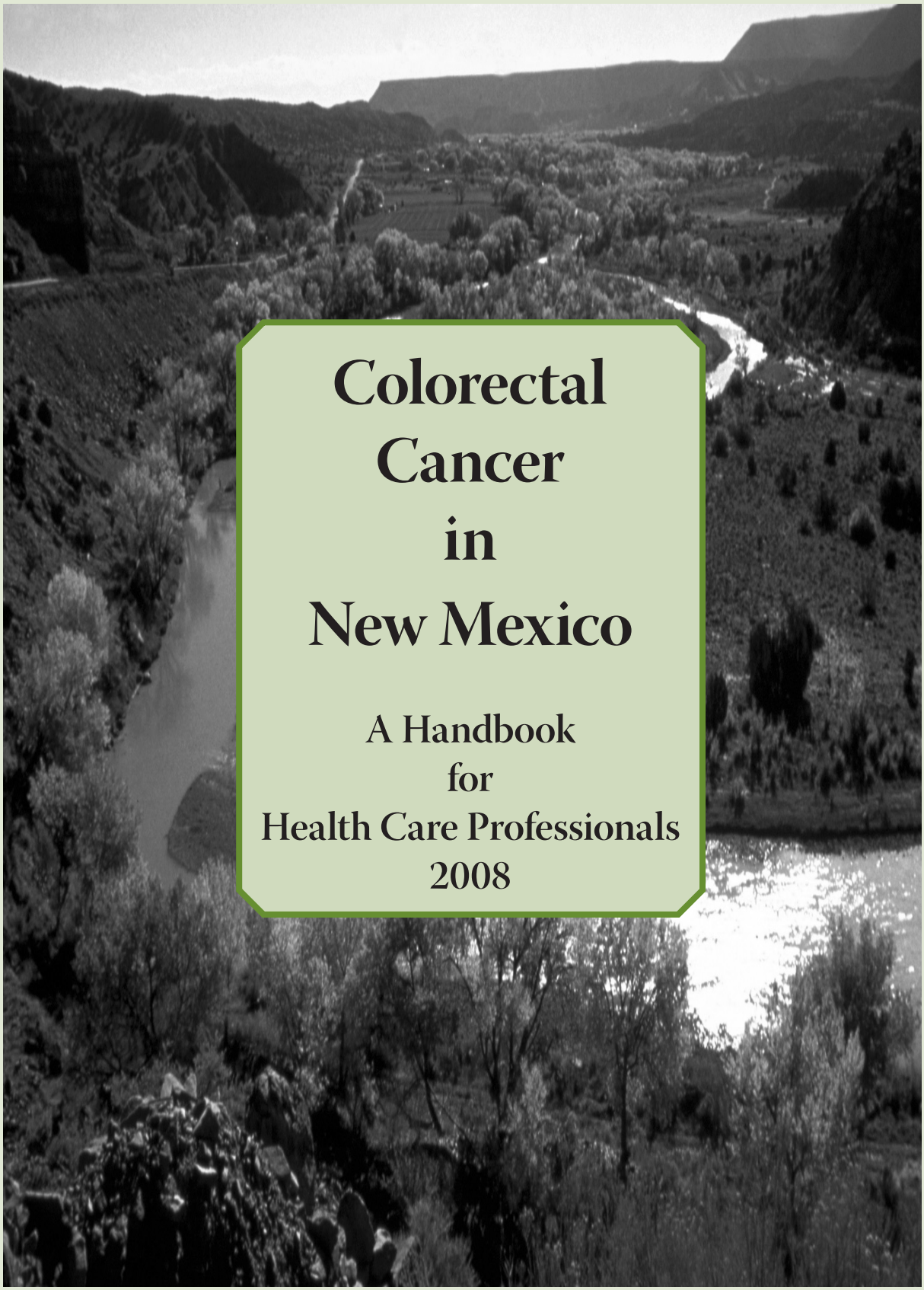

Colorectal Cancer in New Mexico

A Handbook for Health Care Professionals 2008

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Colorectal Cancer in New Mexico

A Handbook for Health Care Professionals 2008

Third Edition

Acknowledgements

Third Edition

The Clinical Prevention Initiative (CPI) is a collaborative effort of the New Mexico Medical Society and the New Mexico Department of Health. The CPI's mission is to maximize the effectiveness and reach of high priority, evidence-based clinical preventive services delivered by New Mexico health care professionals, practices, and systems.

The CPI Colorectal Cancer Prevention Workgroup would like to acknowledge and thank the following for their time, guidance, and hard work:

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Cover Photo: Rio Chama. Courtesy of the New Mexico Department of Tourism, 2008

Continuing Medical Education (CME) Information Sheet

Colorectal Cancer in New Mexico: A Handbook for Health Care Professionals, 2008

Objectives:

Colorectal cancer is the fourth most frequently diagnosed cancer and the second leading cause of cancer death. The objective of this handbook is to provide health care professionals in New Mexico with a resource that details the epidemiology of colorectal cancer, clarifies screening options, describes treatment options, lists additional resources, and offers patient education materials.

The expected outcome of this handbook is that New Mexican health care professionals will have a clearer understanding of colorectal cancer, its screening and treatment, and the providers' role in dealing with this disease. The desired outcome is that the frequency of colorectal cancer screening will increase across the state. Identification of the cancer at earlier, more effectively treated stages, will result in better outcomes for patients and health care professionals, and in substantial savings of treatment dollars.

Target Audience:

Health Care Professionals (Primary Care Physicians, Physician Assistants, Nurse Practitioners, Nurses).

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Media:

Printed handbook

Estimated time to complete the activity:

4 hours

Method of Physician Participation:

Read handbook chapters and then answer each question using the Continuing Medical Education (CME) Credit/Response Form provided in Chapter 5. Mail or fax the completed answer form to receive CME credit. Address and fax information are located at the bottom of the CME Credit/Response Form.

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Accreditation:

The University of New Mexico Office of Continuing Medical Education is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The UNM Office of Continuing Medical Education designates this educational activity for a maximum of 4 *AMA PRA Category 1 Credits™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.

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Chapter 1: Colorectal Cancer Epidemiology

Incidence and Mortality

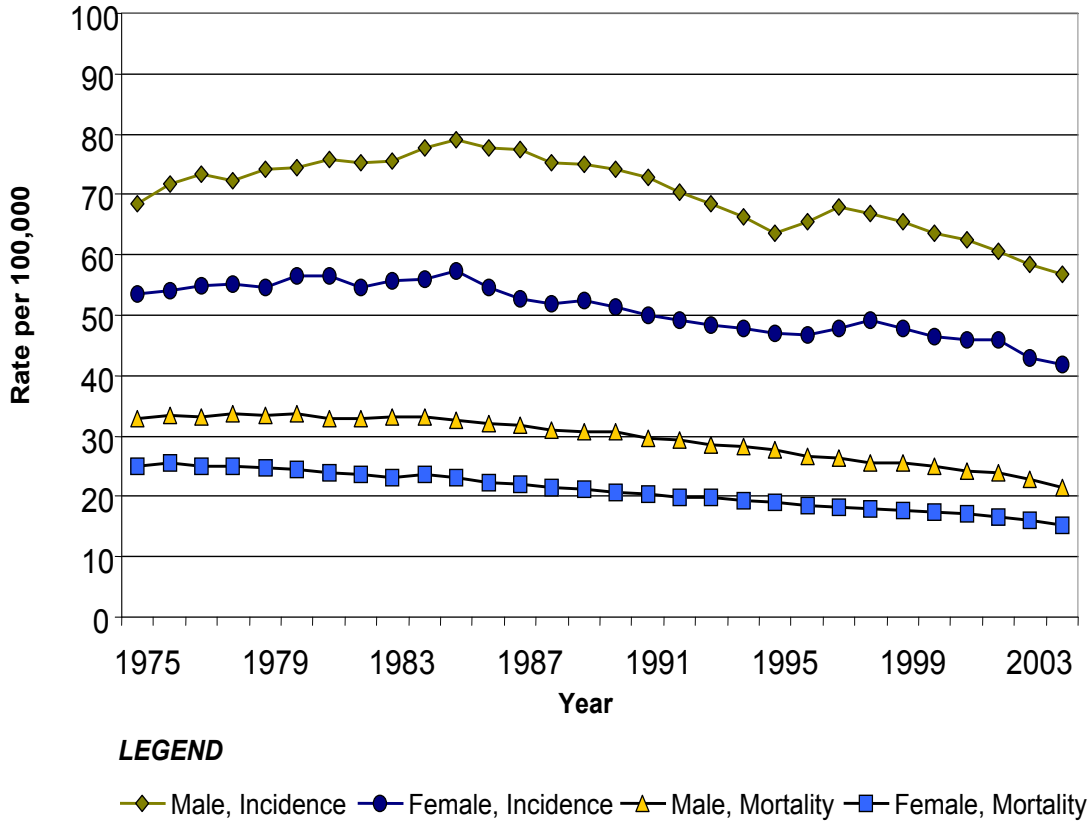
United States data

Colorectal cancer is the fourth most frequently diagnosed cancer in the United States and the second leading cause of cancer death. The American Cancer Society estimated that there would be 153,760 new cases of colorectal cancer diagnosed in 2007 and 52,180 colorectal cancer deaths (Jemal, 2007).

Overall, the lifetime risk of being diagnosed with colorectal cancer is just under 6%, and the lifetime risk of dying from colorectal cancer is 2.2%. More importantly, on average a person dying from colorectal cancer loses about 14 years of life.

The annual age-adjusted incidence rate for colorectal cancer began declining in the mid-1980s, with an average percent change of -1.5% since 1995 (Figure 1). Additionally, the age-adjusted mortality rates have steadily declined since 1995, with an average percent change of -2.2% (Figure 1). The decline has accelerated in recent years; between 2002 and 2004 the average percent change was -4.9% for men and -4.5% for women (Espey, 2007).

Figure 1: Colorectal cancer incidence and mortality rates by sex, United States, 1975-2004



NOTE: Rates are age-adjusted to the 2000 United States standard population.

Source: Ries, 2006

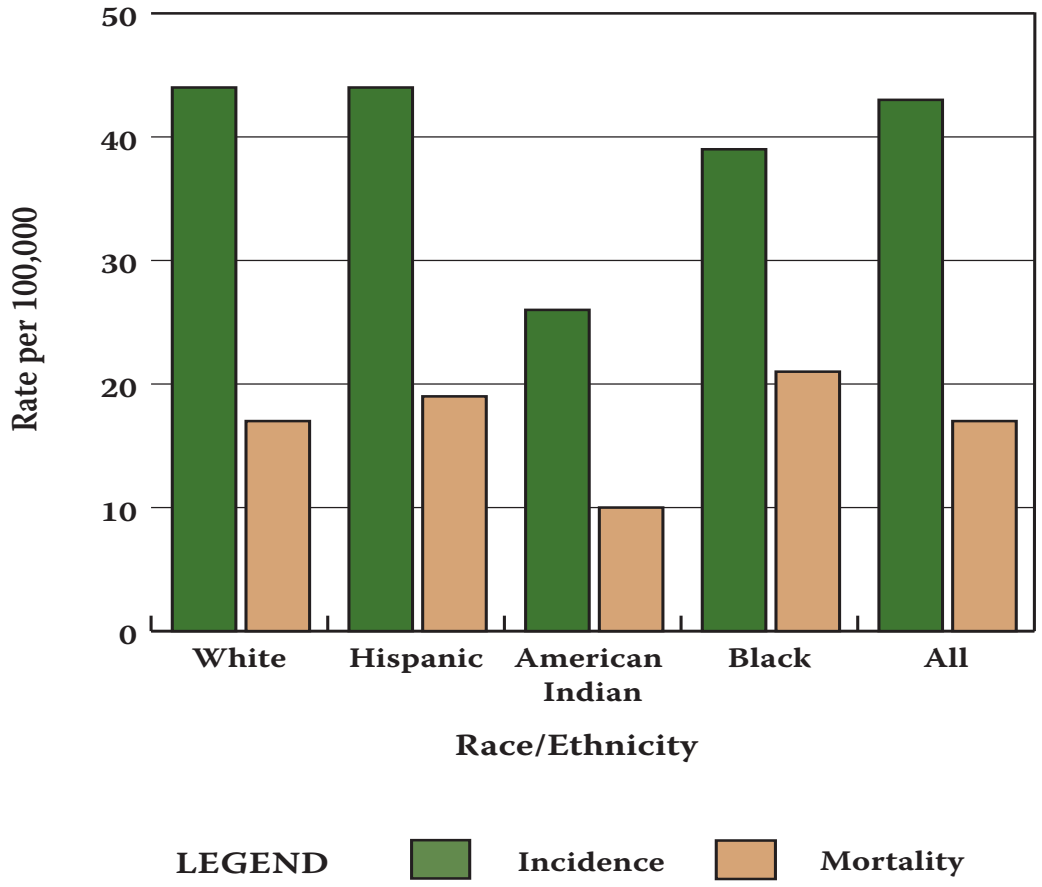
New Mexico data

About 90% of colorectal cancers in New Mexico are diagnosed in persons ages 55 years or older, and 70% are diagnosed in persons ages 65 years or older.

Average incidence rates between 2000-2004 were highest among Whites and Hispanics and lowest among American Indians (Figure 2). Mortality rates were highest in Blacks and lowest in American Indians.

Figures 3 to 6 show temporal trends in colorectal cancer incidence and mortality for New Mexico from 1975 to 2004, stratified by sex and race/ethnicity (NMCFF, 2007). Incidence has gradually declined among Whites but steadily increased in Hispanics and American Indians. Overall, mortality rates have been relatively stable, though the rates have declined in Whites and increased in Hispanics and American Indians. Women have lower incidence and mortality rates (Figures 3, 5) than men (Figures 4, 6).

Figure 2: Colorectal cancer - average annual incidence and mortality rates by race/ethnicity, New Mexico, 2000-2004



Source: New Mexico Cancer Facts & Figures, 2007

Figure 3: Colorectal cancer average annual incidence, Females, New Mexico, 1975-2004

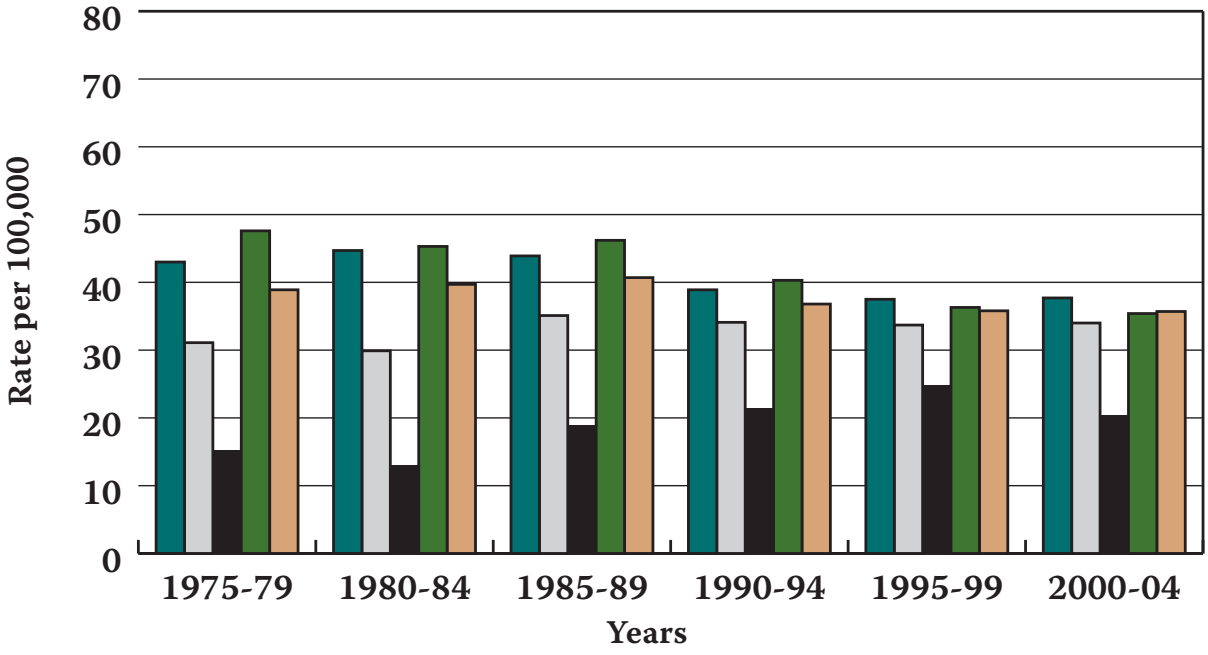
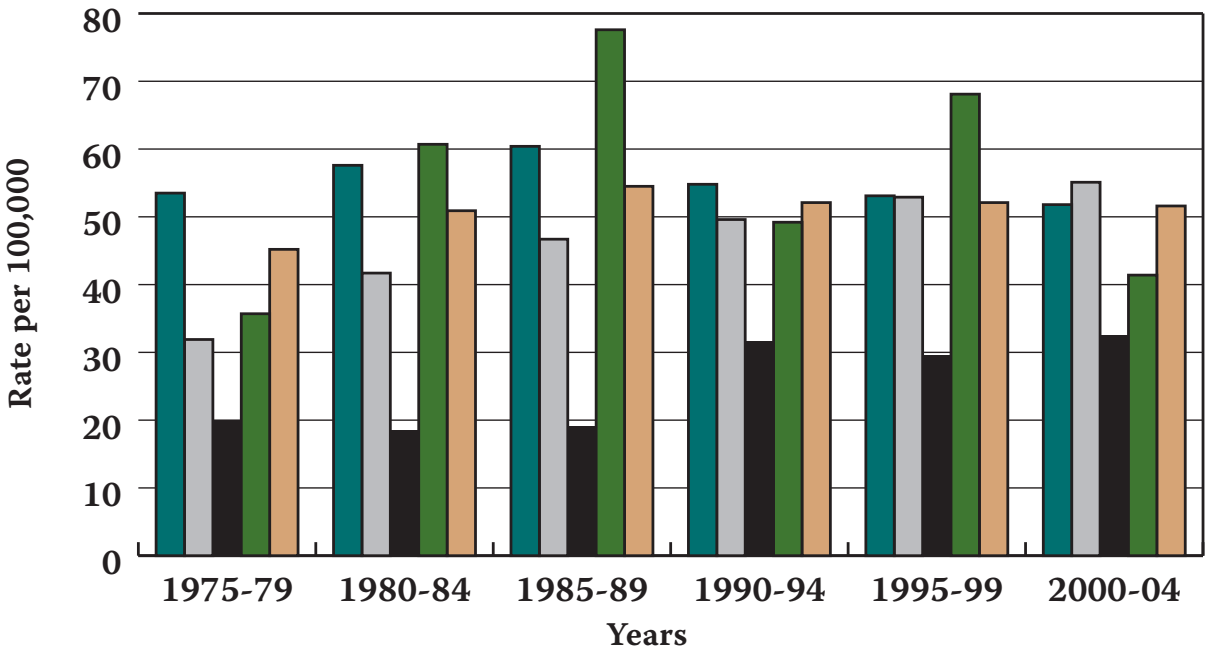


Figure 4: Colorectal cancer average annual incidence, Males, New Mexico, 1975-2004



LEGEND (Figures 3-4)

NOTE: All rates are age-adjusted to the 2000 standard U.S. population.

Source: New Mexico Cancer Facts & Figures, 2007

Figure 5: Colorectal cancer average annual mortality, Females, New Mexico, 1975-2004

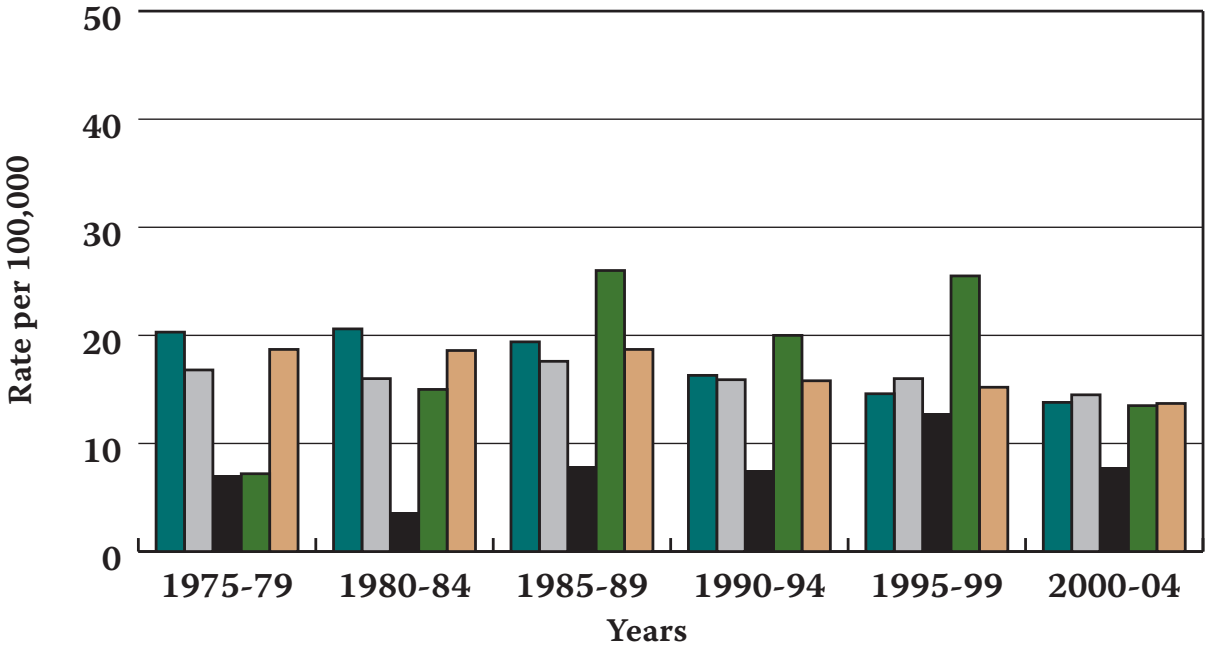
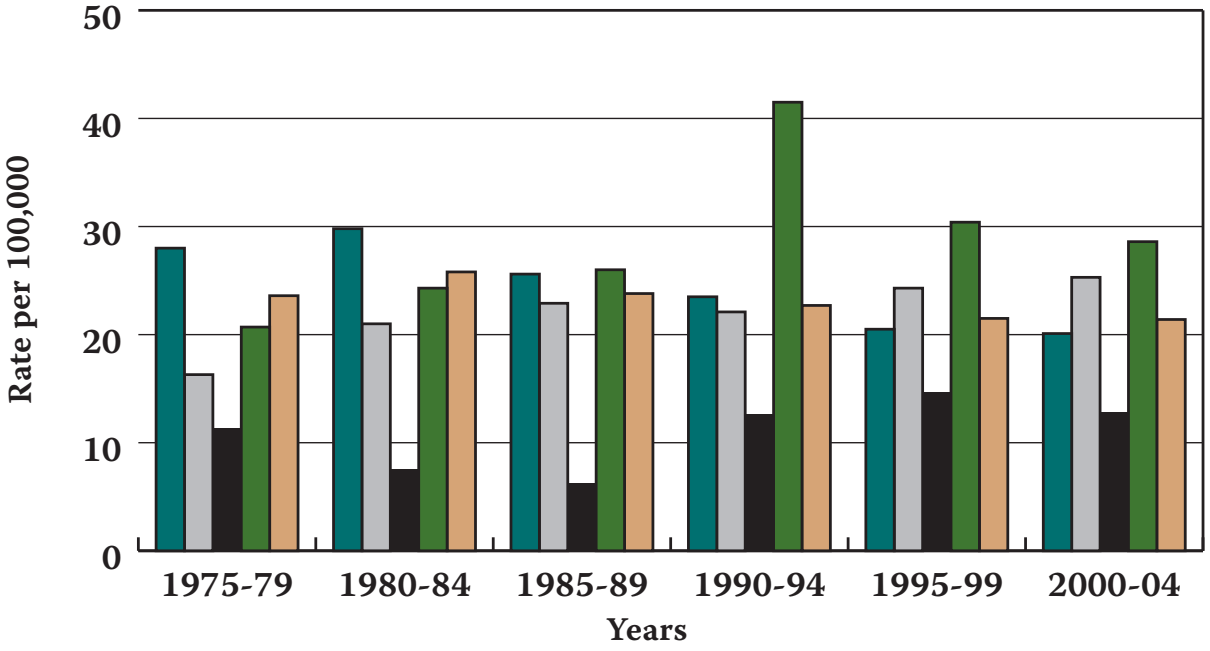


Figure 6: Colorectal cancer average annual mortality, Males, New Mexico, 1975-2004



LEGEND (Figures 5-6)

NOTE: All rates are age-adjusted to the 2000 standard U.S. population.

Source: New Mexico Cancer Facts & Figures, 2007

Pathogenesis

The great majority of colorectal cancers are adenocarcinomas. These cancers are hypothesized to arise in normal colonic mucosa following complex interactions between environmental factors and genetic alterations. Cellular proliferation initially leads to adenomatous polyps and further genetic changes can then transform these polyps to carcinoma.

The malignant transformation occurs slowly, over an estimated 10 to 15 years.

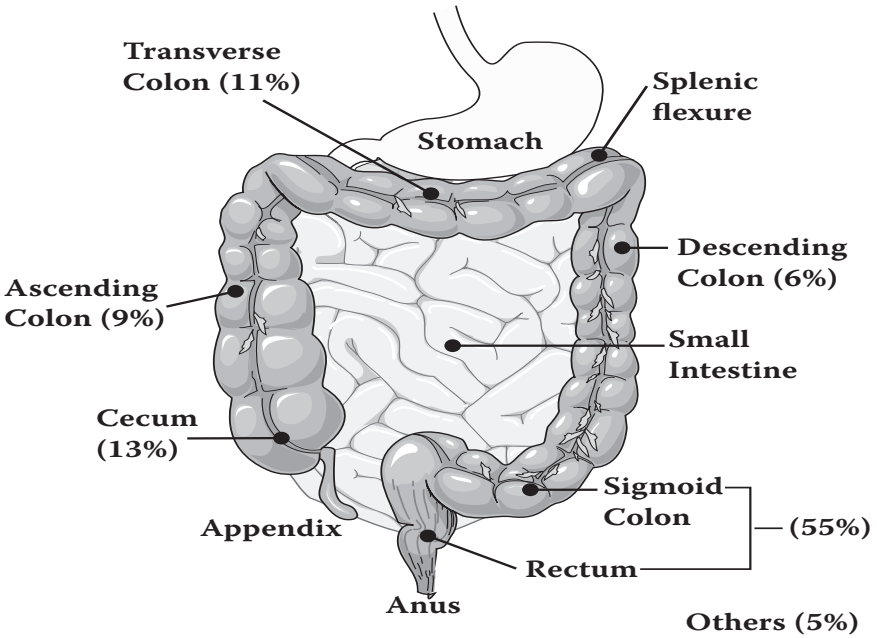
- Only 2.5/1000 adenomatous polyps become malignant each year, though 10% of polyps ≥ 1 cm can become malignant within 10 years.
- Approximately 3% to 5% of colorectal cancers will present with synchronous tumors (multiple distinct primary tumors).

Clinical Presentation

About 60% of cancers arise in the descending colon and rectosigmoid (Figure 7), but there has been a shift towards right-sided tumors (cecum, ascending colon, and transverse colon) during the past few decades. The clinical presentation will depend upon the cancer stage and location.

- Early cancers are usually asymptomatic.
- More advanced-stage right colon tumors will often present with microcytic anemia (due to occult bleeding), weakness, and/or an abdominal mass.
- Advanced-stage left colon tumors can present with obstructive symptoms and gross bleeding.
- Rectal tumors commonly present with tenesmus, pain, and bleeding.

Figure 7: Location of colorectal cancers at diagnosis



Source: Winawer, 1997

Cancer Staging

The extent of cancer spread, or stage, is designated with the TNM (Tumor, Node, Metastasis) classification of the American Joint Committee on Cancer (AJCC). Staging is based on the primary tumor (T), the presence of regional lymph node involvement (N), and the presence of distant metastasis (M) (Table 1, Figure 8).

Table 1: Colorectal cancer staging classifications

AJCC Stage	TNM		
0	Tis	N0	M0
I	T1-2	N0	M0
IIA	T3	N0	M0
IIB	T4	N0	M0
IIIA	T1-2	N1	M0
IIIB	T3-4	N1	M0
IIIC	Any T	N2	M0
IV	Any T	Any N	M1

Source: NCI, 2007

TNM Definitions

Primary tumor (T):

Tis *carcinoma in situ;*
T1 *tumor invades submucosa;*
T2 *tumor invades muscularis propria;*
T3 *tumor invades through the muscularis propria into the subserosa, or into nonperitonealized pericolic or perirectal tissues;*
T4 *tumor directly invades other organs or structures, and/or perforates visceral peritoneum.*

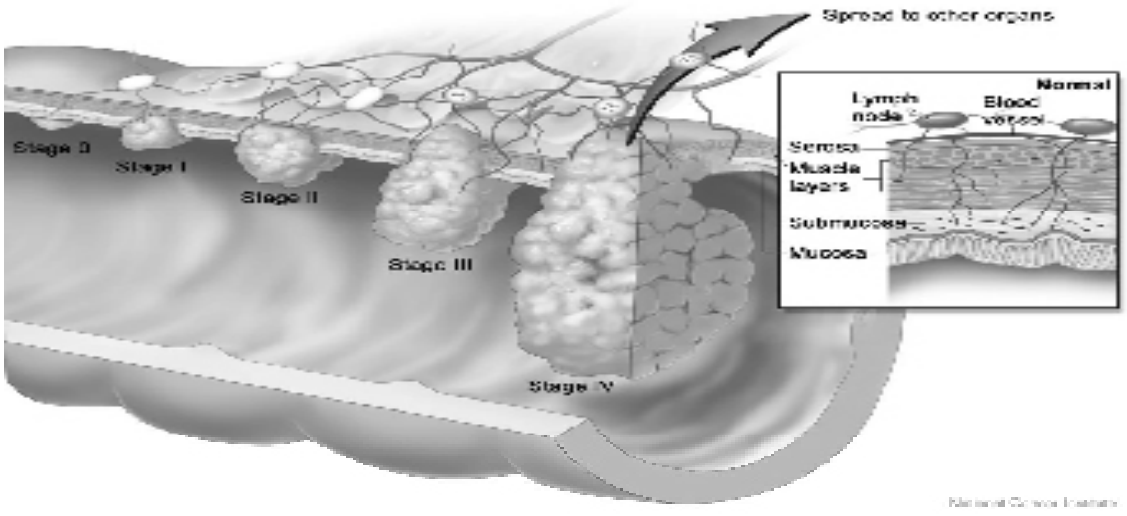
Regional lymph nodes (N):

N0 *no regional lymph node metastasis;*
N1 *metastasis in 1 to 3 regional lymph nodes;*
N2 *metastasis in 4 or more regional lymph nodes.*

Distant metastasis (M):

M0 *no distant metastasis;*
M1 *distant metastasis.*

Figure 8: Colorectal cancer staging (AJCC stage)



Prognosis

Cancer stage at detection is the most important prognostic factor for colorectal carcinoma.

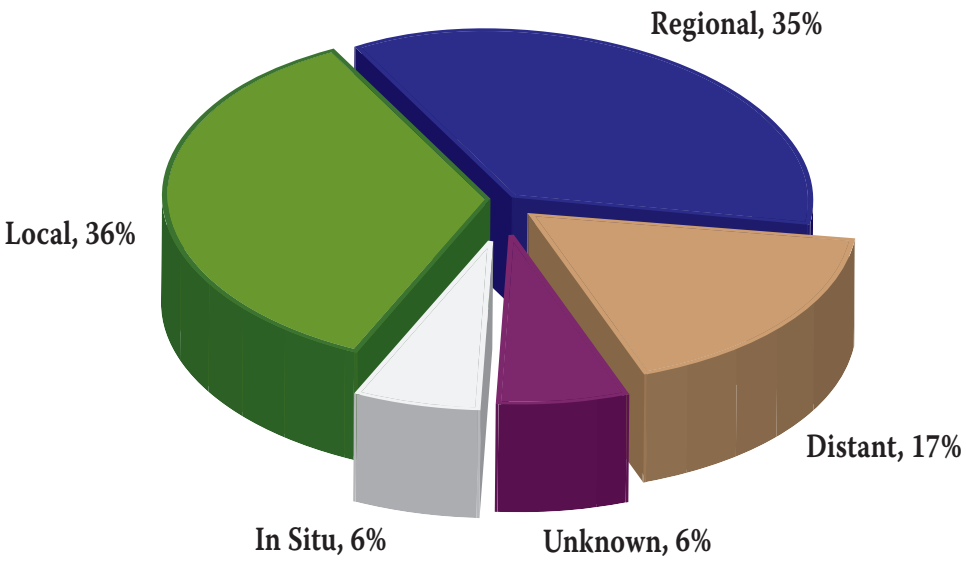
- Data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) registries indicate that the overall five-year relative survival rate is around 65%. However, the five-year survival rate is nearly 90% in persons with local-stage disease (confined to the primary site), 67% in persons with regional-stage disease (spread to regional lymph nodes or directly beyond the primary site), and only 9% in those with distant-stage disease (metastasis) (Table 2). Survival is better for colon cancers than for rectal cancers because there is more recurrent local disease with rectal cancers.
- In New Mexico, more than half of the patients with colorectal cancer have regional spread or distant metastasis at the time of diagnosis (Figure 9).

Table 2: Five-year relative survival for colorectal cancer by stage at diagnosis, New Mexico, 1997-2003

	STAGE			
Cancer Sites	**Local**	**Regional**	**Distant**	**All**
Colon	92%	70%	8%	66%
Rectum	82%	60%	11%	64%
Colon and Rectum	89%	67%	9%	65%

Source: New Mexico Tumor Registry

Figure 9: Colorectal cancer by stage at diagnosis, New Mexico, 2001-2003



Source: New Mexico Tumor Registry

Risk Factors for Developing Colorectal Cancer

Age

- The risk for developing colorectal cancer increases with age (Table 3).
- Most cases are diagnosed in men and women ages 50 years and older.
- The risk of colorectal cancer begins increasing after the age of 40, rising sharply at age 50 to 55, and then doubling with each successive decade.

Sex

- Men are more likely to be diagnosed than women (Table 3).

Table 3: Probability of developing invasive colorectal cancer by age intervals and sex, United States, 2000-2002

	Birth to 39	40 to 59	60 to 69	70 and older	Birth to death
Male	0.07 %	0.90 %	1.66 %	4.94 %	5.84 % (1 in 17)
Female	0.06 %	0.70 %	1.16 %	4.61 %	5.51 % (1 in 18)

Source: Jemal, 2007

Race

- Black men and women have higher incidence rates for colorectal cancer than White men or women.

Personal history

- A diagnosis of colorectal cancer increases the risk for developing another (metachronous) cancer, with a 1.5% to 3% incidence within 5 years of surgical treatment.
- Having a large adenomatous polyp, particularly with villous or tubulovillous histology, or having multiple polyps, increases the risk for colorectal cancer.
- Long-standing inflammatory bowel disease is associated with a 5- to 15-fold increased cancer risk compared to the general population. Risk begins increasing after 10 years of being diagnosed with pancolitis and 15 to 20 years after being diagnosed with left colon disease.
- Diabetes is associated with a 30% increased risk for colorectal cancer.
- Obesity is associated with a 50% increased risk for colorectal cancer.
- Cholecystectomy may be associated with right-sided colorectal cancers.
- Ureterocolic anastamosis is associated with an increased risk for colorectal cancer near the ureteric stoma.
- Previous pelvic irradiation may be associated with an increased risk for colorectal cancer with a 5- to 10-year latency.

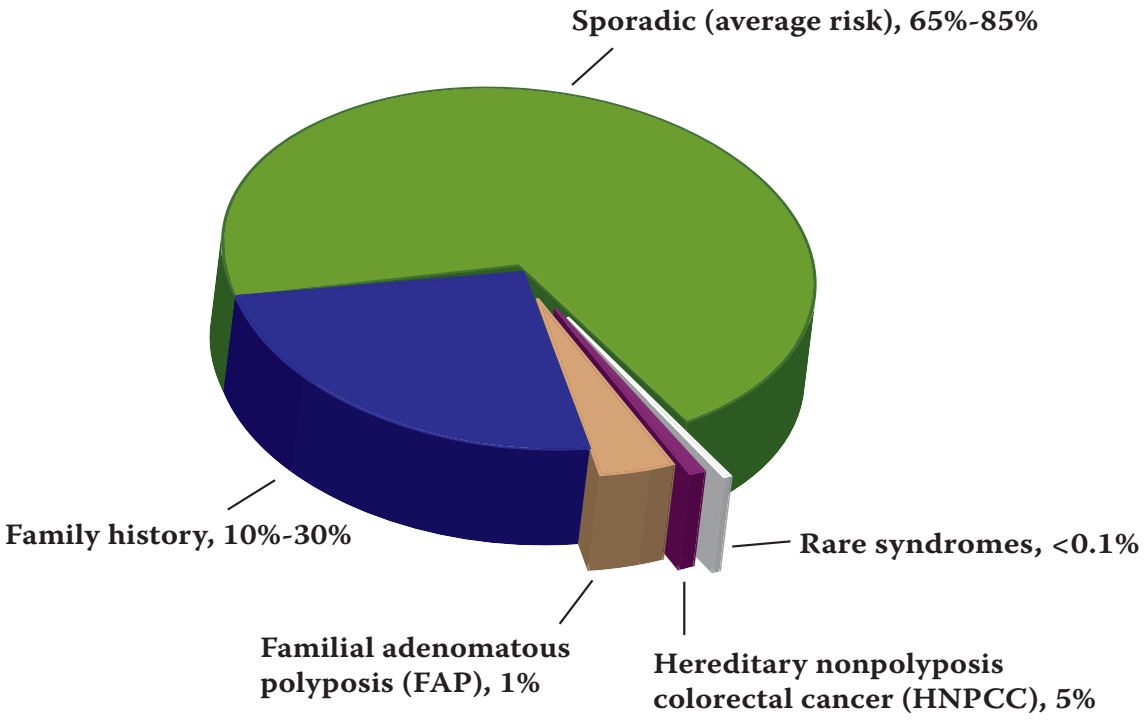
Hereditary syndromes

- Genetic mutations with an autosomal dominance have been identified for several hereditary syndromes that primarily present with colon cancer (Figure 10).
- Familial adenomatous polyposis (FAP) usually presents in early- to mid-adolescence with hundreds to thousands of colon polyps. Without treatment (colectomy), one or more of these polyps will progress to colorectal cancer. Over 90% of untreated FAP patients develop cancers by age 45 and the life-time risk of cancer is 99%.
- Hereditary non-polyposis colon cancer (HNPCC) presents with colon cancer in the fourth or fifth decades of life. HNPCC tumors are predominantly proximal (right sided) with few polyps. The lifetime risk of colon cancer in the HNPCC is approximately 85%. Forty to sixty percent of women with HNPCC will develop endometrial cancers. HNPCC is associated with cancer at other sites, including small bowel, stomach, urinary tract, and ovary. The clinical diagnosis of HNPCC involves a pattern of colon and other cancers in a family over at least two generations or colon cancer in an individual younger than 40 (with FAP ruled out).

Family history

- Persons with a family history of adenomatous polyps or colorectal cancer in a single first-degree relative have about a two-fold increased risk for developing colorectal cancer. Between 10%-30% of patients with colorectal cancer have a positive family history (Figure 10).
- Risk increases further if more than one first-degree relative has cancer and if the cancer was diagnosed before age 60.
- Risk is also increased if close relatives were diagnosed with adenomatous polyps before age 60.

Figure 10: Colorectal cancer risk groups



Source: Centers for Disease Control and Prevention

Behavioral risks

Epidemiologic, though not causal, associations have been reported for some behavioral habits.

- Diets high in total fat (particularly high in saturated fats), protein, calories, and meat and low in calcium, vitamin E, vitamin D, and folate
- Cigarette smoking
- Alcohol

Table 4: Risk factors for colorectal cancer

Demographics	Age > 50
	Male sex
	Black race
Personal History	Colorectal cancer or adenomatous polyps
	Inflammatory bowel disease
	Diabetes
	Obesity
	Cholecystectomy
	Ureterocolic anastamoses
	Pelvic irradation
Hereditary Syndromes	Familial adenomatous polyposis
	Hereditary nonpolyposis colorectal cancer
Family History	Sporadic colorectal cancers or adenomatous polyps
Behavioral Risks	Diets high in red meat or processed meat
	Diets low in calcium, vitamin E, vitamin D, and folate
	High alcohol intake (> 45 g/day)
	Tobacco

Source: National Cancer Institute, www.cancer.gov/cancertopics/pdq/prevention/colorectal; UpToDate®

Protective Factors

Diet

- Epidemiologic and observational studies suggest that diets that are high in fruits, vegetables, and fiber or low in red meat, animal fat and/or cholesterol are protective against colorectal cancer. Foods containing folate, selenium, or vitamin D might also be protective.
- Randomized controlled trials failed to show that cereal fiber supplementation and diets low in fat and high in fiber, fruits, and vegetables reduced the rate of adenoma recurrence over a 3-year to 4-year period (Alberts, 2000; Schatzkin, 2000).
- No randomized trials have shown that dietary supplements (folic acid, vitamin B6, antioxidants, or magnesium) reduce the incidence of colorectal cancer.

Nonsteroidal anti-inflammatory drugs (NSAIDs)

- Randomized trial data have shown that sulindac and celecoxib can reduce the size and number of polyps in familial adenomatous polyposis (FAP) (Thun, 2002).
- Daily aspirin reduced the risk of recurrent adenoma formation in patients with previous colorectal cancer or previous adenomatous polyps (Baron, 2003; Sandler, 2003). However, the United States Preventive Services Task Force recommended against using aspirin and NSAIDs for preventing colorectal cancer in asymptomatic adults at average risk for developing colorectal cancer. The Task Force concluded that the potential harms outweighed the benefits (USPSTF, 2007).
- No randomized trials of NSAIDs have shown reduced incidence or mortality from colorectal cancer.

Calcium and vitamin D supplements

- Daily calcium supplements moderately reduced the risk of recurrent adenomatous polyps in subjects with previous colorectal adenomas. Observational data suggests that vitamin D supplements are protective against colorectal cancer.
- No randomized trials of calcium or vitamin D supplements have shown a reduced incidence or mortality from colorectal cancer.

Physical activity

- Numerous observational studies have shown that regular activity, including occupational, household, and leisure time, protects against colorectal cancer. The mechanism is uncertain, though may be related to decreased gastrointestinal transit time and reduced insulin resistance. Currently, no intervention trials of physical activity for colorectal cancer prevention have been published.

Hormone replacement therapy

- Post-menopausal female hormone replacement therapy (HRT) has been associated with a decreased risk for colon cancer but not rectal cancer. However, HRT is associated with an increased risk for breast cancer and cardiovascular disease events (Chlebowski, 2004).

Polypectomy

- The observational National Polyp Study estimated that colonoscopic polypectomy reduced the incidence of colorectal cancer by at least 75% (Winawer, 1993). This estimate was based on comparisons with two cohorts with colonic polyps that were not removed and a general-population registry.

Fecal occult blood testing (FOBT)

- The Minnesota Colon Cancer Control Study found that annual and biennial fecal occult blood testing were associated with 20% and 17%, respectively, reductions in the incidence of colorectal cancer after 18 years of follow up (Mandel, 2000). Most patients with a positive fecal occult blood test subsequently underwent colonoscopy.

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Chapter 2: Colorectal Cancer Screening

Screening Rationale

Screening (secondary prevention) is testing asymptomatic people to determine whether they are at increased risk for having a disease. Screening is an important strategy for colorectal cancer because randomized controlled trials have shown that screening reduces colorectal cancer incidence and mortality. Furthermore, there are no acceptable primary prevention strategies proven to reduce colorectal cancer incidence or mortality. Despite improvements in surgical techniques, radiation therapy, and chemotherapy, prognosis is poor for patients with advanced-stage disease. A number of effective testing options are available.

Current Testing Options

- *Fecal Occult Blood Testing*
  - *Guaiac (FOBT)*
  - *Immunochemical (iFOBT)*
- *Flexible Sigmoidoscopy*
- *Colonoscopy*
- *Double-Contrast Barium Enema*

Emerging Testing Options

- *CT Colonography*
- *DNA-based Stool Assay*

Current Testing Options

Fecal occult blood testing (FOBT)

- FOBT detects blood in the stool by a positive reaction from the peroxidase activity of hemoglobin on the guaiac-based test card.
- Home FOBT testing of three stools is recommended for screening. Patients use a wooden applicator to smear a thin film of stool on the two windows of the test card (Table 5).
- Patients are advised to avoid gastric irritants, rare meat, and peroxodise-containing vegetables (turnips, horseradish) which can cause a false positive test.
- Patients are advised to avoid vitamin C which can cause a false negative test.
- FOBT testing of stool obtained following a digital rectal examination is not recommended because it has a lower sensitivity and specificity than home testing.
- FOBT cards should not be rehydrated by the laboratory; although rehydration increases cancer detection it also leads to an unacceptably high rate of false positive tests.
- A positive FOBT, whether from home FOBT testing or an office digital rectal examination, requires colonoscopy for evaluation.

Table 5: Fecal occult blood testing (FOBT) instructions for patients

- Two smears from each of three consecutive stools
- Suggested dietary and medication restrictions for the two days before testing:
  - No gastric irritants such as NSAIDs (to avoid false positives)
  - Low dose aspirin and coumadin are permitted
  - No red meat, turnips, or horseradish (to avoid false positives)
  - No vitamin C supplements (to avoid false negatives)

Source: Winawer, 1997

Immunochemical fecal occult blood test (iFOBT)

- The immunochemical fecal occult blood test (iFOBT) is a newer human hemoglobin-specific stool blood assay. The iFOBT detects the globin portion of human hemoglobin in a stool sample and has been shown to have equal or better sensitivity and specificity than guaiac-based tests for detecting colorectal neoplasms.
- Most iFOBT assay require sampling from 2 or 3 stools.
- No dietary restrictions are required because the test is specific to human hemoglobin.
- No medication restrictions (particularly NSAIDs) are required because iFOBT is specific to lower GI bleeding. iFOBT is more expensive and requires more extensive laboratory processing than guaiac FOBT.

Flexible sigmoidoscopy

- The 60-centimeter flexible sigmoidoscope can examine the rectum, sigmoid colon, and the descending colon up to the splenic flexure.
- A positive test is detecting a polyp. Patients will be referred for colonoscopy if they have a large polyp (≥ 1.0 cm), an adenoma with tubulovillous or villous histology, or multiple adenomas because these findings may increase the likelihood of finding a proximal neoplasia.
- There is no consensus on whether patients with a single, small (< 6 mm) tubular adenoma require a subsequent colonoscopy.
- Sigmoidoscopy, which is generally performed without sedation, is a relatively safe procedure. Bowel perforation or hemorrhage occurs only 1 to 2 times per 10,000 procedures.

Colonoscopy

- Colonoscopy has the highest detection rate for polyps and is the only colorectal cancer screening strategy that may also be therapeutic because endoscopists can remove adenomatous and malignant polyps.
- Colonoscopy requires an extensive bowel preparation that may involve large volumes of an oral cathartic solution and intravenous sedation during the procedure (which may prevent patients from being able to drive themselves home). It also entails a greater expense compared to other screening tests and a lengthy training for endoscopists to become proficient in performing colonoscopy.
- The rate of major complications (perforation or bleeding) is about 1 to 3 in 1,000 procedures and mortality is 1 to 3 in 10,000 procedures, higher than seen with sigmoidoscopy. Complication rates are higher for therapeutic procedures (polypectomy) than for screening or diagnostic procedures.

Double-contrast barium enema (DCBE)

- A double-contrast barium enema (DCBE) involves inserting barium and air into the rectum. This procedure outlines mucosal lesions and is considered more sensitive than single contrast barium enema for detecting colorectal polyps.
- The National Polyp Study reported that DCBE missed nearly 50% of the polyps >1 cm that were found with colonoscopy (Winawer, 2000).

Evidence For Screening Benefit

Fecal occult blood test (FOBT): Randomized-controlled trials have shown that annual and biennial FOBT screening reduces colorectal cancer mortality by 15% to 33% (Table 6) and reduces incidence by 17% to 20%. However, none of these studies showed a reduction in overall mortality.

Table 6: Randomized controlled screening trials of fecal occult blood testing (FOBT)

Site (Reference) Testing Interval	Subjects	Study Duration	CRC Mortality Rate (per 1,000 person years)	CRC Mortality Reduction
Minnesota (Mandel, 1999) Annual/Biennial	48,000	18 years	Screened (annual): 0.50 (biennial): 0.62 Control: 0.75	33% 21%
United Kingdom (Hardcastle, 1996) Biennial	150,000	14 years	Screened: 0.60 Control: 0.70	15%
Denmark (Kronborg, 1996) Biennial	62,000	10 years	Screened: 0.73 Control: 0.89	18%

Flexible sigmoidoscopy: Case-control studies have suggested that sigmoidoscopic screening could reduce mortality from colorectal cancer by 59% to 75%. In recent comparisons with colonoscopy, flexible sigmoidoscopy would miss half the cases with advanced proximal colonic neoplasia (adenoma ≥ 1 cm, villous adenoma, high grade dysplasia, invasive cancer) because there were no distal polyps. However, all patients with distal adenomas found on flexible sigmoidoscopy are recommended to undergo colonoscopy. With this strategy, 80% of patients with advanced neoplasia would ultimately be diagnosed (Lieberman, 2000). The impact of missing these proximal neoplasias on colorectal cancer mortality is unknown. Randomized controlled trials of screening sigmoidoscopy are ongoing.

Colonoscopy: The effectiveness of colonoscopy with polypectomy on colorectal cancer incidence was indirectly demonstrated in the National Polyp Study (Winawer, 1993). Colorectal cancer incidence was reduced by more than 75% in comparison to expected cancer rates derived from several reference groups. Although recent studies have shown colonoscopy to be more sensitive in detecting advanced neoplasia than fecal occult blood testing, flexible sigmoidoscopy, or double-contrast barium enema, there is still no direct evidence that colonoscopy screening can reduce colorectal cancer mortality.

Screening Rates

Although colorectal cancer screening is effective in reducing incidence and mortality, screening rates are relatively low. Consequently a substantial proportion of colorectal cancers are detected at an advanced, less curable stage.

- Combined data from the 2004 and 2006 New Mexico Behavioral Risk Factor Surveillance System (BRFSS) surveys showed that 53.1% of New Mexican respondents were considered currently screened based on having had either FOBT within the previous year and/or a lower endoscopy within the previous ten years (Table 7).
- National data from the combined 2002 and 2004 BRFSS surveys showed that 57.3% of respondents age 50 years or older reported undergoing a fecal occult blood test in the past year and/or a lower endoscopy in the past 10 years (CDC, 2006).
- In the 2000 National Health Interview Survey, 44.5% of men and 41% of women 50 years and older reported undergoing either fecal occult blood testing within the past year or a colonoscopy, sigmoidoscopy, or proctoscopy within the past 10 years (Seeff, 2004).

Table 7: Colorectal cancer screening (FOBT, Lower Endoscopy), New Mexico, BRFSS: 2004, 2006

	Never (%)	FOBT In Past Year (%)	Lower Endoscopy In Past 10 Years (%)	FOBT In Past Year and/ or Lower Endoscopy In Past 10 Years (%)
Total	35.5	15.5	47.6	53.1
Sex				
Male	36.3	16.8	47.6	53.5
Female	34.8	14.3	47.5	52.8
Age				
50-54	52.3	9.9	31.4	36.7
55-64	33.7	15.6	49.6	55.4
65-74	26.0	19.9	57.3	64.2
75+	27.8	17.3	53.9	57.9
Race/Ethnicity				
White	29.3	16.1	51.9	57.6
Hispanic	46.5	14.1	40.3	45.7
American Indian	58.4	11.0	26.8	33.2
Black	36.7	18.1	52.3	54.8
Health Care Coverage				
Yes	31.8	16.6	50.8	56.6
No	64.1	6.9	22.8	27.4
Education				
Some High School	54.7	10.5	34.0	38.1
H.S. or GED	41.1	14.6	41.8	48.0
Some College	32.0	18.7	48.9	56.5
College Graduate	26.9	15.5	55.9	60.1
Annual Household Income				
<$15,000	50.2	11.7	36.2	41.6
$15,000-$24,999	42.0	16.0	38.2	45.8
$25,000-$49,999	34.6	15.6	47.8	53.0
$50,000-$74,999	32.0	16.5	50.1	56.6
≥ $75,000	24.8	16.7	59.0	64.8

Abbreviations: FOBT = fecal occult blood test (home blood stool test). Lower endoscopy = sigmoidoscopy or colonoscopy.
All observations with missing data have been omitted from the analyses. All data are weighted estimates.
Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004, 2006; New Mexico Department of Health, Public Health Division, Chronic Disease Prevention and Control Bureau, 2007.

Screening Recommendations

Average-risk patients

The patient at average risk is defined as age 50 years and older with none of the following risk factors for colorectal cancer: family or personal history of colorectal cancer or adenomatous polyps, hereditary syndromes, or long-standing inflammatory bowel disease.

Table 8 shows the colorectal cancer screening recommendations from various professional organizations for screening average-risk patients beginning at age 50. Colonoscopy is the preferred test to evaluate abnormal screening findings. Additionally, the American College of Obstetrics and Gynecology recommends colonoscopy as the preferred screening strategy for women because women are more likely than men to have right-sided lesions without distal adenomas (ACOG, 2007). These adenomas would not be detected by screening with flexible sigmoidoscopy (Schoenfeld, 2005).

The U.S. Preventive Services Task Force published evidence-based recommendations for colorectal cancer screening (USPSTF, 2002):

> *"The USPSTF strongly recommends that clinicians screen men and women 50 years of age or older for colorectal cancer.*
>
> *Rationale: The USPSTF found fair to good evidence that several screening methods are effective in reducing mortality from colorectal cancer. The USPSTF concluded that the benefits from screening substantially outweigh potential harms, but the quality of evidence, magnitude of benefit, and potential harms vary with each method.*
>
> *The USPSTF found good evidence that periodic fecal occult blood testing (FOBT) reduces mortality from colorectal cancer and fair evidence that sigmoidoscopy alone or in combination with FOBT reduces mortality. The USPSTF did not find direct evidence that screening colonoscopy is effective in reducing colorectal cancer mortality; efficacy of colonoscopy is supported by its integral role in trials of FOBT, extrapolation from sigmoidoscopy studies, limited case-control evidence, and the ability of colonoscopy to inspect the proximal colon. Double-contrast barium enema offers an alternative means of whole-bowel examination, but it is less sensitive than colonoscopy, and there is no direct evidence that it is effective in reducing mortality rates. The USPSTF found insufficient evidence that newer screening technologies (for example, computed tomographic colography) are effective in improving health outcomes.*
>
> *There are insufficient data to determine which strategy is best in terms of the balance of benefits and potential harms or cost-effectiveness. Studies reviewed by the USPSTF indicate that colorectal cancer screening is likely to be cost-effective (less than $30,000 per additional year of life gained) regardless of the strategy chosen.*
>
> *It is unclear whether the increased accuracy of colonoscopy compared with alternative screening methods (for example, the identification of lesions that FOBT and flexible sigmoidoscopy would not detect) offsets the procedure's additional complications, inconvenience, and costs."*

Table 8: Recommended screening tests and intervals for average-risk patients

Test	U.S. Preventive Services Task Force (Pignone, 2002)	American Cancer Society (Smith, 2002)	American Gastroenterological Association (Winawer, 2003)
FOBT	Annual	Annual	Annual
Flex Sig	"Periodic" exam	Every 5 years	Every 5 years
FOBT /Flex Sig	Insufficient evidence to recommend combining tests. FOBT should precede flex sig	Annual and every 5 years, respectively	Annual and every 5 years, respectively
Colonoscopy	Insufficient evidence to recommend routine screening	Every 10 years	Every 10 years
Double- Contrast Barium Enema (DCBE)	Insufficient evidence to recommend routine screening	Every 5 years	Every 5-10 years

Higher-risk patients

Patients with an inherited syndrome of colon cancer, a personal or family history of sporadic colorectal cancer or adenomatous polyps, or a personal history of inflammatory bowel disease have an increased risk for colorectal cancer. Recommendations for colorectal cancer screening of these higher-risk persons are shown in Table 9.

Genetic counseling and testing for hereditary syndromes may be indicated when a patient presents with a history of multiple family members affected by cancers.

- Because testing for hereditary colorectal cancer syndromes such as familial adenomatous polyposis and hereditary non-polyposis colorectal cancer is complex, patients at risk should receive appropriate genetic evaluation and counseling.
- Genetic testing is most likely to be informative if an affected family member is tested first to establish the mutation. A negative test result in the absence of a known familial mutation, though, does not rule out hereditary cancer risk.
- Early screening and appropriate surgical management have been proven to reduce the risk of death from the hereditary syndromes. Management recommendations depend on the family history and specific mutation, but all involve early and frequent colon cancer screening.

Table 9: American Gastroenterological Association recommendations for colorectal cancer screening in higher-risk patients

Risk Level	Definition	Age to Begin Testing	Screening Strategy
High risk	Familial adenomatous polyposis	Age 10-12	Genetic testing or flexible sigmoidoscopy every 1-2 years. Consider colectomy when polyps appear
High risk	Hereditary non-polyposis colorectal cancer	Age 20-25 or 10 years younger than the earliest CRC diagnosis in the family	Colonoscopy every 2 years until age 40, then annually
High risk	Single first-degree relative diagnosed with CRC at age < 60 or multiple first-degree relatives with CRC	Age 40 or 10 years younger than the earliest CRC diagnosis in the family, whichever comes first	Colonoscopy every 3-5 years
Moderately increased risk	Single first-degree relative diagnosed with CRC at age ≥ 60	Age 40	Colonoscopy every 10 years or sigmoid-oscopy every 5 years and annual FOBT
Moderately increased risk	First degree relative(s) diagnosed with adenomas, particularly at age < 60	Consider beginning at age 40 or 5 years younger than earliest polyp diagnosis in the family, whichever comes first	Colonoscopy every 3-5 years

Source: Winawer, 2003

Surveillance

Surveillance testing is intended to identify recurrent adenomatous polyps or colorectal cancer. Surveillance intervals depend upon the type, size, and number of previous neoplasia (Table 10).

Table 10: Surveillance colonoscopy recommendations

Surveillance Category	Interval for Surveillance Colonoscopy
1 or 2 small (<1 cm) tubular adenomas with only low-grade dysplasia	5 – 10 years after initial polypectomy
3–10 adenomas, any adenoma ≥1 cm, any adenoma with villous features or high-grade dysplasia	3 years after initial polyp removal; subsequent interval is 5 years if follow-up colonoscopy is normal
> 10 adenomas at first examination	Less than 3 years (consider genetic counseling)
Curative resection for colorectal cancer	1 year following resection; subsequent intervals are 3 years then 5 years if follow-up colonoscopies are normal

Source: Rex, 2006; Winawer, 2006

Adenomatous polyps

- Persons with advanced or multiple (≥ 3 cm diameter) adenomatous polyps should undergo a follow-up (surveillance) colonoscopy in 3 years. If the first follow-up is normal or if no more than two small (< 1 cm) tubular adenomas are found, the surveillance interval can be extended to 5 years.
- Persons initially found to have only 1 or 2 small tubular adenomas could wait 5 years for their first surveillance colonoscopy.

Colorectal cancer

- Surveillance is also recommended for individuals undergoing curative resection for colorectal cancer. A colonoscopy should be performed 1 year after the resection (or 1 year after the colonoscopy performed to clear the colon of synchronous disease). If the follow-up colonoscopy is normal, then the next surveillance interval should be 3 years (Rex, 2006).
- If this first examination is normal, then colonoscopy should be offered after 3 years. If this examination is normal then patients should undergo surveillance colonoscopies every 5 years.

Discontinuing Screening

There is no consensus on when to stop colorectal cancer screening. The FOBT screening studies usually excluded subjects older than 75 or 80 years although colorectal cancer incidence and mortality increase with age. Mortality differences between the screened and unscreened groups first emerged after about 3 to 4 years of follow-up. This suggests that screening could be discontinued for patients with limited life expectancy (< 5 years) based on age or comorbidity. Particularly for elderly patients, providers should consider discussing the benefits and risks of screening on an individual basis, focusing on overall state of health, preferences towards testing and treatment, and the importance of potentially preventing future morbidity and mortality (USPSTF, 2002).

Emerging Testing Options

CT colonography

Abdominal helical computed tomography with virtual reality computer technology represents a new diagnostic imaging technique for colorectal cancer screening. A standard colon lavage preparation is still required followed by the insertion of air into the rectum to distend the colon.

CT colonography (CTC), with 3-dimensional imaging and elaborate stool tagging with contrast agents, was compared with optical colonoscopy in 1,233 asymptomatic adults. CTC had high sensitivity (88.7% to 93.9%) and specificity (79.6% to 96.0%) for polyps 6 mm and 10 mm, respectively (Pickhardt, 2003).

- While only 7.5% of subjects would be referred for colonoscopy based on having polyps ≥ 10 mm, 29.7% would be referred if the threshold were 6 mm. However, a recent observational study reported that only 13% of subjects had polyps ≥ 6 mm on CTC (Kim, 2007). The overall detection of advanced adenomas and carcinomas was similar between CTC (3.2%) and colonoscopy (3.4%).
- Limitations of CTC are the difficulty in identifying right-sided and flat lesions, expense, and the considerable time required for radiologists to perform the procedure. No studies have evaluated whether colorectal cancer screening with CTC improves clinical outcomes. Reimbursement is limited and CTC is not widely available in New Mexico.

DNA-based stool assays

Detecting mutations in fecal DNA represents another approach to colorectal cancer screening. A recently developed stool assay targeting multiple genetic markers has a high sensitivity for cancer and polyps ≥ 1 cm. DNA assays can evaluate the entire colon non-invasively without colon lavage, changing dietary habits or stopping medications before testing, or collecting multiple stool specimens.

- A large-scale multi-center study found that fecal DNA was more sensitive than fecal occult blood testing for detecting advanced (≥ 1 cm, villous, high-grade dysplasia) adenomas (15.1% vs. 10.7%) and colorectal cancers (51.6% vs. 12.9%) and equally specific (approximately 95% for advanced neoplasia) (Imperiale, 2004). Reimbursement is limited and tests are not widely available. No studies have evaluated whether colorectal cancer screening with fecal DNA improves clinical outcomes.

Guidelines for Colorectal Cancer Screening Coding and Reimbursement

Coverage for colorectal cancer screening is becoming consistent for most health plans. For primary care providers not performing endoscopic examinations, the major issue is reimbursement for extended counseling time and fecal occult blood testing. In the case of counseling time, providers must distinguish between patients with gastrointestinal symptoms or unusual risk factors and those who are asymptomatic and without risk factors.

Primary care prevention opportunities

Adding colorectal cancer screening counseling to an office visit

Relatively brief counseling may be added to an office visit for a condition that may reflect underlying colorectal cancer or be a cancer risk factor. As described in CPT-4 guidance, if counseling dominates the visit (more than 50%), then total time spent with the patient and family - rather than other criteria - controls the level of evaluation and management service codes listed below:

99201	Problem-focused office visit, new patient	10 min
99202	Expanded problem-focused office visit, new patient	20 min
99203	Detailed office visit, new patient	30 min
99204	Comprehensive office visit, new patient	45 min
99205	Comprehensive complex office visit, new patient	60 min
99212	Problem-focused office visit, established patient	10 min
99213	Expanded problem-focused office visit, established patient	15 min
99214	Detailed office visit, established patient	25 min
99215	Comprehensive office visit, established patient	40 min

For example, counseling an established patient with a personal history of rectal bleeding or previous colorectal polyps for 7 1/2 or more minutes during a 15-minute office visit, would be coded 99213. The extent of counseling must be documented in the medical record.

Some typical conditions or risk factors and their ICD-9 diagnostic codes are listed below:

789.00	Abdominal pain, unspecified
783.21	Abnormal loss of weight
280.9	Anemia, iron deficiency, unspecified
569.3	Bleeding, rectal
578.1	Blood in stool, melena
792.1	Blood in stool, occult
564.0	Constipation
555.9	Crohn's disease, unspecified
556.9	Ulcerative colitis, unspecified
V16.0	Family history of GI Cancer
V10.05	Personal history of colon cancer
V10.06	Personal history of rectal cancer
V12.72	Personal history of colonic polyps

Adding colorectal cancer screening counseling to a prevention examination

Colorectal cancer screening counseling is typically provided as part of a preventive medicine evaluation (well person "check-up").

Codes for this service include:

Age	New Patients	Established Patients
5-11	99383	99393
12-17	99384	99394
18-39	99385	99395
40-64	99386	99396
65+	99387	99397

No additional charge is appropriate in this situation.

Coding For Fecal Occult Blood Testing

Fecal occult blood testing for colorectal cancer screening usually refers to a guaiac-based test. Patients collect stool samples at home on a card(s) and return them to the practitioner's office for developing. Home colorectal cancer screening testing every twelve months is a covered benefit for Medicare patients over 50 years of age. Medicare will deny the test if performed less than 11 months since the previous test.

Effective January 1, 2007 the CPT-4 code required for Medicare reimbursement and recognized by most other health plans is:

82270 Blood, occult, by peroxidase activity (e.g. Guaiac), qualitative; feces, consecutive collected specimens with single determination, for colorectal neoplasm screening (i.e., patient was provided three cards or single triple card for consecutive collection).

The diagnosis code that should be used is:

V76.41 Colorectal cancer screening.

Coverage of Sigmoidoscopy, Colonoscopy and Barium Enema

Medicare - and many other health plans - now cover these procedures for screening of both average and high-risk persons. Medicare will cover these screening procedures for beneficiaries who are not at high risk at age 50 or above.

Sigmoidoscopy is covered every four years or 119 months following the month in which the last screening colonoscopy was performed.

Colonoscopy is covered every 10 years, but not within 47 months of a screening sigmoidoscopy, if the beneficiary is not high risk. High-risk beneficiaries are covered every 2 years regardless of age.

Barium enema is covered every 4 years for beneficiaries not at high risk. High-risk beneficiaries are covered every 2 years regardless of age.

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Chapter 3: Colorectal Cancer Treatment

Treatment Options

Treatment options depend upon the tumor stage (see Page 12) and whether the tumor is located in the rectum or the colon (Table 11). Removing pre-malignant polyps with colonoscopy or surgical resection can prevent colorectal cancer.

Table 11: Treatment options for colorectal cancer

Stage	Treatment Options
0	• Polypectomy or colon resection
I	• Wide surgical resection
II	• Wide surgical resection • Consider clinical trials evaluating chemotherapy, radiation therapy, or biologic therapy
III	• Wide surgical resection • Chemotherapy or clinical trials
IV	• Surgical resection or bypass of obstructing or bleeding primary lesions in selected cases • Surgical resection of isolated metastases (liver, lung, ovaries) • Chemotherapy • Clinical trials • Palliative radiation

Source: National Cancer Institute, www.cancer.gov/cancertopics/pdq/treatment/colon/healthprofessional.

Early-Stage Cancers

Treatment: Colorectal cancers localized to the bowel are highly treatable and often curable with surgical resection of the tumor alone. Adding chemotherapy or radiation therapy does not improve overall cure rates for early-stage cancers. Most of these patients will not require a colostomy if the tumor is sufficiently far from the anus to allow a primary re-anastomosis. The National Veterans Affairs Surgical Quality Improvement Project reported a 6% 30-day mortality following resection and primary re-anastamosis for surgeries performed between 1991 and 1995. The most common complications following bowel surgery are shown in Table 12.

Table 12: Treatment complications for bowel surgery

Complication	Percent
Prolonged ileus	8%
Pneumonia	6%
Difficulty weaning from the ventilator	6%
Urinary tract infection	5%

Source: Longo, 2000

Advanced-Stage Cancers

Treatment: More advanced tumors that have spread through the bowel wall may require additional treatment with chemotherapy and/or radiation (particularly for rectal cancers). In the absence of distant metastasis, some patients with advanced disease may undergo a primary resection with pelvic exenteration. Colorectal cancer most commonly metastasizes to the liver; these metastases will also be treated with chemotherapy though some may be resectable. Even if the metastases are unresectable, primary tumors may be resected to prevent bowel obstruction. Patients can also be considered for radiofrequency ablation, cryosurgery, or infusional chemotherapy if the liver is the only site of metastatic disease. However, these treatments provide only temporary control, usually for 4-6 months, before liver metastases recur or cancer develops elsewhere.

Clinical trials: Eligible patients with advanced-stage cancers should be considered for controlled clinical trials evaluating the efficacy of various chemotherapy regimens, radiation therapy, or biological therapy. Information about such trials is available from the National Cancer Institute: www.cancer.gov/clinicaltrials.

Advance directives and palliative care: These should be routinely discussed soon after diagnosis for patients with advanced disease.

- Hospice care is an important option for patients with progressive metastatic disease despite available therapies. Resuscitating these patients may be inappropriate if it prolongs life of poor quality and certainly if it violates advance directives. The vast majority of patients can be kept quite comfortable through proper palliative care.
- Liver metastasis usually cause little pain. The usual symptoms of liver involvement are anorexia, jaundice, nausea, and increasing somnolence, which can lead to hepatic coma.
- A serious terminal morbidity is recurrent bowel obstruction, which can be treated surgically or with colonoscopic stent placement if there is an intraluminal lesion. However, if the recurrent bowel obstruction is due to peritoneal carcinomatosis, then the patient will require suctioning either through gastrostomy or nasogastric tubes.

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Chapter 4: Selected Resources

Colorectal Cancer Information Sources

American Cancer Society

National
Toll-free phone: 1-800-ACS-2345 (1-800-227-2345)
Web site: www.cancer.org

The American Cancer Society is the nationwide, community-based, voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives and diminishing suffering from cancer, through research, education, advocacy, and service. The American Cancer Society offers a variety of services to cancer patients and their families.

Cancer Genetics Clinic

University of New Mexico Cancer Center
Hereditary Cancer Assessment Program
900 Camino de Salud NE
1 University of New Mexico
Albuquerque, NM 87131-5306

Main phone: 505-272-6545
Appointment phone: 505-925-4308
Statewide toll-free phone: 1-800-432-6806

This service is provided through the Hereditary Cancer Risk Assessment Program at the University of New Mexico Cancer Center. Individuals at risk for inherited cancer may be referred by any health care provider or they may self-refer for consultation with a trained and qualified genetic counselor. The referring clinician will be sent a summary of the consultation as well as follow-up recommendations for the patient.

Centers for Disease Control and Prevention

Selected web sites:

General: www.cdc.gov
Cancer prevention program: www.cdc.gov/cancer/dcpc.htm
Colorectal cancer Screen for Life Campaign: www.cdc.gov/cancer/screenforlife
Spanish language: www.cdc.gov/spanish
Behavioral Risk Factor Surveillance System: www.cdc.gov/brfss

The Centers for Disease Control and Prevention (CDC) is recognized as the lead federal agency for protecting the health and safety of people — at home and abroad — providing credible information to enhance health decisions, and promoting health through strong partnerships. The Centers for Disease Control and Prevention's Division of Cancer Prevention and Control (DCPC) conducts, supports, and promotes efforts to prevent cancer and to increase early detection of cancer. DCPC works with partners in the government, private, and nonprofit sectors to develop, implement, and promote effective cancer prevention and control practices nationwide. The Division's activities include monitoring cancer incidence and mortality, supporting cancer prevention programs, funding research, developing educational programs, and providing information services.

Colon Cancer Alliance

1200 G Street, NW, Suite 800
Washington, DC 20005

Phone: 212-627-7451
Toll-free helpline: 1-877-422-2030
Web site: www.ccalliance.org

The Colon Cancer Alliance (CCA) is an organization of colon and rectal cancer survivors, caregivers, people with a genetic predisposition to the disease, and other individuals touched by colorectal cancer. The CCA provides patient support services and facilitates access to information, educates the public about colorectal cancer and encourages early detection through appropriate screening, supports research for more effective treatment and cure, and advocates legislation to support public funding for all cancers, particularly colorectal cancer.

National Cancer Institute

Selected web sites:

General: www.cancer.gov
Clinical trials: www.cancer.gov/clinicaltrials

The National Cancer Institute (NCI), one of the National Institutes of Health, supports the following services: the Cancer Information Service and Physician Data Query. These and other resources are highlighted below.

» **Cancer Information Service (CIS)**

Toll-free phone: 1-800-4-CANCER (1-800-422-6237)
TTY: 1-800-332-8615

The CIS provides a nationwide telephone service for cancer patients and their families, the public, and health care professionals. CIS can provide specific information in understandable language about particular types of cancer as well as information on state-of-the-art care and the availability of clinical trials.

CIS hours are Monday through Friday, 9 a.m. to 4:30 p.m. local time.

» **Physician Data Query (PDQ®)**

Web site: www.cancer.gov

The PDQ® is a comprehensive cancer information database containing up-to-date information about cancer treatment, supportive care, screening, prevention, genetics, and complementary and alternative medicine (CAM). The database also contains abstracts of clinical trial protocols.

PDQ® was developed by the NCI with the assistance of national cancer experts and provides peer-reviewed cancer information summaries for health professionals (technical) and patients (nontechical).

PDQ® information can be accessed several ways. Cancer information summaries can be found at www.cancer.gov/cancertopics. Clinical trials information can be found at www.cancer.gov/clinicaltrials. Cancer patients, their families, and the public can call the Cancer Information Service (CIS) at 1-800-422-6237. CIS Information Specialists use PDQ® information to answer callers' questions.

National Coalition for Cancer Survivorship (NCCS)

1010 Wayne Avenue, Suite 770
Silver Spring, MD 20910

Toll-free phone: 1-888-650-9127
Fax: 301-565-9670
Web site: www.canceradvocacy.org

The NCCS is a network of cancer survivors and their organizations across the United States. The NCCS helps cancer survivors and their families start local support groups or contact existing ones, sponsors a clearinghouse of national resources for support and information on life after a cancer diagnosis, provides advice to reduce cancer-based discrimination, and serves as a unified voice of cancer survivors. To find a local NCCS group, contact the national office at the number above.

National Hospice and Palliative Care Organization

1700 Diagonal Road, Suite 625
Alexandria, VA 22314

Phone: 703-837-1500
Toll-free phone: 800-658-8898
Spanish-language helpline: 1-877-422-2030
Fax: 703-837-1233
Web site: www.nhpco.org

The National Hospice and Palliative Care Organization is an affiliate of the National Hospice Foundation (NHF). Its mission is to expand America's vision for end of life care. The NHF, a charitable organization, was created in 1992 to broaden America's understanding of hospice through research and education. The NHF can be found at www.nationalhospicefoundation.org.

National Library of Medicine NLM Gateway

Web site: gateway.nlm.nih.gov

NLM Gateway allows users to search online in multiple retrieval systems at the National Library of Medicine (NLM). The current gateway searches MEDLINE/PubMed, OLDMEDLINE, LOCATORplus, MEDLINEplus, ClinicalTrials.gov, DIRLINE, meeting abstracts, and HSRProj.

New Mexico Clinical Prevention Initiative

7770 Jefferson NE, Suite 400
Albuquerque, NM 87109

Phone: 505-828-0237
Statewide toll-free phone: 1-800-748-1596
Fax: 505-828-0336
Web site: www.nmms.org

The Clinical Prevention Initiative (CPI) - a collaboration of the New Mexico Medical Society and the New Mexico Department of Health - was created to assist office-based practitioners with the provision of clinical prevention services. Materials and office consultations will be provided free of charge upon request.

New Mexico Department of Health Comprehensive Cancer Program

5301 Central NE, Suite 800
Albuquerque, NM 87108

Phone: 505-841-5860
Web site: www.cancernm.org

People Living Through Cancer, Inc.

3401 Candelaria NE, Suite A
Albuquerque, NM 87017

Tel: 505-242-3263
Toll-free phone: 1-888-441-4439
Fax: 505-242-6756
Email: pltc@pltc.org

People Living Through Cancer (PLTC) was founded by and for those coping with a cancer diagnosis or the cancer of a friend or loved one. PLTC provides support groups for survivors and family members, publishes the quarterly *Living Through Cancer* journal, trains those wishing to improve their skills at giving support, maintains the largest cancer-related library for health care consumers in New Mexico, provides a telephone "lifeline" offering immediate support, information and referrals, and puts on an annual statewide survivorship conference.

United Ostomy Associations of America, Inc.

Toll-free phone: 1-800-826-0826
Website: www.uoaa.org
E-mail: info@uoaa.org

The UOA consists of over 400 chapters across North America and provides a toll free number to request assistance. Available are their quarterly newsletter, "The Ostomy Quarterly," patient visiting and support, and a variety of publications for the rehabilitation and support of ostomates.

Colorectal Cancer Screening Patient Handouts

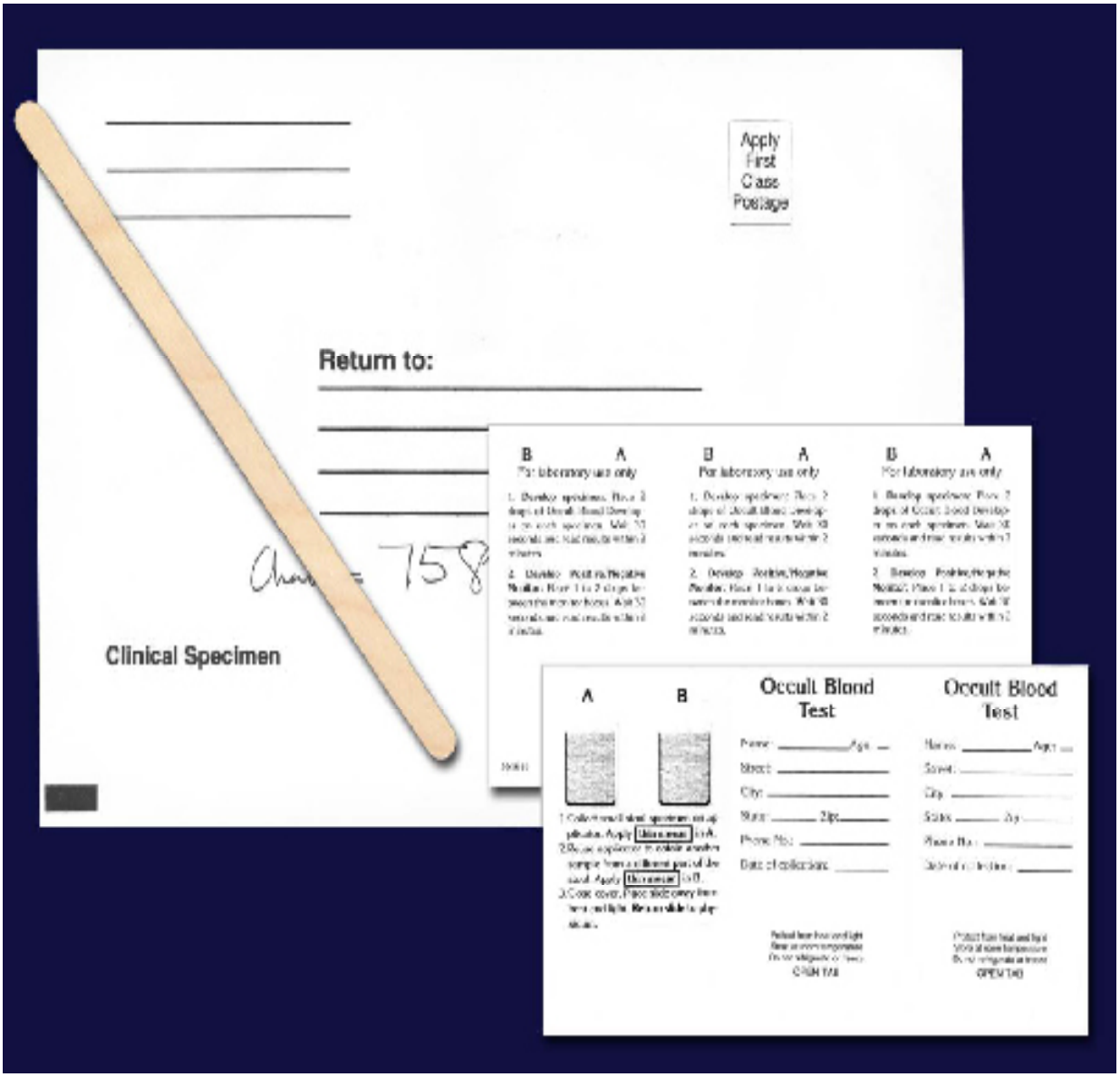
The following pages illustrate colorectal cancer screening tests (Fecal Occult Blood Test [FOBT], Flexible Sigmoidoscopy, Colonoscopy, Double-Contrast Barium Enema [DCBE]), and may be copied to use as patient education materials.

Each handout describes basic procedures about each test and may be appropriate for patients considering colorectal cancer screening, or those scheduled for a screening test.

Fecal occult blood test (FOBT)

This test checks for occult (hidden) blood in the stool. You receive a test kit from your doctor or health care provider. At home, you place a small amount of your stool from three bowel movements in a row on test cards. You return the cards to your doctor's office or a lab, where the stool samples are tested for hidden blood.

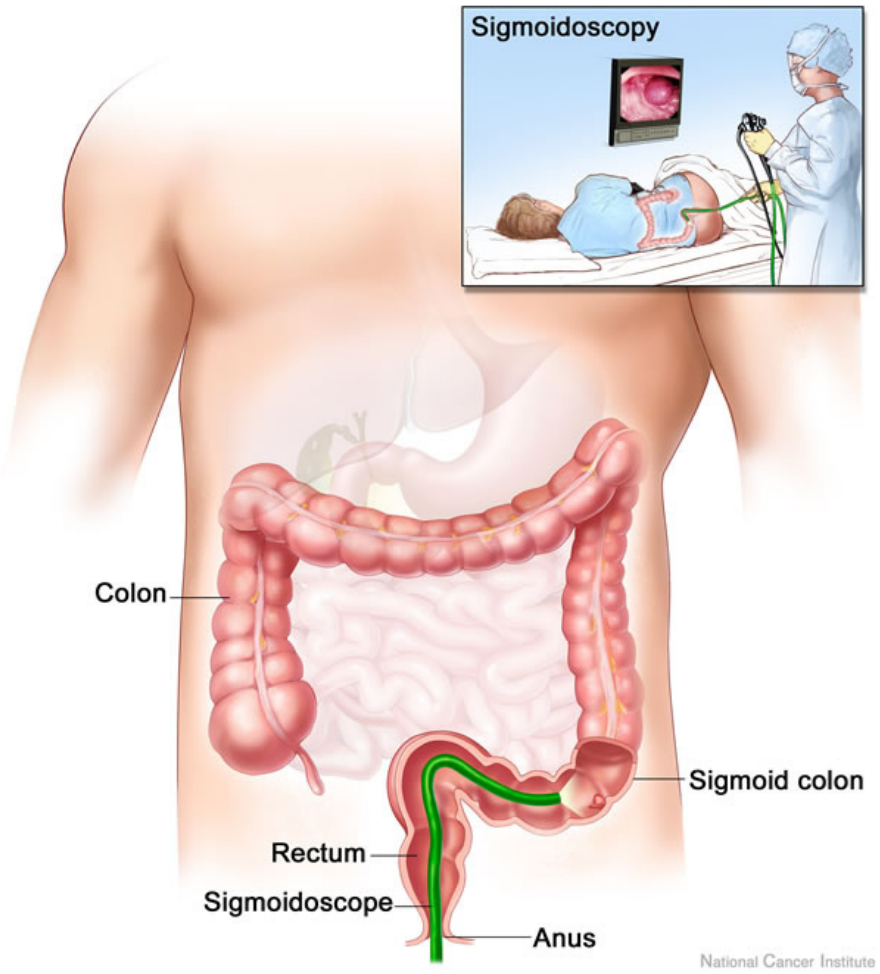
Example of Fecal Occult Blood Test (FOBT) card



Flexible sigmoidoscopy

This test allows the doctor to examine the lining of your rectum and lower part of your colon using a thin, flexible, lighted tube called a sigmoidoscope. It is inserted into your rectum and lower part of the colon.

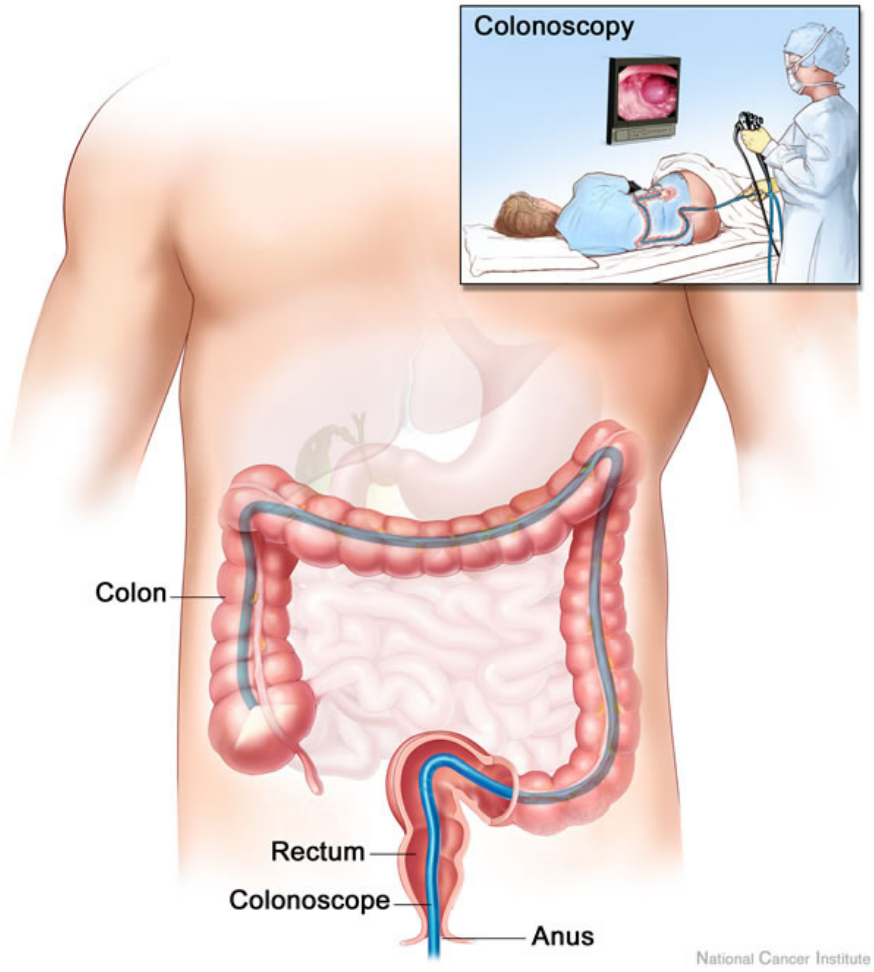
Example of Flexible Sigmoidoscopy



Colonoscopy

This test is similar to flexible sigmoidoscopy, except it allows the doctor to examine the lining of your rectum and entire colon using a thin, flexible, lighted tube called a colonoscope. It is inserted into your rectum and colon. The doctor can find and remove most polyps and some cancers.

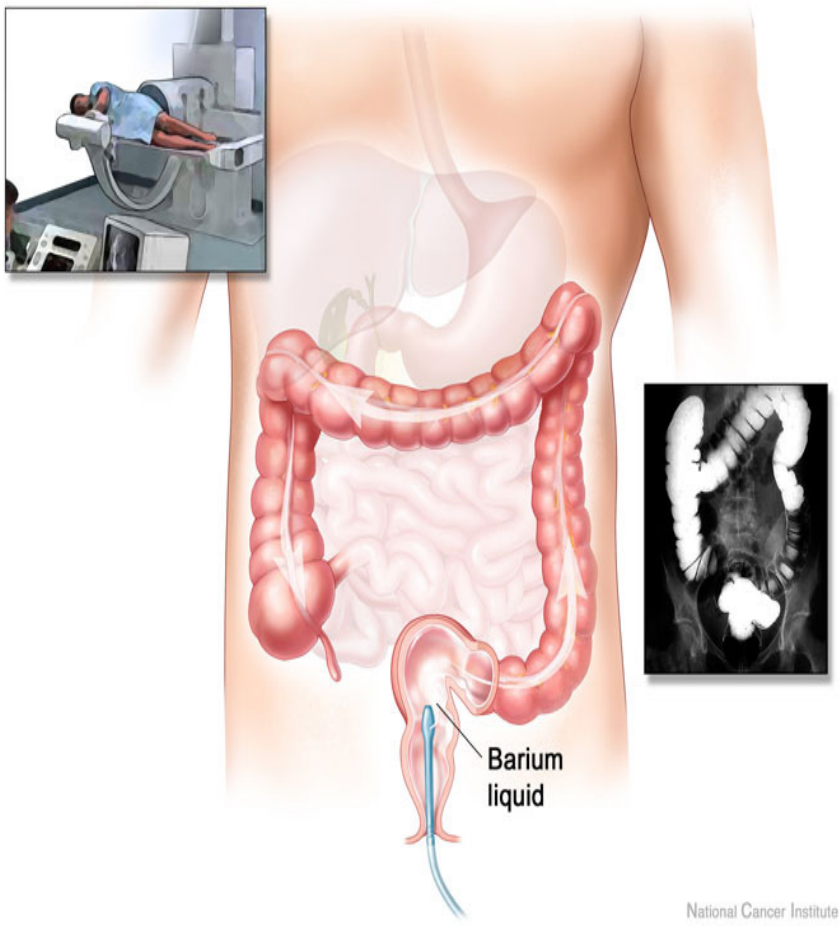
Example of Colonoscopy



Double-contrast barium enema (DCBE)

This test allows the doctor to see an x-ray image of the rectum and entire colon. First you receive an enema with a liquid called barium that flows from a tube into the colon, followed by an air enema. The barium and air create an outline around your colon, allowing the doctor to see if abnormalities are present.

Example of Double-Contrast Barium Enema (DCBE)



Chapter 5: Continuing Medical Education (CME) Questions

1. An effective colorectal cancer screening program would be expected to accomplish all of the following except:
    a. Reduce mortality from colorectal cancer
    b. Decrease health care costs for screening
    c. Cause a shift in diagnosed cancers towards an earlier stage
    d. Reduce the incidence of colorectal cancer

2.. Which colorectal cancer screening or prevention strategy has been proven in randomized controlled trials to reduce colorectal cancer incidence?
    a. Increasing dietary fiber
    b. Taking non-steroidal anti-inflammatory drugs
    c. Performing annual fecal occult blood testing
    d. Undergoing colonoscopy

3. The New Mexican population group with the highest colorectal cancer incidence rate is:
    a. White males
    b. American Indian females
    c. Black females
    d. Hispanic males

4. A 54-year-old woman presents to your clinic as a new primary care patient. Review of systems is negative, and her medical history reveals previous "borderline" hypertension that resolved with weight loss. She has no family history of colorectal cancer or adenomatous polyps. She had a fecal occult blood test a little over a year ago, which she reports was normal. She has never had an endoscopic colorectal exam. She was confused by an article she read recently about colorectal cancer screening, and asks you to discuss screening with her. All of the following regarding colorectal cancer screening for this patient are true except:
    a. She should be screened as an "average-risk" person
    b. Colorectal cancer screening can reduce cancer incidence and mortality
    c. She should be screened as a "higher-risk" person
    d. Fecal occult blood testing, flexible sigmoidoscopy, double-contrast barium enema, or colonoscopy are all acceptable options

5. A 40-year-old asymptomatic man reports to his primary care provider that his 43-year-old brother has recently been diagnosed with a right-sided colon cancer. On review of his family history, there is a history of colon cancer in his mother and a maternal aunt. What screening test would you recommend?
    a. Hemoccult
    b. Colonoscopy
    c. Barium enema
    d. Flexible sigmoidoscopy
    e. Fecal DNA testing

Answers: 1.b 2.c 3.d 4.c 5.b

The Continuing Medical Education (CME) Credit/Response Form and Colorectal Cancer Handbook Evaluation

Name_____

Address_____

Phone_____**Email**_____

Please check one: ____MD/DO ____RN/LPN ____Other (please define below)

____PA ____NP _____

Answers to Questions on Page 42:

1. ____ 2. ____ 3. ____ 4. ____ 5. ____

Evaluation of the Colorectal Cancer Handbook, 3rd Edition:

1. Overall, I am satisfied with the information in the handbook. _____Yes _____ No
   If no, please explain: _____
   _____
2. The handbook delivered objective, evidence-based content. _____ Yes _____ No
3. Was there a commercial bias in the handbook? _____Yes _____ No
   If yes, please explain: _____
   _____
4. The handbook was clear, concise, and effective. _____ Yes _____ No
5. Will you change your practice based on this material? ____Yes _____No
   a) If yes, please describe changes you plan to make:
   1. _____
   2. _____
   3. _____

   b) If no, please explain:
   1. _____
   2. _____
   3. _____

May we follow up with you in 3-6 months regarding the material presented in this handbook and ask about any related practice changes? ____Yes _____No

Please complete and mail or fax a copy of this to:

Clinical Prevention Initiative
New Mexico Medical Society
7770 Jefferson NE, Suite 400
Albuquerque, NM 87109

FAX (505) 828-0336

CME Version:
January 2008-January 2011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Prevention
Initiative
NEW MEXICO
MEDICAL SOCIETY
NEW MEXICO
DEPARTMENT OF
HEALTH