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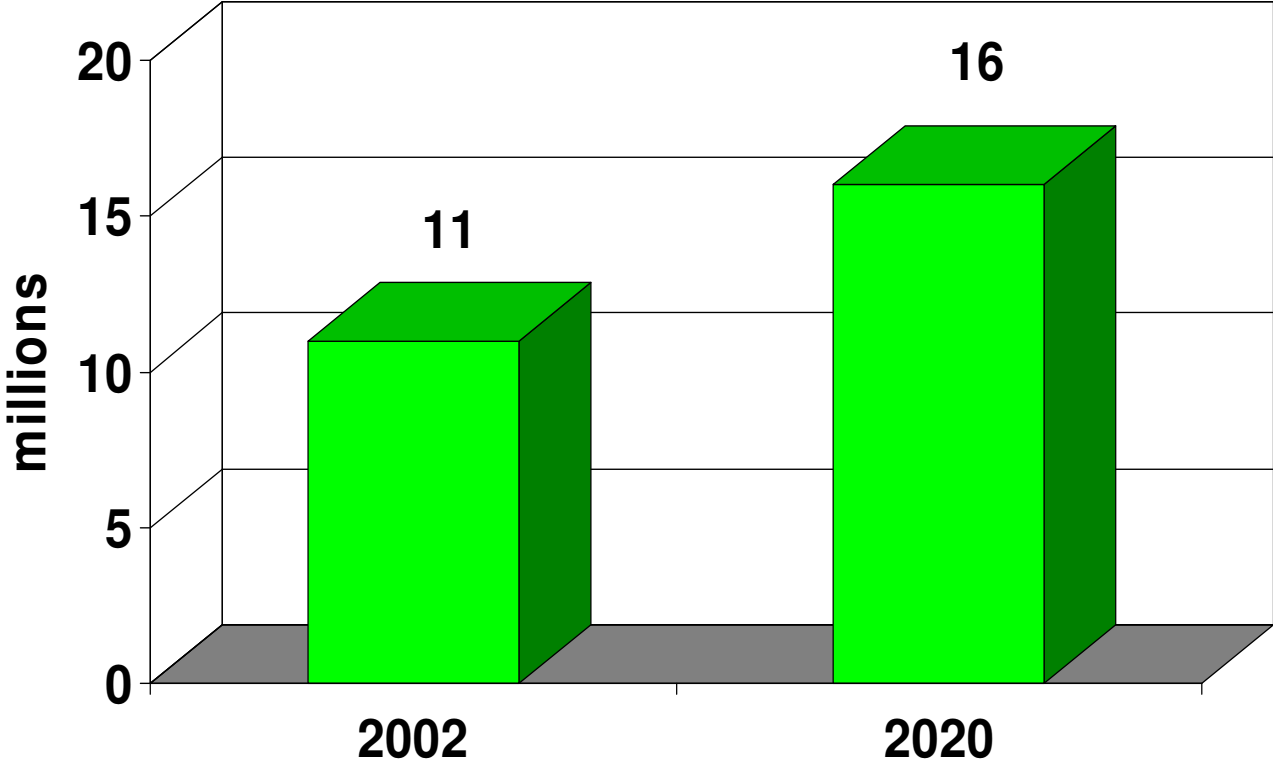
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Disclosures

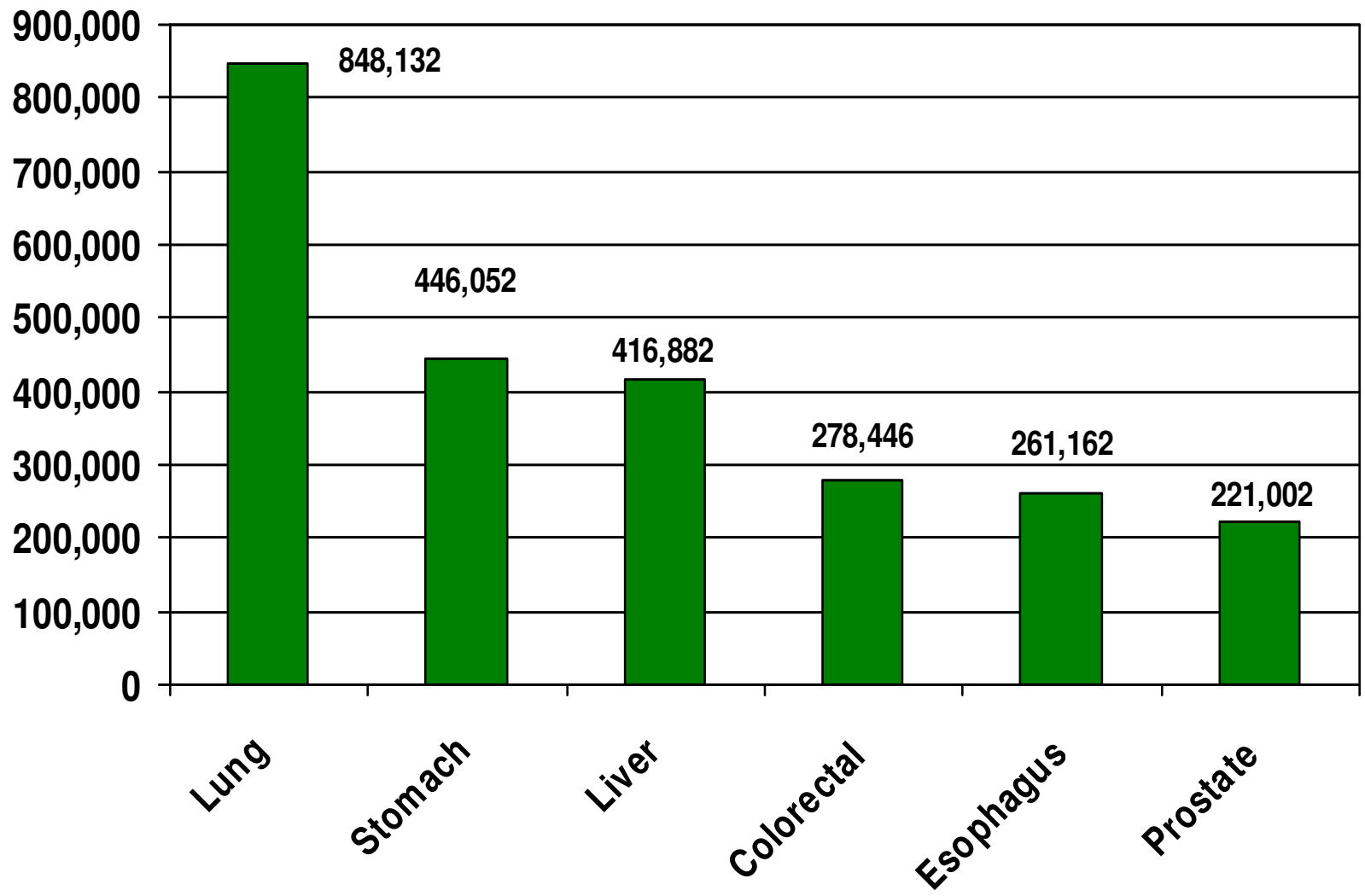
- Employed by:
 - American Cancer Society
 - Emory University
- Steering Committee:
 - GSK prostate cancer prevention study
- Other disclosures:
 - No Stock Ownership
 - No Speakers Bureaus
 - No Advocacy of any products in the talk

Growth of New Cancer Cases Worldwide, 2000-2020



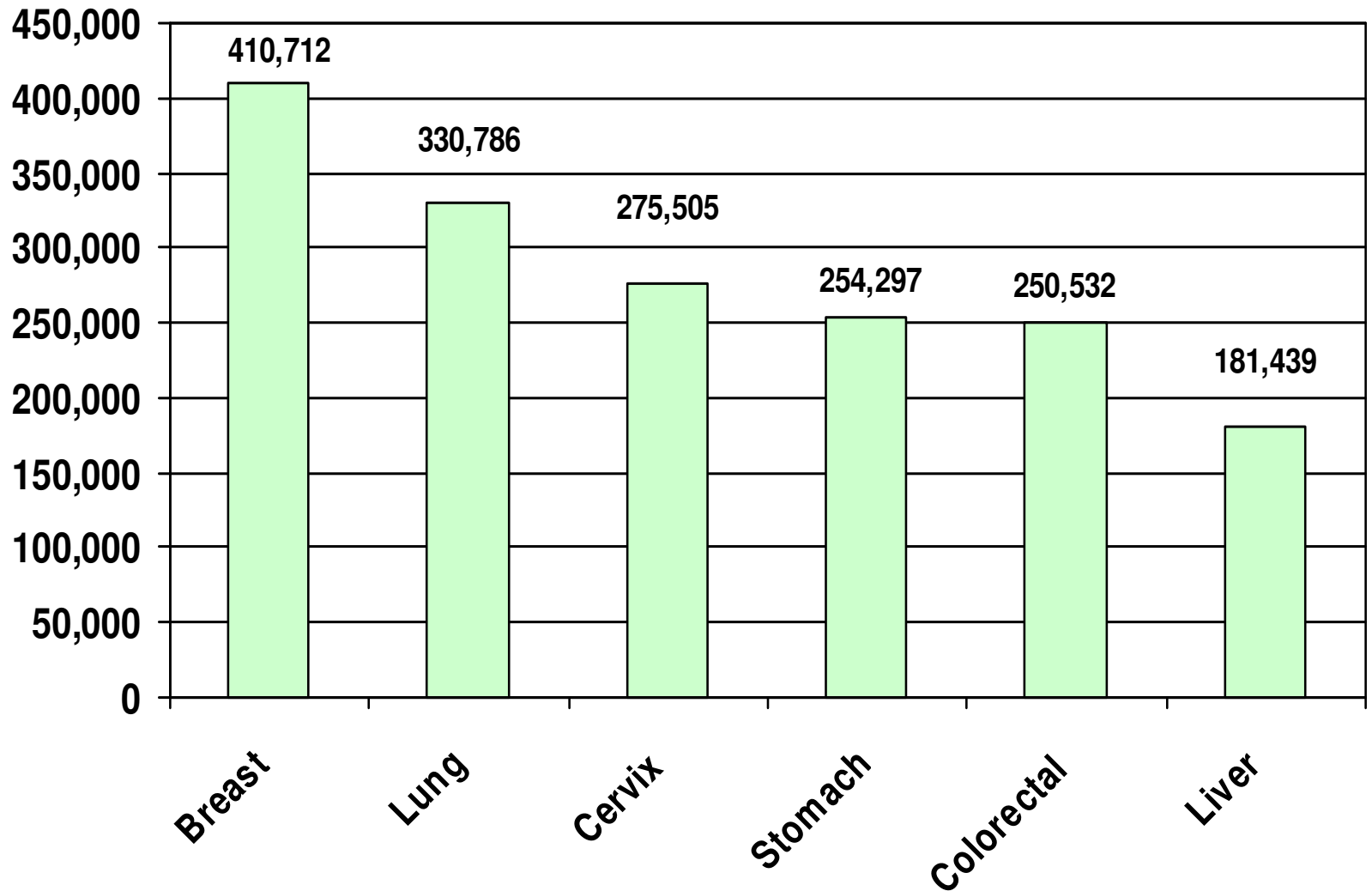
WHO

World, Cancer Mortality, Men, 2002



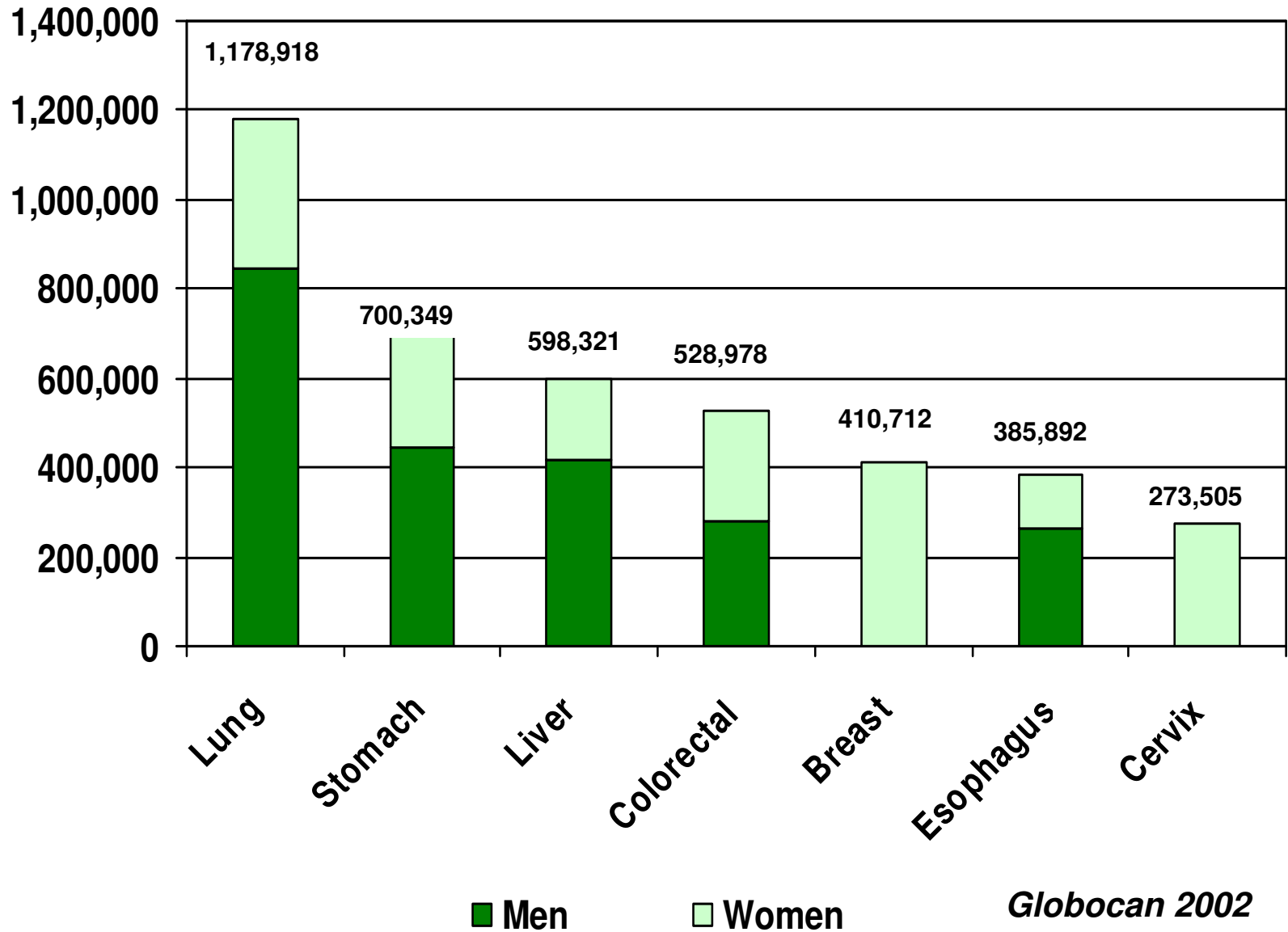
Globocan 2002

World, Cancer Mortality, Women, 2002



Globocan 2002

World, Cancer Mortality, 2002



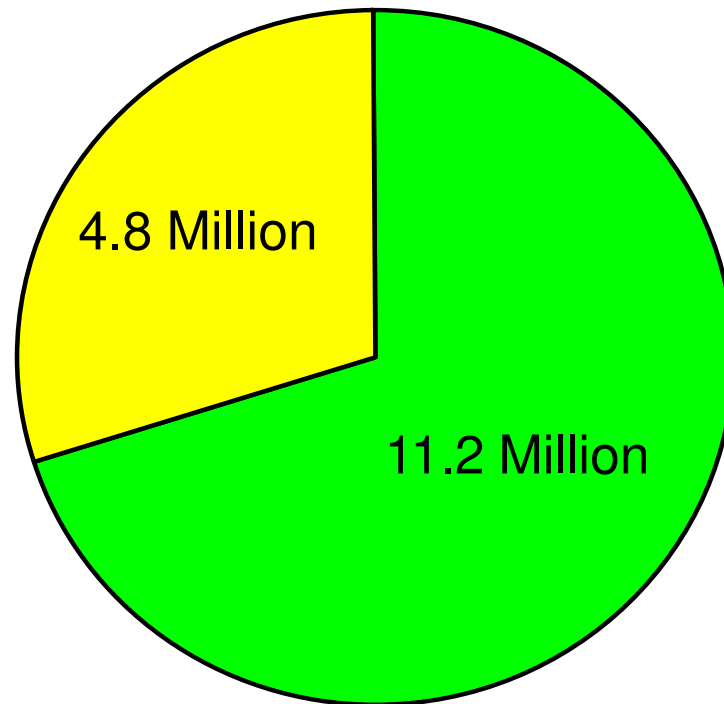
Globocan 2002



Tobacco

- 650 million smokers alive today will eventually die of tobacco-related causes
- Half of all smokers die in middle age (35-65)
- Tobacco killed 100 million in the last century; it is projected to kill 1 billion this century
- Tobacco will kill 10 million people worldwide each year and 7 million of these deaths will be in the developing world.
- More than 40% of all smokers live in India and China

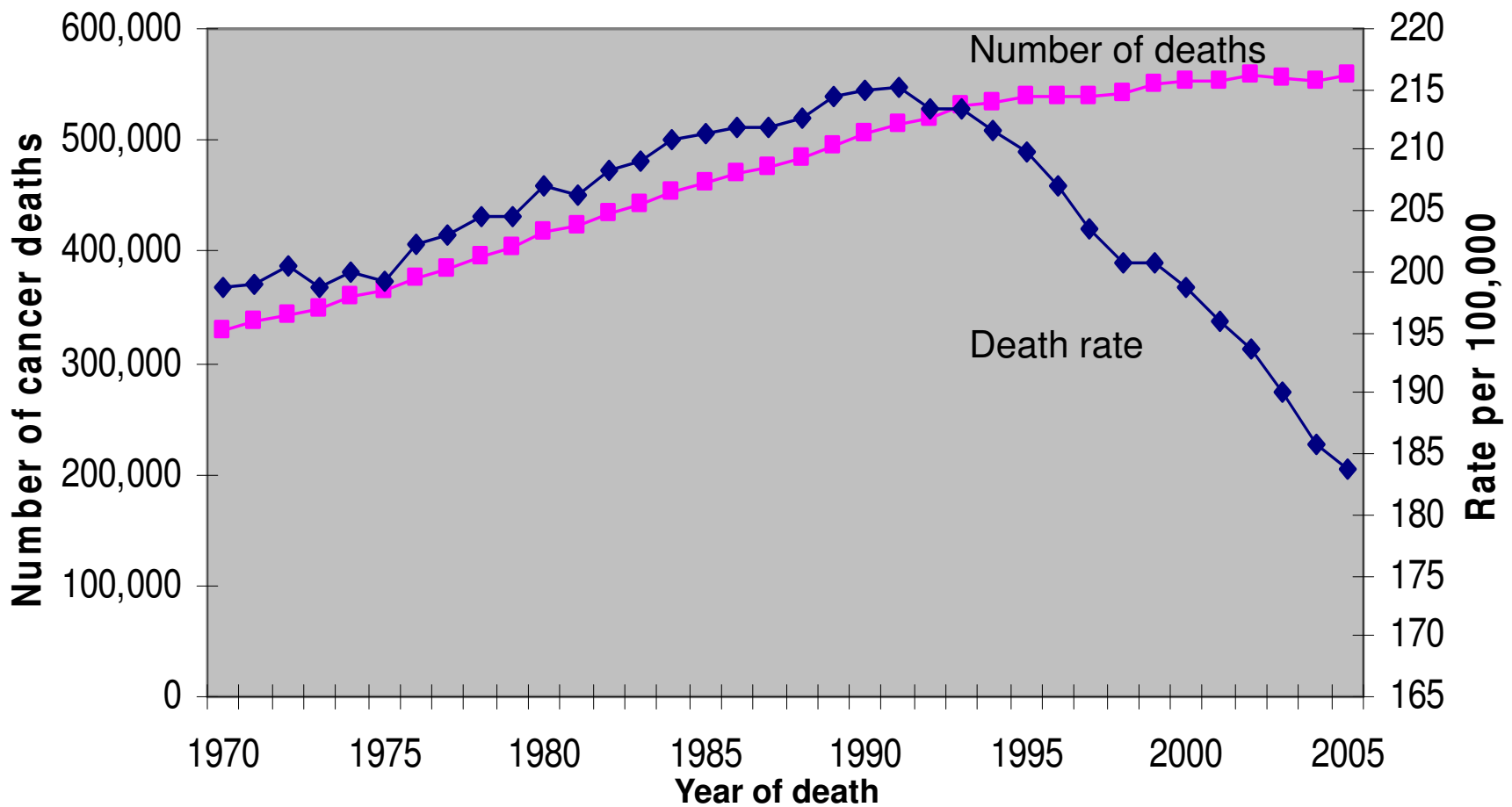
Cancer Deaths: Developed vs. Developing



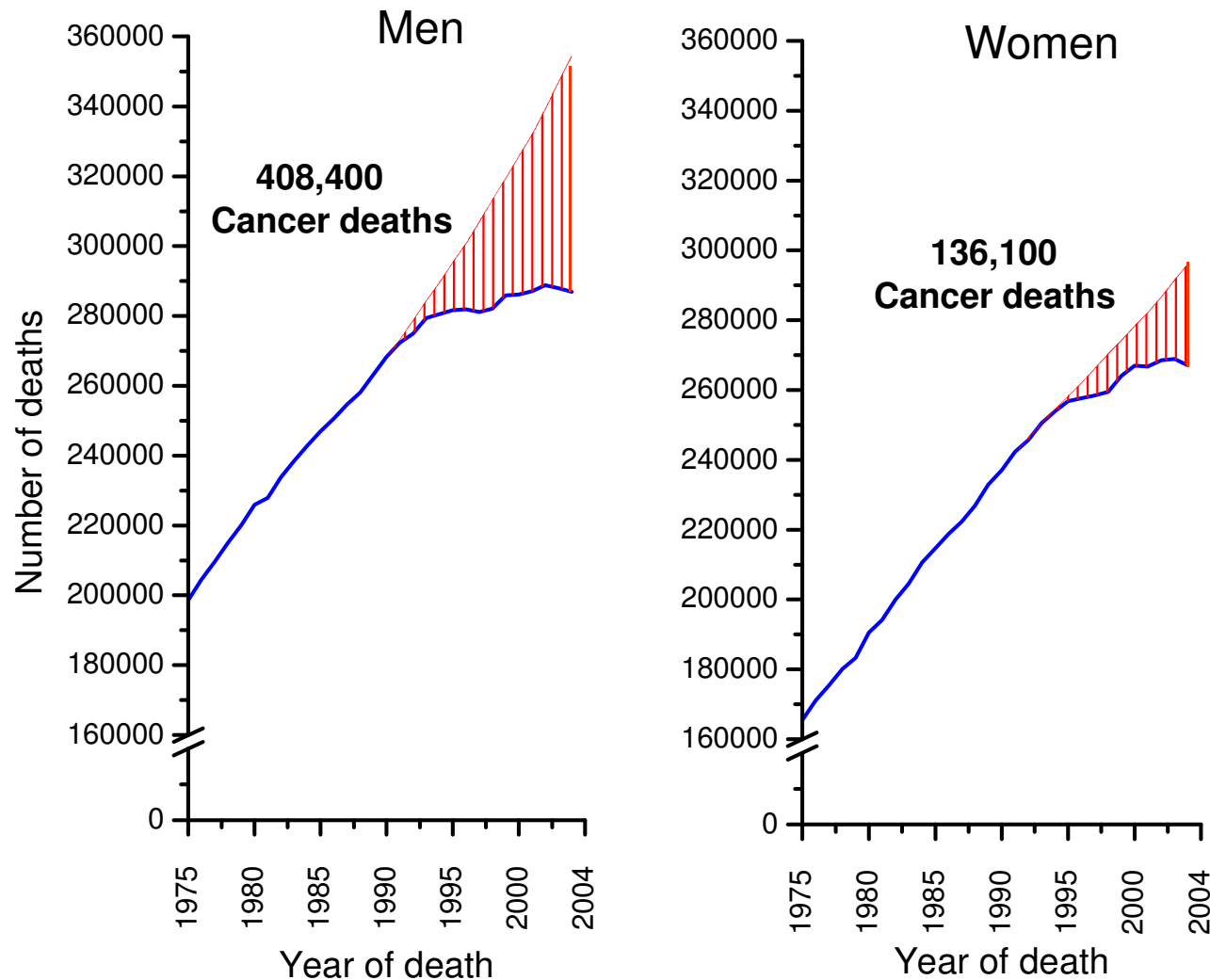
By 2020, 70% of all cancer deaths will be in the developing world

■ Developing ■ Developed

U.S. Trends in Actual Number of Cancer Deaths and Age-adjusted Cancer Death Rates, 1970-2005



Total Number of Cancer Deaths Avoided from 1991 to 2004 in men and 1992 to 2004 in Women



The blue line represents the actual cancer deaths recorded in each year and the red line represents the expected number of cancer deaths if cancer mortality rates had remained the same since 1991/1992.



Breast Cancer

- It is estimated that 57,000 breast cancer deaths were averted between 1990 and 2005 due to screening, early detection, and aggressive treatment.
- Breast cancer screening rates have actually gone down during the period 2000 to 2005



Colorectal Cancer

- It is estimated that 77,000 colorectal cancer deaths were averted between 1990 and 2005 due to screening, early detection, and aggressive treatment.
- Colorectal cancer screening rates have actually gone down during the period 2000 to 2005

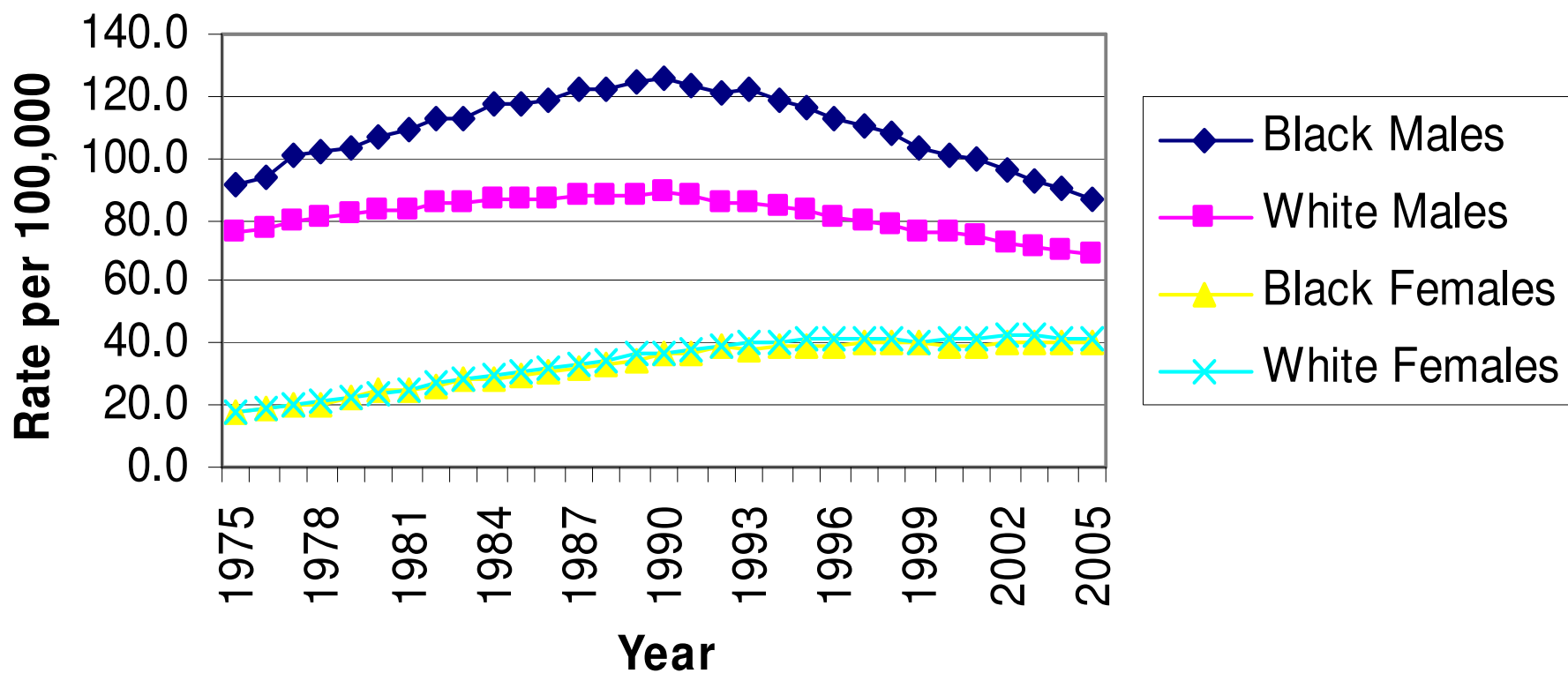


A Note about Smoking and Tobacco

There has been a tremendous positive culture change in the U.S.

Lung Cancer Mortality Rates

Age Adjusted to 2000 Standard



Lung Cancer Incidence

Race/Ethnicity	Rate per 100,000 Age-adjusted to 2000 standard	Rate per 100,000 Age-adjusted to 2000 standard
	Male	Female
White	79.5	54.9
Black	107.6	54.6
Asian/Pacific Isl.	53.9	28.0
Native American	54.3	39.7
Hispanic	44.2	25.4

Lung Cancer Mortality

Race/Ethnicity	Rate per 100,000 Age-adjusted to 2000 standard	Rate per 100,000 Age-adjusted to 2000 standard
	Male	Female
White	71.3	42
Black	93.1	39.9
Asian/Pacific Isl.	37.5	18.5
Native American	42.5	28.8
Hispanic	35.1	14.6



Fact

- Within race poor people do worse compared to non-poor
- Within stage poor people do worse compared to non-poor
- Blacks do worse than Whites



Racial Disparity by Stage at Diagnosis Lung Cancer 1996-2004 SEER

	Black Males	White Males
Local	12%	15%
Regional	26%	26%



Racial Disparity by Stage at Diagnosis Lung Cancer 1996-2004 SEER

	Black Females	White Females
Local	15.0%	18.0%
Regional	25.0%	25.0%



5 year survival by Cancer Stage and Race 1996-2004 SEER

	Black Males	White Males
Local	37.0%	45.5%
Regional	15.5%	19.0%



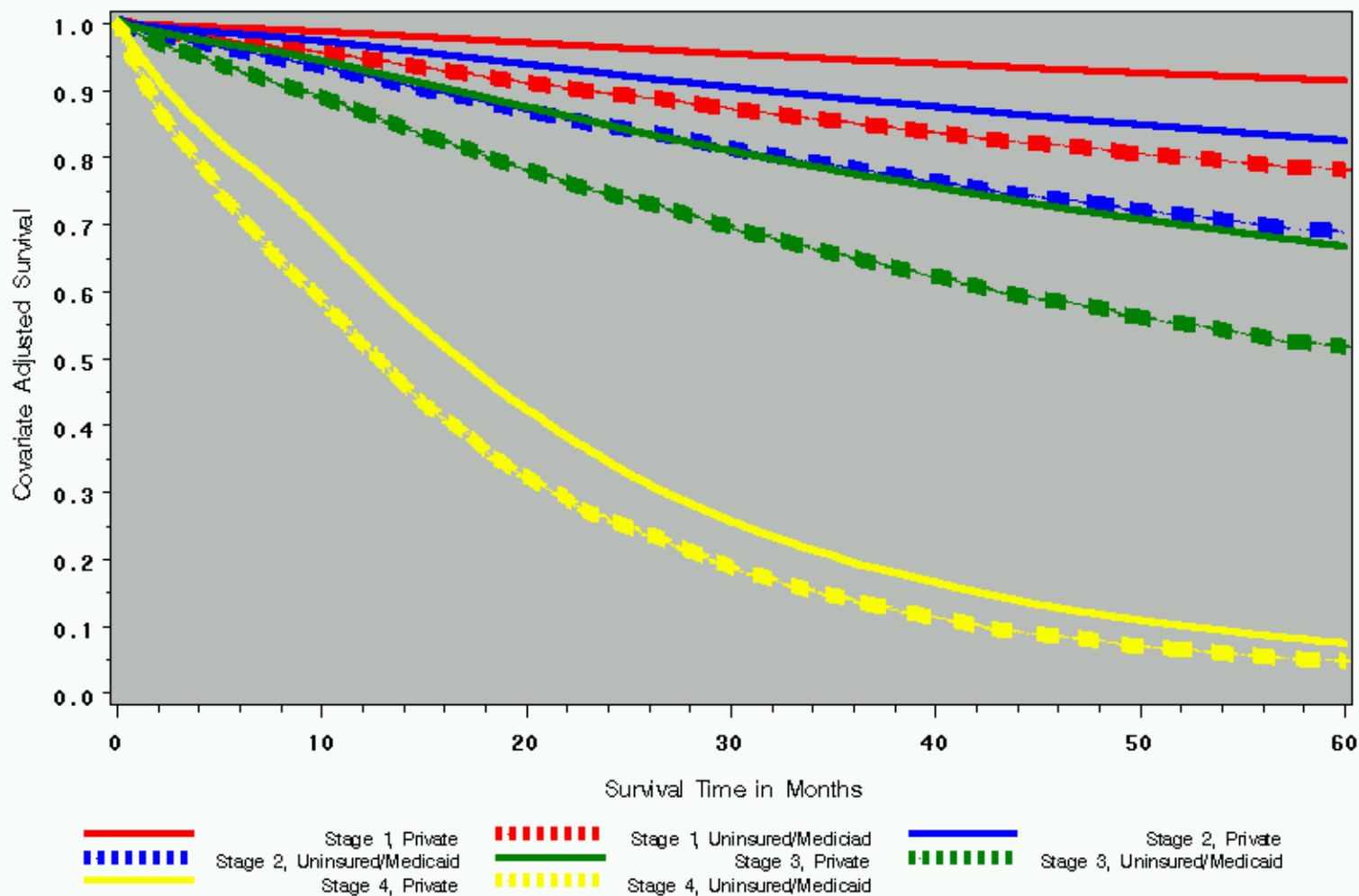
5 year survival by Cancer Stage and Race 1996-2004 SEER

	Black Females	White Females
Local	46.0%	54.3%
Regional	20.4%	22.4%



How Can We Provide Adequate High Quality Care (to Include Preventive Care) to a Population That Has So Often Not Received It?

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



Cancer Survival and Deprivation in Scotland

5yr survival	Affluent	Deprived
Breast	58%	48%
Colon	40%	34%
Lymphoma	58%	42%
Prostate	45%	36%
Bladder	70%	58%
Melanoma	84%	69%



Survival Rates RMS Titanic

First Class 60%

Second Class 43%

Third Class 20%



Metrics to identify and track disparities

- Race and ethnicity
- Years of education
- Insurance status



Race and Ethnicity Data Limitations

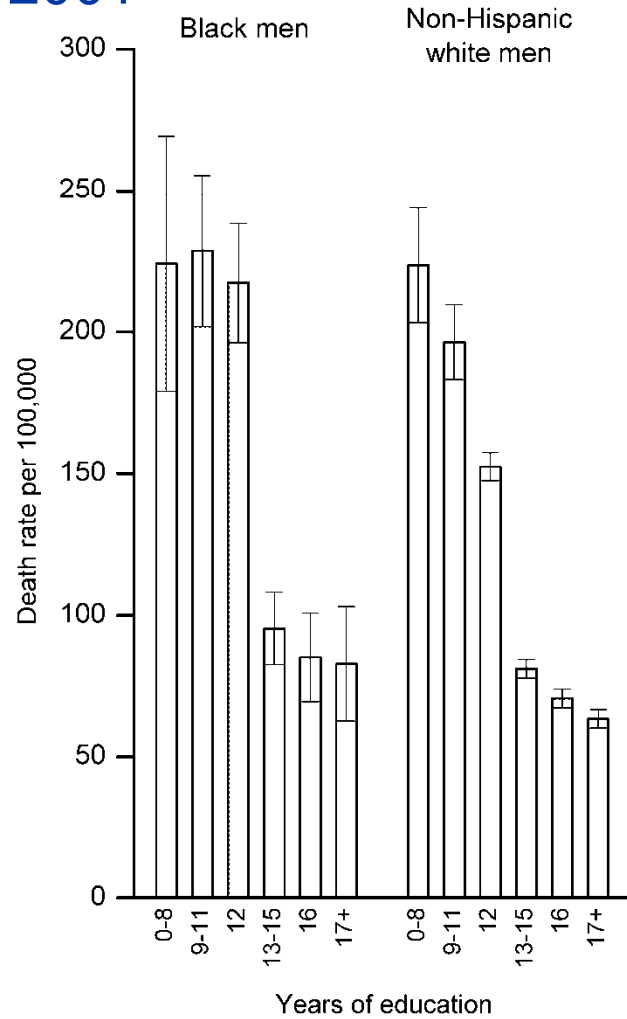
- Long-term data on I & M trends available only for blacks and whites
- Undercounting of numerators (especially for American Indians)
- Lack of data on subgroups by country of origin (e.g. Cambodian vs. Japanese)



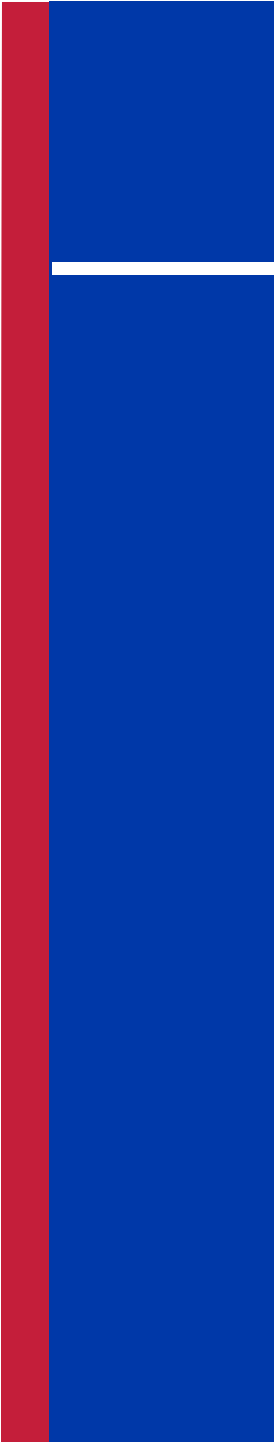
Race and Ethnicity Data Limitations (continued)

- Lack of accurate denominators
- Sparse data for smaller populations

Death Rates for All Cancers Combined by Race/Ethnicity and Education Level, Ages 25-64, US, 2001



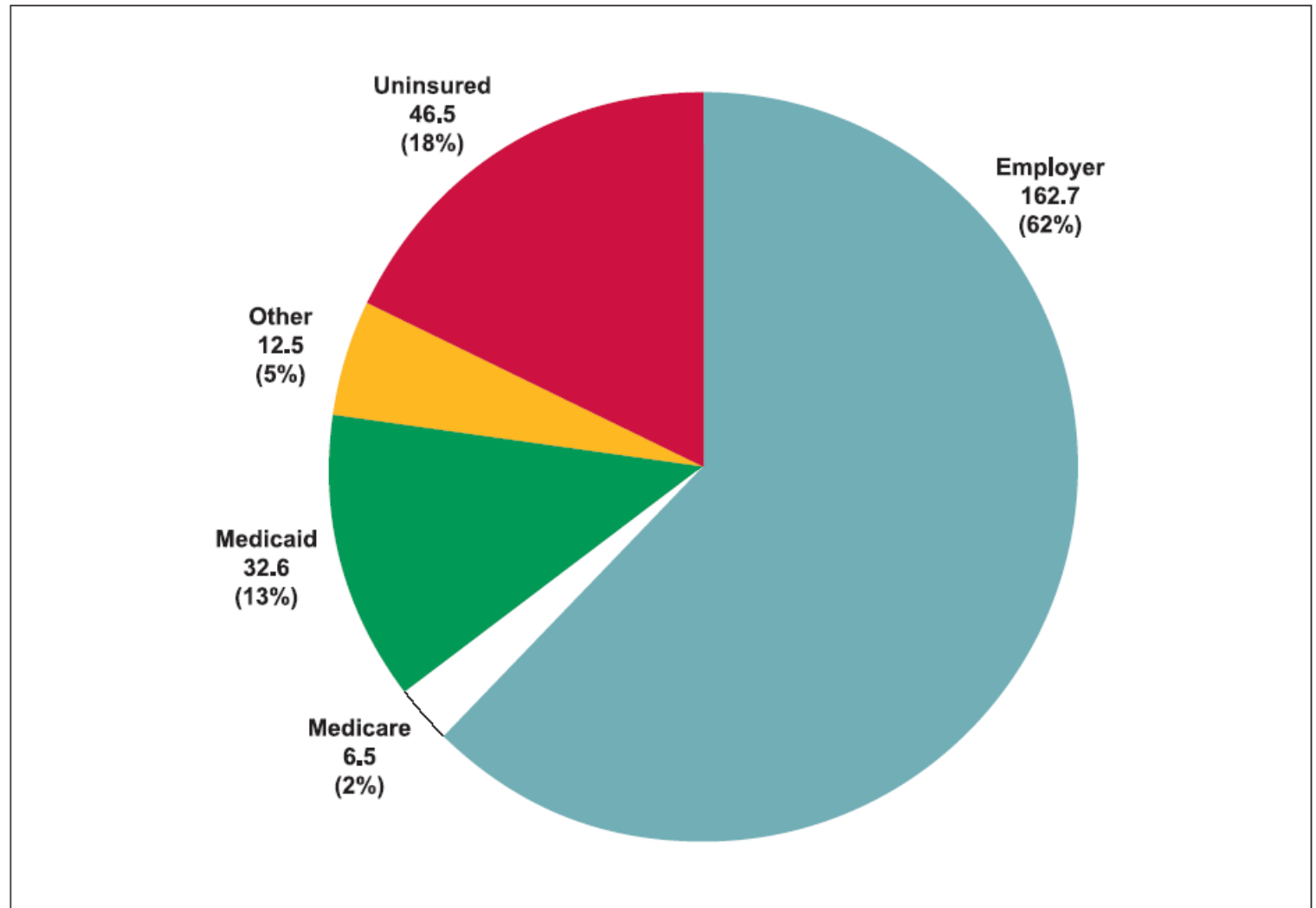
Source: Albano et al., JNCI 2007; 99(18):1384-94



U.S. deaths avoided (age 25-64) if everyone had the same death rate as the most educated?

- African American (Non-Hispanic)
 - Men 52% (28,216)
 - Women 33% (12,624)
- White (Non-Hispanic)
 - Men 48% (106,146)
 - Women 40% (55,134)
- Hispanic
 - Men 39% (9,337)
 - Women 30% (3,825)

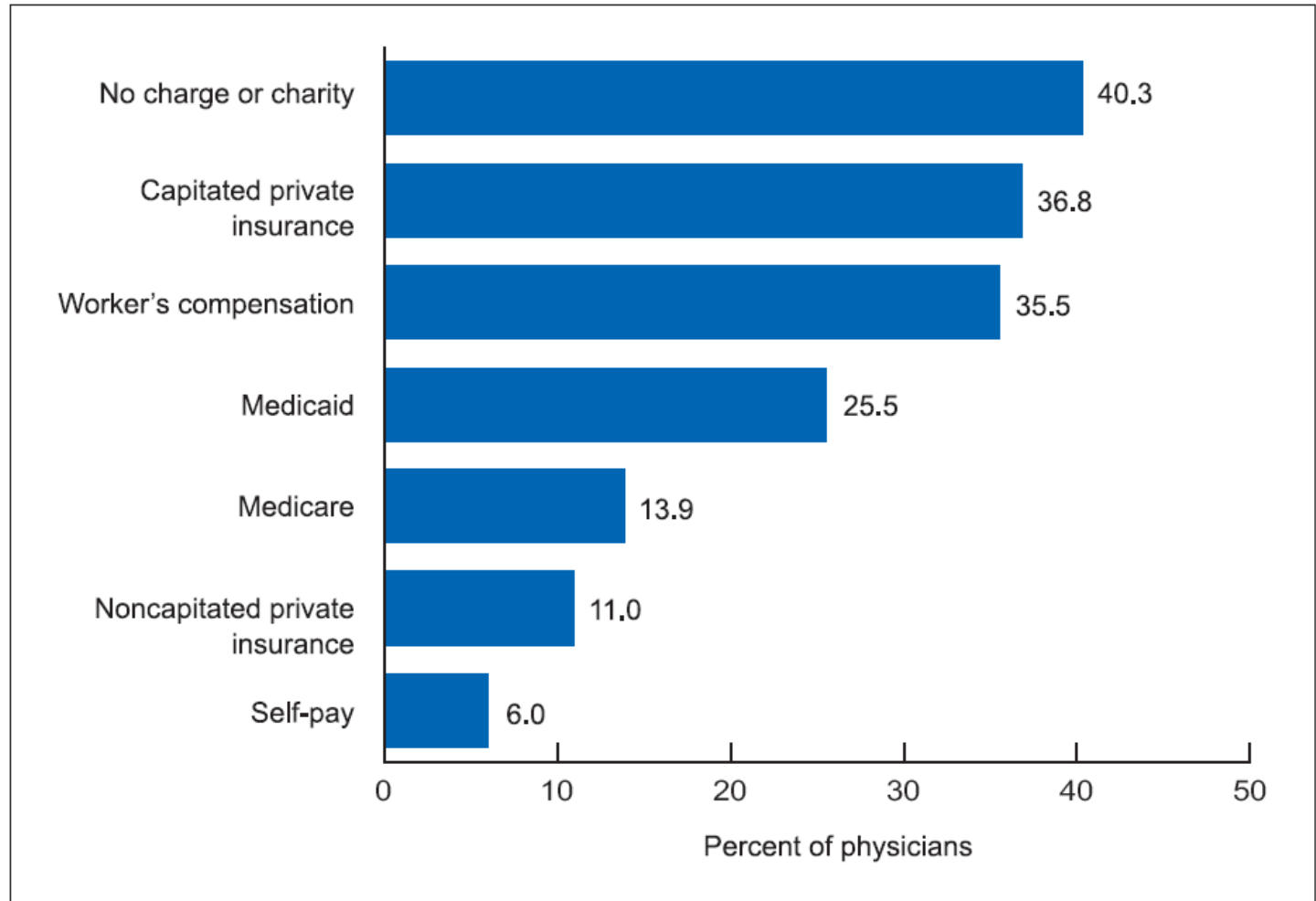
Health Insurance Coverage Among Individuals Under Age 65 (In Millions)



Collins SR, White C, Kriss JL. Whither Employer-Based Health Insurance? The Current and Future Role of U.S. Companies in the Provision and Financing of Health Insurance. The Commonwealth Fund. September 2007.

Data Source: Current Population Survey, March 2007.

Percentage of Office-based Physicians Not Accepting New Patients According to Method of Payment, 2003-2004



Source: Hing E, Burt CW. Characteristics of office-based physicians and their practices: United States, 2003-2004. Series 13, No. 164. Hyattsville, MD: National Center for Health Statistics.



The Meaning of Race in Science and Medicine

- Differences in patterns of care by race documented in:
 - Prostate Cancer
 - Colon Cancer
 - Breast Cancer
 - Lung Cancer
- The full reasons for the differences have yet to be explained



Equal Treatment Yields Equal Outcome There is not Equal Treatment

- Studies suggest that disparities may be due to:
 - Cultural differences in acceptance of and willingness to present for therapy.
 - Disparities in comorbid diseases making aggressive therapy inappropriate.
 - Lack of convenient access to therapy.
 - Racism and SES discrimination.



The Influence of Hospital Volume on Survival After resection for Lung Cancer

- Of patients age 65+ with stage I, II, IIIA NSCLC between 1985 and 1996 (2118 patients and 76 hospitals)
- 5 year survival
- 44 % among those treated at high volume hospitals
- 33 % among those treated at lowest volume hospitals
- $P < 0.001$
 - Bach et al NEJM 345 p 181-8



The Influence of Hospital Volume on Survival After resection for Lung Cancer

- Of patients age 65+ with stage I, II, IIIA NSCLC between 1985 and 1996 (2118 patients and 76 hospitals)
- High volume hospitals had lower rates of complications 20% vs 44%
- High volume hospitals had lower 30 mortality 3% vs 6%
- Bach et al NEJM 2001, 345 p 181-8



Racial Disparities and Site of Care

- Poor people and Racial Minorities are more likely to get their medical care at places that are less able to provide optimal care.

- Bach PB, Ethn Dis 2005 15:31-33



Racial comparison of outcomes of male Department of Veterans Affairs patients with lung

- Prospective data was collected from twelve VA Medical Centers from May 1981 to May 1986.
- Blacks with higher stage at presentation
- Equal treatment yields equal outcome among equal patients (stage and overall health) with race playing no factor in outcome.
- At least six studies confirm these findings
 - Akerley et al Arch Intern Med 1993, 153:1681-8



Racial Disparities Among Patients with Lung Cancer Who were Recommended Operative Therapy

- In a retrospective cohort study of patients in SEER Medicare database from 1992 to 2002 17,739 were recommended surgery 89% white and 65% black.
- Black patients less frequently underwent resection 69% vs. 83% $p < 0.001$
- After adjustment for therapy received equal treatment yields equal outcome
 - Farjah F, Arch Surg 2009, 144:14-18



Racial Differences in the Treatment of Early-Stage Lung Cancer

- Of 10,984 patients aged 65+ with resectable NSCLC from 1985 to 1993
 - 64% of Blacks and 76.7% of whites received surgery
 $p < 0.001$
 - Black 5 year survival rate was 26.4% vs white 5 year survival rate of 34.1%, $p < 0.001$
 - Equal treatment yielded equal outcome (blacks and whites treated with surgery had similar survival rates)
- Bach et al NEJM 1999, 341:1198-1205



Metastatic Lung Cancer

- Evidence that equal treatment yields equal outcomes among equal patients (NSCLC and SCLC)
- There is evidence that there is not equal treatment

Multivariate Analysis of Initial Chemotherapy Dose < 85% of Standard N = 737 Breast Cancer Patients

	Odds Ratio	95% CI	
Normal BMI	1.00		
Overweight	1.18	0.74 to 1.87	P=.65
Obese	2.47	1.36 to 4.51	P=.003
Severely obese	4.04	1.46 to 11.19	P=.007

Griggs et al, JCO v25, 2007

Multivariate Analysis of Initial Chemotherapy Dose < 85% of Standard N = 737 Breast Cancer Patients

	Odds Ratio	95% CI	
Education Less than High School	3.07	1.57 to 5.99	P=.001

Griggs et al, JCO v25, 2007

Multivariate Logistic Regression for Treatment with Nonstandard Breast Cancer Regimen N=957

	Odds Ratio	95% CI	
College Graduate	1.00	—	
High School Graduate	1.80	1.08 to 3.00	Trend P=.024
Less than High School	3.24	1.17 to 9.00	
Black Race	1.93	1.11 to 3.36	P=.02

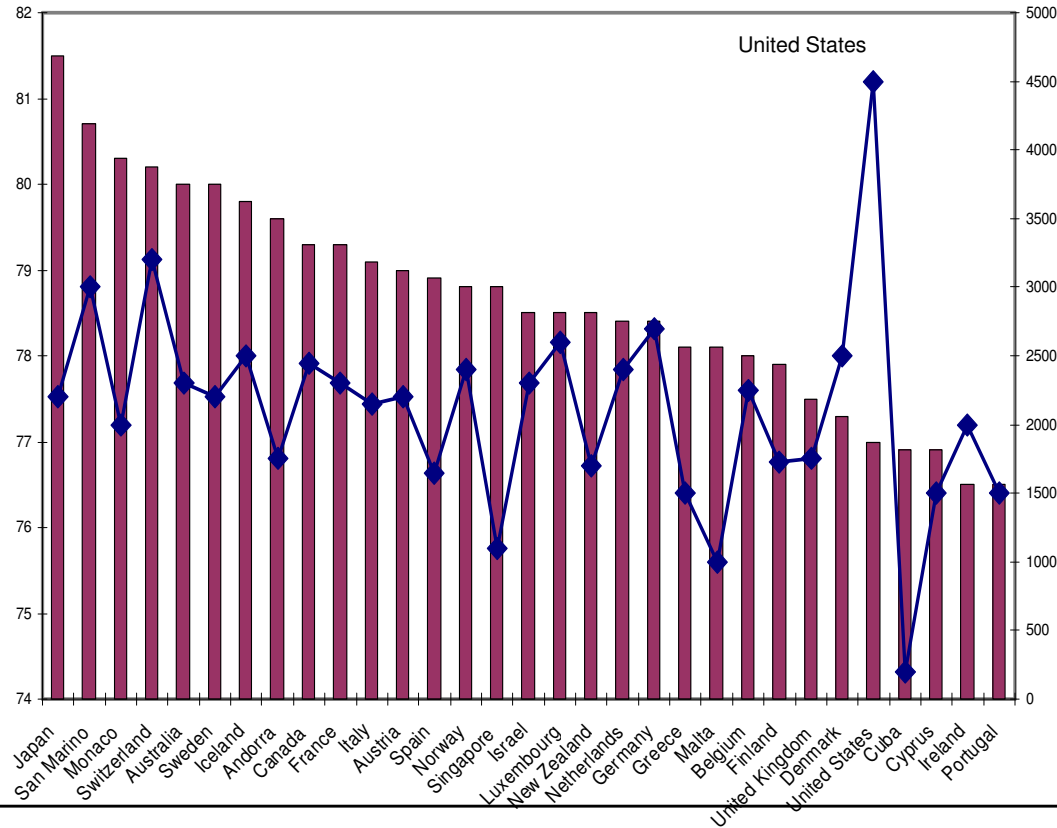
Controlling for geographic region, job category, employment status, insurance status

Griggs et al, JCO v 18, 2007

Higher Per Capita Spending in the U.S. does not Translate into Longer Life Expectancy

The Cost of a Long Life

Average Life Expectancy (years)



Per Capita Spending in USD

Life Expectancy – Per Capita Spending



Disparities in Health

- Some consume too much
 - (Unnecessary care given)
- Some consume too little
 - (Necessary care not given)
- We could decrease the waste and improve overall health!!!!



Disparities in Health

- A call for the use of “Evidence Based Care”
- That is:
 - the rational use of medicine
 - not the rationing of medicine



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