

2022 NCCRT Annual Meeting

INNOVATIONS IN CANCER
SCREENING



Innovations in Cancer Screening and Prevention



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*Chair, Family Medicine and Community Health
Perelman School of Medicine
University of Pennsylvania*



Innovations in Cancer Screening and Prevention

Friday, November 18, 11:45 AM

Preface



Disparities Exist Across Many Dimensions

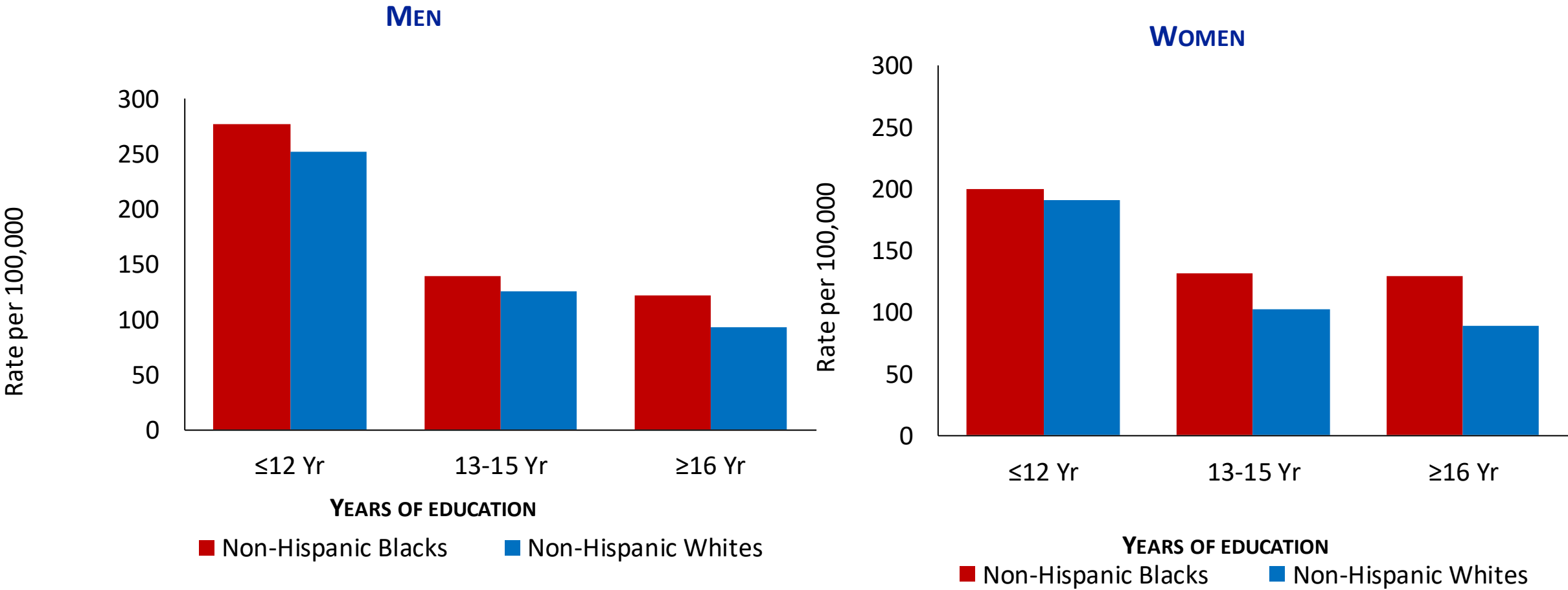
- Both economic status, (wealth), and level of educational achievement strongly correlate with patterns of disparity. They also correlate with likelihood of having health insurance.
- People identifying as Black are more likely to be poor but not all Black people are poor.



Being Black in America confers an independent, higher risk of dying from cancer.



The Impact Of Eliminating Racial Versus Educational Disparity In Cancer Mortality Within Blacks: Overall Cancer Death Rates By Race And Sex, 2016



In this talk, whenever possible, I will show disparities related to wealth/poverty or education. These disparities impact individuals from all ethnic and racial groups.

Some disparities are reported based on race, and I will show the Black population vs. White population disparity.

Health Equity



The Root Causes of Health Disparities – and a Path Forward

Richard C. Wender

Professor and Chair, Department of Family Medicine and Community Health

Perelman School of Medicine

University of Pennsylvania



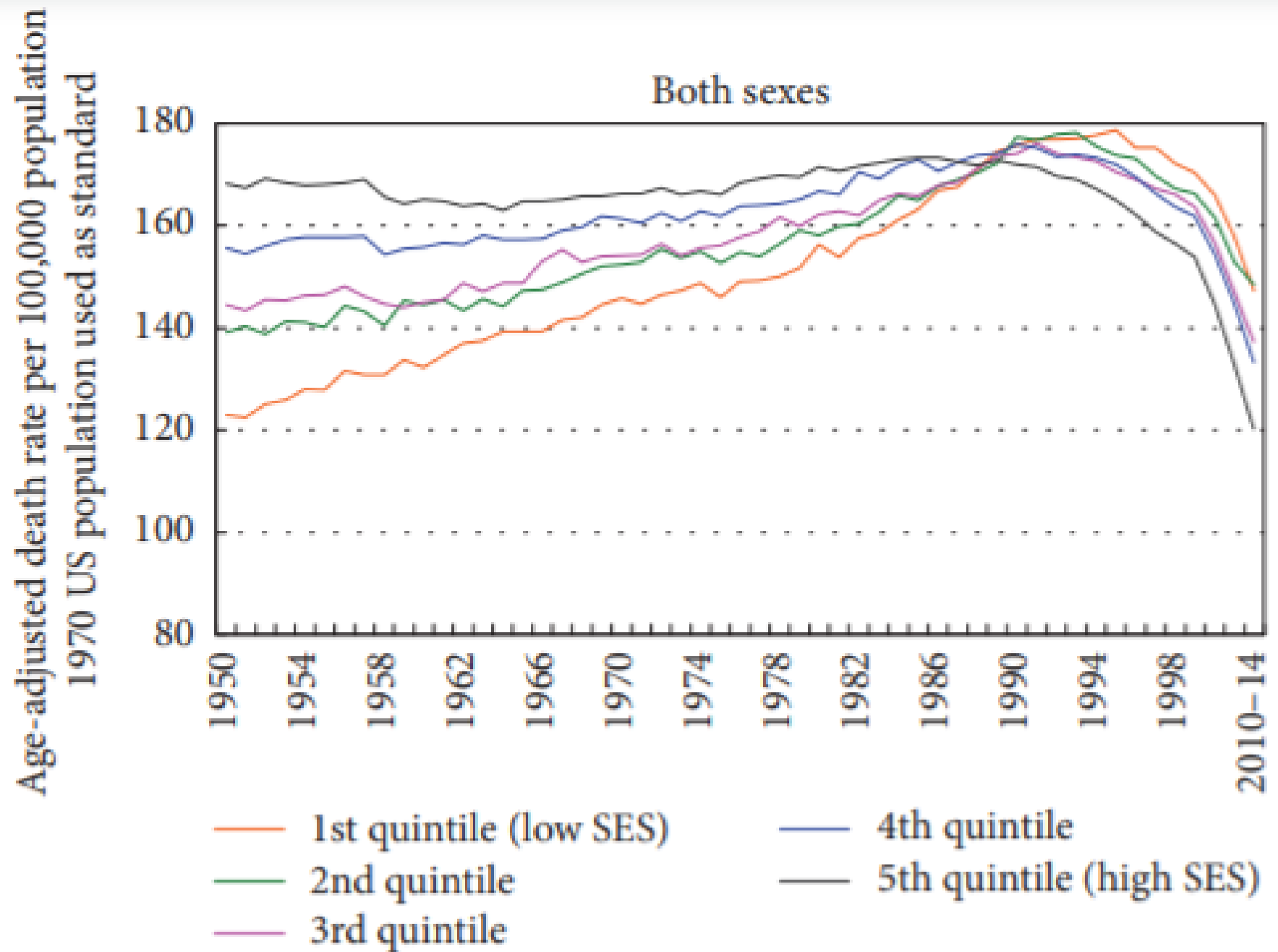
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Penn Medicine

**Everything
you need to
know about
cancer
disparities
in one
graph.**



Research Article

Socioeconomic and Racial/Ethnic Disparities in Cancer Mortality, Incidence, and Survival in the United States, 1950–2014: Over Six Decades of Changing Patterns and Widening Inequalities

Gopal K. Singh¹ and Ahmedin Jemal²

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²*American Cancer Society, Inc., Surveillance & Health Services Research, 250 Williams Street NW, Corporate Center, Atlanta, GA 30303, USA*

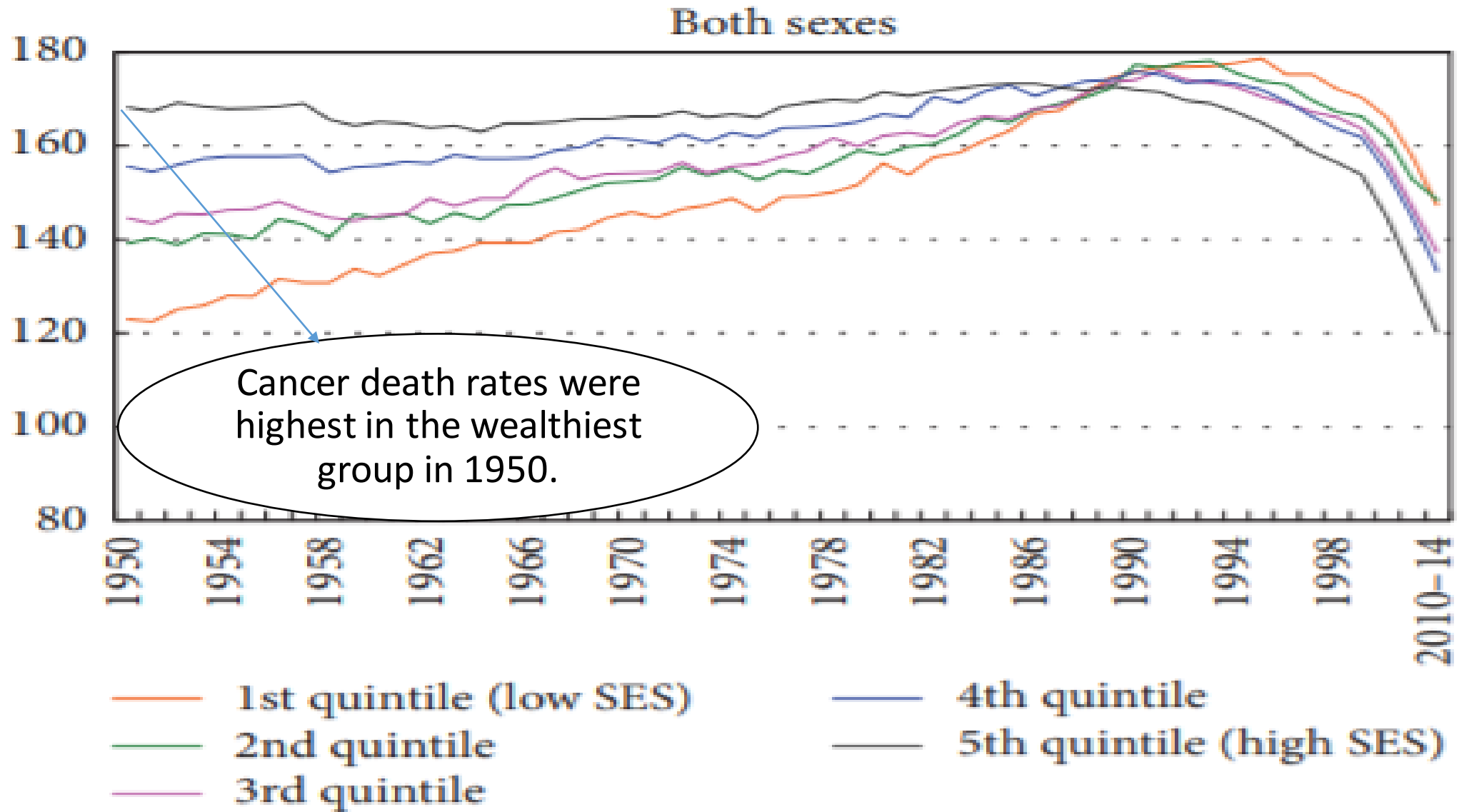
Correspondence should be addressed to Gopal K. Singh; gsingh@hrsa.gov

Received 1 December 2016; Accepted 27 February 2017; Published 20 March 2017

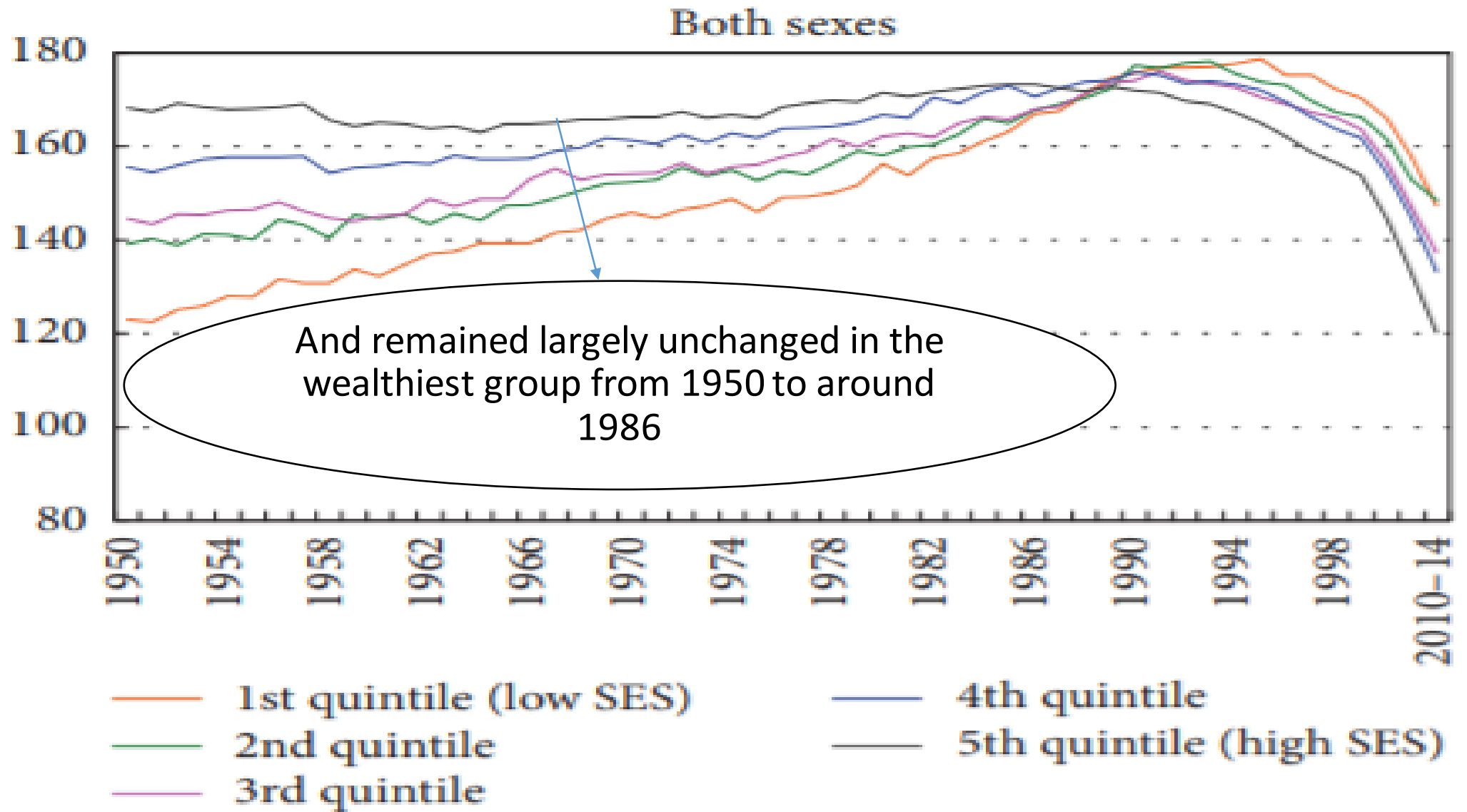
Seven Key Observations



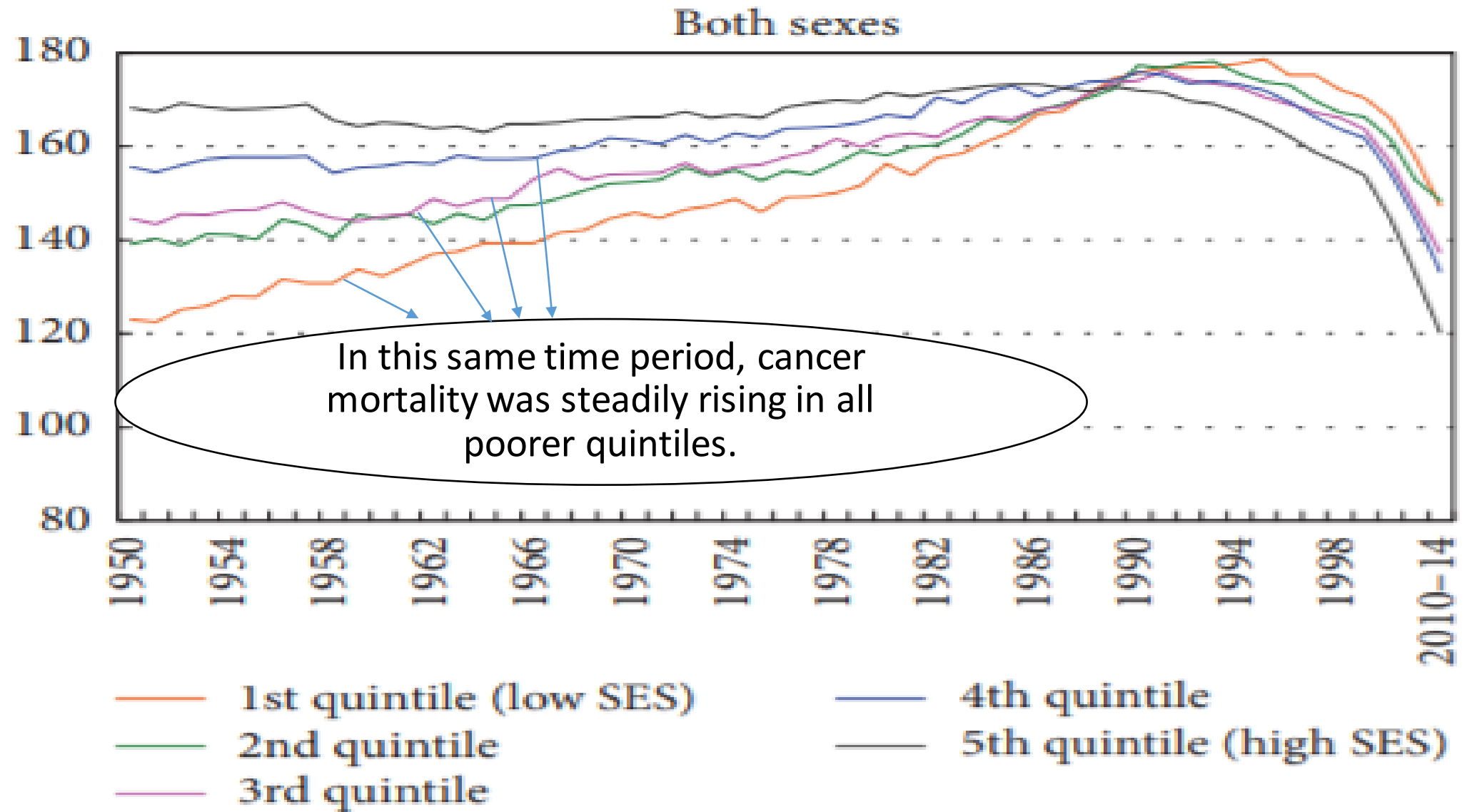
Age-adjusted death rate per 100,000 population
1970 US population used as standard



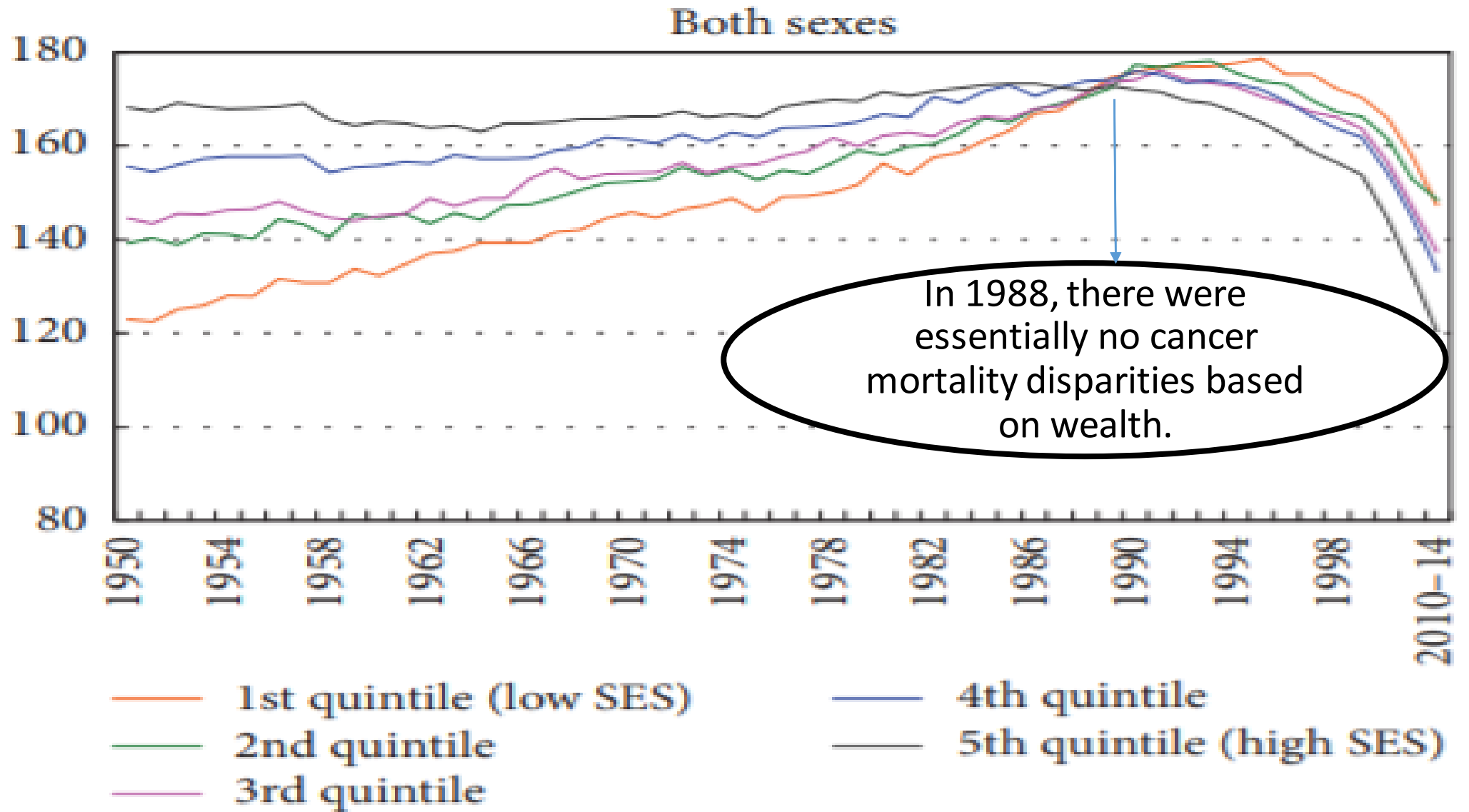
Age-adjusted death rate per 100,000 population
1970 US population used as standard



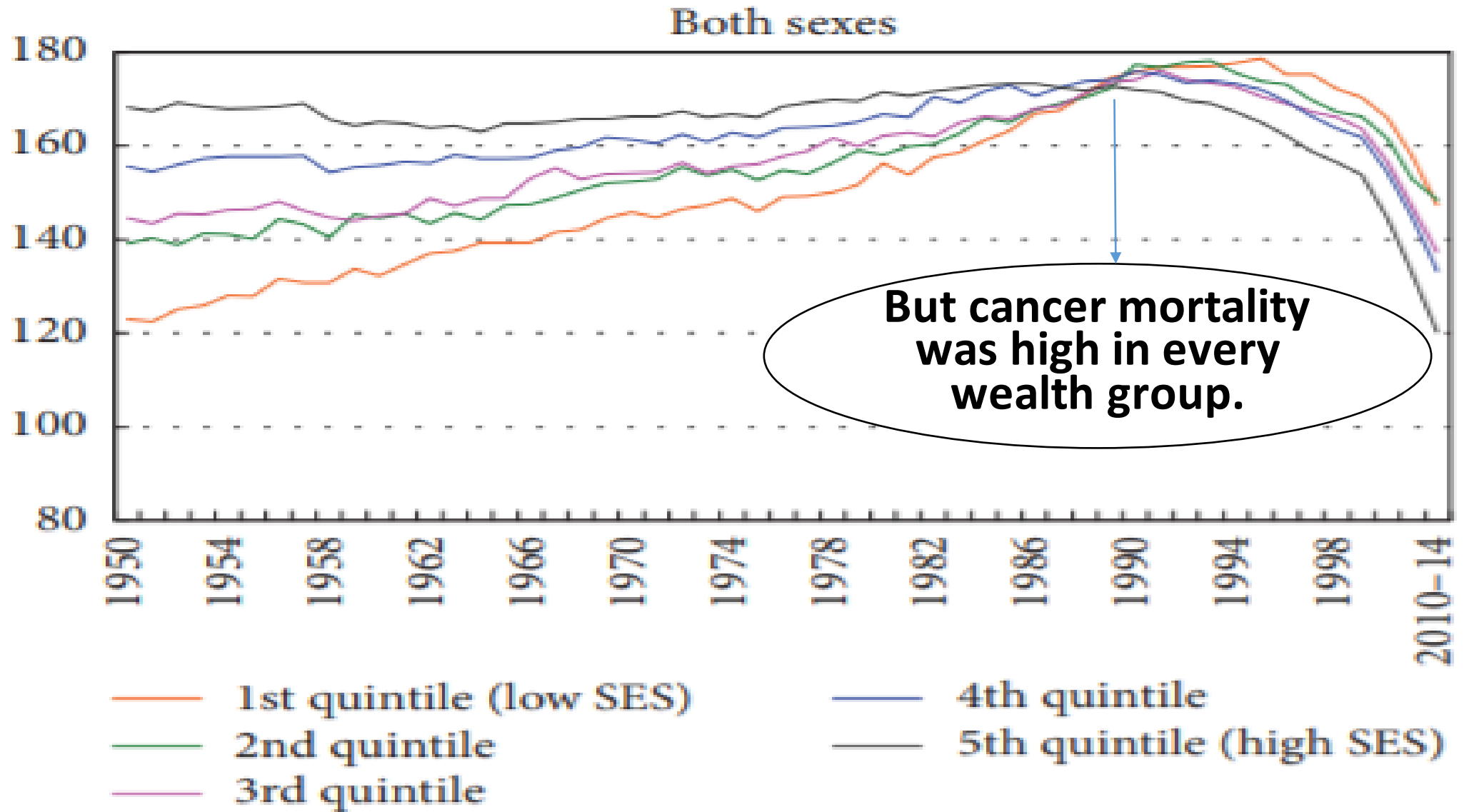
Age-adjusted death rate per 100,000 population
1970 US population used as standard



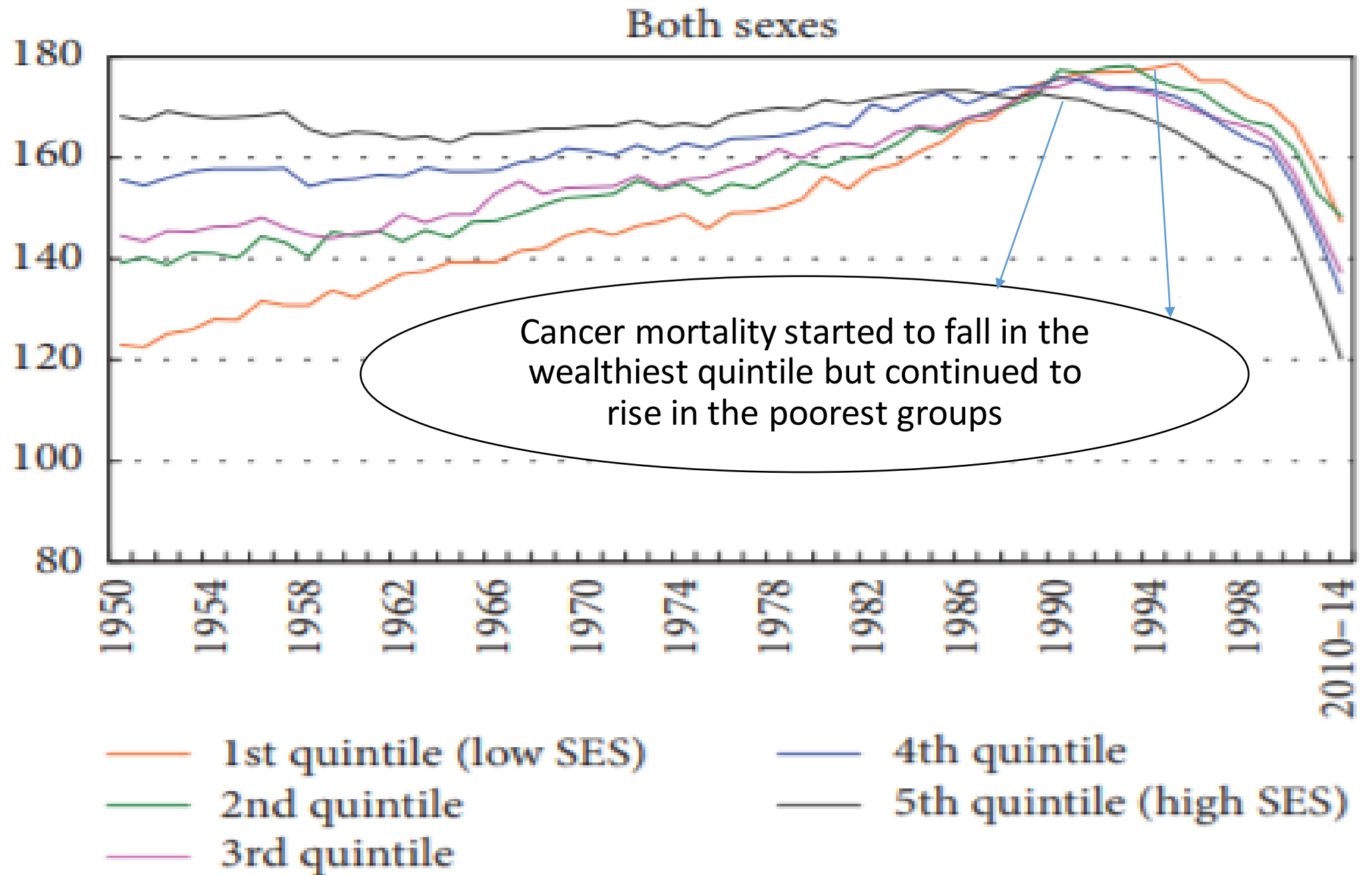
Age-adjusted death rate per 100,000 population
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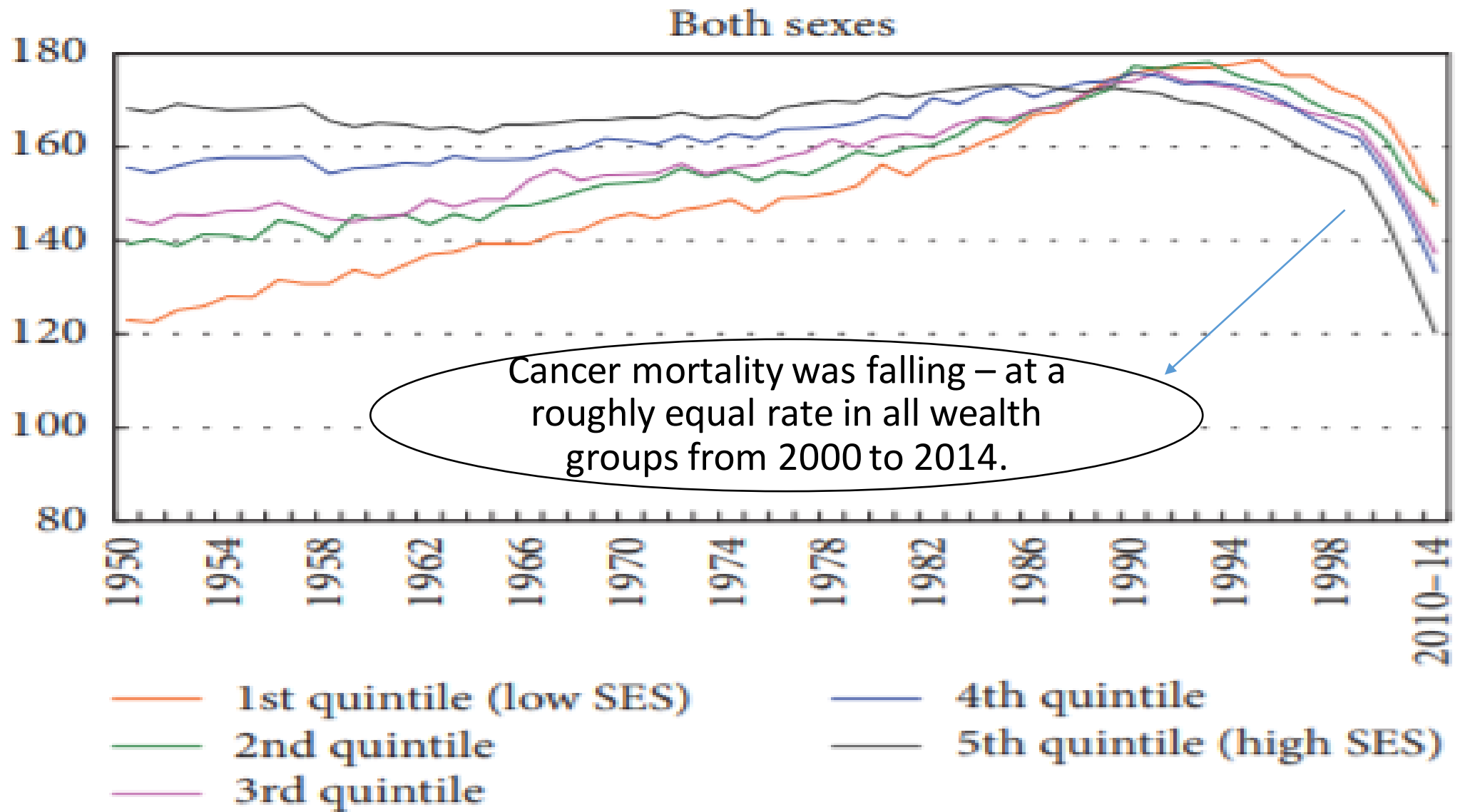
Age-adjusted death rate per 100,000 population
1970 US population used as standard



Age-adjusted death rate per 100,000 population
1970 US population used as standard



Age-adjusted death rate per 100,000 population
1970 US population used as standard



Why were cancer death rates associated with wealth in 1950?



Cancer As a Disease of Affluence

- Cancer mortality in 1950 reflected the behaviors of the population from 1900 to 1950.
- Patterns of food intake, physical activity, and smoking were substantially determined by level of affluence and wealth.

Tobacco Use



“When smoking first swept the United States in the early decades of the 20th century, it took hold among the well-to-do. Cigarettes were high-society symbols of elegance and class, puffed by doctors and movie stars. By the 1960’s, smoking had exploded, helped by the distribution of cigarettes to soldiers in World War II. Half of all men and a third of women smoked.”

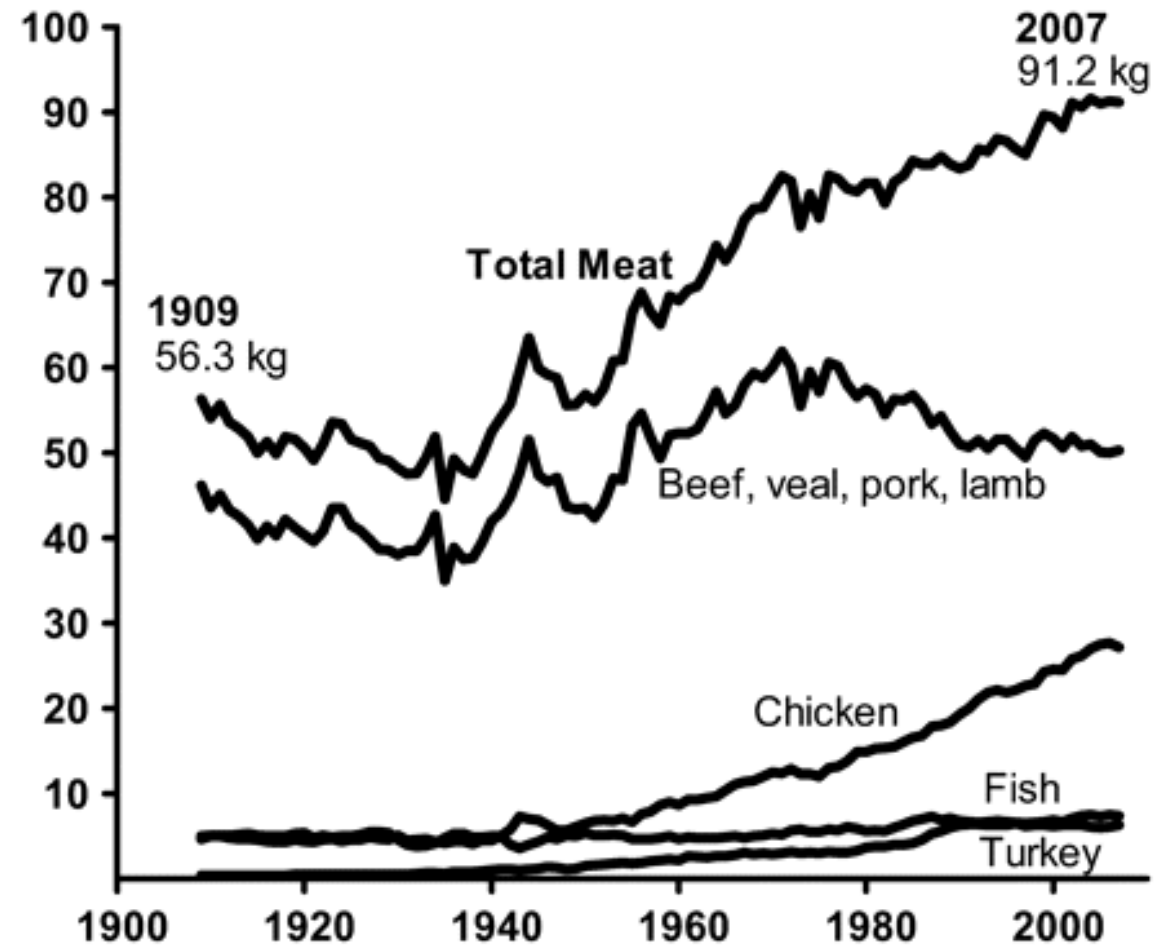
[Smoking Proves Hard to Shake Among the Poor – The New York Times \(nytimes.com\)](https://www.nytimes.com/2012/01/01/health/smoking-proves-hard-to-shake-among-the-poor.html)



Dietary Patterns



FIGURE 1. US per capita red meat, poultry, and fish availability (kg/y). Data are from reference 6.



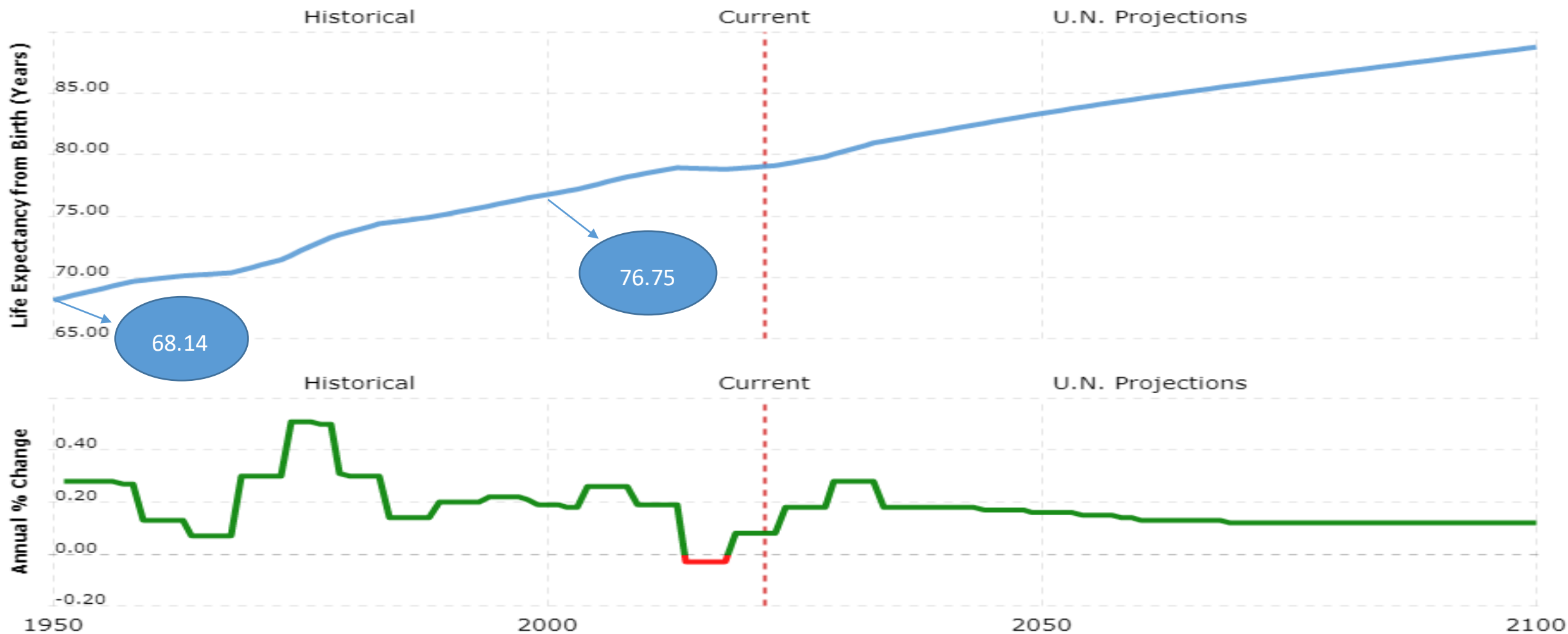
Why did cancer mortality start to go up in poorer groups?



Life Expectancy in the United States: 1950-2102

From: To:

Zoom:



Life Expectancy: 1950 vs. 2015 for Black and White Population

White		Black	
1950:		1950:	
- Men:	65.6	- Men:	59.1
- Women:	71.1	- Women:	62.9
- Both sexes:	69.1	- Both sexes:	60.8
2015:		2015:	
- Men:	76.3	- Men:	72.2
- Women:	81.1	- Women:	78.5
- Both sexes:	78.9	- Both sexes:	75.5
		8.3 years lower	
		3.4 years lower	

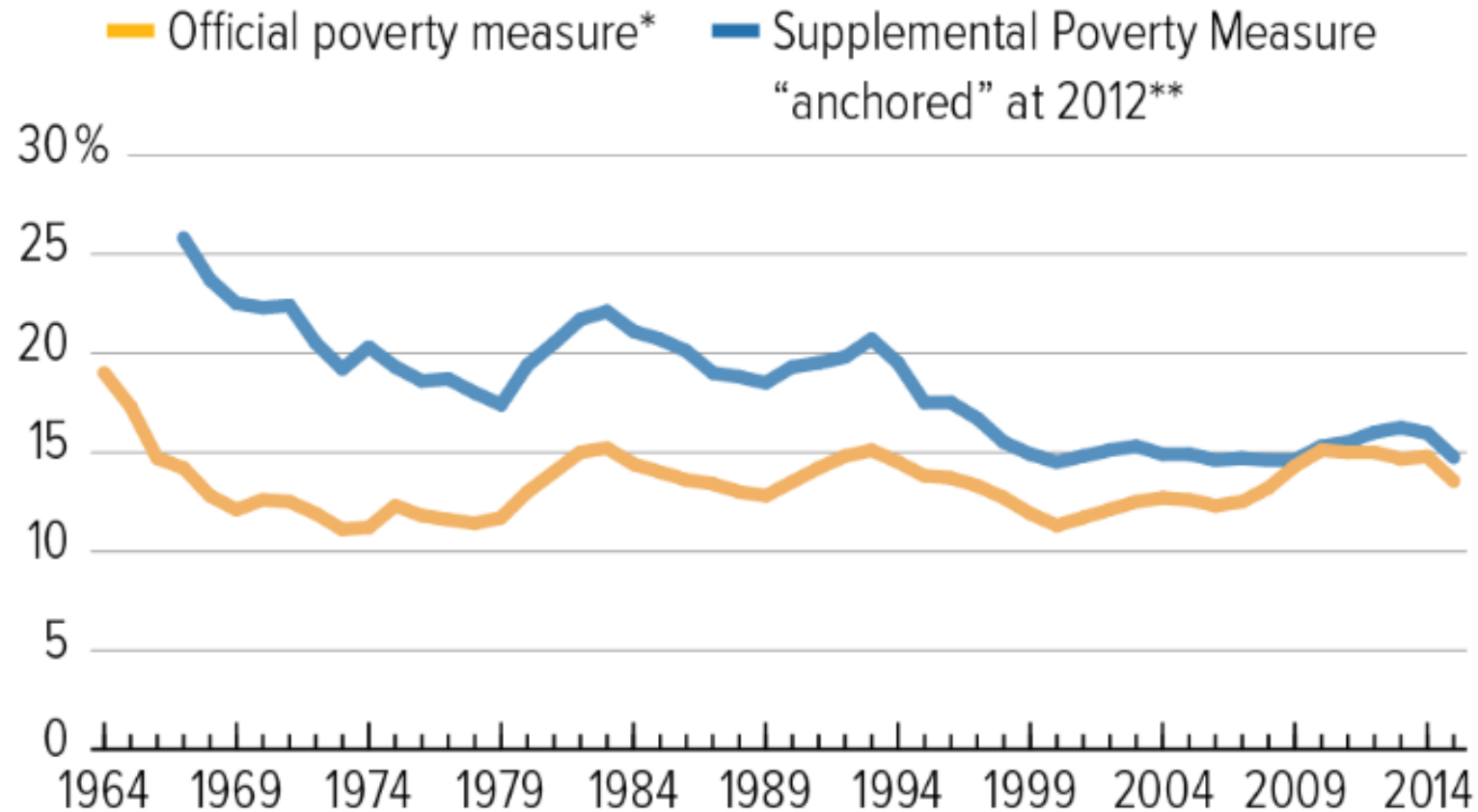
Poverty decreased



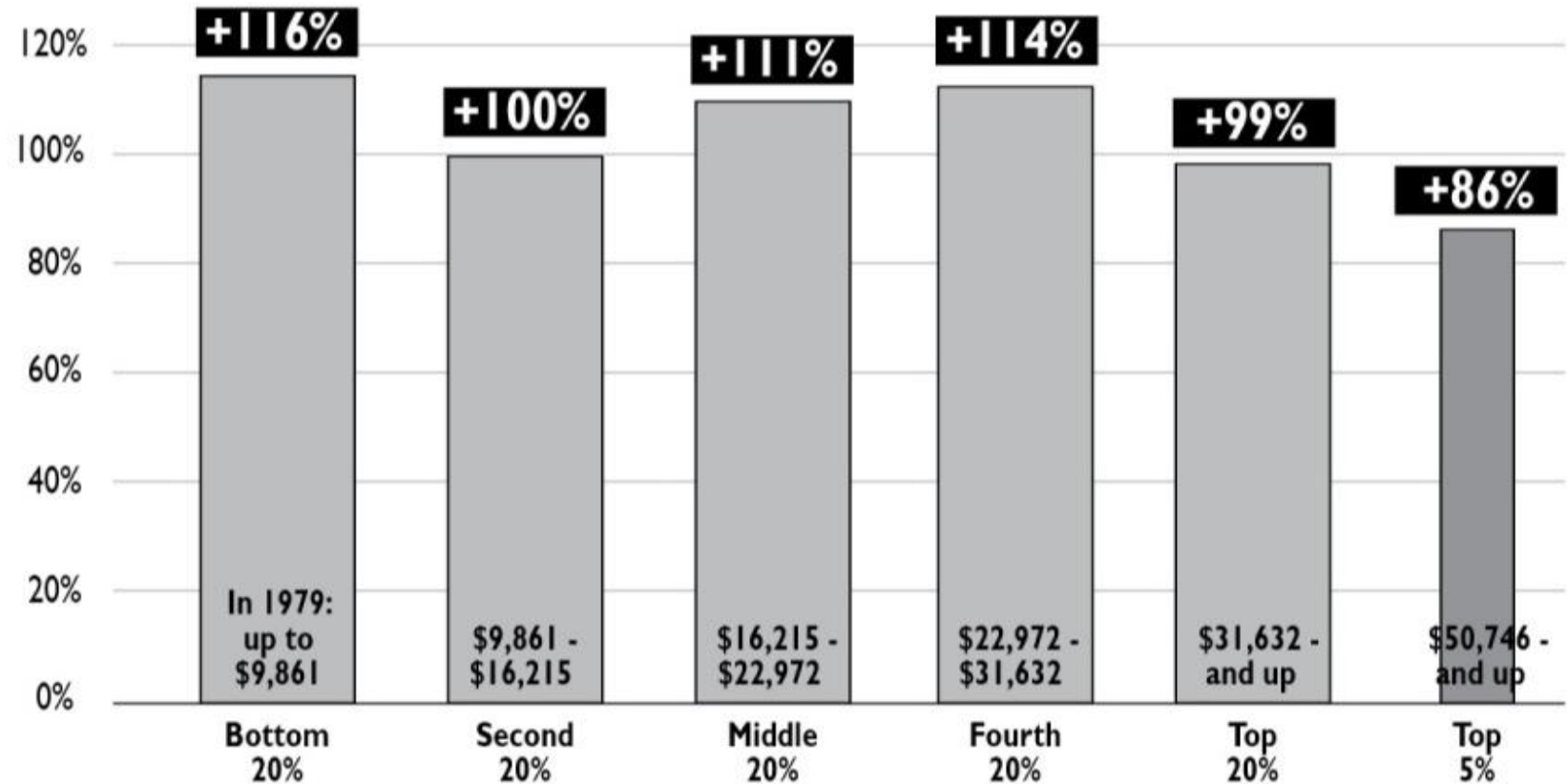
Poverty fell substantially through the 1950's and 1960's.

Poverty Has Fallen Significantly Since 1960s Under “Anchored” Supplemental Poverty Measure

Percent of people living in poverty

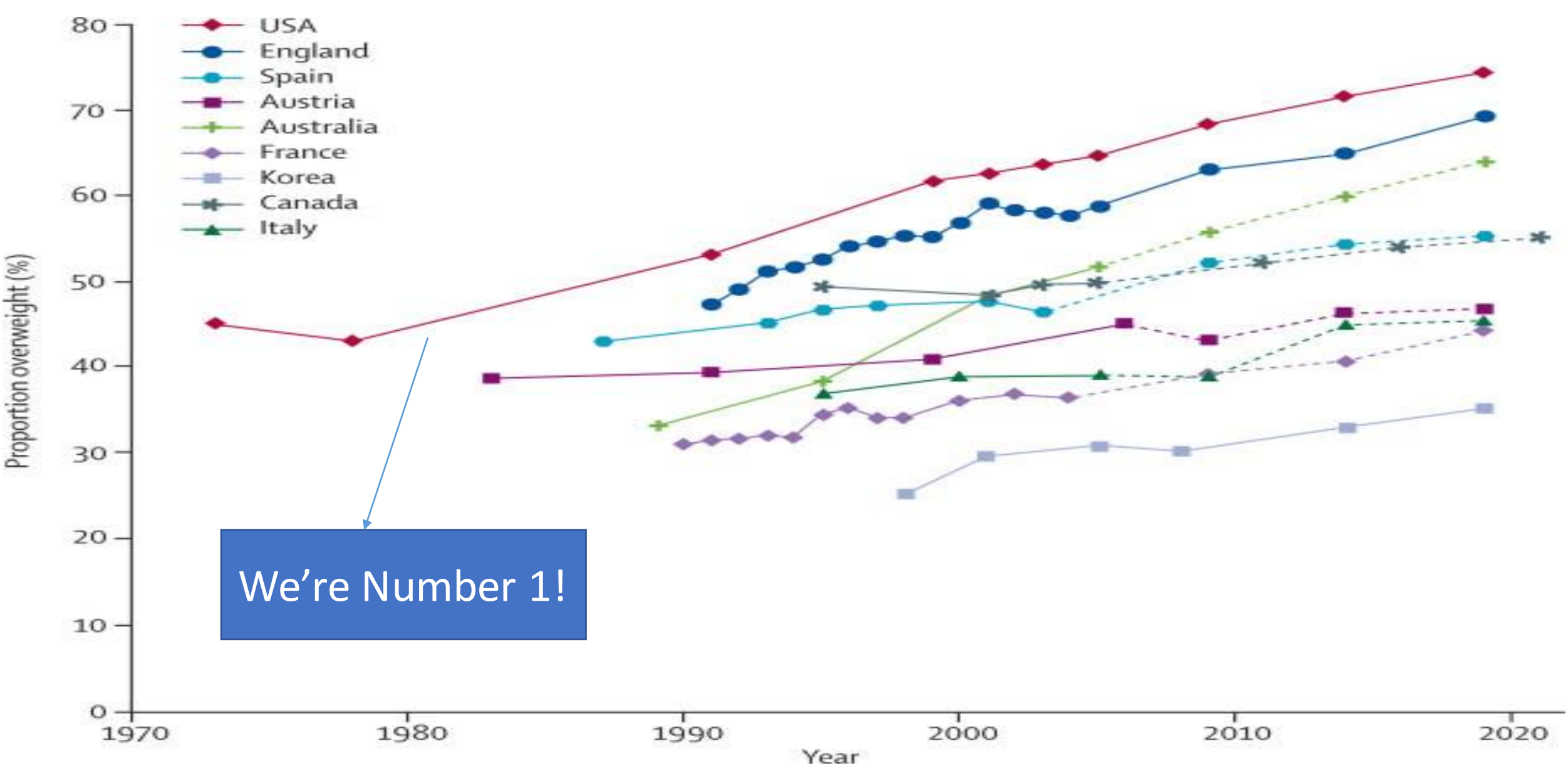


Real Family Income Growth by Quintile and for Top 5%, 1947-1979



Modern day obesity patterns started to emerge





1988: Cancer Disparities Are Eliminated



We Eliminated Cancer Disparities Associated with Wealth in 1988 – in the Wrong Way

- **Everyone, in all sub-groups, faced a high risk of dying from cancer.**
- It looked like cancer would bypass cardiovascular disease to become the leading cause of death in the U.S.

1988-1995: Cancer Disparities Invert

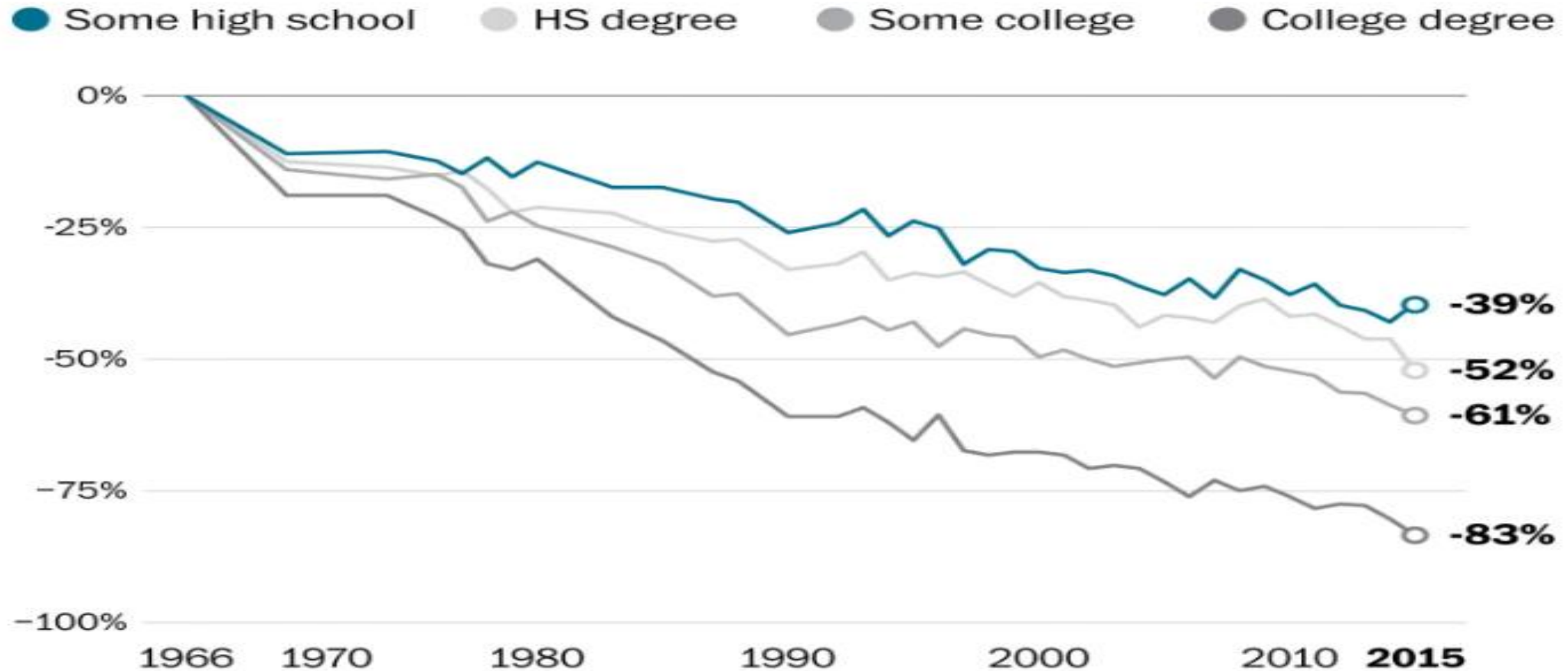


What Explains This Reversal in Cancer Disparities?

1. Cancer mortality continued to rise, to the highest rate in history, in poorer, less educated sub-group.
 - This group is more likely to be Black
2. Cancer mortality started to go down in the wealthier and more educated sub-group.
 - This group is more likely to be White

Smoking has declined for all, but not equally

Change in U.S. adult smoking rates from 1966 to 2015, by education level

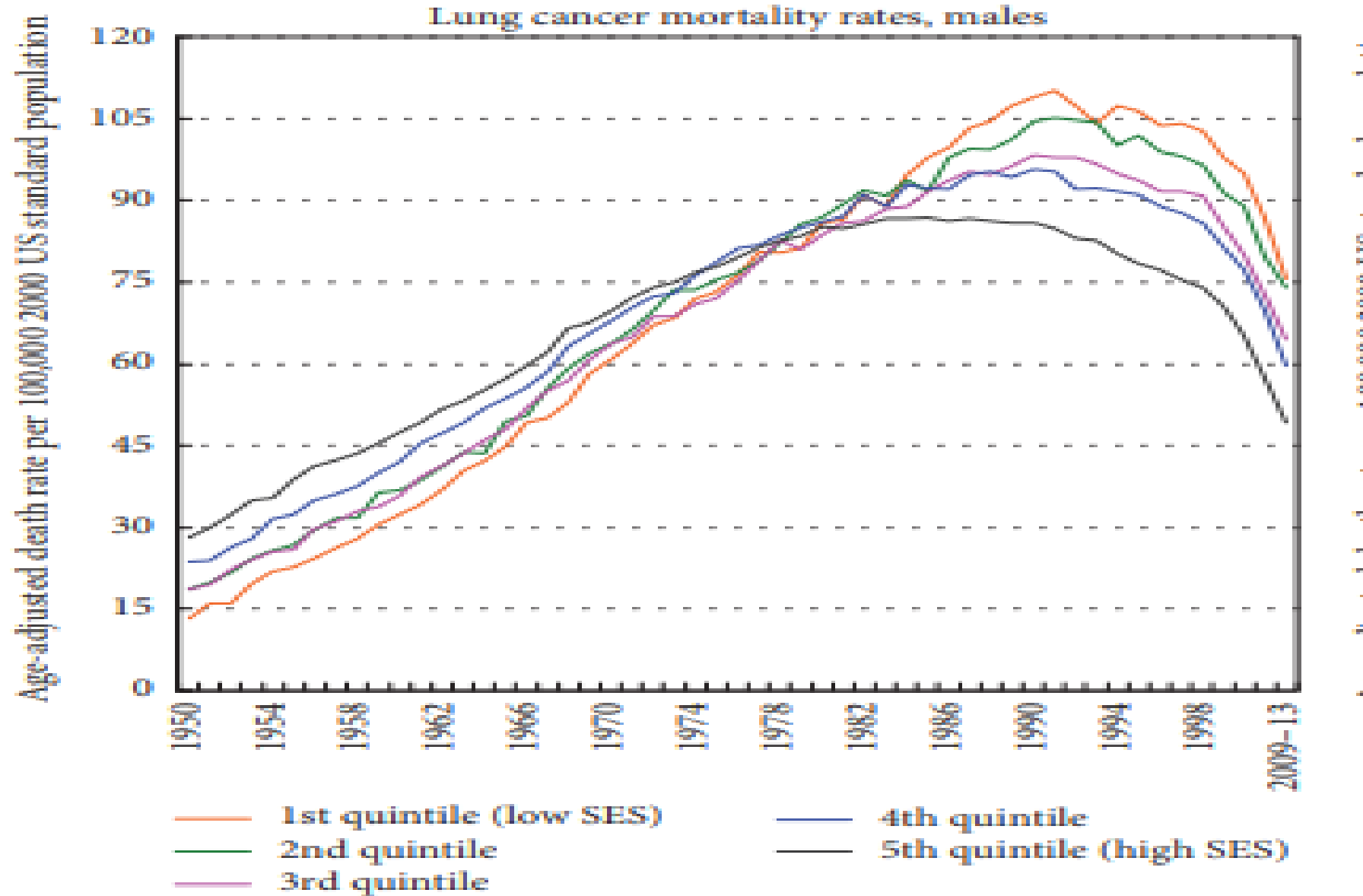


Source: National Health Interview Survey

THE WASHINGTON POST



White men and wealthier men started smoking earlier and started giving it up earlier. This led to dramatic changes in lung cancer mortality.



Until 1990, cancer mortality trends were dominated by lifestyle factors which, in turn, were related to wealth, income, race, ethnicity, and other social factors.

Then a new tool in the fight against cancer emerged that has been a game-changer:



Until 1990, cancer mortality trends were dominated by lifestyle factors which, in turn, were related to wealth, income, race, ethnicity, and other social factors.

Then a new tool in the fight against cancer emerged that has been a game-changer:

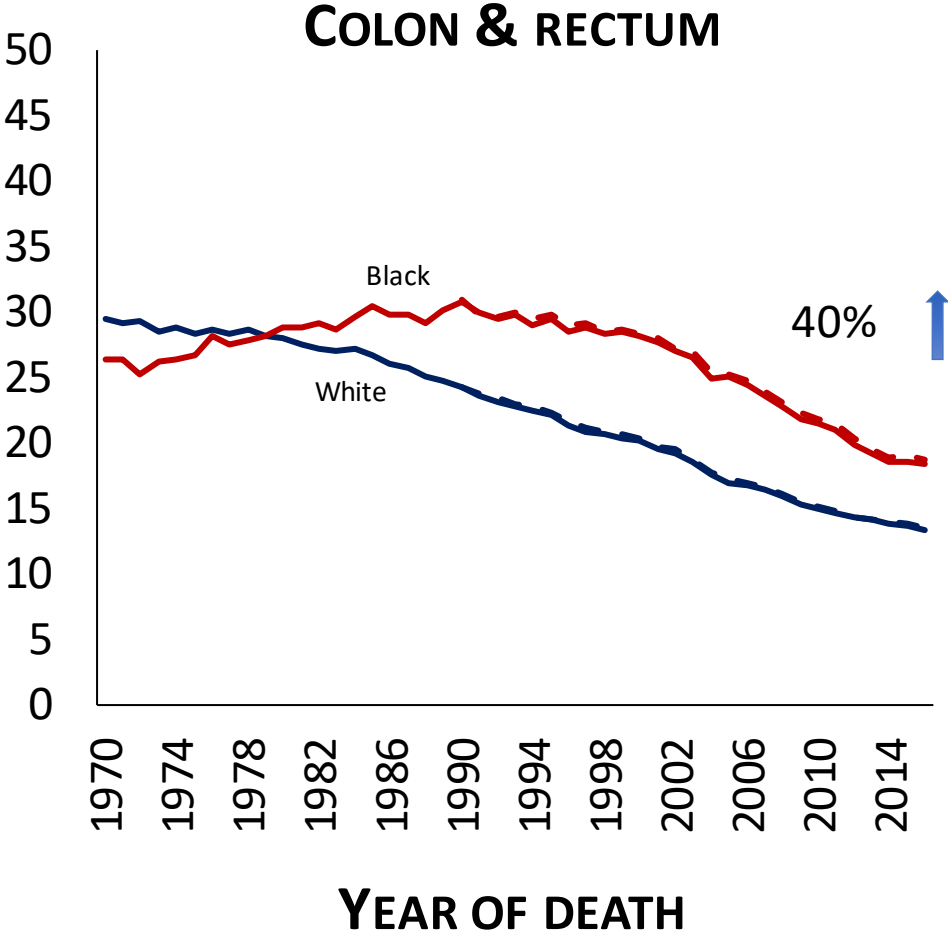
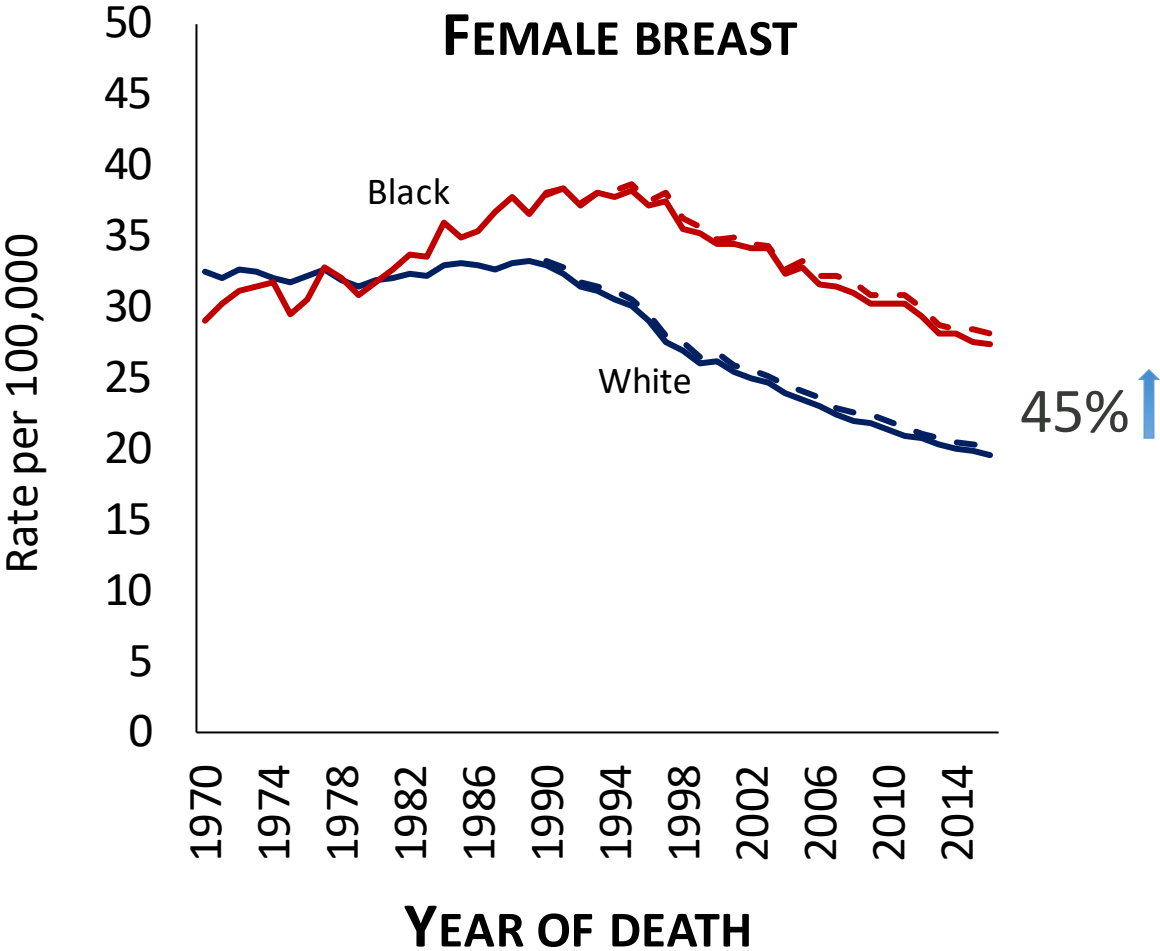
Cancer Screening



When Were Cancer Screens First Recommended by the ACS?

- **Mammography:** 1976
- **Colorectal cancer screening:** 1970's with sigmoidoscopy
Colonoscopy in 2001
- **Pap smears:** 1950's – encouraged.
On a regular schedule in 2001
- **Prostate cancer with PSA:** 2001
- **Lung cancer with CT:** 2013

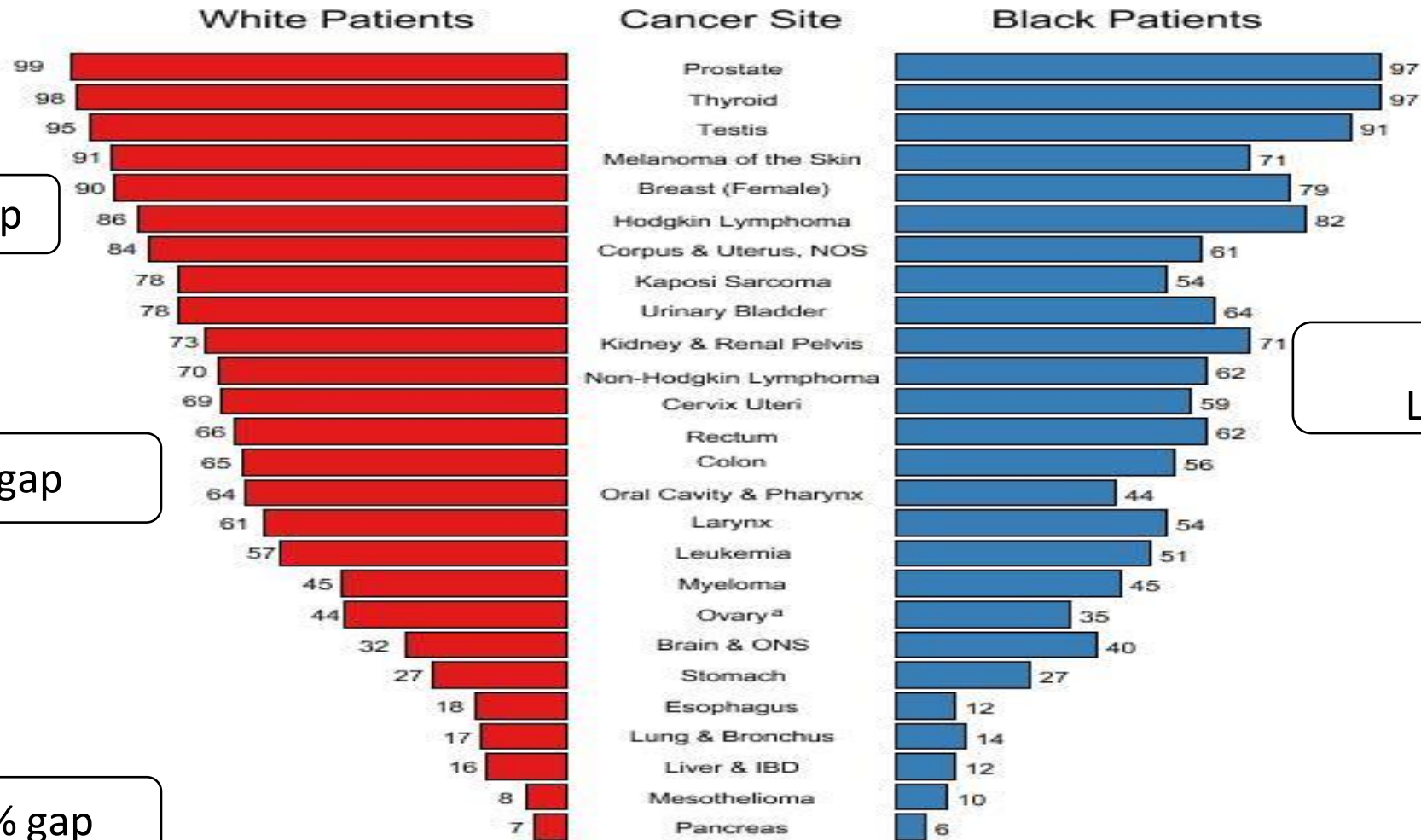
Trends In Breast /Colon Rectum Cancer Mortality By Race



The more we have to offer for a particular cancer, the greater the disparity.



5-Year Relative Survival (%) SEER Program, 2004-2010 Both Sexes, by Race and Cancer Site



Breast: 11% gap

Colon: 9% gap

Pancreas: 1% gap

Non-Hodgkin
Lymphoma: 8%

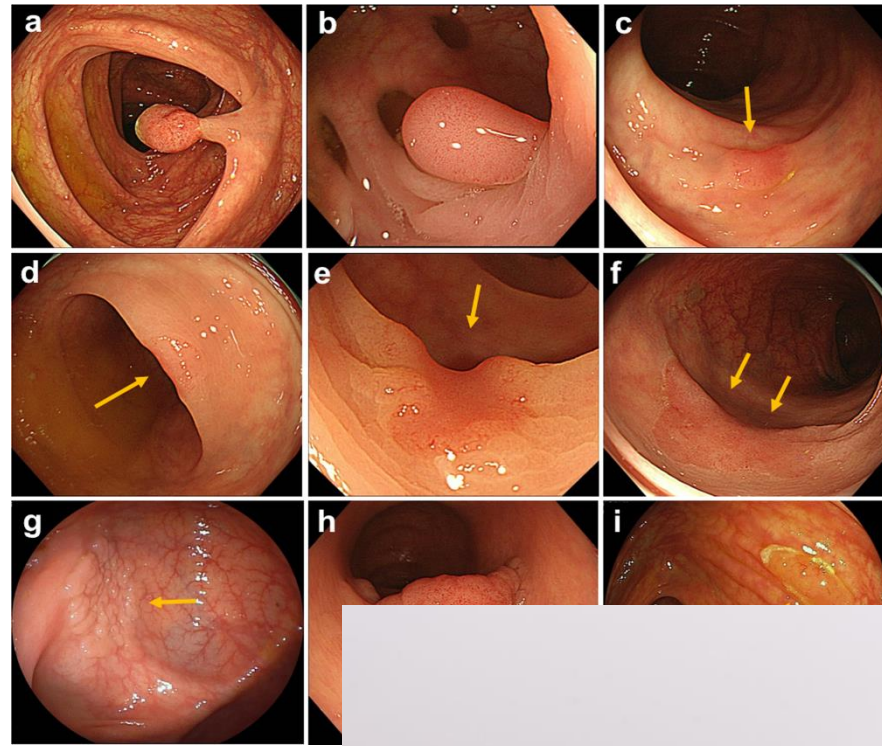
Source: SEER 18 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana, New Jersey and Georgia excluding ATL/RG).

^a Ovary excludes borderline cases or histologies 8442, 8451, 8462, 8472, and 8473.

We need to understand the sources of disparities in outcomes associated with screening.



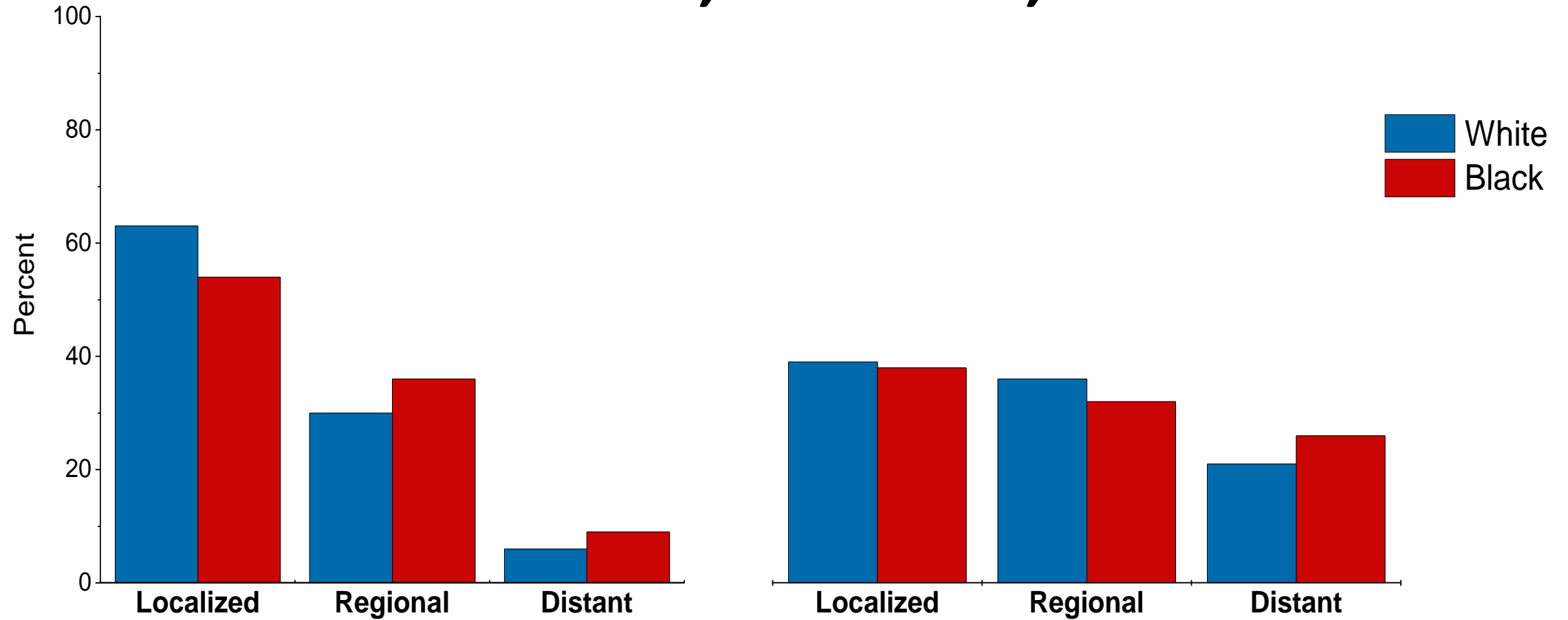
Screening Rates May Not be the Main Source of Disparities



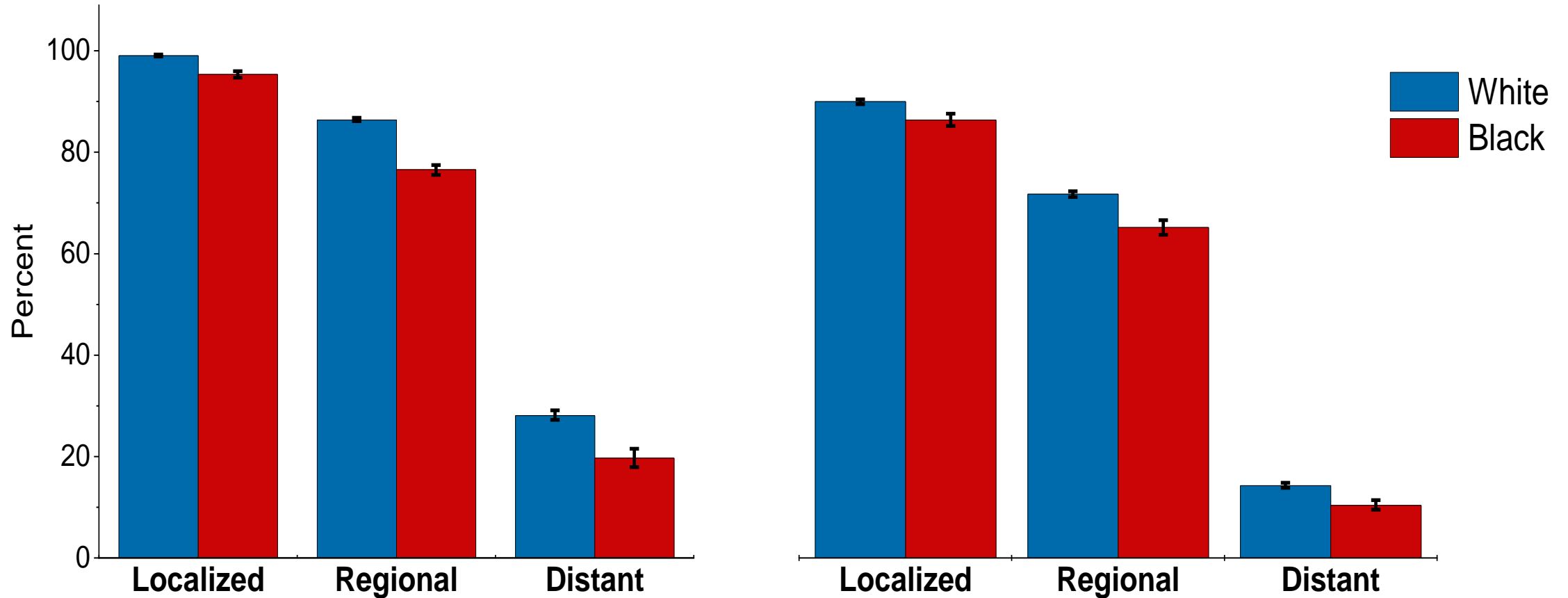
BREAST CANCER SCREENING	BLACK	WHITE
Up-to-date (women 45+ years)**	66	64
Mammogram within the past two years (women 50-74 years) (USPSTF guideline)	74	73
CERVICAL CANCER SCREENING (women 25-65 years)		
Up-to-date	88	86

COLORECTAL CANCER SCREENING	BLACK	WHITE
ADULT 50+ YEARS	65	68
MALES	64	69
FEMALES	66	66
ADULTS 45+ YEARS	57	58
MALES	58	59
FEMALES	57	57
PROSTATE-SPECIFIC ANTIGEN TEST (MEN 50+ YEARS)		
Within the past year	33	37

Stage Distribution for Female Breast and Colorectal Cancers, SEER 18, 2008-2014



5-Year Relative Survival for Female Breast and Colorectal Cancers, SEER 18, 2008-14



Racial and Ethnic Disparities in Interval Colorectal Cancer Incidence

A Population-Based Cohort Study

Stacey A. Fedewa, PhD, MPH; W. Dana Flanders, MD, DSc; Kevin C. Ward, PhD, MPH; Chun Chieh Lin, PhD; Ahmedin Jemal, DVM, PhD; Ann Goding Sauer, MSPH; Chyke A. Doubeni, MD, MPH*; and Michael Goodman, MD, MPH*

Background: Interval colorectal cancer (CRC) accounts for 3% to 8% of all cases of CRC in the United States. Data on interval CRC by race/ethnicity are scant.

Objective: To examine whether risk for interval CRC among Medicare patients differs by race/ethnicity and whether this potential variation is accounted for by differences in the quality of colonoscopy, as measured by physicians' polyp detection rate (PDR).

Design: Population-based cohort study.

Setting: Medicare program.

Participants: Patients aged 66 to 75 years who received colonoscopy between 2002 and 2011 and were followed through 2013.

Measurements: Kaplan-Meier curves and adjusted Cox models were used to estimate cumulative probabilities and hazard ratios (HRs) of interval CRC, defined as a CRC diagnosis 6 to 59 months after colonoscopy.

Results: There were 2735 cases of interval CRC identified over 235 146 person-years of follow-up. A higher proportion of black persons (52.8%) than white persons (46.2%) received colonos-

copy from physicians with a lower PDR. This rate was significantly associated with interval CRC risk. The probability of interval CRC by the end of follow-up was 7.1% in black persons and 5.8% in white persons. Compared with white persons, black persons had significantly higher risk for interval CRC (HR, 1.31 [95% CI, 1.13 to 1.51]); the disparity was more pronounced for cancer of the rectum (HR, 1.70 [CI, 1.25 to 2.31]) and distal colon (HR, 1.45 [CI, 1.00 to 2.11]) than for cancer of the proximal colon (HR, 1.17 [CI, 0.96 to 1.42]). Adjustment for PDR did not alter HRs by race/ethnicity, but differences between black persons and white persons were greater among physicians with higher PDRs.

Limitation: Colonoscopy and polypectomy were identified by using billing codes.

Conclusion: Among elderly Medicare enrollees, the risk for interval CRC was higher in black persons than in white persons; the difference was more pronounced for cancer of the distal colon and rectum and for physicians with higher PDRs.

Primary Funding Source: American Cancer Society.

Ann Intern Med. 2017;166:857-866. doi:10.7326/M16-1154

For author affiliations, see end of text.

This article was published at Annals.org on 23 May 2017.

* Drs. Doubeni and Goodman contributed equally to this work.

Annals.org

Key Findings

“A higher proportion of black persons (52.8%) than white persons (46.2%) received colonoscopy from physicians with lower polyp detection rate.”

“The probability of interval CRC by the end of follow-up was 7.1% in black persons and 5.8% in white persons.”

1995 - Today: Cancer Mortality Is Falling in All
Income Groups.
A Cause for Cautious Optimism



Cancer Disparities: Summary

1. Lifestyle factors related to social aspects of life are the overwhelming determinants of risk of dying from cancer.
2. Smoking trends account for many aspects of disparity trends.
3. Advances in cancer screening, and to a lesser extent advances in treatment, have helped all sub-groups – **but have driven increasing disparity between high and low income and education groups.**

We Must Confront This Reality

Unless we can tackle the root causes of health disparities: **access to high quality care, affordability, the income gap, and lack of health insurance,** advances in cancer care will increase cancer disparities.

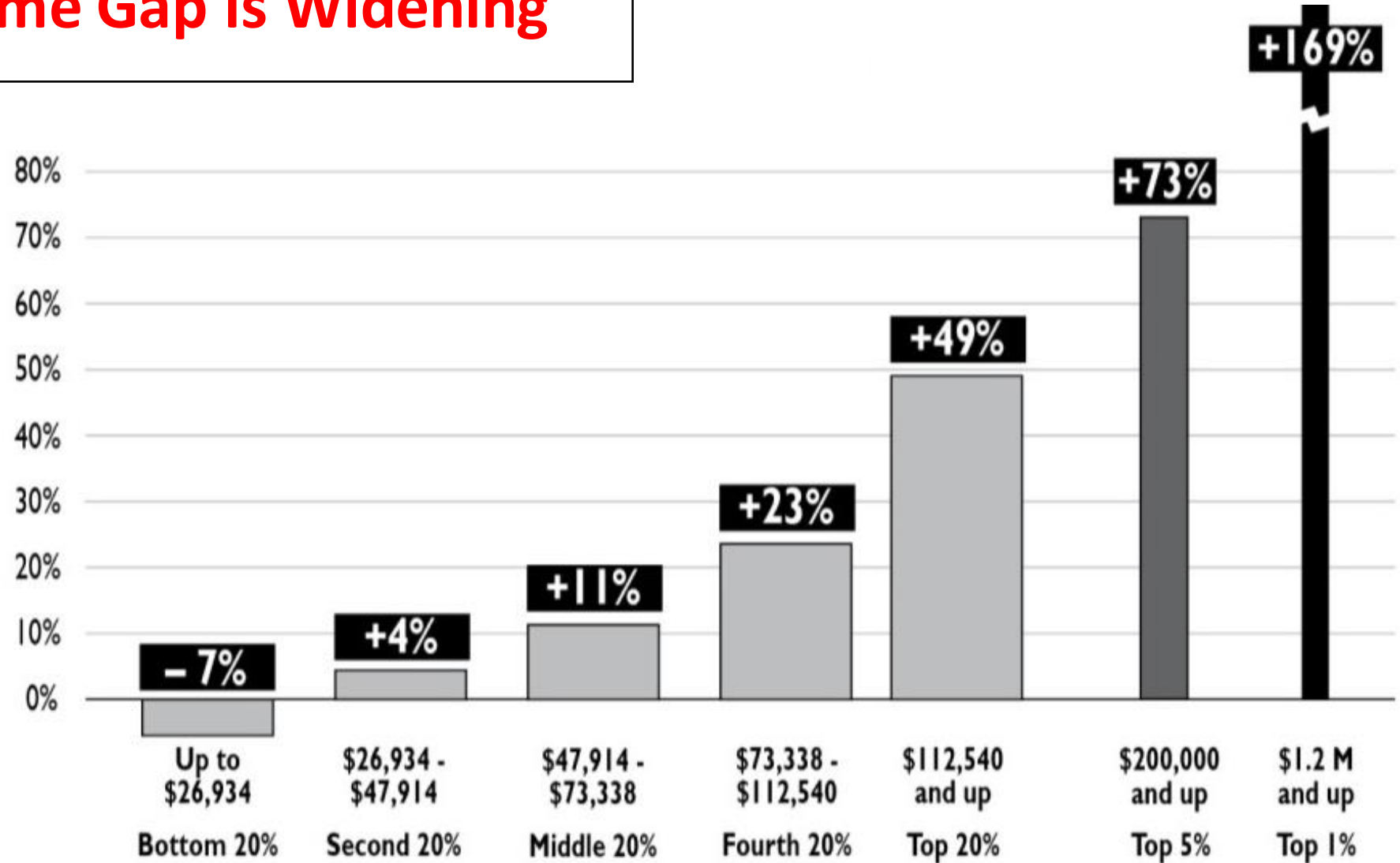


Reducing Economic Barriers to Care

- Cancer mortality trends from 1950 to 1975 show that reducing poverty and narrowing income gaps led to a convergence of cancer mortality rates.
- Doesn't that suggest that further narrowing of income gaps can ensure that everyone benefits from technologic advances?

But The Income Gap is Widening

**Real Family
Income
Growth by
Quintile
and for Top
5% & 1%,
1979-2009**



Moving Forward



We Must Confront A Painful Choice in the Future of Cancer Care

Stand still – and work on narrowing disparities for the cancer care that is available to us today.

Or

Move forward – and do everything we can to ensure that everyone benefits, as quickly as possible, from the remarkable advances in cancer care that are emerging.

I believe we must keep marching forward.

But we must move forward with deliberate, coordinated efforts to minimize the emergence of disparities and to shorten the period where only some people benefit.

Moving Forward: **Blood Tests To Screen for Cancer**

- Multi-cancer early detection (MCED) tests
- Single cancer early detection tests

Both technologies rely on detecting cell-free DNA, proteins, or other blood markers of cancer. The difference between the two approaches reflects both differences in technology and differences in strategies pursued by the various companies involved in this work.

These Tests May Hold Real Promise

- Circulating DNA can find deadly cancers in asymptomatic people.
- The public will embrace the concept of a blood test for cancer.
- Can increase screening rates even for cancers for which we already have screening tests.
- These tests are coming. Watch closely!

What About Blood Tests for a Single Cancer?

- A highly accurate and affordable blood test for colorectal cancer holds promise:
 - Medicare has already defined a pathway for coverage
 - More likely to be included in screening guidelines
 - More likely to be included in insurance coverage without too long of a delay

And blood tests for cancer will be appealing to a lot of people!

But Don't Forget . . .

- People with a positive blood test will need to have a colonoscopy to accrue any benefit.
- And if they have cancer, they will face all of the sources of disparities that other cancer patients face.

Steps To Limit Emergence of Disparities: Foundational Principles



1. Do not oversimplify solutions.

Social Determinants of Health



Health Behaviors and Social Determinants Are the Leading Causes of Health Disparities

- Policies that reduce tobacco, promote access to and consumption of healthy food, reduce caloric intake, promote physical activity, increase access to health care services, and reduce poverty hold more potential to reduce cancer mortality and disparities than improvements in therapy.

2. Embrace and support policy solutions.

2021 POLICY AGENDA

OUR TOP INITIATIVES



1

HEALTHCARE ACCESS & AFFORDABILITY

- Restore **HUSKY A*** eligibility limits for parents
- Center **equity in private health insurance** proposals
- Solidify equity-focused **telehealth*** and related supports



- Support pathways to reimbursement for **community health workers** and **doulas**
- Connect **community benefit*** to equity by strengthening state requirements

ADDRESS BARRIERS TO HEALTH

2



3

INTENTIONALLY TARGET HEALTH DISPARITIES & RACISM

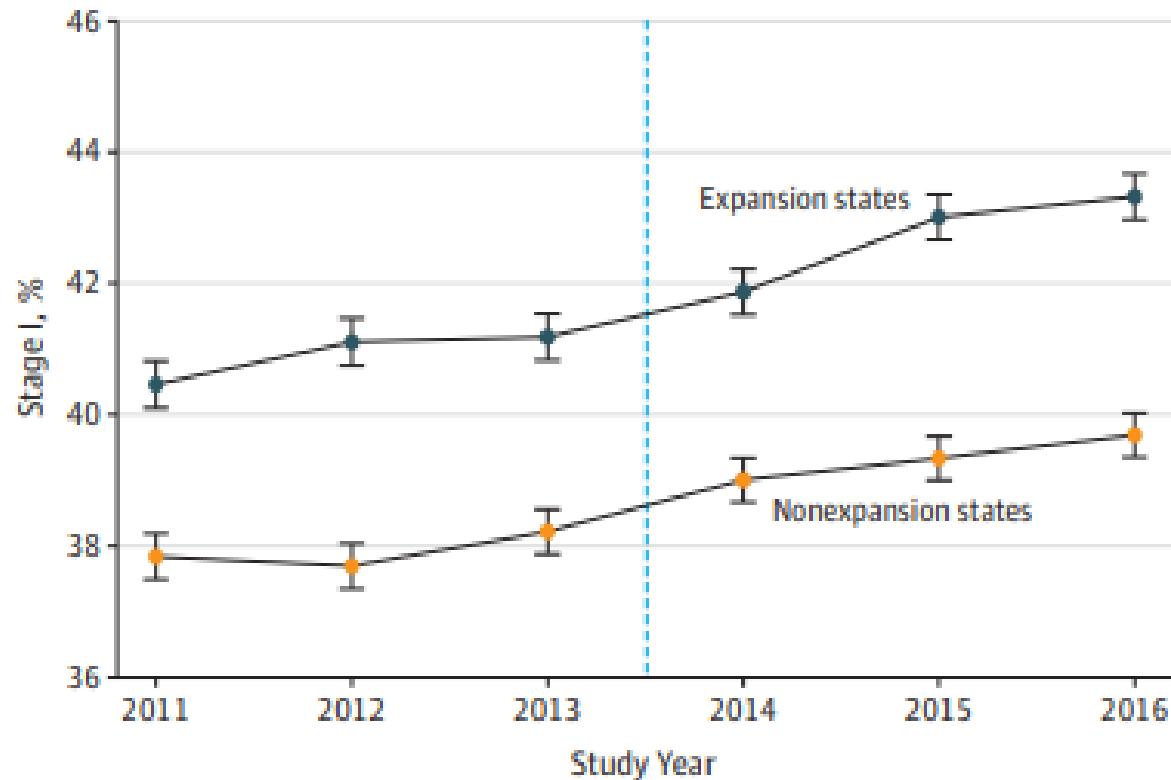
- Embed **health equity in all policies*** & establish a state **equity task force**
- Acknowledge that **racism is a public health crisis**
- Collect the **data*** needed to evaluate inequities

*LEGISLATIVE PRIORITY

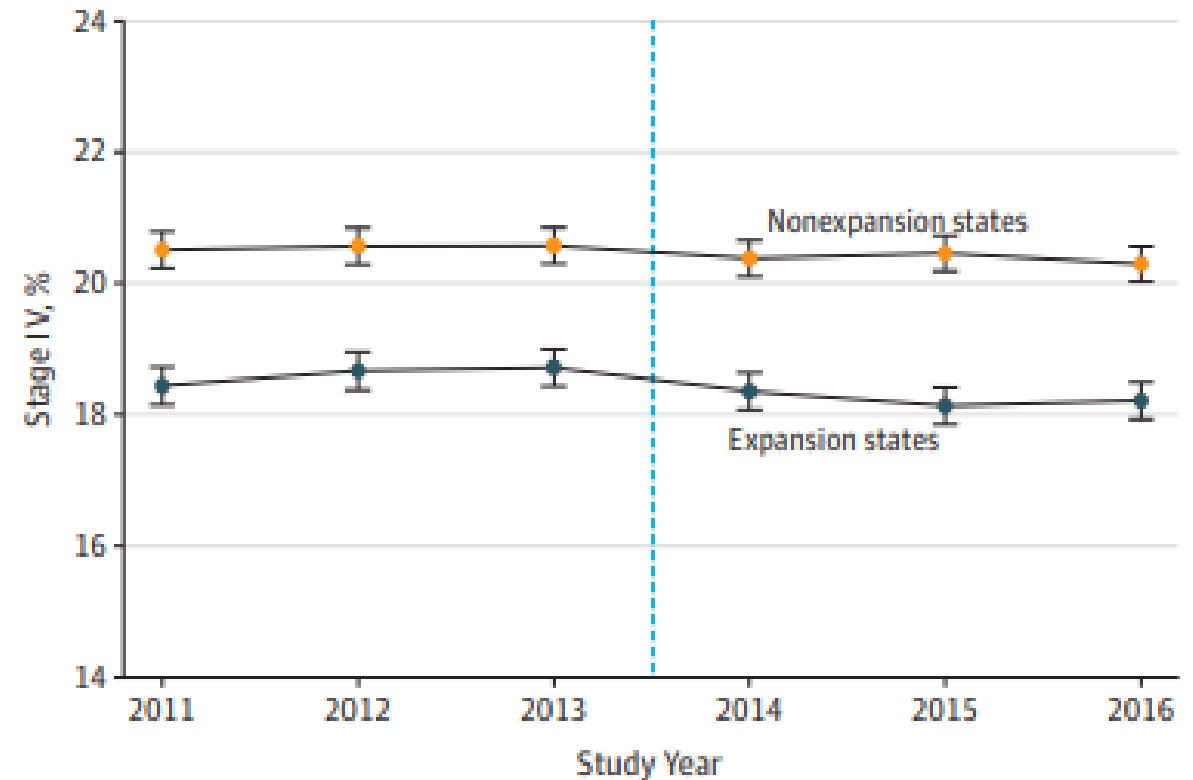


Expanding Medicaid Is a Proven Strategy

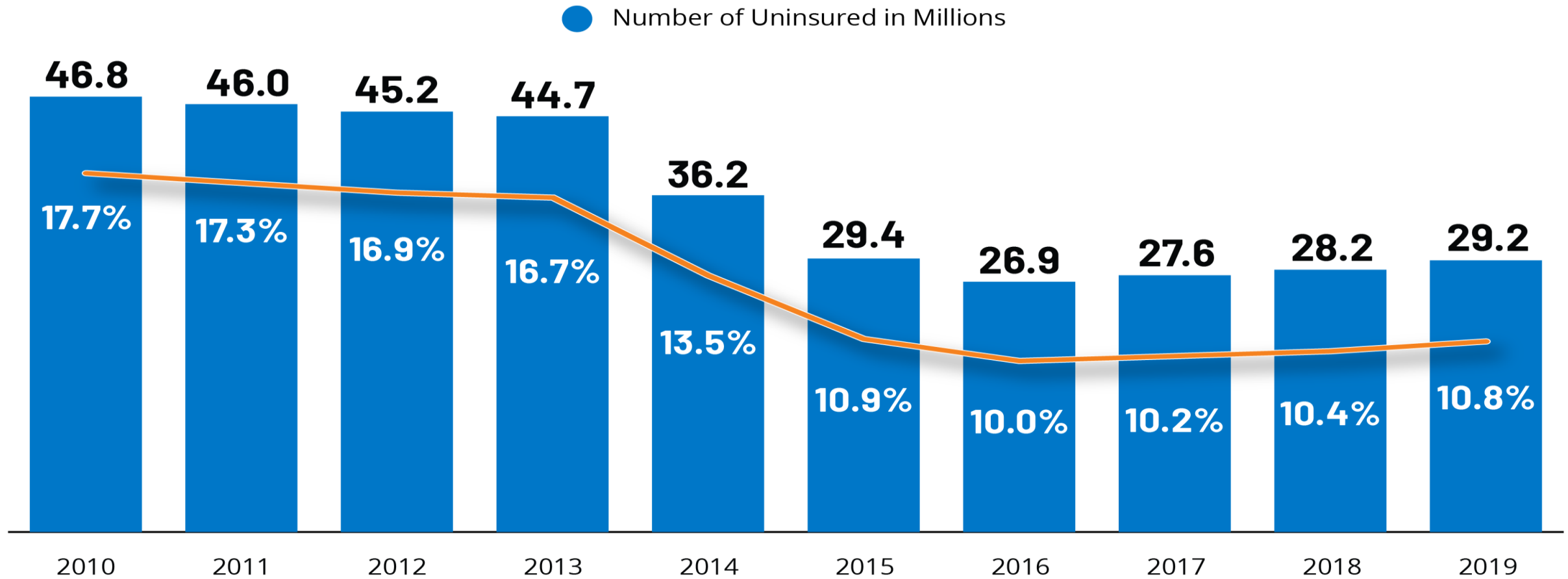
C Early-stage cancer



D Advanced-stage cancer

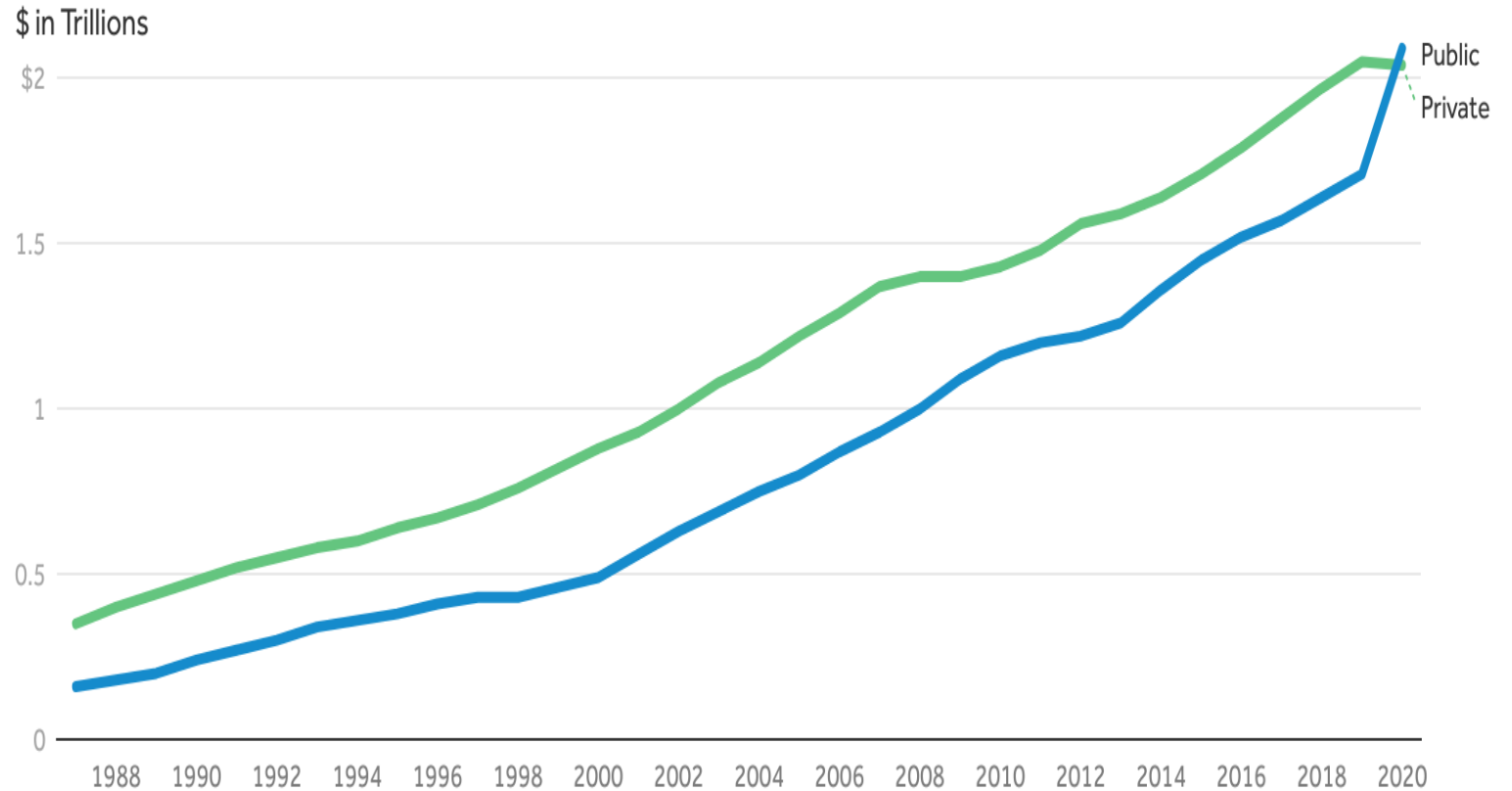


Number of Uninsured and Uninsured Rate among the Nonelderly Population, 2010-2019



3. Solutions to slow the inexorably increasing costs of healthcare must be one of our highest priorities.

Total national health expenditures, US \$ Trillions, 1987-2020



Source: KFF analysis of National Health Expenditure (NHE) data

Peterson-KFF
Health System Tracker

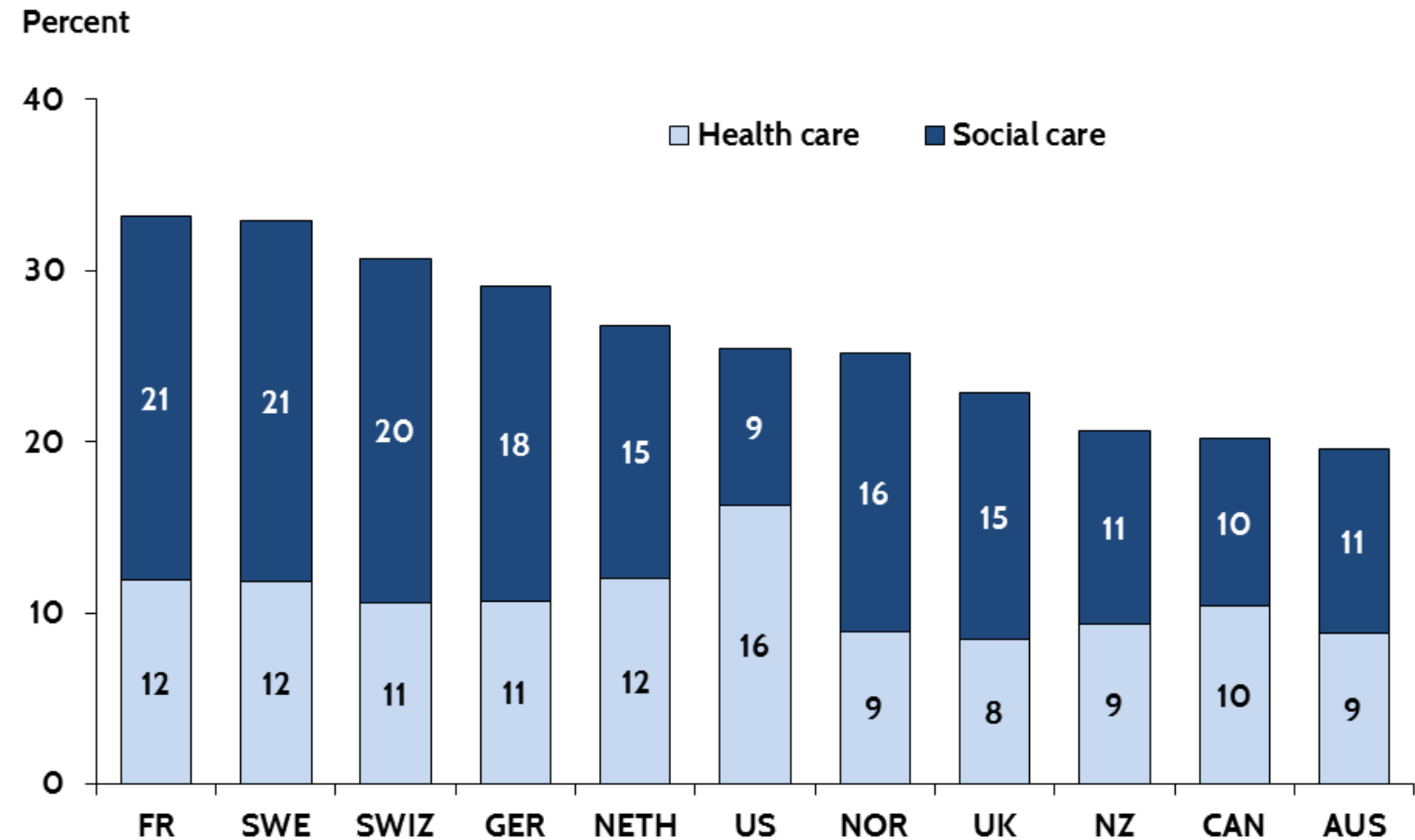


The health care paradox.



The paradox of health care vs. the health of the public in the United States.

Exhibit 8. Health and Social Care Spending as a Percentage of GDP



Notes: GDP refers to gross domestic product.

Source: E. H. Bradley and L. A. Taylor, *The American Health Care Paradox: Why Spending More Is Getting Us Less*, Public Affairs, 2013.



The Paradox: Summarized

- Reliance on the free market to deliver health care services has driven up the cost of health care.
- This has led to substantial inequality in the ability of individuals to access advanced care from the best health centers.
 - Incentives discourage health professionals from seeking public health or primary care careers.
 - Medical advances contribute to disparities.



The Paradox (cont)

- Spending on health care has severely limited dollars available to invest in public health and social needs.
- **But has also adversely impacted personal wages and contributed to today's wealth gap.**



Many People are Opposing Policies that Would Improve Health

- Medicaid expansion.
- Universal access to health insurance.
- Investment in social programs and programs that reduce poverty.



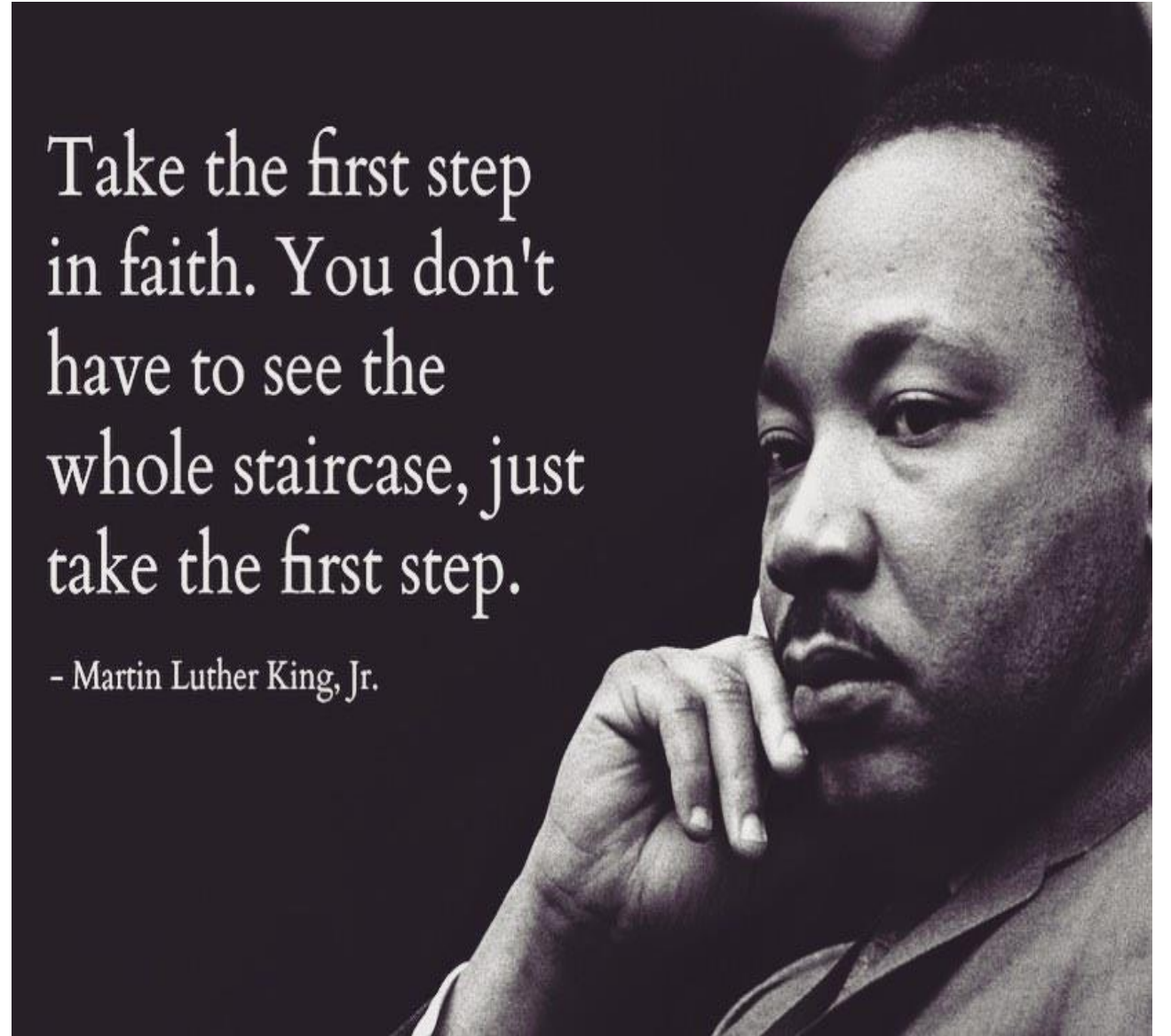
Our journey to build a sense of cohesion and a willingness to act for the common good – **to truly advance public health** – will be arduous and very long.



We must take the first step – and then keep going.

Take the first step
in faith. You don't
have to see the
whole staircase, just
take the first step.

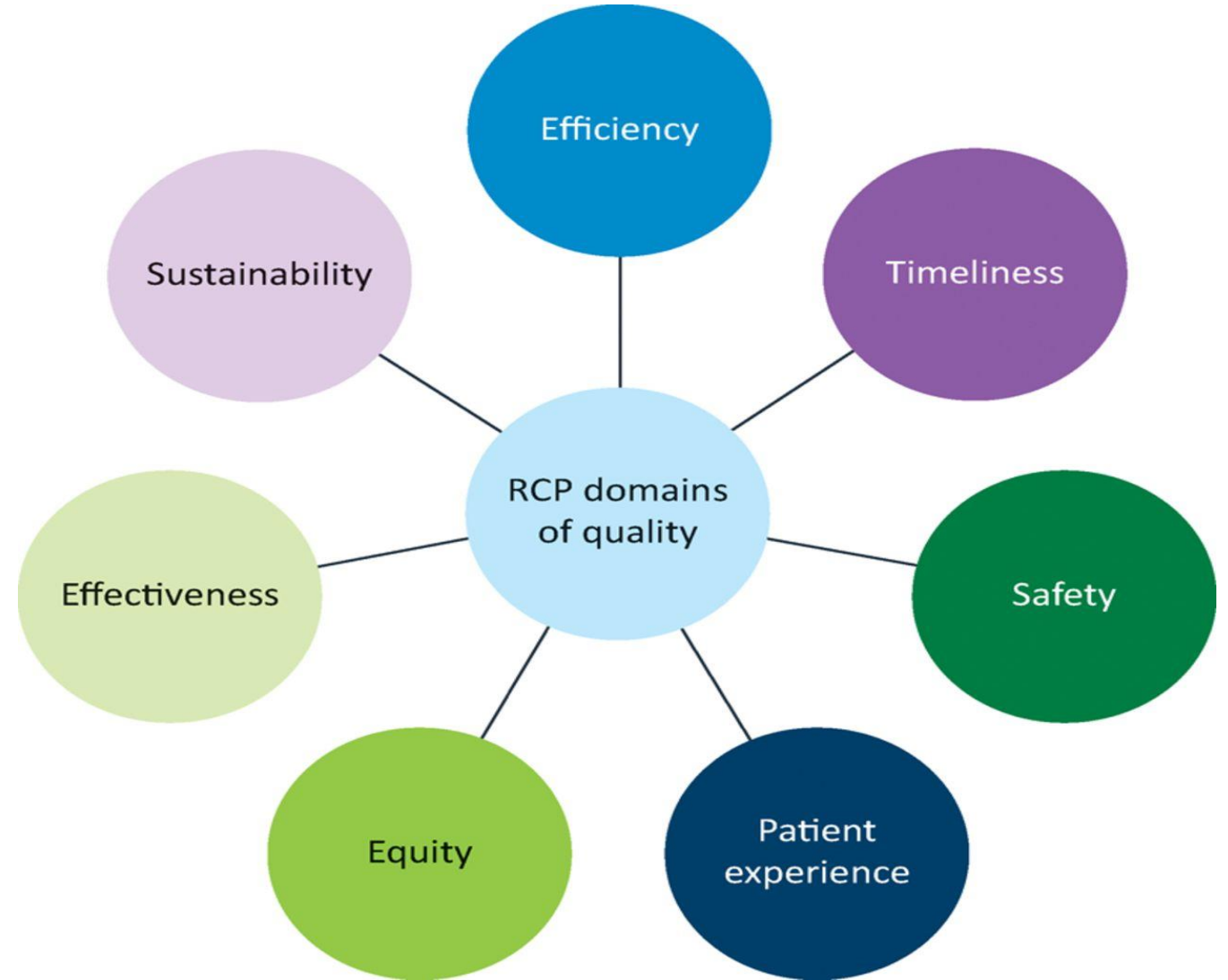
- Martin Luther King, Jr.



Steps To Limit Emergence of Disparities: Clinical Interventions



4. Quality of care is critically important. Lower quality care for poorer patients and for people of color contributes to health disparities.

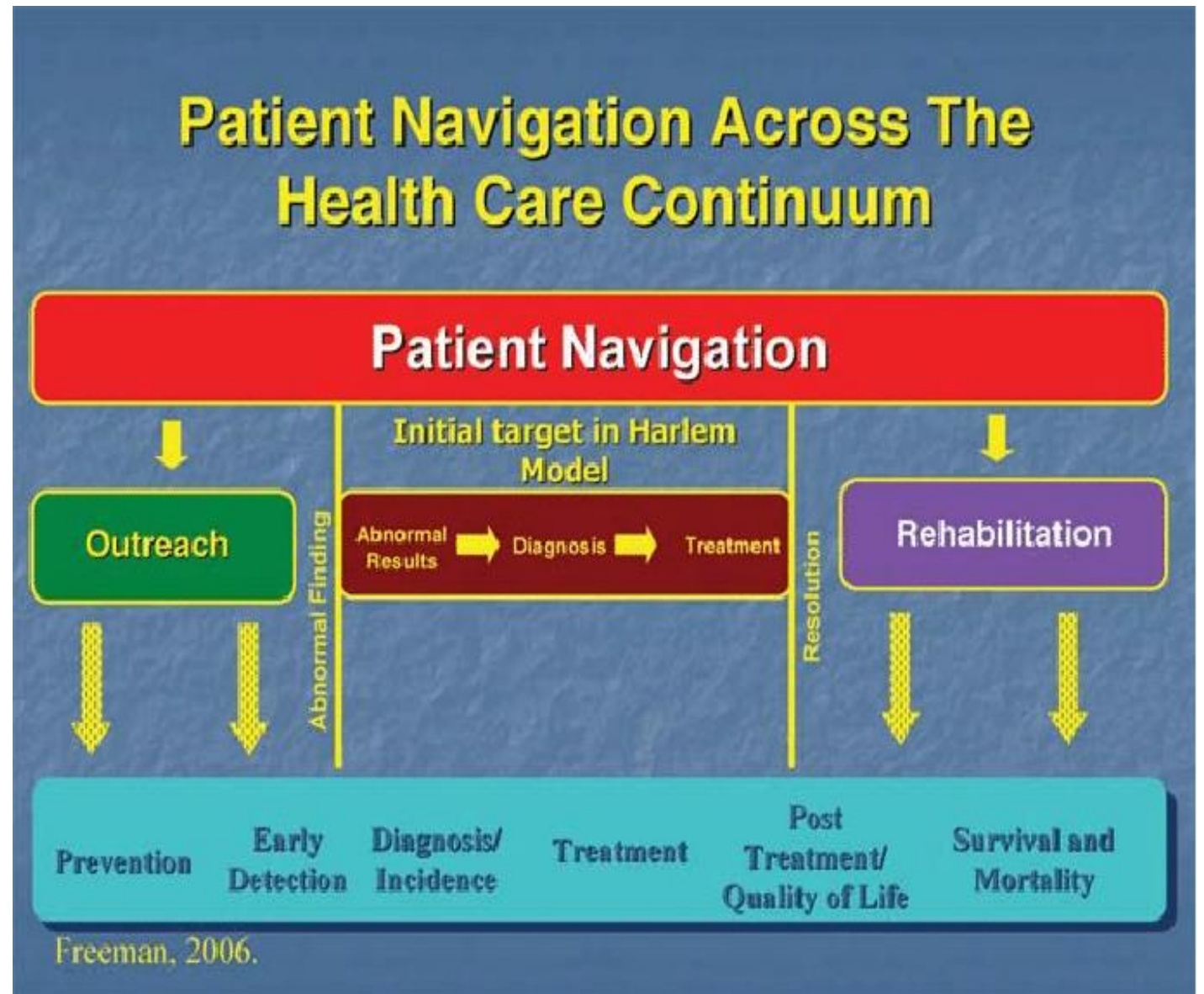


We Must Be Measuring and Reporting Quality

- Report quality according to:
 - Race
 - Ethnicity
 - Income
 - Insurance type
 - Educational achievement
 - Neighborhood



5. Expand efforts to create and address social needs confronted by individual patients.




Key Reports Outline a Path Forward

CA: A Cancer Journal for Clinicians

Article | [Free Access](#)

Understanding and addressing social determinants to advance cancer health equity in the United States: A blueprint for practice, research, and policy

Kassandra I. Alcaraz PhD, MPH , Tracy L. Wiedt MPH, Elvan C. Daniels MD, MPH, K. Robin Yabroff PhD, Carmen E. Guerra MD, Richard C. Wender MD

First published: 29 October 2019 | <https://doi.org/10.3322/caac.21586> | Citations: 65

[Check for full text](#)

DISCLOSURES: Kassandra I. Alcaraz, Tracy L. Wiedt, Elvan C. Daniels, K. Robin Yabroff, and Richard C. Wender are employed by the American Cancer Society, which receives grants from private and corporate foundations, including foundations associated with companies in the health sector for research outside the submitted work. Tracy L. Wiedt receives partial salary support from a Robert Wood Johnson Foundation grant to embed health equity approaches in the American Cancer Society's mission priorities to reduce the unequal burden of cancer disparities. The remaining authors are not funded by or key personnel for any of these grants and their salary is solely funded through American Cancer Society funds. Carmen E. Guerra is employed by the Perelman School of Medicine at the University of Pennsylvania and receives partial salary support from the National Cancer Institute (P30 CA 06520). Dr. Guerra serves as the Board Scientific Officer for the American Cancer Society's National Board of Directors.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

CONSENSUS STUDY REPORT

INTEGRATING
SOCIAL CARE
INTO THE
DELIVERY OF
HEALTH CARE

MOVING UPSTREAM
TO IMPROVE THE
NATION'S HEALTH



Penn Medicine

Steps To Limit Emergence of Disparities: A Roadmap for Health Care Systems and Organizations



6. Place a commitment to health equity at the center of your vision and mission statements.

public
prevent
Healthy
workforce
support
Vermonters
promote equity
valued
communities
Living

Vision

Healthy Vermonters living in healthy communities

Mission

Protect and promote the best health for all Vermonters



7. Hire a diverse workforce, drawing from the communities you're serving.



8. Co-create health care priorities and solutions with communities.



9. Act with courage.

Be persistent.

Do not compromise.

“Courage is the most important of all the virtues because without courage, you can’t practice any other virtue consistently.” — Maya Angelou



Cancer care is entering an extraordinary era.
We will not tolerate progress for some but not for all.

Achieving equitable cancer outcomes will be very difficult.

Cancer care is entering an extraordinary era.
We will not tolerate progress for some but not for all.

Achieving equitable cancer outcomes will be very difficult.

We must not settle for anything less.





Q&A

Thank You!



nccrt.org #NCCRT2022 @NCCRTnews #80inEveryCommunity



WRAP UP AND ADJOURN