National Cancer Institute

Annual Report to the Nation
2009

National Cancer Advisory Board

February 18, 2010

Brenda K. Edwards

Surveillance Research Program

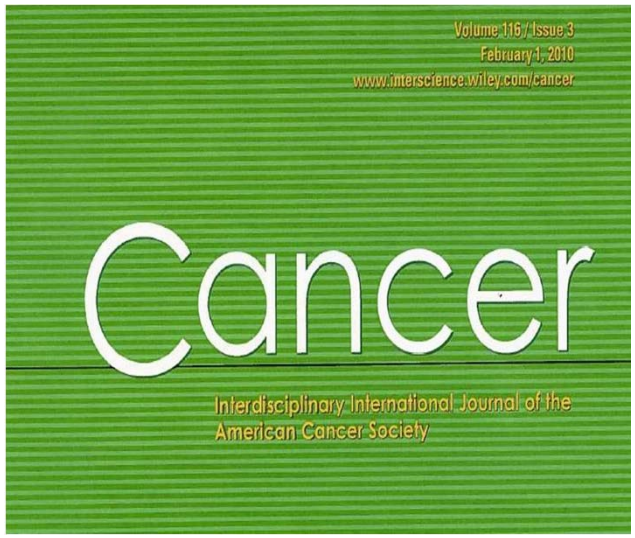
NCI

Monitoring the Impact of Cancer & Progress to Reduce Cancer

- Important for ongoing surveillance
  - All sites, common or rare
  - All populations, by age, sex, race & ethnicity, geography
- Identifying unusual patterns
  - Rapid changes in incidence
    - Relevance to etiology
    - Relevance to public health
      - Planning
      - Evaluating the impact of public health interventions

Annual Report to the Nation on the Status of Cancer

- Coordinated & shared responsibility since 1998
  - National Cancer Institute
  - Centers for Disease Control & Prevention
  - American Cancer Society
  - North American Association for Central Cancer Registries
- Latest data on cancer incidence & mortality
- Requires data linkages, methods development
- Special feature:
  - Tobacco control & lung cancer
  - American Indian & Alaska Natives; Hispanics
  - Treatment patterns
  - Cancer control
  - Survival
  - Cancer and aging population



Volume 116/Issue 3
February 1, 2010
Pages 544-573

Online print December 7, 2010

Commentary

Annual Report to the Nation on the Status Of Cancer, 1975-2006, Featuring Colorectal Cancer Trends and Impact of Interventions (Risk Factors, Screening, and Treatment) to Reduce Future Rates

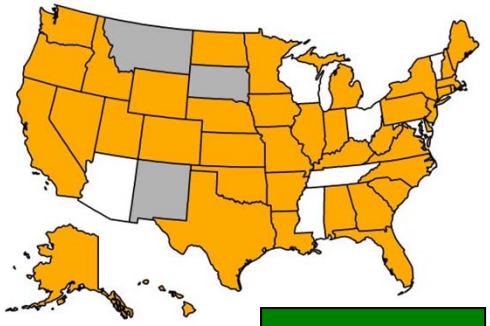
Brenda K. Edwards, PhD[1];Elizabeth Ward, PhD[2];Betsy A. Kohler, MPH, CTR[3];Christie Eheman, PhD[4]; Ann G. Zauber, PhD[5];Robert N. Anderson, PhD[6];Ahmedin Jemal, DVM, PhD[2]; Maria J. Schymura, PhD[3,7];Iris Lansdorp-Vogelaar, MS, PhD[8];Laura C. Seeff, MD[4]; Marjolein van Ballegooijen, MD, PhD[8];S. Luuk Goede, MSc[8];and Lynn A. G. Ries, MS[1]

Rates of new diagnoses and rates of death from all cancers combined declined significantly in the most recent time period for men and women overall and for most racial & ethnic US populations

- **Incidence: 0.7 % per year from 1999-2006**
- **Deaths: 1.6% per year from 2001-2006**

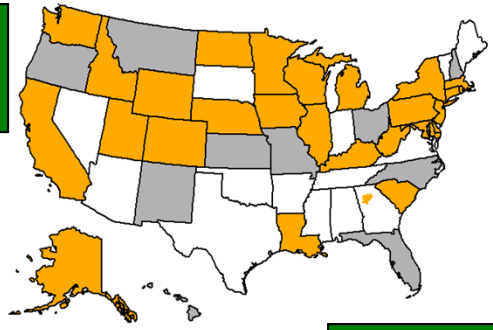
United States improved coverage for population-based cancer incidence

NAACCR 2002-2006
86%

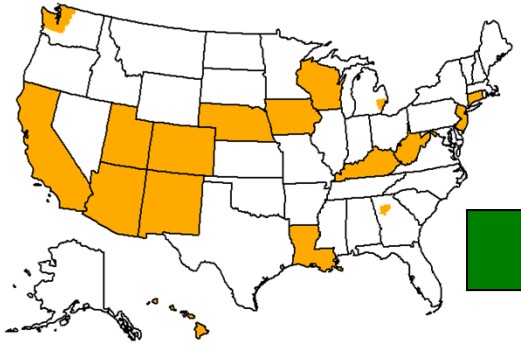


2006

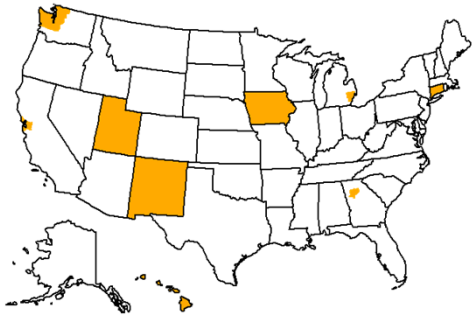
NAACCR 1997-2006
71%



2000



1995



SEER 1975- 2006
10%

SEER 9: 1975-2006 (9.4%)
SEER 13: 1992-2006 (14%)
SEER 17: 2000-2006 (26%)
NAACCR: 2002-2006 (86%)
USCS: 2005 (01/08) (100%)

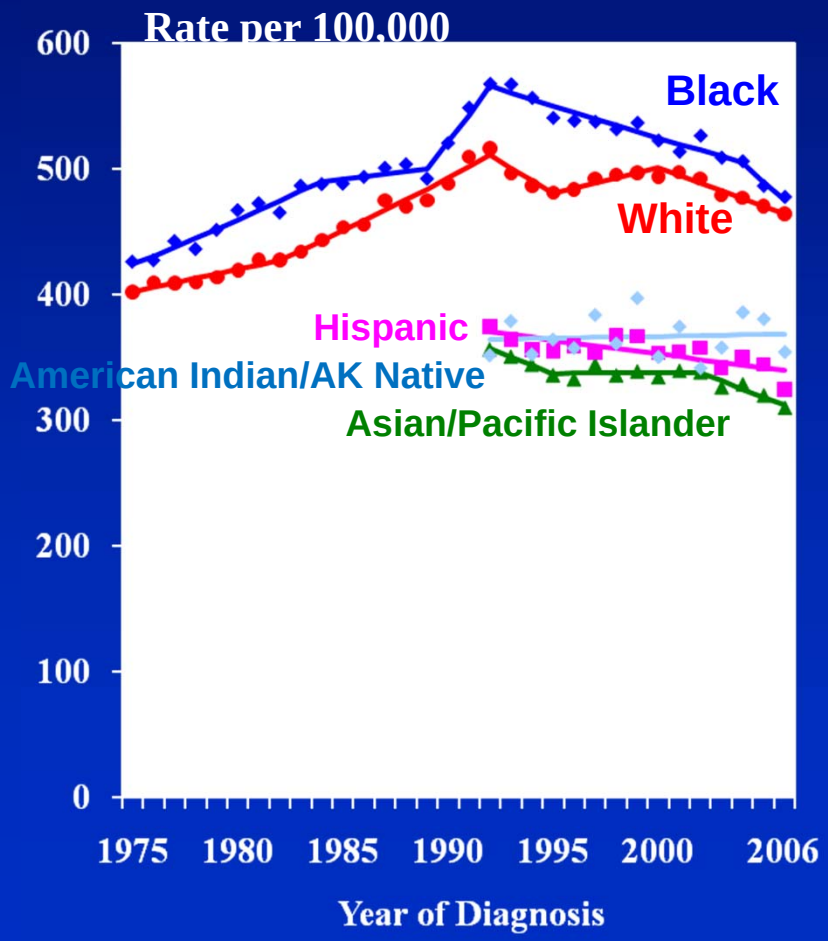
Top 15 Cancer Sites for Men and Women

Cancer Type	Men: New Cases	Men: Deaths	Women: New Cases	Women: Deaths
Bladder	_	_	+0.2%	+0.4%
Brain	-0.5%	-1.0%	_	-1.1%
Breast			-2.0%	-1.9%
Cervix			-3.5%	_
Colon/rectum	-3.0%	-3.9%	-2.2%	-3.4%
Esophagus	+0.7%	+0.4%		
Kidney	+1.8%	-1.5%	+2.4%	-0.6%
Leukemia	+0.1%	-0.8%	+0.3%	-1.6%
Liver	+3.6%	+2.4%		+1.8%
Lung	-1.8%	-2.0%	+0.4%	_
Melanoma	+3.1%	+2.0%	+3.0%	
Myeloma	+0.7%	-1.1%		-2.4%
Non-Hodgkin Lymphoma	_	-3.0%	+1.1%	-3.7%
Oral	-1.2%	-2.2%	-0.9%	
Ovary			-2.1%	-1.4%
Pancreas	_	_	+1.7%	+0.1%
Prostate	-2.4%	-4.1%		
Stomach	-2.0%	-3.7%		-2.7%
Thyroid			+6.3%	
Uterus			-0.5%	_

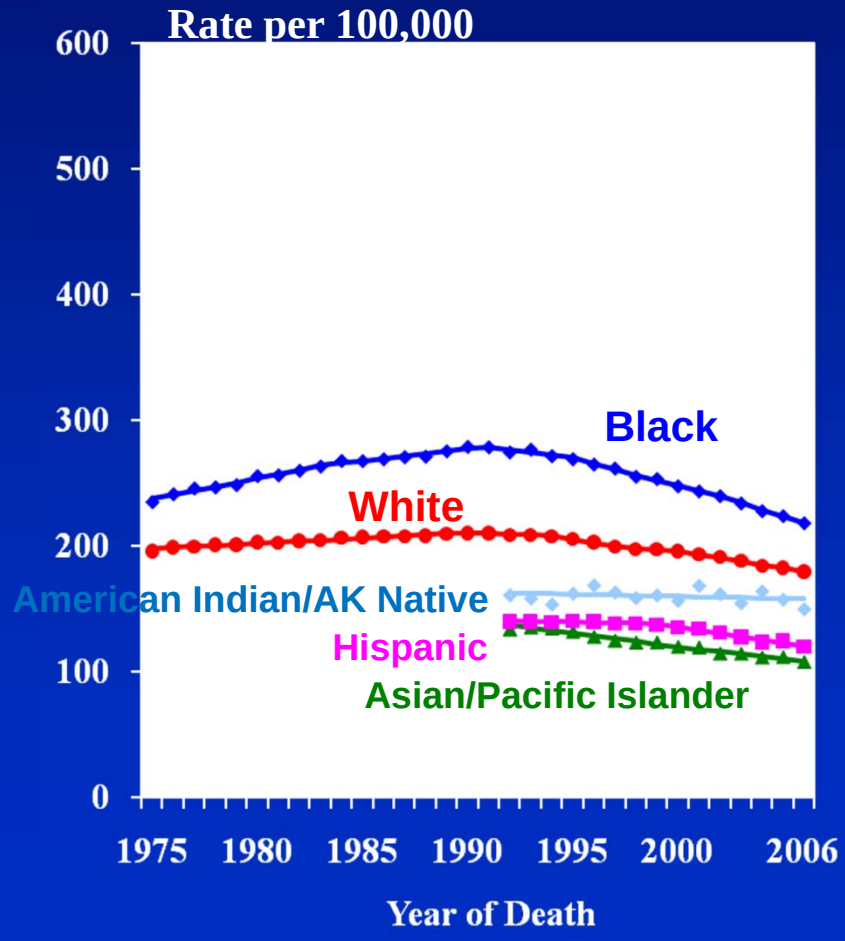
All Cancers, SEER Incidence and US Death Rates

Joinpoint Analyses for Whites & Blacks 1975-2006
Asian/Pacific Islanders, American Indians/Alaska Natives & Hispanics 1992-2006

Incidence

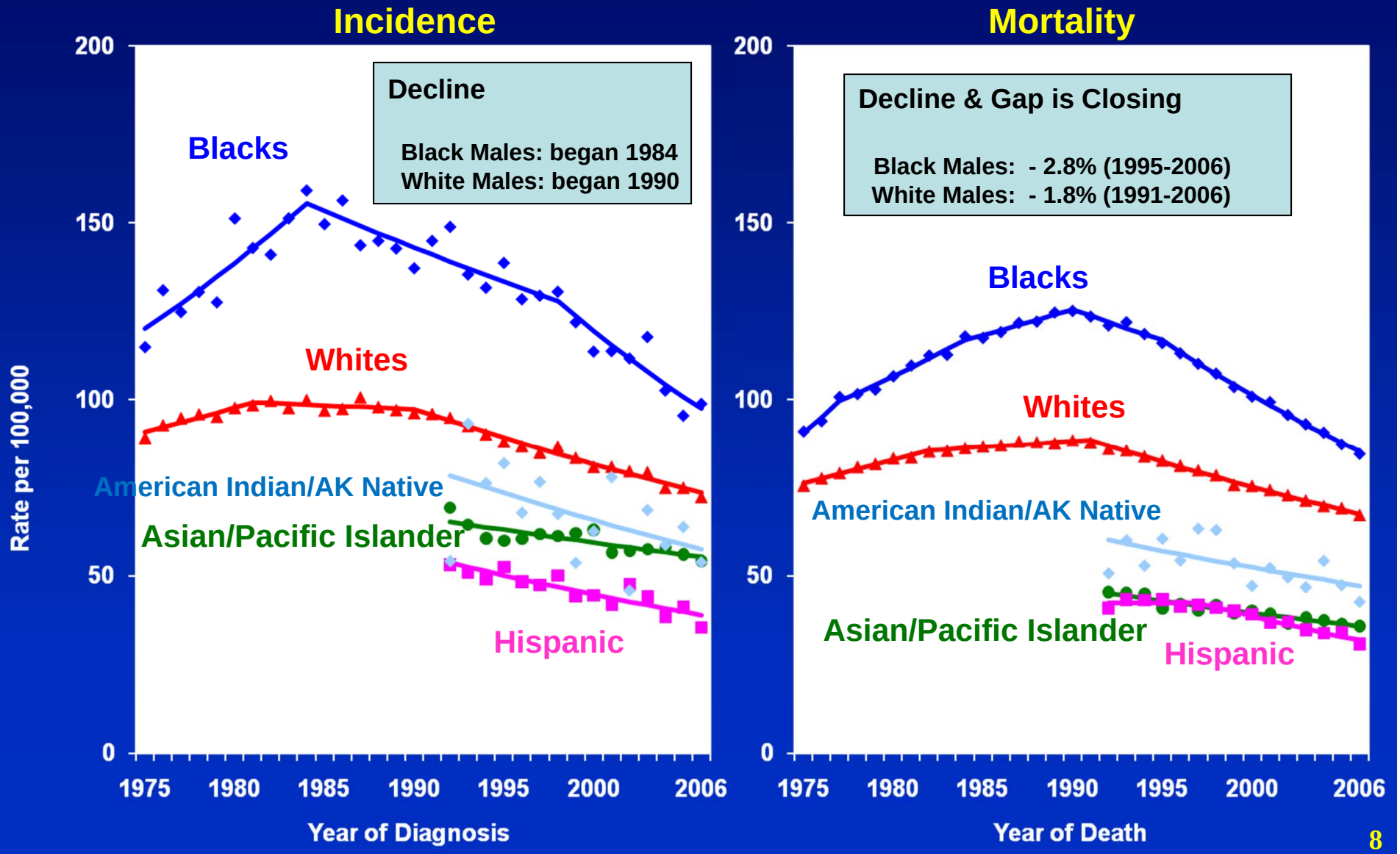


Mortality



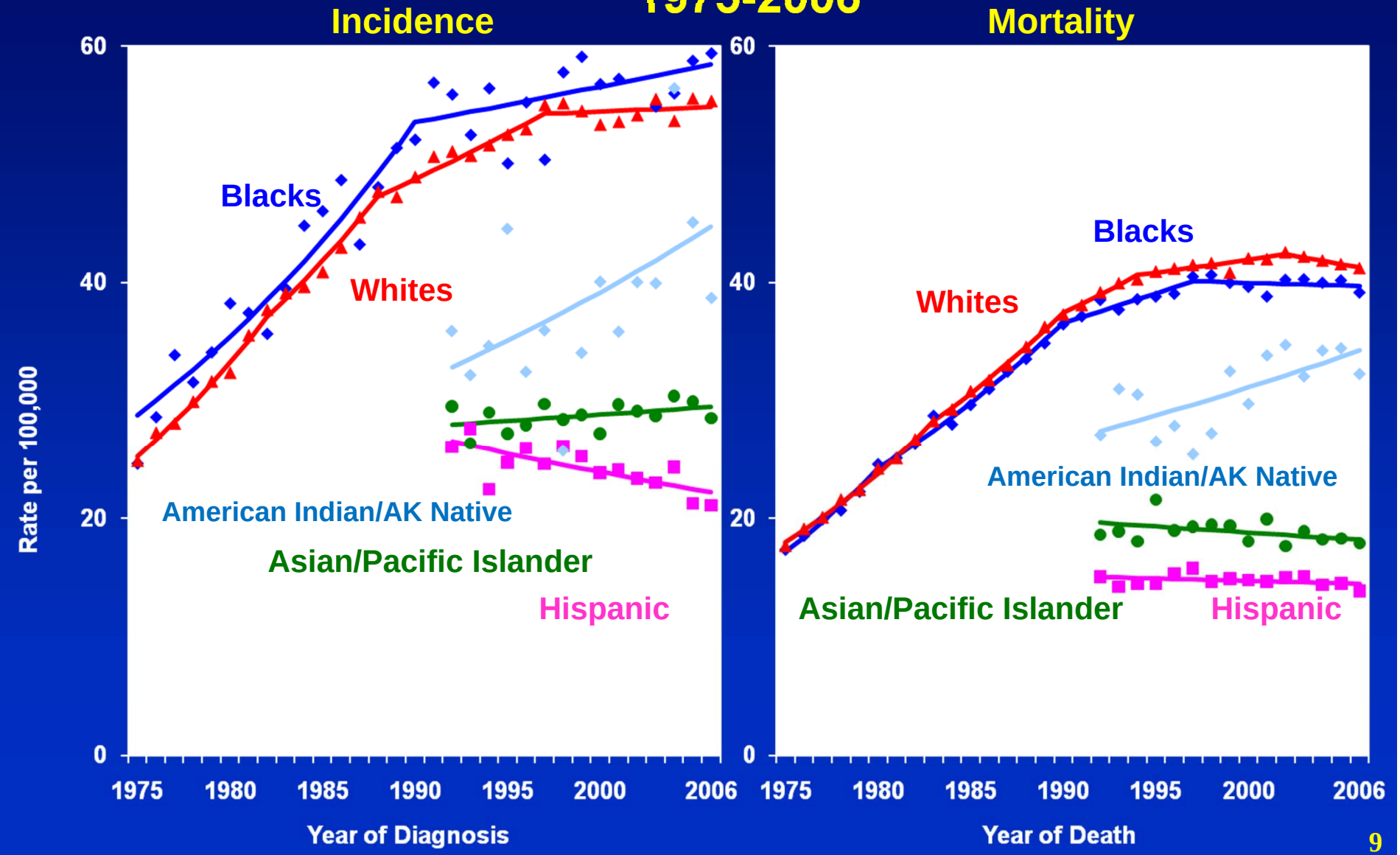
Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Male Lung & Bronchus Cancer
SEER Incidence (delay adjusted) & US Death Rates
1975-2006



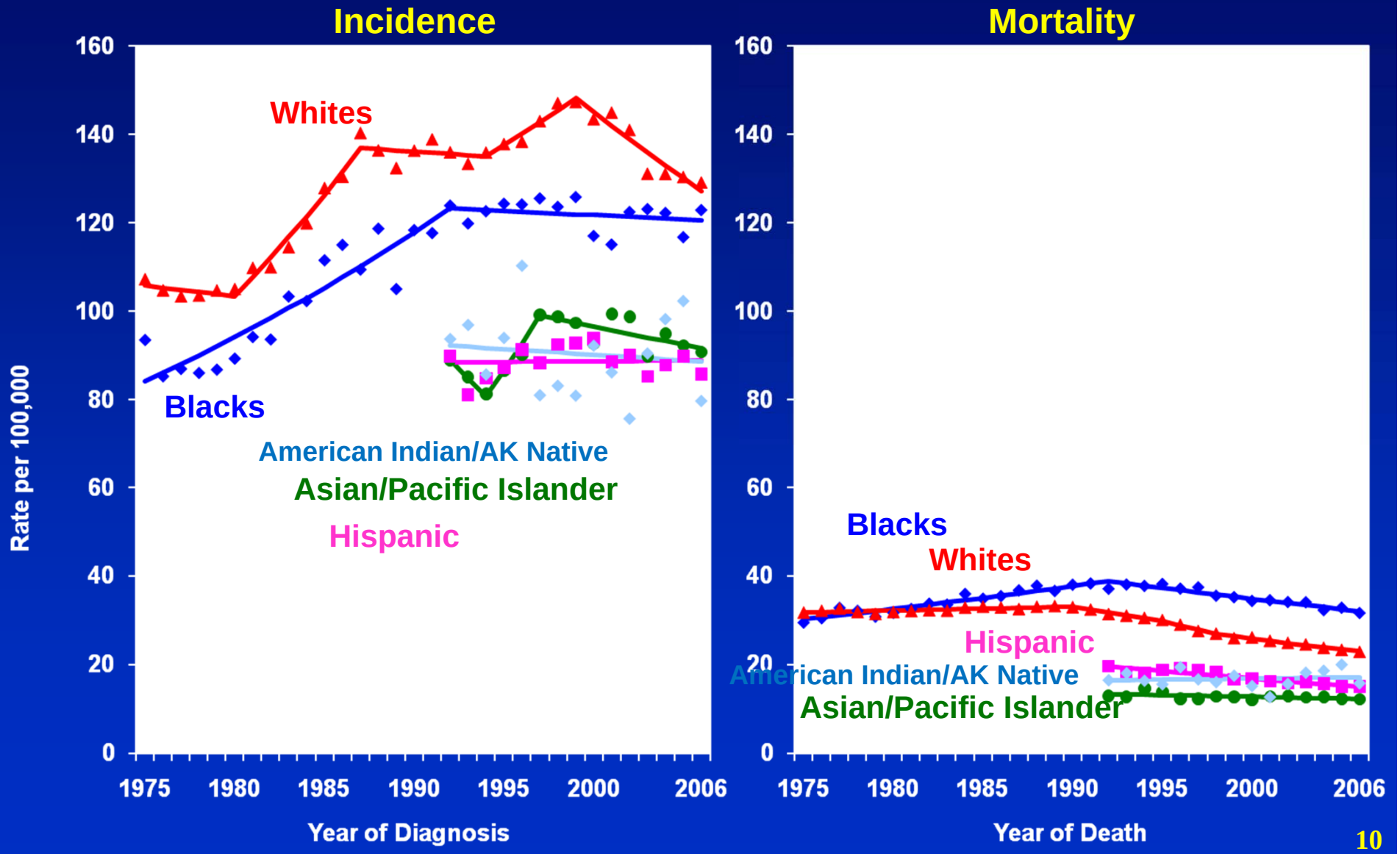
Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Female Lung & Bronchus Cancer
SEER Incidence (delay adjusted) & US Death Rates
1975-2006



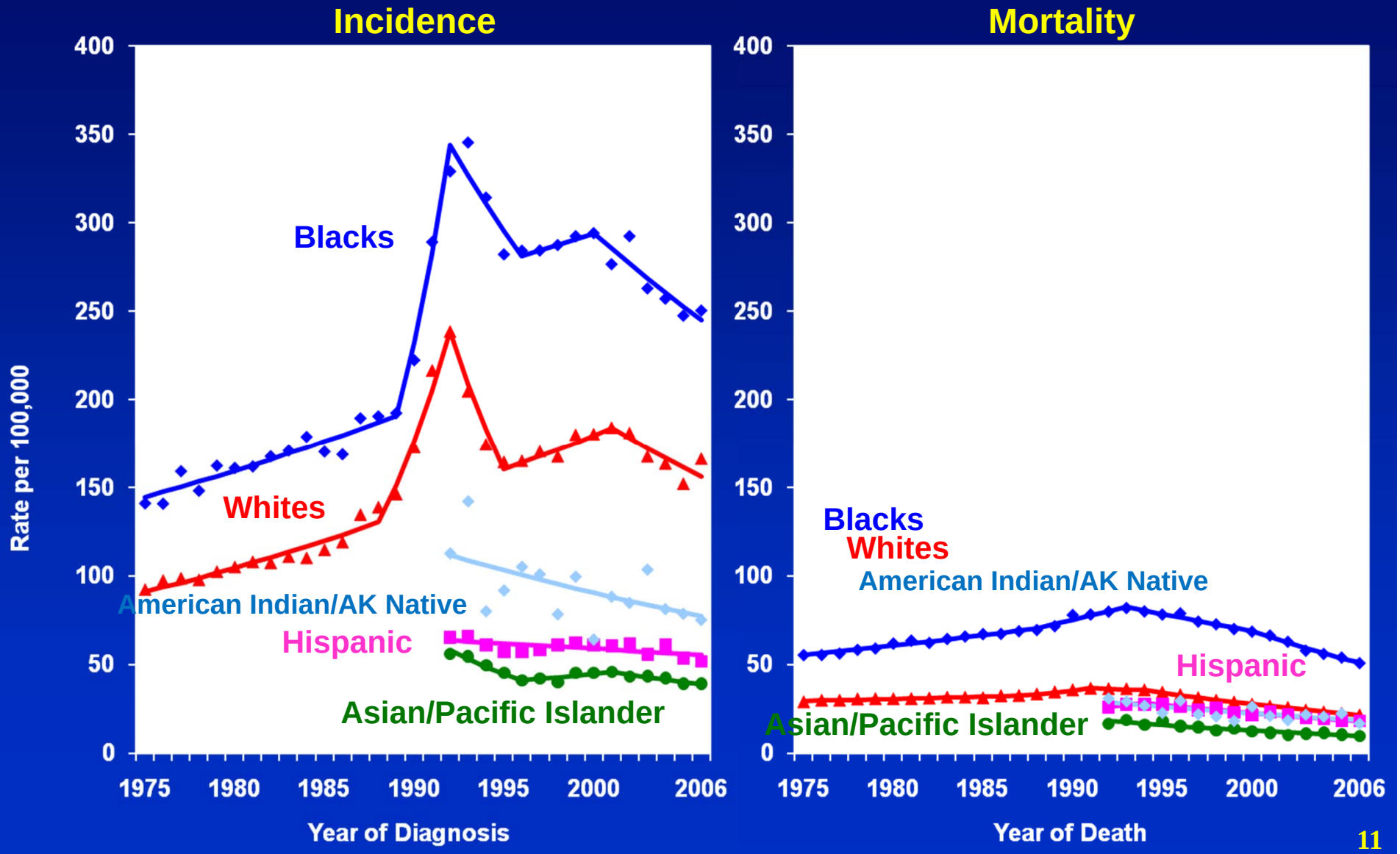
Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Female Breast Cancer
SEER Incidence (delay adjusted) & US Death Rates
1975-2006



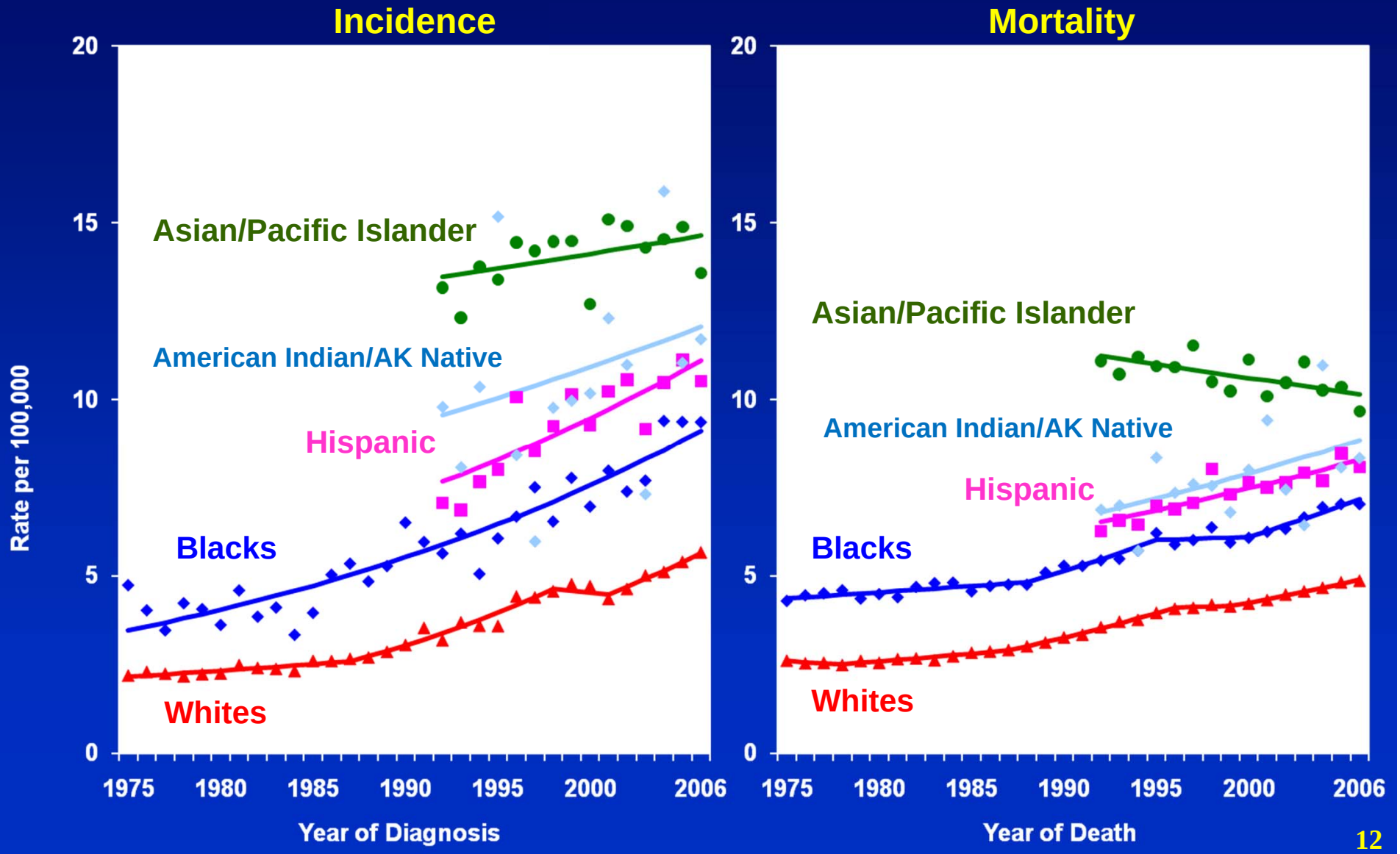
Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Prostate Cancer
SEER Incidence (delay adjusted) & US Death Rates
Males, 1975-2006



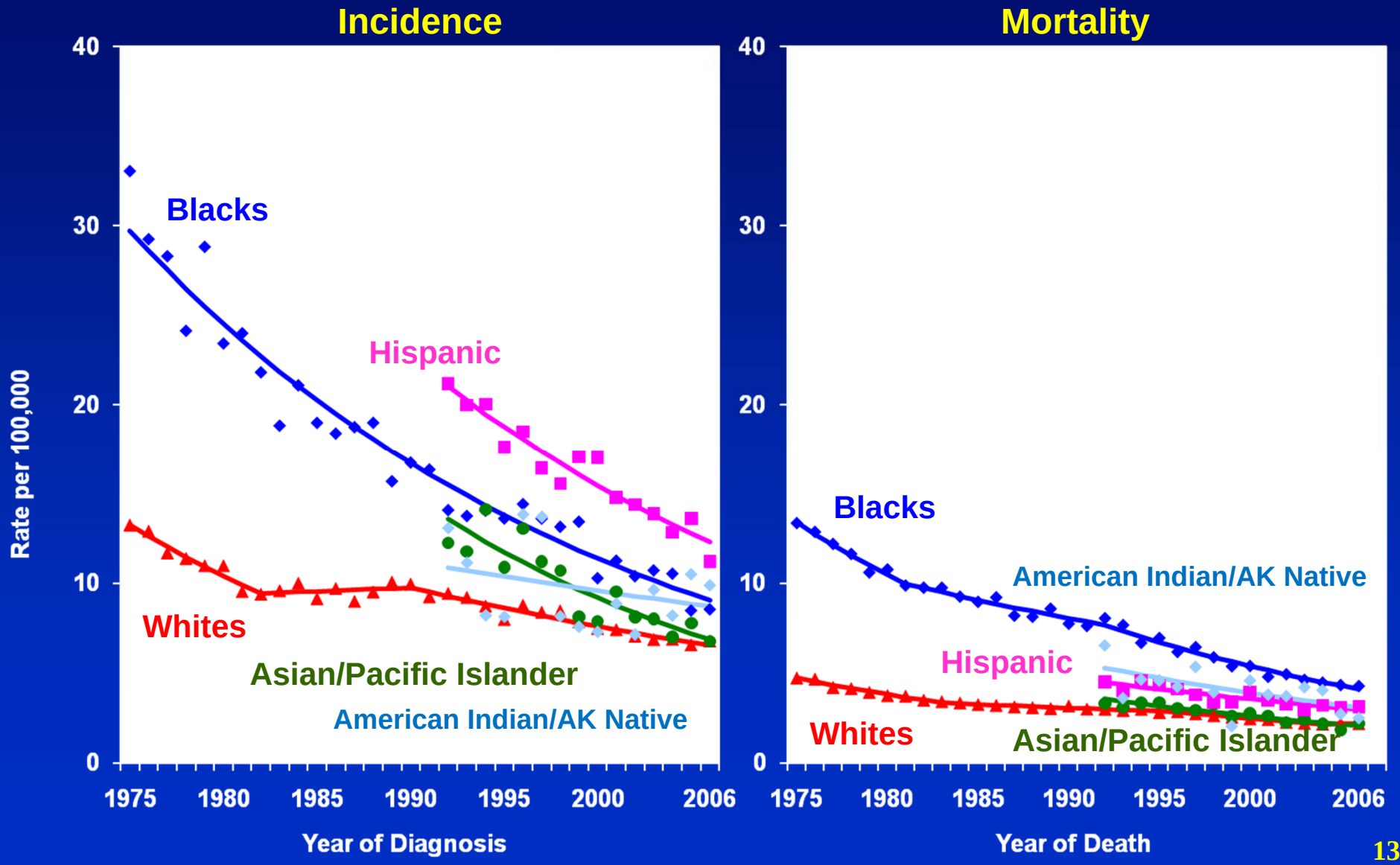
Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Liver & Intrahepatic Bile Duct Cancer
SEER Incidence (delay adjusted) & US Death Rates
1975-2006



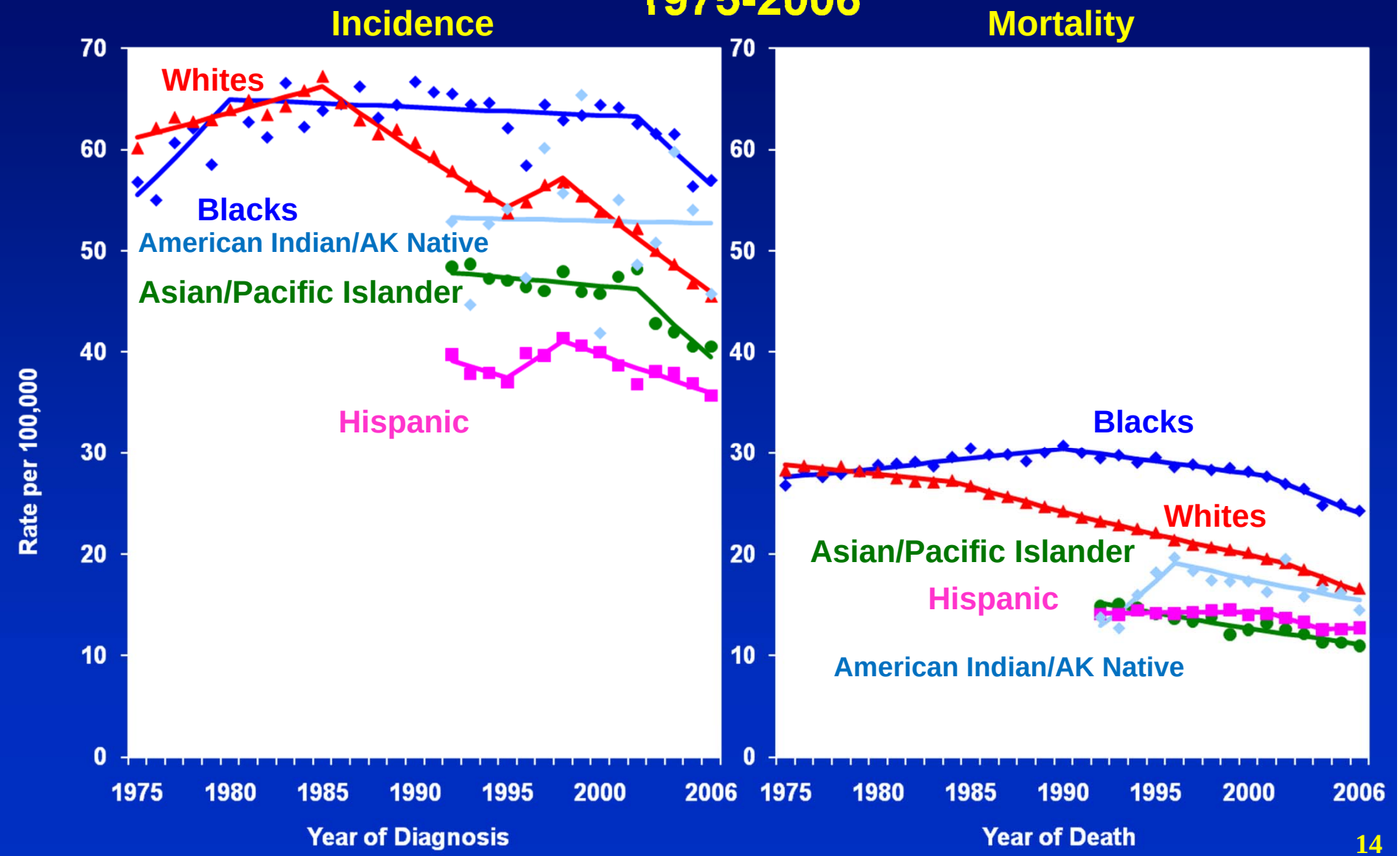
Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Cervical Cancer
SEER Incidence (delay adjusted) & US Death Rates
1975-2006



Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Both Sexes Colon & Rectum Cancer
SEER Incidence (delay adjusted) & US Death Rates
1975-2006

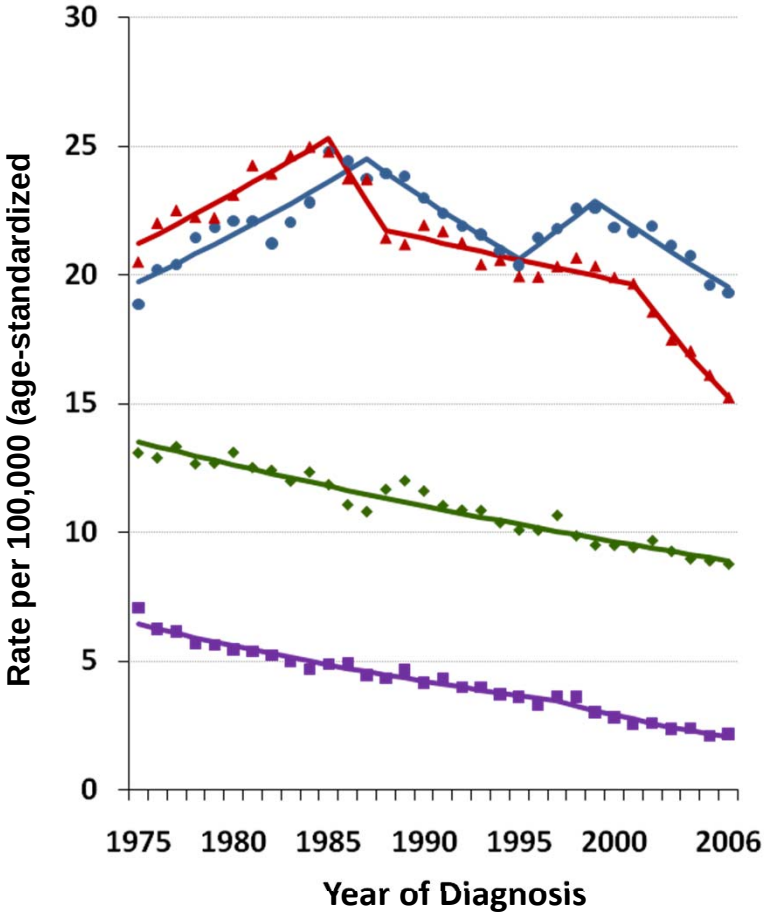


Rates are age-adjusted to the 2000 U.S. standard million population. Sources: Incidence data – NCI SEER Program; Mortality data – CDC NCHS NVSS

Colorectal Cancer

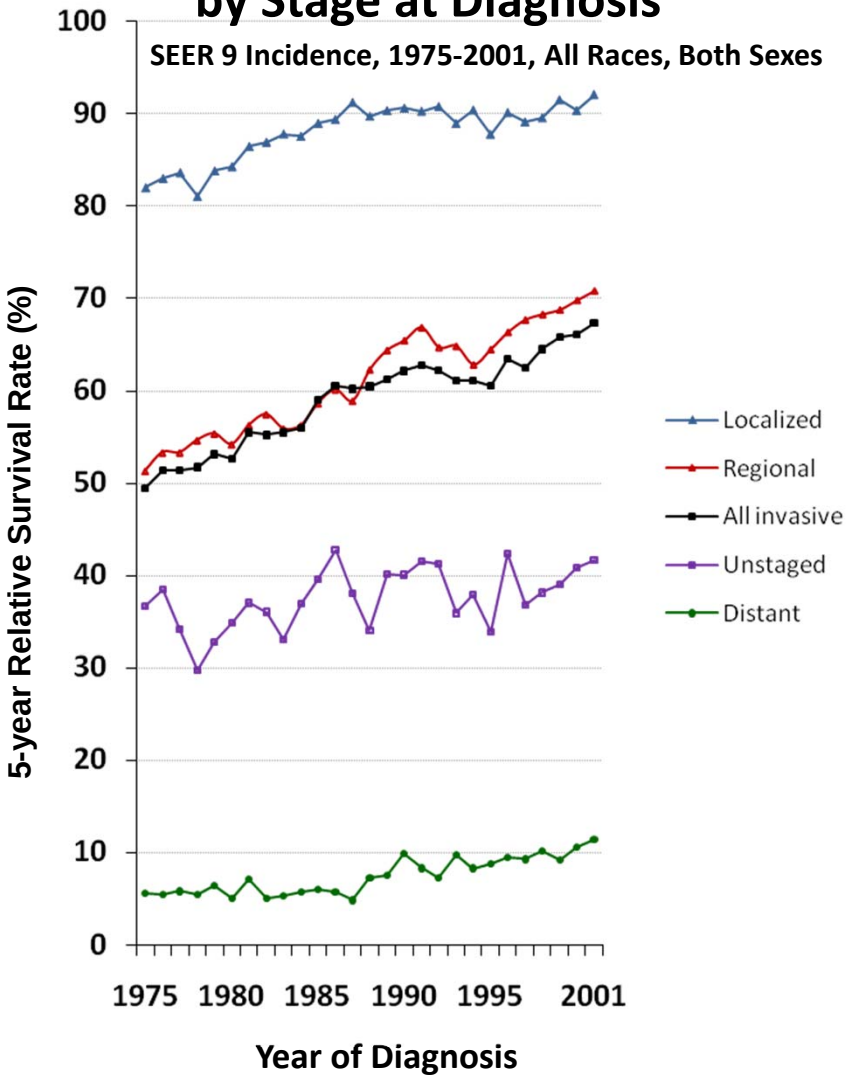
Age-Standardized Incidence Rates by Stage at Diagnosis

SEER 9 Incidence, 1975-2006, All Races, Both Sexes



5-Year Relative Survival Rates by Stage at Diagnosis

SEER 9 Incidence, 1975-2001, All Races, Both Sexes



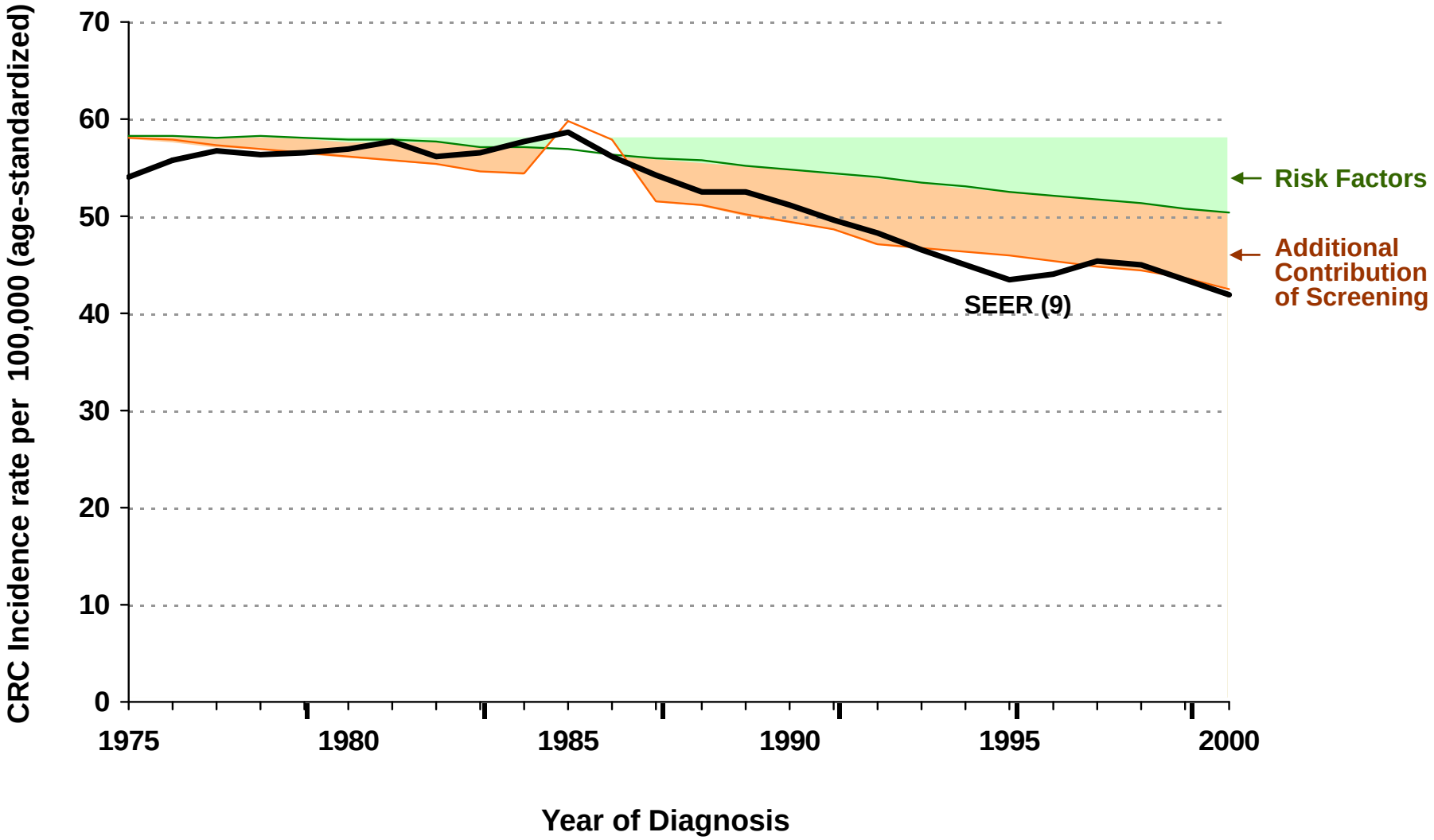
Micro-Simulation Modeling Projections of Colorectal Cancer (CRC) Rates

- **CISNET Consortium's MISCAN-Colon model**
  - **Tool to analyze historical impact of changes in risk factors, screening & treatment practices and to project future mortality trends for CRC**
  - **Increase risk (e.g., smoking, obesity & red meat consumption)**
  - **Decrease risk (e.g., NSAID use, supplements, and physical activity)**
  - **Screening use (e.g., national data on FOBT, endoscopy)**
  - **Treatment (4 chemotherapy regimens for advanced CRC)**

Micro-Simulation Modeling Projections of Colorectal Cancer (CRC) Rates

- Declines in CRC death rates consistent with
  - Relatively large contribution from screening
  - Smaller demonstrable impact of risk factor reductions (long term) & treatment (short term)
- Declines projected to continue
- Declines could be accelerated with favorable trends in risk factors, higher utilization of screening & optimal treatment (e.g., 50% reduction by 2020)

Partition of Past Trends in Colorectal Cancer Incidence* (1975-2000)



* Rates are based on the first primary colorectal cancer and include the primary sites of C18.0 C18.2-C18.9, C19.9, C20.9 and the ICD-03 histologies of: 8000-8001,8010,8020,8140,8210-8211. Rates do not include cases that are from a reporting source of death certificate only or autopsy only.

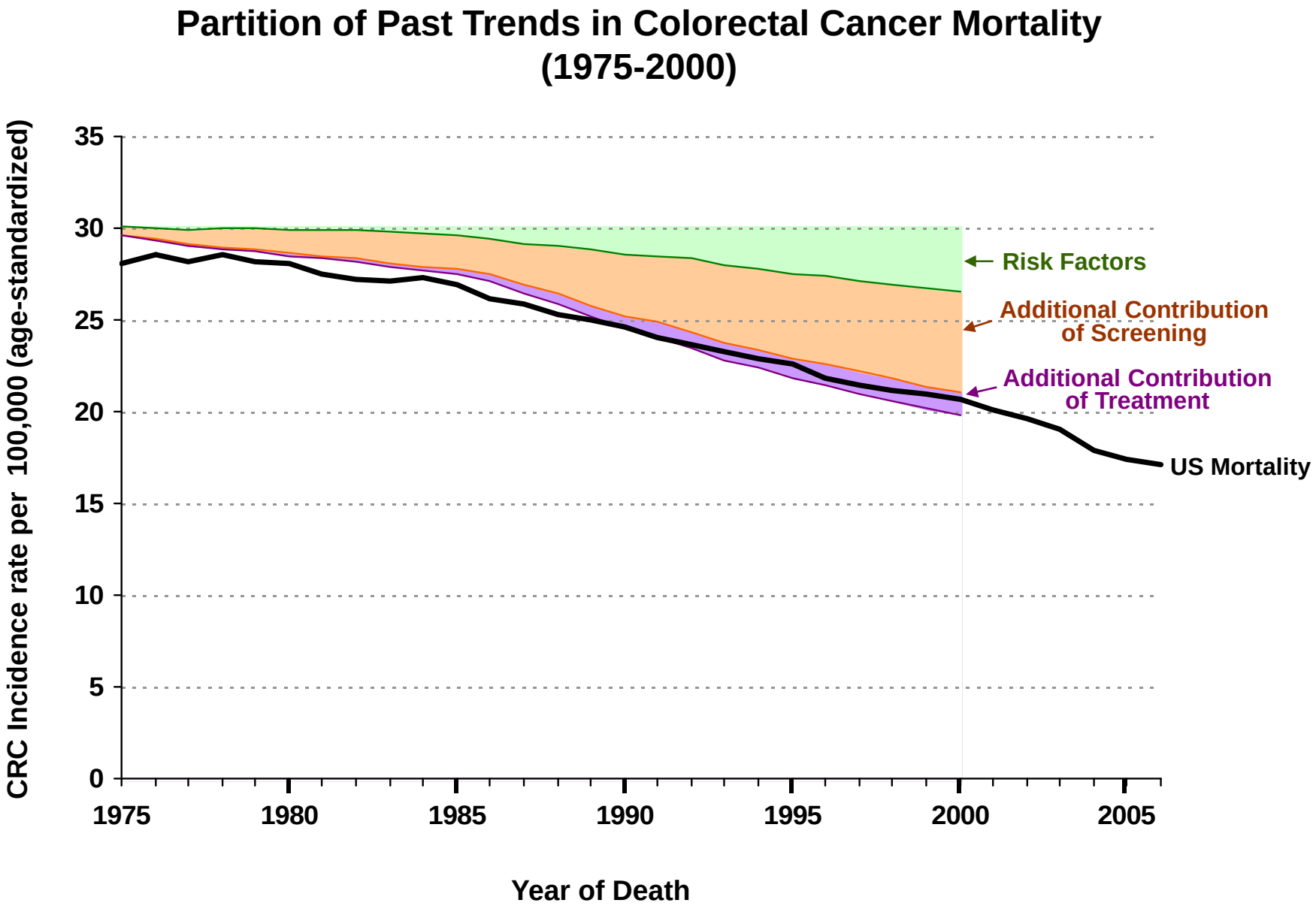
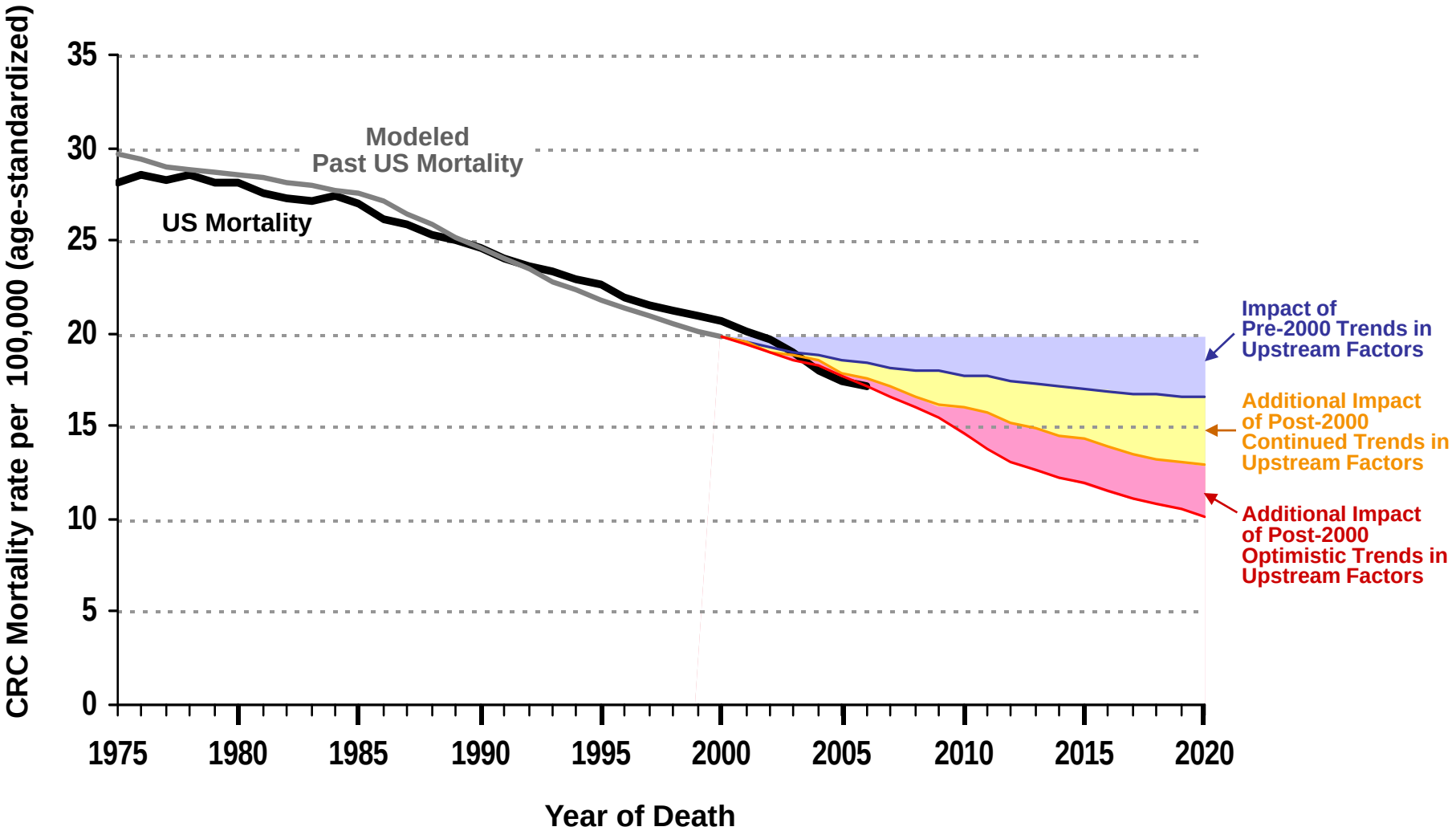

Partition of Past Trends in Colorectal Cancer Mortality
(1975-2000)
CRC Incidence rate per 100,000 (age-standardized)
35
30
25
20
15
10
5
0
1975
1980
1985
1990
1995
2000
2005
Year of Death
Risk Factors
Additional Contribution of Screening
Additional Contribution of Treatment
US Mortality

Figure 6. Projections of Colorectal Cancer Mortality with Differing Intensities of Cancer Control (2000 – 2020)



Coming Soon

: http://progressreport.cancer.gov

National Cancer Institute
U.S. National Institutes of Health | www.cancer.gov

Search Progress Report GO

Cancer Trends Progress Report – 2009/2010 Update

Progress Report Tools
- Print this page
- Generate custom report

Additional Content
- Director's Message
- Introduction
- Appendices

Related Resources
- About this *Report*
- Fact sheet (PDF)
- FAQs
- Quick tutorial
- Dictionary

Feedback
We welcome your questions and comments about the *Cancer Trends Progress Report*.

The *Cancer Trends Progress Report*, first issued in 2001 as the *Cancer Progress Report*, summarizes our nation's progress against cancer in relation to Healthy People 2010 targets set forth by the Department of Health and Human Services. The report includes key measures of progress along the cancer control continuum and uses national trend data to illustrate where advances have been made.

New in the CTPR 2009/2010 Update
- Measures
- Differences by demographics
- Methodology
- Show all

Report Highlights
Major conclusions

Trends-at-a-Glance
Trends and summary tables

Prevention
Tobacco, Physical activity, Diet, Sun protection, more...

Treatment
Bladder, breast, colorectal, kidney, lung, ovary, prostate cancer treatment

Early Detection
Breast, cervical, colorectal cancer screening

Life After Cancer
Survival
Costs of cancer care

Diagnosis
Incidence
Stage at diagnosis

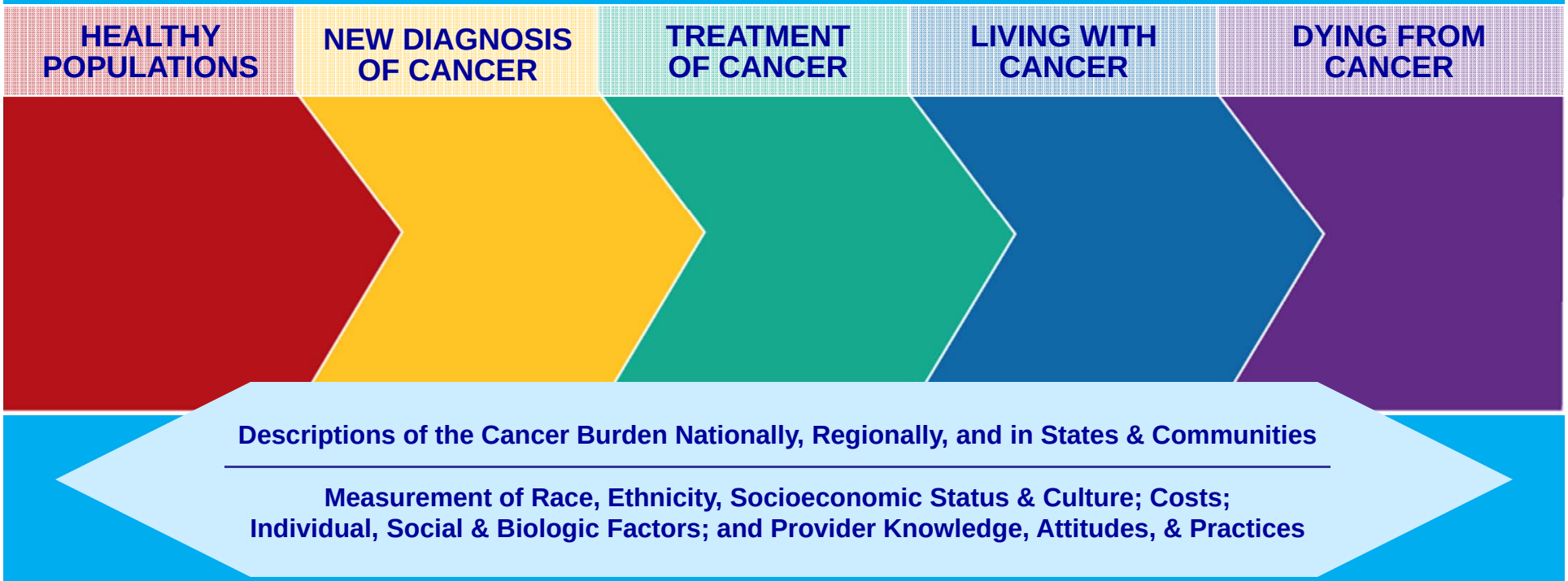
End of Life
Mortality
Person-years of life lost

The report, available only online, can be printed in part or in its entirety. Portions of the report are updated annually, while other sections are updated as new data become available. The full report will next be updated in 2011.

Challenges

- Increasing demands on SEER for more data:
  - Comorbidity
  - Recurrence
  - Prognostic factors & clinically relevant characteristics
  - Biospecimens
  - Diagnosis, treatment, and medical management
  - Delivery of care
- Reliance on electronic health records (EHR)
- Automated data collection and processing
- Database linkage (protected patient identifiers)
- Better understanding of population differences
- Coordination & integration (surveillance partners)

A National Framework for Cancer Surveillance



Wingo PA, Howe HL, Thun MJ, Ballard-Barbash R, Ward E, Brown ML, Sylvester J, Friedell GH, Alley L, Rowland JH, Edwards BK, Cancer Causes and Control 2005;16:151-170

Swan J, Wingo P, Clive R, West D, Miller D, Hutchison C, Sondik EJ, Edwards BK, Cancer 1998; 83:1282-1291

Questions for NCAB

- How can we provide more meaningful cancer data to researchers and the public?
- What are the important cancer statistics that we should report?
- Should we focus more on timely reporting, collaborative reporting, easier access to cancer data, or interpreting cancer data?
- With resource constraints, should we continue to focus on depth (details) rather than breadth (population coverage), improve collaborations with hospitals & cancer centers or team only with federal agencies, and/or expand the use of statistical methods to compensate for limited empirical data?