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Chief Medical Officer



NCI Budget Request for Fiscal Year 2008

Dollars in Thousands

Fiscal Year 2007 Estimate	4,798,511
Current Services Increase	291,403
Total	5,089,914

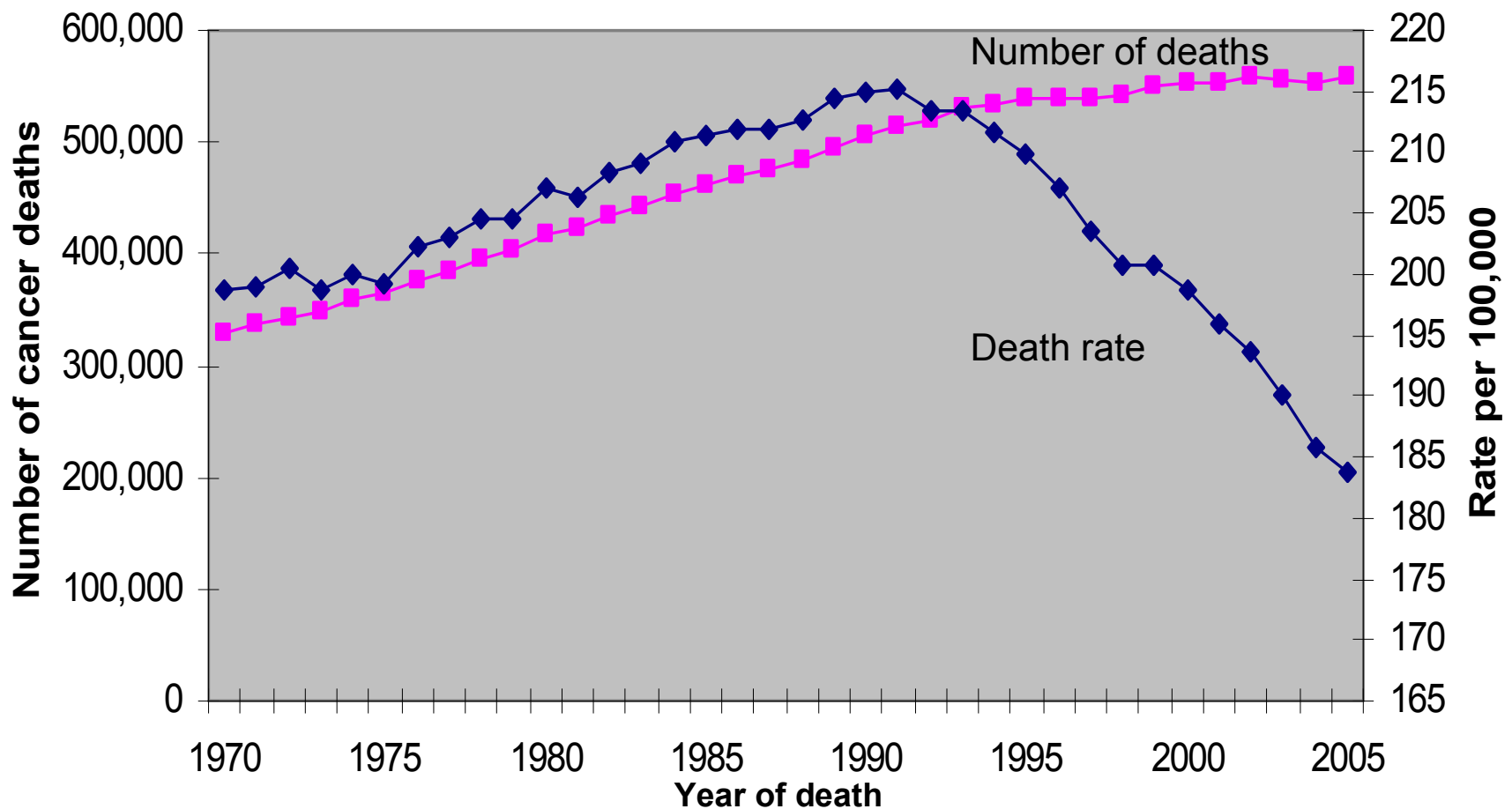


Fiscal Year 2007-2008 Scientific Estimate (Bypass Budget)

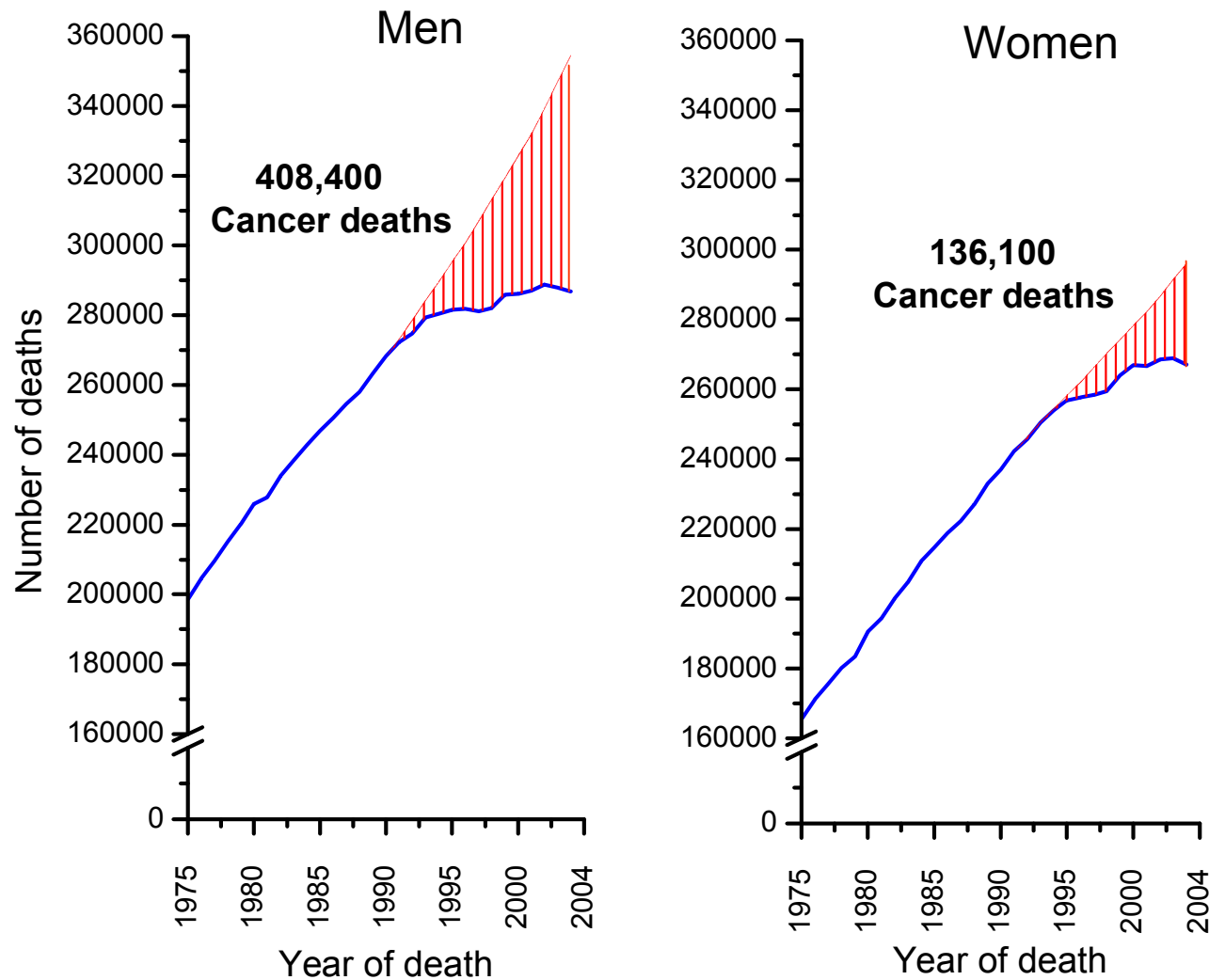
Dollars in Thousands

Expand Cancer Center Research	164,000
Re-Engineering Clinical Trials	171,000
Linking Science and Technology	194,800
Advancing Medical Informatics	190,000
Integrating Cancer Science	799,800
Total	5,889,714

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

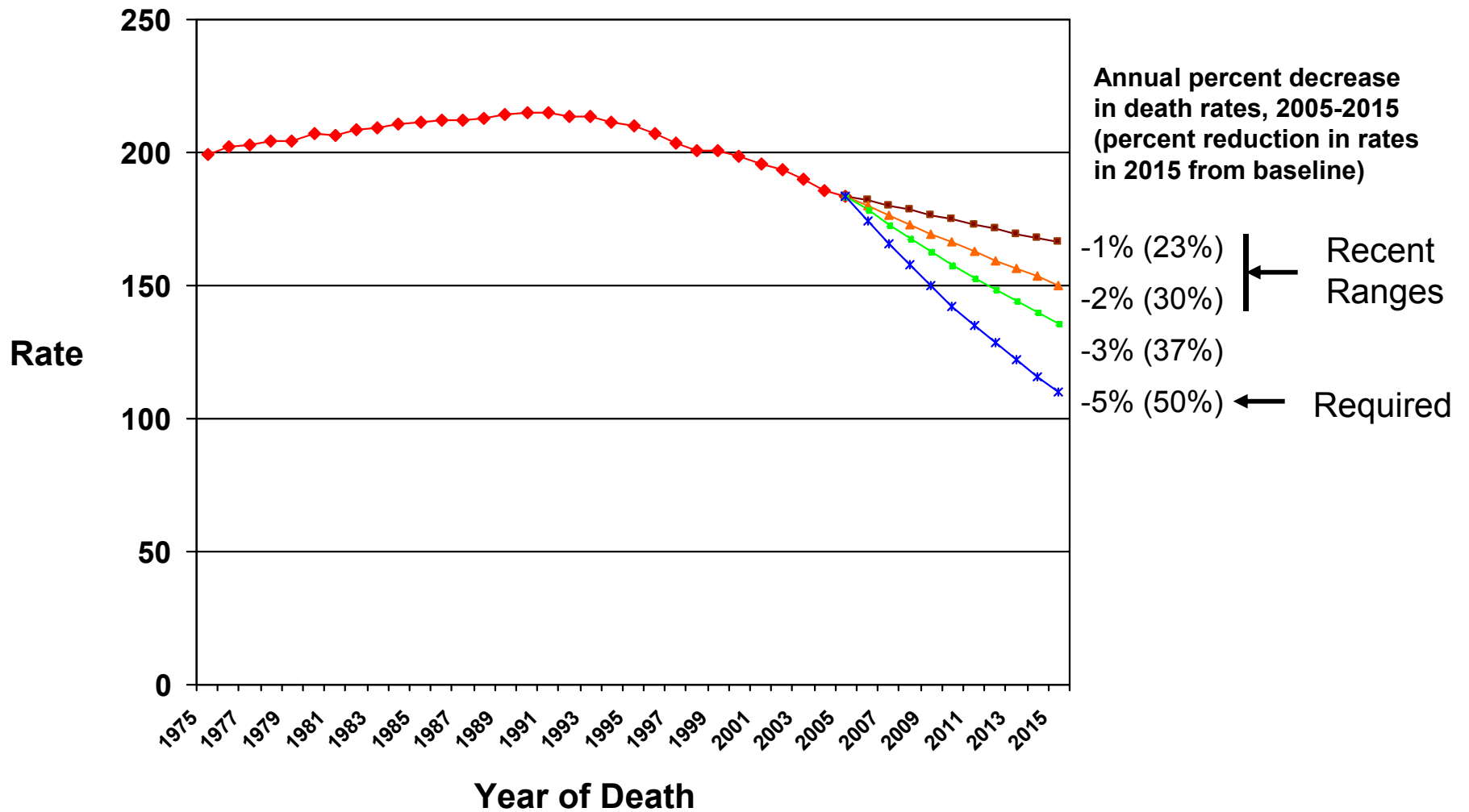


Total Number of Cancer Deaths Avoided from 1991 to 2004 in men and 1992 to 2004 in Women



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.

Relationship Between Annual % Decline in Mortality Rates and Achieving ACS 2015 Goal of 50% Reduction in Mortality Rates from 1991 Baseline





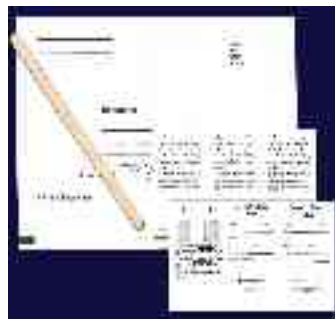
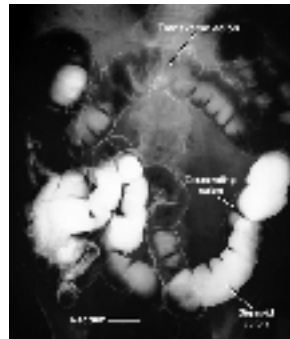
**We know what to do,
We just need to do it!!!**



A Note about Smoking and Tobacco

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

Colorectal Cancer Screening (2008)



2008 CRC Screening Guidelines

Adults age 50 and older

Tests That Detect Adenomatous Polyps and Cancer

Flexible sigmoidoscopy (FSIG) every 5 years, or

Colonoscopy every 10 years, or

Double contrast barium enema (DCBE) every 5 years, or

CT colonography (CTC) every 5 years

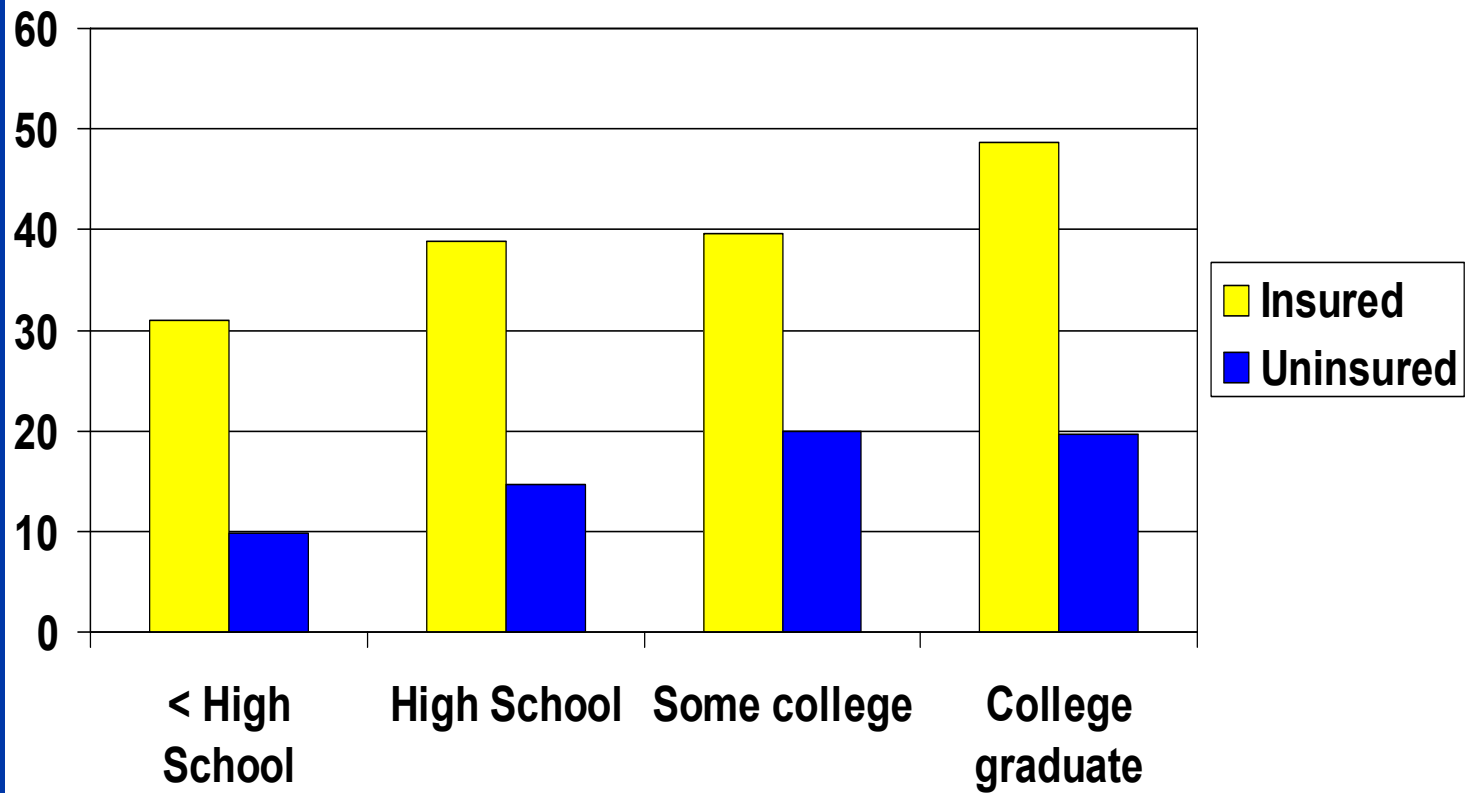
Tests That Primarily Detect Cancer

Annual guaiac-based fecal occult blood test (gFOBT) with high test sensitivity for cancer, or

Annual fecal immunochemical test (FIT) with high test sensitivity for cancer, or

Stool DNA test (sDNA), with high sensitivity for cancer, interval uncertain

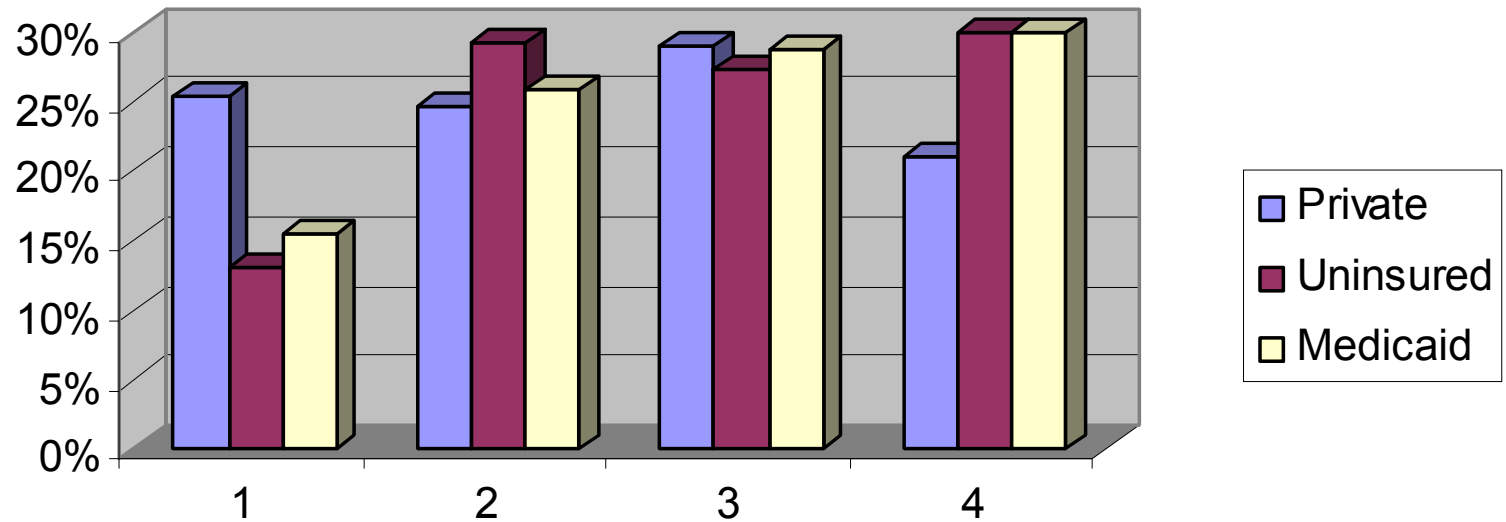
Colorectal Cancer Screening*, Adults 50-64, NHIS 2003



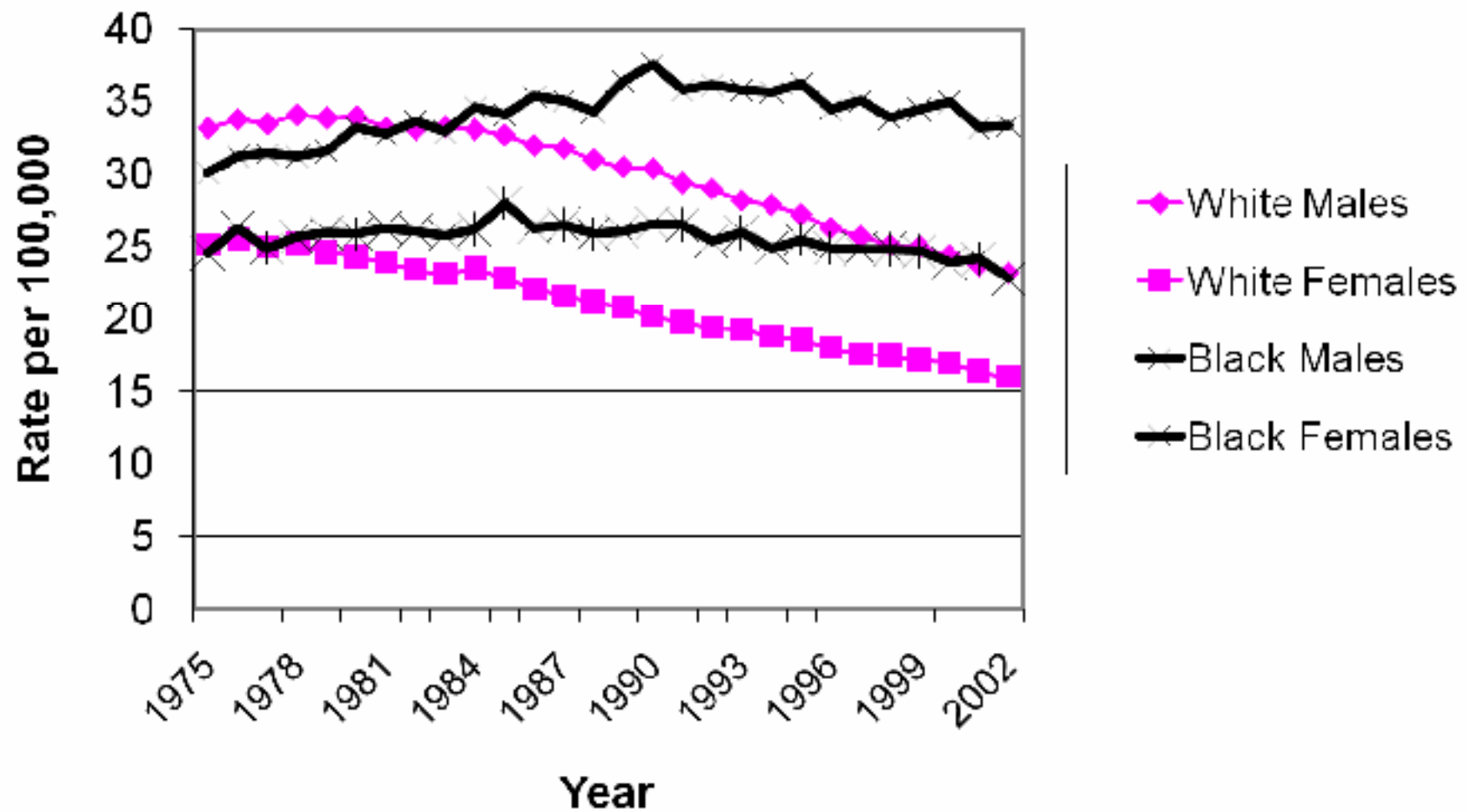
*Either a fecal occult blood test within the past year or an endoscopy within the past five years.

Colorectal Stage vs. Insurance

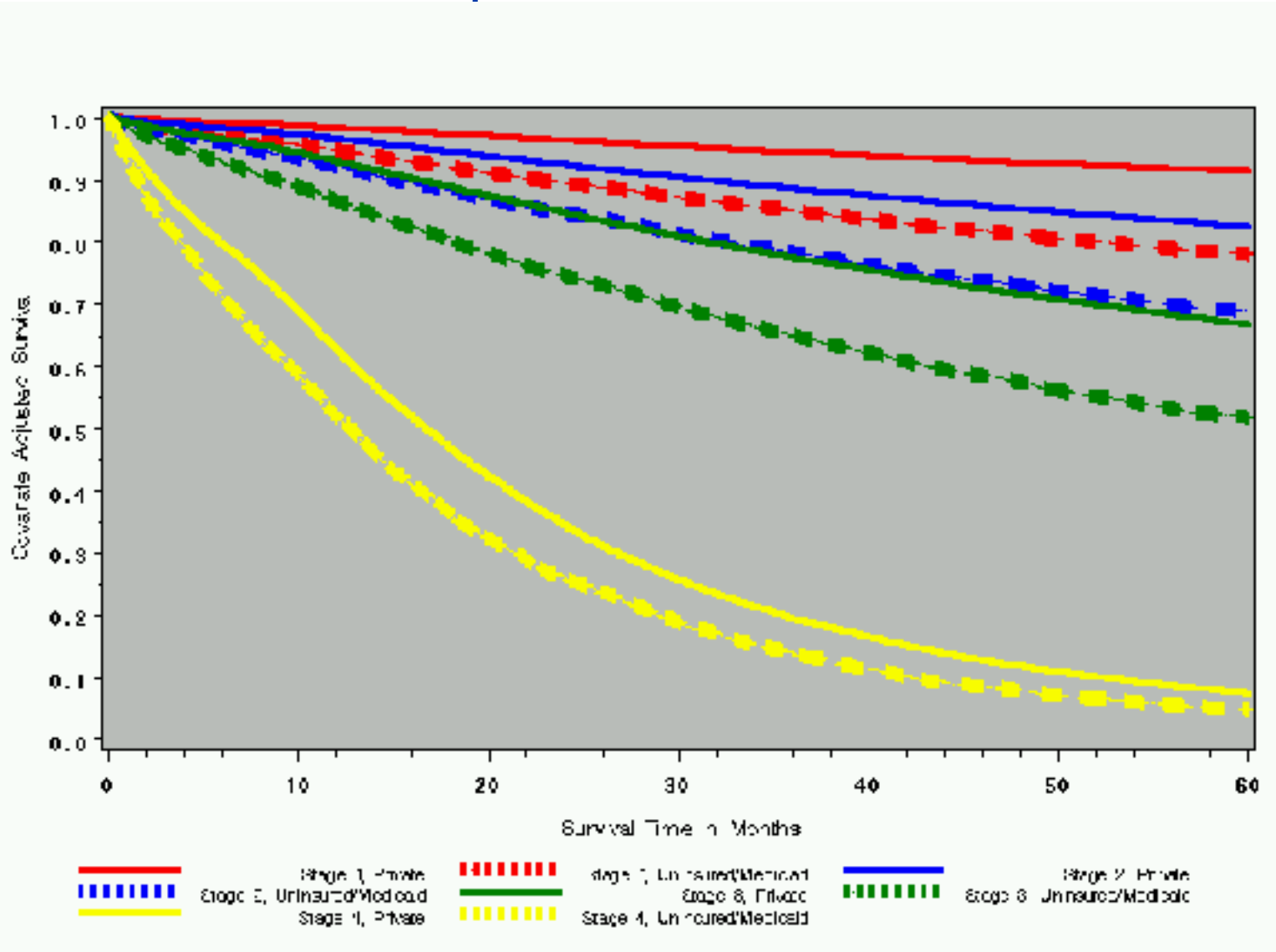
Stage at diagnosis among all colorectal cancer patients diagnosed in 1999-2000 and reported to the NCDB



Colon Cancer Mortality 1975 to 2004

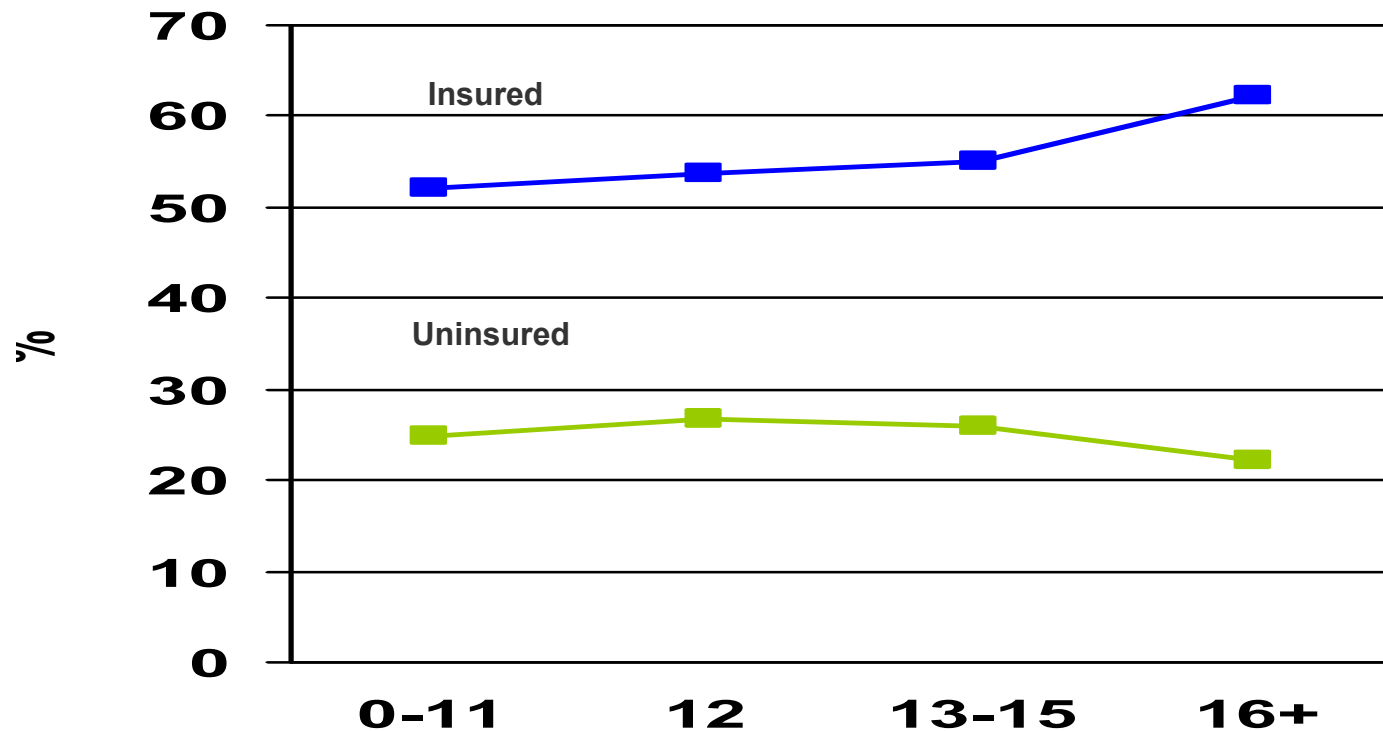


Adjusted Colorectal Cancer Survival by Stages and Insurance Status, among Patients Diagnosed in 1999-2000 and Reported to the NCDB



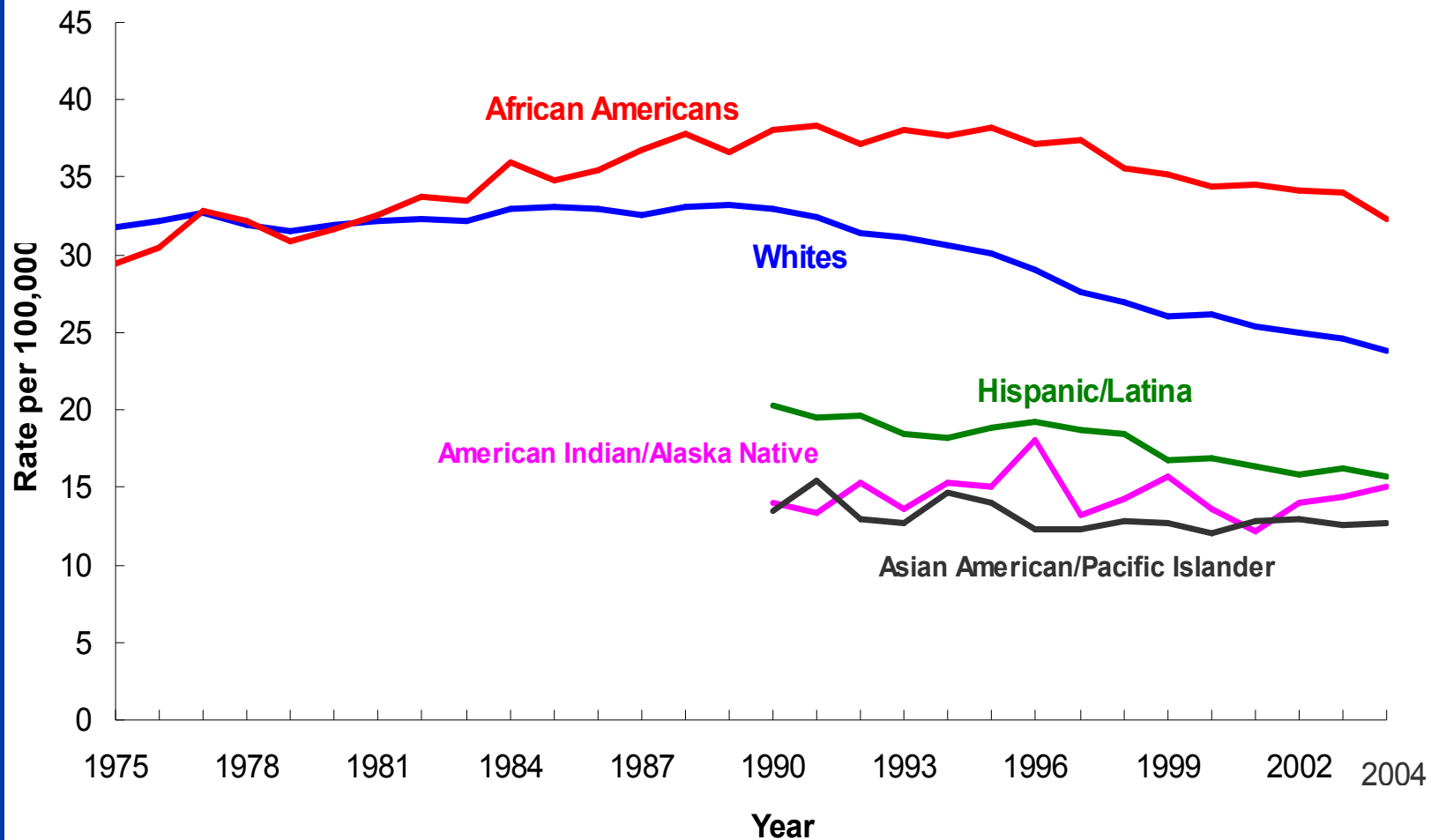
Mammogram Within the Last Year in Adult Women, ages 40-64, by Years of Education and Insurance Status, NHIS 2005

All Races combined

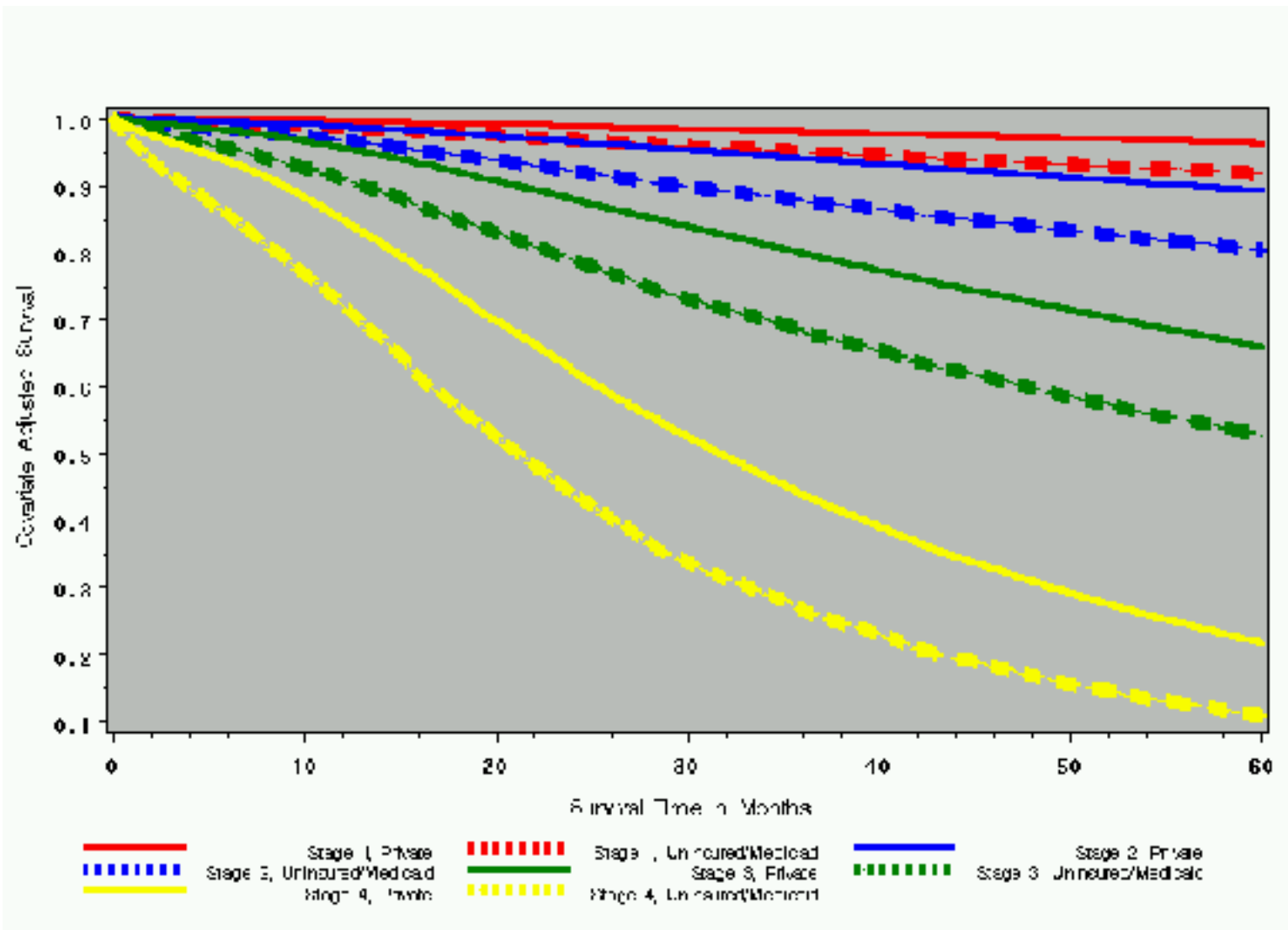


Source: National Health Interview Survey 2005, National Center for Health Statistics, Centers for Disease Control and Prevention, 2006.

Trends in Female Breast Cancer Death Rates by Race and Ethnicity, US, 1975-2004



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

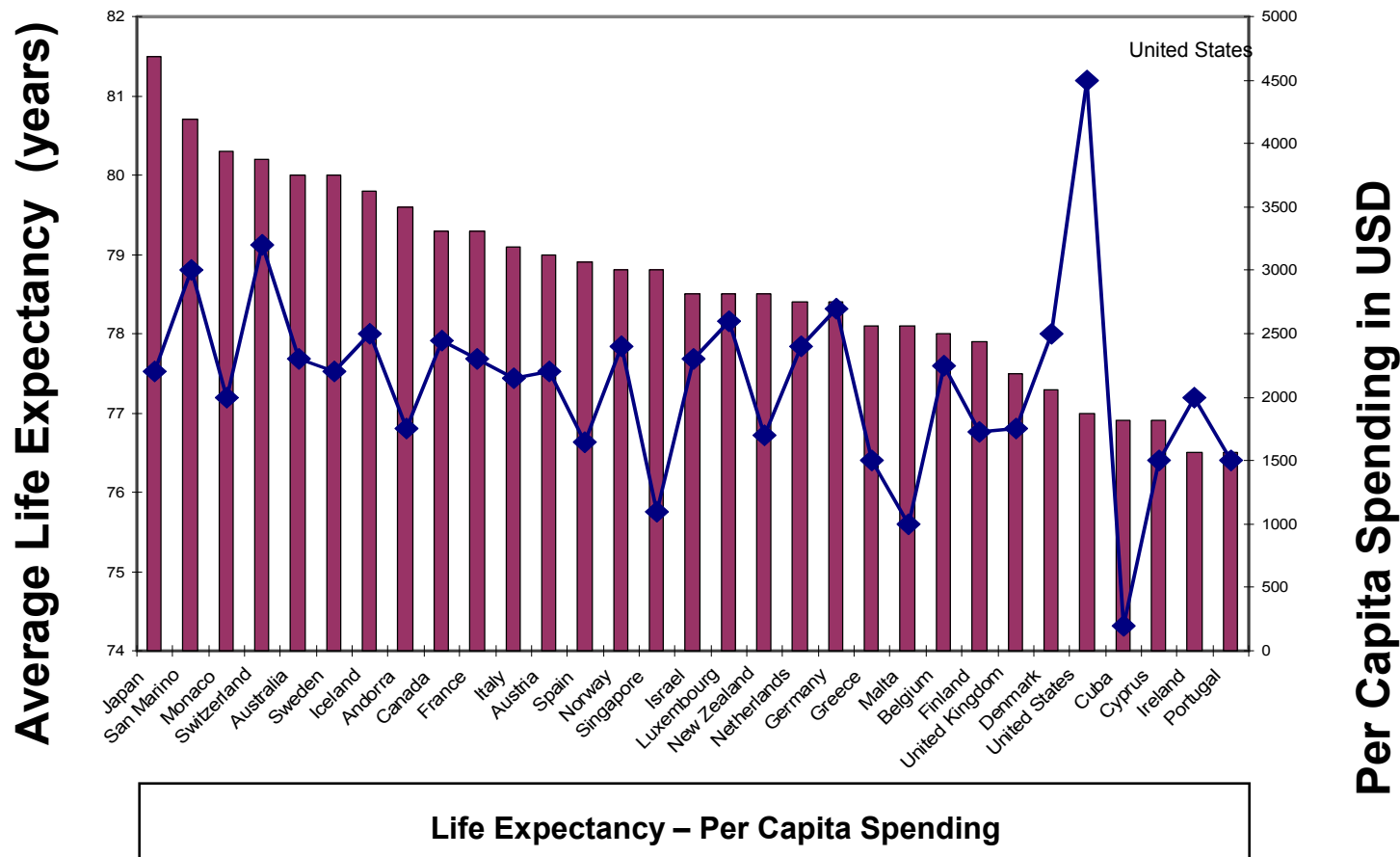




How can we provide adequate high quality care (to include preventive care) to a population that has so often not received it?

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

The Cost of a Long Life





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



The Crystal Ball

Futuring

- Prostate Cancer
 - Two screening trials are due to report in 2009 or 2010
 - ACS screening guideline under review
- Lung Cancer
 - Spiral CT is an active issue of research
 - Several randomized trials due to mature in the next three years



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Scientific Progress 2007 and 2008



New FDA Drug Approvals

- Lapatinib (Tykerb) for breast cancer
- Temsirolimus (Torisel) for advanced renal cancer
- Ixabepilone (Ixempra) for breast cancer
- Nilotinib (Tasigna) for Chronic Myelogenous Leukemia (CML)



Head and Neck Cancers

- The Human Papilloma Virus
 - Risk is independent of tobacco or alcohol use
 - HPV positive tumors have a better prognosis and this suggests a different biology
 - More evidence that the HPV vaccine may prevent more than cervical cancer



Breast Cancer

- MRI Screening encouraged for women at high risk (20% or greater lifetime risk)
 - A strong family history
 - Certain genetic mutations (BRCA)
 - Other known risk factors P53 (Li-Fraumeni), PTEN (Cowden Syndrome)
 - Prior radiation to the chest for lymphoma



Breast Cancer

- Two studies suggest decreasing use of post menopausal Hormone Replacement Therapy linked to declines in breast cancer incidence in U.S.
 - The NIH Women's Health Initiative correlated HRT as a risk factor for breast cancer and other diseases in 2002
 - Declines documented during period 2002 to 2006
 - HRT was commonly prescribed beginning in early 1950's



Lung Cancer

- Preventive radiation therapy to the head improves survival for patients with small cell lung cancer
 - At one year, 27% of those receiving prophylactic treatment were alive compared to 13% of those not treated with preventive radiation



Colon Cancer

- Stage III treated patients have a higher risk of disease recurrence and death with a western diet (3.25 times)
 - Western diet-high intake of meat, fat, refined grain
 - Prudent diet-large quantities of fruits, vegetables, poultry, and fish



Colon Cancer

- Cetuximab (Erbix) a monoclonal antibody that inhibits epidermal growth factors
- A phase III clinical trial
 - showed improved response to
FOLFIRI and Cetuximab 46.9%
versus
FOLFIRI 38.7%
 - Three times more patients getting Cetuximab were ultimately resectable (able to be treated with curative intent)

Liver Cancer

- Sorafenib (Nexavar)

44% longer survival in a randomized placebo controlled trial versus placebo.

- Sorafenib is a small molecular inhibitor of:
 - Raf kinase,
 - PDGF (platelet-derived growth factor),
 - VEGF (Vascular Endothelial Growth Factor Receptor 2 and 3 kinases)
 - c Kit the receptor for stem cell factor.
- Recently approved by the FDA for liver cancer and advanced kidney cancer



Kidney Cancer

- Bevacizumab (Avastin) added to interferon-alpha doubled progression-free survival from 5.4 months to 10.2 months
- Bevacizumab is a monoclonal antibody that inhibits blood vessel growth factors (VEGF) and is approved for colon cancer
- Recently FDA Approved for Kidney Cancer
 - Sorafenib
 - Sunitinib (Sutent)
 - Temsirolimus (Torise)



Gynecologic Cancers

- External Beam Radiation Therapy (EBRT) shows no improvement in endometrial cancer outcomes in a randomized trial with four years of follow-up
 - Survival
 - Risk of recurrence

Of note, 61% of radiation treated patients had side-effects (fatigue, diarrhea, and increased urinary frequency)



Multiple Myeloma

- Lenalidomide (Revlimid) and Bortezomib (Velcade) in combination more effective than when used individually
 - 58% response to the combination (6% complete response)
- Lenalidomide (Revlimid) is a growth factor inhibitor related to thalidomide
- Bortezomib (Velcade) is a proteasome inhibitor. It interferes with the cells way of breaking down certain proteins



Cancer Prevention

(an aspirin a day)

- An adult-strength aspirin for five years reduced chance of developing cancer especially colon cancer
 - Of 100,000 treated with aspirin, 1,858 men and 1,083 women develop cancer
 - Of 100,000, not taking aspirin, 2,163 men and 1,163 women develop cancer



Survivorship

- Survivors of childhood cancer
 - 75% have one or more health problems
 - Second cancers
 - Coronary artery disease
 - Lung problems
 - Endocrine disorders
 - 25% have five or more health problems