Colorectal Cancer Screening

Improving Colorectal Cancer Screening
“80X18 Goal”

Lewis Foxhall, MD, FAAFP
Professor Clinical Cancer Prevention
VP Health Policy
UT MD Anderson Cancer Center
Speaker Disclosure

- Dr. Foxhall has disclosed that he has no actual or potential conflict of interest in relation to this topic.
Colorectal Cancer Learning Objectives

- Overview of colorectal cancer and CRC screening
- Identify risk factors for colon cancer
- Recognize importance of early detection of CRC
- Compare screening technologies and methods
- Address barriers to higher screening rates and quality

Goal: screening rates of 80% by 2018
Colorectal Cancer

- 3rd most common cancer in U.S.
  - 132,700 estimated new cases 2015
  - 10,500 new cases Texas

- 2nd deadliest cancer
  - 49,700 deaths nationwide
  - 3,400 deaths Texas

- 1 million+ U.S. colorectal cancer survivors

CRC Risk Factors – Age

Average age at diagnosis 72
Over 90% diagnosed at 50 or later

Figure 4: Age-specific incidence by Gender 2006-2010

<table>
<thead>
<tr>
<th>Age group</th>
<th>0-19</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>80+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.1</td>
<td>1.8</td>
<td>4.9</td>
<td>21.9</td>
<td>82.0</td>
<td>190.3</td>
<td>353.6</td>
<td>520.8</td>
</tr>
<tr>
<td>Female</td>
<td>0.0</td>
<td>1.4</td>
<td>5.1</td>
<td>18.5</td>
<td>57.7</td>
<td>123.3</td>
<td>246.9</td>
<td>411.9</td>
</tr>
<tr>
<td>Both</td>
<td>0.1</td>
<td>1.6</td>
<td>5.0</td>
<td>20.2</td>
<td>69.9</td>
<td>155.8</td>
<td>294.8</td>
<td>451.6</td>
</tr>
</tbody>
</table>
Trends in Incidence by Age

http://www.mayoclinicproceedings.org/article/S0025-6196(13)00822-7/fulltext
Incidence and Age at Diagnosis

www.cancer-rates.info/naaccr/
Trends in Cancer Death Rates* Among Women, US, 1930-2011

*Age-adjusted to the 2000 US standard population.
†Uterus includes uterine corpus and uterine cervix combined.
Source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2014.
Trends in Cancer Death Rates* Among Men, US, 1930-2011

*Age-adjusted to the 2000 US standard population.
Source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2014.

Decline per decade: 4% 11% 15% 27% (2000-2011)

48% decline from 1970 to 2011
Disparities in Incidence and Mortality 1975-2010

Figure 5. Trends in Colorectal Cancer Incidence and Mortality Rates by Race/Ethnicity and Sex, 1975-2010

Trends for American Indians/Alaska Natives are not included due to sparse data. Rates are per 100,000 and age adjusted to the 2000 US standard population. *Rates are two-year moving averages. †Rates are three-year moving averages. ‡Rates exclude deaths from Connecticut, District of Columbia, Louisiana, Maine, Maryland, Minnesota, Mississippi, New Hampshire, New York, North Dakota, Oklahoma, South Carolina, Vermont, and Virginia due to incomplete ethnicity data.


American Cancer Society, Surveillance Research, 2014
Texas: Colorectal Cancer Age-Adjusted Cancer Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Incidence Rates</th>
<th>Mortality Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>40.2</td>
<td>15.5</td>
</tr>
<tr>
<td>2011</td>
<td>38.8</td>
<td>14.9</td>
</tr>
<tr>
<td>2012</td>
<td>38.0</td>
<td>14.6</td>
</tr>
</tbody>
</table>

Rates are per 100,000
Texas CRC Incidence and Mortality

Age-Adjusted Invasive Cancer Incidence Rates in Texas
Colon & Rectum, 2006 - 2012
By County
Age-Adjusted to the 2000 U.S. Standard Population
Texas Rate: 40.2 / per 100,000

Age-Adjusted Cancer Mortality Rates in Texas
Colon & Rectum, 2003 - 2012
By County
Age-Adjusted to the 2000 U.S. Standard Population
Texas Rate: 15.3 / per 100,000

Incidence
Mortality
Death Rates, 2008-2012

Per 100,000, age adjusted to the 2000 US standard population

Data Source: National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention, 2015
© 2016 American Cancer Society
ARS Question
Which of the following are true regarding colorectal cancer in the U.S?

1. Death rates are declining
2. Racial/ethnic disparities exist
3. 2\textsuperscript{nd} most common cause of cancer death overall
4. All of the above
Colorectal Cancer Risk Factors

- **Age**
  - 90% of cases occur in people 50 and older
  - Average age of diagnosis 69

- **Gender**
  - Slight male predominance, but common in both men and women

- **Race/Ethnicity**
  - African Americans have highest incidence and mortality rates of all groups in U.S.
  - Increased rates also documented in Alaska Natives, some American Indian tribes, Ashkenazi Jews
  - Hispanics the lowest (with considerable variation depending on country of origin)
Colorectal Cancer Risk Factors

- **Average Risk**
  - Asymptomatic > 50 yrs

- **Family History CRC**
  - 1 first degree relative
  - > 1 relative
  - Relative dx < 45

- **Personal History CRC, polyps**

- **Medical History IBD**
  - Crohn’s colon
  - UC colon
  - UC rectum

- **Hereditary Syndromes**
  - FAP
  - HNPCC
  - BRCA1 <50

- **Cancer Survivors**
  - Testicular
  - Prostate with RTx

- **Other**
  - Smoking
  - DM
  - Obesity
  - Red meat
  - Processed meat
  - Alcohol

ACS Colorectal Cancer Facts and Figures
Colorectal Cancer Risk Factors

- **Sporadic (average risk)** (65%–85%)
- **Family history** (10%–30%)
- **Hereditary nonpolyposis colorectal cancer (HNPCC)** (5%)
- **Familial adenomatous polyposis (FAP)** (1%)
- **Rare syndromes** (<0.1%)
Polyp to Carcinoma Pathway

Normal \( \rightarrow \) Adenoma \( \rightarrow \) Carcinoma

10 Years

Human colon carcinogenesis progresses by the dysplasia/adenoma to carcinoma pathway.
Polyp to Carcinoma Pathway

Normal to Adenoma to Carcinoma

10 Years

Human colon carcinogenesis progresses by the dysplasia/adenoma to carcinoma pathway
Polyp Characteristics

- **Hyperplastic**
  - Minimal cancer potential

- **Adenomatous**
  - Approximately 90% of colon and rectal cancers arise from adenomas

- **Villous/serrated**
  - Increased risk of progression
4 Molecular Subtypes of CRC

- Gene Expression subtyping of adenocarcinoma by CRC Subtyping Consortium using combined methods
- Implications for prognosis, targeted personalized treatment and screening
- 6 subtyping algorithms to analyze 18 CRC data sets and the Cancer Genome Atlas related to 4,151 patients

**4 subtypes of CRC**

- CMS 1 (consensus molecular subtype) 14% F>M, right sided
  - worst survival rate on recurrence, BRAF mutations
- CMS 2 37% left sided, higher genetic instability
- CMS 3 13% lower level of mutation, KRAS mutations
- CMS 4 23% present at advanced state, worst overall survival

Guinney, Nature Medicine, 2015
Importance of Early Detection

Survival by State at Diagnosis

64.9% overall
Value of Screening

- Detect disease in asymptomatic individuals vs. clinical symptoms
- At early stage where treatment is more effective and less toxic
- Avoid harms associated with Tx of advanced CRC
- Reduce cancer specific mortality
- Reduce overall mortality
- Reduce incidence by treating precursors
- Improve or preserve quality of life
Importance of Screening

- **Avoid needless suffering and death**
  - More effective and less toxic treatment options
  - Improved survival
  - Early detection markedly improves chances of long-term survival
  - Improved quality of life

- **Cancer Prevention**
  - Removal of pre-cancerous polyps prevent cancer (unique aspect of colon cancer screening)

- **Cost-effective**
  - Cost of CRC screening compares favorably to many other common interventions (i.e. mammograms)

- **Quality Reporting**
  - PQRS – MACRA
  - HEDIS
  - UDS
Cancer Screening Rates

- CRC screening rate increase slowing

Sabatino, Cancer Screening Test Use — United States, MMWR May 8, 2015 / 64(17);464-468
Texas Screening Rates

Colorectal Cancer Screening / Sigmoidoscopy
Texas - 2012

Up to Date 60.4%
by NHIS 2010

62.6
37.4

https://healthmeasures.aspe.hhs.gov/measure/25
https://healthmeasures.aspe.hhs.gov/measure/25
Texas Counties Population Ages 50+ by Health Service Region, 2012

Source: Texas Department of State Health Services, 2015
Colorectal Cancer Incidence and Mortality Rates by Health Service Region, 2008-2012

Source(s): Prepared by the Texas Department of State Health Services, Cancer Epidemiology and Surveillance Branch, Texas Cancer Registry National Cancer Institute - Surveillance, Epidemiology and End Results Program
## Colorectal Cancer Stage at Diagnosis by Health Service Region, 2008-2012

<table>
<thead>
<tr>
<th>Region</th>
<th>In-Situ</th>
<th>Localized</th>
<th>Regional</th>
<th>Distant</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>3.6%</td>
<td>34.8%</td>
<td>30.7%</td>
<td>19.1%</td>
<td>11.8%</td>
</tr>
<tr>
<td>1</td>
<td>4.0%</td>
<td>33.9%</td>
<td>33.5%</td>
<td>20.6%</td>
<td>8.0%</td>
</tr>
<tr>
<td>2/3</td>
<td>2.9%</td>
<td>34.0%</td>
<td>32.0%</td>
<td>19.4%</td>
<td>11.6%</td>
</tr>
<tr>
<td>4/5N</td>
<td>4.6%</td>
<td>38.0%</td>
<td>29.5%</td>
<td>17.6%</td>
<td>10.3%</td>
</tr>
<tr>
<td>6/5S</td>
<td>4.5%</td>
<td>32.5%</td>
<td>30.4%</td>
<td>19.2%</td>
<td>13.5%</td>
</tr>
<tr>
<td>7</td>
<td>2.9%</td>
<td>38.0%</td>
<td>30.3%</td>
<td>19.5%</td>
<td>9.3%</td>
</tr>
<tr>
<td>8</td>
<td>4.0%</td>
<td>34.5%</td>
<td>31.2%</td>
<td>19.1%</td>
<td>11.2%</td>
</tr>
<tr>
<td>9/10</td>
<td>4.6%</td>
<td>37.2%</td>
<td>28.2%</td>
<td>19.4%</td>
<td>10.6%</td>
</tr>
<tr>
<td>11</td>
<td>1.7%</td>
<td>36.2%</td>
<td>28.8%</td>
<td>17.8%</td>
<td>15.5%</td>
</tr>
</tbody>
</table>

Source: Prepared by the Texas Department of State Health Services, Cancer Epidemiology and Surveillance Branch, Texas Cancer Registry
Texas Residents by Sigmoidoscopy or Colonoscopy

Calculated Variable: Adults aged 50+ who have ever had a sigmoidoscopy or colonoscopy

Source: Center for Disease Control, Behavioral Risk Factor Surveillance System
Texans Aged 50+ Who Reported Having Had a Sigmoidoscopy or Colonoscopy by Health Service Region, 2012

Source(s): Center for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Survey Data
Texas Behavioral Risk Factor Surveillance System, Center for Health Statistics
Texas Counties Population Ages 50+ by Health Service Region, 2012

Source: Texas Department of State Health Services, 2015
Texas Residents by Fecal Occult Blood Stool Test (FOBT)

**Calculated Variable**: Adults aged 50+ who have had a blood stool test within the past two years

![Graph showing the trend of Texas Residents by Fecal Occult Blood Stool Test (FOBT) from 2002 to 2012. The graph includes data for each year with the percentage of residents who have had a FOBT test.](image)

- **2002**: 24.3% Yes, 75.7% No
- **2004**: 23.4% Yes, 76.6% No
- **2006**: 21.7% Yes, 78.3% No
- **2008**: 19.3% Yes, 80.7% No
- **2010**: 14.9% Yes, 85.1% No
- **2012**: 13.0% Yes, 87.0% No

**Source**: Center for Disease Control, Behavioral Risk Factor Surveillance System

**BRFSS changes methodology**
Colorectal Cancer Screening* Up to Date
Adults Age 50 Years and Older by State, 2012

*Either a fecal occult blood test within the past year or a sigmoidoscopy or colonoscopy within the past 10 years (includes diagnostic exams).

Source: Behavioral Risk Factor Surveillance System Public Use Data Tapes 2012, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
ARS Question
Which statement regarding colorectal cancer screening and diagnosis is correct?

1. 90% of cases are diagnosed in the earliest stage
2. 40% of cases are diagnosed in the earliest stage
3. Screening rates in Texas are near 80%
4. Screening rates in the U.S. are increasing
Importance of Screening

- Only 40% of colorectal cancers are detected at the earliest stage
- Only 60% over age 50 report having had a recent colorectal cancer screening test
- Screening rates remain lower in the underserved/uninsured population than in the general population
- Disparities persist
CRC Screening Recommendations: USPSTF
Average Risk Individuals

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade (What's This?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults, beginning at age 50 years and continuing until age 75 years</td>
<td>The USPSTF recommends screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy in adults, beginning at age 50 years and continuing until age 75 years. The risks and benefits of these screening methods vary.</td>
<td>A</td>
</tr>
<tr>
<td>Adults age 70 to 85 years</td>
<td>The USPSTF recommends against routine screening for colorectal cancer in adults 70 to 85 years of age. There may be considerations that support colorectal cancer screening in an individual patient.</td>
<td>C</td>
</tr>
<tr>
<td>Adults older than age 85 years</td>
<td>The USPSTF recommends against screening for colorectal cancer in adults older than age 85 years.</td>
<td>D</td>
</tr>
<tr>
<td>Computed Tomographic Colonography and Fecal DNA testing as screening modalities</td>
<td>The USPSTF concludes that the evidence is insufficient to assess the benefits and harms of computed tomographic colonography and fecal DNA testing as screening modalities for colorectal cancer.</td>
<td>I</td>
</tr>
</tbody>
</table>

This topic page summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on screening for colorectal cancer.

Release Date: October 2008
USPSTF Recommendations

50 – 75 years Screen Routinely

- FOBT (high sensitivity) annually
- Flexible Sigmoidoscopy every 5 years
  - With FOBT mid-cycle or every 3 years
- Colonoscopy every 10 years
  - No interval FOBT after normal colonoscopy
  - Those with Hx of polyps or CRC use surveillance protocol

- 76 – 85 years, screen only after SDM
- Benefit declines with age especially in those routinely screened with normal results 50-75
- Risk increases especially with comorbid conditions
  - Do not screen if life expectancy < 5 years or very high risk
## ACS CRC Screening Recommendations
### Average Risk Beginning at 50 years

<table>
<thead>
<tr>
<th>Tests That Detect Adenomatous Polyps and Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible sigmoidoscopy (FSIG) every 5 years*, or</td>
</tr>
<tr>
<td>Colonoscopy every 10 years, or</td>
</tr>
<tr>
<td>Double contrast barium enema (DCBE) every 5 years*, or</td>
</tr>
<tr>
<td>CT colonography (CTC) every 5 years*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tests That Primarily Detect Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual guaiac-based fecal occult blood test (gFOBT) with high test sensitivity for cancer *, ** or</td>
</tr>
<tr>
<td>Annual fecal immunochemical test (FIT) with high test sensitivity for cancer*, ** or</td>
</tr>
<tr>
<td>Stool DNA test (sDNA), with high sensitivity for cancer*, interval uncertain</td>
</tr>
</tbody>
</table>

* Colonoscopy should be done if test results are positive.
** For gFOBT or FIT used as a screening test, the take-home multiple sample method should be used.
gFOBT or FIT done during a digital rectal exam in the doctor’s office is not adequate for screening.
Screening Technologies – Stool Tests

- **Guaiac (gFOBT)**
  - Hemoccult SENSA (higher sensitivity)
  - Sens 64-80% Spec 87-90%
  - Hemoccult II (lower sensitivity)
    - No longer recommended for screening

- **Immunochemical (FIT) –**
  - Higher sensitivity and specificity
  - Specific for lower GI bleeding
  - Improved patient participation
  - Sens 73-89% Spec 92-95%

- **Important to advise patient that tests done in the “privacy of their home”**

Lee Meta-analysis Annals Int Med, 2014, p161
Screening Technologies – Guaiac-based Fecal Occult Blood Test

- Best quality evidence (3 RCTs)
- Requires collection of specimens from 3 different bowel movements
- Reacts with heme portion of the hemoglobin molecule; non-specific
- Results may be influenced by some foods and medications
Screening Technologies – Fecal Immunochemical Test (FIT)

- Based on the immunochemical detection of human hemoglobin > enhanced specificity
- Results not influenced by food, medication
- Antibody reacts with the intact globin portion of human hemoglobin
  - Globin breaks down during passage from upper to lower GI tract
  - Positive fecal immunochemical test is specific for lower GI origin
Screening Technologies – Multi-target Stool DNA Test

- **Stool DNA test**
  - (Cologuard) Approved by FDA/Medicare
    - Sensitivity for cancer: 92.3% vs FIT 73.8%
    - Advanced lesions: 42.4% vs 23.8%
    - High grade dysplasia: 69.2% vs 42.6%
    - Sessile polyps: 42.34% vs 5.1%
    - Specificity: 86.6% vs 94.9%
    - NNS Colonoscopy 154, DNA 166, FIT 208

- Cost: Every 3 years, $502 payment approved by Medicare

- USPSTF recommendation I (insufficient evidence)

*Imperiale, Multi-target Stool DNA Testing for Colorectal Cancer Screening, NEJM, April 3, 2014*
Screening Technologies – CT Colonography  “Virtual Colonoscopy”

USPSTF recommendation “1”
Screening Technologies – Second Generation Colon “Pill” Camera

Sensitivity for polyps > 6mm 84%  specificity 64%
> 10mm 88% specificity 95%

FDA clearance for use in patients with incomplete endoscopy


http://esgweb1.nts.jhu.edu/hmn/W08/images/story/subpage/PillCamESO.jpg
Screening Technologies
New Scopes

- The CathCam
- The Aer-O-Scope™
- Endotics™ system
- NeoGuide™ system
- Invendoscope™
- ColonoSight™ system
- Magnetic endoscopic device
- Endo-Ease™ overtube

Screening Quality Issues

- Colonoscopy
  - Inadequate prep
  - Missed polyps
  - Incomplete insertion
  - Inadequate report
  - Performance monitoring inadequate
  - Guidelines not followed
- Fecal Occult Blood Texting
  - FOBT option not offered
  - Patient preferences not considered
  - Low sensitivity tests
  - In office tests
  - Follow up and repeat annual testing
The Most Important Measure of Quality Colonoscopy: Adenoma Detection Rate

• Definition: The percent of screening exams with at least one adenoma detected

**Current Targets:**
ADR should be: \( \geq 30\% \) male screening patients
\( \geq 20\% \) female screening patients
Percent of Colonoscopies Where Biopsy Was Taken (and Findings on Biopsy) for Colonoscopists Who Performed ≥30 Colonoscopies between 7/1/2006 – 3/31/2012 in Average Risk Clients 50+ Years of Age Who Reported No Bleeding in the CRF CRC Screening Program, MD
Standardized Colonoscopy Reporting and Data System (CO-RADS)

SPECIAL REPORT

Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable

David Lieberman, MD, Marion Nadel, PhD, Robert A. Smith, PhD, Wendy Atkin, PhD, Subash B. Duggirala, MD, MPH, FAAFP, Robert Fletcher, MD, MSc, Seth N. Glick, MD, C. Daniel Johnson, MD, Theodore R. Levin, MD, John B. Pope, MD, Michael B. Potter, MD, David Ransohoff, MD, Douglas Rex, MD, Robert Schoen, MD, Paul Schroy, MD, Sidney Winawer, MD

Portland, Oregon, USA

Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable
2 Approaches – Colonoscopy and Stool Testing are Both Critical Strategies

• Clinics achieving 80% is relying on stool testing as well as colonoscopy. Both approaches are critical.
We Must Make High Quality Colonoscopy as Widely Available as Possible

• The increase in CRC screening rates between 2000 and 2010 resulted from a **36%** increase in colonoscopy rates.
• Getting to 80% demands that colonoscopy must be available to everyone.
We Must Also Ensure that Anyone Can Be Offered a Home Stool Blood Test

• Even if you recommend colonoscopy for all, some people won’t get one, can’t get one, or shouldn’t get one.
• Using colonoscopy exclusively will, inevitably, lead to a screening gap.
Stool Blood Testing Remains Important in the “Age of Colonoscopy”

- Colonoscopy is now the most frequently used screening test for CRC.
- However, when provided annually to average-risk patients with appropriate follow-up, stool occult blood testing with high-sensitivity tests can provide similar reductions in mortality compared to colonoscopy and some reduction in incidence.

Evaluating Test Strategies for Colorectal Cancer Screening: A Decision Analysis for the U.S. Preventive Services Task Force
Advantages of Stool Blood Testing

• Stool blood testing
  – Is less expensive
  – Can be offered by any member of the health team
  – Requires no bowel preparation
  – **Can be done in privacy at home**
  – Does not require time off work or assistance getting home after the procedure
  – Is non-invasive and has no risk of causing pain, bleeding, bowel perforation, or other adverse outcomes

Colonoscopy is required only if stool blood testing is abnormal.
Many Patients Prefer Home Stool Testing

• Diverse sample of 323 adults given detailed side-by-side description of FOBT and colonoscopy*
  • 53% preferred FOBT
  • Almost half felt very strongly about their preference

• 212 patients at four health centers in Texas rated different screening options with different attributes**
  • 37% preferred colonoscopy
  • 31% preferred FOBT

*Community-based Preferences for Stool Cards versus Colonoscopy in Colorectal Cancer Screening
**Preferences for colorectal cancer screening among racially/ethnically diverse primary care patients
Many Patients Prefer Home Stool Testing

- Randomized clinical trial in which 997 ethnically diverse patients in San Francisco community health centers received different recommendations for screening.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonoscopy recommended:</td>
<td>38% completed colonoscopy</td>
</tr>
<tr>
<td>FOBT recommended:</td>
<td>67% completed FOBT</td>
</tr>
<tr>
<td>Colonoscopy or FOBT:</td>
<td>69% completed a test</td>
</tr>
</tbody>
</table>
Fecal Immunochemical Tests (FITs) Should Replace Guaiac FOBT

- FITs
  - Demonstrate superior sensitivity and specificity
  - Are specific for colon blood and are unaffected by diet or medications
  - Some can be developed by automated readers
  - Some improve patient participation in screening

FIT was More Effective for CRC Screening than FOBT

- Population based random sample of 20,623 individuals, 50-75 yrs (Netherlands)
- Tests and invitations were sent together
- 1 FIT (I-FOBT) vs. 3 G-FOBT samples

<table>
<thead>
<tr>
<th></th>
<th>FIT</th>
<th>FOBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>6157(60%)</td>
<td>4836(47%)</td>
</tr>
<tr>
<td>Pos. rate</td>
<td>5.5%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Polyps</td>
<td>679</td>
<td>220</td>
</tr>
<tr>
<td>Adv. Adenoma</td>
<td>145</td>
<td>57</td>
</tr>
<tr>
<td>Cancer</td>
<td>24</td>
<td>11</td>
</tr>
</tbody>
</table>

ACS Guidelines Update

• The ACS Colorectal Cancer Advisory Groups concluded that the current evidence, “provide a persuasive argument that [immunochemical tests] offer enhanced specificity in colorectal cancer screening over guaiac-based testing.”

• “..in comparison with guaiac-based tests for the detection of occult blood, immunochemical tests are more patient friendly, and are likely to be equal or better in sensitivity and specificity.”
Remember: Stool Collection Should Be Done AT HOME!

• Stool collected on rectal exam may not be sufficient or sufficiently representative of stool collected from a complete bowel movement.
• There is no evidence that any type of stool blood testing is sufficiently sensitive when used on a stool sample collected during a rectal exam.
• Therefore, HS-gFOBT and FIT should be completed by the patient at home, and NOT as an in-office test.
CRC Points to Consider

- “No CRC screening test is perfect, either for cancer detection or adenoma detection.

- Each technology has unique advantages, each has been shown to be cost-effective and each has associated limitations and risks.

- Patient preferences and availability of resources play an important role in the selection of screening tests.”

- With full adherence recommended approaches give same benefits (FOBT/FIT, FS+FOBT, Colonoscopy)
1 Test Approach That Is Best?

- “The best test is the one that gets done.”
  - Dr. Sidney Winowar

I got screened for colorectal cancer. What about you?
www.cdc.gov/screenforlife
Screening Program Models

- **Point-of-care screening**
  - Most common in U.S.

- **Practice or health delivery system population screening**
  - VA, Kaiser Permanente

- **Public health regional population screening**
  - More common in other countries Australia, Canada, Germany, Israel, Italy, Japan, UK and at least 23 other countries

Verma, Population-Based Programs for Increasing Colorectal Cancer Screening in the US, Ca Cancer Jnl, 2015
Office-Based Screening Barriers

- Medical practice is demand driven (acute problem)
- Practice demands are numerous/diverse
- Few practices currently have mechanisms to assure that every eligible patient gets a recommendation for screening.
- Screening rates are less for persons with less education, lower SES, no health insurance.
  - Lack of health insurance is a strong predictor of screening status. Higher co-pays and deductibles also lead to decreased screening rates.
ARS Question
Which of the factors below is the most frequently reported barrier to screening by insured patients?

1. Lack of clinician recommendation
2. Low awareness of CRC as a personal health threat
3. Lack of knowledge of screening benefits
4. Fear, embarrassment, discomfort
Screening Barriers

- Lack of clinician recommendation
- “My doctor never talked to me about it!”
- Low awareness of CRC as a personal health threat
- Lack of knowledge of screening benefits
- Fear, embarrassment, discomfort
- Time
- Cost (including co-pays)
- Access
Strategies for Clinic Based CRC Screening – ACS/NCCRT

- Develop a screening policy
  - Risk assessment
  - Documentation of prior screening
  - Recommendation for all eligible patients
  - Define responsibilities
  - Plan for evaluation of abnormal tests and treatment
  - Surgeon, Anesthesiology, Pathology, Oncology

- Reminders
  - Patients and clinicians
  - Follow up unreturned tests

- Tracking system/Navigation
  - Results
  - Compliance with follow up/colonoscopy
  - Rescheduling protocol (clinic vs. endoscopist)
Resources

- **ACS CRC tool and resources**
  - cancer.org/colonmd

- **CDC Screen for Life**
  - cdc.gov/cancer/colorectal/sfl

- **USPHS/UNC guide to improve screening**
  - ncspeed.org/sites/default/files/CRC_Toolkit.pdf

- **ePrognosis**
  - Estimates for life expectancy
  - http://cancerscreening.eprognosis.org/

- **FLU-FIT Materials** http://flufit.org

- **Screening for Colorectal Cancer: Optimizing Quality**
  - www.cdc.gov/cancer/colorectal/quality/

- **Steps for increasing CRC screening rates, a manual for community health centers**
  - www.nccrt.org
Resources

- Short, Colorectal Cancer Screening and Surveillance, American Family Physician, January 15, 2015
- Promoting cancer screening within the patient centered medical home, Sarfaty, CA Cancer J Clin. 2011;61:397-408
- Strategies for expanding colorectal cancer screening at community health centers, Sarfaty, CA Cancer J for Clin. 2013; 63, 221-231
- Public Health Impact of Achieving 80% CRC Screening Rates in the US by 2018, Meester, Cancer; 2015 Mar
Synopsis

- Colorectal cancer is a serious threat to our patients
- Screening rates are far below recommended levels
- Our patients suffer and die needlessly from colorectal cancer

- We need your help to reach the goal of 80% by 2018
ARS Question
Regarding colorectal cancer screening in my office,

1. Screening rates are 80% or higher
2. Screening rates are 60-80%
3. Screening rates are 40-50%
4. Screening rates are < 40%
5. Don’t know or NA
Acknowledgement

- Durado D. Brooks, MD, MPH
- Richard Wender, MD
  - American Cancer Society
Questions?

LIVE LONG & PROSPER

Lewis E. Foxhall, MD, FAAFP
lfoxhall@mdanderson.org

www.mdanderson.org
Personal Action Plan

- What steps will you take to improve prevention and early detection of colorectal cancer in your practice?
  - List three things you will do to reduce colorectal cancer deaths in your patients

- 1

- 2

- 3
Evidence-Based Toolkit and Guide to Increase Colorectal Cancer Screening Rates

Developed by National Colorectal Cancer Roundtable
Four Essentials for Improved Screening Rates

1. Your Recommendation
2. An Office Policy
   A. An Office Policy is Vital
   B. Fit the Policy to Your Practice
      • Determine Individual Risk Level
      • Identify Local Medical Resources
      • Assess Insurance Coverage
      • Consider Patient Preference
      • Attend to Office Implementation
3. An Office Reminder System
   A. Options for Patients: Education and Cues to Action
   B. Options for Physicians:
      • Chart Prompts
      • Audits and Feedback
      • Ticklers and Logs
      • Staff Assignments
4. An Effective Communication System
   A. Options for Action
      • Stage-based Communication
      • Shared Decisions, Informed Decisions,
        Decision Aids
      • Staff Involvement
The Tool Kit Contains Ready to Use “Tools”

- Interactive web based and pdf versions available
- Both provide:
  - Step-by-step guidance on how to implement office systems
  - Forms and templates
  - Useful web sites

Available at www.cancer.org/colonmd
For Patients and Caregivers

American Cancer Society’s Complete Guide to Colorectal Cancer

- Comprehensive, matter-of-fact
- Easy to read and assuring
- Helpful charts and illustrations, resources for patients, and a special section designed for caregivers
- Includes real-life stories from people with cancer and their loved ones and caregivers
- More than 400 pages on risk factors, prevention, testing, treatment choices, coping, and life after treatment
- Written by a team of world-class experts

1.800.ACS.2345
www.cancer.org/bookstore
“Get Tested For Colon Cancer: Here's How.”

An 7-minute video reviewing options for colorectal cancer screening tests, including test preparation.

Access at www.cancer.org/colonmd
We Need Tailored Messages to Reach the Unscreened

• We have conducted market research with a large group of unscreened Americans.
Evidence-Based Messages are now Available

• General messages to encourage screening will not be effective.
• NCCRT members are ready to commit to common messages.
Barriers to Consumer Screening – **Factors**

- **#1: Affordability**
  - “I do not have health insurance and would not be able to afford this test. I do not feel the need to have it done.”

- **#2: Lack of symptoms**
  - “Doctors are seen when the symptoms are evidently presumed, not before.”

- **#3: No family history of colon cancer**
  - “Never had any problems and my family had no problems, so felt it wasn’t really necessary.”

  #1 reason among 50-64 year olds & Hispanics
  - Nearly ½ uninsured
  - #1 reason among 65+ year olds
Barriers to Consumer Screening – *Factors*

**#4: Perceptions about the unpleasantness of the test**
- “I do not think it is a good idea to stick something where the sun don’t shine. The yellow Gatorade I cannot stomach.”

**#5: Doctor did not recommend it**
- “I fear it will be uncomfortable. My doctor has never mentioned it to me, so I just let it go.”

**#6: Priority of other health issues**
- “I just turned 50 and I am dealing with another health issue, so it’s on the back burner.”

#1 reason among Black/African Americans; #3 reason among Hispanics
### Activating Messages That Motivate

<table>
<thead>
<tr>
<th><strong>There are several screening options available, including simple take home options. Talk to your doctor about getting screened.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colon cancer is the second leading cause of cancer deaths in the U.S., when men and women are combined, yet it can be prevented or detected at an early stage.</strong></td>
</tr>
<tr>
<td><strong>Preventing colon cancer, or finding it early, doesn’t have to be expensive. There are simple, affordable tests available. Get screened! Call your doctor today.</strong></td>
</tr>
</tbody>
</table>
Reaching Unscreened Hispanic Audiences: Research Findings

There is a lack of information among Hispanics about what colon cancer is and the tests used to screen for colon cancer. This lack of info is a huge barrier to getting this population screened.

There is also a lack of specific knowledge that a colonoscopy is used to detect and prevent cancer.

Fear, especially, fear of the unknown, came to the top as a major barrier. This fear often leads to procrastination or putting off the test.
Reaching Unscreened Hispanic Audiences: Research Findings

Affordability or lack of insurance is another top barrier among this population.

Among males, the “machismo” effect also holds them back from making health decisions, including CRC screening.

According to Hispanics, physicians are either not giving a recommendation for screening or are not being stern enough in their recommendation.

Colon cancer as the #2 cancer killer among Hispanics is a particularly motivating message for Hispanics.
Top Messages for Unscreemed Hispanic Audiences
If you are 50 or older, you’re at a higher risk for colon cancer – even if you are healthy. Ask your doctor for a screening test. You can do a simple test at home.

• Respondents were motivated by age.
• “Even if you are healthy” was a key motivator.
• The idea of a simple test at home was an added bonus.
You are so important to your family, don’t let them down! Don’t procrastinate any longer! Get screened for colon cancer today! It could save your life.

- Everyone related to the “family” message.
- “Don’t procrastinate any longer” was a strong message.
- Made people worry about how they are doing disservice to their families by not getting screened.
Hi, my name is Maria. I lost my father to colon cancer. He was too stubborn to get screened, but the cancer might have been prevented if he did. Don’t let your family lose you, too. Get screened and prevent colon cancer.

• When this message was chosen, it hit home very strongly at an emotional level – sometimes even bringing tears to their eyes.
• The message was most effective for fathers, particularly those that may have been putting off screening tests because they are too “macho.”
Colon cancer is the second-leading cancer killer in the U.S. among Hispanics, but it doesn’t have to be. Colon cancer can be prevented or found at an early stage. Getting screened is absolutely necessary! Call a doctor today.

• Leading with the statistic was the key motivating aspect of this message.
• The stern tone also makes the message more effective with Latinos.
• Fear motivates them to action, while the idea that the cancer can be prevented gives them hope.
Colorectal Cancer “Prevention” is a Very Important Motivator but also Very Difficult to Communicate

• The messages we set out to test were not effective in communicating that colon cancer can be prevented through a screening test.
• Many participants equated prevention to healthy eating and saw the tests as a way of “detecting” and not “preventing.”
Colon cancer starts with a polyp in the large intestine. Polyps are very common in people age 50 and older, but they can be detected and removed before they turn into cancer. Don’t die of cancer. Talk to your doctor about colon cancer prevention.

- This message was created while in the field in an attempt to better communicate the intended idea of prevention. It succeeded.
- Helped Latinos understand how “detection” can be “prevention”
FLU-FIT Program

- **Flu-FIT an effective approach to screening**
  - Based in six community clinics in SF area, Dr. Michael Potter
  - Eligible patients completing screening increased 2.2X

- **Method**
  - Adults 50-75 years of age offered FIT/FOBT screening at time of annual influenza vaccination
  - Standing orders executed by nursing staff
  - One hour training for LVN’s, MA’s
  - Log Sheet reminder to check eligibility at time of visit
  - Visual aide for patients
  - Multilingual written instructions
  - Video instructions
  - Stamped envelopes for return of tests
  - [www.flu-fit.org](http://www.flu-fit.org)
### Increased Risk

#### Family History

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Age to initiate screening</th>
<th>Interval if normal (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single first-degree relative with colorectal cancer or an advanced adenoma diagnosed at ≥ 60 years of age</td>
<td>50 years (may start at 45 years in AA)</td>
<td>10</td>
</tr>
<tr>
<td>Single first-degree relative with colorectal cancer or an advanced adenoma diagnosed at &lt; 60 years of age</td>
<td>40 years or 10 years younger than affected relative's age when diagnosed, whichever is earlier</td>
<td>5</td>
</tr>
<tr>
<td>Two first-degree relatives with colorectal cancer or an advanced adenoma diagnosed at any age</td>
<td>40 years or 10 years younger than the youngest affected relative's age when diagnosed, whichever is earlier</td>
<td>5</td>
</tr>
</tbody>
</table>


An advanced adenoma is defined as an adenoma that is 10 mm or larger, has villous elements, or has high-grade dysplasia.

Short, Colorectal Cancer Screening and Surveillance, American Family Physician, January 15, 2015
Screening Patients With a Family History

• If patient has either:
  – CRC or adenomas* in a first-degree relative diagnosed before age 60 OR
  – Two or more first-degree relatives diagnosed at any age (with family history not suggestive of genetic syndrome)

Colonoscopy every 5 years starting at age 40, or 10 years before the youngest case in the family was diagnosed, whichever comes first.**

*Our expert opinion is that this applies to relatives with advanced adenomas (adenomas that are ≥1cm, villous, or with high-grade dysplasia) only, recognizing that this information is often unavailable.

**The evidence base for these guidelines was not strong and some aspects are controversial.

Source: Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology
Screening Patients With a Family History

- If patient has either:
  - CRC or adenomas* in a first-degree relative diagnosed at age >60 OR
  - Two second-degree relatives with CRC

  Begin screening at age 40 with any test recommended for average risk; repeat at usual intervals based on type of test and findings.**

*Our expert opinion is that this applies to relatives with advanced adenomas (adenomas that are >1cm, villous, or with high-grade dysplasia) only, recognizing that this information is often unavailable.

**The evidence base for these guidelines was not strong and some aspects are controversial.

Source: Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology
Increased Risk

History of Polyps

- Personal history of small hyperplastic polyp recheck colonoscopy per average risk
- Personal history of 1-2 tubular adenomas with low-grade dysplasia, recheck q 5-10 years
- 3-10 adenomas or 1 adenoma >1cm or adenoma with villous features or high grade dysplasia recheck q 3 years
- >10 adenomas on single exam recheck < 3 years consider familial syndrome
- Sessile adenoma removed piecemeal recheck 2-6 months to verify complete removal then as indicated
Increased Risk

Personal History of Colorectal Cancer

- Patients undergoing curative intent resection of CRC: perioperative colonoscopy then 1 year after last colonoscopy

- Patients undergoing resection for CRC: intraoperative colonoscopy or 3-6 months post op if no unresectable mets
High Risk

- **Inflammatory bowel disease (chronic ulcerative colitis and Crohn’s colitis):**
  - Start 8 years after onset of pancolitis, or 12-15 yrs after onset of left sided colitis,
  - Colonoscopy with biopsy for dysplasia q1-2 yrs.
High Risk

- Genetic diagnosis or suspicion of FAP:
  - Early surveillance starting at 10-12 years with flex sig annually
  - Counseling to consider genetic testing if not done
  - Consider colectomy if genetic test +

- Genetic or clinical diagnosis or suspicion of HNPCC:
  - Start at 20-25 y/o or 10 years before earliest diagnosis of relative: Colonoscopy q 1-2yrs
  - Counseling to consider genetic testing
Surveillance of Patients with Adenomas at Prior Colonoscopy

- Low-risk adenomas*
  - 1–2 tubular adenomas <10mm

Colonoscopy in 5-10 years

*These recommendations assume that the prior colonoscopy was complete and adequate. For serrated polyps, see Surveillance of Patients with Serrated Polyps at Prior Colonoscopy.

Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer
Surveillance of Patients with Adenomas at Prior Colonoscopy

- High-risk adenomas*
  - 3–10 adenomas <10mm OR
  - ≥1 adenoma ≥10mm OR
  - ≥1 adenoma with villous features OR
  - ≥1 adenoma with high grade dysplasia
  - >10 adenomas

Colonoscopy in 3 years

Colonoscopy in <3 years (consider syndrome)

*These recommendations assume that the prior colonoscopy was complete and adequate. For serrated polyps, see Surveillance of Patients with Serrated Polyps at Prior Colonoscopy.

Surveillance of Patients with Adenomas at Prior Colonoscopy

- Any adenoma with piecemeal or possibly incomplete excision → Colonoscopy in 2-6 months

*These recommendations assume that the prior colonoscopy was complete and adequate. For serrated polyps, see Surveillance of Patients with Serrated Polyps at Prior Colonoscopy.

Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer
### Recommendations for Adenoma Surveillance After First Surveillance Colonoscopy

<table>
<thead>
<tr>
<th>Baseline Colonoscopy Finding</th>
<th>First Surveillance Colonoscopy Finding</th>
<th>Interval for Second Surveillance (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-risk adenoma (LRA)</td>
<td>• HRA</td>
<td>• 3</td>
</tr>
<tr>
<td></td>
<td>• LRA</td>
<td>• 5</td>
</tr>
<tr>
<td></td>
<td>• No adenoma</td>
<td>• 10</td>
</tr>
<tr>
<td>High-risk adenoma (HRA)</td>
<td>• HRA</td>
<td>• 3</td>
</tr>
<tr>
<td></td>
<td>• LRA</td>
<td>• 5</td>
</tr>
<tr>
<td></td>
<td>• No adenoma</td>
<td>• 5</td>
</tr>
</tbody>
</table>
## Guidelines for Surveillance

<table>
<thead>
<tr>
<th>Initial colonoscopy findings</th>
<th>Follow-up interval</th>
<th>Criteria for serrated polyposis syndrome:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal</strong></td>
<td>No polyps or normal biopsy results</td>
<td>at least 5 serrated polyps proximal to the sigmoid with 2 or more that are &gt; 10 mm, any serrated polyp proximal to sigmoid with a family history of serrated polyposis syndrome, or &gt; 20 serrated polyps of any size throughout the colon.</td>
</tr>
<tr>
<td><strong>Hyperplastic polyps</strong></td>
<td>Small (&lt; 10 mm) hyperplastic polyps in rectum or sigmoid</td>
<td></td>
</tr>
<tr>
<td><strong>Low-risk polyps</strong></td>
<td>1 or 2 small (&lt; 10 mm) tubular adenomas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small sessile serrated polyp (&lt; 10 mm) without dysplasia</td>
<td></td>
</tr>
<tr>
<td><strong>High-risk polyps</strong></td>
<td>3 to 10 tubular adenomas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tubular adenoma or serrated polyp that is ≥ 10 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adenoma with villous features or high-grade dysplasia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sessile serrated polyp with cytologic dysplasia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Traditional serrated adenoma</td>
<td></td>
</tr>
<tr>
<td><strong>Other circumstances</strong></td>
<td>More than 10 adenomas</td>
<td>&lt; 3 years</td>
</tr>
<tr>
<td></td>
<td>Serrated polyposis syndrome*</td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td>Following piecemeal removal of a large (&gt; 15 mm) sessile adenoma or serrated polyp</td>
<td>Consider repeat in &lt; 1 year if question of residual polyp</td>
</tr>
<tr>
<td></td>
<td>Following curative resection of colorectal cancer</td>
<td>1 year after resection, then 3 and 5 years if normal</td>
</tr>
</tbody>
</table>

*Criteria for serrated polyposis syndrome: at least 5 serrated polyps proximal to the sigmoid with 2 or more that are > 10 mm, any serrated polyp proximal to sigmoid with a family history of serrated polyposis syndrome, or > 20 serrated polyps of any size throughout the colon.

1. Patients with small rectal hyperplastic polyps should be considered to have normal colonoscopies, and therefore the interval before the subsequent colonoscopy should be 10 years. An exception is patients with a hyperplastic polyposis syndrome. They are at increased risk for adenomas and colorectal cancer and need to be identified for more intensive follow up.

2. Patients with only one or two small (<1cm) tubular adenomas with only low-grade dysplasia should have their next follow-up colonoscopy in 5 to 10 years. The precise timing within this interval should be based on other clinical factors (such as prior colonoscopy findings, family history, and the preferences of the patient and judgment of the physician.)
3. Patients with 3 to 10 adenomas, or any adenoma >1 cm, or any adenoma with villous features, or high-grade dysplasia should have their next follow-up colonoscopy in 3 years providing that piecemeal removal has not been done and the adenoma(s) are completely removed. If the follow-up colonoscopy is normal or shows only one or two small tubular adenomas with low-grade dysplasia, then the interval for the subsequent examination should be 5 years.

4. Patients who have more than 10 adenomas at one examination should be examined at a shorter (<3 years) interval established by clinical judgment, and the clinician should consider the possibility of an underlying familial syndrome.
5. Patients with sessile adenomas that are removed piecemeal should be considered for follow up at short intervals (2 to 6 months) to verify complete removal. Once complete removal has been established, subsequent surveillance needs to be individualized based on the endoscopist’s judgment. Completeness of removal should be based on both endoscopic and pathologic assessments.

6. More intensive surveillance is indicated when the family history may indicate hereditary nonpolyposis colorectal cancer.
## FITs Available in the US

<table>
<thead>
<tr>
<th>Name</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>InSure</td>
<td>Enterix, Quest Company</td>
</tr>
<tr>
<td>Hemoccult-ICT</td>
<td>Beckman-Coulter</td>
</tr>
<tr>
<td>Instant-View</td>
<td>Alpha Scientific Designs</td>
</tr>
<tr>
<td>MonoHaem</td>
<td>Chemicon International</td>
</tr>
<tr>
<td>Clearview Ultra-FOB</td>
<td>Wampole Laboratory</td>
</tr>
<tr>
<td>Fit-Chek</td>
<td>Polymedco</td>
</tr>
<tr>
<td>Hemosure One Step</td>
<td>WHPM, Inc.</td>
</tr>
<tr>
<td>Magstream Hem Sp</td>
<td>Fujirebio, Inc.</td>
</tr>
</tbody>
</table>

Levi Z, Ann Intern Med. 2007; 146:244-55
6 Recommended Program Elements – IARC

1. Explicit screening policy
   Age, method, intervals

2. Defined population

3. Management team
   Implementation, oversight, direction
   Administrative, clinical, public health

4. Health care team
   Screening, treatment

5. Quality assurance
   Data audits, review, reports

6. Population based data collection
   Screening rates, incidence, stage, mortality

Verma, Population-Based Programs for Increasing Colorectal Cancer Screening in the US, Ca Cancer Jnl, 2015
4 Attributes of Successful Programs

1. Dedicated funding source
2. Structured policy to address positive tests and treat Ca
3. Outreach for education and recruitment
4. Rescreening process

Verma, Population-Based Programs for Increasing Colorectal Cancer Screening in the US, Ca Cancer Jnl, 2015
Population Based Programs
Reported Improvement

National
- CDC National Demonstration Program 47-73%

State and City
- Delaware Statewide Cancer Control Program (C,FS) 57-74% AA: 48-72%
- Maryland Cancer Prevention Education Screening and Treatment Program (C,FOBT) 52-75%
- New York City program (C) 42-69% AA: 36-71%

Heath System
- Kaiser Permanente Northern California (FOBT, C, FS) 37-79%
- Group Health Cooperative of Puget Sound (FOBT, C) 53-78%
- Veterans Health Administration (FOBT, C) 31-80%
- Independence Blue Cross (PCMH cert, incentive pay) 59-75%

Verma, Population-Based Programs for Increasing Colorectal Cancer Screening in the US, Ca Cancer Jnl, 2015
Addressing Underserved Populations Through Community Health Centers

- Opportunities through community health centers
  - Serve vulnerable populations
    - 93% low income
    - 24% limited English speakers
    - 62% ethnic minorities
    - 36% uninsured
    - 39% Medicaid
    - Homeless, farm workers, public housing residents
  - National Prevention Strategy
  - National Quality Strategy
  - IOM Integrating Public Health and Primary Care
  - National Colorectal Cancer Roundtable 80% by 2018 Goal
  - CRC screening added UDS requirement by HRSA 2012
  - No cost to individuals covered by health plans through ACA
  - Transition to Patient Centered Medical Home Model
Strategies for Clinic Based CRC Screening

- Chart review or EMR to identify eligible patients
- Standing orders
- Patient education/coaching
- Define referral process for endoscopy and treatment
- Tag charts for non-responders

- Set a goal
- Track outcomes
- Identify opportunities for improvement - PDSA cycle
Implementation Tactics

- Offer recommended CRC screening services as a routine part of care.
- Adopt and use certified electronic health records and personal health records.
- Adopt medical home or team-based care models.
- Reduce or eliminate out-of-pocket costs for preventive services and educate and encourage patients to access these services.
- Establish patient reminders
  - Mailing cards, sending e-mails, or making phone calls when a patient is due for a preventive health service
- Audit and feedback
Implementation Tactics

- **Clinician reminders**
  - Electronic health records with reminders or cues, chart stickers, vital signs stamps, medical record flow sheets

- **Expand hours of operation, provide child care, offer services in convenient locations (e.g., near workplaces),**

- **Create linkages with and connect patients to community resources, family support, and education programs.**

- **Facilitate coordination among diverse care providers (e.g., clinical care, behavioral health, community health workers, complementary and alternative medicine).**

- **Communicate with patients in an appropriate manner so that patients can understand and act on advice. (CLAS standards)**