# Colorectal Cancer 101

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Centers for Disease Control and Prevention

# Facts About Colorectal Cancer

- **130,607 new cases and 52,045 deaths in 2010 in the United States***
- **2nd leading cause of cancer death overall, after lung cancer**
- **Can be prevented or detected early through screening**
- **Colorectal cancer incidence and mortality have been declining in the United States**
  - 30% decrease in incidence during past decade among adults aged 50 and older**
- **Screening has been an important contributor to U.S. declines in incidence and mortality**

*U.S. Cancer Statistics Working Group. 2013. Available here.

**Siegel R et al. CA Cancer J Clin 2014;64:104-117.

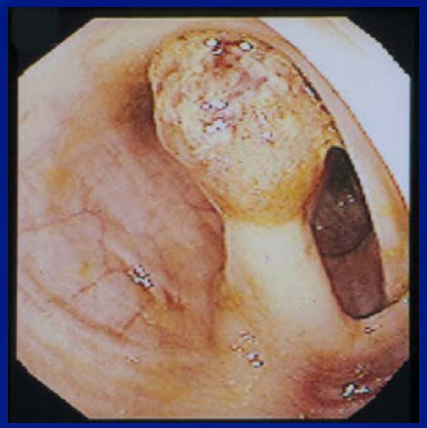
# Where Does Colorectal Cancer Come From?

- Most cancers of the colon and rectum develop over years from adenomatous or serrated polyps
- Polyps are very common and increase with age but very few progress to cancer
- Polyps that are larger, have dysplasia, or villous histology have a higher risk of progression to cancer than other polyps
- Estimate of polyp dwell time from a <1 cm adenomatous polyp to an invasive cancer is at least 10 years

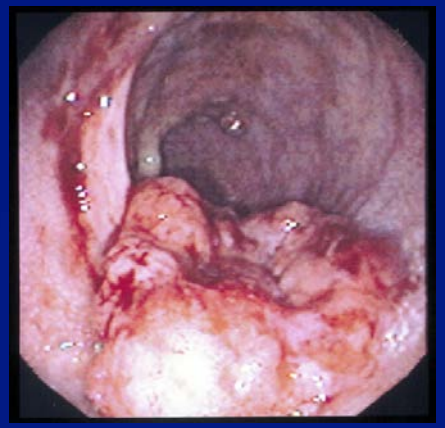
# Natural History of Colorectal Cancer

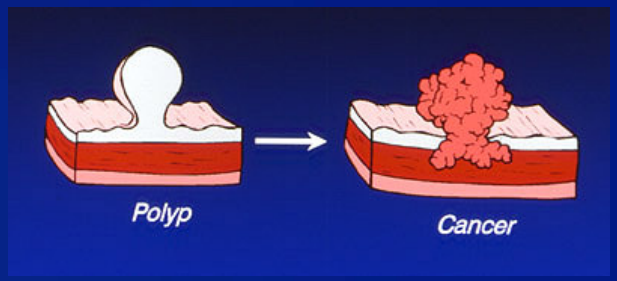
Normal

Polyp



Adenocarcinoma





# *How Colorectal Cancer Screening Works*

Screening tests are performed *before* a person has symptoms

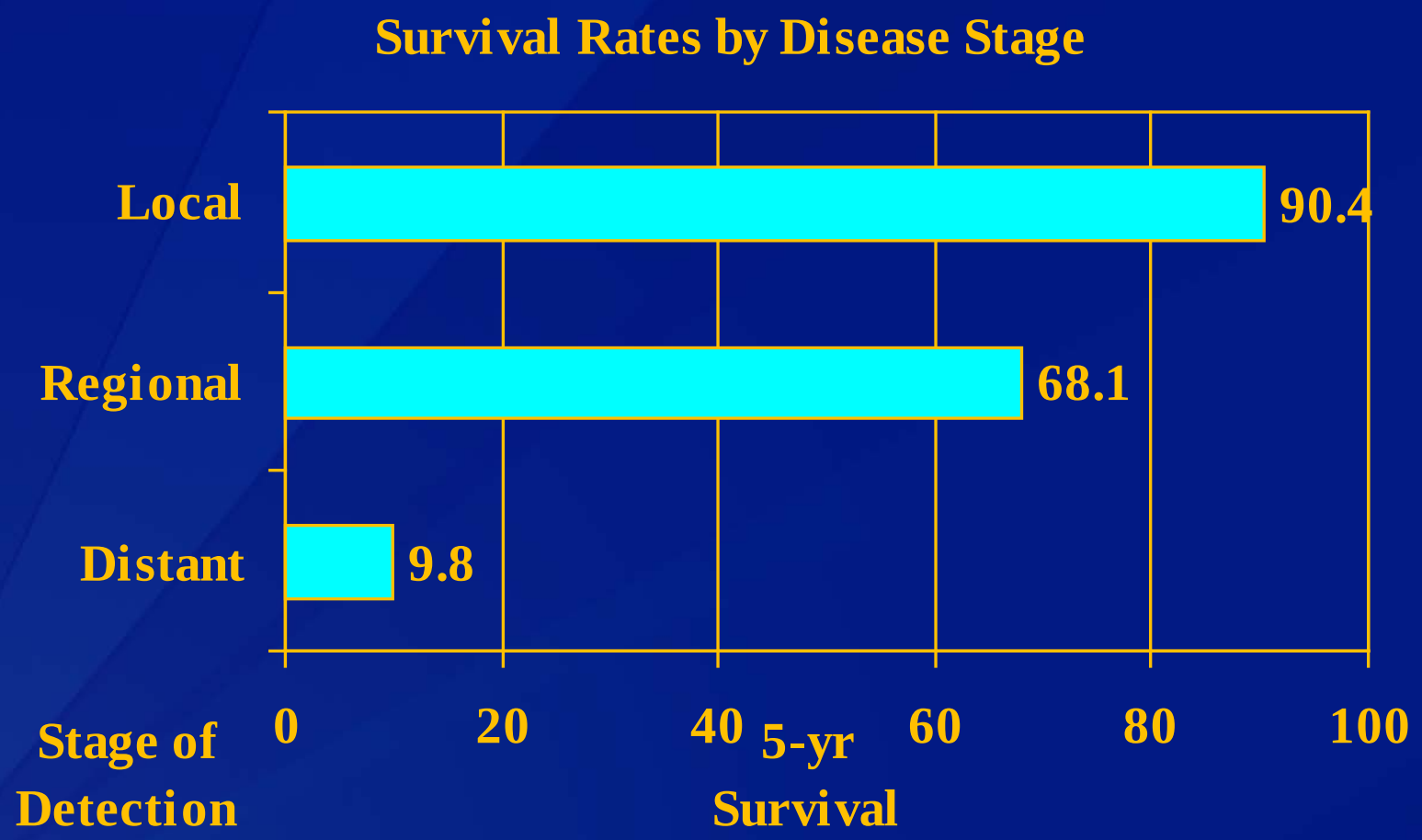
- To detect a disease or disease precursor which may be present but silent
- To prevent or more effectively treat the disease

Colorectal Cancer Screening = Prevention & Early Detection

Prevention (polyp removal) → Decreased Incidence

Early Detection → Decreased mortality

# Benefits of Screening




Source: SEER Cancer Statistics Review, 1975-2003

# Is Screening Appropriate for Your Patient?

**Need to know patient's:**

- Risk level
- Screening and surveillance history
- Age
- Comorbidities
- Preferences

# Risk Stratification to Ensure Appropriate Screening and Surveillance*

- **Average Risk**
  - No signs or symptoms of CRC
  - None of the risk factors below
- **Increased Risk**
  - Family history of CRC or adenomas in a first-degree relative or CRC in two second-degree relatives
  - Personal history of adenomas, certain serrated polyps, or CRC
- **High Risk**
  - Inflammatory bowel disease: chronic ulcerative colitis or Crohn's colitis
- **Highest Risk**
  - Confirmed or suspected genetic syndromes (FAP, HNPCC)

*Diagnostic testing is appropriate for patients with signs or symptoms

Screening for Colorectal Cancer

# AVERAGE RISK

# Patients at Average-Risk: Screening Guidelines

## Three Screening Options:

- High-sensitivity guaiac-based FOBT (HS-gFOBT) or fecal immunochemical tests (FIT) yearly, or
- Flexible sigmoidoscopy every 5 years with interval HS-gFOBT or FIT every 3 years, or
- Colonoscopy every 10 years

US Preventive Services Task Force. Ann Intern Med. 2008;149(9):627-37.

# Summary USPSTF Recommendations

| Population | Grade | Recommendation | Rationale |
|---|---|---|---|
| Age 50-75 years | A | Screen routinely with HS-FOBT, sigmoidoscopy, or colonoscopy | Benefits of screening outweigh potential harms |
| Age 76-85 years | C | Do not screen routinely | Likelihood that detection and early intervention yields a mortality benefit declines after age 75 due to time lag between adenoma development and cancer diagnosis |
| Age >85 years | D | Do not screen | |

# USPSTF Test/Interval Recommendations

| Screening Test | Grade | Interval | Rationale |
|---|---|---|---|
| High sensitivity FOBT (guaiac or immunochemical) | A | Annual | All are effective in decreasing CRC mortality. Risks and benefits of screening methods vary. |
| Flexible sigmoidoscopy | A | Every 5 years with HS-FOBT every 3 years | |
| Colonoscopy | A | Every 10 years | |
| CT colonography | I | N/A | Insufficient evidence to assess benefits and harms |
| Fecal DNA | I | N/A | |

# Rationale

- **Cancer Intervention and Surveillance Modeling Network (CISNET)**
  - Microsimulation modeling
  - Compared life-years gained relative to resource use for different screening strategies
- **Adults age 76 – 85 years**
  - Gain in life years small in comparison to risks
  - Assumes all previous screens for CRC negative
  - Benefit of screening not seen for 7 years
- **Adults age >85 years**
  - Competing causes of mortality

# FOBT Based Strategy

- **Annual High-sensitivity FOBT**
  - Required fewest colonoscopies
  - Hemeoccult Sensa
  - FIT with similar characteristics as Magstream quantitative tests
  - Hemeoccult II did not have similar effectiveness
    - Fewer life-years gained
    - Lower predicted incidence/mortality reduction

# Endoscopy Based strategies

- **Sigmoidoscopy every 5 years with HS FOBT every 3 years**
  - Sigmoidoscopy alone did not have similar effectiveness
    - Fewer life-years gained
    - Lower predicted incidence/mortality reduction
  - Minimal decrease in life-years gained compared to sigmoidoscopy every 5 years with annual FOBT
- **Colonoscopy every 10 years**

# Should African Americans Start Screening Before Age 50?

**Recommendation: begin screening at age 50**

- **Rationale for earlier screening:**
  - Higher age-specific rates of CRC among African Americans
- **Rationale against earlier screening:**
  - Most CRC cases in African Americans occur after age 60
  - Prevalence of polyps >9mm similar for whites and African Americans
  - No evidence supporting effectiveness of earlier screening
  - Increasing screening rates by >10% among African Americans over age 50 more effective than earlier screening
- **Guidelines vary:**
  - USPSTF, ACS-MSTF-ACR*: age 50
  - ACG**, ASGE***: age 45
  - ACP: age 40
- **Coverage varies:**
  - Medicare and states with mandatory screening requirement: age 50

*ACS-MSTF-ACR: American Cancer Society –Multi-Society Task Force on Colorectal Cancer – American College of Radiology
**ACG: American College of Gastroenterology
***ASGE: American Society for Gastrointestinal Endoscopy

Screening and Surveillance for Colorectal Cancer

# INCREASED RISK

# 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**

- **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 only, i.e., adenomas that are > 1cm, villous, or with high-grade dysplasia, recognizing that this information is often unavailable.

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

Levin B et al. CA Cancer J Clin. 2008; 58(3):130-160.

# Surveillance of Patients with Adenomas at Prior Colonoscopy

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

→ Colonoscopy in 5-10 years

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

→ Colonoscopy in 3 years

  - >10 adenomas

→ Colonoscopy in <3 years (consider syndrome)

- **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 here

Lieberman DA et al. Gastroenterology 2012; 143: 844-57.

# CRC SCREENING TESTS

# Test Options

- **Stool based tests**
  - Guaiac fecal occult blood tests (gFOBT or FOBT)
  - Immunochemical FOBT (iFOBT or FIT)
  - mtsDNA (multi-target stool DNA)
- **Endoscopic tests**
  - Flexible sigmoidoscopy
  - Colonoscopy
- **Radiology**
  - Double contrast barium enema
  - CT colonography or virtual colonoscopy

# Guaiac FOBT vs FIT

- gFOBT
  - Detects peroxidase activity of heme
  - In presence of heme and developer (hydrogen peroxide), guaiac acid turns blue
  - Heme present in red meat, fruits, vegetables (radishes, turnips, broccoli)
  - Vitamin C inhibits guaiac reaction
- FIT
  - Specific antibodies to hemoglobin
  - Specific to bleeding from colon (globin does not survive passage through UGI)
  - No dietary restriction
  - Unaffected by medications
  - Quantitative
  - Automated developers and readers

# Fecal Immunochemical Tests (FIT)



# gFOBT: Test Characteristics

| | Hemeoccult II | Hemeoccult Sensa |
|---|---|---|
| Percent test positive | 2.5% | 10% - 13.6% |
| Sensitivity CRC | 25% - 38% | 64% - 80% |
| Specificity CRC | 98% - 99% | 87% - 90% |
| Sensitivity adenoma ≥10 mm | 16% - 31% | 41% - 68.6% |
| Specificity adenoma ≥10 mm | ~91% | 87% - 91% |

Whitlock EP, Lin JS, Liles E, et al. Screening for colorectal cancer: a targeted systematic review for the U.S. Preventive Services Task Force. Ann Intern Med 2008;149:638-658.

# gFOBT: Evidence

| | Mandel, 1993 | Mandel, 1999 | Hardcastle, 1996 | Kronborg, 1996 |
|---|---|---|---|---|
| **Frequency of Testing** | Annual | Biennial | Biennial | Biennial |
| **Duration (years)** | 18 | 18 | 8 | 13 |
| **Slide rehydration** | Yes | Yes | No | No |
| **% requiring colonoscopy** | 30% | 30% | 5% | 5% |
| **Mortality reduction** | 33% | 21% | 15% | 18% |
| **Incidence reduction** | 20% | 17% | | |


Mandel JS, Bond JH, Church TR, et al. N Engl J Med 1993; 328: 1365-71.
Mandel JS, Church TR, Ederer F, Bond JH. J Natl Cancer Inst 1999;91:434-7.
Hardcastle JD, Chamberlain JO, Robinson MH, et al. Lancet 1996; 348:1472-1477.
Kronborg O, Fenger C, Olsen J, Jorgensen OD, Sondergaard. Lancet 1996; 348:1467-1.

# FIT Test Characteristics

| Condition Detected | Sensitivity | Specificity |
|---|---|---|
| Cancer | 68.8%<br>90.9% | 94.4%<br>95.6% |
| Advanced adenomas | 22.2%<br>40.3% | 97.4%<br>91.3% |

Lin JS, Piper MA, Perdue LA, et al. Screening for colorectal cancer: an updated systematic review for the review for the U.S. Preventive Services Task Force. AHRQ Publication No. 14-05203-EF-1. Oct 2015.

# Caveats

- **FITs for which there is good evidence may or may not be the same as FITs currently marketed**
  - Sample collection (1, 2, or 3 days)
  - Sample collection method (stick, brush, tests per stool, sample stability, sample transport)
  - Sensitivity/specificity for qualitative FITs depends on cutpoint
- **Mortality reduction depends on program of annual FOBT**
  - Test sensitivity vs Program sensitivity
- **Positive FOBTs must be followed up with colonoscopy**
  - DO NOT REPEAT POSITIVE FOBTs
  - If colonoscopy negative, next screen in 10 years

# Step 1: Select an Effective Test

- **Not all FITs have been rigorously tested**

Criterion for choosing a FIT:

- Use a FIT that has been evaluated in clinical practice and for which data on performance in the peer-reviewed literature show at least 50% sensitivity for cancer

# Step 1: Select an Effective Test

- **A brand of FIT that has been extensively tested and is available in the United States is OC FIT-CHEK® (Polymedco):**
  - Provided as a 1-sample kit in most cases. The collection method involves inserting the probe several times into the stool to a point on the probe just above the ridges and placing the collection probe into a small tube. The stool is probed before it comes into contact with the toilet water.
  - Test processing can be manual or automated
    - Manual: OC-Light®* – point-of-care assay
      - Estimated sensitivity for cancer: 93% (95% CI, 83%-97%)
    - Automated: OC-Auto®* – uses an automated analyzer

Lee JK et al. Ann Intern Med. 2014:160:171-181.

*Use of trade names is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services

# FIT/FOBT

- Advantages
  - Inexpensive
  - Does not require specialized resources
  - Test can be done at home
  - FIT specific for human blood
  - No dietary restrictions with FIT
  - Proven CRC mortality reduction with gFOBT
- Disadvantages
  - Annual testing
  - Dietary restriction for gFOBT
  - Uncertain cost benefit over time
  - Decreased sensitivity for adenomas (? Prevention of CRC)
  - FIT test variation

# *Colonoscopy*

**Colonoscope**

# Colonoscopy

| Adenoma | Sensitivity |
|---|---|
| ≥6 mm | 74.6% - 92.8% |
| ≥10 mm | 89.1% - 94.7% |

Lin JS, Piper MA, Perdue LA, et al. Screening for colorectal cancer: an updated systematic review for the review for the U.S. Preventive Services Task Force. AHRQ Publication No. 14-05203-EF-1. Oct 2015.

# Colonoscopy: Evidence

- **USPSTF: Insufficient evidence to provide precise estimates of sensitivity in community setting**
  - Lack of true gold standard
  - Sensitivity estimates from tandem CTC studies
- **Indirect evidence**
  - Observational studies: 60% - 90% reduction in CRC incidence after polypectomy
  - National Polyp Study
    - 76% - 90% reduction observed CRC incidence over 6 years

# Colonoscopy Caveats

- **Some contradictory evidence**
  - 3 U.S. chemoprevention trials
    - Incidence CRC after clearing colonoscopy 4x that seen in NPS
    - No reduction CRC incidence
  - 2 U.S. dietary intervention trails
    - Higher rates incident CRC after clearing colonoscopy than NPS
- **Effectiveness dependent on quality**
  - Variable performance due to skill level of endoscopist
- **Complications**
  - Serious complications 2.8 per 1,000 procedures (perforations, hemorrhage, CV events, severe abdominal pain, death)

# Colonoscopy

- Advantages
  - Most accurate test as single application
  - Detection and removal of polyps in single procedure
  - If negative, once every 10 years
- Disadvantages
  - Bowel preparation
  - Sedation (requires transportation and time off work)
  - Invasive
  - Complications
  - Expensive
  - Missed adenomas, interval cancers

# 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

Gastrointestinal Endoscopy 2007;65:757-766.

http://www.giejournal.org/article/S0016-5107(07)00003-X/fulltext

# 5. Monitor Procedure Quality - Assessing the Endoscopist

**Indicators of endoscopist procedure quality:**

- Adenoma Detection Rate (ADR)
- Cecal intubation rate
- Quality of bowel preparation
- Use of appropriate intervals for screening and surveillance

# 5. Monitor Procedure Quality – Adenoma Detection Rates

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

**CURRENT TARGET***

**ADR should be: ≥25%: male screening patients**
**≥15%: female screening patients**

*These benchmarks may increase with additional data

- **Probably the most important quality indicator**
  - Multiple studies have demonstrated that the rate of subsequent development of CRC is inversely related to the endoscopist's ADR (Kaminski et al. 2010, Corley et al. 2014)

# 5. Monitor Procedure Quality – Cecal Intubation Rates

- Definition: percent of exams in which the cecum was reached

**TARGET**

**All exams: >90%**

**Screening and surveillance exams: >95%**

- Important lesions can be missed if colonoscopy is not complete to the cecum
- Failure to reach the cecum constitutes an incomplete exam

# 5. Monitor Procedure Quality – Bowel Prep Adequacy Rates

- Monitor the percent of patients with bowel prep quality adequate to detect lesions >5mm

**TARGET**

**≥90% good-excellent or adequate**

- Poor bowel prep results in missed lesions and need to repeat exam sooner, increasing risk and cost
- If <90% of exams are good, practice should be examined and remediated

# *Flexible Sigmoidoscopy*

**Fiberoptic sigmoidoscope**

# Flexible Sigmoidosocpy

- **Test characteristics**
  - Estimated sensitivity for CRC throughout entire colon: 58% - 75%
  - Estimated sensitivity for advanced neoplasia: 72% - 86%
  - Isolated proximal advanced neoplasia: 0.8% - 3.2% in average risk population
- **Adenoma miss rate**
  - 20% overall polyps any size (14.% polyps ≥10mm, 19% ≥6mm)
- **Refer for colonoscopy if adenoma found**
  - Risk proximal adenoma 2x greater with adenoma any size in distal colon
  - If no biopsy, refer for polyp >5mm

# Flexible Sigmoidoscopy: Evidence

- **Case control studies**
  - Selby[1]
    - Rigid sigmoidoscopy with polypectomy
    - 60% reduction in mortality from distal CRC over 10 years
    - Death from proximal cancers same in both groups
  - Newcomb[2]
    - 79% mortality reduction for CRC with reach of sigmoidoscope
- **Randomized control trial**
  - Atkin[3] (UK trail)
    - One time flex sig between age 55-65 years
    - Incidence CRC in people attending screening reduced 33%
    - CRC mortality reduced 43%
    - Incidence distal CRC reduced 50%


[1] Selby JV, Friedman GD, Quesenberry CP Jr, Weiss NS. N Engl J Med 1992; 326:653-7.

[2] Newcomb PA, Norfleet RG, Storer BE, Surawicz TS, Marcus PM. J Natl Cancer Inst 1992; 84:1572-5

3 Atkin WS, Edwards R, Kralj-Hans I, et al. Once only flexible sigmoidoscopy screening in prevention of colorectal cancer: a multicentre randomised control trial. Lancet 2010;375:1624-33.

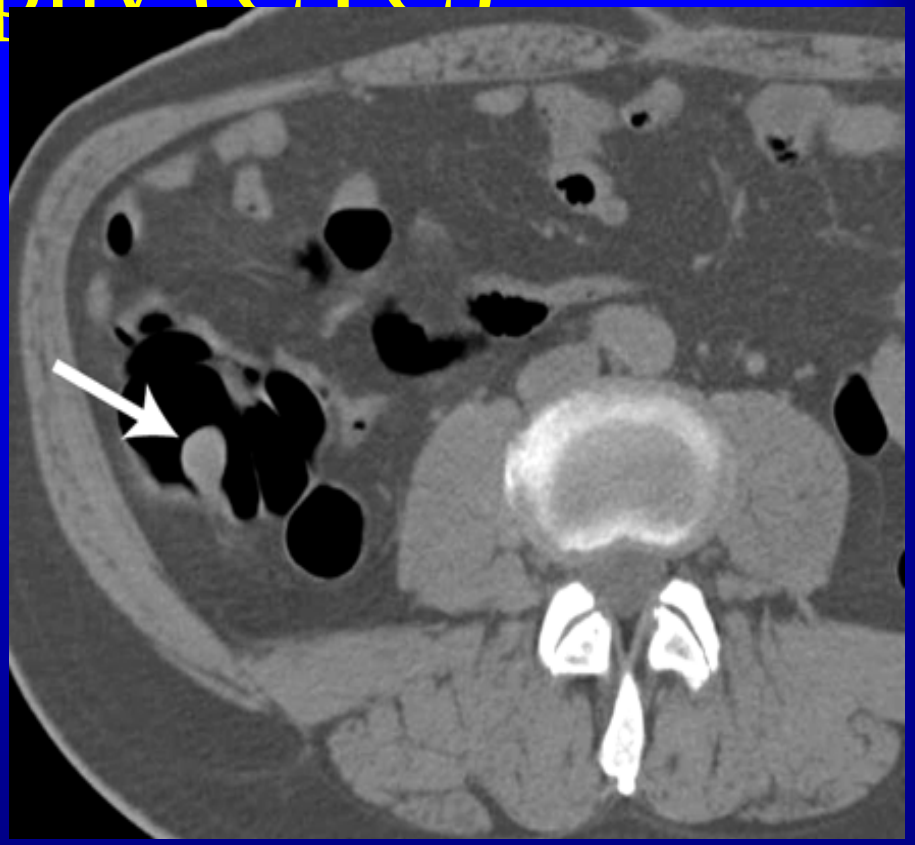
# Flexible Sigmoidoscopy

- Advantages
  - Office based
  - Does not require sedation
  - Simplified bowel preparation
  - Every 5 years
  - Evidence to support incidence/mortality reduction
- Disadvantages
  - Complications
  - Quality
  - Invasive
  - May miss isolated proximal adenomas/cancers

# Computed Tomographic Colonography (CTC)

- Single detector CT
  - Slice selection determined before study
  - Fixed

- Multidetector CT
  - Range of possible slice thickness
  - Post-study
  - Thinner slices
  - Shorter time



# 3D CTC

# CT Colonography:Test characteristics

| | Pickhardt[1] | ACRIN[2] | Kim[3] | Johnson[4] |
|---|---|---|---|---|
| **Sensitivity** | | | | |
| CRC | 2 of 2 cases | 6 of 7 cases | None | 5 of 5 |
| Adenoma ≥10mm | 93.8% | 90% | 100% | 50-83% |
| Adenoma ≥6mm | 88.7% | 78% | 59-77% | NR |
| **Specificity** | | | | |
| Adenoma ≥10mm | 96% | 86% | 99-100% | 97-99% |
| Adenoma ≥6mm | 79.6% | 88% | 89-99% | NR |
| **Colonoscopy referral rate** | | | | |
| Adenoma ≥10mm | 1 in 13 | NR | 1 in 10 | Not calc |
| Adenoma ≥6mm | 1 in 3 | 1 in 6-8 | 1 in 5 | Not calc |


1. Pickhardt PJ, Choi JR, Hwang I, et al. NEJM 2003;349:2191-200
2. Johnson CD, Chen, MH, Toledano AY, et al. NEJM 2008;359:1207-17
3. Kim SH, Lee JM, Eun HW, et al. Radiology 2007;244:852-64
4. Johnson CD, Fletcher JG, MacCarty RL, et al. . AJR Am J Roentgenol 2007;189:672-80

# CT Colonography: Uncertainties

- Radiation exposure
- Extracolonic findings
  - 40-70%
  - 5% - 37% need diagnostic follow-up
  - 3% need definitive treatment
- Community vs. research setting
- Management of small polyps
- Sensitivity for flat adenomas
- Professional capacity/training
- Test interval

# mtsDNA

- Cologuard
- Tests stool for:
  - presence of known DNA alterations in adenoma-carcinoma sequence
  - Human hemoglobin with FIT
- Requires entire stool specimen (30 g minimum)
- Sensitivity CRC 92.3% (vs 73.8 FIT alone)
- Specificity 84.4% (higher false positive rate)

# DRAFT USPSTF 2015 Recommendations

| Population | Recommendation | Grade (What's This?) |
|---|---|---|
| Adults ages 50 to 75 years | The USPSTF recommends screening for colorectal cancer starting at age 50 years and continuing until age 75 years. The risks and benefits of different screening methods vary. | A |
| Adults ages 76 to 85 years | The decision to screen for colorectal cancer in adults ages 76 to 85 years should be an individual one, taking into account the patient's overall health and prior screening history.<br>• Adults in this age group who have never been screened for colorectal cancer are more likely to benefit.<br>• Screening would be most appropriate among adults who: 1) are healthy enough to undergo treatment if colorectal cancer is detected, and 2) do not have comorbid conditions that would significantly limit life expectancy. | C |

## Draft: Table. Recommended Screening Strategies for Colorectal Cancer

| Screening Modality | Frequency* | Other Considerations |
|---|---|---|
| FIT or high-sensitivity gFOBT | Every year | Requires the fewest lifetime colonoscopies (a proxy for harms). Does not require bowel cleanout, anesthesia, or transportation to and from the screening examination (test is performed at home). |
| Flexible sigmoidoscopy with FIT | Flexible sigmoidoscopy every 10 years plus FIT every year | Potentially attractive option for persons who want endoscopic screening but wish to limit exposure to colonoscopy. May also be useful when access to colonoscopy is geographically limited. |
| Colonoscopy | Every 10 years | Requires less frequent screening. Screening and diagnostic followup of positive results can be performed during the same examination. |

* Applies to persons with negative screening tests (including hyperplastic polyps) and is not intended for those in surveillance programs.

**Abbreviations:** FIT=fecal immunochemical test; gFOBT=guaiac-based fecal occult blood test.

## Bottom Line

The best test is the one that gets done

# Free CME

- http://www.cdc.gov/cancer/colorectal/quality/index.htm

# Questions?

# dajoseph@cdc.gov

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

# Achieving 80% by 2018:
# *Improving Colon Cancer Screening Rates in Washington, DC*

**Richard C. Wender, MD**
Chief Cancer Control Officer
American Cancer Society, Inc.



Numerous events, accomplishments, and decisions have converged.

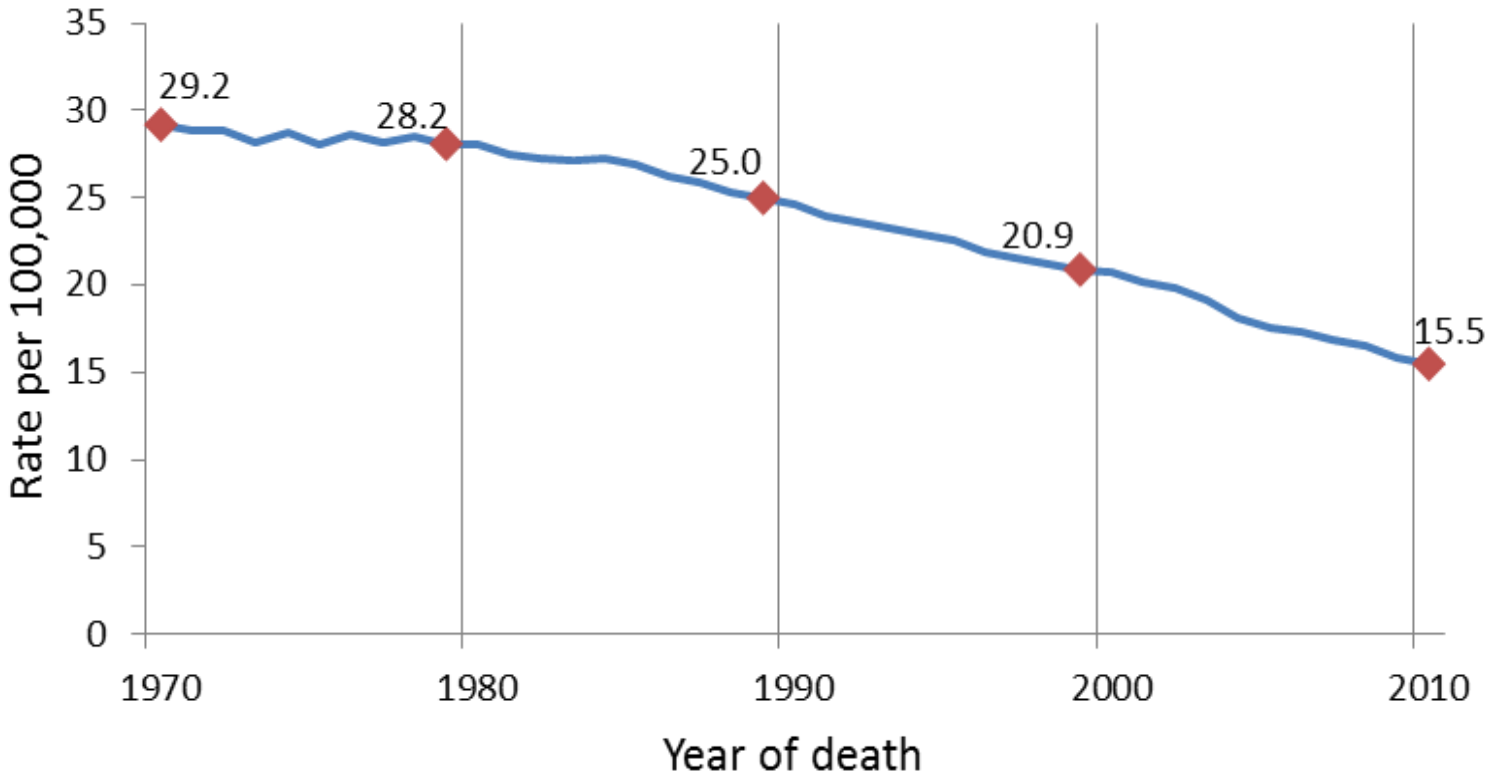
Together, they have created an **extraordinary opportunity** to achieve our goal of

**80%** colon cancer screening rate by **2018**.

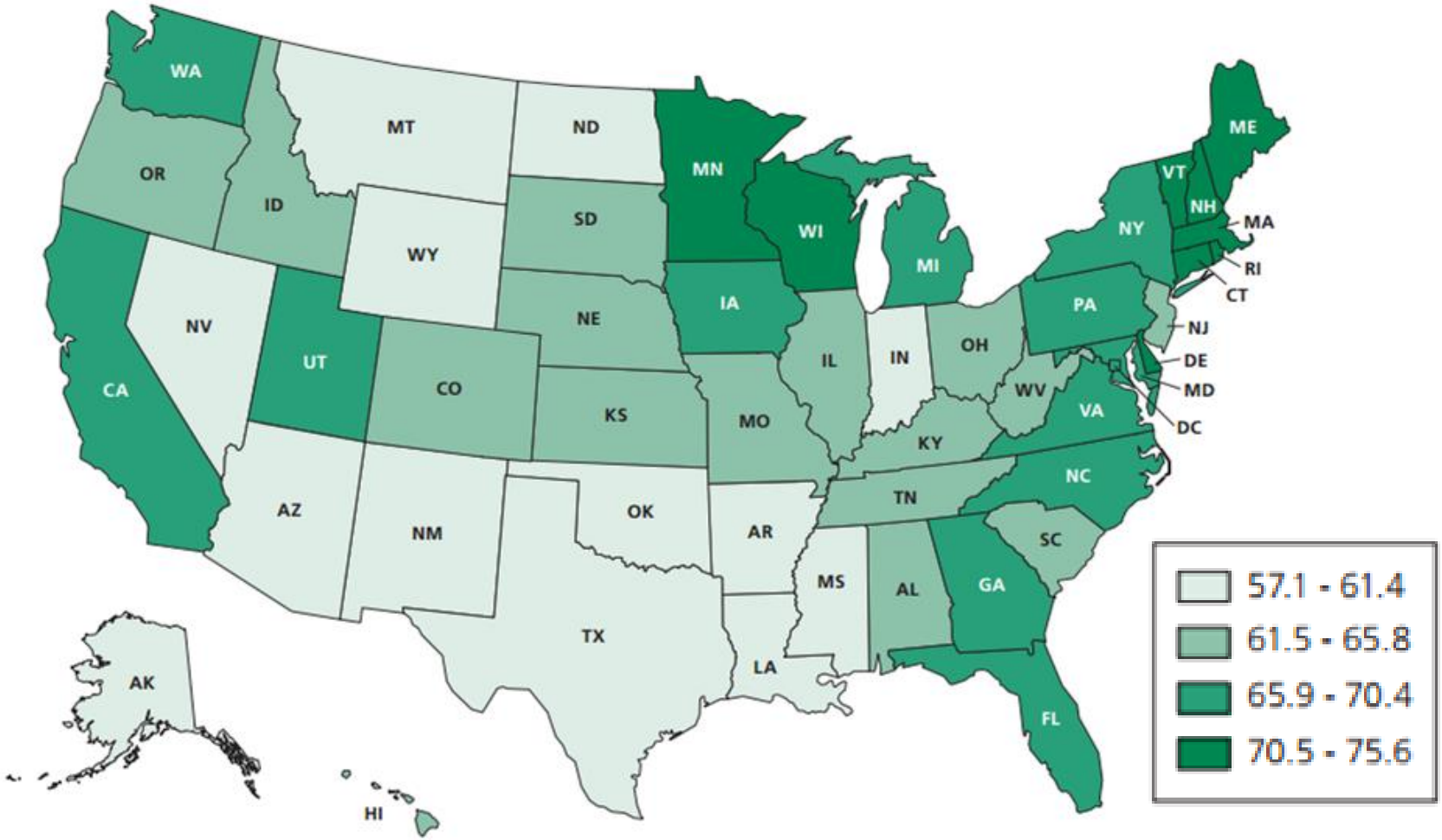
# We are Making Progress!

***Increasing Decline in Colorectal Cancer Death Rates, 1970-2010***

*Decline per decade:* 3% 11% 15% 25%



# Colorectal Cancer Screening* Prevalence among Adults Age 50 Years and Older by State, 2012

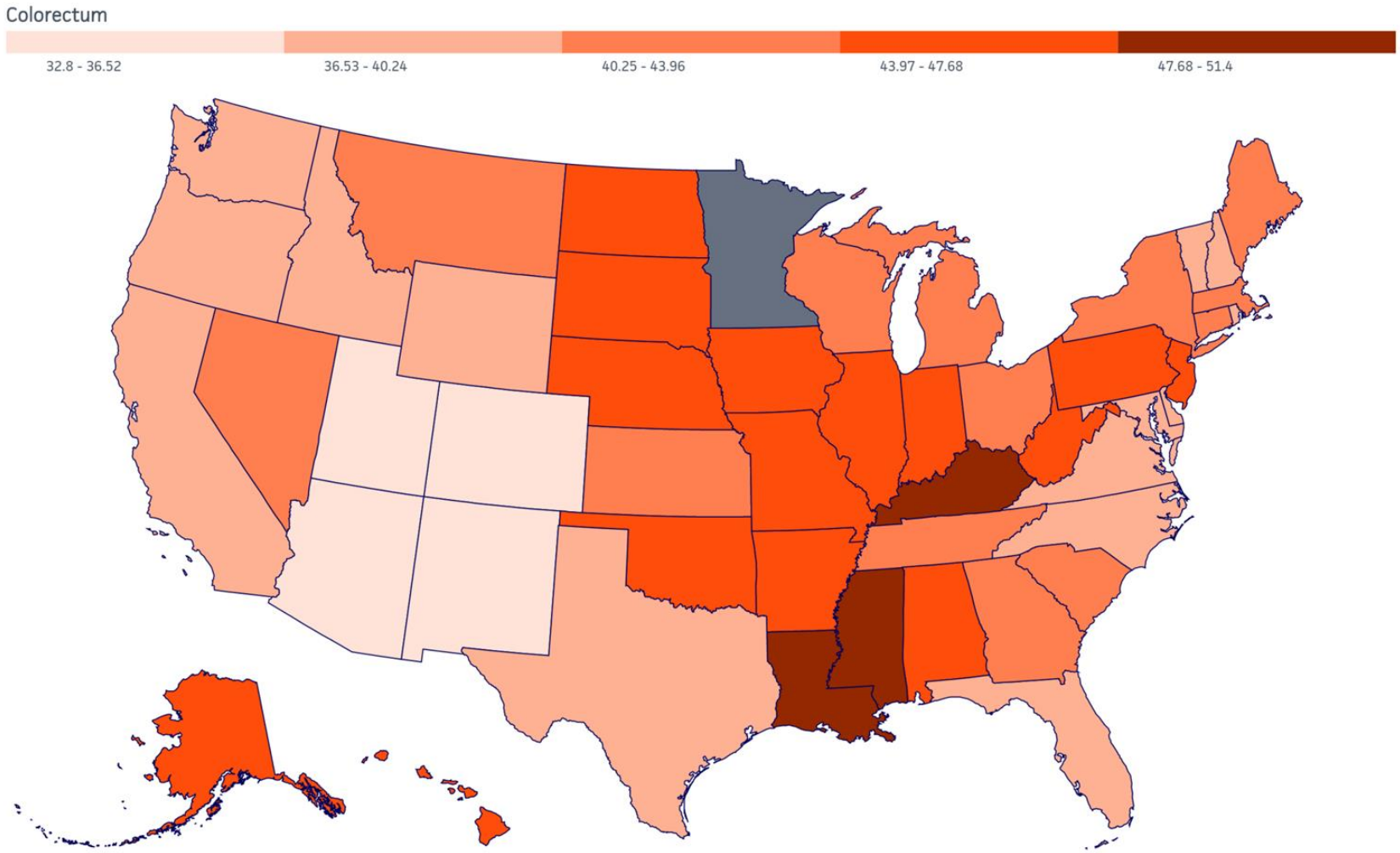



*Either a fecal occult blood test within the past year or a sigmoidoscopy or colonoscopy within the past 10 years (includes diagnostic exams).

**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.

# Incidence Rates, 2008-2012

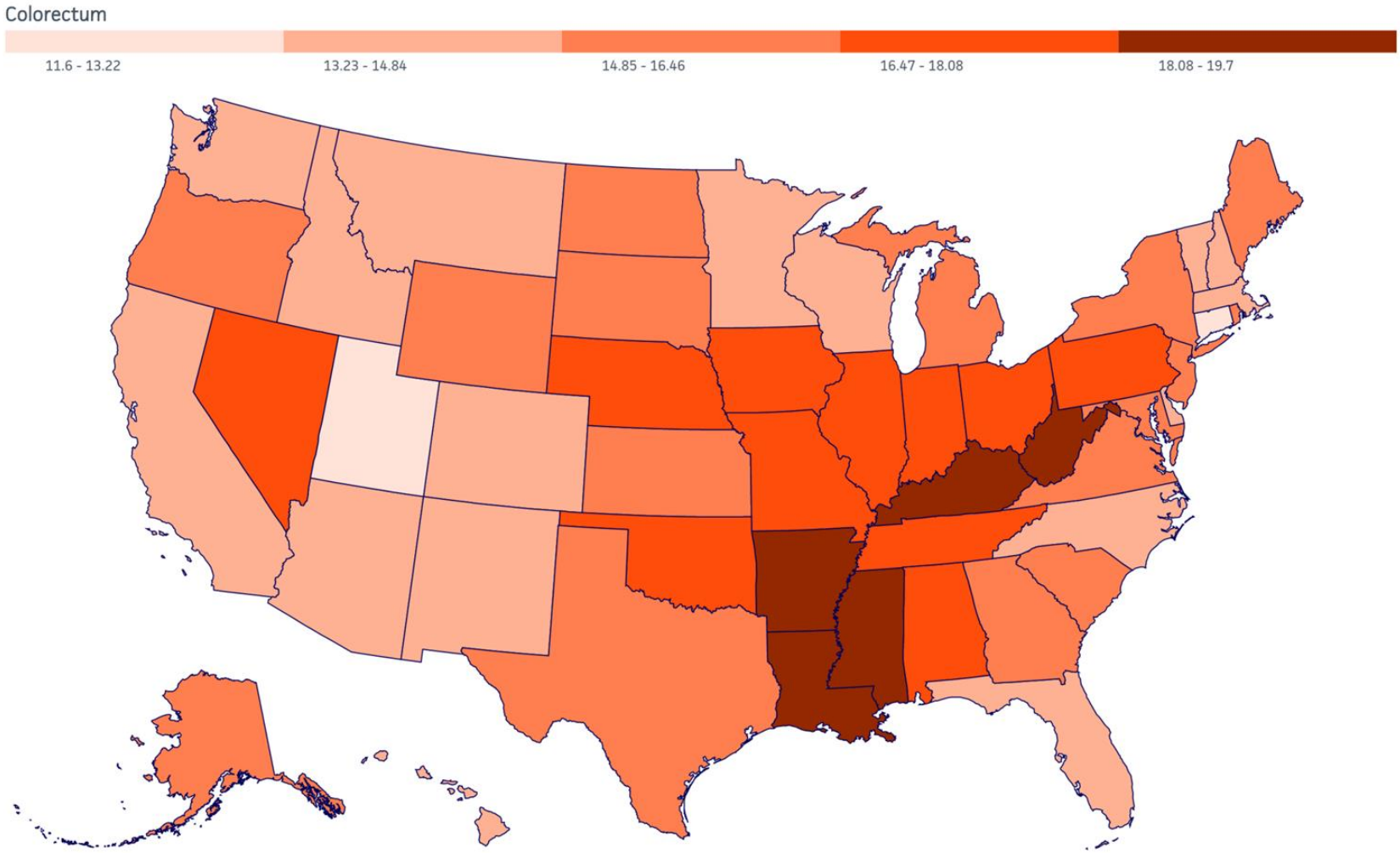
## Per 100,000, age adjusted to the 2000 US standard population




Data Source: North American Association of Central Cancer Registries (NAACCR), 2015

# 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

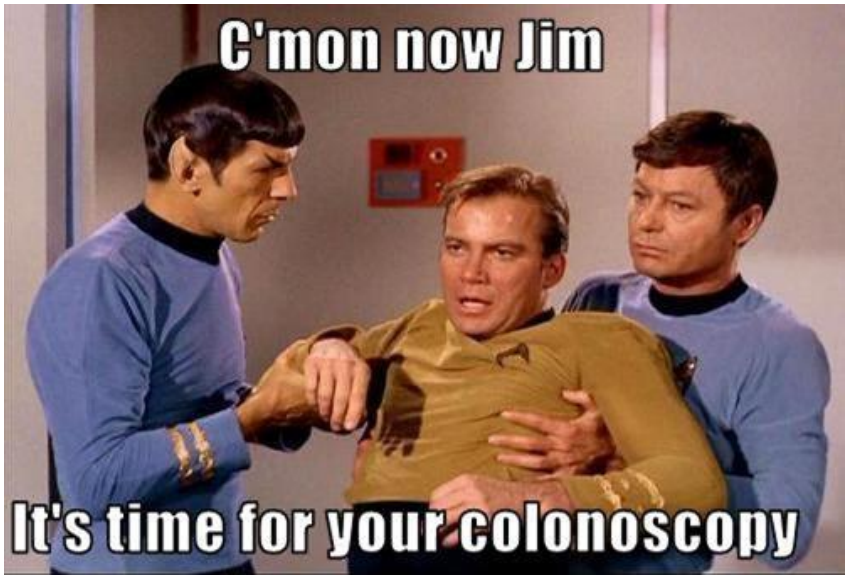
The nation has become energized by the goal of 80% by 2018.

**So what will it really take?**

# Colonoscopy and Stool Testing are Both Critical Strategies

- Every system 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

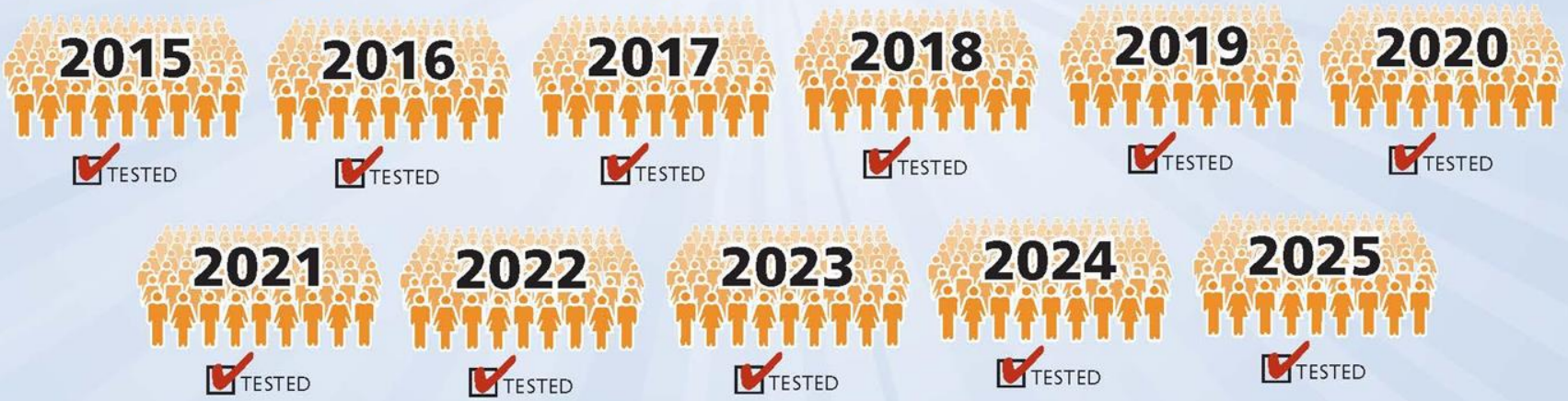



- The increase in CRC screening rates between 2000 and 2010 resulted from a **36%** increase in colonoscopy rates.
- Getting to 80% demands that colonoscopy must be available to everyone.

# COLONOSCOPY: Good for 10 years

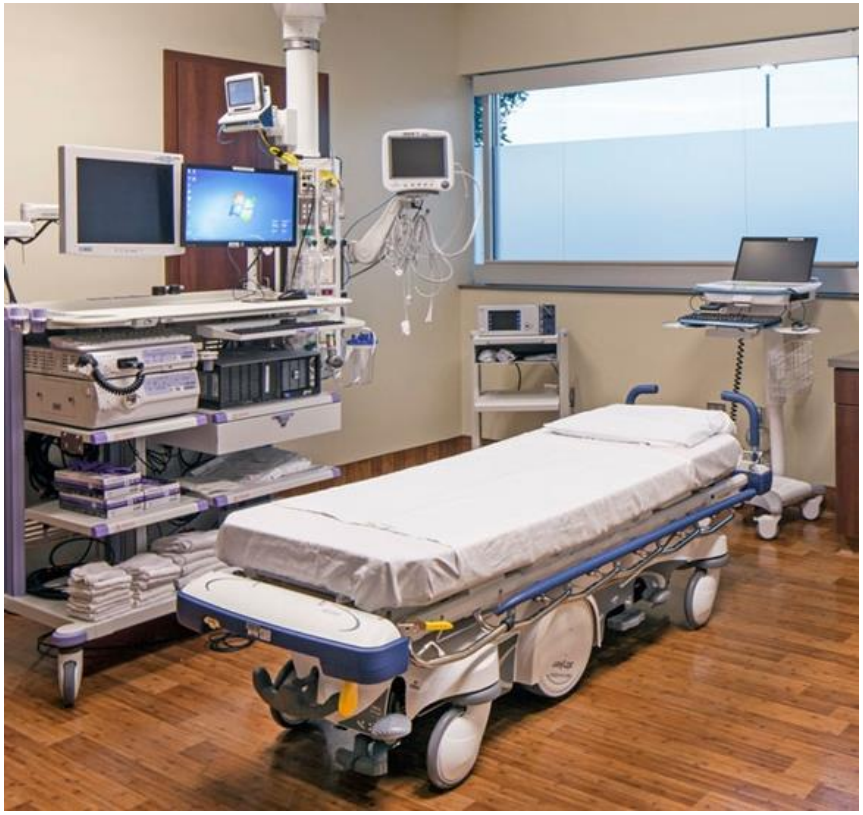

2016 NO TEST NEEDED
2017 NO TEST NEEDED
2018 NO TEST NEEDED
2019 NO TEST NEEDED
2020 NO TEST NEEDED
2021 NO TEST NEEDED
2022 NO TEST NEEDED
2023 NO TEST NEEDED
2024 NO TEST NEEDED


# FIT: Only good for one year



# Improving Colonoscopy Quality

- Not all colonoscopies are created equal.
- Failure to achieve adequate polyp detection rates compromises the effectiveness of a screening program.



# Three Key Components of Colonoscopy Quality

- Screen the right patients at the right intervals.
- Maximize bowel prep quality and patient show rates.
- Monitor adenoma detection rate.

# 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

# 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

# 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.

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

- 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

| Baseline Colonoscopy Finding | First Surveillance Colonoscopy Finding | Interval for Second Surveillance (years) |
|---|---|---|
| **Low-risk adenoma (LRA)** | • HRA<br>• LRA<br>• No adenoma | • 3<br>• 5<br>• 10 |
| **High-risk adenoma (HRA)** | • HRA<br>• LRA<br>• No adenoma | • 3<br>• 5<br>• 5 |

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

# Patient Navigation: The Key to Better Show Rates and Better Bowel Preps

- Navigators have been proven to significantly improve colonoscopy show rates and quality of bowel preps.

- Lynn Butterly, MD, in New Hampshire has proven that patient navigation can reduce no-show rate and inadequate bowel prep rate to essentially zero.
- Colonoscopy navigation is now proven to be cost effective and should become a care standard.

# The Most Important Measure of Quality Colonoscopy: Adenoma Detection Rate

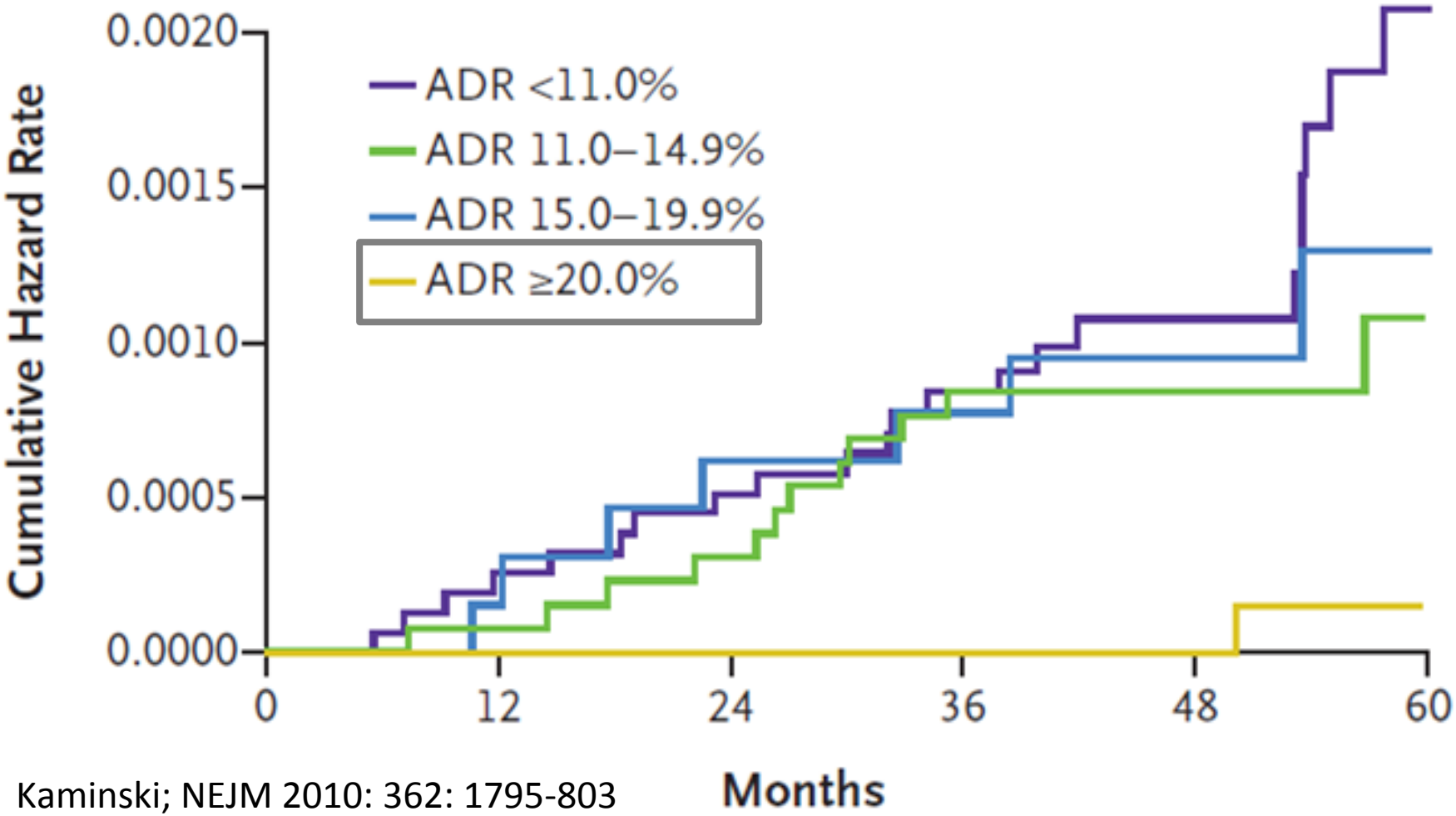
- Definition: The percent of screening exams with at least one adenoma detected

**Current Targets:**

ADR should be: ≥ 30% male screening patients

≥ 20% female screening patients

# ADR and Risk of Interval Cancer




Kaminski; NEJM 2010: 362: 1795-803

# ADR and Outcomes: Kaiser

- Data from 314,872 colonoscopies performed between January 1, 1998 and December 31, 2010
- 136 gastroenterologists
  - To be included, GI had to have completed > 300 colonoscopies and 75 or more screening examinations during the study period.
- ADRs ranged from 7.4% to 52.5%.
- 8730 colorectal cancers diagnosed

Corley et al. NEJM 2014: 370: 1298-1306

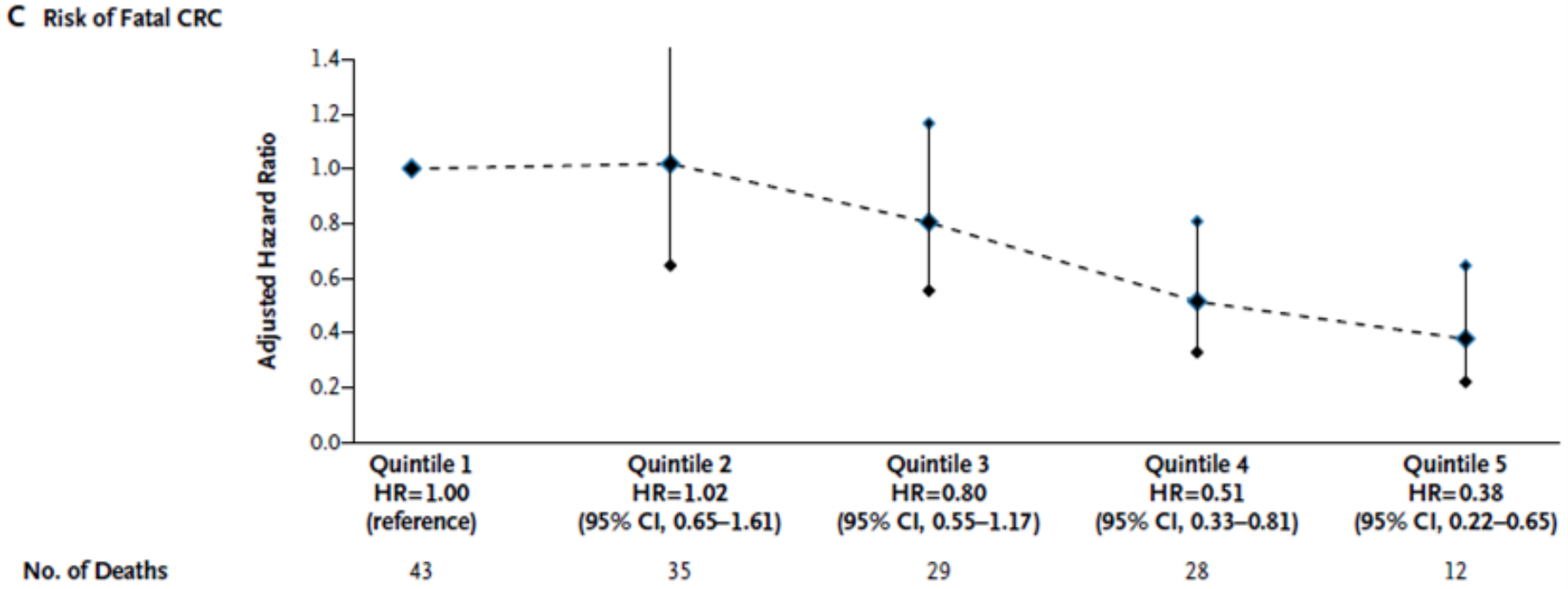
# ADR and Risk of Interval Cancer

**Quintile 1 – ADR < 20%**

**Quintile 5 – ADR > 33%**

Corley et al. NEJM 2014: 370: 1298-1306

# ADR and Risk of Fatal Cancer

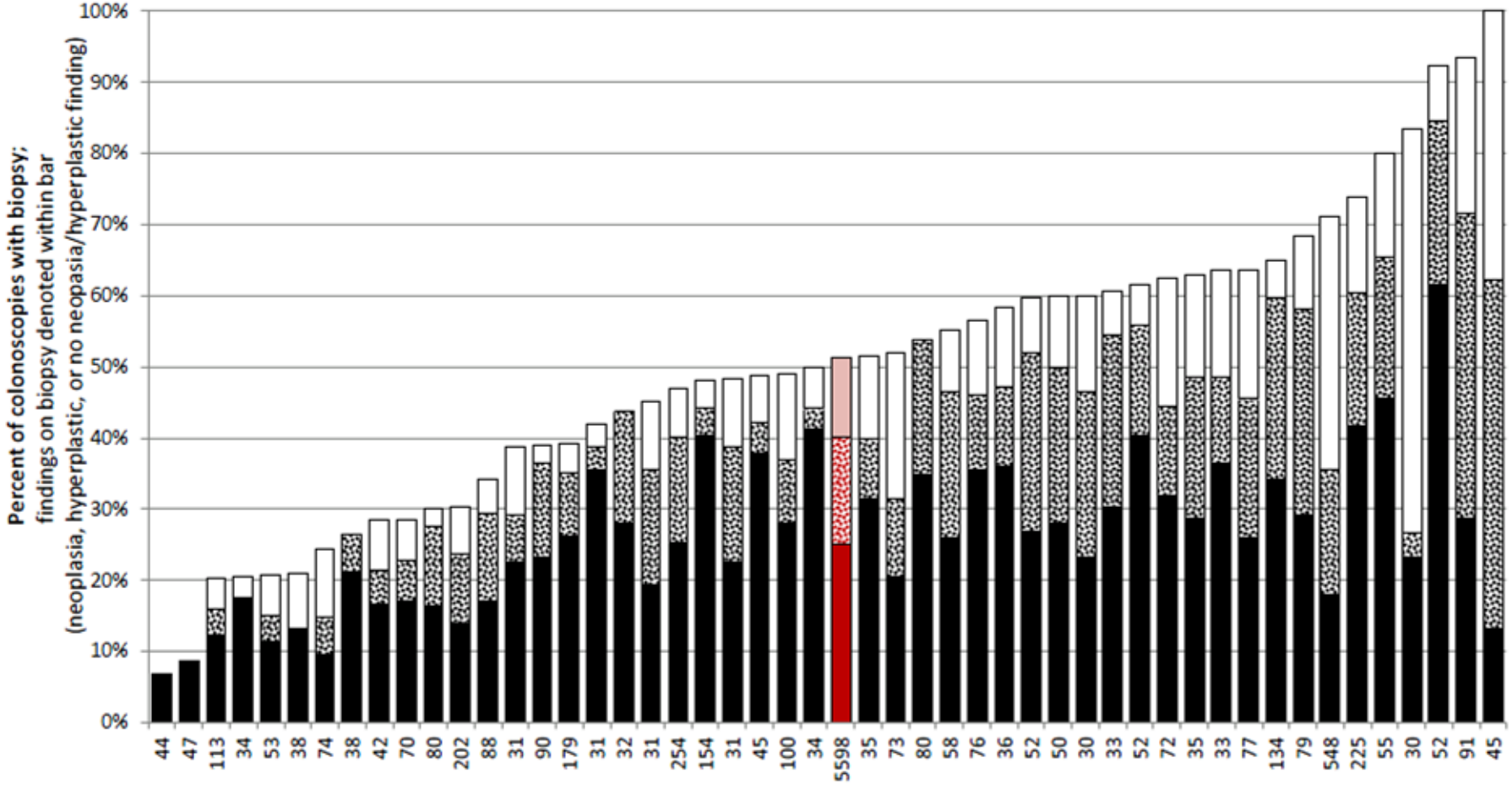



**Quintile 1 – ADR < 20%**

**Quintile 5 – ADR > 33%**

Corley et al. NEJM 2014: 370: 1298-1306

# 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




**Individual Colonoscopists**

The **number** on the X axis represents the number of colonoscopies performed by the endoscopist from which these results were derived.

(5,598 were done statewide and the bar represents the statewide percentages for Maryland)

■ Neoplasia (adenocarcinoma, suspected cancer, or adenoma) ▨ Hyperplastic polyp □ Biopsy with no neoplasia/hyperplastic finding

# The Best Way to Improve Colonoscopy Performance

- Gather and share colonoscopy quality data at the level of hospitals and individual colonoscopists.

**Colonoscopy Quality**

| Physician Group | detection rate * | perforation rate ** | completion rate*** | patient satisfaction rate + | no. performed yearly ++ | withdrawl time+++ |
|---|---|---|---|---|---|---|
| Beth Israel Deaconess Physician Organization | 23% women, 29% men | 1 in 2500 cases | 94.70% | 94.30% | median, 500 | 7-10 mins. |
| Digestive Health Associates - affiliate, Tufts Medical physicians | 15-50% | 1 in 15,000 cases | 95-98% | 98-100% | > 1000 | avg. 20 mins. |
| Harvard Vanguard | 47% | 1 in 10,000 cases | don't track | this measure is unclear | avg. >500 | 13.4 mins. |
| Hawthorn Medical Associates - (affiliate, Steward Health Care) | 42.5% avg | 1 in 13,500 cases | 99.80% | 94-96% | 1000-1500 | 9 mins. |
| Mass General Physicians Organization | 20-35% | 1 in 2000 cases | 98% | 90% | avg. 500 | at least 6 mins. |

# Every Health System Must Commit to Improving System-wide ADR

- Every system must participate in a colonoscopy registry.
- Registries must monitor:
  - Show rates
  - Prep quality
  - Cecal intubation rates
  - ADR

# 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

# 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.

| | |
|---|---|
| **Colonoscopy recommended:** | **38% completed colonoscopy** |
| **FOBT recommended:** | **67% completed FOBT** |
| **Colonoscopy or FOBT:** | **69% completed a test** |

Adherence to Colorectal Cancer Screening: A Randomized Clinical Trial of Competing Strategies

# Many Patients Prefer Home Stool Testing

- Some patients may forgo ANY colorectal cancer screening if they are not offered a home stool blood testing alternative to colonoscopy.
- Clinical evidence indicates that selecting annual stool blood testing instead of colonoscopy is a reasonable choice for average-risk patients.
- However, patients who select stool blood testing must also be prepared to accept follow-up colonoscopy if the stool blood test is abnormal.

# 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

Allison JE, et.al. J Natl Cancer Inst. 2007; 191:1-9
Cole SR, et.al. J Med Screen. 2003; 10:117-122

# Fecal Immunochemical Tests (FIT)


- FIT tests are based on the immunochemical detection of human hemoglobin (Hb) as an indicator of blood in the stool.
- Immunochemical tests use a monoclonal or polyclonal antibody that reacts with the intact globin protein portion of human hemoglobin.

# 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

| | FIT | FOBT |
|---|---|---|
| **Participation** | **6157(60%)** | 4836(47%) |
| **Pos. rate** | 5.5% | 2.4% |
| **Polyps** | 679 | 220 |
| **Adv. Adenoma** | 145 | 57 |
| **Cancer** | 24 | 11 |

Van Rossun et al. Gastro. 2008 ; 135: 82-90 .

# FITs Available in the US

| Name | Manufacturer |
|---|---|
| InSure | Enterix, Quest Company |
| Hemoccult-ICT | Beckman-Coulter |
| Instant-View | Alpha Scientific Designs |
| MonoHaem | Chemicon International |
| Clearview Ultra-FOB | Wampole Laboratory |
| Fit-Chek | Polymedco |
| Hemosure One Step | WHPM, Inc. |
| Magstream Hem Sp | Fujirebio, Inc. |

Hemoccult ICT, HemeSelect, InSure, Fit-Chek, and MagStream 1000/Hem SP have been evaluated in large numbers.

Levi Z, Ann Intern Med. 2007; 146:244-55

# 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.**

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# 10 Components of the 80% by 2018 Strategic Plan

1. The 80% by 2018 campaign has gone viral.
2. We’re not getting anywhere near 80% without relying on our nation’s primary care clinicians.
3. Approaching this state-by-state has broad appeal.
4. Engaging health care plans is difficult but critically important.
5. Hospitals and Cancer Centers can be the difference between our reaching this goal or not.

# 10 Components of the 80% by 2018 Strategic Plan

6. Working with large employers and CEOs is a strategy worth exploring.

7. We need to use tailored messages to reach the unscreened.

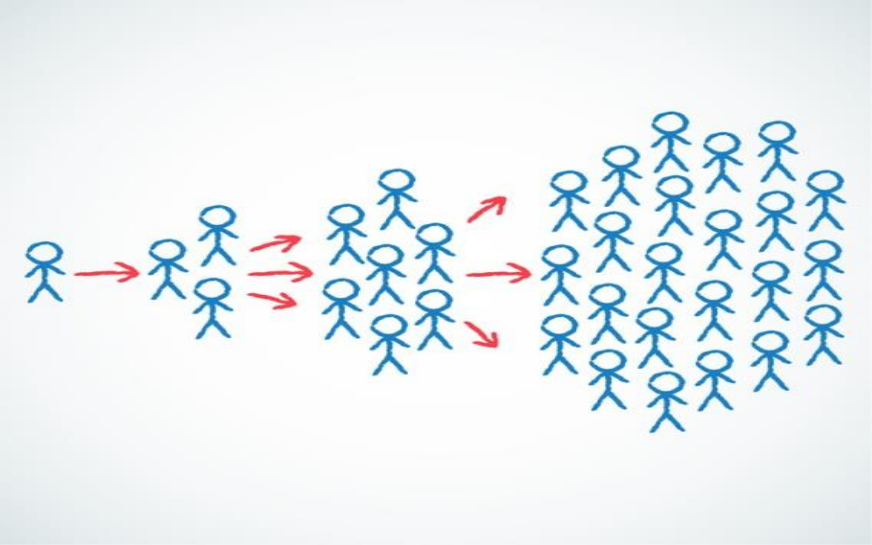
8. Financial barriers persist as major obstacles to screening.

9. Finding the right set of complementary strategies is a key goal.

10. We must floor the accelerator right now and keep pedal to the metal for the next four years.

# 1. The 80% by 2018 Campaign Has Gone Viral

- The world loves a good goal. As public health stories go, this one works really well.
- Organizations are eager to pull together to get something important done.



# More and More Organizations Are Signing the Pledge

NATIONAL Colorectal Cancer ROUNDTABLE

American Cancer Society®

EIGHTY BY 2018

Shared Goal: Reaching 80% Screened for Colorectal Cancer by 2018

***Background***

Colorectal cancer is a major public health problem. It is the second leading cause of cancer death, and a cause of considerable suffering among more than 140,000 adults diagnosed with colorectal cancer each year. However, colorectal cancer can be detected early at a curable stage, and it can be prevented through the detection and removal of precancerous polyps.

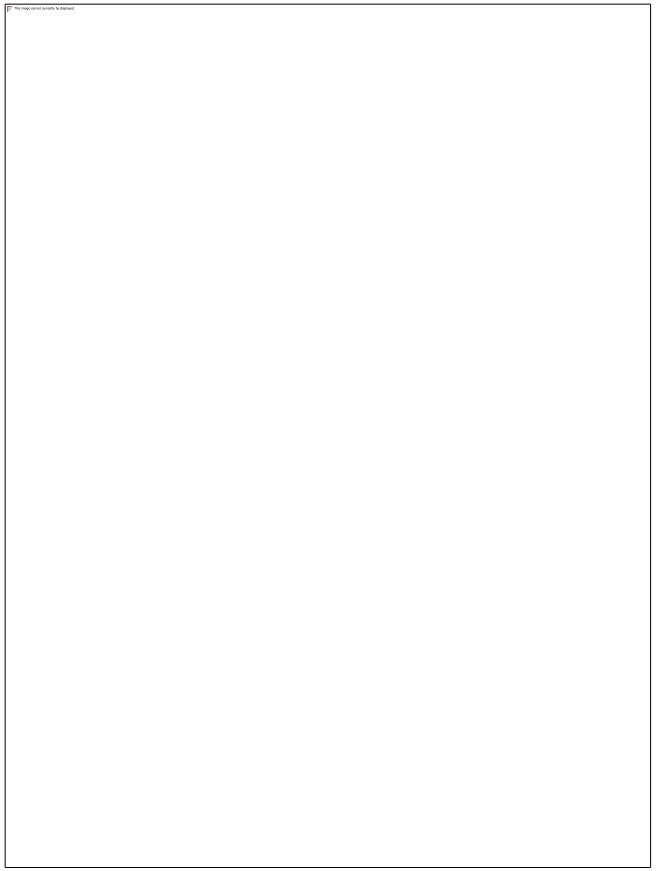
***Commitment***

Our organizations stand united in the belief that we can eliminate colorectal cancer as a major public health problem. We have screening technologies that work, the national capacity to apply these technologies, and effective local models for delivering the continuum of care in a more organized fashion. Equal access to care is everyone's responsibility. We share a commitment to eliminating disparities in access to care. As such, our organizations will work to empower communities, patients, providers, community health centers and health systems to embrace these models and develop the partnerships needed to deliver coordinated, quality colorectal cancer screening and follow up care that engages the patient and empowers them to complete needed care from screening through treatment and long-term follow-up.

***Pledge***

**The New York Citywide Colon Cancer Control Coalition (C5)** is embracing the shared goal of reaching 80% screened for colorectal cancer by 2018.

C5 New York Citywide Colon Cancer Control Coalition

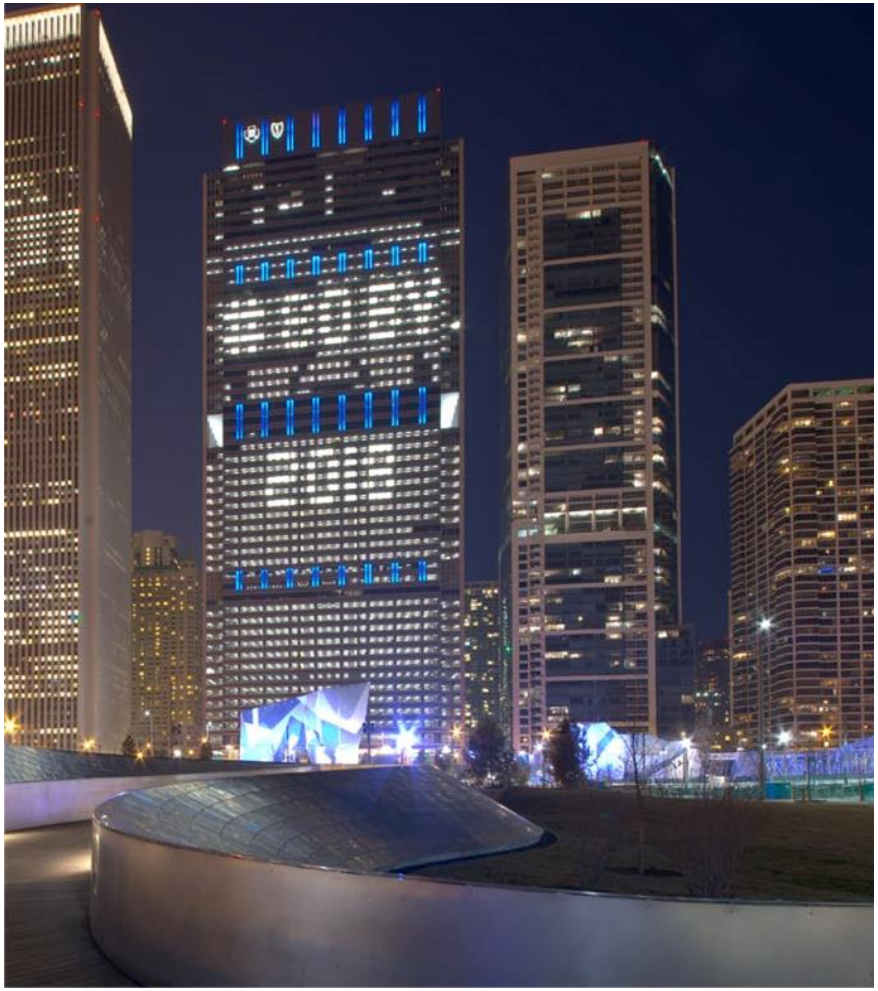


# More Organizations Are Taking the Pledge

# More Organizations Are Taking the Pledge

690 and counting!

# 80% by 2018 Lights Up Chicago



Health Care Service Corporation (Blue Cross Blue Shield of IL, TX, OK, NM, and MT) used its building lights in Chicago to promote 80% by 2018.

# Even Niagara Falls Went Blue!

# Several practice groups have achieved some amazing increases in screening rates.

# Political leaders are making 80% by 18 a priority.

# 21

Community health centers are at 80%

# Community Health Centers at 80%

- Mount Vernon Neighborhood Health Center, NY
- Sterling Area Health Center, MI
- Richford Health Center, VT
- Inland Behavioral & Health Services, CA
- Costa Salud Community Health Centers, PR
- North End Community Health Committee, MA
- Suncoast Community Health Centers, FL
- School Health Clinics of Santa Clara County, CA

# Community Health Centers at 80%

- MyCare Health Center, MI
- Clinica de Salud del Valle de Salinas, CA
- DFD Russell Medical Center, ME
- Bee Busy Wellness Center, TX
- Clinica Monsenor Oscar A. Romero, CA
- Covenant House, PA
- Family Health Centers of Georgia
- Cactus Health Centers, Tx

# Community Health Centers at 80%

- Stony Creek Community Health Center, VA
- Patillas Community Governing Board, PR
- Konza Prairie Community Health Center, KS
- Care Net of Lancaster, SC
- Yakutat Tlingit Tribe, AK

# 39

Health plans are at 80%

# Let’s Pledge to Maintain This Momentum …

*On the road to 2018*

# 2. We're Not Getting to 80% Without Relying on Primary Care

- The basics of screening have not changed:
  - Health insurance facilitates screening.
  - Everyone needs a primary care clinician.
  - The principal determinant of screening is whether or not a **primary care clinician recommends** screening.

**But this is asking a lot.**

# The Realities of Primary Care Practice

- Many competing priorities
- Many preventive care obligations
- Many have EMRs – but they don't always help
- **What will it take to help primary care clinicians lead the way to 80%?**

# What Influences a Physician's Likelihood to Recommend Screening?

- Preventive visits
  - More visits, more likely to recommend.
- Financial incentives
  - Linking substantial payment to colon cancer screening rates can have a huge influence
  - Link payment to other measures of quality, too.
- Being part of a system that values screening
  - Hospital systems
  - ACOs

# Barriers to CRC Screening in Community Health Centers

- Inadequate access to colonoscopy and follow-up care
- Cost of FIT's
- Barriers to patient receptiveness and adherence

# Inadequate Access to Colonoscopy: Strategies that Work

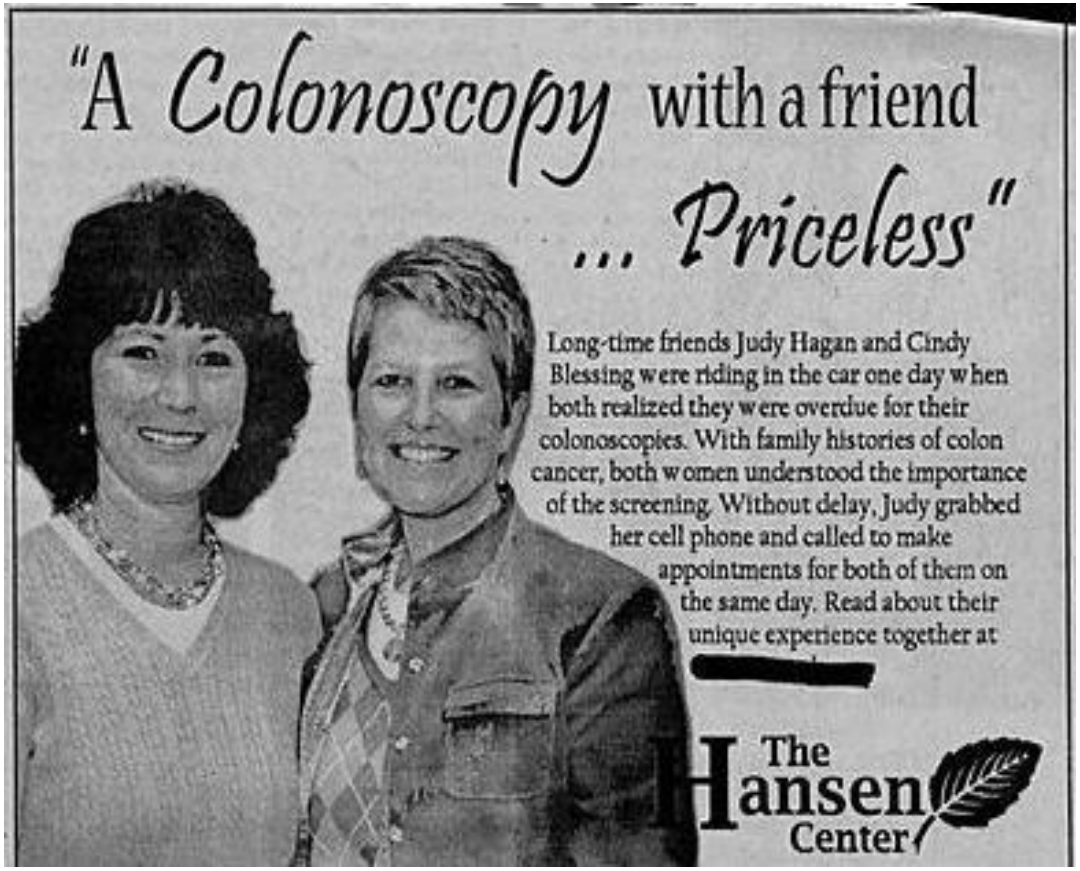
- Rely on FOBT/FIT
  - First time around, positivity rate may reach 5%
  - 2 to 3% in subsequent rounds
  - Can calculate how many colonoscopies will be needed
- Recruit as many colonoscopy groups as possible
  - Important to share the load. Don't overload any one group
- Partner with a hospital system that shares a commitment to the 80 by 18 goal
  - Can help to ensure access to colonoscopy and follow-up care

# Cost of FIT's

- FIT's may cost 5 times more than guaiac FOBT
- Can be a barrier if FQHC needs to pay for the test, particularly for uninsured
- Solutions:
  - Join with other groups for cheaper rates
  - Choose a high performing but more affordable FIT
  - Look for donated FIT's; paid for by insurance so the company can get some reimbursement
  - Use guaiac if needed

# We Now Have 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

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.

**There are several screening options available, including simple take home options. Talk to your doctor about getting screened.**

**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.**

# 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 Unscreened 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."

# Payment is Critical

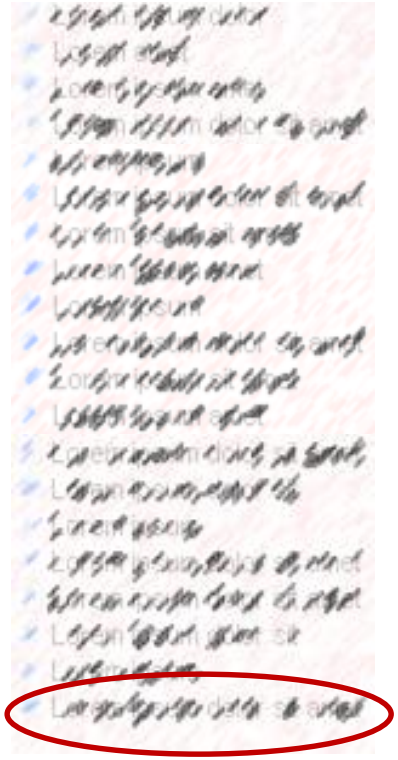
- High performing primary care practice requires a substantial change in payment model:
  - Payment for case management
  - Payment for improved performance
  - Payment for care coordination
  - Percentage of total health care dollars going to primary care must increase

# How Much Additional Payment is Enough?

- Requirements for high performing practices
  - EMR:  Patient registries
  - Case managers
  - Population health managers
  - Improved support staff/clinician ratios
- Payment linked to quality must be substantial and it must be incremental.

# 3. Approaching this State-by-State Holds Broad Appeal

- Numerous states are in the process of forming state Colon Cancer Screening Roundtables or Coalitions.
- States **without** a history of NCCRT involvement are getting on board for the first time.
- Cities and states **love competition** – no one likes being at the bottom of the list.



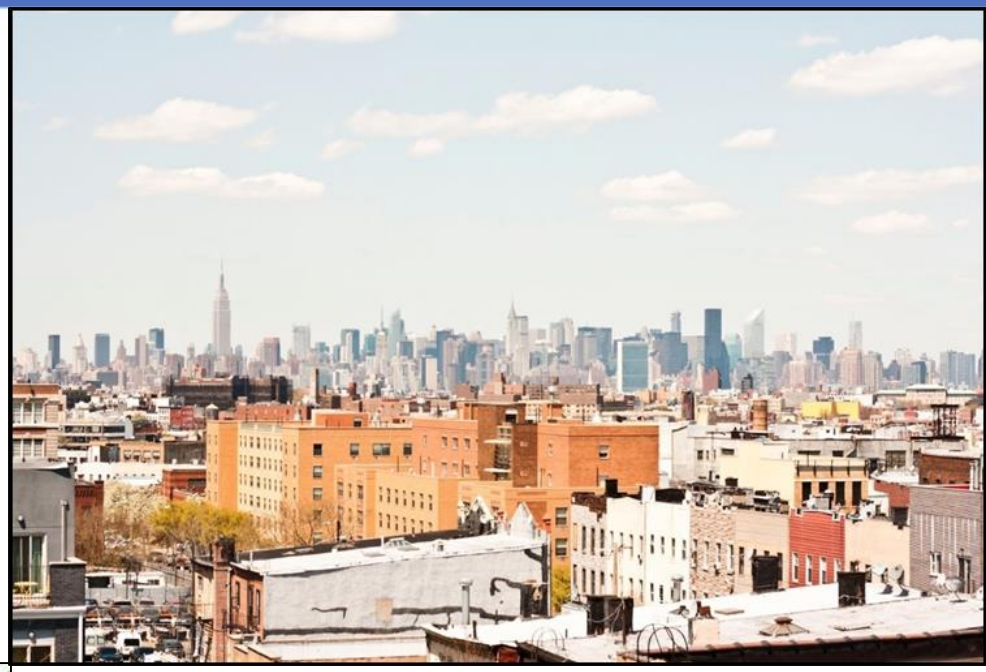
# More and More State-Level Engagement

# What Do States Want and Need?

- Data
  - What is our starting screening rate?
  - How do we set and measure interim targets?
  - What regions offer the most opportunity?
- Goals
  - Set a state goal and get state-wide, multi-stakeholder buy-in.
- Ideas
  - What is working in similar states?
  - What screening strategies should we adopt?
  - How can we ensure that colonoscopy is broadly available?

# Let's Be Little League: Everyone's a Winner

- Some states are out in front. Some are far behind.
- But the playing field is not even.

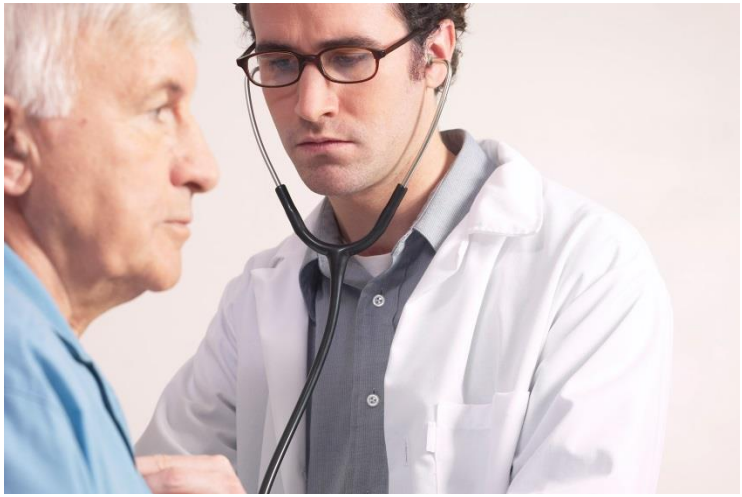



- We will celebrate the first state to reach 80%

**... but we will celebrate, with equal joy, every state that is working hard to get the nation closer to our 80% goal.**

# 4. Engaging Health Care Plans is Critically Important

- Health care plans have a broad agenda and many demands.
- Although improving HEDIS measures is a valued goal, controlling health care costs, reducing readmissions, and managing chronic illness may be viewed as more urgent goals.
- Competition with other plans may be intense.



# But Some Health Plans Are Doing an Amazing Job

Commercial

- Anthem Health Plans of Maine, Inc./Anthem Blue Cross and Blue Shield (BCBS) – Maine
- Anthem Health Plans, Inc./Anthem BCBS – Connecticut
- Anthem BCBS – Connecticut
- BCBS of Massachusetts HMO Blue, Inc.
- Capital Health Plan, Inc.
- Harvard Pilgrim Health Care, Inc.
- Johns Hopkins US Family Health Plan

# Plans at 80%

Commercial

- Kaiser Foundation Health Plan Inc. – Southern California
- Kaiser Foundation Health Plan Inc. – Mid-Atlantic States
- Kaiser Foundation Health Plan Inc. – Northern California
- Geisinger Health Plan
- Health Partners – Minnesota
- Independence Blue Cross - Southeast Pa.
- Martin's Point US Family Health Plan – Maine
- United Healthcare of Wisconsin, Inc.
- The Veteran's Administration

# Plans at 80%

Medicare

- BCBSMA PPO
- Capital Health Plan
- Cigna – AZ
- Coventry Health Plan of Florida
- Group Health Plan
- Gunderson Health Plan
- HealthSpring of Tennessee

# Plans at 80%

- Humana Florida
- Kaiser – CA (Southern California)
- Kaiser Permanente Colorado
- Kaiser Georgia
- Kaiser – Mid-Atlantic
- Kaiser Permanente Northwest
- Kaiser – HI
- Kaiser – CA (Northern CA)

# Plans at 80%

- Leon Medical Centers Health Plans
- MMM Healthcare
- Optima Health Plan
- Peoples Health
- PMC Medicare Choice
- Providence Health Plans
- Texas HealthSpring
- United Healthcare of New York

# Characteristics of High Performing Plans

- Leadership – a commitment to achieve very high screening rates
- A champion – or more than one
- A commitment to measurement and reporting of screening rates
- Implementation of population health management
- Reliance on both stool testing and colonoscopy
- Incentives and accountability for primary care providers
- Elimination of patient cost sharing

# Leadership Commitment and a Champion

- **Leadership** from the very top of the organization, with clear expectations of excellence, is seen in all high performing plans.
- A **Champion,** someone who owns, understands, and directs the work, is universally present.

# A Commitment to Measurement and Reporting of Screening Rates

- The basic maxim of quality improvement: Nothing gets better without measurement and sharing of the data.
- Making sure all stakeholders own the goal, and know where the health plan stands, makes a big difference.

# Reliance on Both Stool Blood Testing and Colonoscopy

- Exclusive colonoscopy plans are achieving 70% screening rates – but not above that.
- Making colonoscopy as widely available as possible is critically important.
- Health plans must understand the advantage of FIT testing.
  - Pick a preferred FIT
  - Make them available
  - Educate clinicians

# Incentives and Accountability for Primary Care Clinicians

- The single most effective strategy for health plans striving for high CRC screening rates:

  **Link substantial financial payment to achievement of high CRC screening rates.**

# Models of Incentives for Primary Care Clinicians

- Payment linked to becoming certified PCMH
- Pay for performance – with a focus on CRC screening, as well as other quality measures
- Increasing payment rates for primary care allows more time to focus on quality
- Payment for screening navigators

# Eliminating Cost-Sharing

- Patients **should not receive a surprise bill** when a polyp is found on colonoscopy.
- This is equivalent to charging a co-pay when the screening mammogram is abnormal.
- Patients **should not receive a bill** when a colonoscopy is performed in response to a positive FOBT/FIT.

# Eliminating Cost-Sharing in Medicare

- Medicare has the authority, without legislative action, to eliminate cost-sharing for colonoscopies that follow a positive stool test.
- The basics of the argument:
  - Redefining the screening guidelines as: “Annual FOBT/FIT with colonoscopy for those testing positive”
  - Colonoscopy is already accepted as a stand alone screen
  - The possibility of cost-sharing is actually providing a disincentive to choosing the more affordable option

# Eliminating Cost-Sharing in Medicare

- Medicare does not have the authority to eliminate cost-sharing if a polyp is found on screening colonoscopy, including the colonoscopy following a positive stool test.
- A bi-partisan bill to eliminate cost-sharing is working its way through Congress.

# 5. Hospitals and Cancer Centers Can Make the Difference

- 80% by 2018 offers a unique opportunities to build integrated systems that can prevent more than **200,000 colon cancer deaths** by 2030.

# Five Steps to Hospital Leadership of 80% by 2018

1. Recognize and overcome barriers to participation.
2. Identify a champion (or champions).
3. Publicly commit to achieving this goal.
4. Assemble a team.
5. Implement the 80% by 2018 Strategic Plan.

# Recognize and Overcome Barriers to Hospital Leadership of 80% by 2018

- Hospital incentives largely encourage provision of complex cancer care.
- Many hospitals don't belong to an ACO or own a primary care network.
- Many hospitals have never led a public health campaign before.
- Many hospitals have difficulty defining "the population" for whom they're responsible
- Hospitals may be reluctant to donate more services than they already donate
- Hospitals may not see the business case.

# The Business Case for Hospital Leadership

- New payment models are linked to quality.
- Bringing together a multi-disciplinary team that combines population management, out-patient primary and specialty care, facilities, and hospital care is outstanding preparation for the future of medicine.
- Achieving 80% by 2018 can establish a hospital as a leader in colon cancer care.
- Reduce un-reimbursed care for advanced disease.

# … And Most Important of All

- It’s the right thing to do!
- The entire hospital community can celebrate achieving something wonderful.

# Identify Champions!

- Virtually every high-performing colon cancer screening system has a Champion.
- This is tough work – someone needs to provide the leadership to bring everyone together.
- Commission on Cancer Hospital Liaison Physician can be that Champion.

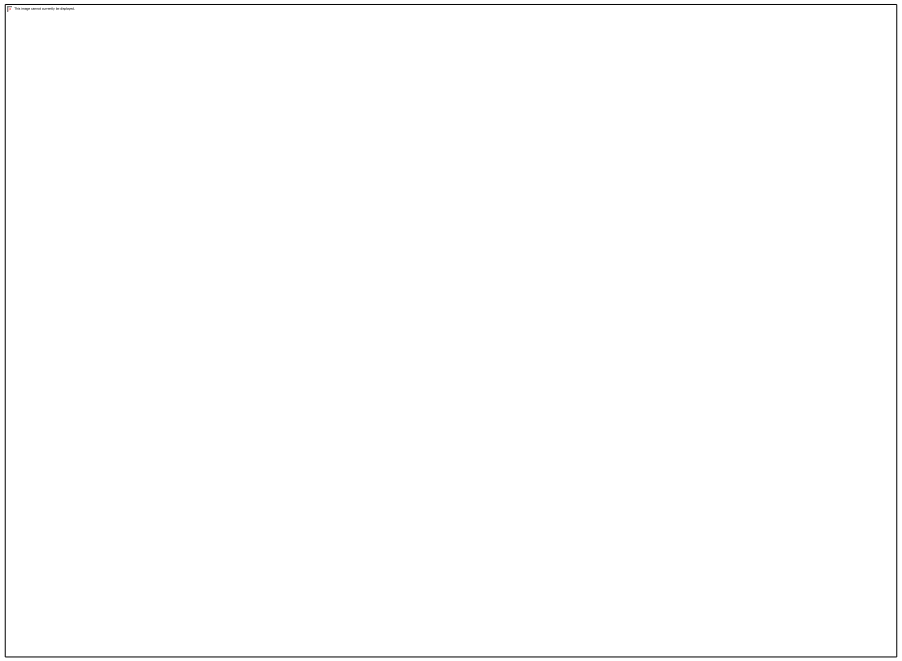
# Publicly Commit to Achieving this Goal

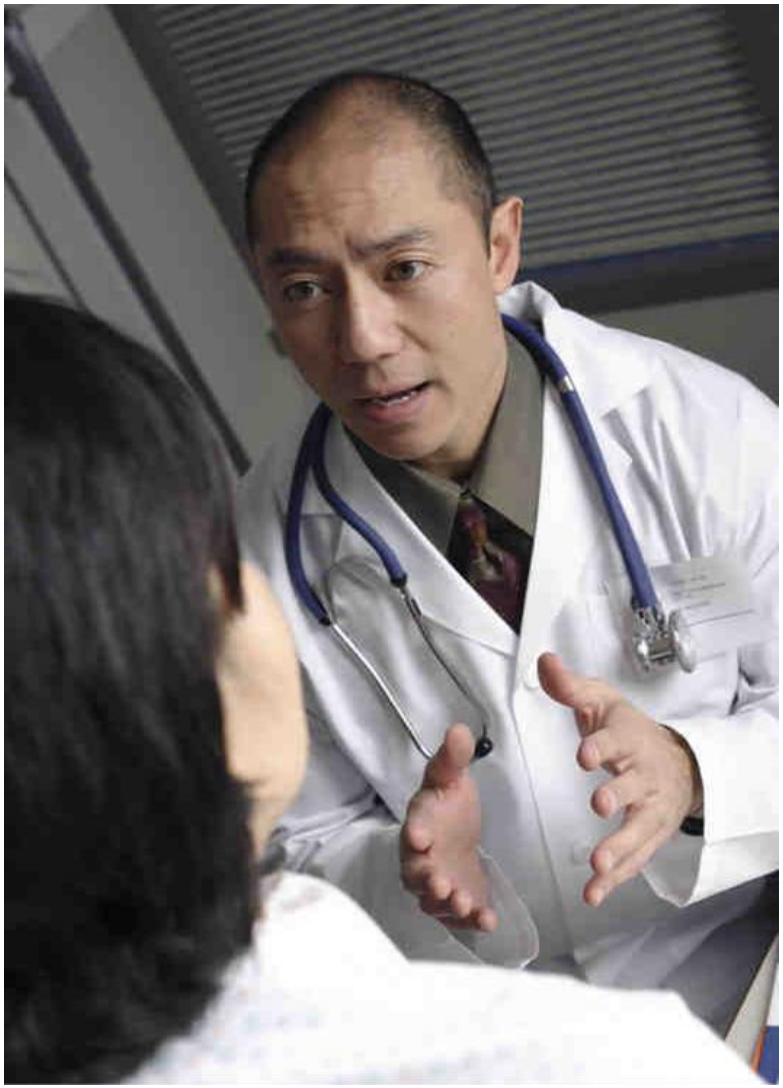
- Signing the Pledge is fantastic … but only if a hospital is truly ready to achieve this goal.
- Sign the pledge.
- Make a fuss!
- Go very public … and then get to work.

# Assemble a Team

- Increasing the quality of colon cancer care demands all hands on deck:
  - Primary care
  - Gastroenterologists
  - **Patient navigators – Should now be a standard of care**
  - Anesthesiologists
  - Surgeons
  - All of their teams
  - Insurers
  - Employers

# Implement the Strategic Plan



# What Does it Take to Execute a Population-Based Screening Program?

- IARC cancer prevention framework identifies 6 criteria:
  1. An explicit screening policy with specified age categories, screening methods, and intervals
  2. A defined population
  3. A management team responsible for implementation
  4. A health care team responsible for decisions and care
  5. A quality-assurance structure
  6. A method for identifying cancer occurrence in the population

Verma, M., Sarfaty, M., Brooks, D. and Wender, R. C. (2015), Population-based programs for increasing colorectal cancer screening in the United States. CA: A Cancer Journal for Clinicians, 65: 496–510. doi: 10.3322/caac.21295

# Example: Kaiser Permanente of Northern California – IARC Criteria

| | |
|---|---|
| **1. Screening Policy** | FIT annually or colonoscopy every 10 years |
| **2. Defined Population** | Enrolled KPNC members |
| **3. Management Team** | Centralized and decentralized medical providers and executive leads |

# Example: Kaiser Permanente of Northern California – IARC Criteria

| | |
|---|---|
| **4. Health Care Team** | Both screening and cancer care offered as a part of the program within the integrated system |
| **5. Quality Assurance** | Quality reports: Regional KPNC registry and California SEER registry |
| **6. Identifying Cancer** | Centers of Excellence use the registry for cancer care using interdisciplinary care teams |

# KPNC: Demographics and Population-Based Strategies

| | |
|---|---|
| **Population Demographics** | Approximately 54% females, 94% Caucasian |
| **Population-Based Strategies** | System-based: Leveraging EMRs to identify eligible patients, automated phone and mail outreach to the patients, FluFIT Program offering FIT at the flu vaccine clinic<br><br>Provider-based: EMR alerts to providers at the time of clinical visits |

Verma, M., Sarfaty, M., Brooks, D. and Wender, R. C. (2015), Population-based programs for increasing colorectal cancer screening in the United States. CA: A Cancer Journal for Clinicians, 65: 496–510. doi: 10.3322/caac.21295

# KPNC: Population-Based Screening Program Results

**37%** Initial Screening Rates in 2005

**79%** Outcome Screening Rates in 2012

Verma, M., Sarfaty, M., Brooks, D. and Wender, R. C. (2015), Population-based programs for increasing colorectal cancer screening in the United States. CA: A Cancer Journal for Clinicians, 65: 496–510. doi: 10.3322/caac.21295

# 6. Engaging Large Employers and CEOs is a Strategy Worth Exploring

- To more effectively impact health care plans, we will need to more effectively engage with their customers – **employers and CEOs.**
- Employers have a wonderful opportunity to help the nation achieve a critical public health goal.

# Achieving 80% by 2018: The Role of Employers

- Create a culture of wellness across the enterprise.
- Educate employees and their families about colon cancer risk.
- Make it easier for individuals to get screened.
- Create incentives.
- Serve as role models.

# 8. Financial Barriers Persist as Major Obstacles to Screening

- To substantially increase screening rates, strategies to reach individuals without health insurance and on Medical Assistance must be developed.
- Federally Qualified Health Centers and academic primary care clinics serve as the safety net for many low income individuals.

# Finding the Right Set of Complementary Strategies is a Key Goal

- Should we focus on working with primary care to implement population management?
- Or should we work on tailored messages to the unscreened?
- Or would it be better to focus on working with hospitals or health care plans?

**Here's the painful truth**: There is nothing we can do to reach 80% colon cancer screening rates by 2018

… **except everything**.

# 10. We Must Floor the Accelerator and Keep Pedal to the Metal for the Next Four Years

- We have made the commitment to increase CRC screening rates by 15% in five years … and we only have three years left to do it.
- Every member organization needs to participate in a national plan but also have their own plan to pursue the interve that they are uniquely positioned to do.

# We Need More Partners

- One way to keep the momentum going is to keep enlisting new partners, creating new ways to convene, and setting more and more segmented, local goals.

**Achieving 80% colon cancer screening rates by the end of 2018 will be very difficult.**

Our goal is big …

… but so is the

**potential impact**.

If we can achieve 80% by 2018,

**277,000 cases** and **203,000 colon cancer deaths** would be **prevented** …

… **by 2030.**

In Washington, DC,

that's **453 cases** and **332 deaths**

avoided ...

**... by 2030.**


Colon Cancer
Catching it early
40%
DISTANT
Cancer has spread to other parts of the body such as liver or lungs
I CAN see it!
Jefferson.
WILDER FOUNDATION
Here for good.

# Q&A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