Current Guidelines for Breast Cancer Screening, Diagnosis and Genetic Testing

ACCI
Updates in the Management of Prevalent Cancers in Developing African Countries

Windy Dean-Colomb, MD, PhD

No disclosures.

Breast cancer screening

- Cancer Statistics
- Risk Factors
- Screening guidelines and controversies for at-risk women
- Screening guidleines for high-risk individuals

Women are Important!

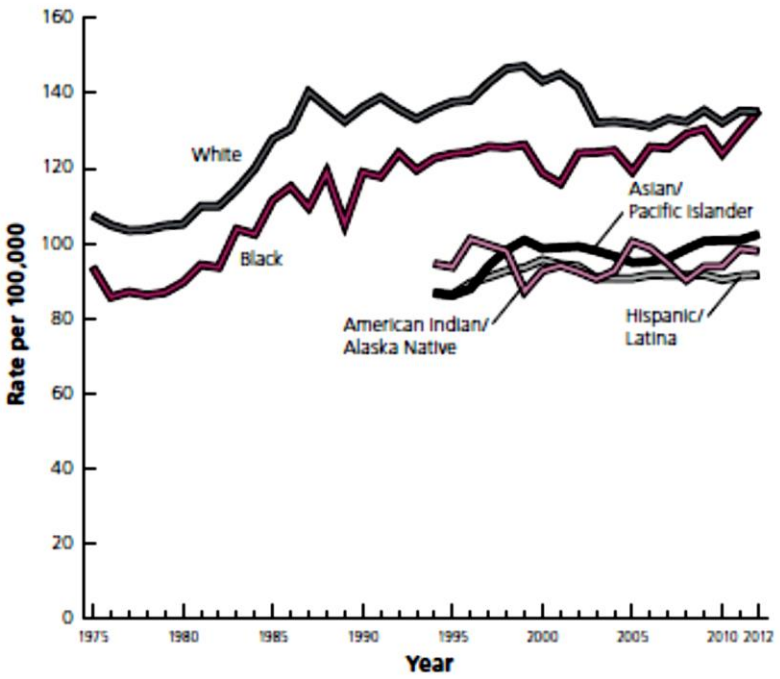
Epidemiology of Breast Cancer

- Second leading cause of death in women
- Leading cancer in women
- 215000 women diagnosed, 40000 die/year
- Incidence on the rise (better screening), death rate decreasing in most populations
- NCI- SEER data indicate lifetime risk in women is 1:6, invasive cancer is 1:9
- 1:8 is what we need to remember!

*Excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.

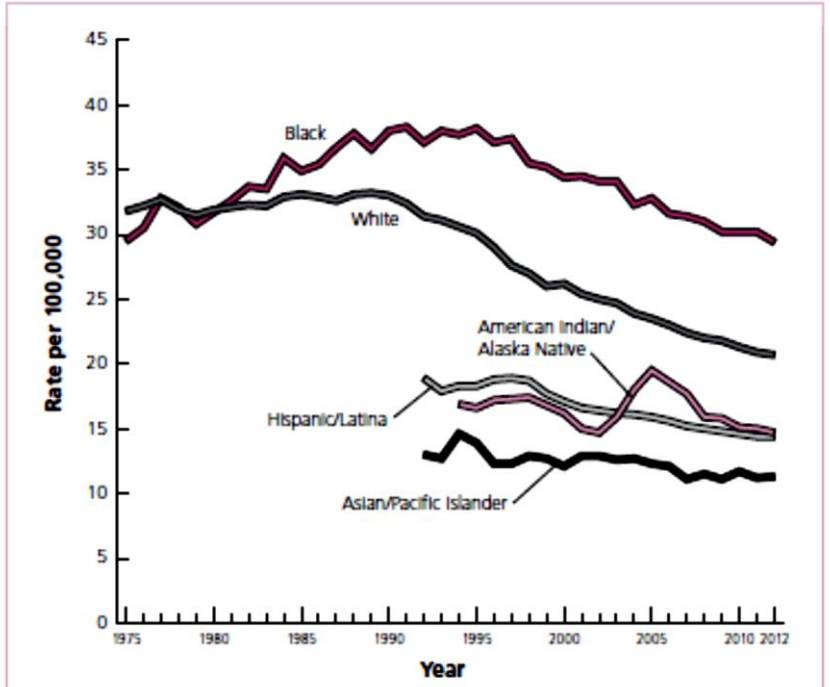
Trends in Female Breast Cancer Incidence and Death Rates by Race and Ethnicity, US, 1975-2012

Breast Cancer Facts & Figures 2017-2018
American Cancer Society



*Rates are age adjusted to the 2000 US standard population and adjusted for reporting delay.

Source: Data for whites and African Americans are from the 9 SEER registries. Data for other races/ethnicities are 3-year moving averages from the 13 SEER registries. For Hispanics, incidence data do not include cases from the Alaska Native Registry. Incidence data for American Indians/Alaska Natives are based on Contract Health Service Delivery Area (CHSDA) counties.



*Rates are age adjusted to the 2000 US standard population.

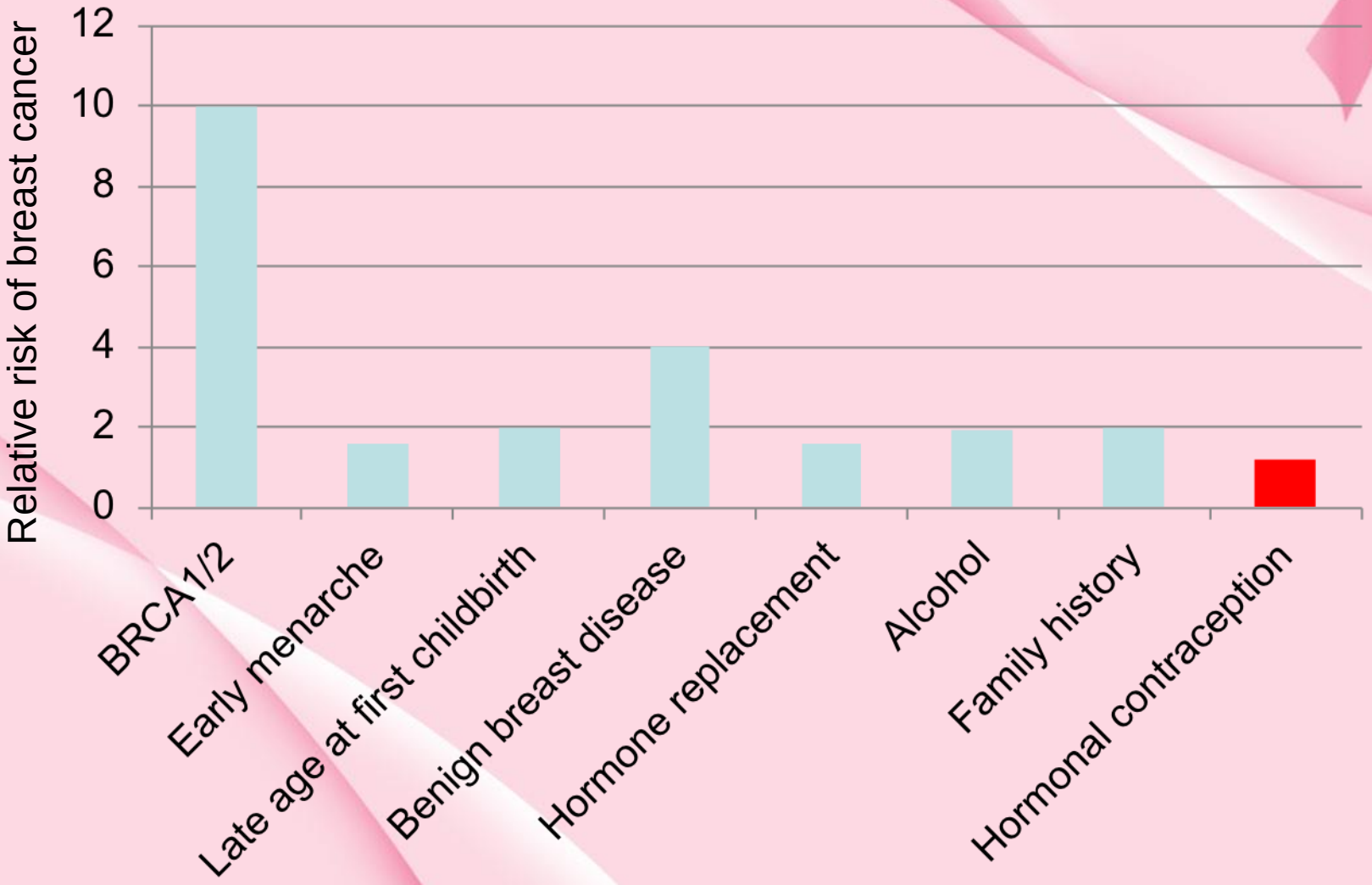
Source: US mortality data, National Center for Health Statistics, Centers for Disease Control and Prevention, as provided by the Surveillance, Epidemiology, and End Results Program, National Cancer Institute. Rates for American Indian/Alaska Native are based on CHSDA counties and are 3-year moving averages. Rates for Hispanics exclude deaths from New Hampshire and Oklahoma.

American Cancer Society, Inc., Surveillance Research, 2015

Risk Factors for Breast Cancer

1. Increased age
2. First degree relative w/ ca breast (age of onset important)
3. Genetic: BRCA1, BRCA2 mutations – (30-50%), familial cancer syndromes (Li-Fraumeni/Cowden/PJ)
4. Previous hx breast ca
5. Early menarche/ late menopause/ obesity/ nulliparity/ alcohol intake/ race/ socioeconomic status
6. High estrogen states…HRT/ OCPs
   - Hormonal replacement therapy(HRT)
     - 30% increased risk with long term use
   - Oral Contraceptives(OC)
     - risk slight
     - risk returns to normal once the use of OC's has been discontinued

Breast cancer risk factors



Genetics

BRCA-1

BRCA Testing

Determine Your Risk

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Contemporary Hormonal Contraception and the Risk of Breast Cancer

Lina S. Mørch, Ph.D., Charlotte W. Skovlund, M.Sc., Philip C. Hannaford, M.D., Lisa Iversen, Ph.D., Shona Fielding, Ph.D., and Øjvind Lidegaard, D.M.Sci.

- 1.8 million women 15-49 y/o who used hormonal contraception followed for 10.9 years
- RR for breast cancer with 10 years of use 1.38
- RR for progestin IUD 1.21
- Risk remained high after stopping if > 5 years of use

CONCLUSIONS

The risk of breast cancer was higher among women who currently or recently used contemporary hormonal contraceptives than among women who had never used hormonal contraceptives, and this risk increased with longer durations of use;

1 extra breast cancer for every 7690 women using hormonal contraception for 1 year

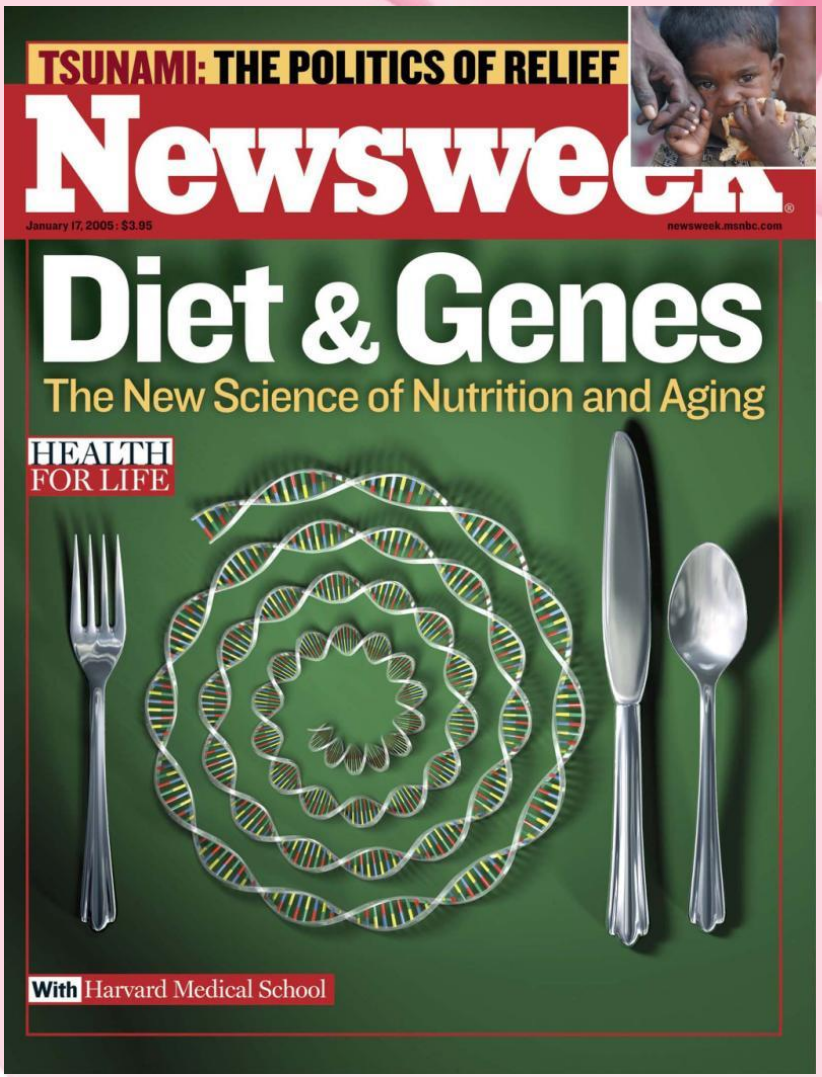
NEJM 2017

Breast cancer risk with lesions

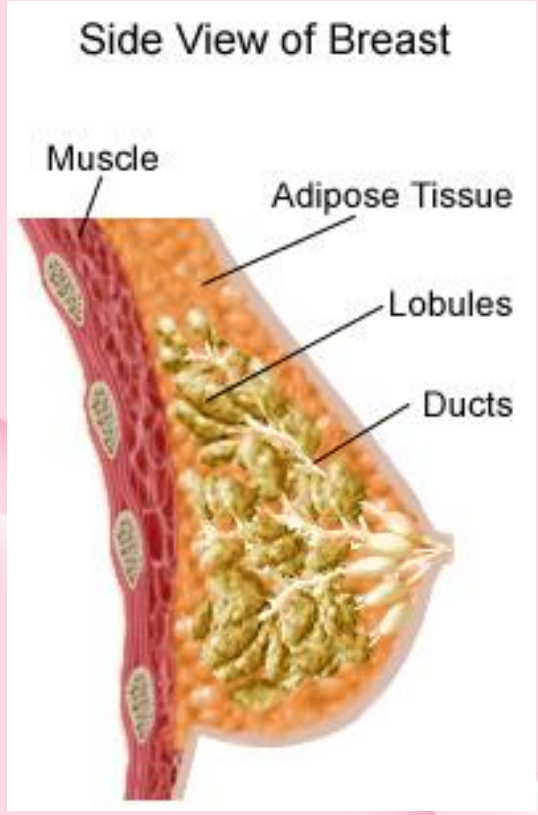
No risk	RR 1.5-2	RR 3-5
Cysts	Papilloma	Atypical ductal hyperplasia
Ductal ectasia	Sclerosing adenosis	Atypical lobular hyperplasia
Fibro adenoma		LCIS
Mastitis		DCIS
Fibrosis		

Arpino G et al. Ann of Int Med 2005


TIME
WHY YOUR DNA ISN'T YOUR DESTINY

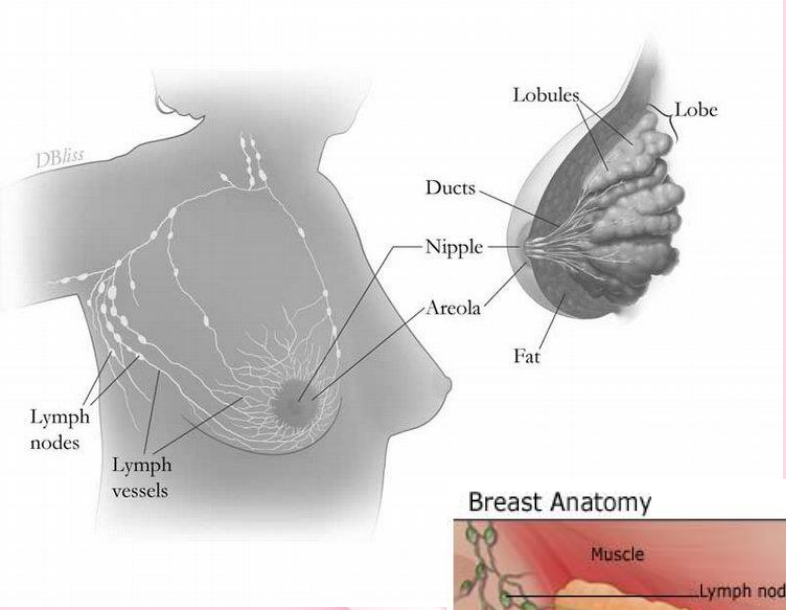

TSUNAMI: THE POLITICS OF RELIEF
Newsweek
January 17, 2005 : $3.95
newsweek.msnbc.com
Diet & Genes
The New Science of Nutrition and Aging
HEALTH FOR LIFE
With Harvard Medical School

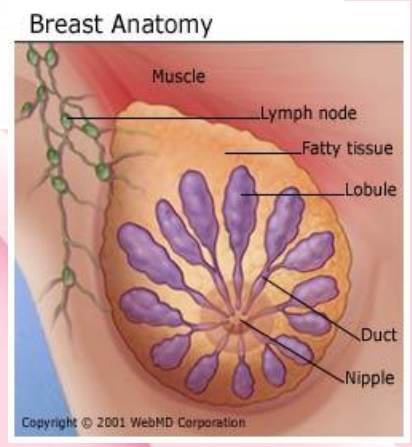
Female Breast Anatomy



- Breasts mainly of fatty tissue interspersed with connective tissue
- Breast has no muscle tissue
- There are muscles underneath the breasts separating them from the ribs
- There are also less conspicuous parts:
  - lobes
  - ducts
  - lymph nodes

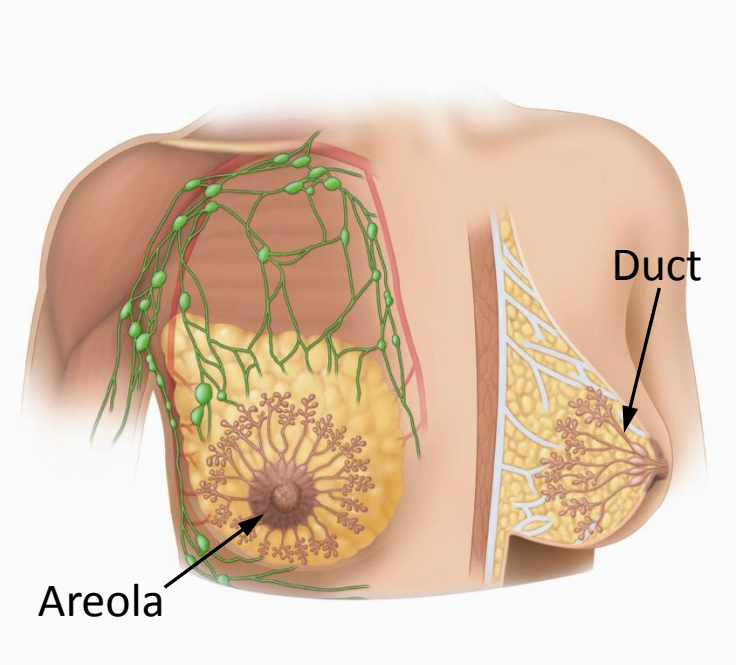
Breast Gland





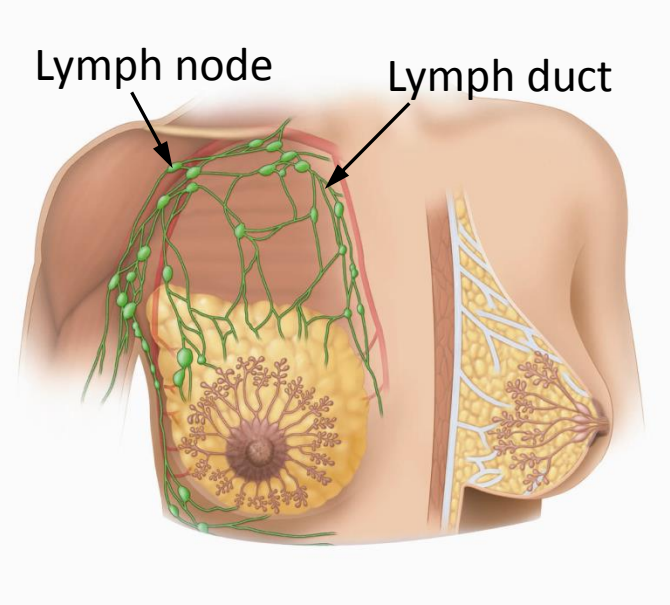
- Each breast has 15 to 20 sections (lobes) arranged like the petals of daisy
- Inside each lobe are many smaller structures called lobules
- At the end of each lobule are tiny sacs (bulbs) that can produce milk

Ducts



- Lobes, Lobules and bulbs, are linked by a network of thin tubes (ducts)
- Ducts carry milk from bulbs toward dark area of skin in the center of the breast (areola)
- Ducts join together into larger ducts ending at the nipple, where milk is delivered

Lymphatic System



A network of vessels

- **Lymph ducts**: Drain fluid that carries white blood cells (that fight disease) from the breast tissues into lymph nodes under the armpit and behind the breastbone
- **Lymph nodes**: Filter harmful bacteria and play a key role in fighting off infection

Normal breast physiology/anatomy

- Symmetry and balance
- Size
  - weight
  - menstrual cycle
  - pregnancy and lactation
- Texture
- Shape
  - age

Screening

- There is no certain way to completely eliminate your risk of breast cancer.
  - Can reduce risk by modifying your lifestyle
- The best plan for women at an average risk is to follow guidelines for early detection.
  - It is estimated that 305,000-483,000 breast cancer deaths were averted between 1990 and 2015 due to screening, early detection, and aggressive treatment.
- Nine out of 10 women can survive breast cancer simply by detecting it early.

Early Detection/Guidelines

For women at average risk:

- Age 40+: Annual mammogram, annual clinical breast exam (CBE) by a health care professional, and an optional monthly breast self-exam (BSE).
- Ages 20-39: Every three years a CBE by a health care professional and an optional monthly BSE.

Women with a family history of breast cancer should talk to their doctor about when to start screening.

American Cancer Society®

Screening

- Screening average-risk (Life-time risk < 15%)
  - Controversies:
    - American Cancer Society
    - United States Preventative Task Force

- Increased risk populations (Life-time risk > 20%)
  - Hereditary breast cancer and genetic testing
  - Screening in increased risk
  - Breast MRI
  - Risk reduction in increased risk populations

Screening for average risk

Cancer Prevention Group	Age 40-44	Age 45-54	>50-55
American Cancer Society	Individualized decision	Annual	Switch to every 2 years or continue annually
USPSTF	Individualized decision	Individualized decision	Every 2 years (50-74)

Age-Specific Risk for Breast Cancer

Age	Probability of developing breast cancer in the next 10 years is one in:
20	2,044
30	249
40	67
50	36
60	29
70	24

Screening: Why the controversy?

Is 40 too early?

- Modest benefits of screening in the 40s
- Does not significantly decrease breast cancer mortality (RR 0.92, 95% CI 0.75-1.02)
- Does not reduce risk of advanced breast cancer (RR 0.98, 95% CI 0.74-1.37)
- False positives, biopsies, costs and psychological stress
- BUT: Some of these studies were done when treatments not that good-magnitude of benefit may be under estimated

Screening- Controversy

Why over 50?

- Studies show a significant RR for breast cancer mortality
  50 to 59 years (RR 0.86, 95% CI 0.68-0.97
  60 to 69 years (RR 0.67, 95% CI 0.54-0.83)
- Reduced risk of advanced breast cancer in > 50 (RR 0.62, 95% CI 0.46-0.83

Annual vs Biennial?

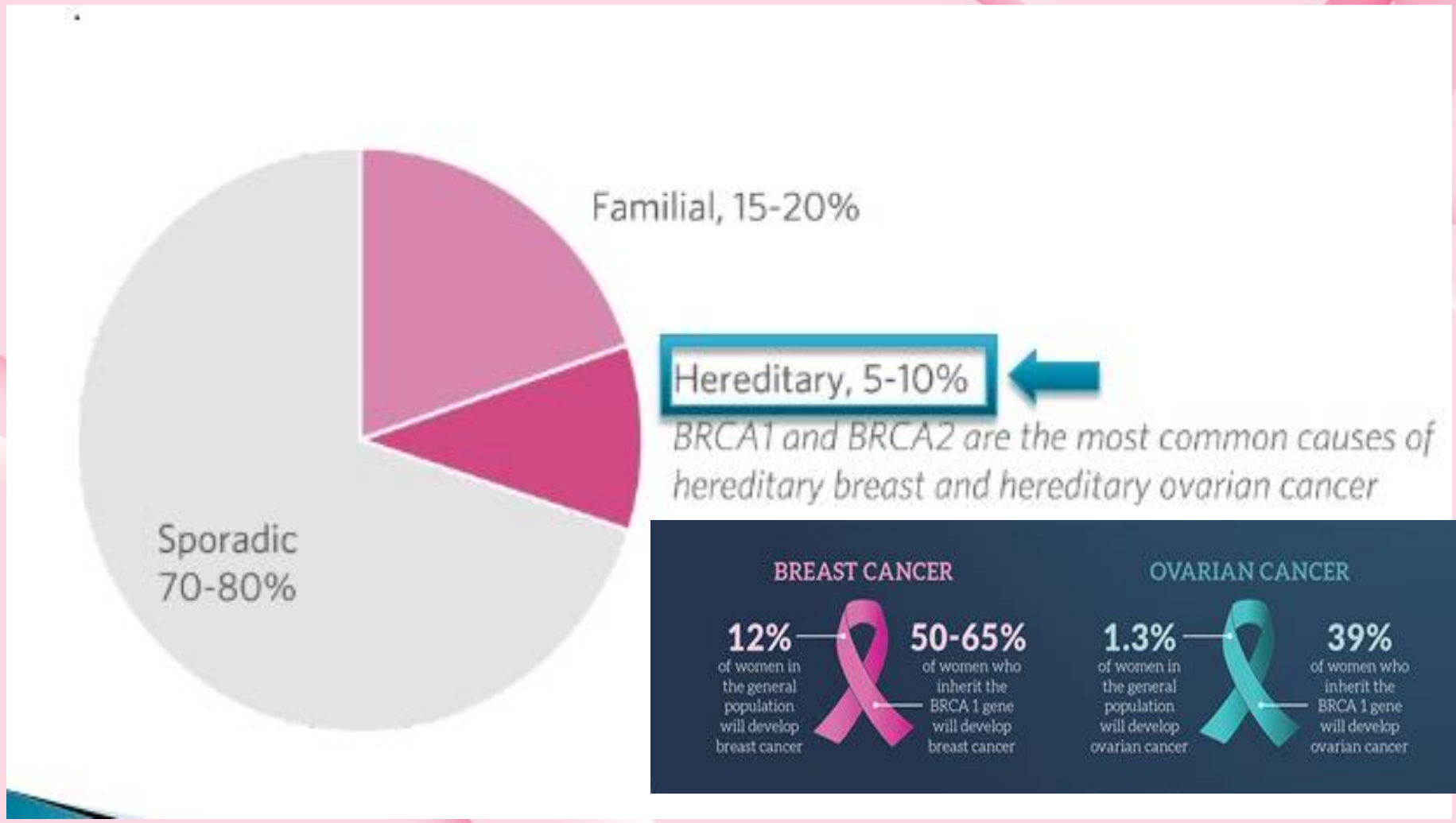
10-year cumulative false-positive mammography rates

- Annual 61%
- Biennial 42%

Increased risk populations

- Lifetime risk of > 20% (models such as Tyrer-Cuzick, BRCAPRO)
- Prior h/o breast cancer
- H/O Thoracic RT under the age of 30 y
- 5 year risk of Invasive disease > = 1.66% in women >= 35 (Gail model)
  https://www.cancer.gov/bcrisktool/
- Diagnosis of atypical hyperplasia, LCIS (DCIS)

Hereditary breast cancer?



Who should have genetic testing?

BRCA testing

- Individuals from families with known BRCA
- Personal history of breast cancer with multiple family members with breast and/or ovarian cancer
- Ashkenazi Jewish descent
- Young age at diagnosis (<= 45 y or <= 50 with other factors*)
- Triple negative cancer age <60
- Personal history of ovarian cancer
- At any age if FH of ovarian cancer or male breast cancer

Multigene/ Panel testing

- There are other cancer types in the family
- One or more rare syndromes in the differential, and/or
- The results would influence medical management.

* >= 1 relative (first, second, third on the same side of the family) at any age with breast cancer, pancreatic cancer or prostate cancer. Also if has an additional breast primary

Screening in increased risk populations

- Clinical encounter at least annually
- Annual screening Mammogram- 10 ys prior to youngest affected family member but at > 25y.
- Some may need screening breast MRIs

Screening in increased risk populations

- Clinical encounter at least annually
- Annual screening mammogram
  - 10 yrs prior to youngest affected family members but at least by age 25 yr.
- Some may also benefit from screening MRI

Who should get a screening MRI

Recommend Annual MRI Screening

BRCA mutation

First-degree relative of *BRCA* carrier

Lifetime risk ~20–25% or greater

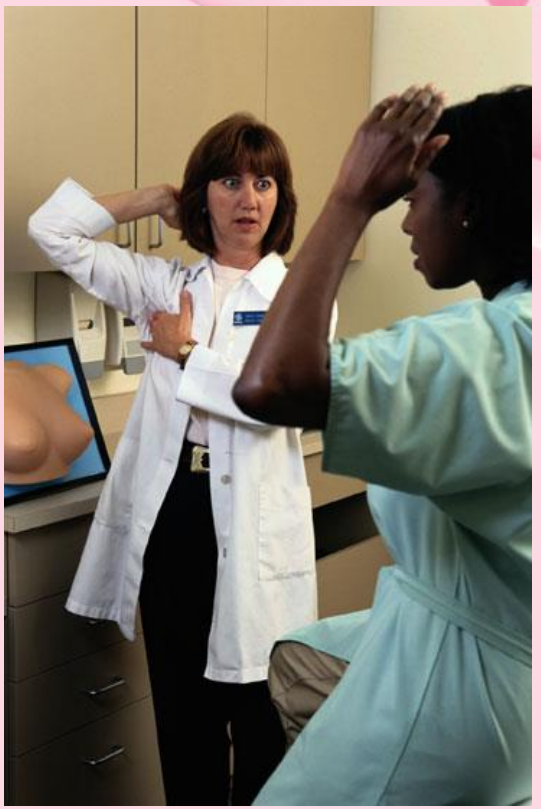
Radiation prior to age 30

Risk reduction in high risk patients

- Risk reduction surgeries: In patients with a genetic mutation
- Endocrine therapy : Tamoxifen, raloxifene, or aromatase inhibitor for 5 years.
  - Prevents HR+ breast cancer by 50%, does not prevent HR- cancer
  - Most notable benefit is seen in Atypical hyperplasia
  - No known survival benefit.
  - Absolute benefit is small
- Consider sending these patients to an oncologist for further evaluation and management.

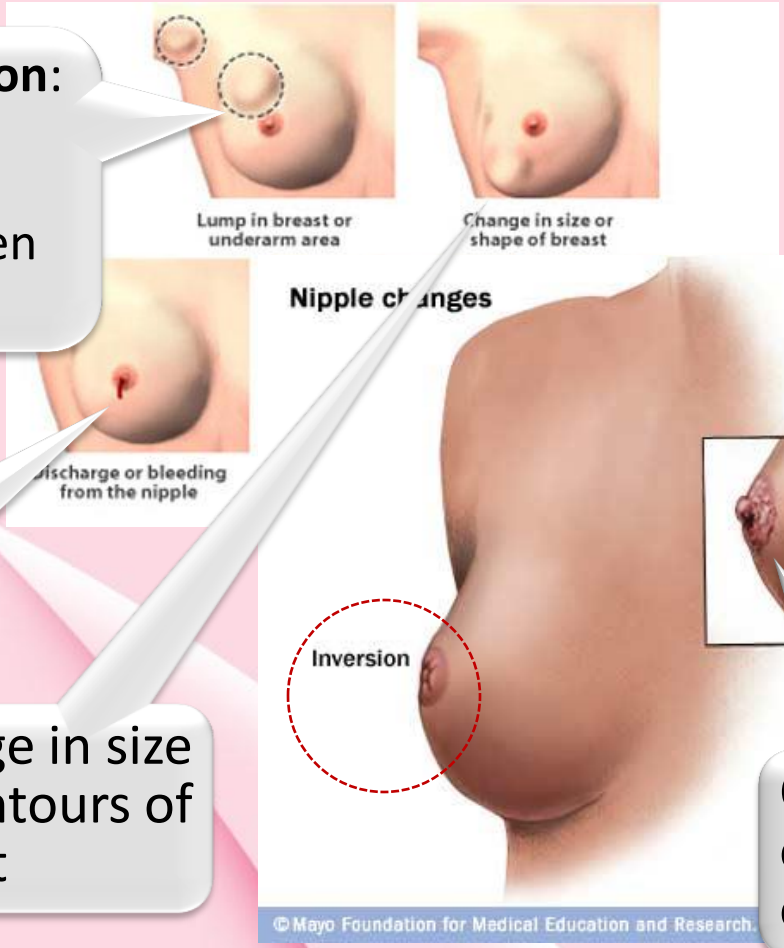
Breast Self Examination

- Opportunity for woman to become familiar with her breasts
- Monthly exam of the breasts and underarm area
- May discover any changes early
- Begin at age 20, continue monthly



Signs and Symptoms

Most common: lump or thickening in breast. Often painless



Discharge or bleeding

Change in size or contours of breast

Redness or pitting of skin over the breast, like the skin of an orange

Change in color or appearance of areola

Why don’t more women practice BSE?

- Fear
- Embarrassment
- Youth
- Lack of knowledge
- Too busy, forgetfulness

Clinical examination

- Performed by doctor or trained nurse practitioner
- Annually for women over 40
- At least every 3 years for women between 20 and 40
- More frequent examination for high risk patients

Mammography

- X-ray of the breast
- Has been shown to save lives in patients 50-69
- Data mixed on usefulness for patients 40-49
- Normal mammogram does not rule out possibility of cancer completely

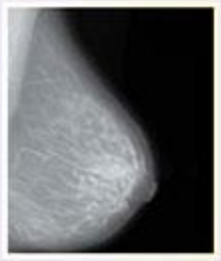
Next Steps

Work-up for Abnormal Mammogram/Palpable mass

1. Diagnostic mammogram and ultrasound
2. Aspiration (FNA)/ Biopsy
3. Determine hormone receptor status
   - Estrogen Receptor (ER)
   - Progesterone (PR)
4. Determine Her2/neu status
5. Treat per algorithm

Mammography

- *Spiculated soft tissue mass*..90% invasive
- *Clustered microcalcifications*
- Indeterminate and linear branching
- *Indications:*
  - All masses
  - Suspicious lesions: mastitis in nonlactating, eczematous nipple
  - Age >35y



Normal mammogram

Benign cyst (not cancer)

Cancer

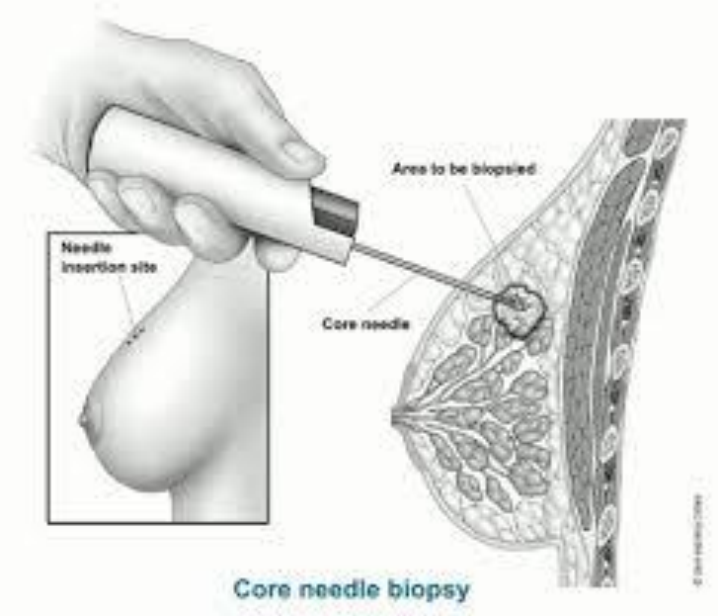
Calcium in your diet does not cause calcium deposits (calcifications) in the breast.

Ultrasound

- Differentiates cystic from solid lesions
  - If simple cyst…no further workup needed--monitor
  - If solid/ complex…biopsy needed
- *Indications:*
  - Usually better in women <35y
  - or with dense breast tissue (? Contrast-enhanced MRI better)
  - If cystic mass seen in mammogram/ clinical

Biopsy

- *Types:*
  - Fine Needle Aspiration (FNA)
  - Core Needle Biopsy (CNB)
  - Open or Excisional Biopsy



- *Indications:*
  - Palpable non-cystic mass with negative mammogram
  - Non-cystic mass seen on mammogram or ultrasound

The Great Divide

- Interventions to close the divide for women with breast between low-income and middle-income countries and high-income countries

- The differences in access to screening, early diagnosis, staging, biological categorization, treatment and follow-up care for these two cancers strikingly differ between HICs and LMICs

- Several cost-effective interventions could be used to reduce the burden of these two cancers in LMICs and to close the divide

Feasible and effective interventions for breast cancer control in LMICs and in bridging the divide

- Breast awareness among the public and health care professionals
- Clinical breast examination (CBE) screening
- Early diagnosis using triple testing:
  - expert CBE, diagnostic imaging (USS/mammography), biopsy (core preferred but can do fine-needle aspiration)
- Histopathology of tissue samples
- Testing for oestrogen receptor using IHC
- Staging
- Treatment of early stage disease and follow-up care: access to care

Survival Rates

- Five-year **localized** survival rate……97 percent
- Five-year **regional** survival rate……78 percent
- Five-year **distant** survival rate……21 percent
- Five-year overall survival rate……86 percent
- Ten-year overall survival rate……76 percent

Bottom Line

- Age and gender are the main risk factors.
- Early detection increases survival and treatment options.
- All women 40+ should talk to their doctors about annual mammograms and CBEs. They can also perform monthly BSEs.
- Mammograms can save lives.

The Importance of African Americans Participating in Clinical Trials

- What is a Clinical Trial
  - A research study in which patients give permission to be part of the testing process
    - New Drug
    - New Mechanical Device
    - New Procedure or Treatment
- Why do we need African Americans to participate in Clinical Trails
  - Know how drugs/treatments work in African Americans
  - Know how diseases react in African Americans

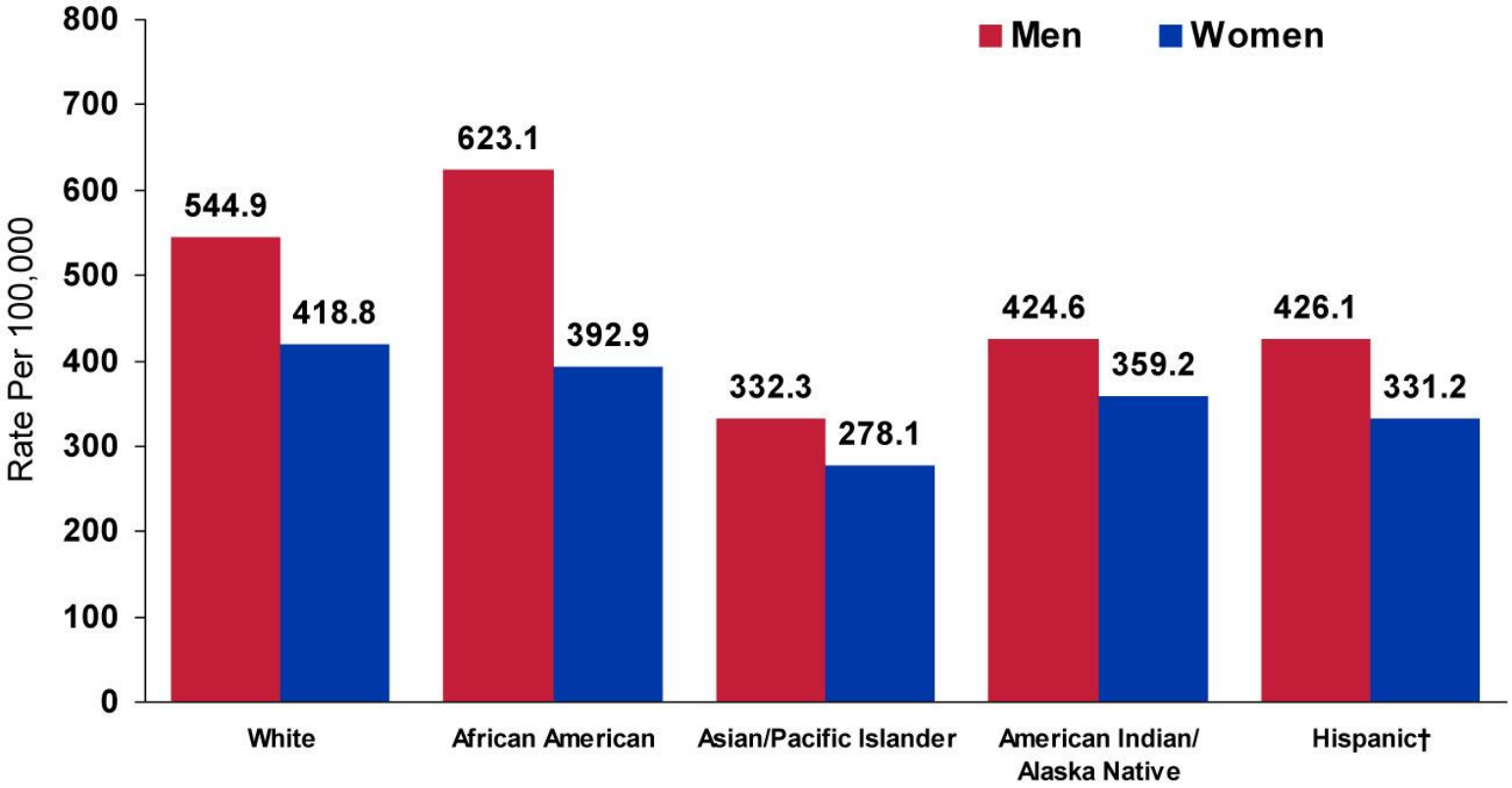
Thank You!

Introduction

- Despite notable advances in cancer prevention, screening, and treatment, a disproportionate number of the uninsured, minorities, and other medically underserved populations are still not benefiting from such important progress.

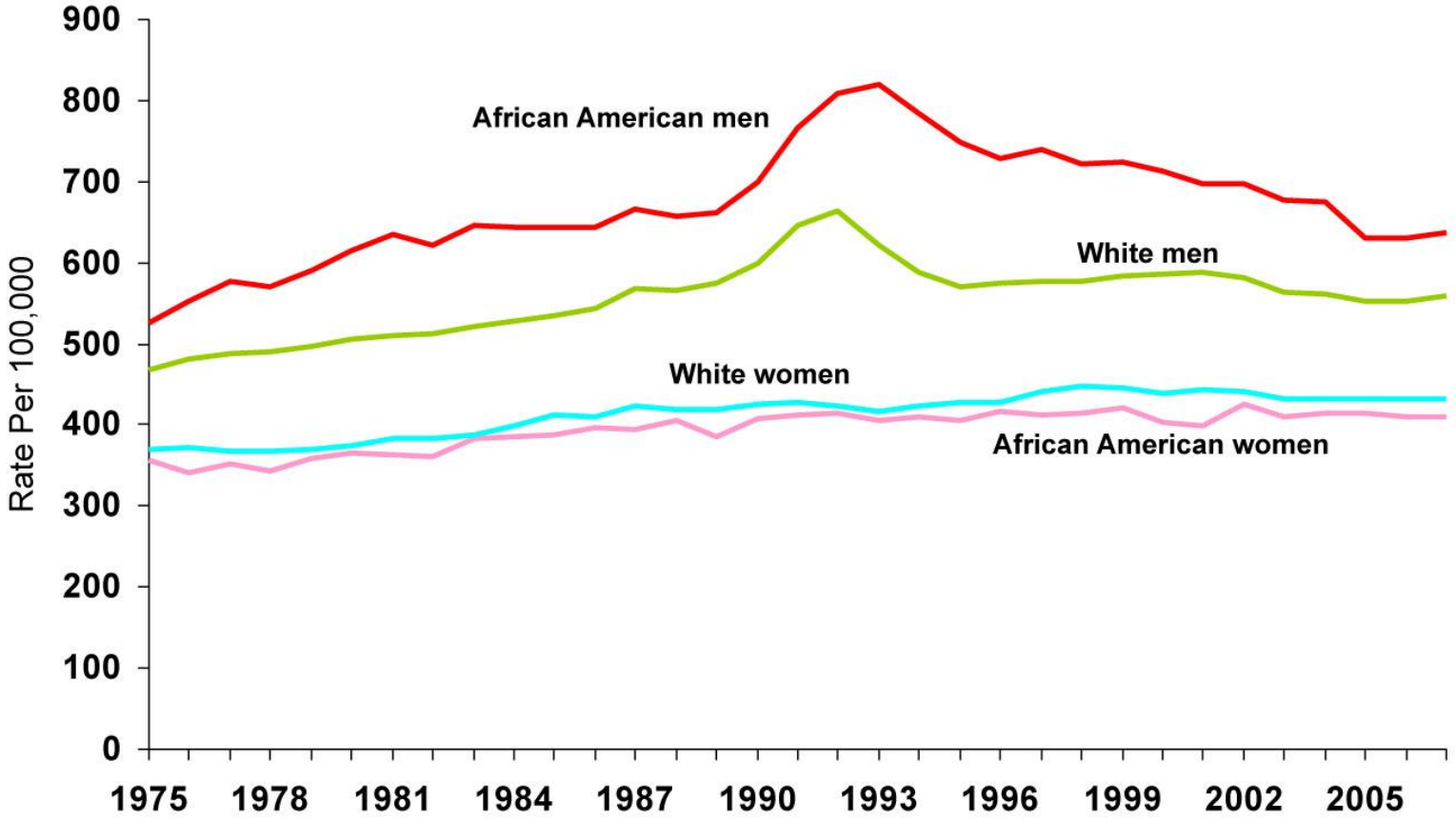
- Underlying causes of cancer disparities are interrelated and complex.
  - Causes of cancer disparities can be linked to social, behavioral, and economic factors such as
    - persistent inequalities in access to care,
    - language barriers
    - unhealthy environments
    - racial discrimination

Cancer Incidence Rates* by Race and Ethnicity, 2003-2007



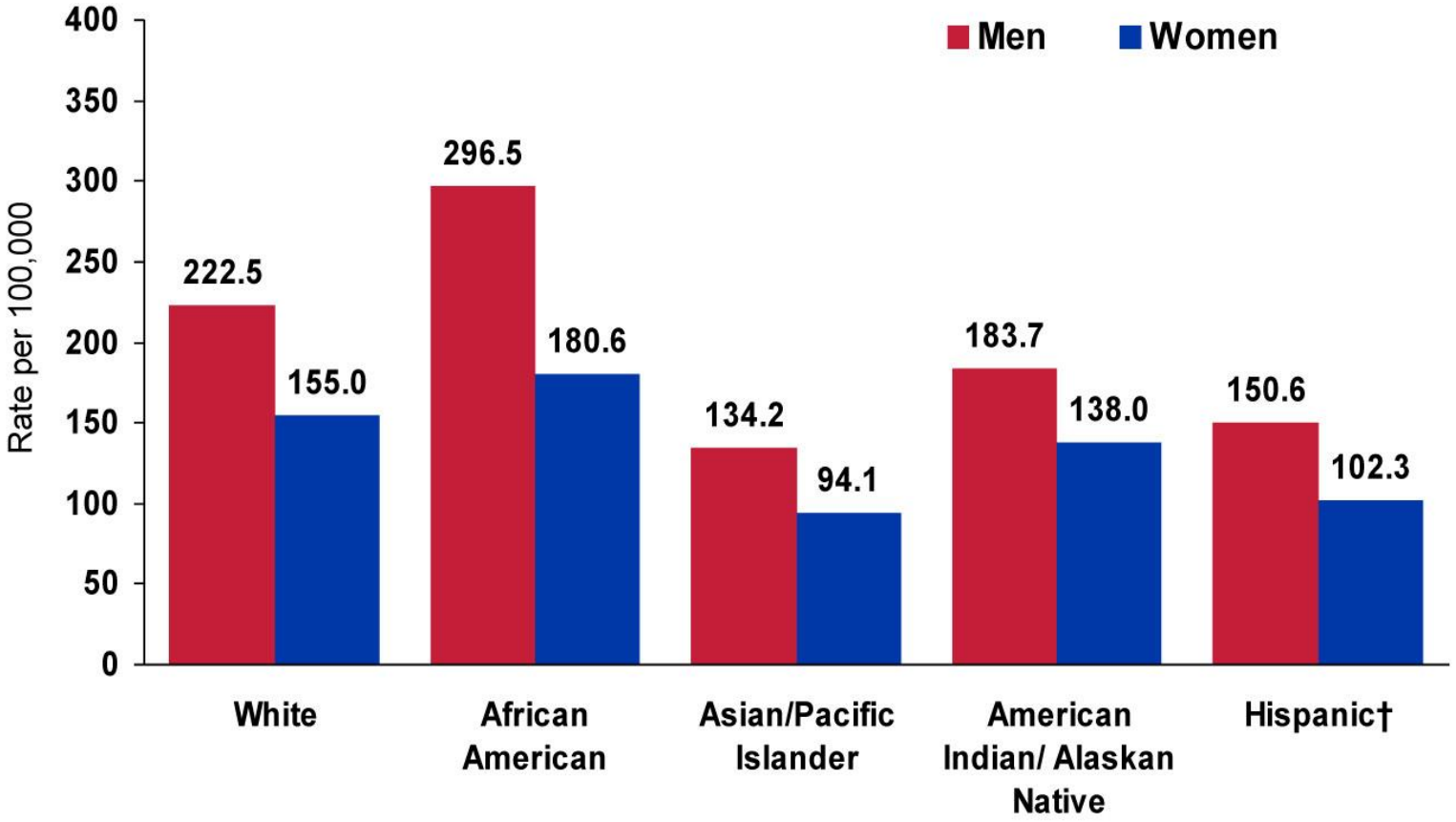
*Age-adjusted to the 2000 US standard population.
†Person of Hispanic origin may be of any race.
Source: Kohler BA, et al. Annual report to the nation on the status of cancer, 1975-2007.*JNCI*. 2011;103:1-23.

Cancer Incidence Rates* by Sex and Race, US,1975-2007



*Age-adjusted to the 2000 US standard population.
Source: Surveillance, Epidemiology, and End Results Program, Delay-adjusted Incidence database: SEER Incidence Delay-adjusted Rates, 9 Registries, 1975-2007, National Cancer Institute, 2010.

Cancer Death Rates* by Race and Ethnicity, US, 2003-2007



*Per 100,000, age-adjusted to the 2000 US standard population.
† Persons of Hispanic origin may be of any race.
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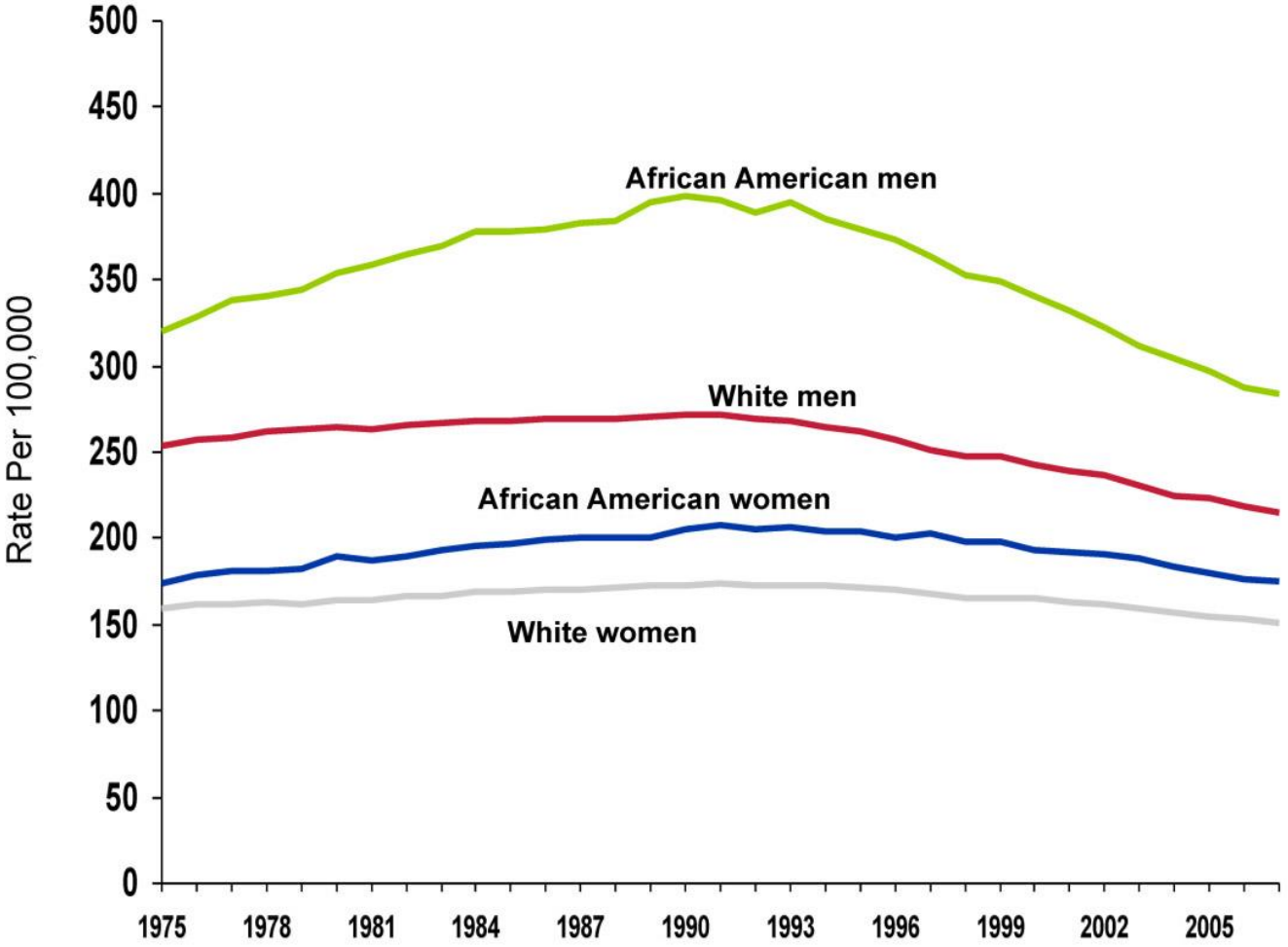


*Age-adjusted to the 2000 US standard population.
Source: Surveillance, Epidemiology, and End Results Program, 1975-2007, Division of Cancer Control and Population Sciences, National Cancer Institute, 2010.

Cancer Survival*(%) by Race,1999-2006

Site	White	African American	Absolute Difference
All Sites	67	58	9
Breast (female)	90	78	12
Colon	65	56	9
Esophagus	18	11	7
Leukemia	54	47	7
Non-Hodgkin lymphoma	68	59	9
Oral cavity	63	42	21
Prostate	100	96	4
Rectum	67	58	9
Urinary bladder	80	66	14
Uterine cervix	72	61	11
Uterine corpus	86	62	24

***5-year relative survival rates based on cancer patients diagnosed from 1999 to 2006 and followed through 2007. Source: SEER 17 registries, Surveillance, Epidemiology, and End Results Program, Division of Cancer Control and Population Sciences, National Cancer Institute, 2010.**

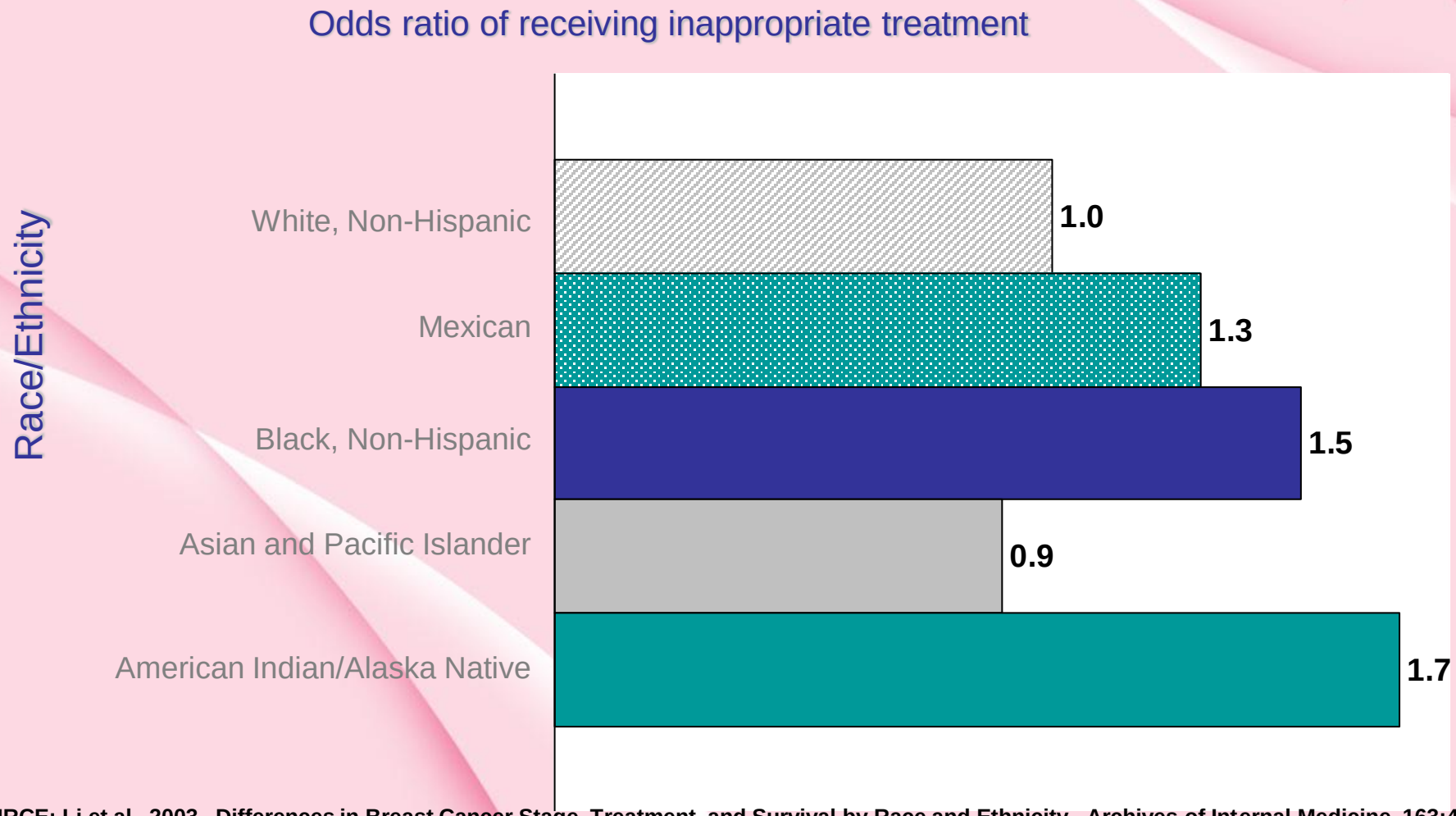
Causes of Cancer Disparity

- Underlying causes of cancer disparities are interrelated and complex.

- Causes of cancer disparities can be linked to social, behavioral, and economic factors such as:
  - persistent inequalities in access to care
  - Socioeconomic barriers
  - cultural barriers
  - language barriers
  - educational barriers
  - unhealthy environments
  - racial discrimination

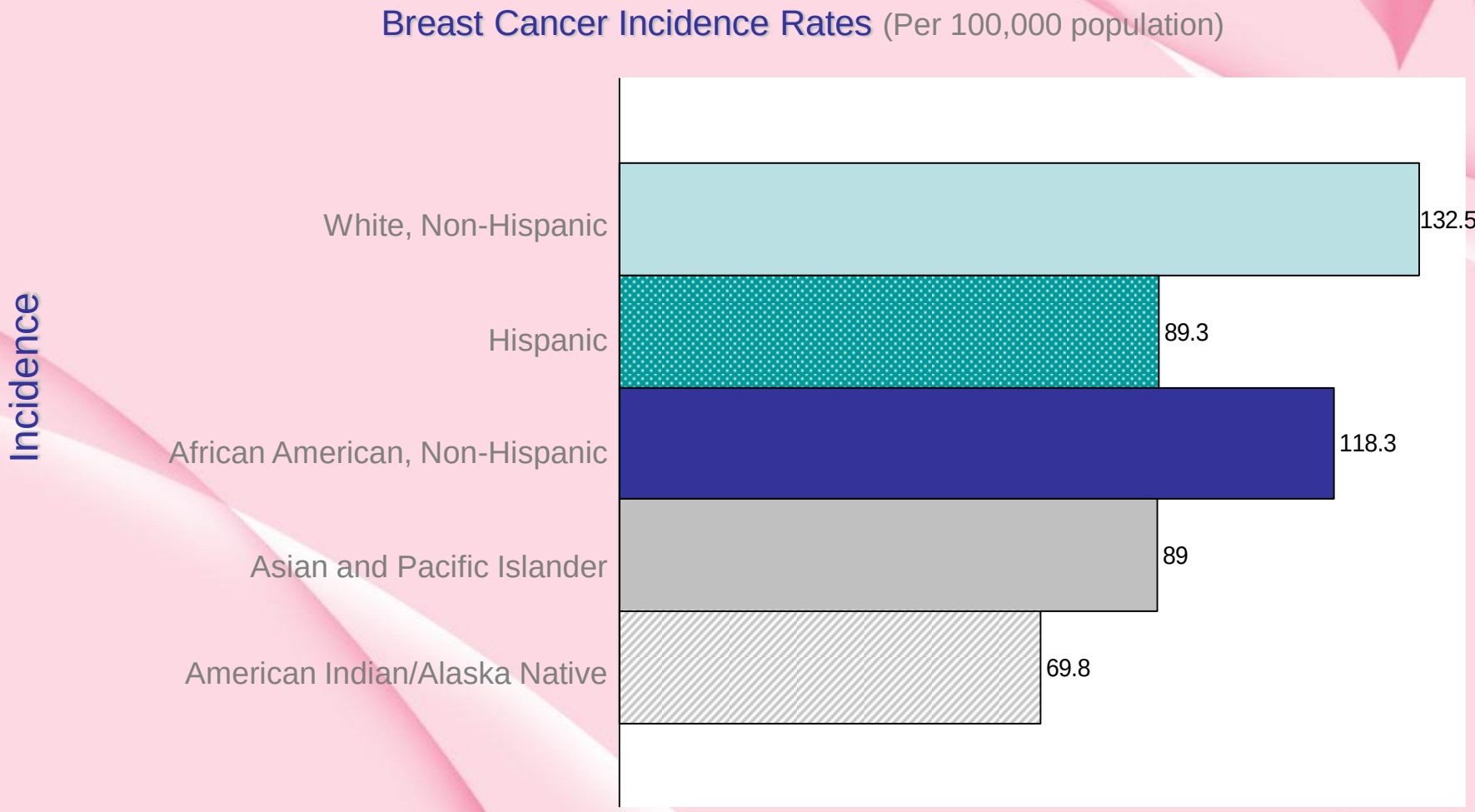
Race/ethnicity affects access to high quality treatment

Compared to whites, blacks are 50% less likely to receive appropriate treatment for breast cancer. American Indians are 70% less likely.



SOURCE: Li et al. 2003. Differences in Breast Cancer Stage, Treatment, and Survival by Race and Ethnicity. Archives of Internal Medicine. 163:49-56.

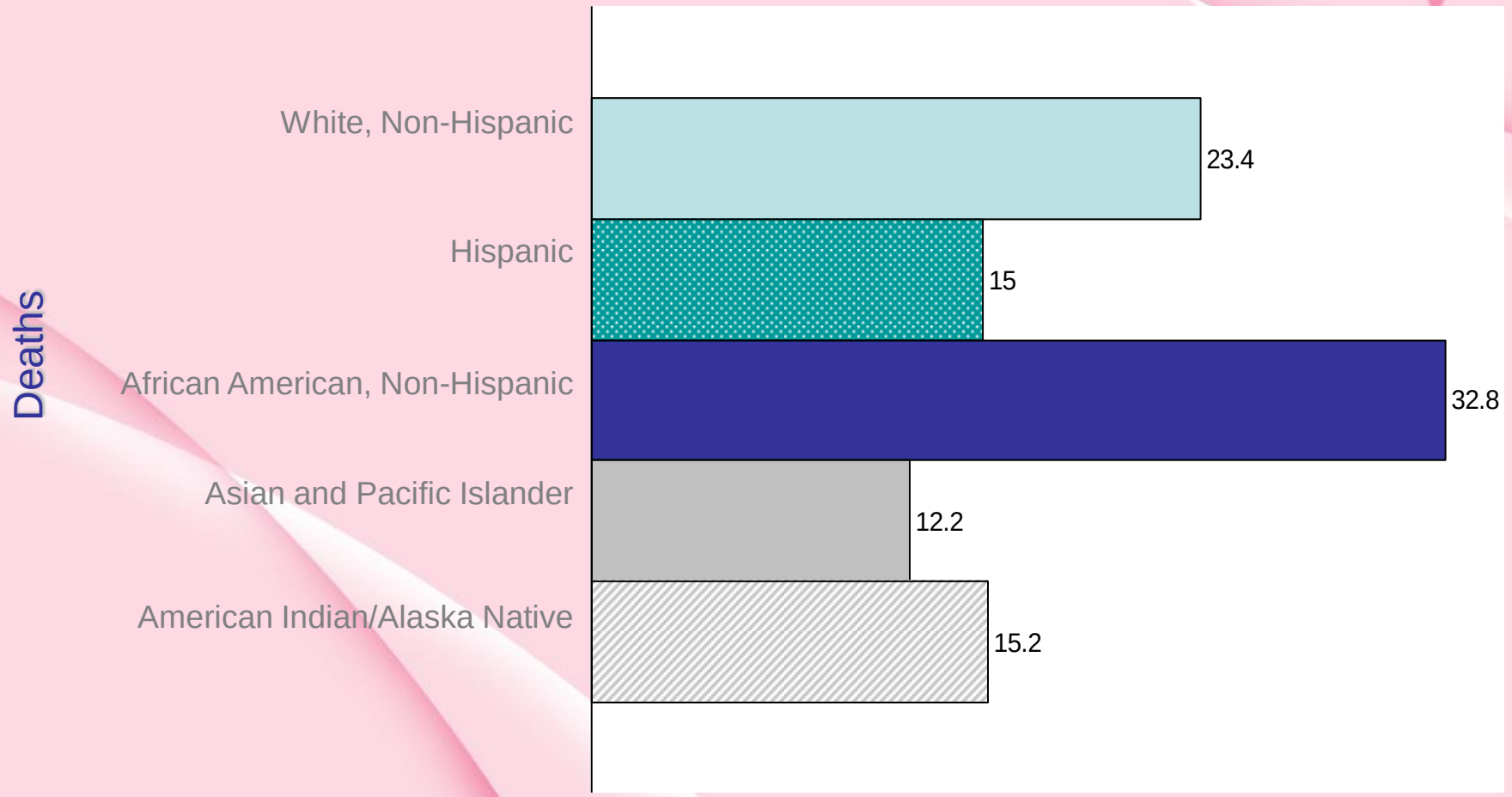
Incidence rates of breast cancer are highest in white women…..



Note: Data are age adjusted to the 2000 standard population. SOURCE: National Cancer Institute, Surveillence, Epidemiology, and End Results (SEER) Program; National Vital Statistics System--Mortality, NCHS, CDC.

….but death rates from breast cancer are highest in African American women

Breast Cancer Death Rates (Per 100,000 population)



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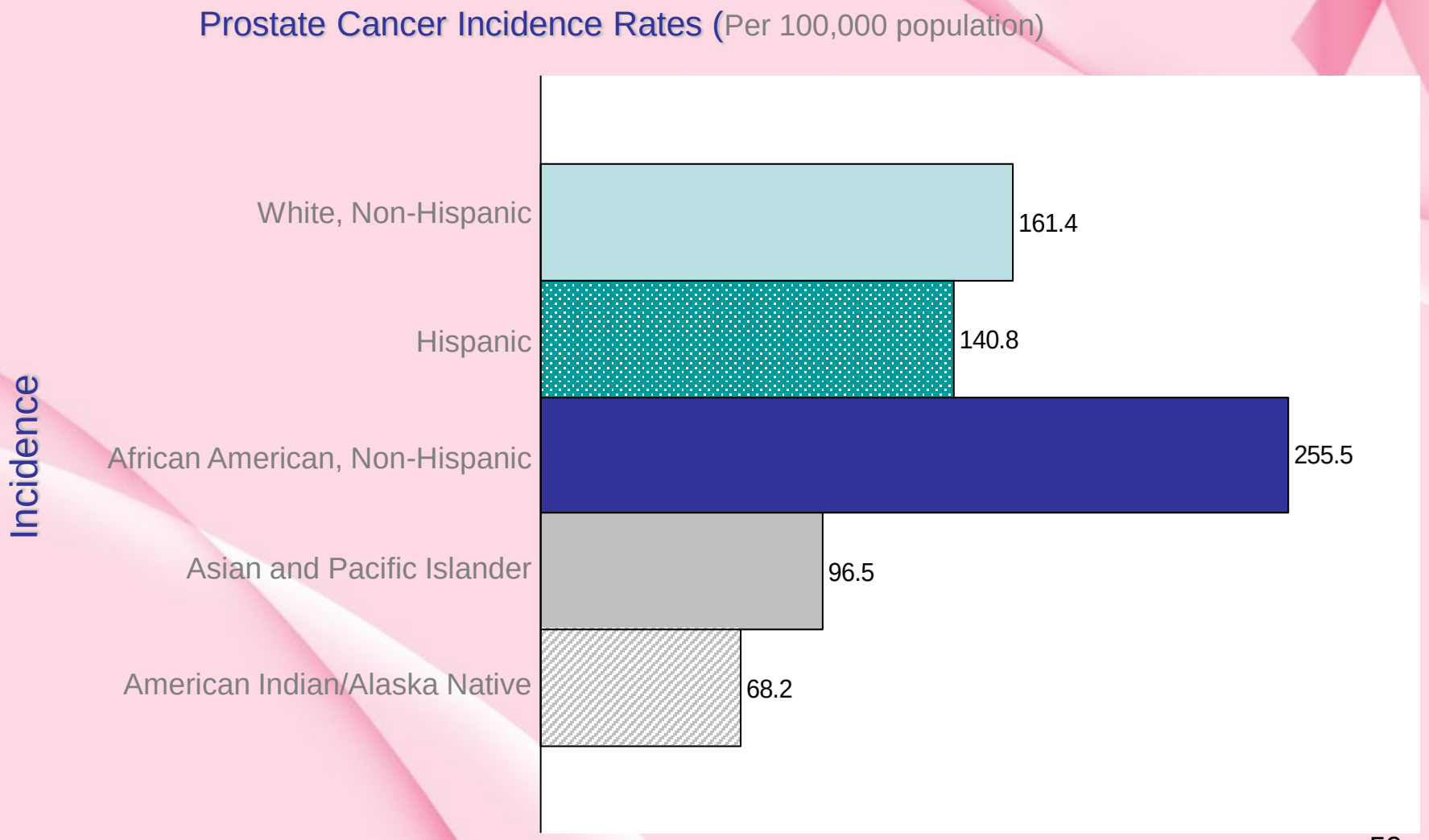
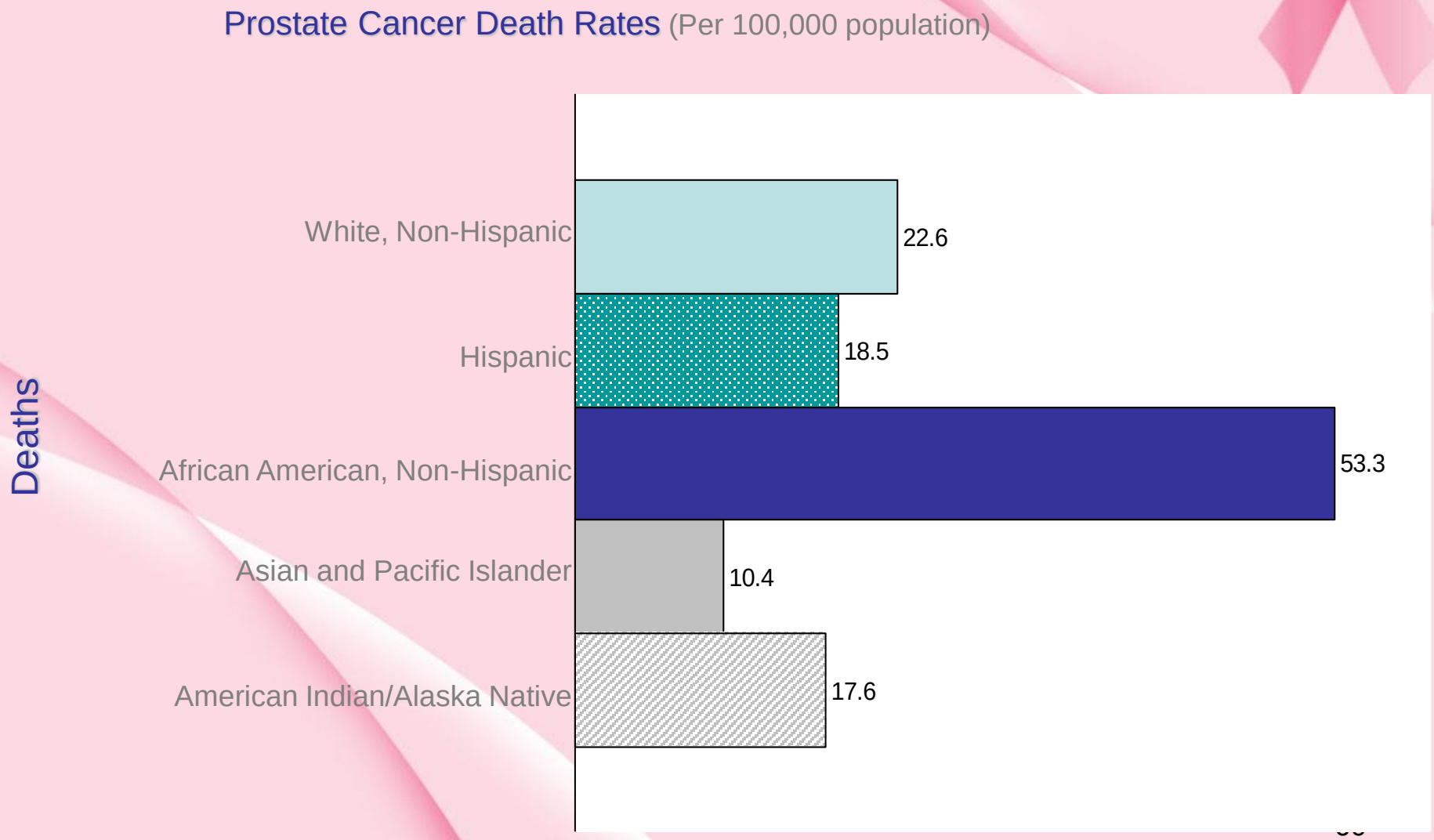
African Americans are more than 50% more likely than whites to be diagnosed with prostate cancer…



Note: Data are age adjusted to the 2000 standard population. SOURCE: National Cancer Institute, Surveillence, Epidemiology, and End Results (SEER) Program; National Vital Statistics System--Mortality, NCHS, CDC.

But African Americans are twice as likely than whites to die of prostate cancer



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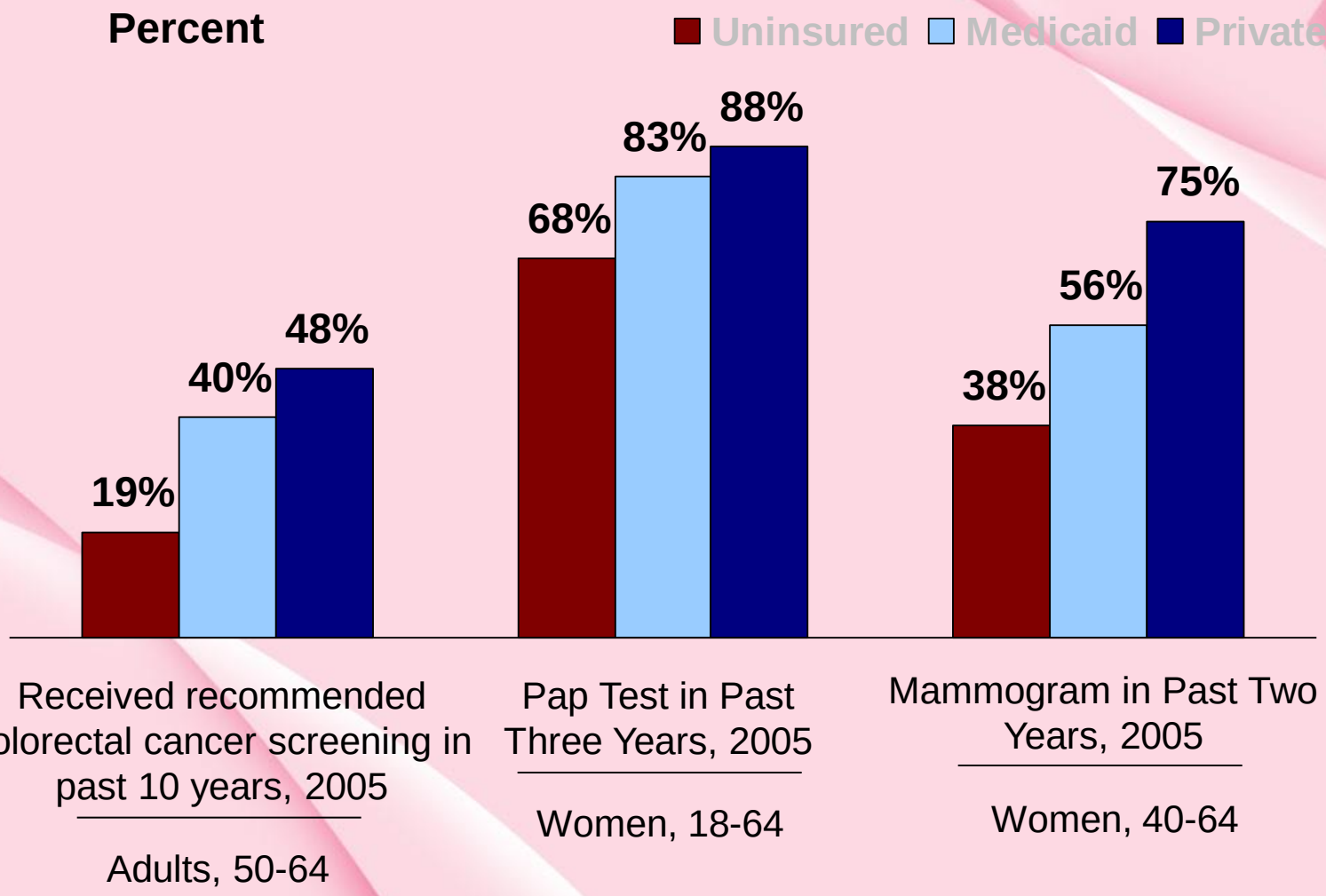
Having insurance makes a difference…

Uninsured persons are less likely than privately insured persons to receive timely cancer screenings

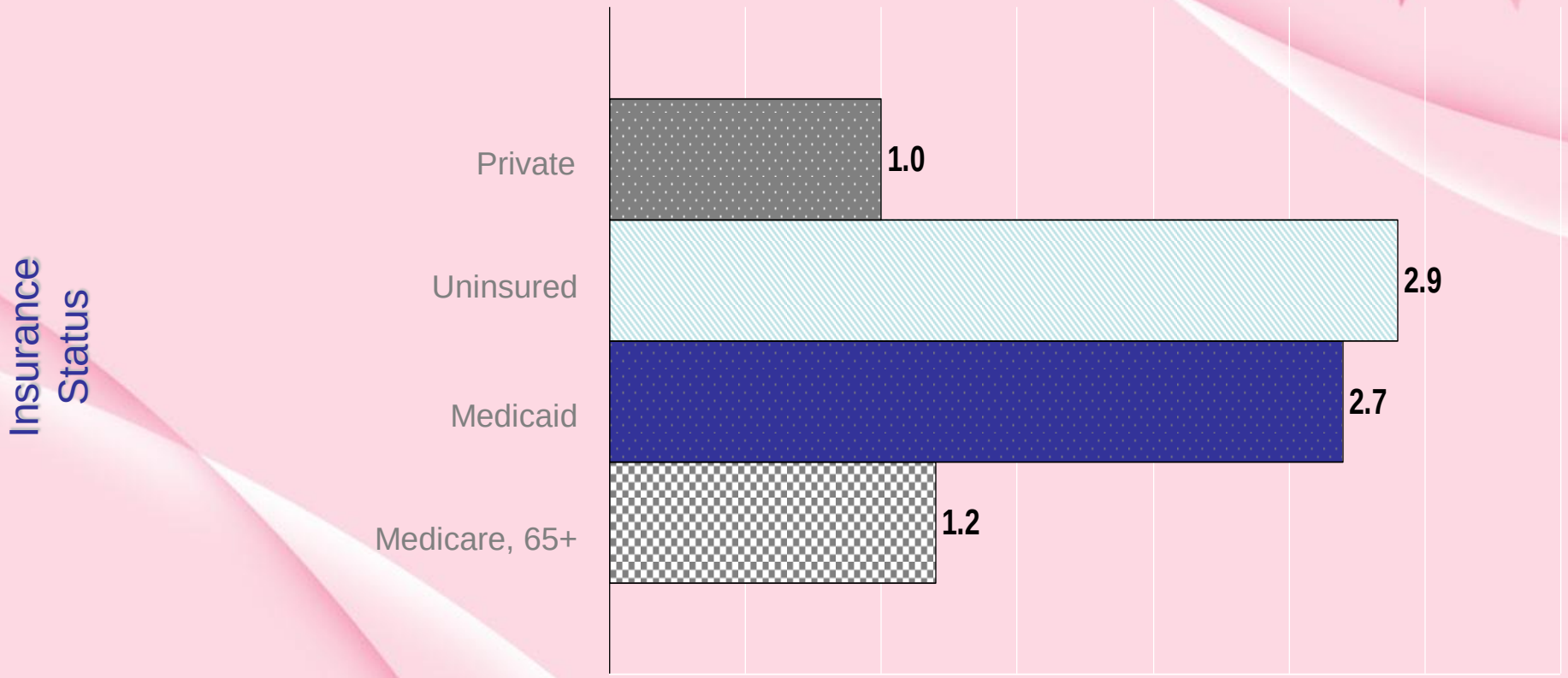


SOURCES: Ward, Elizabeth, et al. "Association of Insurance with Cancer Care Utilization and Outcomes." CA: A Cancer Journal for Clinicians 58.1 (2008): 9-31.

Having health insurance matters…

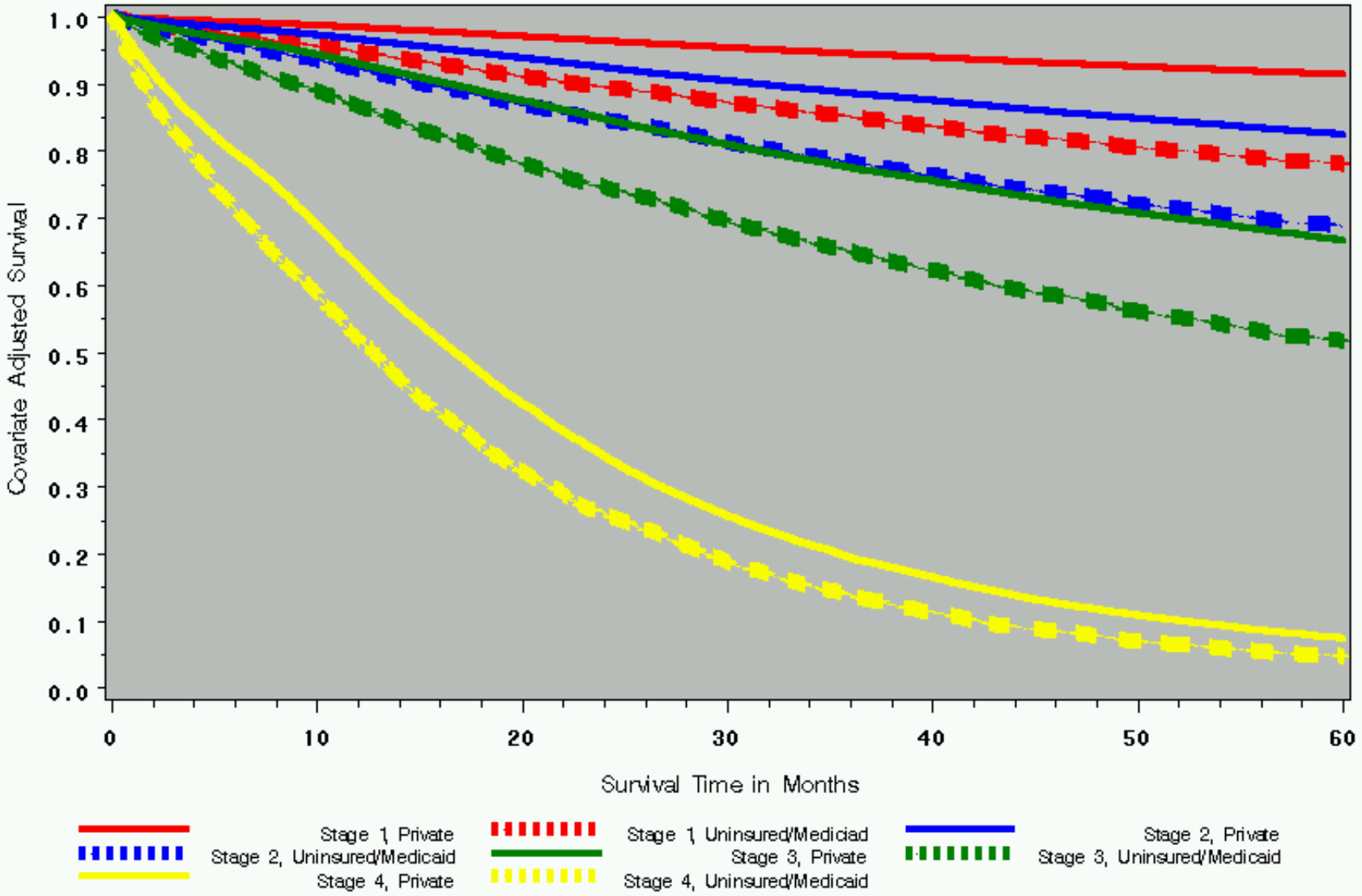
Uninsured, publicly insured women are three times more likely to be diagnosed with a later stage of breast cancer than privately insured women

Likelihood of being diagnosed with Stage III/IV breast cancer vs. Stage I breast cancer



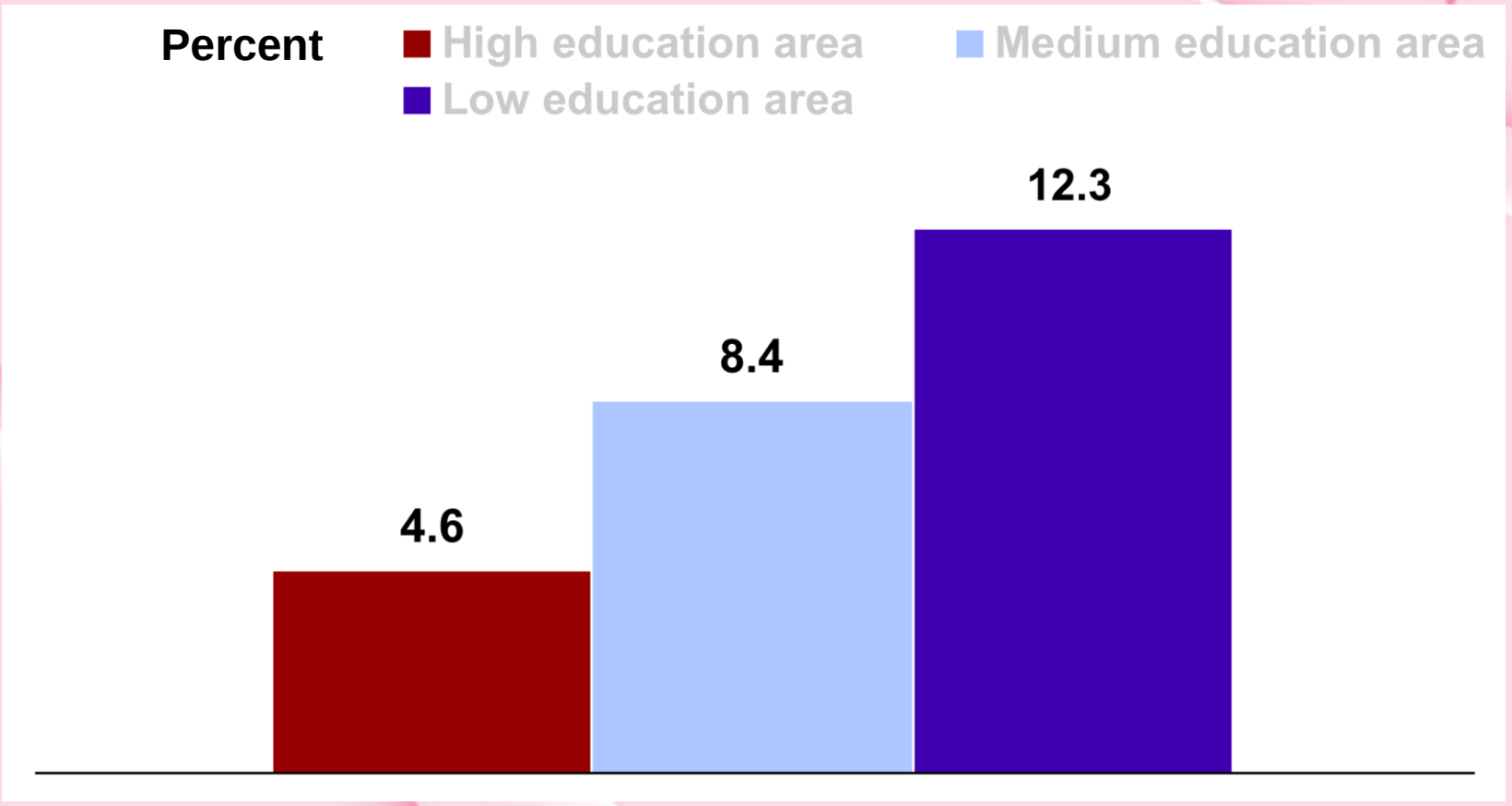
Note: Model adjusted for insurance type, race/ethnicity, age at diagnosis, income, proportion without high school degree, US census region, year of diagnosis, and facility type. SOURCE: Halpern et al, 2007

Adjusted Colorectal Cancer Survival by Stages and Insurance Status, among Patients Diagnosed in 1999-2000 and Reported to the NCDB



Costs of care impact persons of lower socioeconomic status more

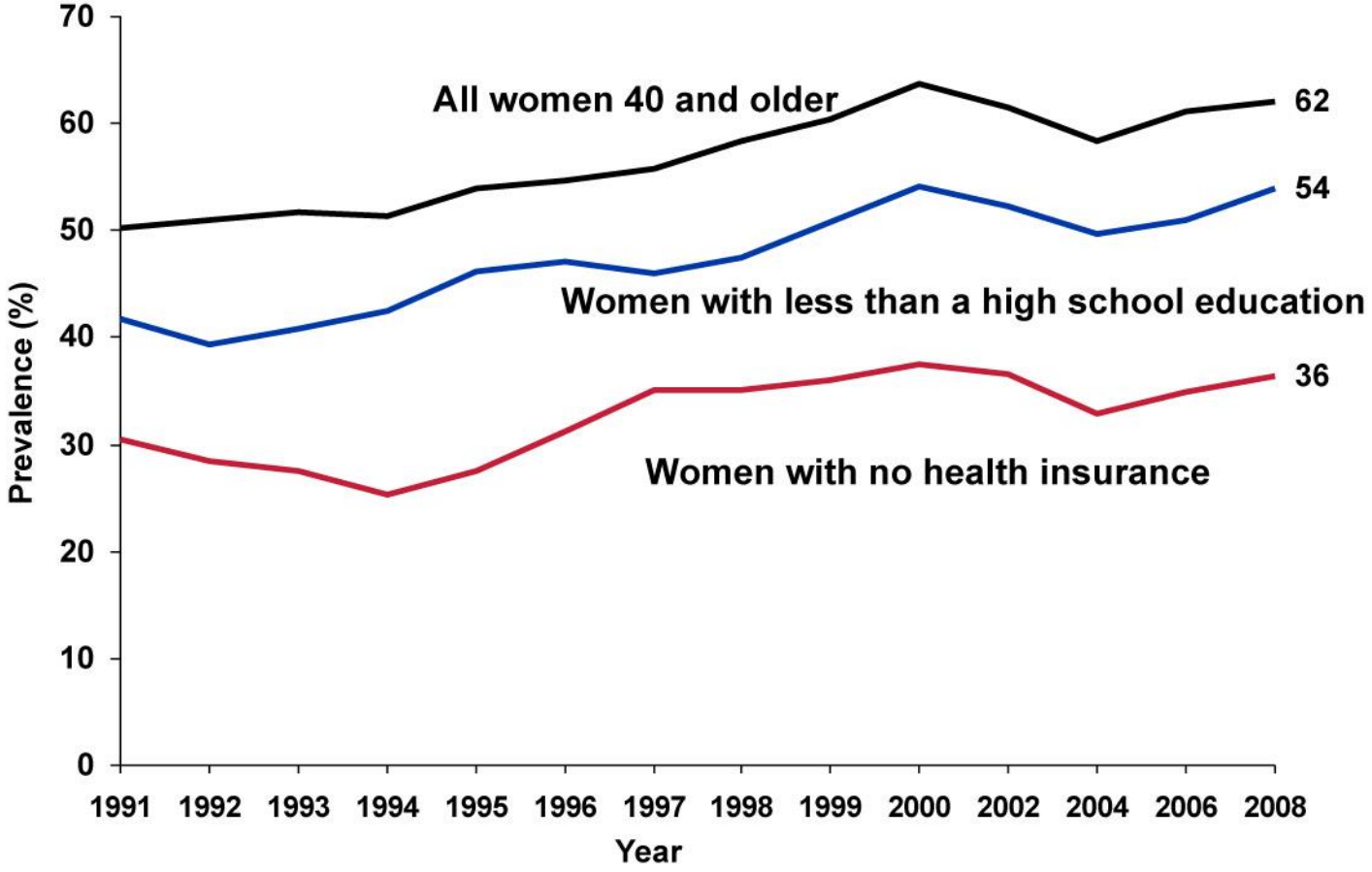
Small copays for mammography are more likely to deter lower education women from receiving mammograms.



Percent decrease in mammography due to copays

SOURCES: ayanian 2008

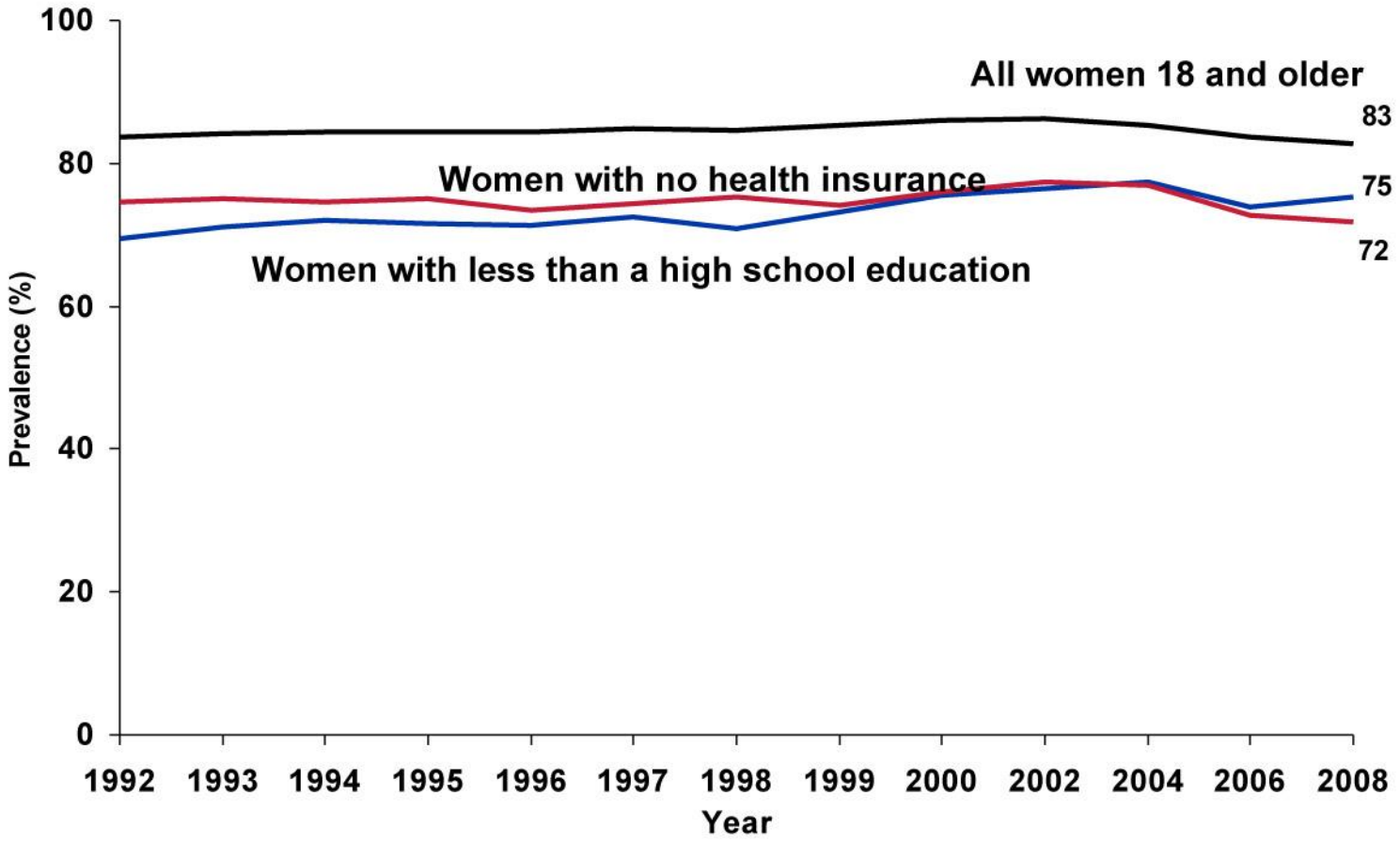
Mammogram Prevalence (%), by Educational Attainment and Health Insurance Status, Women 40 and Older, US, 1991-2008



*A mammogram within the past year. Note: Data from participating states and the District of Columbia were aggregated to represent the United States.

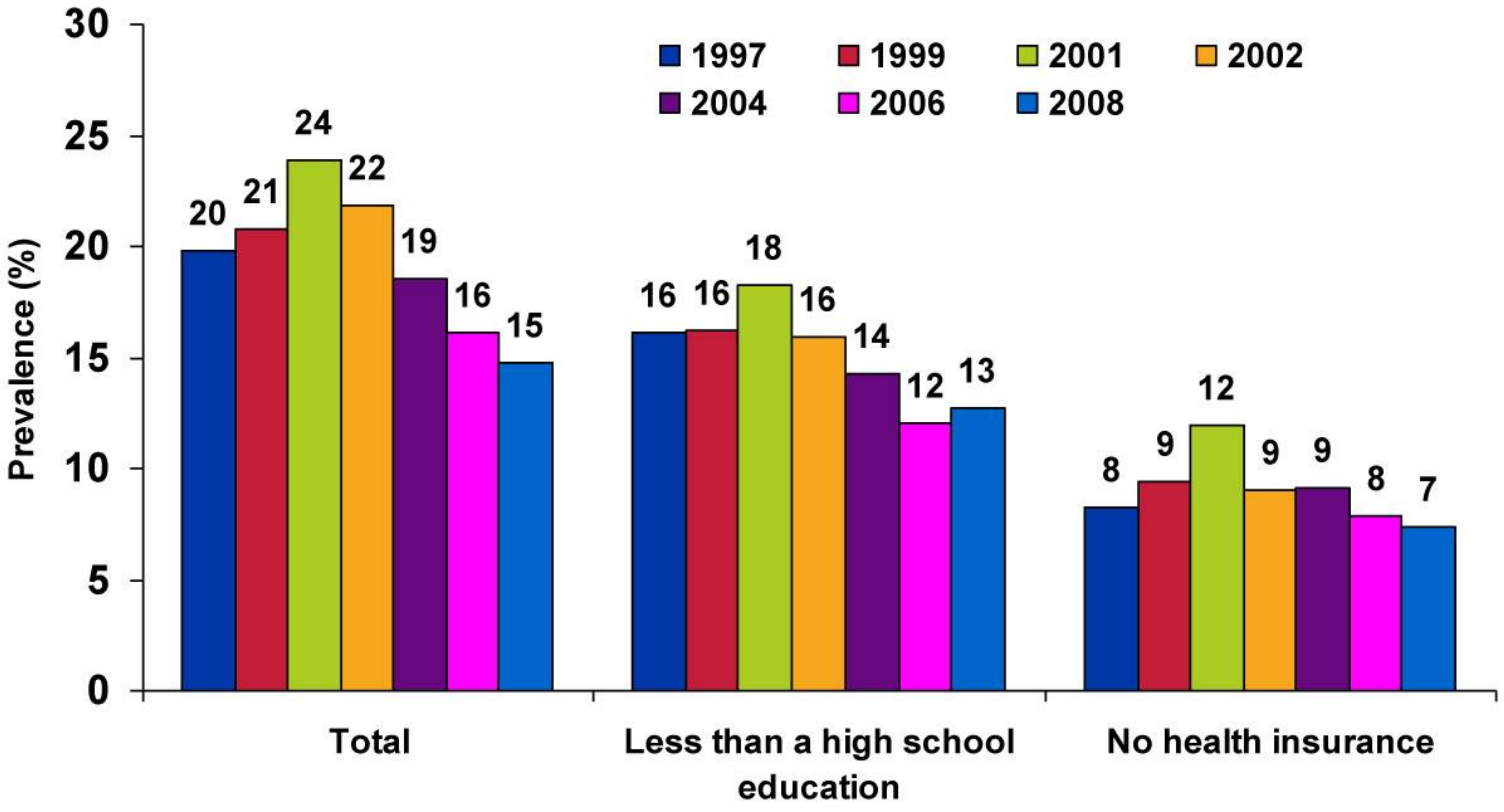
Source: Behavior Risk Factor Surveillance System CD-ROM (1984-1995, 1996-1997, 1998, 1999) and Public Use Data Tape (2000 to 2008), National Centers for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1997, 1999, 2000, 2001-2009.

Trends in Recent* Pap Test Prevalence (%), by Educational Attainment and Health Insurance Status, Women 18 and Older, US, 1992-2008



* A Pap test within the past three years. Note: Data from participating states and the District of Columbia were aggregated to represent the United States. Educational attainment is for women 25 and older.
Source: Behavior Risk Factor Surveillance System CD-ROM (1984-1995, 1996-1997, 1998, 1999) and Public Use Data Tape (2000 to 2008), National Centers for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1997, 1999, 2000, 2001-2009.

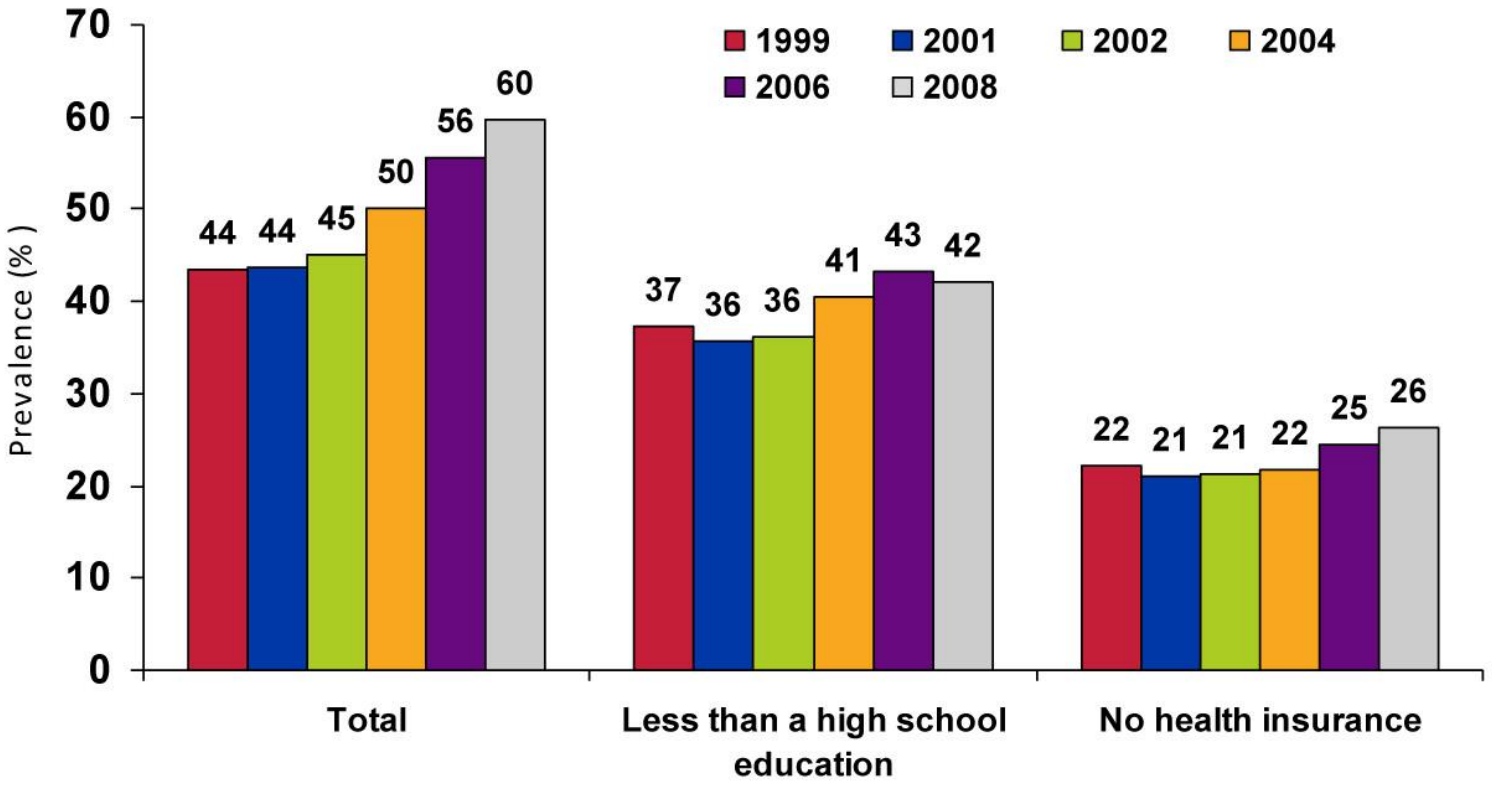
Trends in Recent* Fecal Occult Blood Test Prevalence (%), by Educational Attainment and Health Insurance Status, Adults 50 Years and Older, US, 1997-2008



*A fecal occult blood test within the past year. Note: Data from participating states and the District of Columbia were aggregated to represent the United States.

Source: Behavior Risk Factor Surveillance System CD-ROM (1984-1995, 1996-1997, 1998, 1999) and Public Use Data Tape (2000 to 2008), National Centers for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1997, 1999, 2000, 2001-2009.

Trends in Recent* Flexible Sigmoidoscopy or Colonoscopy Prevalence (%), by Educational Attainment and Health Insurance Status, Adults 50 Years and Older, US, 1997-2008



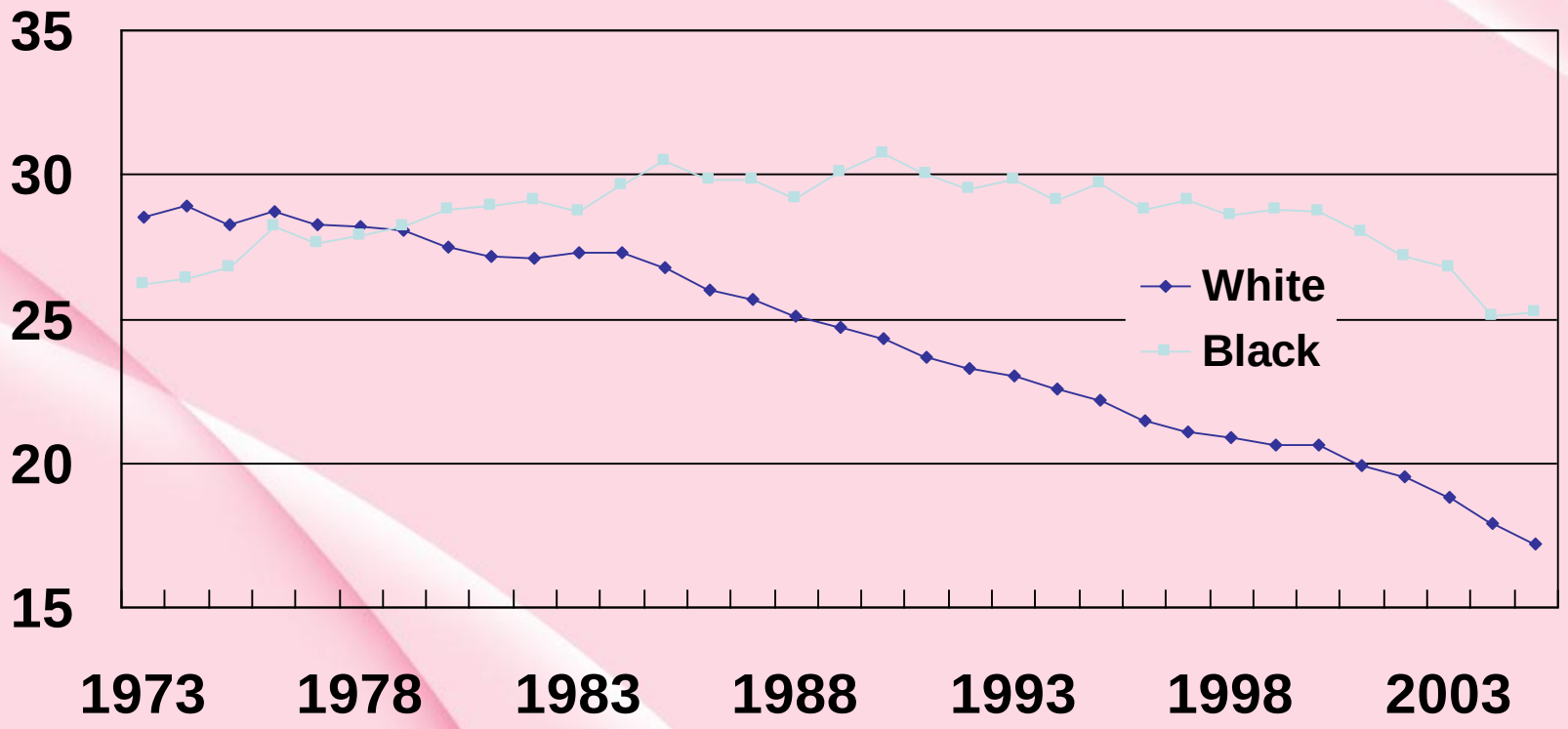
*A flexible sigmoidoscopy or colonoscopy within the past ten years. Note: Data from participating states and the District of Columbia were aggregated to represent the United States.

Source: Behavior Risk Factor Surveillance System CD-ROM (1984-1995, 1996-1997, 1998, 1999) and Public Use Data Tape (2000 to 2008), National Centers for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1997, 1999, 2000, 2001-2009.

Despite progress in fighting cancer, racial disparities can grow

The difference in black and white colorectal cancer death rates is almost 50 times larger than in 1978.

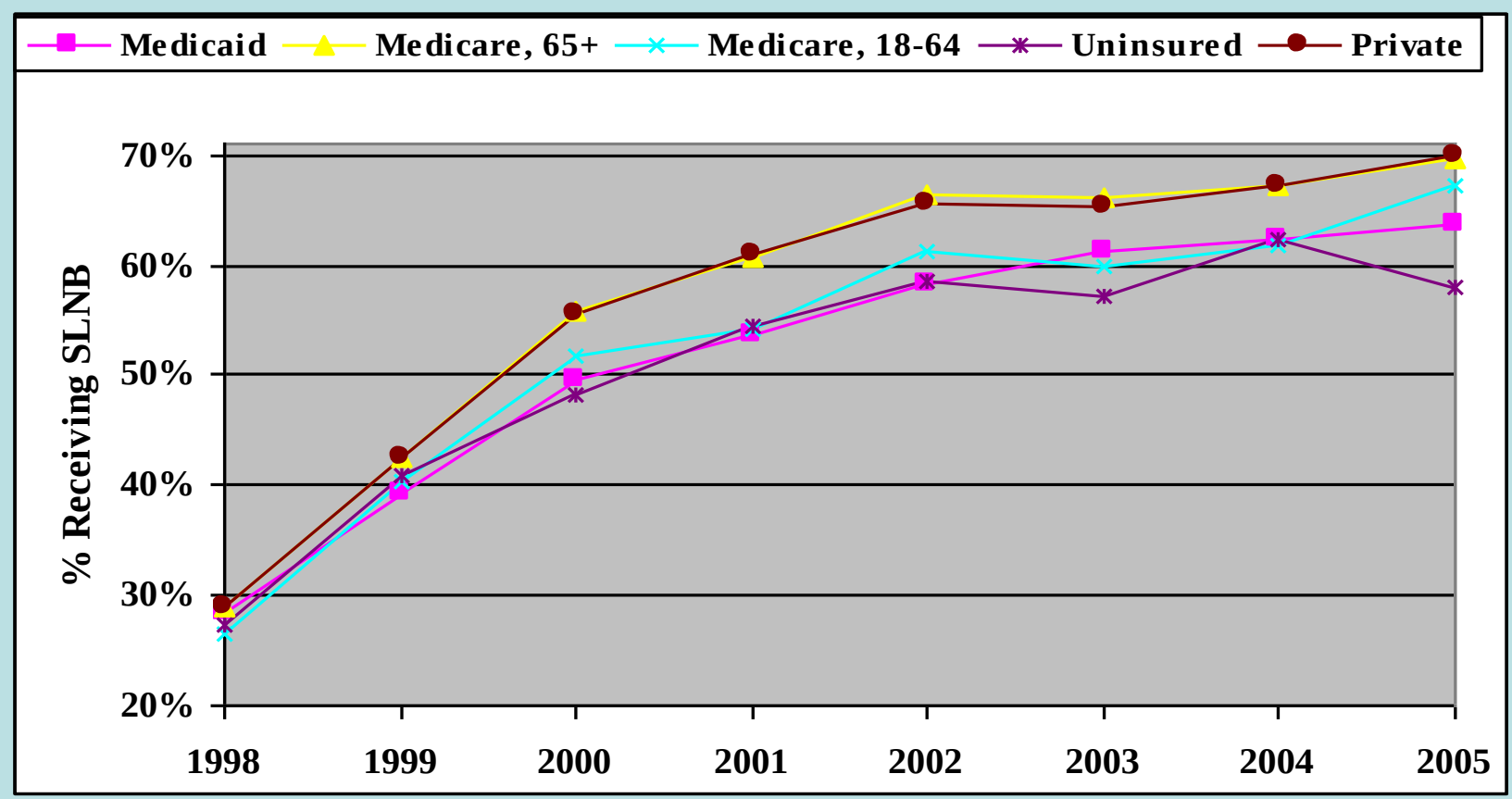
Colorectal Cancer Death Rates (Per 100,000 population)



Note: Data are age adjusted to the 2000 standard population. SOURCE: National Vital Statistics System--Mortality, NCHS, CDC.

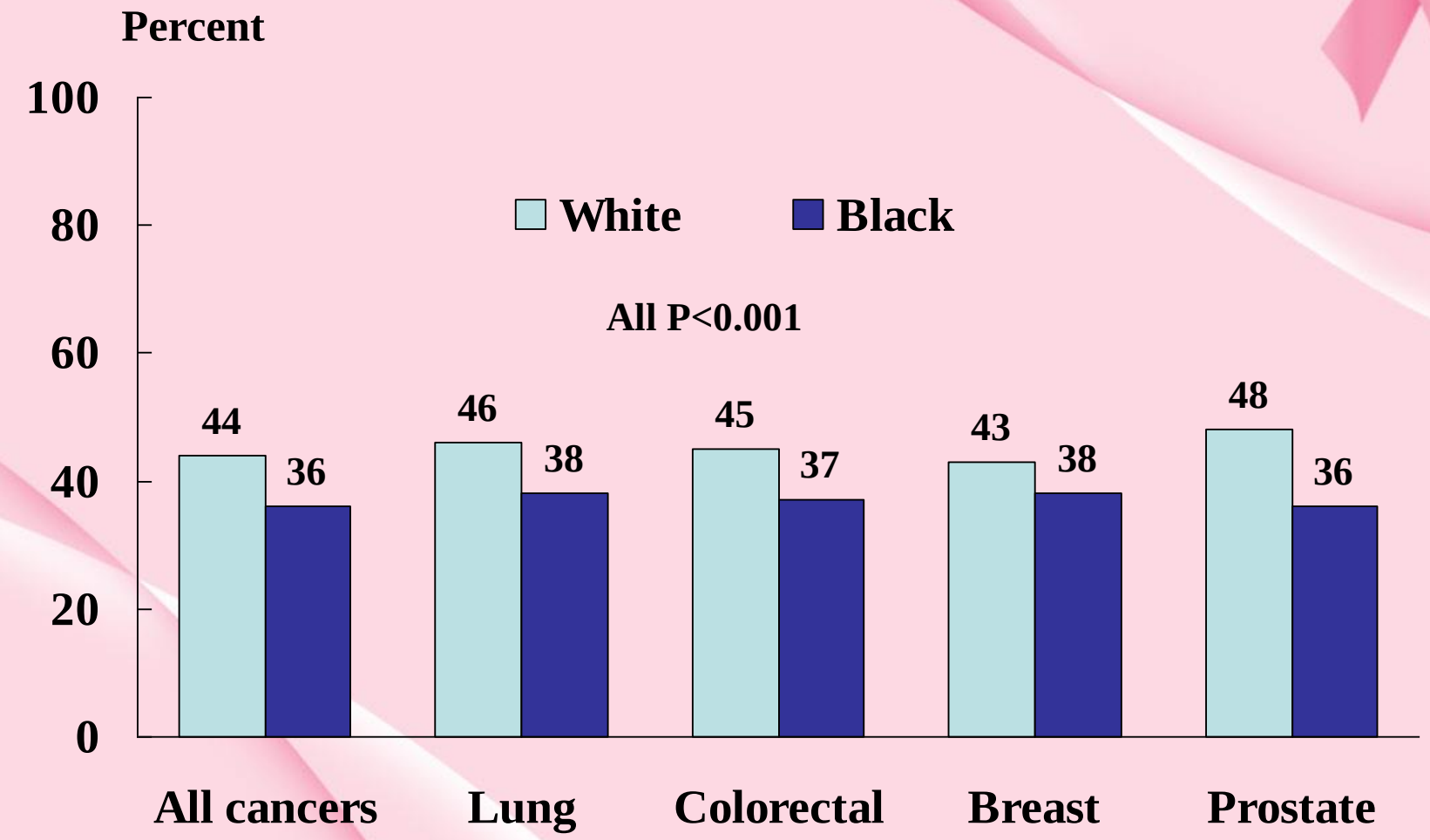
As new treatment technology is used, disparities may grow

Disparities in the receipt of sentinel node lymph biopsy by insurance status have grown as the technology has become more popular.



Chen et al., *Journal of Clinical Oncology 2008*

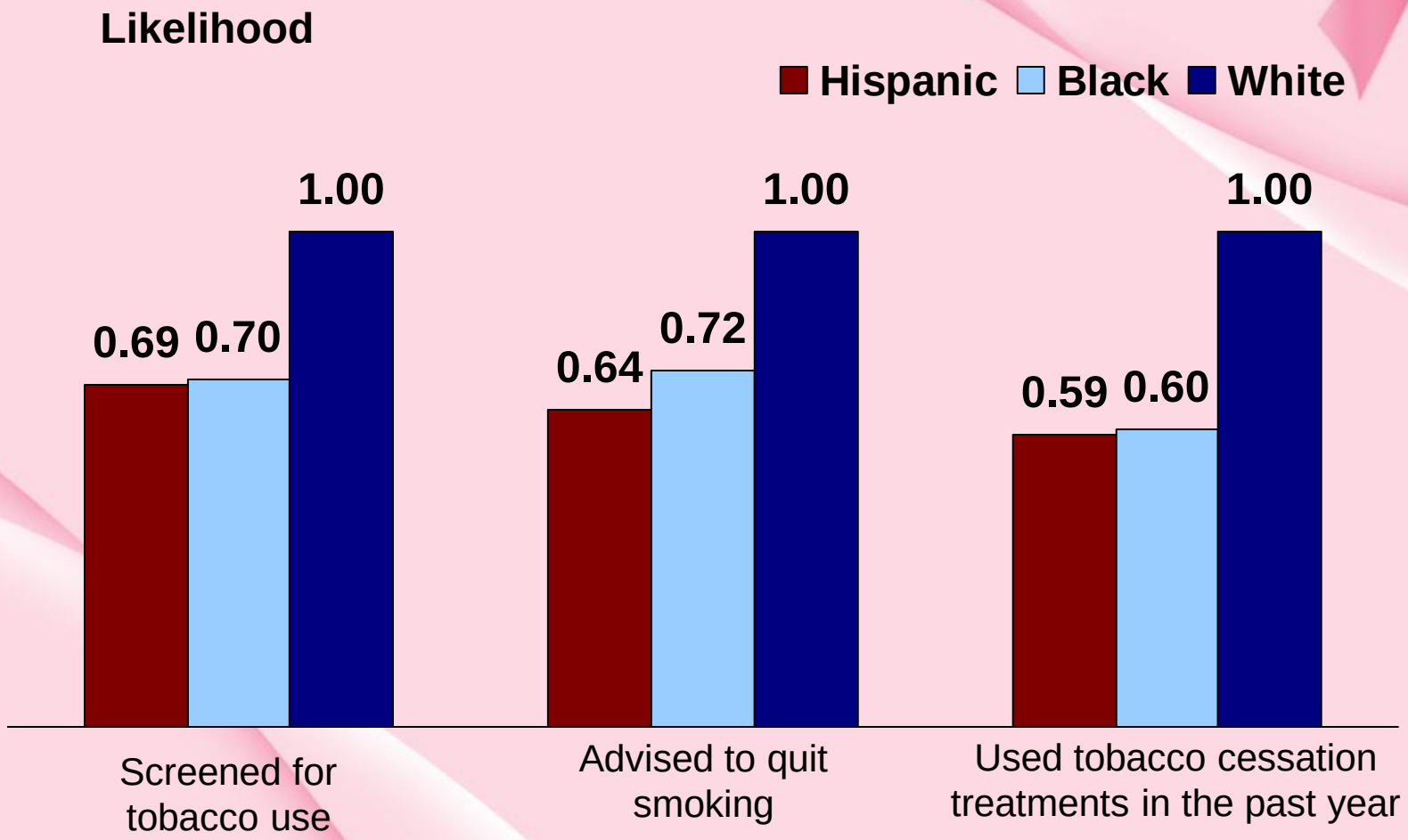
Blacks are less likely than whites to use hospice services prior to their deaths from cancer



Virnig et al, Med Care 2002

Health care providers can make a difference…

Racial and ethnic minorities are less likely to be advised to quit smoking.



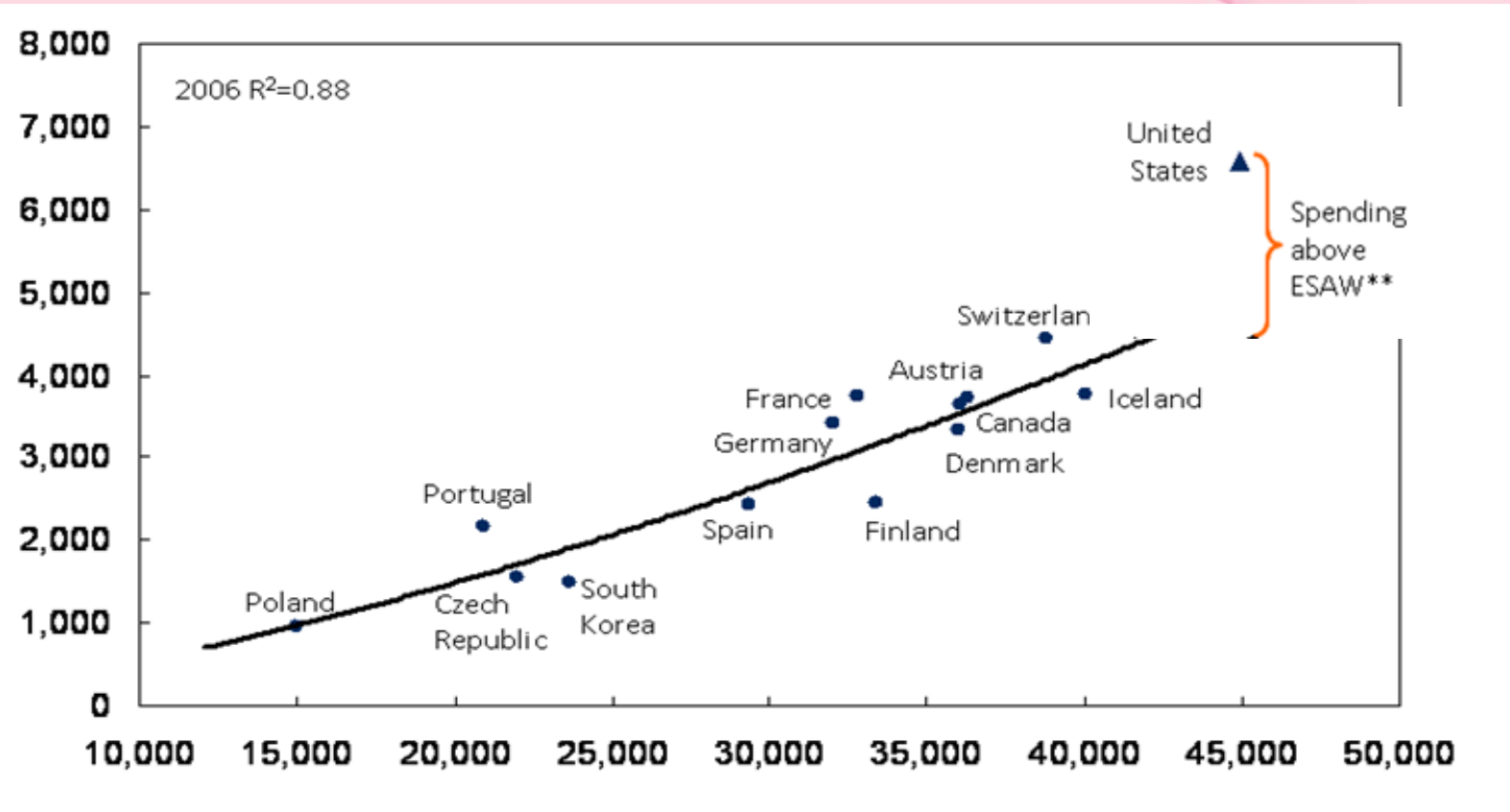
SOURCES: Vilma 2008

True Healthcare Reform (An Efficient, Value Driven Health System)

- Rational use of healthcare is necessary for the future of the U.S. economy (an issue of U.S. security)
- It is possible to decrease costs and improve healthcare by using science to guide our policies
- We need to be smart about health

Spending: US vs. Other Countries

Per capita health care spending $ at PPP*



Per capita GDP ($)

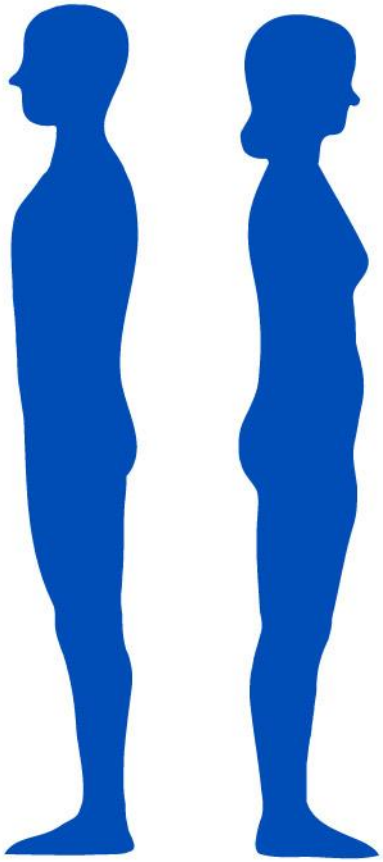
* Purchasing power parity.

** Estimated Spending According to Wealth.

Source: Organization for Economic Co-operation and Development (OECD)

2011 Estimated US Cancer Cases*

Men 822,300		Women 774,370	
Prostate	29%	30%	Breast
Lung & bronchus	14%	14%	Lung & bronchus
Colon & rectum	9%	9%	Colon & rectum
Urinary bladder	6%	6%	Uterine corpus
Melanoma of skin	5%	5%	Thyroid
Kidney & renal pelvis	5%	4%	Non-Hodgkin lymphoma
Non-Hodgkin lymphoma	4%	4%	Melanoma of skin
Oral cavity	3%	3%	Kidney & renal pelvis
Leukemia	3%	3%	Ovary
Pancreas	3%	3%	Pancreas
All Other Sites	19%	16%	All Other Sites



Source: American Cancer Society, 2011

Source: American Cancer Society, 2011.

***Excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.**

The Lifetime Probability of Developing Cancer for Men, 2005-2007*

Site	Risk
All sites†	1 in 2
Prostate	1 in 6
Lung and bronchus	1 in 13
Colon and rectum	1 in 19
Urinary bladder‡	1 in 26
Melanoma§	1 in 37
Non-Hodgkin lymphoma	1 in 43
Kidney	1 in 53
Leukemia	1 in 66
Oral Cavity	1 in 71
Stomach	1 in 91

*** For those free of cancer at beginning of age interval.**

† All Sites exclude basal and squamous cell skin cancers and in situ cancers except urinary bladder.

‡ Includes invasive and in situ cancer cases

§ Statistic for white men.

Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.5.0 Statistical Research and Applications Branch, NCI, 2010. http://srab.cancer.gov/devcan

The Lifetime Probability of Developing Cancer for Women, 2005-2007*

Site	Risk
All sites†	1 in 3
Breast	1 in 8
Lung & bronchus	1 in 16
Colon & rectum	1 in 20
Uterine corpus	1 in 39
Non-Hodgkin lymphoma	1 in 52
Urinary bladder‡	1 in 87
Melanoma§	1 in 55
Ovary	1 in 72
Pancreas	1 in 71
Uterine cervix	1 in 147

*** For those free of cancer at beginning of age interval.**
† All Sites exclude basal and squamous cell skin cancers and in situ cancers except urinary bladder.
‡ Includes invasive and in situ cancer cases
§ Statistic for white women.
Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.5.0 Statistical Research and Applications Branch, NCI, 2010. http://srab.cancer.gov/devcan

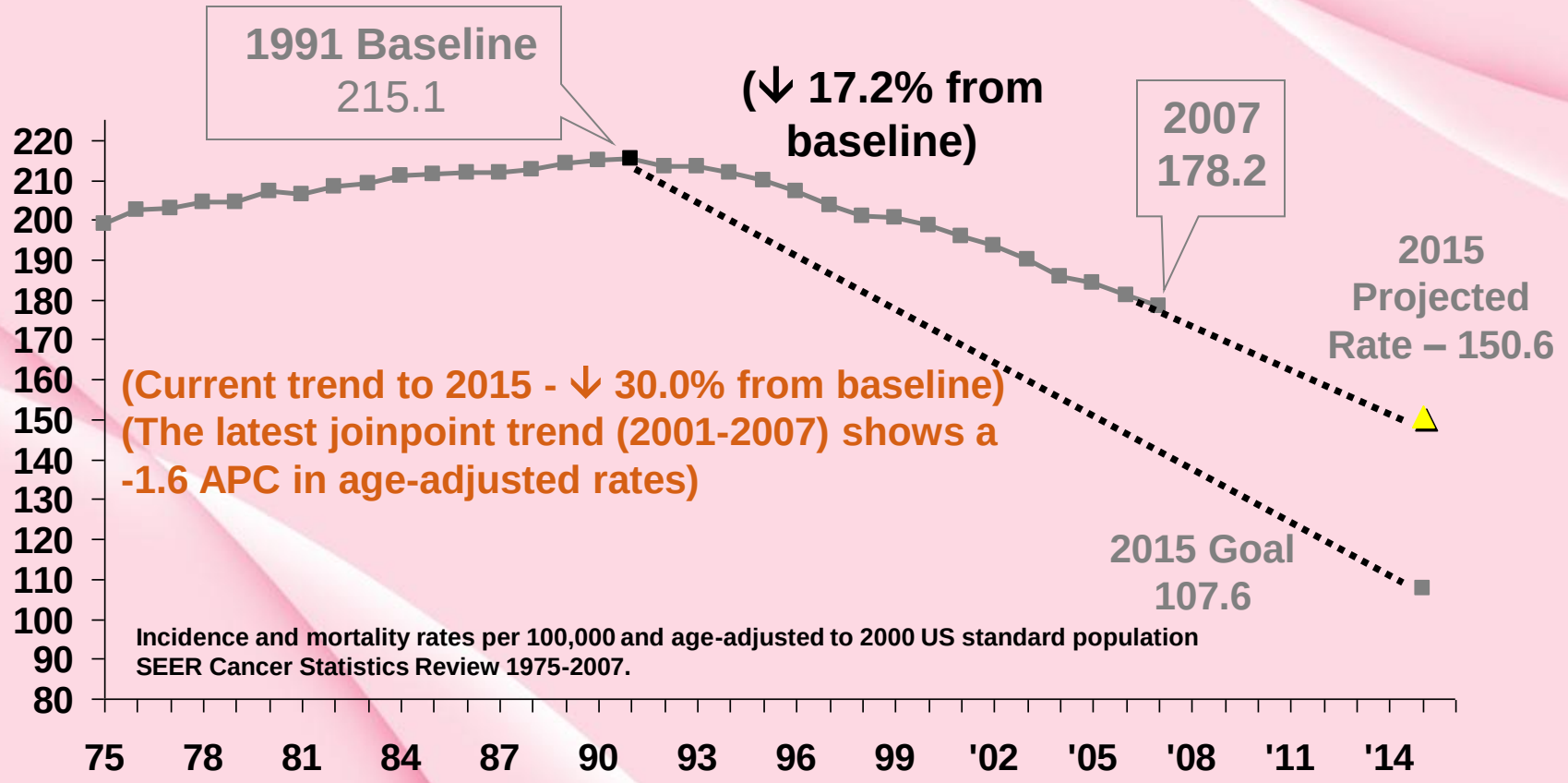
Factor Increasing Cancer Risk in U.S.

- An aging population
  - 30 million over age 65 in 2000
  - 71 million over age 65 in 2030
- Western diet/high in calories
- Lack of exercise
- Smoking/Tobacco use

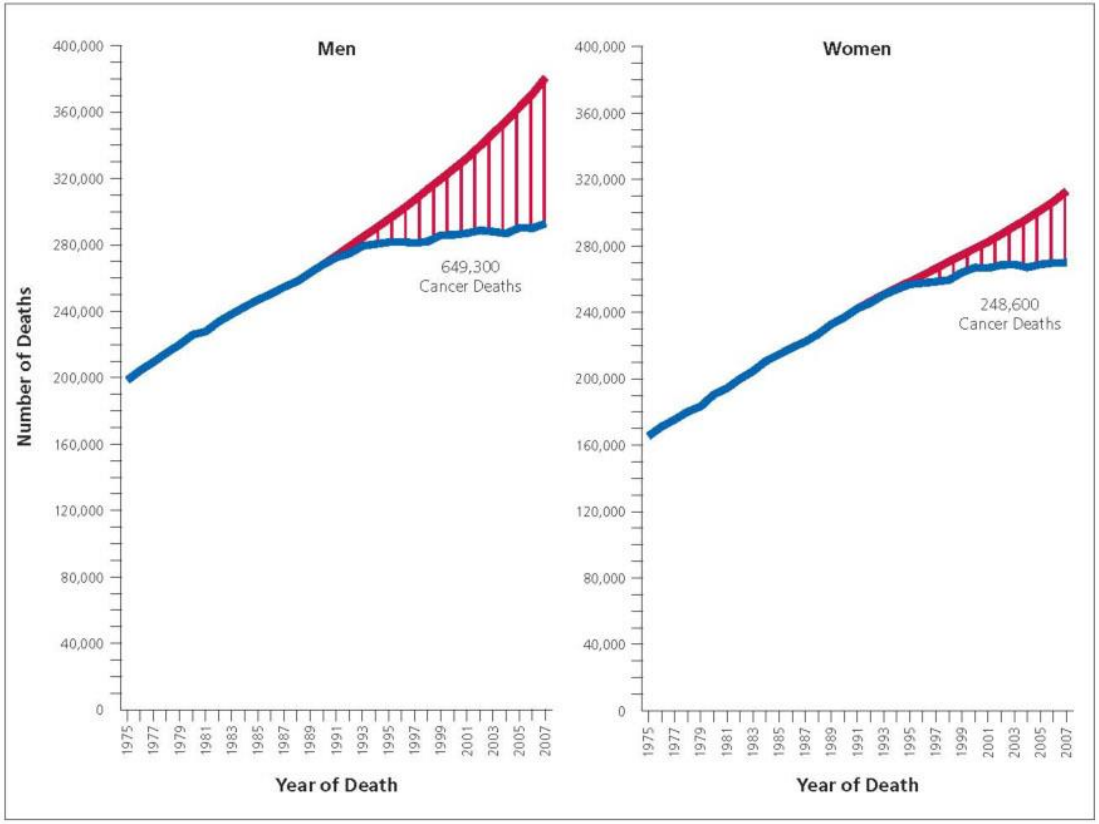
All Sites - Mortality Rates

By Year of Death - All Races, Males and Females

2015 Goal – 50% Reduction from Baseline



Total Number of Cancer Deaths Avoided from 1991 to 2007 in Men and 1992 to 2007 in Women

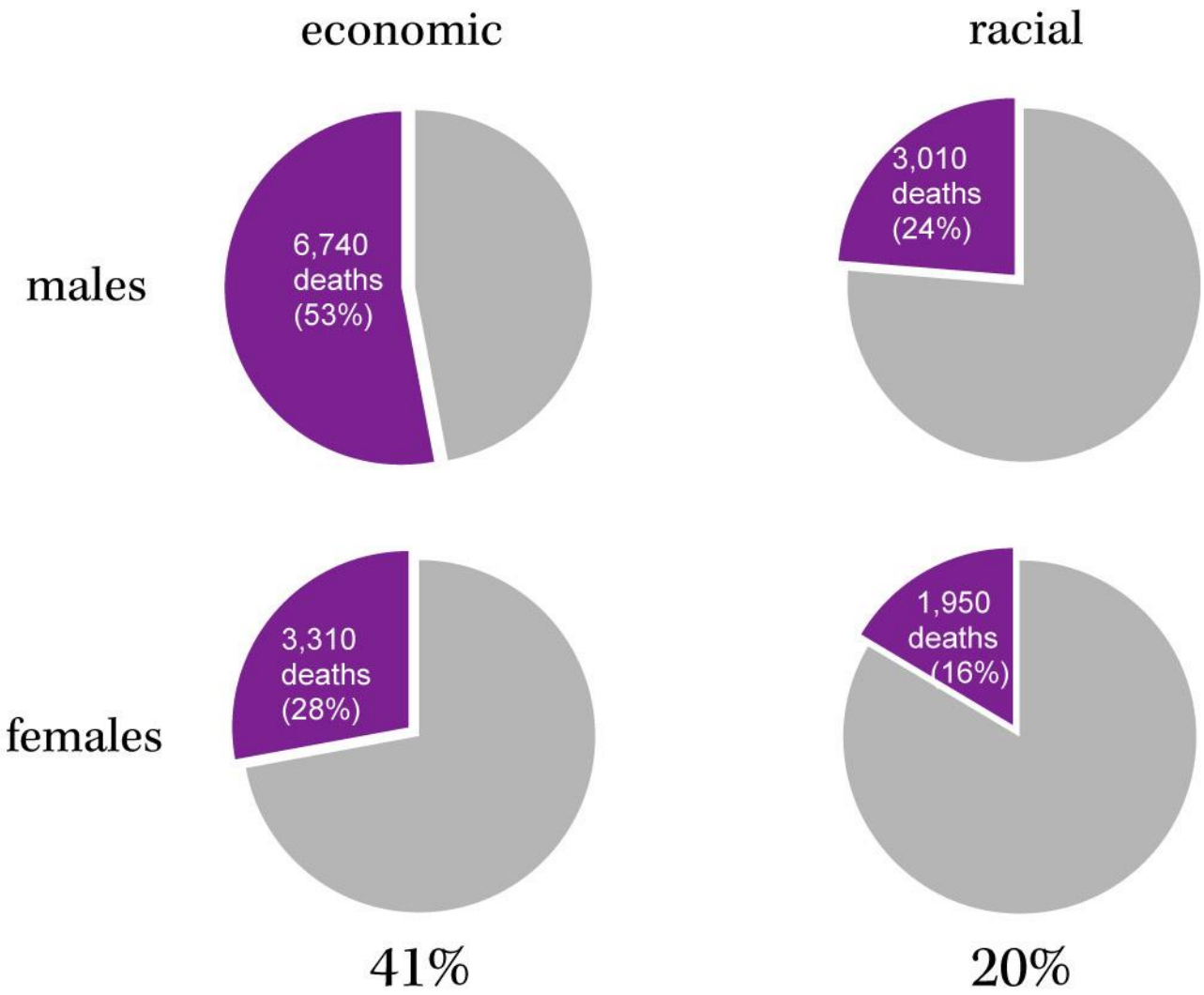


The blue line represents the actual number of cancer deaths recorded each year and the red line represents the expected number of cancer deaths if cancer death rates had remained the same since 1990/1991.

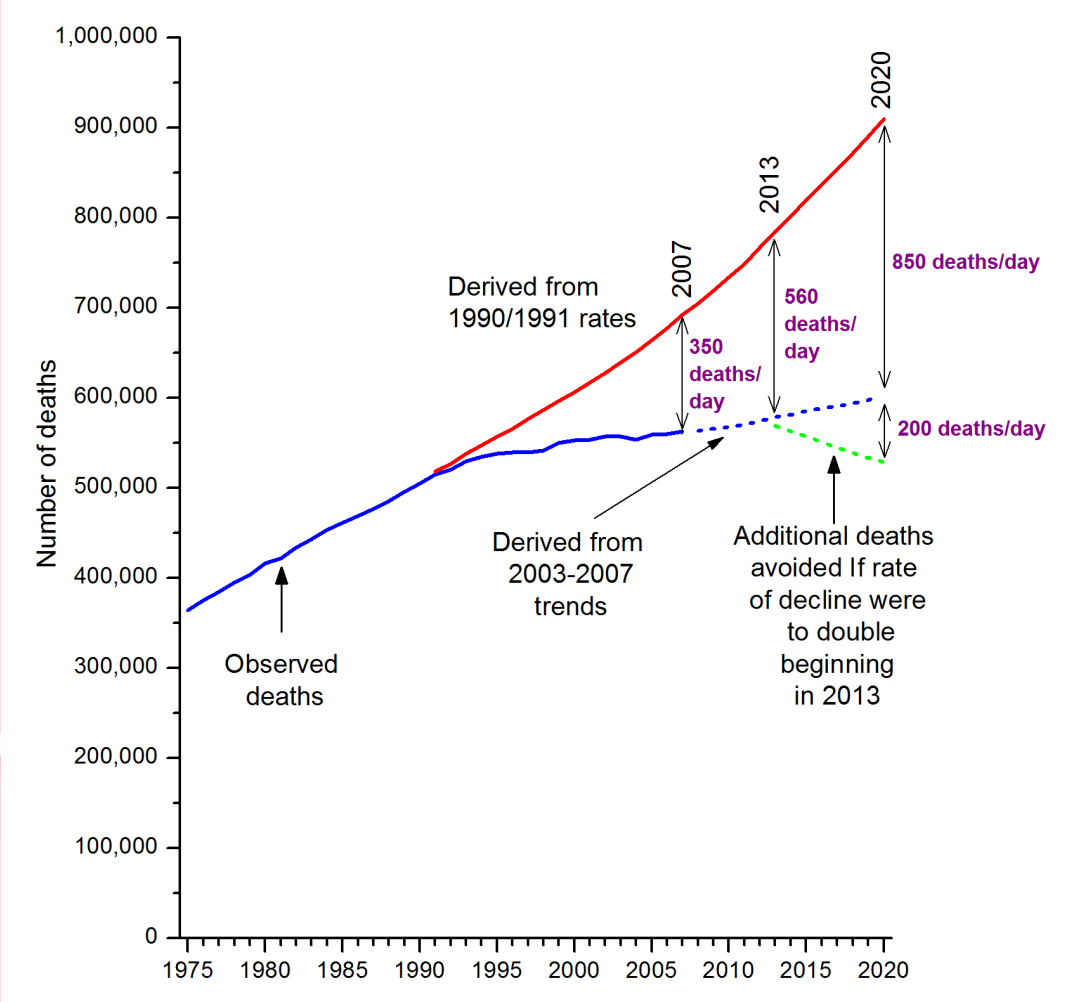
Total number of premature (ages 25 to 64) cancer deaths that could have been avoided in 2007 by eliminating economic and racial disparities

$$\frac{\text{avoidable deaths}}{\text{total deaths}} = \frac{(36{,}720 + 23{,}650)}{(86{,}270 + 77{,}920)} = 37\%$$

Total number of premature (ages 25 to 64) cancer deaths that could have been avoided in 2007 by eliminating economic and racial disparities among African Americans



Deaths averted from 1991-2020

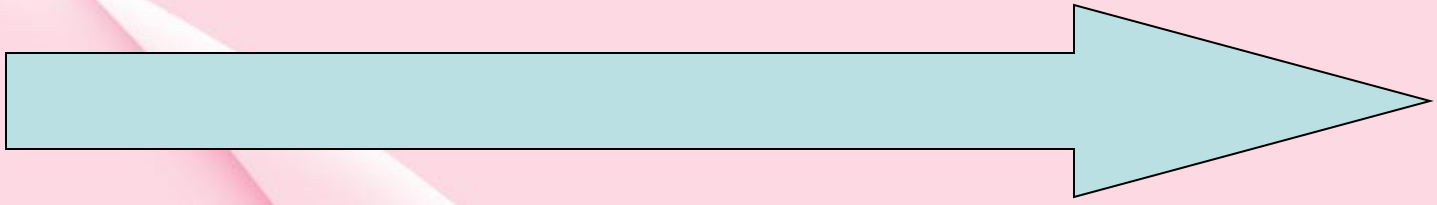


The blue solid line represents the actual number of cancer deaths recorded and the blue dashed line represents projected cancer deaths based on decreasing trends in cancer death rates during 2003-2007. The green dashed line represents the projected number of cancer deaths if rates continue to decline at twice the current rate (2003-2007) beginning in 2013. The red line represents the expected number of cancer deaths if cancer death rates had remained the same since 1990 (males) and 1991(females).

Comprehensive Cancer Control

Integrated and coordinated approach to reduce cancer incidence, morbidity, and mortality

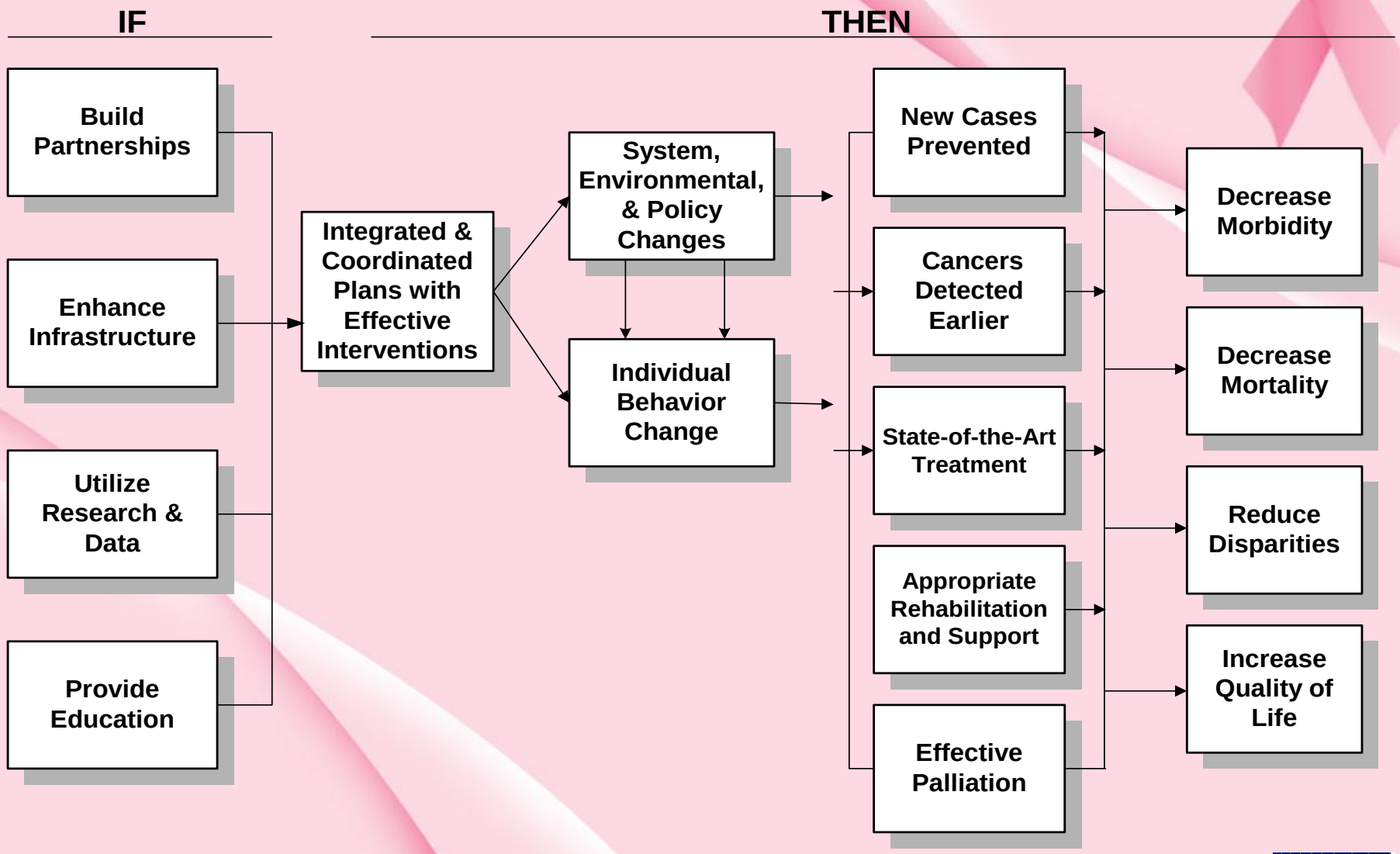
prevention . . . early detection . . . treatment . . . rehabilitation . . . palliation



Comprehensive Approaches to Cancer Control

- Science, data or evidence-based agenda
- Infrastructure support
- Horizontal planning
- Diverse partnerships
- Planned dissemination/institutionalization

Comprehensive Cancer Control



CDC
Centers for Disease Control and Prevention

AL Comprehensive Cancer Control Plan

Goal: Increase the number of breast and cervical cancer cases in AL diagnosed early through patient navigation and quality screening

Table 13:

Women Aged 50+ Who Have Had a Mammogram Within the Past Two Years

EDUCATION		YES	NO
Less than H.S.	%	68.1	31.9
	CI	(62.7-73.4)	(26.6-37.3)
	n	431	181
H.S. or G.E.D.	%	76.9	23.1
	CI	(73.6-80.2)	(19.8-26.4)
	n	993	271
Some post-H.S.	%	80.0	20.0
	CI	(76.4-83.6)	(16.4-23.6)
	n	695	167
College graduate	%	83.3	16.7
	CI	(79.3-87.2)	(12.8-20.7)
	n	587	112

Source: BRFSS 2008

Table 14:

Women Aged 18+ Who Have Had a Pap Test Within the Past Three Years

EDUCATION		YES	NO
Less than H.S.	%	66.6	33.4
	CI	(59.7-73.5)	(26.5-40.3)
	n	232	118
H.S. or G.E.D.	%	79.8	20.2
	CI	(76.4-83.1)	(16.9-23.6)
	n	713	217
Some post-H.S.	%	85.7	14.3
	CI	(82.3-89.1)	(10.9-17.7)
	n	652	124
College graduate	%	90.2	9.8
	CI	(86.9-93.5)	(6.5-13.1)
	n	678	82

Source: BRFSS 2008

Path to Breast Cancer Control in AL

Goal: Increase the number of breast cancer cases in AL diagnosed early through patient navigation and quality screening

BREAST CANCER

C-AL-2011-2015-1

By 2015, increase from 74.1% to 79.0% the percentage of Alabama women 50 and older who report having had a mammogram in the past two years.

- Baseline: 74.1%
- Target: 79.0%
- Information source: 2008 BRFSS; ABCCEDP

Strategies:

- Collaborate with existing community leaders and organizations to provide comprehensive educational campaigns regarding the importance of breast cancer screening and early detection.
- Provide continuing professional education programs for primary care providers regarding adherence to established breast cancer screening guidelines.

Path to Breast Cancer Control in AL

Goal: Increase the number of breast cancer cases in AL diagnosed early through patient navigation and quality screening

C-AL-2011-2015-2

By 2015, increase by 5% the utilization of mammography services by medically underserved women enrolled in the ABCCEDP.

- Baseline: 8.0% in whites and 29.0% in blacks
- Target: 13.0% in whites and 34.0% in blacks
- Information source: ABCCEDP

Strategies:

- Collaborate with existing community leaders and organizations to provide comprehensive educational campaigns regarding the importance of breast cancer screening and early detection.
- Promote community awareness about availability of low or no cost breast cancer screening services for underserved women.
- Promote community awareness about necessity for funding low or no cost breast cancer screening services for underserved women.
- Increase the number of patient navigators to help remove barriers and increase access to care.

Path to Breast Cancer Control in AL

Goal: Increase the number of breast cancer cases in AL diagnosed early through patient navigation and quality screening

C-AL-2011-2015-3

By 2015, increase from 65.9% to 70.0% the proportion of Alabama's breast cancer cases that are diagnosed as in situ or localized disease.

- Baseline: 65.9%
- Target: 70.0%
- Information source: ASCR

Strategies:

- Collaborate with existing community leaders and organizations to provide comprehensive educational campaigns regarding the importance of breast cancer screening and early detection.
- Promote community awareness about availability of low or no cost breast cancer screening services for underserved women.
- Increase the number of patient navigators to help remove barriers and increase access to care.
- Provide continuing professional education programs for primary care providers regarding adherence to established breast cancer screening guidelines.

Mitchell Cancer Institute Vision: Cancer Institute Driven by Research and Education

- Perform outstanding original basic cancer *research*
- *Translate* research findings into therapies, preventions, or diagnostics
- *Validate* research findings in a clinical setting
- *Educate* health-care providers about the latest advances
- ***Reach out* to under-served populations**

UNIVERSITY OF SOUTH ALABAMA MITCHELL CANCER INSTITUTE

Mitchell Cancer Institute
Cancer Control Program

- *Established community partnerships to provide:*

-Skin Cancer Screening:

-screened over 800 individuals via 10 outreach screening events in eight counties

-Prostate cancer screening with the ADPH

-approximately 120 men screened

-Colorectal cancer screening via the Fecal Immunochemical Test (FIT)

UNIVERSITY OF SOUTH ALABAMA
MITCHELL CANCER INSTITUTE

Mitchell Cancer Institute
Cancer Control Program: Fight for Life

- *Establishing a partnership with several community partners to address breast cancer disparity*
  - *-will establish an on-site breast health and cancer education center at FPHC*
  - *-implement systemwide change at FPHC to increase the number of women receiving clinical breast exam and age-appropriate mammogram*
  - -partners:
    - -Franklin Primary Health Centers
    - -ACS and the CHA volunteers
    - -USA Children's and Women's Hospital
    - -UAB REACH US

- *Will be staffed by dedicated Breast Cancer Patient Navigator and ACS CHA workers*
- *Goals:*
  - *to provide breast health education to 2000 women*
  - *Increase the number of women referred for screening mammograms to 1000*

FIGHT for LIFE

USA MITCHELL CANCER INSTITUTE

Franklin Primary

PRIMARY SERVICE AREA MAP

USA MITCHELL CANCER INSTITUTE

USA Mitchell Cancer Institute, 1660 Springhill Avenue, Mobile, AL

USA Mitchell Cancer Institute, 188 Hospital Drive, Suite 400, Fairhope, AL

FRANKLIN PRIMARY HEALTH CENTER, INC.

Franklin Medical Mall, 1303 Dr. Martin Luther King Jr., Mobile, AL

Gilbertown Medical, Dental, & Optometry Center, 140 Front Street, Suite 4, Gilbertown, AL

Loxley Family Medical Center, 1083 East Relham Drive, Loxley, AL

Aiello/Busky Medical Center, 424 South Wilson Avenue, Prichard, AL

H.E. Savage Center (Health Care for the Homeless), 553 Dauphin Street, Mobile, AL

Maysville Medical Center, 1956 Duval Street, Mobile, AL

Springhill Health Center, 1201 Springhill Avenue, Mobile, AL

West Mobile Family Medical Center, 801 D University Blvd., Mobile, AL

Central Plaza Towers Medical Center, 300 Bay Shore Avenue, Bldg. 306, Suite 1, Mobile, AL

Baldwin Family Health Center, 1628 N. McKenzie Street, Suite 102, Foley, AL

J.R. Thomas Rehabilitation, Fitness and Wellness Center, 1361 Dr. Martin Luther King Jr. Avenue, Mobile, AL

LOCATIONS OF SPONSORED COMMUNITY SCREENING EVENTS

- Mt. Ararat Baptist Church, 5201 Washington Blvd., Theodore, AL
- Mount Hebron Church Ministries, 2531 Berkley Ave., Mobile, AL
- Highpoint Baptist Church, 2421 Lott Rd., Eight Mile, AL
- Pilgrim Rest A.M.E. Zion Church, 125 Greer Ave., Whistler, AL

Conclusion

- Eliminating disparities in cancer screening, diagnosis, treatment, and mortality is an essential step toward improved health outcomes for all Americans with cancer.

- Reducing cancer disparities can be achieved by:
  - Instituting cost-effective public health programs that promote overall wellness and save lives.
  - Developing community partnerships that allows for cost-sharing and benefit across the healthcare spectrum.

Thank You!