Trends in Colorectal Cancer Screening Among Maryland Residents Age 65 and Older

Maryland Cancer Survey, 2002-2006

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Colorectal cancer (CRC)

Background

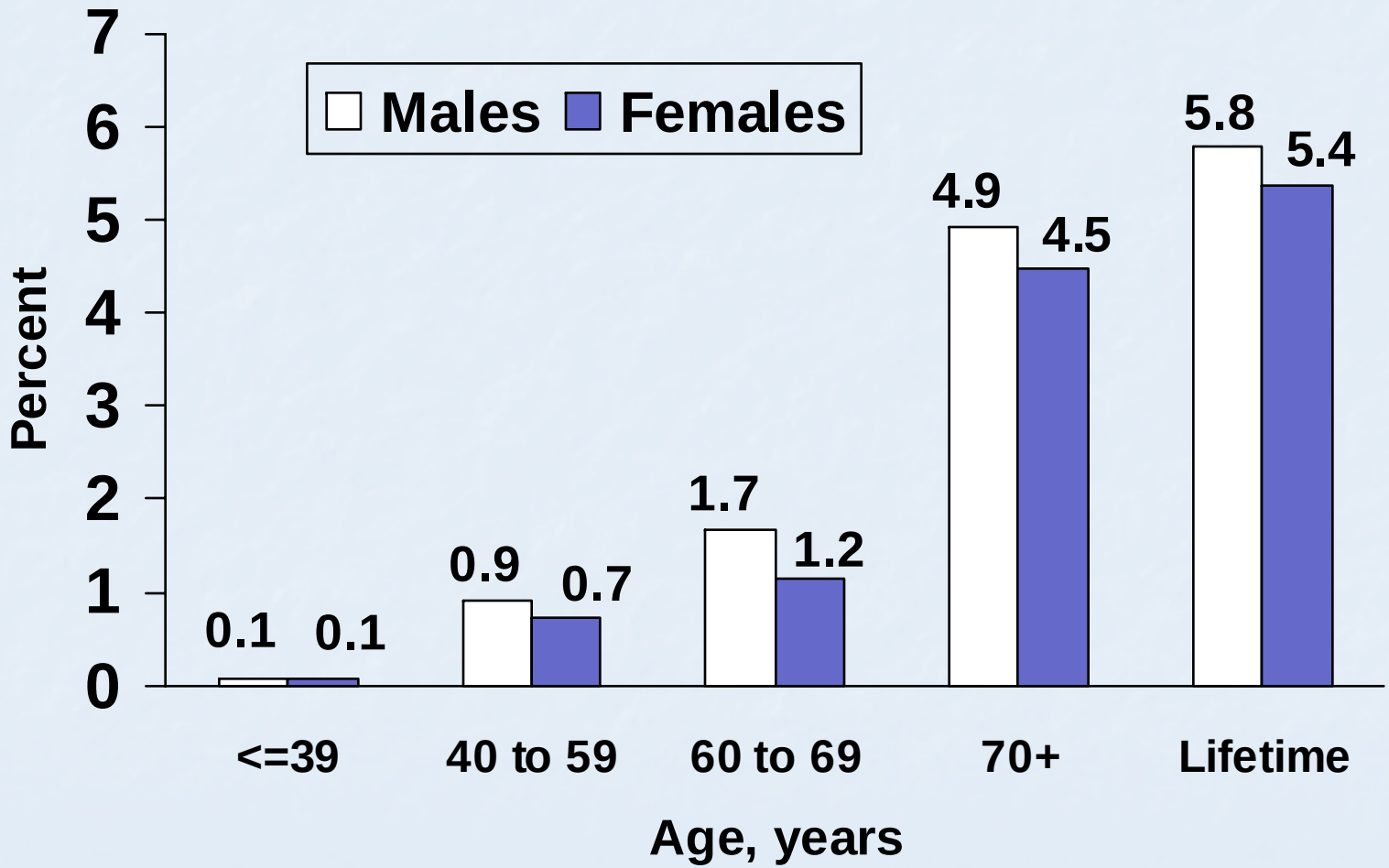
- Fourth most common cancer in Maryland (excluding non-melanoma skin cancer)
- Second leading cause of cancer deaths (after lung cancer)

Key risk factors

- Older age
- Personal or family history of CRC or adenomas
- Personal history of inflammatory bowel disease

Highly preventable through screening

Probability of Developing CRC in U.S. by Age and Gender



Adapted from Jemal A et al. Cancer Statistics 2007. CA Cancer J Clin 2007; 57:43-66.

CRC Screening Recommendations[1,2]

Age

- Start at age 50 (if average risk)
- Earlier if at increased risk
- No upper age limit

Any of following tests:

- Annual fecal occult blood test (FOBT) or fecal immunochemical test (FIT)
- Flexible sigmoidoscopy every 5 years
- Annual FOBT with sigmoidoscopy every 5 years
- Double-contrast barium enema every 5 years
- Colonoscopy (every 10 years)

[1]Smith RA, Cokkinides V, Eyre HJ. Cancer screening in the United States, 2007. CA Cancer J Clin 2007; 57:90-104 (American Cancer Society guidelines)

[2] USPSTF. Screening for colorectal cancer: recommendations and rationale. 2002. http://www.ahrq.gov/clinic/3rduspstf/colorectal/colorr.htm

Maryland Cancer Survey *

To assess:

- Cancer testing prevalence
- Behavioral risk factors
- Disparities in cancer testing

Overview

- Biennial, population-based survey (started 2002)
- ~ 5,000 Maryland residents
- Age 40 years and older
- Several types of cancer, including CRC
- Computer-assisted telephone interviews (CATI)

* Available at
http://www.fha.state.md.us/cancer/surveillance/html/data_reports.cfm

Current analysis
Rationale

- Older age groups are at increased risk for CRC
- CRC testing prevalence in Maryland is increasing among persons age 50 years and older[1]
- Medicare coverage for CRC screening tests expanded in recent years[2]
- What are trends for Maryland residents age 65 and older?

[1]Steinberger EK et al. MMWR 2007;56:932-936

[2] Gross CP et al. JAMA 2006;296:2815-2822

Current analysis
Objectives

For Maryland residents age 65 and older, examined MCS 2002, 2004, and 2006

- Prevalence of ever being tested for CRC
- Prevalence of up-to-date testing
- Changes in testing prevalence over time
- Evidence of disparities

Current analysis
Methods

Bivariate analysis

Prevalence estimates

Trends over time

- Ever tested for CRC
- Up-to-date CRC testing

Logistic regression

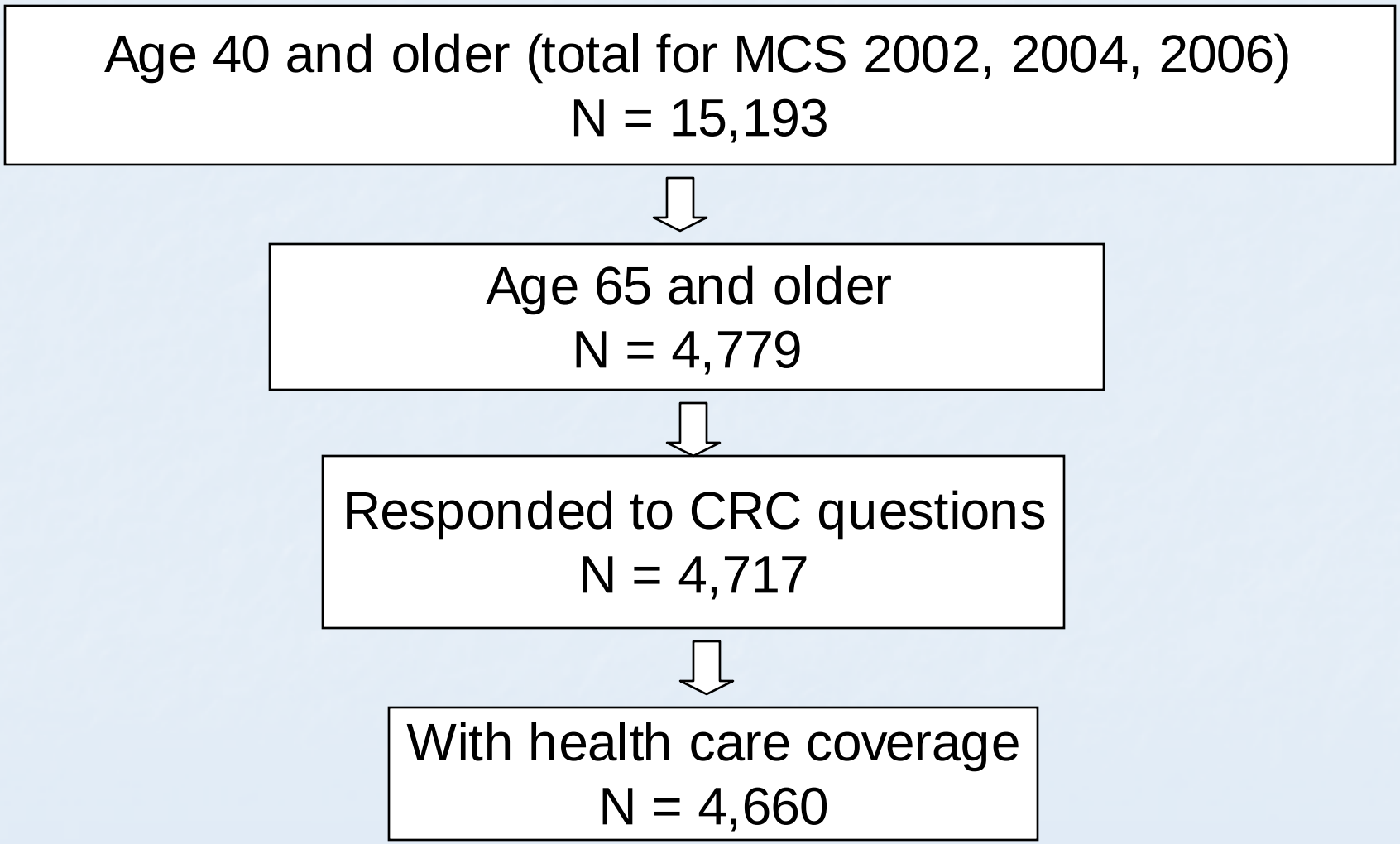
Dependent variables

- Ever tested for CRC
- Up-to-date CRC testing

Independent variables

- Survey year (2006 vs 2002)
- Gender
- Age
- Area of residence (rural/urban)
- Race
- Employment status
- Educational attainment
- Family history of CRC

Selection criteria for study sample



Demographic characteristics
Percent of study sample age 65+ years
(weighted to Maryland population age 65 years and older)

Variable	2002 (n=1470)	2004 (n=1521)	2006 (n=1669)
Sex			
Male	40.5	40.7	40.5
Female	59.5	59.3	59.5
Area of residence			
Urban	77.2	77.2	76.9
Rural	22.8	22.8	23.1
Age			
65-69 years	28.2	28.0	27.6
70-74 years	30.5	28.7	28.6
75 years and older	41.2	43.3	43.9

Demographic characteristics
Percent of study sample age 65+ years
(weighted to Maryland population age 65 years and older)

Variable	**2002** (n=1470)	**2004** (n=1521)	**2006** (n=1669)
Family history of CRC			
Yes	13.8	12.6	12.3
Race			
White	78.3	78.6	77.7
African American	18.1	18.3	19.4
Other	3.6	3.1	2.9

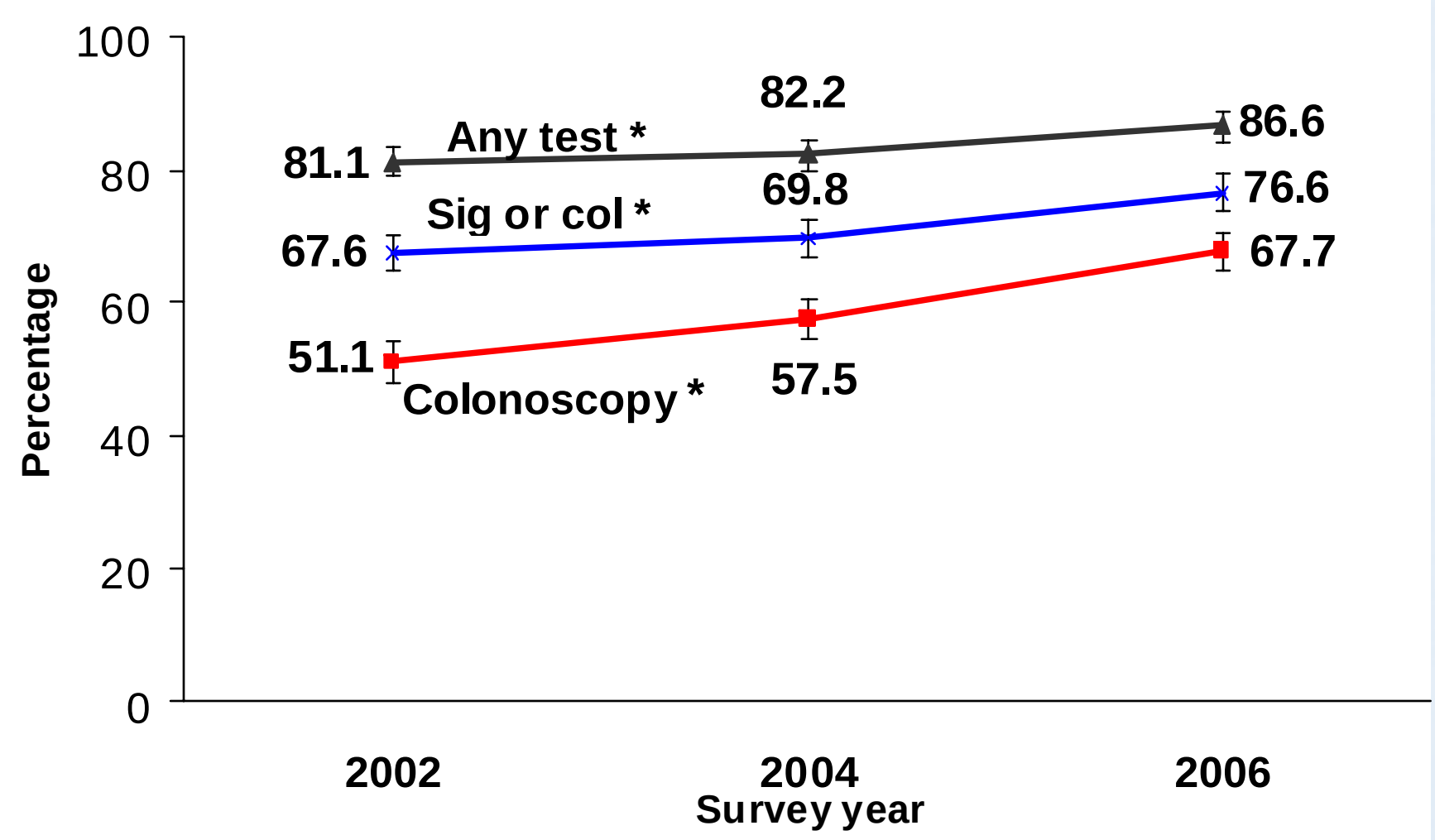
Demographic characteristics
Percent of study sample age 65+ years
(weighted to the Maryland Population, age 65 years and older)

Variable	**2002** (n=1470)	**2004** (n=1521)	**2006** (n=1669)
Education			
Less than high school	16.9	14.1	13.6
High school grad	32.5	33.2	30.6
Some college or more	50.6	52.7	55.8
Employment Status			
Working	10.2	12.2	13.7
Retired	82.2	82.0	77.9
Not working	7.7	5.8	8.4

Trends in prevalence of ever having CRC testing

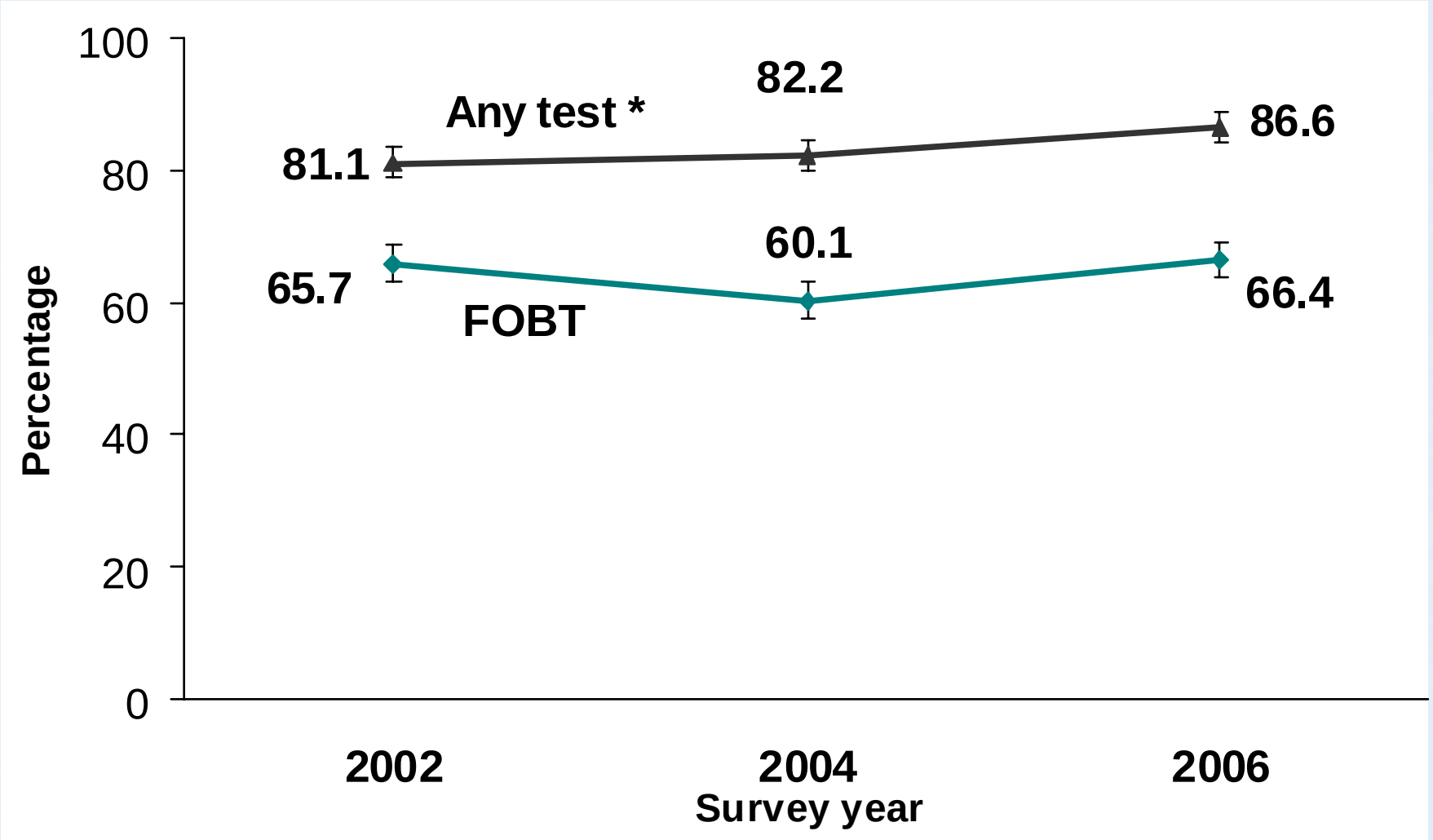
Age 65+ years

Maryland Cancer Survey, 2002 - 2006



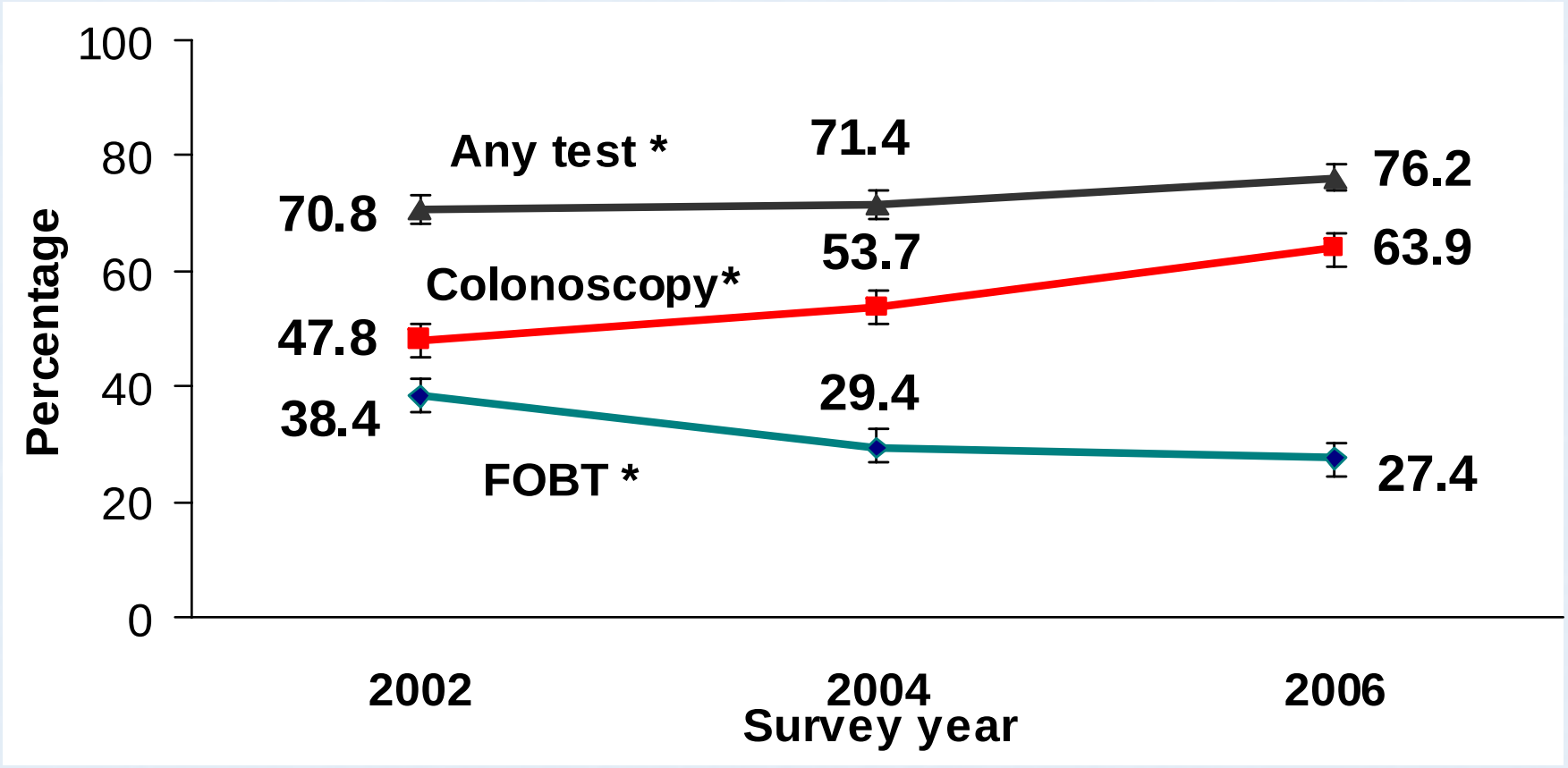
* Statistically significant at $p < 0.05$

Trends in prevalence of ever having CRC testing
Age 65+ years
Maryland Cancer Survey, 2002 - 2006



* Statistically significant at p < 0.05

Trends in prevalence of up-to-date CRC testing
Age 65+ years
Maryland Cancer Survey, 2002 - 2006



*Statistically significant at p<0.05

Adjusted odds ratio for CRC testing, 2006 compared to 2002 (reference)

	Adjusted OR* (95% CI)
Ever tested	
- FOBT	1.04 (0.87-1.24)
- Colonoscopy	2.05 (1.71-2.45)
Up-to-date testing**	
- FOBT	0.60 (0.50-0.72)
- Colonoscopy	1.99 (1.67-2.36)
- Any method	1.31 (1.08-1.59)

Red font indicates results are statistically significant at $p<0.05$ level.

* Adjusted for sex, geographic area, age, race, employment, education, and family history of CRC

** Up-to-date by American Cancer Society guidelines

Summary of trends in CRC testing prevalence - 2002 to 2006

- In Maryland, significant increase in percentage of persons age 65+ ever tested for CRC
  (5.5 percentage points)
- Significant increase in up-to-date testing with colonoscopy among 65+ population
  (16.1 percentage points)
- Clear shift toward colonoscopy
- Decreasing use of sigmoidoscopy and FOBT

Adjusted odds ratio for CRC testing, by race (non-white race* compared to white)

	Adjusted OR (95% CI)**
Ever tested	
- FOBT	0.72 (0.59-0.88)
- Colonoscopy	0.76 (0.62-0.93)
Up-to-date testing	
- FOBT	1.19 (0.97-1.46)
- Colonoscopy	0.71 (0.59-0.87)
- Any method	0.74 (0.60-0.92)

* Black, Asian, American Indian/Alaska Native, Native Hawaiian or other Pacific Islander, multiple race, and unspecified race

** Adjusted for survey year, sex, age, geographic area, employment status, educational attainment, and family history of CRC

Adjusted odds ratio for CRC testing, by area of residence (rural compared to urban)

	Adjusted OR* (95% CI)
Ever tested	
- FOBT	0.78 (0.67-0.90)
- Colonoscopy	0.86 (0.74-0.99)
Up-to-date testing	
- FOBT	0.86 (0.74-1.0)
- Colonoscopy	0.86 (0.74-0.99)
- Any method	0.80 (0.69-0.93)

* Adjusted for survey year, sex, race, age, employment status, educational attainment, and family history of CRC

Adjusted odds ratio for CRC testing, by education (HS or less compared to more than HS)

	Adjusted OR* (95% CI)
Ever tested	
- FOBT	0.64 (0.55-0.75)
- Colonoscopy	0.72 (0.63-0.84)
Up-to-date testing	
- FOBT	0.82 (0.71-0.96)
- Colonoscopy	0.72 (0.62-0.83)
- Any method	0.55 (0.47-0.65)

* Adjusted for survey year, sex, age, race, area of residence, employment status, and family history of CRC

Adjusted odds ratio for CRC testing, by family history of CRC (compared to no family history)

	Adjusted OR* (95% CI)
Ever tested	
- FOBT	1.23 (0.98-1.55)
- Colonoscopy	1.98 (1.56-2.50)
Up-to-date testing	
- FOBT	1.23 (0.99-1.54)
- Colonoscopy	1.99 (1.58-2.51)
- Any method	1.89 (1.42-2.51)

* Adjusted for survey year, sex, age, geographic area, race, employment status, and educational attainment

Predictive Factors for Colonoscopy
Age 65+ years
Maryland Cancer Survey, 2002 - 2006

- Significantly **lower** odds of ever being tested or being up-to-date with colonoscopy if:
  - Non-White race
  - Rural residence
  - Lower educational attainment
  - No family history of CRC

Barriers to CRC testing (2006 data)

Familiarity with CRC tests

- Ever heard of sigmoidoscopy or colonoscopy
  - 87% of non-white respondents
  - 96% of whites ($p<0.001$)

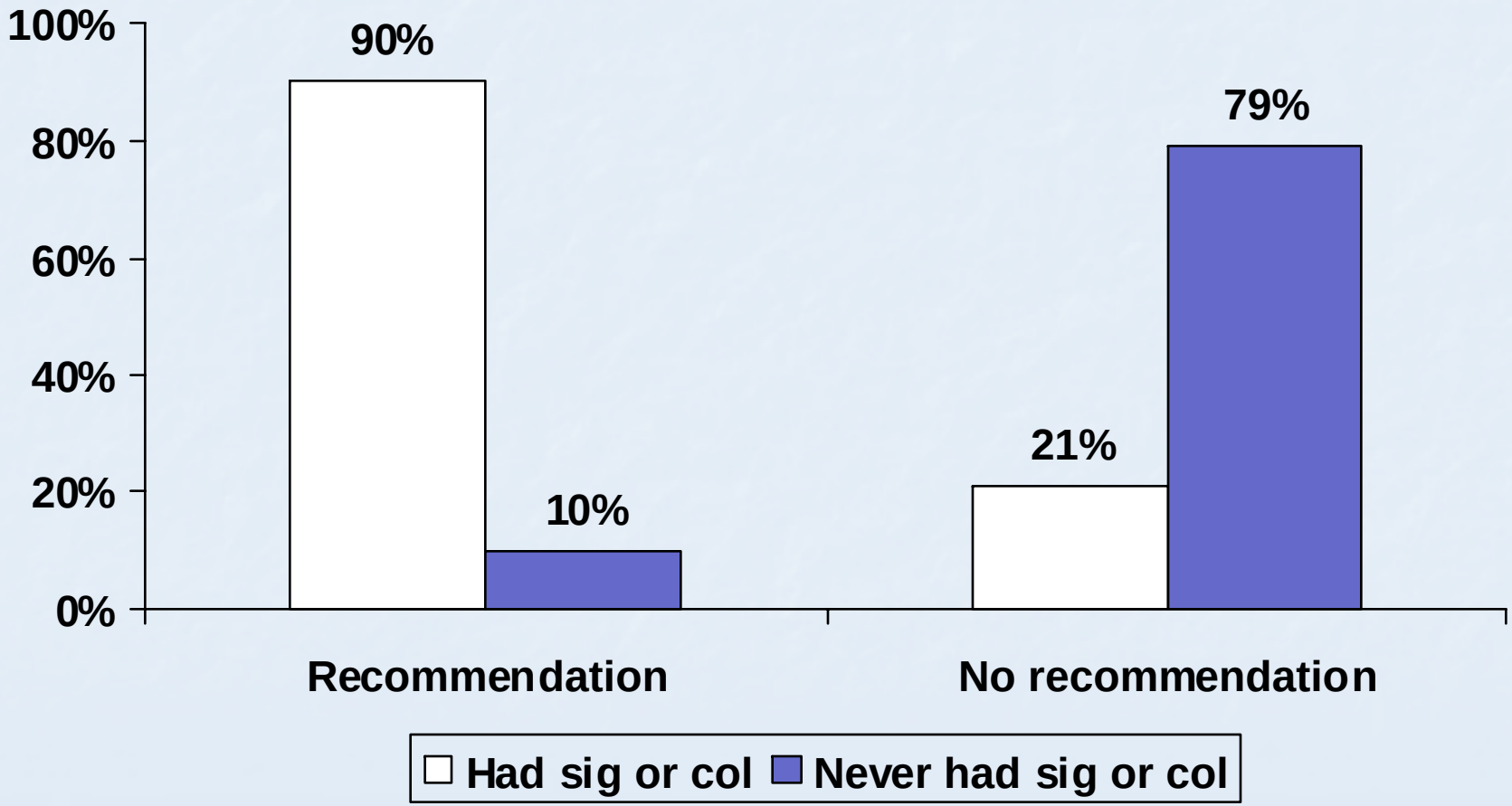
Lack of health care provider recommendation for screening

- Among those who NEVER received doctor recommendation for lower GI endoscopy, only 21% said they ever had the test
- Among those who DID receive a HCP recommendation, 90% were tested

Health care access NOT a barrier in those 65+

- All had health care coverage
- 96% had recent routine checkup

Prevalence of lower GI endoscopy among persons age 65+ with and without doctor recommendation MCS 2006 data



Summary and Conclusions

- Overall high CRC screening prevalence among Maryland residents age 65+
  - 87% ever tested by any method
  - 68% ever had colonoscopy
  - 64% up-to-date with colonoscopy
- Despite having access to care and recent gains in CRC testing, 13% of residents age 65+ have never been tested by any method (2006 MCS)

Summary and Conclusions

- Not all Marylanders have benefited equally from increases in CRC screening
- Among those age 65+, significantly lower odds of ever being tested or of being up-to-date with CRC screening:
  - Non-White residents
  - Rural residents
  - Persons with lower educational attainment (HS diploma or less)
  - Persons with no family history of CRC

Summary and Conclusions

Major factors contributing to increased CRC test use

- Medicare payment for screening colonoscopy (since July 2001)
- CRC education programs for providers and public in Maryland
- Maryland requirements for certain insurers, HMOs, health service plans to provide CRC screening
- No-cost CRC screening for low-income uninsured or under-insured Maryland residents

Strengths and Limitations of Maryland Cancer Survey

Strengths

- Population-based sample, weighted to Maryland population (methods similar to BRFSS)
- Large sample size, targeting age 40 and older
- Elicits specific type of lower GI endoscopy

Limitations

- Self-report survey (responses not verified)
- Low response rates
- No information on specific type of health care coverage
- Exclusions:
  - People without land-line phones
  - Persons not living in private residences
  - Non-English speakers (2002 and 2004)

Recommendations

- Continue CRC public education and outreach programs
  - Expand programs targeted to rural populations and racial minorities
- Inform health care providers
  - Critical importance of recommending CRC screening to all age-eligible patients
- Cut out-of-pocket costs and increase payments for CRC screening under Medicare Part B
  - Eliminate co-insurance, waive deductibles

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