC), and personal history of colorectal cancer.
 - 3a. Through the screening and risk assessment step, the provider determines if the patient meets the screening criteria. If the patient does not meet the screening guidelines, he or she is not screened; however, this provides an opportunity for ongoing education of the importance of screening should the patient's risk status change or when the patient matures in age. Interim and follow-up care is then discussed to ensure that the patient has what is needed to prevent colorectal cancer. Guidelines are emphasized so the patient understands what screening and examinations are to be done. Appropriate follow-up screening occurs in a timely manner and the cycle repeats.
 - 3b. The provider collaborates with the patient to choose the appropriate screening, review pertinent instructions for effective preparation, and determine other tests needed in preparation for the screening. When a provider suggests a specific pathway for colorectal screening, the patient should be involved in the decision. The patient should be shown choices and receive information and advice on what the test can and cannot accomplish or prove. The patient should also be informed of what follow-up is involved after a positive or negative test result.
4. Ensuring that colorectal cancer screening has been completed is essential in the prevention of colorectal cancer. Often screening tests are ordered but not completed. Establishing a process to retrieve and review screening results is important to track the number of completed screenings and patient adherence to recommended guidelines.
5. Patient notification of the results provides an opportunity to involve the patient in his or her care plan and educate the patient about healthy behaviors to prevent colorectal cancer.
6. Positive results should be communicated to the patient in a culturally-sensitive manner. Treatment information and advice should be provided to the patient with an appropriate referral for those services.

- 6a. The patient should be educated on the importance of timely treatment and then referred appropriately.

A quality improvement team benefits from mapping out how care is actually provided. Once it is able to evaluate where there are potential opportunities for improvement, it can use some of the improvement ideas that have worked for others, as outlined in **Table 4.2: Sample Changes That Work**.

A critical pathway can also be constructed to illustrate *how screening is currently provided* within an organization (the existing pathway). Understanding the gap between an organization's *existing* critical pathway (how you provide care now), and the *idealized* critical pathway (how to provide reliable, evidence-based care aligned with current guidelines), form the basis for improvement efforts.

Factors That Impact the Critical Pathway

In addition to understanding the steps for colorectal cancer screening for patients, factors that interfere with optimal care should be understood. As there may be several of these factors, a QI team may find it helpful to focus its attention on factors that interfere with ideal outcomes. This becomes especially useful as plans are developed to mitigate these factors.

Factors that have an impact on **Colorectal Cancer Screening** can be organized into those that are patient-related, relative to the care team, and a result of the health system. Overlaps exist in these categorizations, but it is useful to consider factors that have an impact on care processes from each perspective to avoid overlooking important ones.

Patient factors are characteristics that patients possess, or have control over, that have an impact on care. Examples of patient factors are age, race, diet, and lifestyle choices. Common patient factors may need to be addressed more systematically, such as, a targeted approach to address low health literacy, or a systematic approach to educate staff on the cultural norms of a new refugee population. Examples of how patient factors may increase a person's chance of developing colorectal cancer include:

- **Age**—colorectal cancer increases after age 50
- **Family History**—patients who have close relatives (parent, sibling, child) that had colorectal cancer have an increased risk
- **Lifestyle**—diets high in animal fats, lack of exercise, and smokers have a 30 to 40 percent risk
- **Co-morbidity**—individuals who are obese, have a history of inflammatory bowel disease, diabetes mellitus and insulin resistance, or certain types of polyps have a greater risk

Care team factors are controlled by the care team. These types of factors may include care processes, workflows, how staff follows procedures, and how effectively the team works together. Care team factors that may influence **Colorectal Cancer Screening** include:

- Processes staff use to outreach to or educate patients to ensure periodic care based on level of risk

Colorectal Cancer Screening

- Procedures that provide culturally-competent care to address the patient's cultural norms about colorectal cancer screening
- Processes that provide comprehensive care for patients who are seen regardless of reason for visit
- Providers who may dislike doing colorectal cancer screenings

Health system factors are controlled at the *high level* of an organization and often involve finance and operational issues. Health system factors that may influence **Colorectal Cancer Screening** include:

- **Cost**— co-pays and access to affordable screening methods
- **Scheduling systems**—availability of evening and weekend appointments and wait time may have an impact on access
- **Location**—no transportation or an unsafe location may present barriers to keeping appointments

These factors, when added to the critical pathway, create another dimension to the map as shown in **Figure 3.2**:

Colorectal Cancer Screening

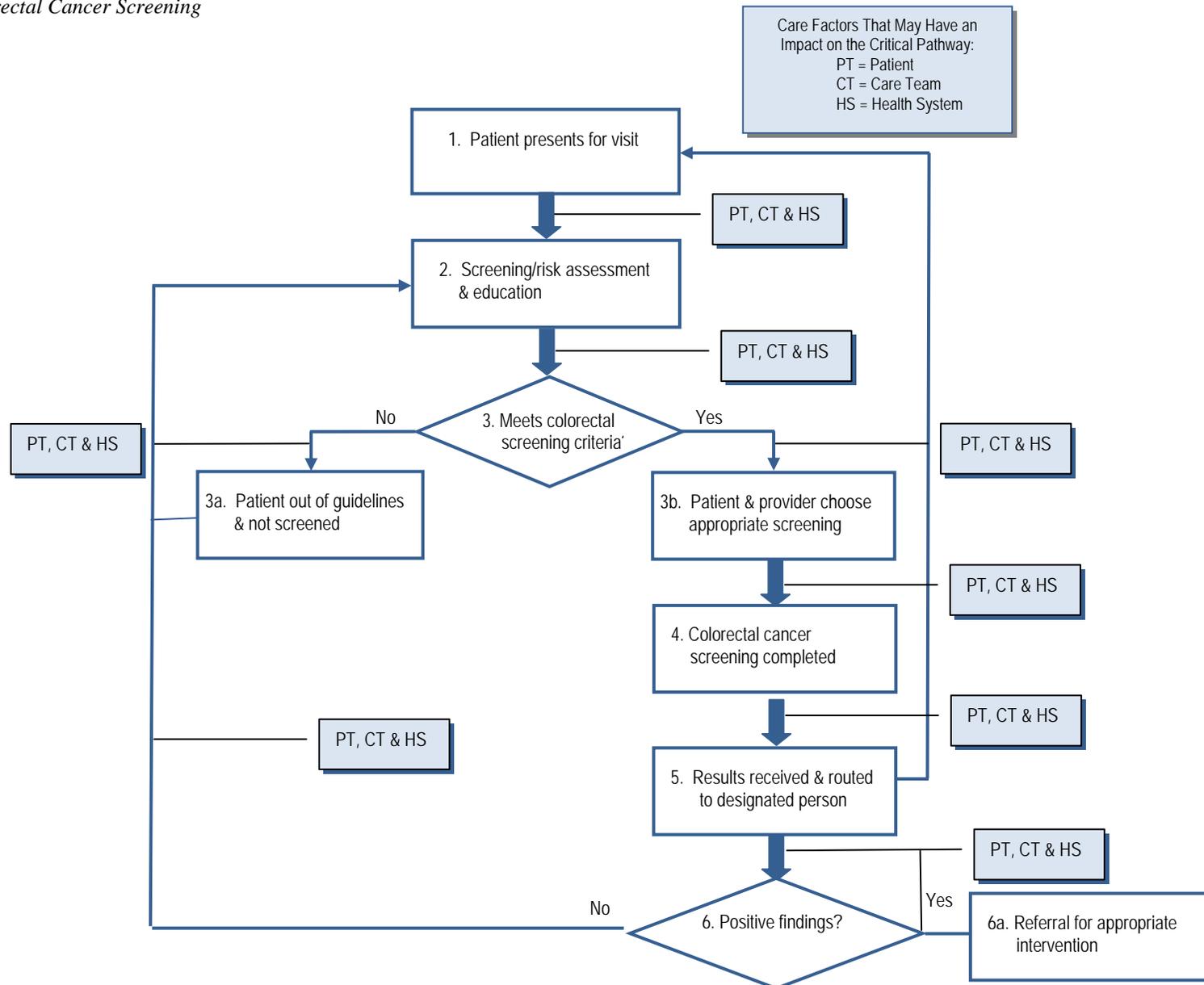


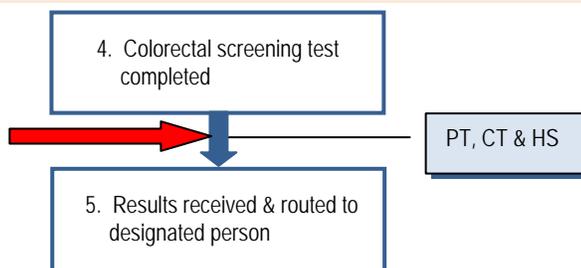
Figure 3.2: Care Factors That Have an Impact on the Critical Pathway for Colorectal Cancer Screening

Note: Note: The critical pathway depicted is based on the measure as described. It should be understood that once a patient is released back to primary care, the screening process based on evidenced-based guidelines is cyclical, and the patient would continue to receive screening, risk assessment, and education.

Next, a team may identify specific factors that pertain to the way screening is provided for its patients. The team may look at Step 4: *Colorectal cancer screening completed*, and Step 5: *Results received and routed to the designated person* of the critical pathway. What factors have an impact on how effectively, timely, and reliably Step 5 follows Step 4? It is tempting to consider the first thoughts that come to mind, but a team is best served by systematically thinking through the potential impact of each category. **Example 3.1** illustrates a team’s output:

Example 3.1: A Team’s Brainstorming Session

The team brainstorms on factors that have an impact on the arrow or opportunity) between Steps 4 and 5 of the critical pathway for **Colorectal Cancer Screening**.



Factor Category	Factors pertinent to our organization – Steps 4 and 5
Patient	Patients do not have a clear understanding of the disease and the consequences of not doing colorectal cancer screening
Care Team	No staff, workflows, or prompts dedicated to developing self-management goals with the patient; available educational materials are not culturally appropriate for the population
Health Systems	Patients unable to access care due to conflicting work schedules

The team continues to look at different parts of the pathway to identify relevant impacts for each part. Once it is able to evaluate where there are potential opportunities for improvement, it can use this information to target its efforts. Additional examples of strategies to improve care for the measure, **Colorectal Cancer screening**, are described in the **Part 4: Improvement Strategies** section of this module.

Once the team visualizes the pathway and identifies opportunities for improved care, the next step is to collect and track data to test and document them. First, a QI team needs to determine *how* to collect data to support its improvement work. This step is essential for understanding the performance of its current care processes, before improvements are applied, and then monitoring its performance over time.

Data Infrastructure: Colorectal Cancer Screening

This section begins to address the critical role of data throughout the improvement process. It is important to recognize that different types of data are collected during the improvement project. First, data to calculate and monitor the **Colorectal Cancer Screening** performance measure results is needed. Monitoring a performance measure involves calculating the measure over time and is used to track progress toward a numerical aim. This section provides an overview of what is needed. A detailed and stepwise approach follows to explain the types of infrastructure elements needed to gather data to support improvement. Second, changes an organization is making to improve care processes and their effects must be tracked. Tracking the impact of changes reassures the team that the changes caused their intended effects.

Data Infrastructure to Monitor the Performance Measure—An Overview

There are three major purposes for maintaining a data infrastructure for quality improvement work:

- To know the starting baseline
- To track and monitor performance as changes are implemented
- To perform systematic analysis and interpretation of data in preparation for action

The first step to creating a data infrastructure for monitoring the performance measure is to determine the baseline. A baseline is the calculation of a measure before a quality improvement project is initiated. It is later used as the basis for comparison as changes are made throughout the improvement process. For the **Colorectal Cancer Screening** measure, an organization can determine the percentage of patients with an appropriate screening for colorectal cancer. Performance reflects the current organizational infrastructure and the patient's interactions with existing care processes and the care team.

Baseline data is compared to subsequent data calculated similarly to monitor the impact of quality improvement efforts. The details of how to calculate the data must be determined to ensure that the calculation is accurate and reproducible. The difference between how an organization provides care now (baseline) and how it wants to provide care (aim) is the gap that must be closed by the improvement work.

The next step of data infrastructure development involves a process in place to calculate the measure over time as improvements are tested. A QI team's work is to make changes, and it is prudent to monitor that those changes result in achieving the stated aim. This involves deciding how often to calculate the measure and adhering to the calculation methodology.

Finally, an organization's data infrastructure must include systematic processes that allow analysis, interpretation, and action on the data collected. Knowledge of performance is insufficient for improvement. It is important for an organization to understand why performance is measured and to predict which changes will increase the number of patients screened for colorectal cancer based on an organization's specific situation. Collecting data related to specific

changes and overall progress related to achieving an organization's specified aim are important to improvement work. The next section describes in more detail how to develop a data infrastructure to support improvement.

Implementation: Colorectal Cancer Screening

This section explores each step to create the data infrastructure used to improve performance on the **Colorectal Cancer Screening** clinical quality measure.

Note: If an organization is currently funded by HRSA, some performance measures, including the quality measure set, may be among those that will be reported to HRSA. An organization should consult its program's Web site plus links to bureau- and office-required guidelines and measures for more information:

[HSB](#) [BCRS](#) [BPHC](#) [BPHC](#) [MCHB](#) [HAB](#) [BHPt](#) [ORHP](#) [ORO](#)

General information on HRSA grants, including searchable guidelines, is available and accessible at the [HRSA Grants Web site](#).

Grantees are encouraged to contact their project officers with questions regarding program requirements.

1. Step 1 - Determine and Evaluate the Baseline

As previously discussed, a *baseline for improvement* is a calculation that provides a snapshot of the performance of the *systems* of care for a measure before improvements are applied. The baseline is determined by calculating the measure and collecting the information for the numerator and denominator.

Determination of a baseline is accomplished by actually calculating the measure and requires that the information for the numerator and denominator be collected. There are several methods to collect this information. While electronic methods are more efficient once established, manual chart audits using random sampling techniques are equally valid.

Consistent data collection sources and methodologies are critical to ensure reliable data. Please note that the tables referenced in this section are from the *NQF-Endorsed National Voluntary Consensus Standards for Physician-Focused Ambulatory Care, Appendix A-NCQA Measure Technical Specifications* (April, 2008 V.7. Pages 20 – 23 and 26 – 28). The methodologies suggested are also from [NQF and can be found here](#).

The following tables and figure depict a decision algorithm for the measure, **Colorectal Cancer Screening**. The algorithm outlines the steps that an organization follows to determine its baseline and monitor improvements for **Colorectal Cancer Screening**.

Identify the Denominator	
The denominator for this measure is the number of patients 51 through 80 years of age during the measurement year	
a. Use a one-year date range, hereafter called the measurement year.	
b. Choose a selection method	Claim/Encounter Data—patients aged 51 to 80 years of age who had one office visit in the prior 12 months <i>Note: Given the measurement look back period, adults 50 to 80 will be captured in this measure</i>
Denominator exclusions	Patients with a diagnosis of colorectal cancer or total colectomy.

Identify the Numerator	
a. Based on an organization’s systems, evaluate all of the individuals who remain in the denominator and choose an Electronic Method or the Medical Record Audit method to determine the numerator. For Electronic Method, use electronic data from an Electronic Medical Record or registry to identify patients in the denominator who have received one or more of the screenings for colorectal cancer. The patient should be included in the numerator if the patients 51 to 80 years of age are seen during the measurement year who have had one or more of the following:	
Numerator Inclusion: Appropriate screenings are defined by one or more of the appropriate screenings:	
i. Fecal occult blood test (FOBT) within the measurement year	
ii. Flexible sigmoidoscopy within the measurement year or the four years prior to the measurement year	
iii. Double contrast barium enema (DCBE) during the measurement year or the four years prior to the measurement year; air contrast enema is a clinical synonym	
iv. Colonoscopy during the measurement year or the nine years prior to the measurement year	
b. Medical Record Audit: Audit all patients in the denominator or use valid sampling methodology. The records audited may be electronic or paper. Include the patient in the numerator if the:	
i. Patients 51 to 80 years of age are seen during the measurement year and one or more of the appropriate screenings outlined in <i>a.</i> above.	
ii. Documentation in the medical record must include both of the following:	
<ul style="list-style-type: none"> • a note indicating the date the colorectal screening was performed and • a notation in the progress notes of the result or finding (this ensures the screening was performed and not merely ordered) 	

Calculate the Measure	
Divide the numerator by the denominator and multiply by 100 to get the percentage of the patients needing colorectal cancer screening	

NQF-Endorsed™ National Voluntary Consensus Standards for Physician-Focused Ambulatory Care
 APPENDIX A –NCQA Measure Technical Specifications
 April, 2008 V.7

Colorectal Cancer Screening (Source: NCQA)																																																	
<ul style="list-style-type: none"> flexible sigmoidoscopy during the measurement year or the four years prior to the measurement year double contrast barium enema (DCBE) during the measurement year or the four years prior to the measurement year. colonoscopy during the measurement year or the nine years prior to the measurement year. <p>A patient had an appropriate screening if a submitted claim/encounter contains any one of the following codes identified in Table COL-A.</p> <p>MEDICAL RECORD SPECIFICATION: One or more screenings for colorectal cancer. Appropriate screenings are defined by any one of the four criteria below:</p> <ul style="list-style-type: none"> fecal occult blood test (FOBT) during the measurement year flexible sigmoidoscopy during the measurement year or the four years prior to the measurement year double contrast barium enema (DCBE) or air contrast enema during the 	<p>Note: Given the measurement look back period, adults 50-80 will be captured in this measure.</p> <p>MEDICAL RECORD SPECIFICATION: A systematic sample from the population listed above should be determined using the most accurate data available in the settings in which the measure will be implemented. The measure developer recommends that in most settings office visit claims (see list of codes) or other codified encounter data should be used to identify patients who have had at least one office visit in the prior (12) months from which a purposeful</p>	<p>total colectomy as far back as possible in the patient's history, through administrative data. Use the codes or descriptions of the codes in Table COL-B to identify allowable exclusions.</p> <p>MEDICAL RECORD SPECIFICATION: Patients with a diagnosis of colorectal cancer or total colectomy. Look for evidence of colorectal cancer or total colectomy as far back as possible in the patient's history, through medical record review. Use the codes in Table COL-B as synonyms for a diagnosis of colorectal cancer or total colectomy.</p>	<p>Table COL-A: Codes to Identify Colorectal Cancer Screening</p> <table border="1"> <thead> <tr> <th>Description</th> <th>CPT</th> <th>HCPCS</th> <th>ICD-9-CM Diagnosis</th> <th>ICD-9-CM Procedure</th> <th>LOINC</th> </tr> </thead> <tbody> <tr> <td>FOBT</td> <td>82270, 82274</td> <td>G0107, G0328</td> <td>V76.51</td> <td></td> <td>2335-8, 12503-9, 12504-7, 14563-1, 14564-9, 14565-6, 27396-1, 27401-9, 27925-7, 27926-5, 29771-3</td> </tr> <tr> <td>Flexible sigmoidoscopy</td> <td>45330-45335, 45337-45342, 45345</td> <td>G0104</td> <td></td> <td>45.24</td> <td></td> </tr> <tr> <td>DCBE</td> <td>74280</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Colonoscopy</td> <td>44388-44394, 44397, 45355, 45378-45387, 45391, 45392</td> <td>G0105, G0121</td> <td></td> <td>45.22, 45.23, 45.25, 45.42, 45.43</td> <td></td> </tr> </tbody> </table> <p>Table COL-B: Codes to Identify Exclusions for Colorectal Cancer Screening</p> <table border="1"> <thead> <tr> <th>Description</th> <th>CPT</th> <th>HCPCS</th> <th>ICD-9-CM Diagnosis</th> <th>ICD-9-CM Procedure</th> </tr> </thead> <tbody> <tr> <td>Colorectal cancer</td> <td></td> <td>G0213-G0215, G0231</td> <td>153, 154.0, 154.1, 197.5, V10.05</td> <td></td> </tr> <tr> <td>Total colectomy</td> <td>44150-44153, 44155-44158, 44210-44212</td> <td></td> <td></td> <td>45.8</td> </tr> </tbody> </table>	Description	CPT	HCPCS	ICD-9-CM Diagnosis	ICD-9-CM Procedure	LOINC	FOBT	82270, 82274	G0107, G0328	V76.51		2335-8, 12503-9, 12504-7, 14563-1, 14564-9, 14565-6, 27396-1, 27401-9, 27925-7, 27926-5, 29771-3	Flexible sigmoidoscopy	45330-45335, 45337-45342, 45345	G0104		45.24		DCBE	74280					Colonoscopy	44388-44394, 44397, 45355, 45378-45387, 45391, 45392	G0105, G0121		45.22, 45.23, 45.25, 45.42, 45.43		Description	CPT	HCPCS	ICD-9-CM Diagnosis	ICD-9-CM Procedure	Colorectal cancer		G0213-G0215, G0231	153, 154.0, 154.1, 197.5, V10.05		Total colectomy	44150-44153, 44155-44158, 44210-44212			45.8	<p>manual or electronically coded data for visits or encounters to determine the sample, and access to either written or electronic medical records to both confirm information in the sampling framework for the denominator and for determination of the numerator.</p>
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FOBT	82270, 82274	G0107, G0328	V76.51		2335-8, 12503-9, 12504-7, 14563-1, 14564-9, 14565-6, 27396-1, 27401-9, 27925-7, 27926-5, 29771-3																																												
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Figure 3.3: NCQA Measure Technical Specifications

Compare an organization’s performance to national benchmarks and other available data. The NCQA Web site updates performance on this measure annually. Note that there is considerable variation among practices reporting. Other opportunities for comparison data are from payers, State cancer control programs, State and regional quality improvement organizations.

Decide if the performance is satisfactory based on available data from reliable sources. It is important to consider the organizational capacity and constraints, but it is recommended that an organization’s aim is high. An organization with a low performance may want to allow a longer time to achieve excellence, but striving to reach a screening rate of 55 percent is feasible for most. If the performance is satisfactory, an organization may wish to choose another measure and focus on other systems of care.

If the performance is unsatisfactory, consider adopting the measure and using it to monitor improvements to the care delivery system. An organization should understand that if a measure is adopted for improvement, ongoing and regular measurement is necessary to reach and sustain its organizational goals. More information regarding measurement can be found in the [Managing Data for Performance Improvement](#) module.

Evaluate the baseline. Initially, a team compares its baseline to the performance it hopes to achieve. It is important to remember this gap in performance is defined as the difference between how the care processes work now (baseline) and how an organization wants them to work (aim). An organization may often modify its aim or timeline after analyzing its baseline measurement and considering the patient population and organizational constraints.

As an organization moves forward, the baseline is used to monitor and compare improvements in care over time. While it is important for an organization to stay focused on its aim, it is equally significant to periodically celebrate the interim successes.

2. Step 2 - Create a reliable way to monitor performance over time as improvements are tested.

An organization should standardize its processes and workflows to ensure the team collects and calculates performance data the same way over time. An organization should document exactly how the data is captured so staff turnover does not interfere with the methodology:

- a. Determine the frequency that performance will be calculated. Frequent data collection is often associated with higher levels of improvement. Monthly measurement is recommended if feasible, as it is associated with a higher level of team engagement and success. If it is infeasible, quarterly measurements may be obtained. Less frequent performance measurements are adequate for reporting purposes, but do not adequately support improvement efforts. An advanced discussion can be found in the [Managing Data for Performance Improvement](#) module.
- b. Chart and display results. A simple chart audit form is appropriate for manual audits and can be repeated frequently, as desired. Results of multiple audits can be presented in a graphic format to demonstrate trends.

Note: If The frequency of team meetings is not necessarily prescribed for success. Many successful teams meet once a week while others may meet bi-weekly when focusing their improvement efforts on any given measure. Success of these meetings is rather the output of the team members' active engagement in the meeting and being prepared to report on recent improvement findings. More information, including resources and tools supporting developing and implementing effective team meetings can be found in the [Improvement Teams](#) module.

3. Step 3 - Create systematic processes that allow an organization to analyze, interpret, and act on the data collected.

Having the data is not enough. Improvement work involves thinking about the data and deciding what to do based on that analysis. A QI team needs to put processes in place – team meetings, scheduled reports, and periodic meetings with senior leaders to use the data tracked. This section describes how a QI team may accomplish the work of creating actionable plans based on the data collected. In **Example 3.2: The QI Team at Excelsior**

Health, the hypothetical scenario using a fictional health center illustrates how a team may use these concepts to act on its data:

- a. **Analyze: What are the data trends?** Tracking performance over time for the measure, **Colorectal Cancer Screening**, is critical to successful improvement, but calculation of performance is not enough. It is important for a team to meet to analyze the data on a regular basis. QI teams that are experienced in looking at data recognize these common patterns:
 - Performance is improving
 - Performance is decreasing
 - Performance is flat
 - Performance has no recognizable pattern

Additional examples of common data patterns are provided with further explanation in the [Managing Data for Performance Improvement](#) module. It is typical for a team to see little movement in its data over the first several months. It is important that a QI team review performance progress regularly. A QI team that meets regularly and calculates performance monthly should spend part of one meeting each month reviewing its progress to date.

- b. **Interpret: What do these data trends mean?** A QI team needs to then interpret what these data trends mean within the context of its own organization. If performance is increasing, but has not yet reached the numerical aim, perhaps the changes in place are having the desired effect and the aim will be reached over time. If performance is decreasing, what has changed? Are there new care process changes, a failure of registry data input, or a large increase in those patients included in the registry? If performance is flat, did the organization maximize the benefits from changes implemented or was there some regression to the former way of doing things? Improvement trends that have reached a plateau may indicate that an organization needs to think differently about future changes. A few suggestions that an organization may consider when experiencing a plateau in improving are listed below:
 - i. Consider looking at outliers to determine barriers to patient access to care for colorectal cancer screening, for example, lack of insurance, transportation, or language and cultural differences.

Note: Asian-Americans, compared to non-Hispanic Whites, have lower rates of cancer screening (colorectal and breast), adjusting for access to care and socioeconomic status. Foreign-born Asians, on survey, believed that cancer screening should be a response to symptoms and declined tests because of lack of symptoms.²⁴

- ii. Consider changes in a different part of the framework to get improvement back on track. If using a critical pathway approach, an organization may look at the steps prior to where the problem seems to be. If a Care Model approach is used and the team worked hard on delivery system design issues, opportunities to better leverage the clinical information systems or engage the community may be considered.

Interpretation of data over time is critical in determining where a team will target its efforts. Additional tools that can assist a team in understanding underlying causes for data trends are beyond the scope of this manual but are discussed in detail in a monograph that was published by the NQC, [A Modern Paradigm for Improving Healthcare Quality](#).

- c. **Act: Make decisions based on data.** Once a QI team has a better understanding of what the data means, efforts should be targeted to further advance the performance toward the aim. Often the decisions are made at the team level about what to tackle first. Then small tests of change can be accomplished to determine what improvements could be implemented to enhance performance. The practice of using small tests of change actually allows multiple changes to be tested simultaneously.

Note: An advanced discussion on how to use the data collected to advance an organization's improvement, including resources and tools to support improvement, can be found in the [Managing Data for Performance Improvement](#) module.

Example 3.2: QI Team at Excelsior Health

The Quality Improvement (QI) team at Excelsior Health worked diligently to improve colorectal cancer screening rates for patients over the last several months. The team focused on patient education, following screening guidelines, and streamlining those processes. But during the last three months, the performance remained the same at 30 percent, which was below its aim of having 55 percent of its patients with an appropriate screening for colorectal cancer.

Analysis: The team noted improvement initially. Registry input, care processes, and patient volumes seemed to be stable but performance was flat for the last three months.

The team leader asked for a list of those patients who did not have an appropriate screening for colorectal cancer. Further study of these specific cases found that over half of those patients were uninsured.

Interpretation: Because there was initial improvement followed by several months of flat performance, the team leader looked for obvious changes in processes that would have an impact on performance, but found none. The team leader interpreted the data to mean that initial changes provided some improvement, but not enough to achieve its aim and have the desired impact. More work was needed. The team leader employed a common strategy to find additional opportunities; i.e., he looked at the population in compliance (the outliers) for a common cause to be addressed. In this case, a common thread was that patients were coming in for routine care and referred for screening, but were not able to follow through with the appropriate test.

This information allowed the team to consider ways to assist uninsured patients with following through on colorectal cancer screening. They looked at *Sample Changes that Worked* (Table 4.2) for ideas then added suggestions based on its own patient population. The team decided to increase focus on access to screenings. A proposal was submitted to the organization leadership to purchase pre-stamped envelopes that would allow patients to easily mail in their fecal occult blood testing cards. A cost analysis was done that included cost of the postage and materials, as well as potential revenue. The purchase was approved and systems designed for implementing its use. The improvement team will continue to monitor its performance to determine if this change contributes to achieving its aim statement goals.

Act: The information gathered from the analysis and interpretation of the data allowed the team to focus its next efforts. Since numerous patients were not following through with screening, the team targeted its efforts on improving access to affordable screenings. This enabled the team to focus on PDSAs to test changes specific to these areas and monitor its progress.

A QI team leader needs to monitor the pace of the progress over time. If there is insufficient progress to meet the specified aim, reasons should be analyzed and addressed. One organization may choose to accelerate its improvement efforts; another may decide to extend its initial allotment of time to achieve its aim and consider other constraints within the organization.

Part 4: Improvement Strategies: Colorectal Cancer Screening

The actual improvement process is composed of three steps that respond to the following questions:

1. What changes can an organization make?
2. How can an organization make those changes?
3. How can an organization know the changes caused an improvement?

What Changes Can an Organization Make?

It is important to understand that improvement requires change, but not all change results in improvement. Considering all of the possible changes that can be made to health care systems, considerable effort has been dedicated to creating various quality improvement strategies providing a framework that organizes possible changes into logical categories. Frameworks for change in health care quality improvement are known as *quality models* and have been tested to guide change. In fact, considering that there are limited resources to dedicate to improvement, most organizations adopt one or more quality models to guide their improvement efforts. There is not a right or wrong approach, and there are many areas of overlap in quality models. Experienced quality improvement teams often use multiple strategies to overcome challenges as they progress. Two approaches often used by teams that are working to improve performance in **Colorectal Cancer Screening** are the *Care Model* approach and the *Critical Pathway* approach.

The case study continues...

The Improvement Journey:

Over the next several weeks, the registry was populated with data from Dr. Stalling's patients. Using the parameters specified for the measure's numerator and denominator, performance was calculated as 68 percent of patients without an appropriate screening for colorectal cancer. Although Dr. Stalling knew things were not good, he was surprised by the results and did not believe the data. Because there was such a gap in performance and its goal, the organization decided on a formal effort. It took the following steps:

1. Received support from leadership. Dr. Stalling requested that all clinical staff be involved, but the CEO felt that they could not afford that level of resource support. They negotiated a two-hour kickoff meeting and a one-hour meeting each week for up to three staff members. They decided that only Dr. Stalling would actively participate from the provider staff and that the project would initially focus on his patients only. In addition, the MA would continue to have a few additional hours each week to keep the registry up to date and run monthly progress reports. Although active participation was limited to one provider, everyone would be kept up to date during monthly staff meetings.
2. An Improvement Team was formed. Dr. Stalling played a clinical leadership role and the MA, who functioned both as an MA and the registry expert, was invited to attend. The receptionist had a strong family history of cancer and was anxious to participate. The cancer patient navigator from the neighboring hospital was invited to participate in the team meeting twice a month. The receptionist agreed to keep track of all documentation related to the project and to ensure the meetings stayed on track. The MA agreed to monitor the time and to provide insights into her role on the care team as well as data. Dr. Stalling agreed to provide clinical leadership and also provide or facilitate any training that would benefit the team.
3. The team developed the following aim statement: *We will improve the colorectal cancer screening rates for Dr. Stalling's patients so that in 12 months, 55 percent of his patients will have an appropriate screening for colorectal cancer.*
4. The team agreed to try out strategies to make sure the MA received all data collected at the time of the visit for data entry. They also decided to look at the previous month's data during its team meeting on the second Thursday of each month.
5. It focused on what it could do to improve screening for colorectal cancer and to do it as quickly as possible. The team chose the critical pathway improvement strategy.

1. Care Model Approach: Implementing the changes described in the Care Model is a proven method to improve care delivery. The Care Model is an organizational framework for change and is organized into six domains:

- a. Organization of Health Care
- b. Clinical Information Systems
- c. Delivery System Design

- d. Decision Support
- e. Community
- f. Self-Management Support

Changes within these domains can effectively leverage transformation of a current reactive care system to one that better supports care for chronic disease conditions, such as colorectal cancer screening. Changes within these domains can effectively leverage transformation of a current reactive care system to one that better supports proactive care. If an organization does not have general experience with the Care Model, reading information on the Care Model before proceeding is recommended. The Care Model recognizes that preventive care, such as **Colorectal Cancer Screening** for patients requires more proactive systems than the health care system often provides. The Care Model is implemented to improve care by working in six domains, defined below, that transform the way care is delivered:

Community—To improve the health of the population, a health care organization reaches out to form powerful alliances and partnerships with State programs, local agencies, schools, faith organizations, businesses, and clubs.

Organization of Health Care—A health care system can create an environment in which organized efforts to improve preventive care of patients takes hold and flourishes.

Self Management—Effective self management is very different from telling patients what to do. Patients have a central role in determining their care and one that fosters a sense of responsibility for their own health.

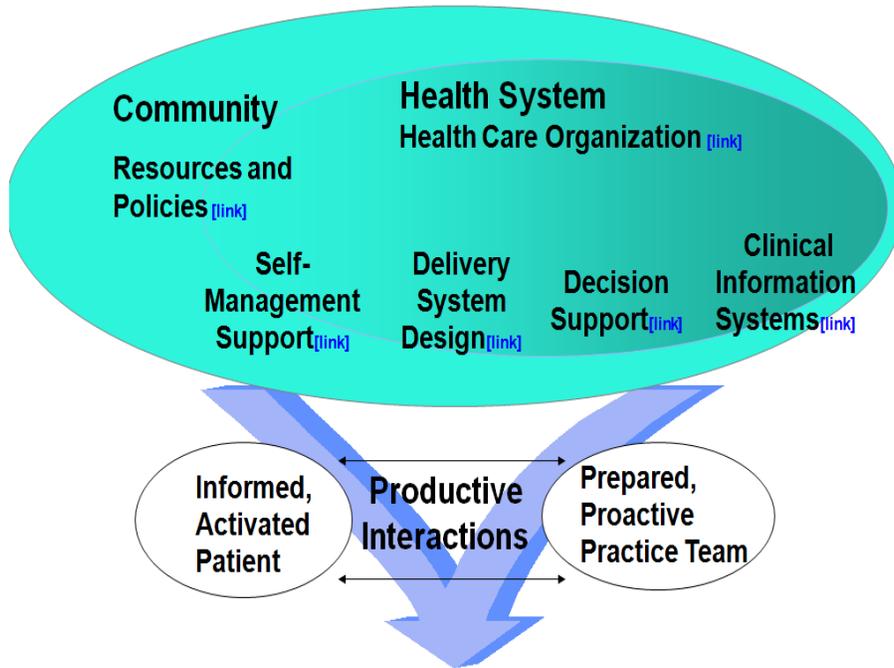
Delivery System Design—Delivery of patient care requires that an organization not only determines what care is needed, but clarify its roles and tasks to ensure the patient receives the care. An organization needs to ensure that all of the clinicians, who take care of a patient, have centralized, up-to-date information about the patient’s status, and make follow-up a part of their standard procedures.

Decision Support—Treatment decisions need to be based on explicit, proven guidelines supported by at least one defining study. A health care organization integrates explicit, proven guidelines into the day-to-day practice of primary care providers in an accessible and easy-to-use manner.

Clinical Information System—A registry, that is, an information system that can track individual patients and populations of patients, is a necessity when managing chronic illness or preventive care.

Definitions above adapted from the Institute for Healthcare Improvement Web site.²⁵

Care Model



Improved Outcomes

Figure 4.1: The Care Model

In **Table 4.1: Care Model Key Changes**, key changes are presented that have been used successfully to improve colorectal cancer screening within the Care Model framework.

Table 4.1: Care Model Key Changes

Community	Organization of Health Care	Self Management	Delivery System Design	Decision Support	Clinical Information System
		Appreciate and consider the culture - provide patient with culturally- and literacy-appropriate educational tools and resources regarding cancer screening and follow-up	-		Establish a registry - a centralized source of information regarding who is due for screening or has an abnormal screening test
					Create a tracking system that identifies abnormal screening, follows the patient's referral progress, and sends reminders
	Develop partnerships with other community and health care organizations to ensure that adequate screening and follow-up capacity exists		Maximize each team member's contribution to care - redesign care roles to create planned and coordinated care for screening and follow-up		Develop a process for using and maintaining the registry
Look to community agencies to help reduce barriers to the evaluation of abnormal screens	Assign day-to-day leadership for continued clinical improvement	Create mechanisms for patient peer support and behavior change programs	Anticipate and plan the visit to ensure timely screening and follow-up	Educate patients about guidelines	Use the registry to provide feedback to care team and leaders

This toolkit is meant as a guide to help organize ideas, but is also designed to allow flexibility for creative planning.

Note: An organization may choose to adapt and refine a tool to assist improvement for the measure, **Breast Cancer Screening**. Testing the measure before fully implementing it offers a way to try something new and modify it before additional resources are spent.

The case study continues...

The QI Team:

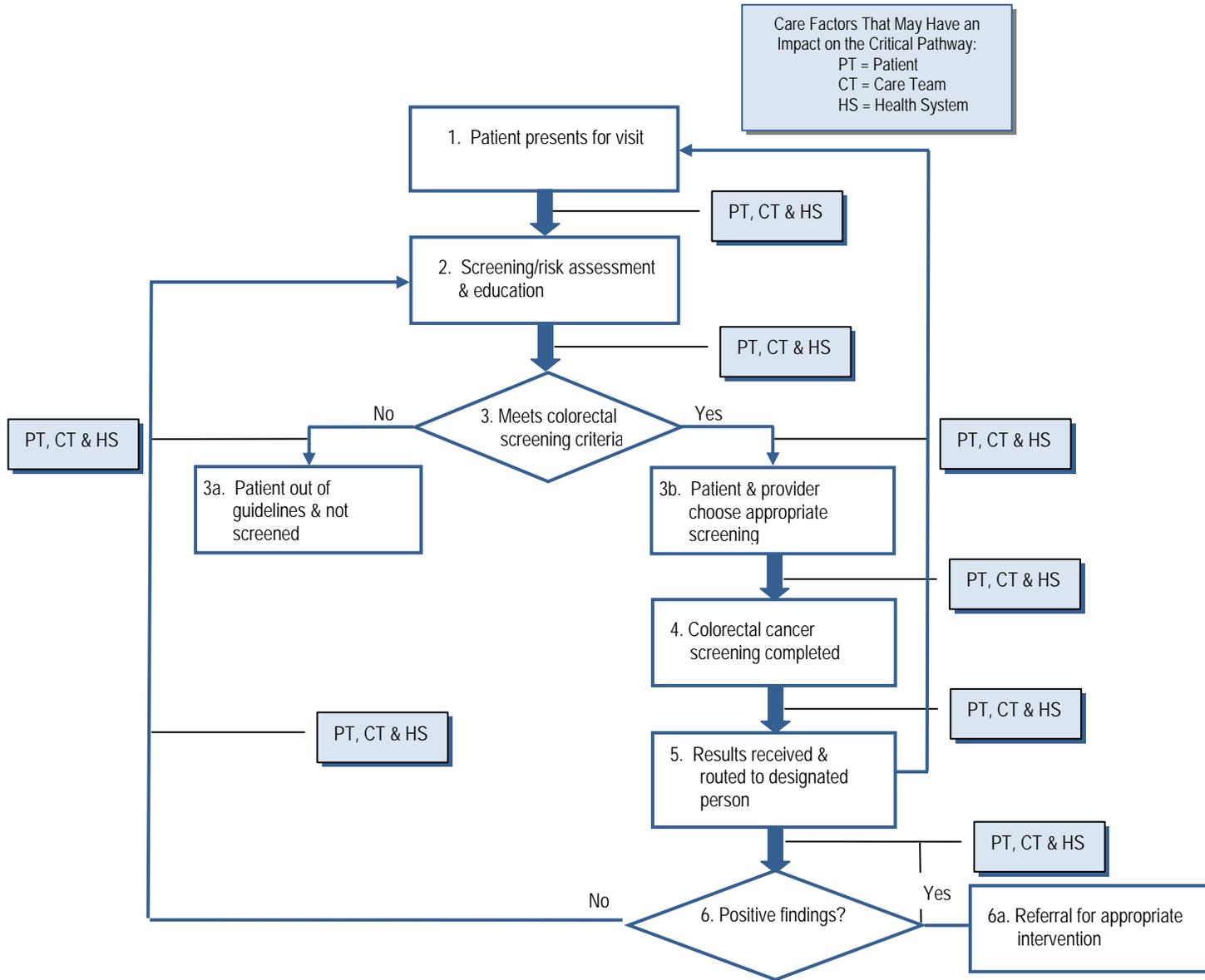
The initial meeting was the launch meeting and time was spent looking at the baseline data, understanding the critical pathway for colorectal cancer screening, and reviewing the Model for Improvement change methodology. The team was asked to observe the systems currently in place regarding colorectal cancer screening and be prepared to discuss them the following week. They also asked the MA to organize a chart audit with the nurse to look at those patients who did not have an appropriate screening for colorectal cancer.

At the second meeting, the team mapped out challenges it observed to its current system of care and reviewed the results of the chart audit. Common themes were:

- Of eight patients on Dr. Stalling's schedule, two did not keep their appointments. They realized there was no clear follow-up of "no shows" after one attempt.
- Of three patients due for screening, two were referred for the test. The one not referred was a patient who already had so many things to discuss that the screening order was overlooked.
- Of the two patients who were returning to discuss other problems, one completed the screening, and the other had car trouble and did not appear. He had also missed his follow-up appointment.
- The eighth patient came in for a sore knee. Although she had a family history of colon cancer, the visit was focused entirely on the knee pain and the screening referral was overlooked.

The chart audit was helpful. The results from those patients who had a screening done at the hospital now came back as a full-page report that was filed in the radiology section. The lab report for fecal occult blood testing (FOBT) was reported back in a half sheet and filed in the lab section. These were placed by protocol along with all of the other labs that were filed as half sheets, with two slips attached to a page to save space in the chart. As a result, some of the screenings that were completed were missed. Also, some patients moved or transferred care and had not been purged from the practice management system and were counted when they should not have been.

Figure 4.2: Critical Pathway Approach



Note: The critical pathway depicted is based on the measure as described, It should be understood that once a patient is released back to primary care, the screening process based on evidence- based guidelines is cyclical, and the patient would continue to receive screening, risk assessment, and education.

- 2. Critical Pathway Approach:** As with all critical pathways, good performance relies on many different systems and processes working together efficiently. An organization is encouraged to map its own critical pathway for **Colorectal Cancer Screening**, or refer to the schematic in **Figure 4.2**. Often when a QI team maps its pathways, it readily can see how complex each step is. It is common for different team members to do the same step differently. Workflow inefficiencies become clear when an organization visualizes how each step is completed and the interdependencies among the steps. Some teams are overwhelmed by the possibilities of changes that can be made in their systems; others focus only on a specific group of factors.

One way to organize the factors that have an impact on the systems is to consider that some are controlled by the patient, others are primarily controlled by the care team, and still others are inherent in the system of care delivery. All three sets of changes must be considered to improve systems of care. In general, these categories can be defined as follows:

- **Patient changes**—efforts to support self-management efforts, patient engagement, and navigation of the care system
- **Care team changes**—changes in job duties or workflow that assist to retain patients in care and ensure timely evidence-based colorectal cancer screening
- **Health system changes**—changes that have an impact on how care is delivered, independent of who delivers it

A team should use the steps along the critical pathway to target improvements. For this measure, **Colorectal Cancer Screening**, influences and performance begin by ensuring that the appropriate screening is completed (not simply ordered), as indicated by the fifth step in the critical pathway, *colorectal cancer screening completed*.

An organization should ensure that patients are appropriately educated regarding the importance of regular colorectal cancer screening based on their level of risk. Providing education to patients also affords an organization the opportunity to assess patient barriers to screening, such as, lack of insurance or cost. Successful organizations have often aligned resources in the community for screening at a reduced cost for patients creating a true partnership in patient care.

An organization can think through each part of the critical pathway in turn, teasing out what happens and what could be improved. In **Table 4.2**, changes that have worked for other QI teams are matched with the part of the system on which they have the most impact. These ideas are not meant to be inclusive, but to start a dialogue of what may improve each part of the critical pathway in an organization, and thus improve it overall.

Changes That Work

Table 4.2: Sample Changes That Work That Are Linked to the Critical Pathway for Colorectal Cancer Screening

Number/Area of Critical Pathway		Patient Changes	Care Team Changes	Health System Changes
1	<i>Patient presents for visit</i>	<ul style="list-style-type: none"> Educate patients with educational resources regarding the importance of routine colorectal cancer screening Assess barriers to colorectal cancer screening; address barriers in partnership with patients Provide access to care team member who can provide patient education 	<ul style="list-style-type: none"> Promote colorectal screenings for patients 50 and older at every patient encounter Ensure messaging from the care team regarding importance of periodic screening Query electronic medical records or billing system monthly (patients 50 & older) 	<ul style="list-style-type: none"> Prompts for colorectal cancer screening (patients 50 & older) due at point of care – registry and flow sheets Implement standing orders for screening per protocol Implement on-site FOBT that correlates with higher rate of testing Implement Colon Health Patient Navigator & policy and procedures
2	<i>Screening /risk assessment & education provide opportunities for colorectal cancer prevention</i>	<ul style="list-style-type: none"> Education for patients on importance of colorectal cancer screening, including guidelines and test options Assess patient beliefs for screenings Assist with appropriate self-management goal setting and strategies to overcome barriers Consider health literacy screening 		<ul style="list-style-type: none"> Implement triage to screen higher-risk patients first CME’s for providers that support culturally-competent screening and education supporting appropriate colorectal cancer screening Display culturally-appropriate posters and brochures in patient areas to encourage patients to talk to providers about screening
3	<i>Determine if patient meets the screening criteria using evidence-based guidelines</i>	<ul style="list-style-type: none"> Provide evidence-based guidelines for colorectal cancer screening including risk assessments Consider health literacy screening 		<ul style="list-style-type: none"> Clinical guidelines for colorectal risk assessment and age-appropriate screenings Providers have continuing educational opportunities to stay current with appropriate interventions Prompts for the screening are not turned off when test ordered, but rather when results received Appointments default to PCP (primary care provider)

Colorectal Cancer Screening

Number/Area of Critical Pathway		Patient Changes	Care Team Changes	Health System Changes
3a	<p>Patient determined to be out of guidelines but reinforce care guidelines & provide education and counseling level</p> <p><i>Note: Process starts over as indicated by arrow in Figure 4.2</i></p>	<p>Education for patients on importance of colorectal cancer screening, including guidelines/risk factors</p>	<ul style="list-style-type: none"> Continued education for age-appropriate screening and risk assessment Providers should agree on guidelines so that care among providers is congruent 	<ul style="list-style-type: none"> Patient routinely given documentation of current care plan Tools to support colon cancer screening Providers have continuing educational opportunities to stay current with appropriate interventions Display culturally-appropriate posters and brochures in patient areas to encourage patients to talk to providers about screening
3b			<ul style="list-style-type: none"> Share clinical guidelines in patient-friendly format Share screening procedure & associated screening prep details regarding chosen screening pathway Ensure screening is ordered when it is due, regardless of reason for visit Document current treatment plan and share copy with the patient 	<ul style="list-style-type: none"> Provide list of free or low-cost colorectal screening services Develop routine colonoscopy referral for patients 50 and older
4	<p><i>Colorectal cancer screening completed</i></p>			<ul style="list-style-type: none"> Implement patient follow-up and recall system to ensure screening follow-through Clear procedures for how screening results are routed once received – usually to a provider or another health professional who can act on the results by protocol
5		<p>Education for patients on importance of receiving test results</p>	<ul style="list-style-type: none"> Assign patients with colonoscopy to follow-up managers Ensure outreach to patient with test results and achieving targets per guidelines; <i>no news is good news</i> strategy for notifying patients about lab tests is not aligned with good care 	<ul style="list-style-type: none"> Monitor patient contacted with results Set data tracking and evaluation systems for timely patient contact Implement a tracking system that monitors screening results and that prompts if results not logged as expected

Colorectal Cancer Screening

Number/Area of Critical Pathway		Patient Changes	Care Team Changes	Health System Changes
6	Positive findings?		<ul style="list-style-type: none"> • General referral for treatment • Help patients to make follow-up appointments • Assess current care plan, barriers to following care plan, and collaborate with patient on care plan modifications 	<ul style="list-style-type: none"> • Partnerships with specialist for low-cost interventions • Culturally-competent education materials readily available for specialist referral
6a	Reinforce care guidelines & ensure appropriate referral for appropriate intervention or care & appropriate follow-up	Schedule self-management support between visits as indicated.		<ul style="list-style-type: none"> • Ensure patient receives guidance about access to the practice with interim concerns • Financial considerations and referral source for low-cost interventions • Implement Patient Satisfaction Survey for Colon Health Navigation

Note: The critical pathway depicted is based on the measure as described. It should be understood that once a patient is released back to primary care, the screening process based on evidence- based guidelines is cyclical, and the patient would continue to receive screening, risk assessment, and education.

This toolkit is meant as a guide to help organize ideas, but is also designed to allow flexibility for creative planning

Note: An organization may choose to adapt and refine a tool to assist improvement for the measure, **Colorectal Cancer Screening**. Testing the measure before fully implementing it offers a way to try something new and modify it before additional resources are spent.

How Can an Organization Make Those Changes?

Earlier in this module, examples are provided of changes that have led to improved organizational systems of care and better patient health outcomes (Critical Pathway and Care Model). Because every change is not necessarily an improvement, changes must be tested and studied to determine whether the change improves the quality of care. This concept is addressed in detail in the [Managing Data for Performance Improvement](#).

It is important that these changes be tested in the context of an organization's staff, current processes, and patients. The goal is that the change results in lasting improvements within an organization.

Organizations commonly use tools to manage change as they work to improve their systems. For a comprehensive discussion of change management, refer to the [Managing Data for Performance Improvement](#) and [Redesigning a System of Care to Promote QI](#) modules.

Here are a couple of tools that are worth mentioning in the context of this measure:

1. Small tests of change – [Model for Improvement and PDSA\(Plan-Do-Study-Act\)](#)
2. [Process mapping](#)

1. *Model for Improvement*

The *Model for Improvement* (26) identifies aim, measure, and change strategies by asking three questions:

AIM	What are we trying to accomplish?
MEASURE	How will we know that a change is an improvement?
CHANGE	What changes can we make that will result in improvement?

These questions are followed by the use of learning cycles to plan and test changes in systems and processes. These are referred to as PDSA (Plan-Do-Study-Act) cycles. The PDSA Cycle is a test-and-learning method for discovering effective and efficient ways to change a current process. In **Figure 4.3: The PDSA Cycle**, the graphic provides a visual of the PDSA process:



Figure 4.3: The PDSA Cycle

An organization focusing its improvement efforts on **Colorectal Cancer Screening** for its patients benefits from implementing PDSAs to test change processes that have an impact on obtaining the appropriate screening for colorectal cancer. Those organizational processes tested may focus on outreach, operational procedures, or patient education interventions ensuring that patients have timely access to care. A few examples of such processes relating to **Colorectal Cancer Screening** are listed below:

- What system is in place to provide patients with timely reminders regarding colorectal cancer screening?
- What are the assigned roles, duties, and tasks for planned visits to a multidisciplinary care team? Are members of the team cross-trained?
- Does the patient population understand its specific role in obtaining the appropriate screen for colorectal cancer or is there an opportunity for education?
- Is there an opportunity to educate the community on the importance of screening for colorectal cancer in a group visit setting?
- Are there cultural, linguistic, and literacy barriers that the organization may need to address?

As an organization plans to test a change, it should specify *who*, *what*, *where*, and *when* so that all staff know their roles clearly. Careful planning results in successful tests of change. Documentation of what happened – the *S* or study part of the PDSA – is also important. This can help a team to understand the impact of changes to a process as unanticipated consequences may occur.

The case study continues...

PDSA Cycles in Action:

The team agreed to reflect on what it had learned from its observations and also read through the list of key changes that had worked for others. The team would decide where to focus its initial PDSAs at the next meeting. The MA was also given additional time to look through patient charts to ensure that all results had been captured. The team decided it was not worth changing the lab-filing procedure, but incoming lab and radiology results should be routed for data entry before they were filed. The team agreed to discuss PDSAs around that process at the next meeting.

As it turned out, the actual performance baseline was 30 percent, not 39 percent. The team still had a long way to go but felt more confident that its starting point was accurate. The team continued its work and focused PDSAs on areas that might benefit from change. It used resources to help guide it about changes that worked, and monitored its data over time. It developed standing orders for screening and a more aggressive outreach program for no-shows, and tracked results received for screenings ordered. Helping patients get their screenings done when due resulted in considerable improvement, and at that point, only 30 percent of Dr. Stalling's patients had an appropriate screening. The team next focused on barriers to improving screening for colorectal cancer. Dr. Stalling attended a conference and learned how to use motivational interviewing to get patients to want to do colorectal cancer screening. He also changed his practice to be more aggressive to achieve higher screening rates for his patients and not waiting for patients to ask for the test. The cancer patient navigator played a key role, especially as she and Dr. Stalling learned more about each other's approaches, and together were able to strategize about challenging patients. The organization adopted a policy of screening all patients aged 50 to 80 years for colorectal cancer. The clinic also developed coaching for self-management support and considered shared-group visits.

Tips for Testing Changes

- Keep the changes small and continue testing.
- Involve care teams that have a strong interest in improving colorectal cancer screening.
- Study the results after each change. All changes are not improvements; do not continue testing something that does not work!
- If stuck, involve others who do the work even if they are not on the improvement team.
- Make sure that overall aims are improving; changes in one part of a complex system sometimes have an adverse effect in another.

2. *Process Mapping*

Process mapping is another valuable tool that an organization focused on improvement often uses. A process map provides a visual diagram of a sequence of events that result in a particular outcome. Many organizations use this tool to evaluate a current process and again when restructuring a process.

The purpose of process mapping is to use diagramming to understand the current process; i.e., how a process currently works within the organization. By looking at the steps, their sequence, who performs each step, and how efficiently the process works, a team can often visualize opportunities for improvement.

Process mapping can be used before or in conjunction with a PDSA cycle. Often, mapping out the current process uncovers unwanted variation. In other words, different staff may perform the process differently, or the process is changed on certain days or by specific providers. By looking at the process map, a team may be able to identify gaps and variation in the process that have an impact on colorectal cancer screening for patients.

Both of these improvement strategies are illustrated in **Example 4.1:**

Example 4.1: Illustration of Improvement Strategies

Successful referral to a patient navigator

At a small clinic in the northeast, the organization's improvement team found that 25 percent of its patients aged 50 to 80 years had an appropriate screening for colorectal cancer. Further investigation revealed that the main reason for a missed appointment for screening was fear. The improvement team decided to look at the process and decided to use the patient navigator at the hospital to contact patients for screening. The referral process to the patient navigator was:

1. Patient navigator appointment ordered by the provider at time of the patient's visit.
2. MA schedules an appointment at the hospital and provides information to the patient.
3. Documentation of patient visits with the patient navigator or no-shows received by the health center.

The team felt that Steps 2 and 3 were potential problems in the process and analyzed how they could be improved. Phone calls were made to five patients who had been referred to the patient navigator to assess their experiences. Two had attended their appointments but had difficulty finding the navigator's office; two had not attended because they felt that it would not be worthwhile, and one developed a schedule conflict after the appointment had been made. There was no notation that the three patients had no-showed their appointments in the patients' charts.

The QI team considered various strategies, such as, providing clearer instructions for patients, providing education on site, and improving the feedback loop between the navigator and the provider. The team investigated the option of contracting with the patient navigator for a half day per week to work on site and found that it could be reimbursed for her services. This arrangement was put in place as a three-month trial and referral completion rates were monitored monthly. Although attendance was not perfect, it was significantly better than when patients were referred off site. The team also emphasized that notes from the visit, or that the patient no-showed, was critical information that must be documented in the patient's chart.

The team strategy was successful. By having the patient navigator on site, access to the service was simplified and was perceived by patients to be more integrated with their provider's care.

Process mapping, when used effectively, can identify opportunities for improvement and support testing changes in the current system of care. Additional information, including tools and resources to assist an organization in adapting process mapping as an improvement strategy within its organization, can be found in the [Redesigning a System of Care to Promote QI](#) module.

How Can an Organization Know That Changes Caused an Improvement?

Measures and data are necessary to answer this question. Data is needed to assess and understand the impact of changes designed to meet an organization's specified aim. Measurement is essential in order to be convinced that changes are leading to improvement. Organizations that have experienced successful improvement efforts found that data, when shared with staff and patients outside the core improvement team, led to the *spread of*

improvement strategies, in turn generating interest and excitement in the overall quality improvement process.

Measures are collected prior to beginning the improvement process and continue on a regularly scheduled basis throughout the improvement program. Once an organization reaches its specified goal, frequency of data collection may be reduced. Additional information regarding frequency of data collection, tracking, and analyzing data can be found in the [Managing Data for Performance Improvement](#) module.

Part 5: Holding the Gains and Spreading the Improvement

Holding the Gains

Once an organization has redesigned the process for colorectal cancer screening, it can be tempting to move on to other issues and stop monitoring the process. Ongoing monitoring ensures that an organization *holds the gains* over time.

Although an organization may be able to reduce the frequency of monitoring the process, some ongoing assessment of the measure is necessary to ensure an organization continues to meet its intended goal. Processes that work well now may need to change as the environment shifts. Because all systems are dynamic, they change unless efforts are made to ensure that the improvements continue. Organizations often do a few simple things to ensure that successful changes are embedded in the daily work. Examples include:

1. Change the procedure book to reflect the new care process.
2. Include key tasks in the new process as part of job descriptions.
3. Adjust the expectations for performance to include attention to quality improvement and teamwork to improve care.
4. Re-align hiring procedures to recruit individuals who are flexible and committed to quality improvement.

The case study continues...

Sustaining Improvements:

A year later...

About 52 percent of Dr. Stalling's patients have colorectal cancer screening. Even though the team is still working toward its aim, it has made considerable progress and learned much along the way. Because the results have been communicated at staff meetings, other providers are interested in adopting some of these changes that work and to follow the results in a registry. Confident it could make meaningful changes as a team, it expanded the team quality improvement project to include other metrics pertinent to **Colorectal Cancer Screening**. It used the NCQA Physician Recognition Program as a guide to choose measures and to develop appropriate aims. It remained focused on one care team to test changes to achieve its aim initially, but the organizational leadership was committed to do more; excellence in colorectal cancer screening across the organization became a strategic priority. Over the subsequent two years, the clinic made substantial improvement and is now known countywide for the excellence of its preventive care.

Spreading Improvement

Spread can be defined differently based on an organization's defined target population for the improvement effort. An organization often begins an improvement intervention on a smaller scale, possibly focusing on one site or one provider's patient panel, and then increases the population of focus (POF) or the number of providers. Spread can mean spreading improvements to another area of an organization. An organization can still focus on **Colorectal Cancer Screening** but also include other or all providers. Ideally, others can learn from the initial improvement experience and implement the interventions of the improvement team in their own environments. Spread of this kind is often at an accelerated pace as there is experience about changes that work within the organization. Once it has successfully reached its goal for **Colorectal Cancer Screening**, an organization may choose another measure to improve other aspects of preventive care. Good sources for **Colorectal Cancer Screening** measure sets include:

- [NCQA](#)
- [NQF](#)
- [CDC](#)

Another option is to target a different topic or another population of patients. An organization may evaluate organizational priorities as it did when initially choosing the **Colorectal Cancer Screening** measure and begin to plan for its next improvement effort. Additional information on *Holding the Gains and Spreading Improvements*, including specific resources and tools to support an organization's improvement program, can be found in the [Redesigning a System of Care to Promote QI](#) module.

Part 6: Supporting Information

Case Study

To gain insight into how a fictional QI team approached this measure, review a hypothetical case study highlighting Southeast Health Center's approach to improving **Colorectal Cancer Screening** performance.

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