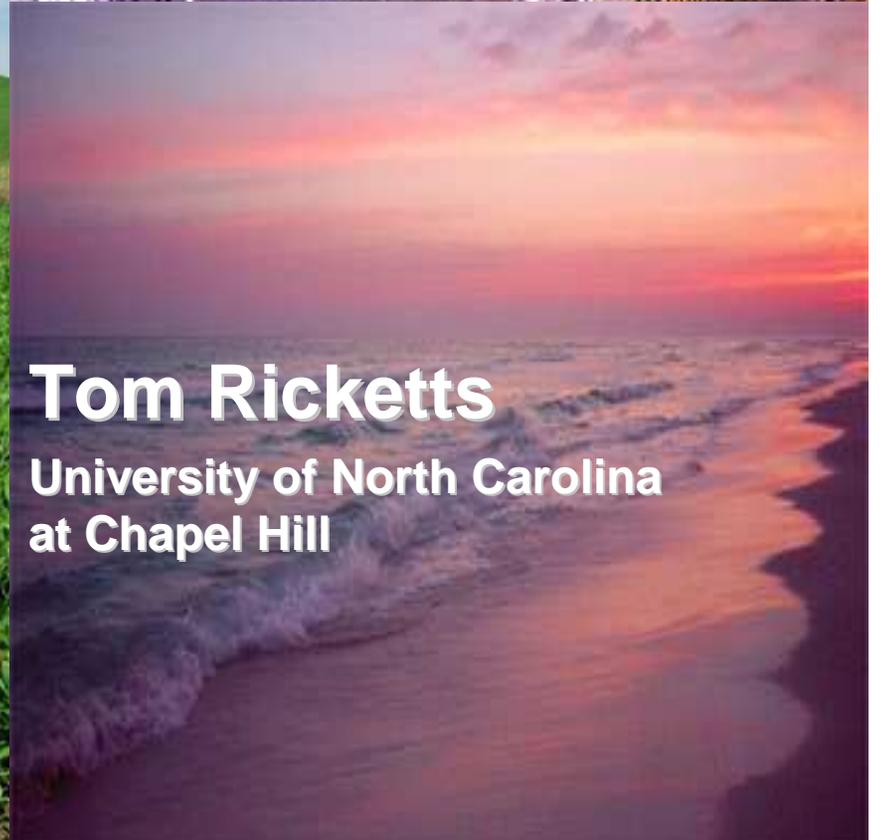


**North Carolina:  
A Healthy Place?  
A Healthy Future?**

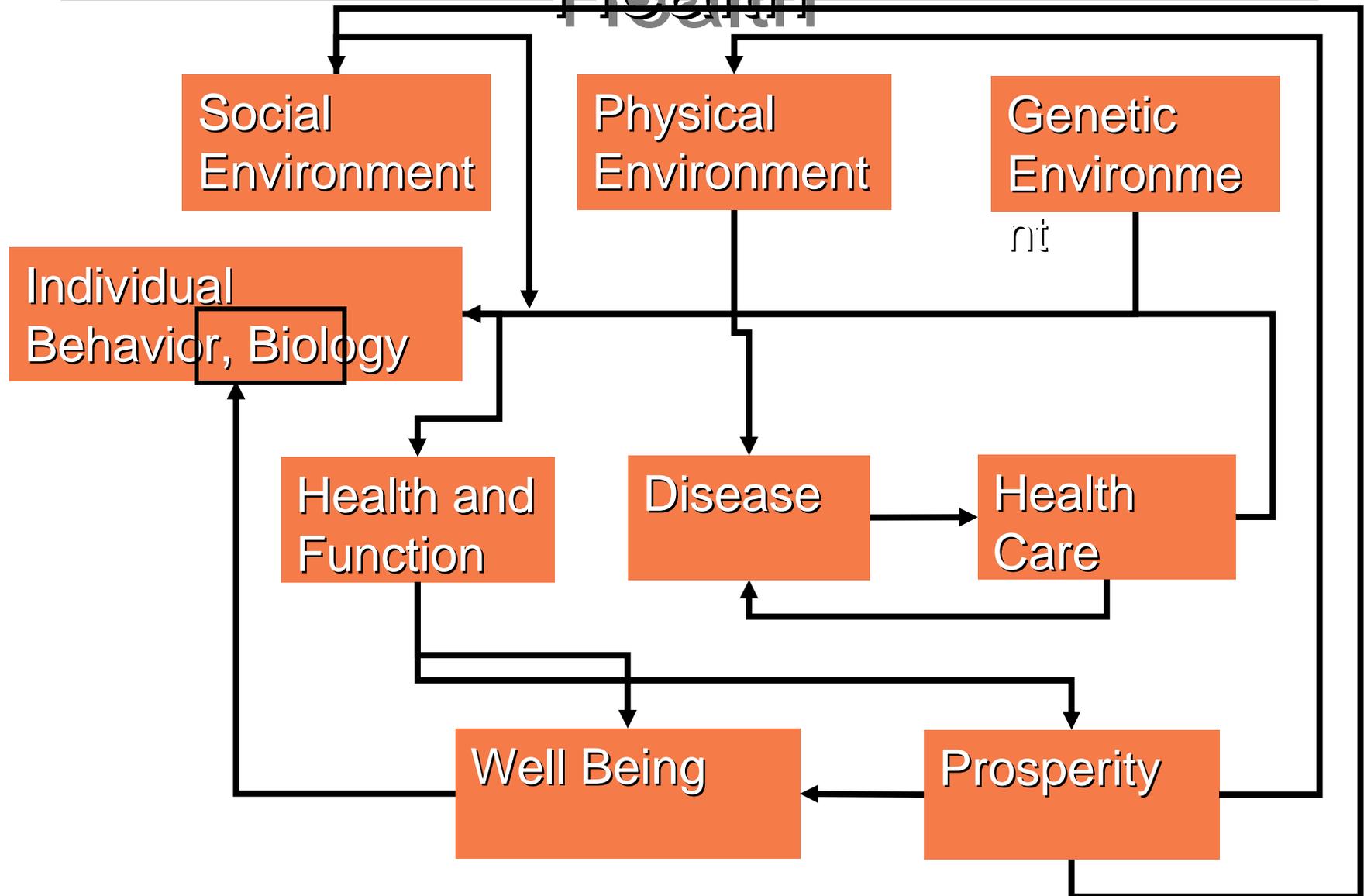


**Tom Ricketts**  
University of North Carolina  
at Chapel Hill

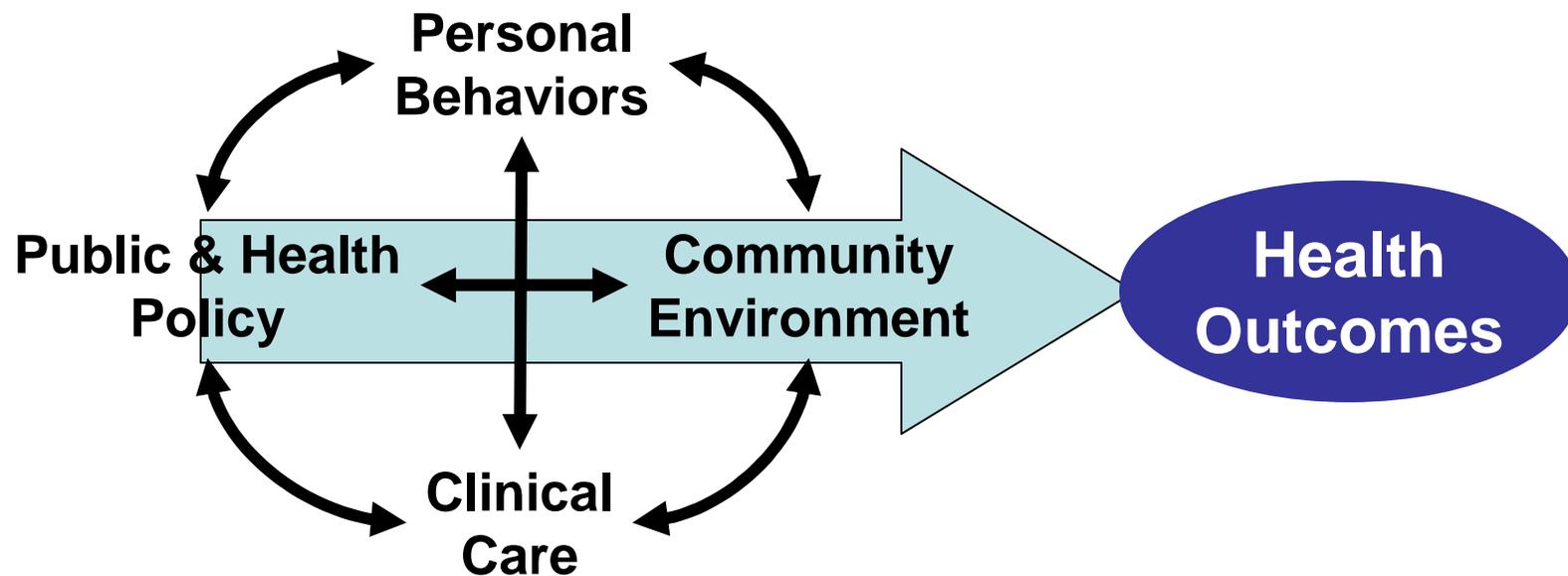
# What Is a Healthy State?

- ❖ **The people (present state)**
  - **Happiness, satisfaction**
  - **Wealth and prosperity**
  - **Clinical Picture (Health Statistics)**
- ❖ **The potential (future state)**
  - **The environment, does it promote health?**
  - **The future, are we headed the right way?**

# Evans, Stoddart Model of Health

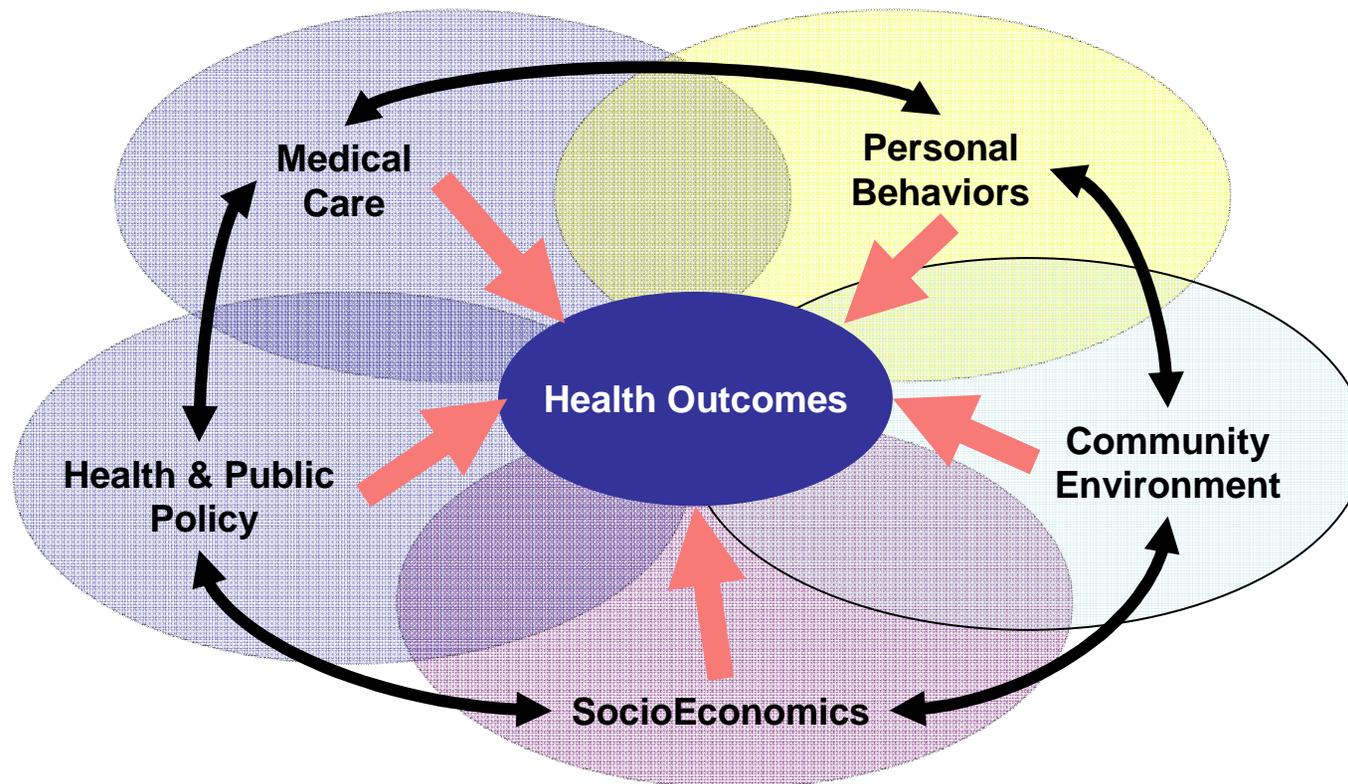


# America's Health Rankings Model



**Problem: Where to “put” Genetics/Genomics, Explicit Environmental Factors, Mental Health**

# America's Health Rankings Going Forward

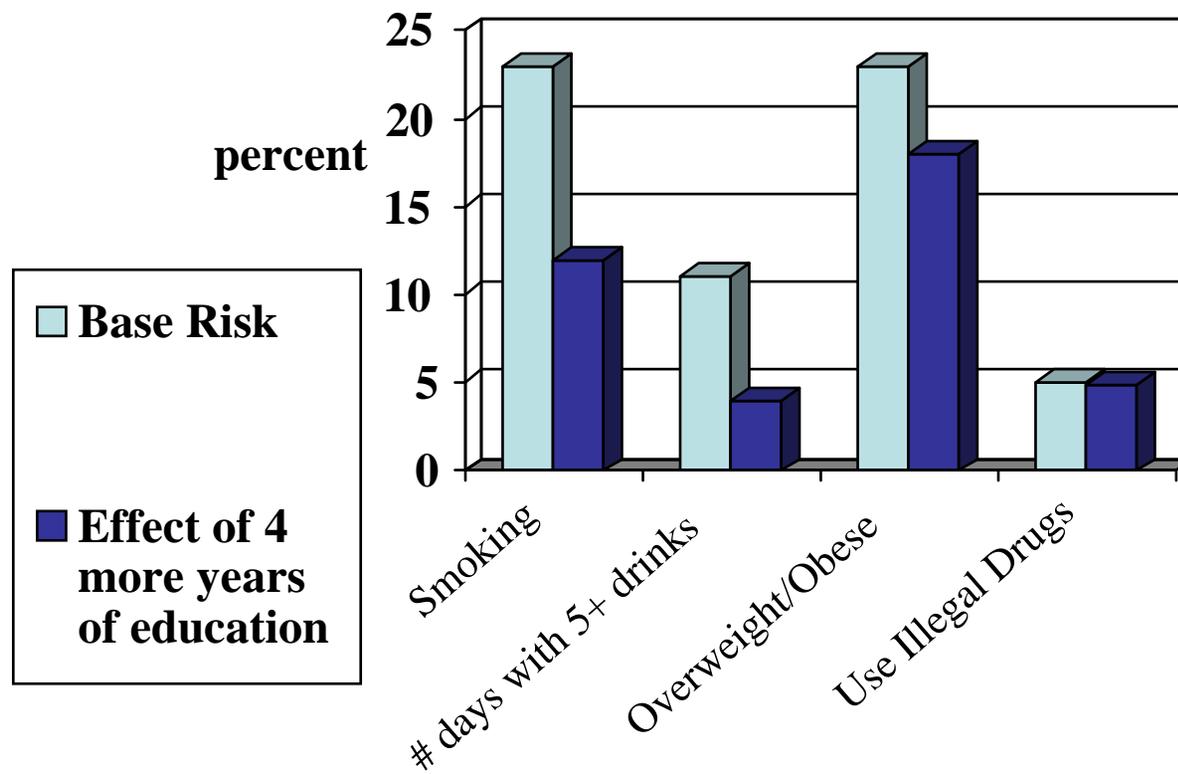


# Components

NAME OF COMPONENT	% OF TOTAL	EFFECT ON SCORE
<b>PERSONAL BEHAVIOR</b>		
Prevalence of smoking	10.0	Negative
<i>Binge Drinking</i>	5.0	Negative
Prevalence of obesity	5.0	Negative
High School Graduation	5.0	Positive
<b>COMMUNITY ENVIRONMENT</b>		
Violent Crime	5.0	Negative
Infectious Disease	5.0	Negative
Children in poverty	5.0	Negative
Occupational Fatalities	2.5	Negative
<b>PUBLIC &amp; HEALTH POLICIES</b>		
Lack of Health Insurance	5.0	Negative
Immunization coverage	5.0	Positive
Per capita Public Health Spending	2.5	Positive
<b>CLINICAL CARE</b>		
Adequacy Of Prenatal Care	5.0	Positive
Primary Care Physicians	5.0	Positive
Preventable Hospitalizations	5.0	Negative
<b>OUTCOMES</b>		
Poor Mental Health Days	5.0	Negative
Poor Physical Health Days	5.0	Negative
Cancer deaths	5.0	Negative
<i>Cardiovascular Deaths</i>	5.0	Negative
Infant Mortality	5.0	Negative
Premature Death	5.0	Negative
<b>OVER ALL HEALTH RANKING</b>	<b>100.0</b>	

# Why Education?

❖ **Cutler & Lleras-Muney find Education Returns big benefits:**

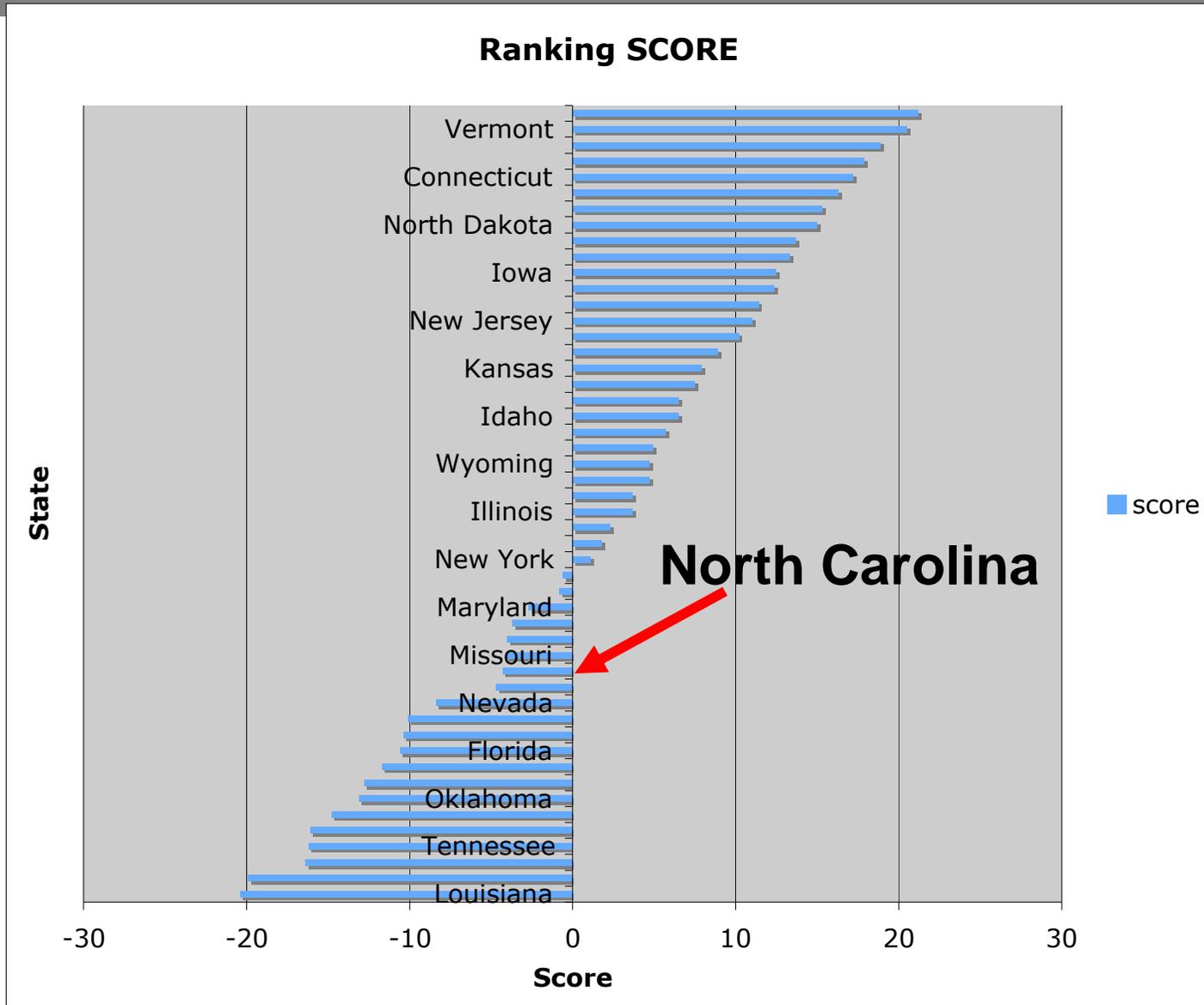


Cutler DM, Lleras-Muney A. 2006. Education and Health: Evaluating Theories and Evidence  
NBER Working Paper Series, No. 12352 <http://www.nber.org/papers/w12353>

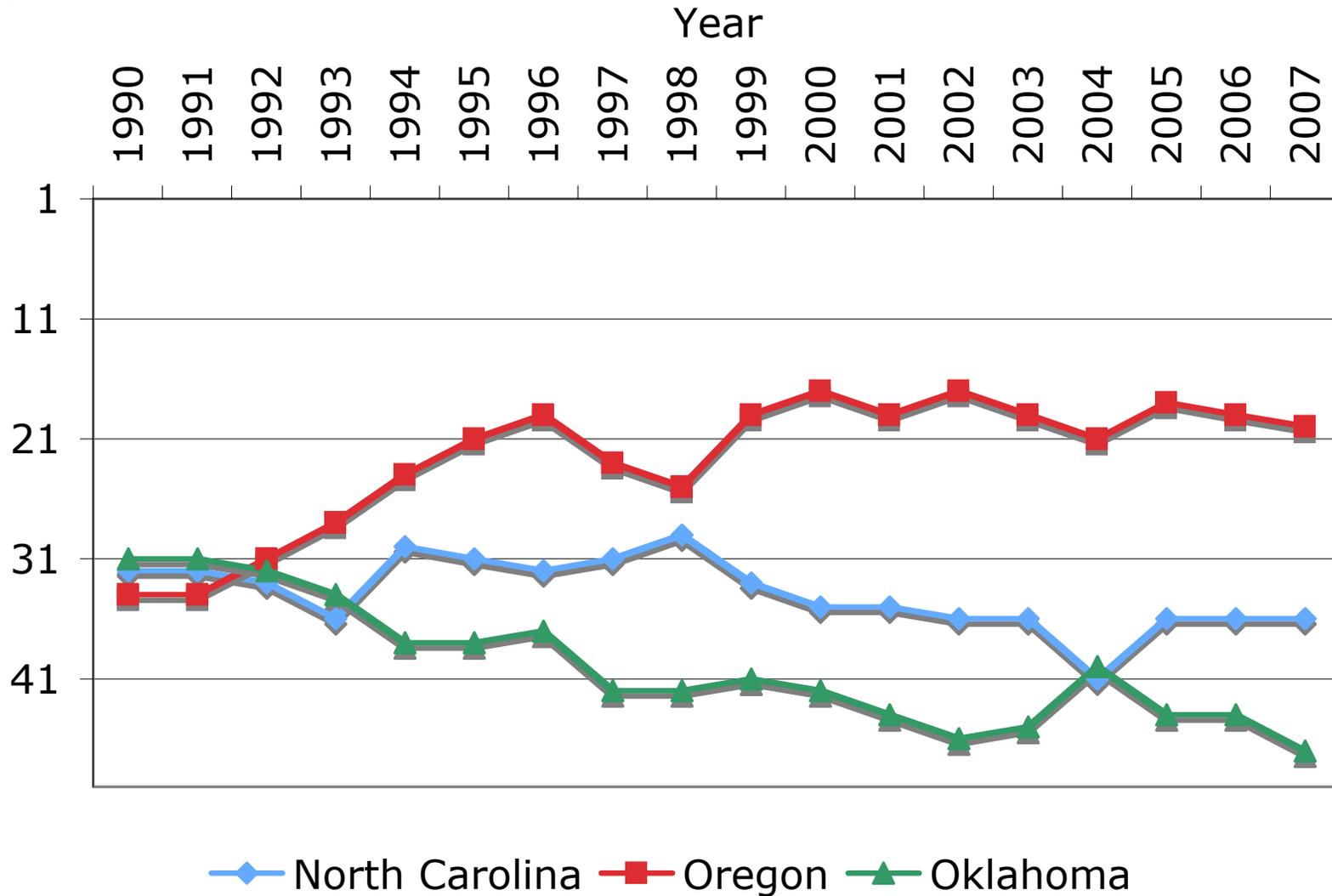
# Education ROI: Cutler

- ❖ **\$1,000 in grant aid to families results in and increase in education of....**
- ❖ **0.16 years which translates into....**
- ❖ **0.03-0.10 years of additional life which is roughly....**
- ❖ **\$2,250-\$7,200 in present value...**
  
- ❖ **Which is very large rate of return**

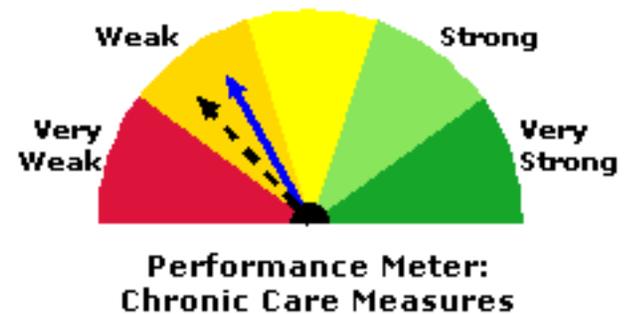
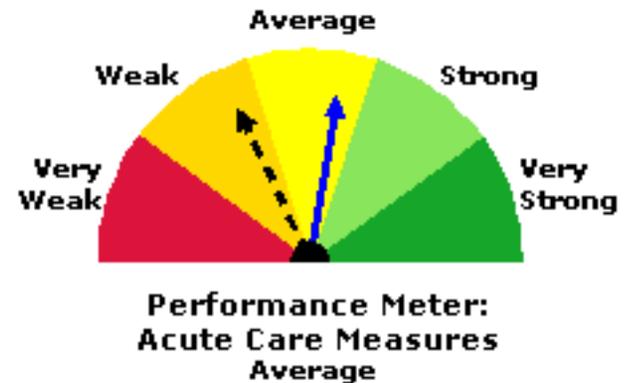
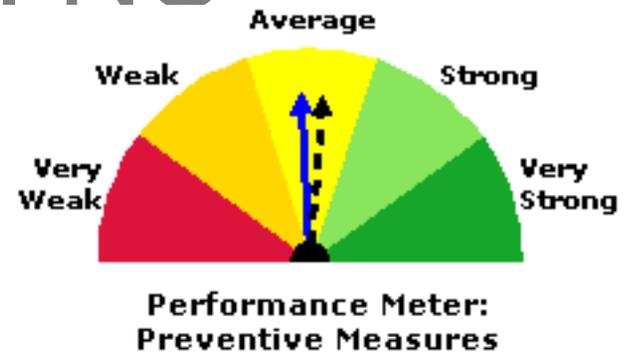
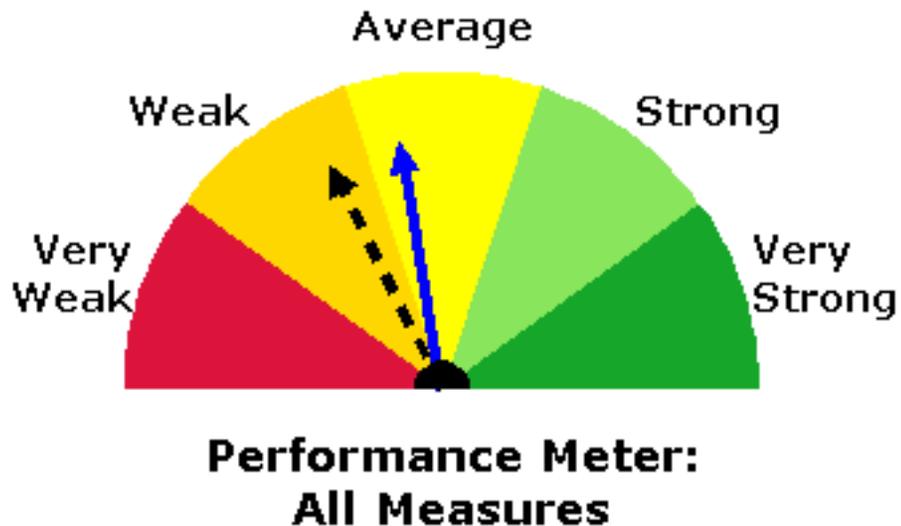
# Where Does NC Rank?



# NC Rank Over Time



# AHRQ Performance Snapshot: NC



<http://statesnapshots.ahrq.gov>

# Generalizations From Data

## ❖ **North Carolina has been “stable”**

### ➤ **Some improvements since 1990**

- ✓ Overall mortality, years of potential life lost

### ➤ **Recent improvements**

- ✓ Children in poverty

- ✓ Immunization coverage

- ✓ Activity days

- ✓ Smoking rate

# Generalizations, ctd

## ❖ **Poor “structural” conditions**

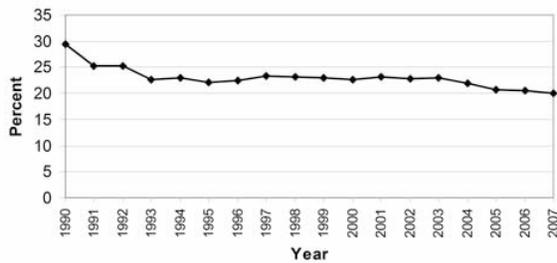
- **Low high school graduation rate**
- **High infant mortality rate**
- **High prematurity rate**
- **Wide disparity measure**

## ❖ **Improvement in:**

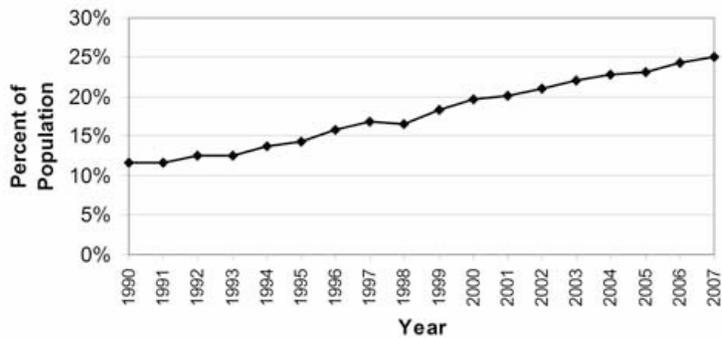
- **Teen pregnancy**
- **Access to care measures (practitioners, child health insurance)**

# Recent Concerns

Prevalence of Smoking Since 1990  
United States

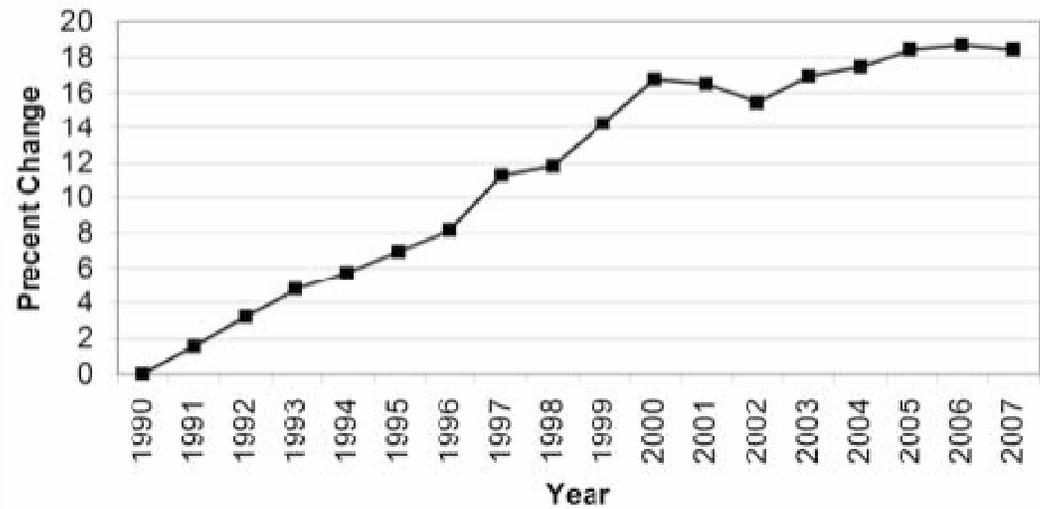


Prevalence of Obesity Since 1990  
United States

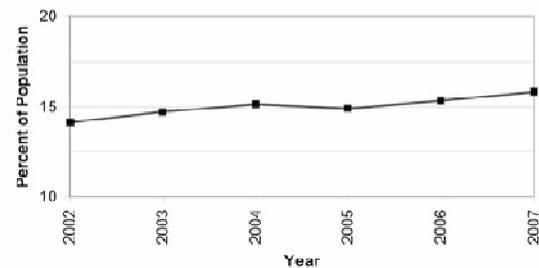


Improvements Since 1990

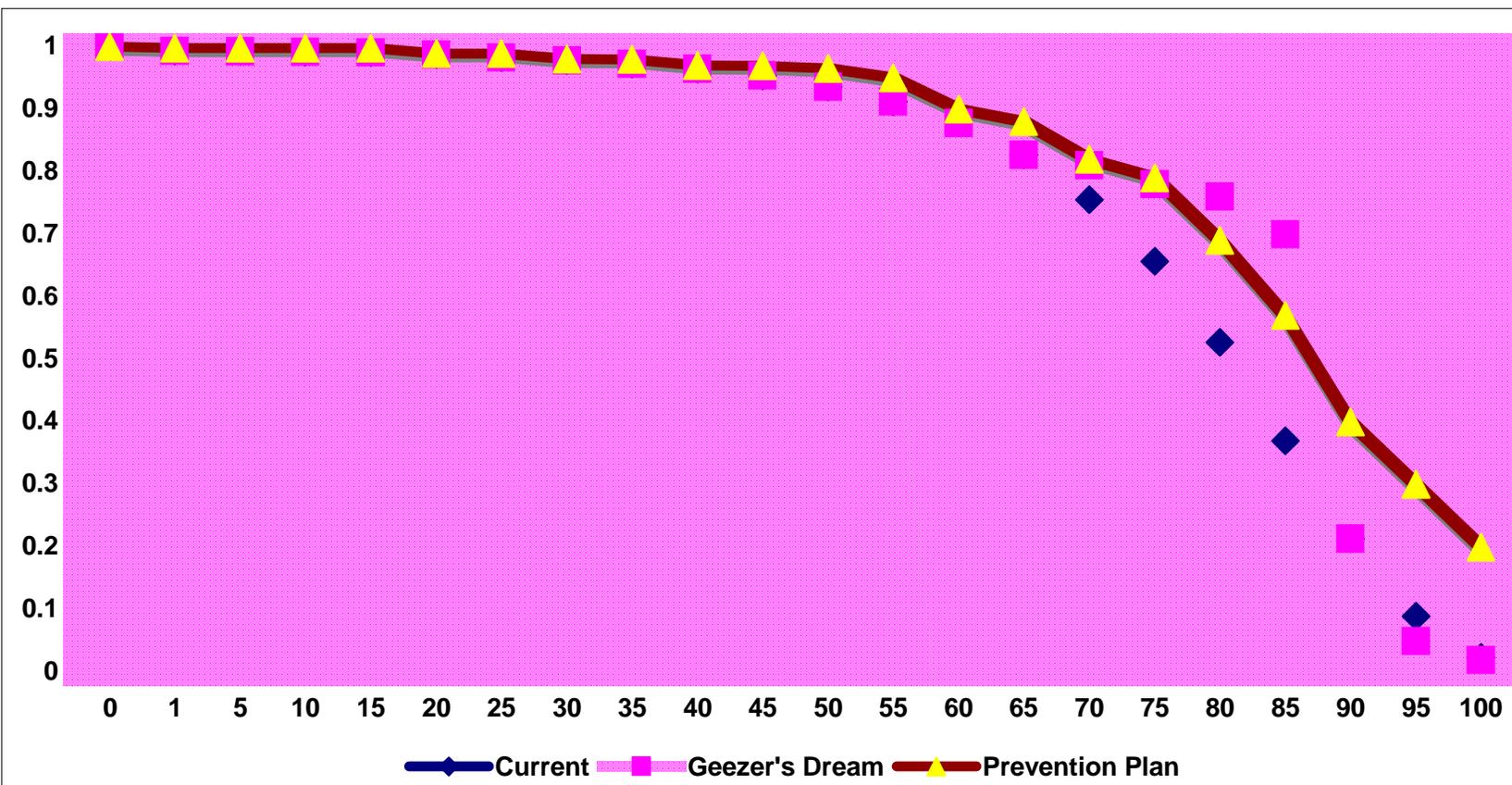
United States



Lack of Health Insurance - United States



# Compressing mortality

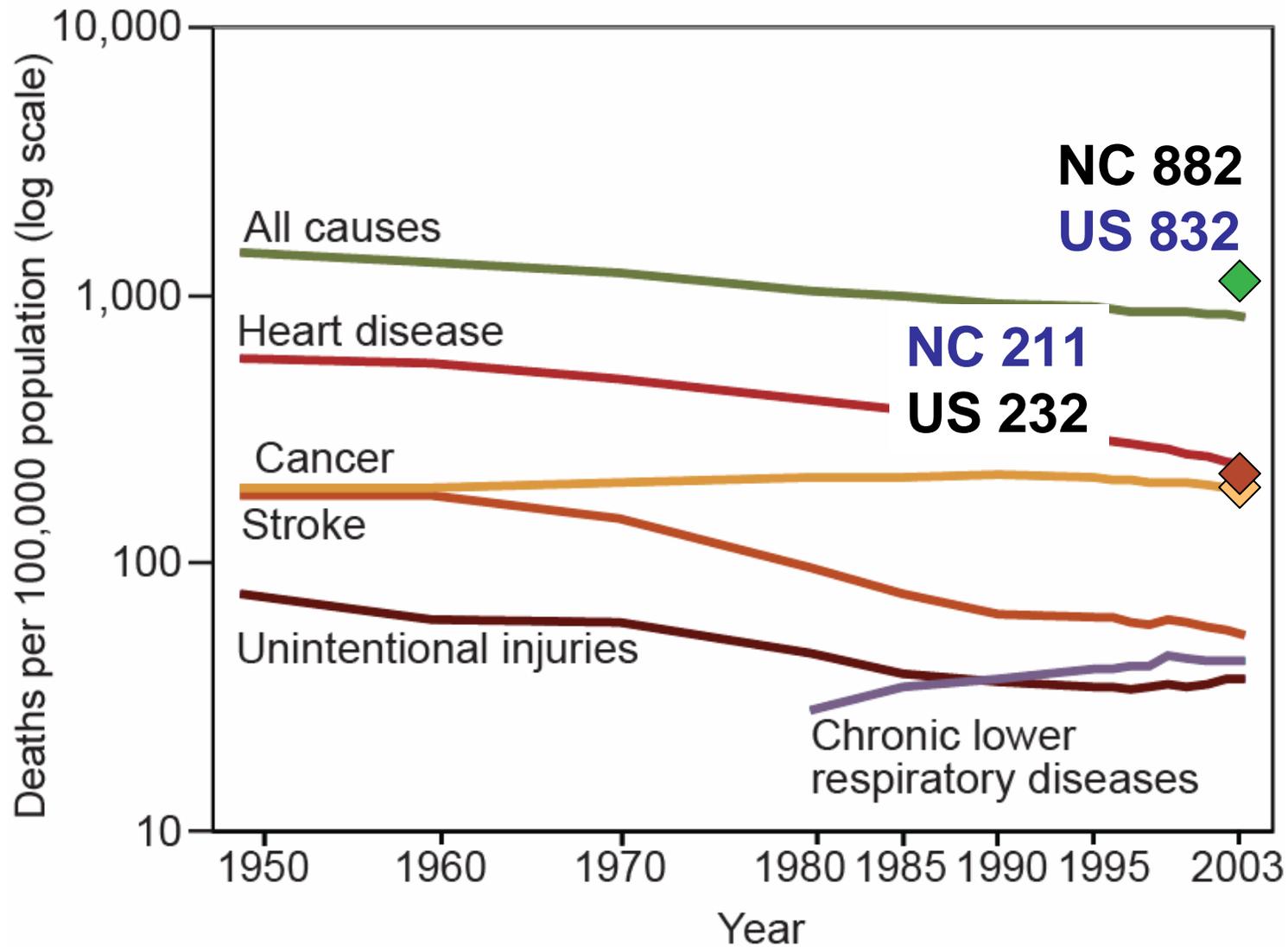


# Adjusting Life Years

- ❖ **We may extend lifespan, but not end up with more overall “quality of life”**
- ❖ **We measure these as “Adjusted Life Years” or ALYs**
- ❖ **This creates awkward tradeoffs**

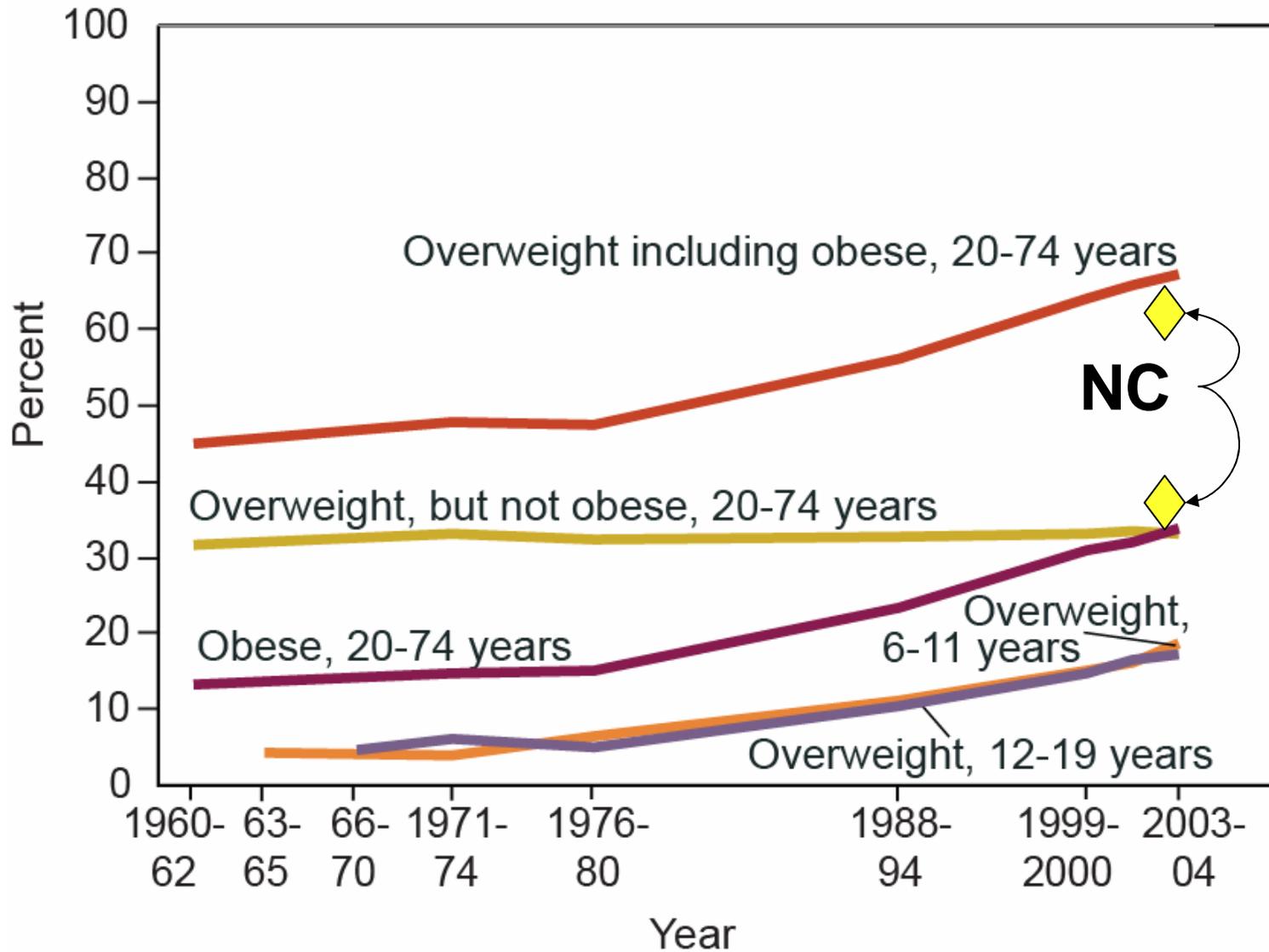
How do we compress?

# Leading causes of death for all ages



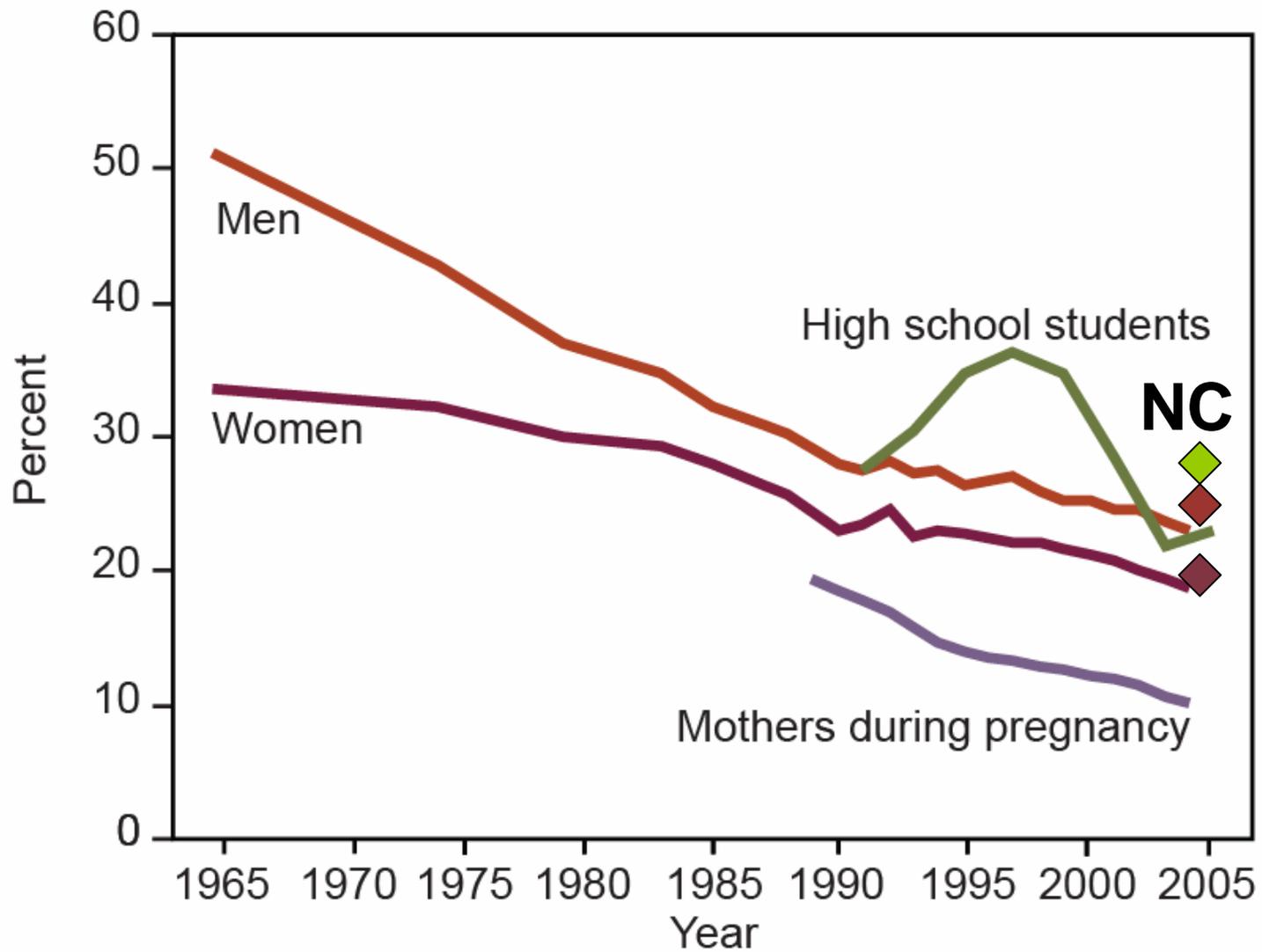
SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2006*, Figure 27. Data from the National Vital Statistics System.

# Overweight and obesity



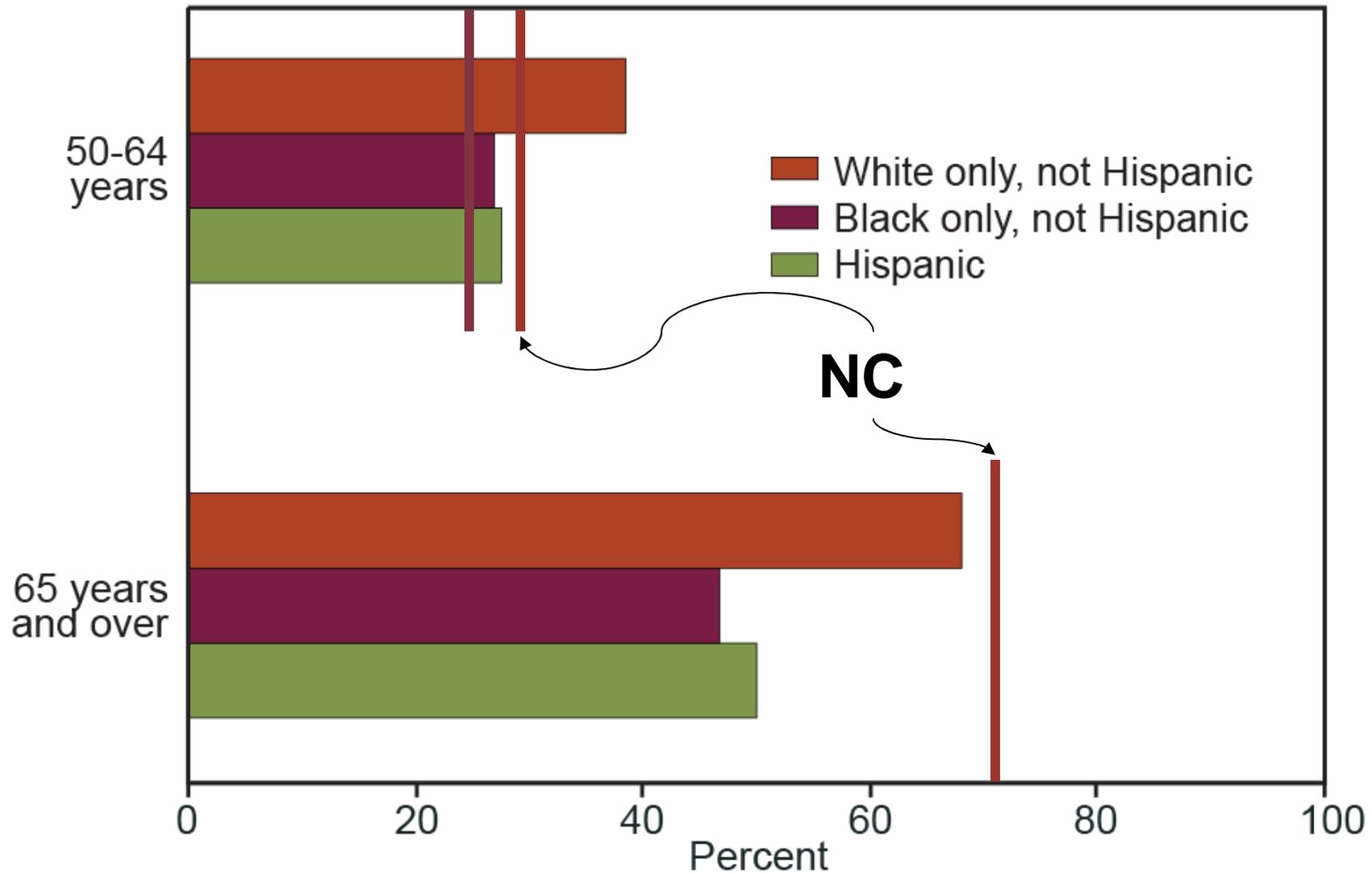
SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2006*, Figure 13. Data from the National Health and Nutrition Examination Survey.

# Cigarette smoking



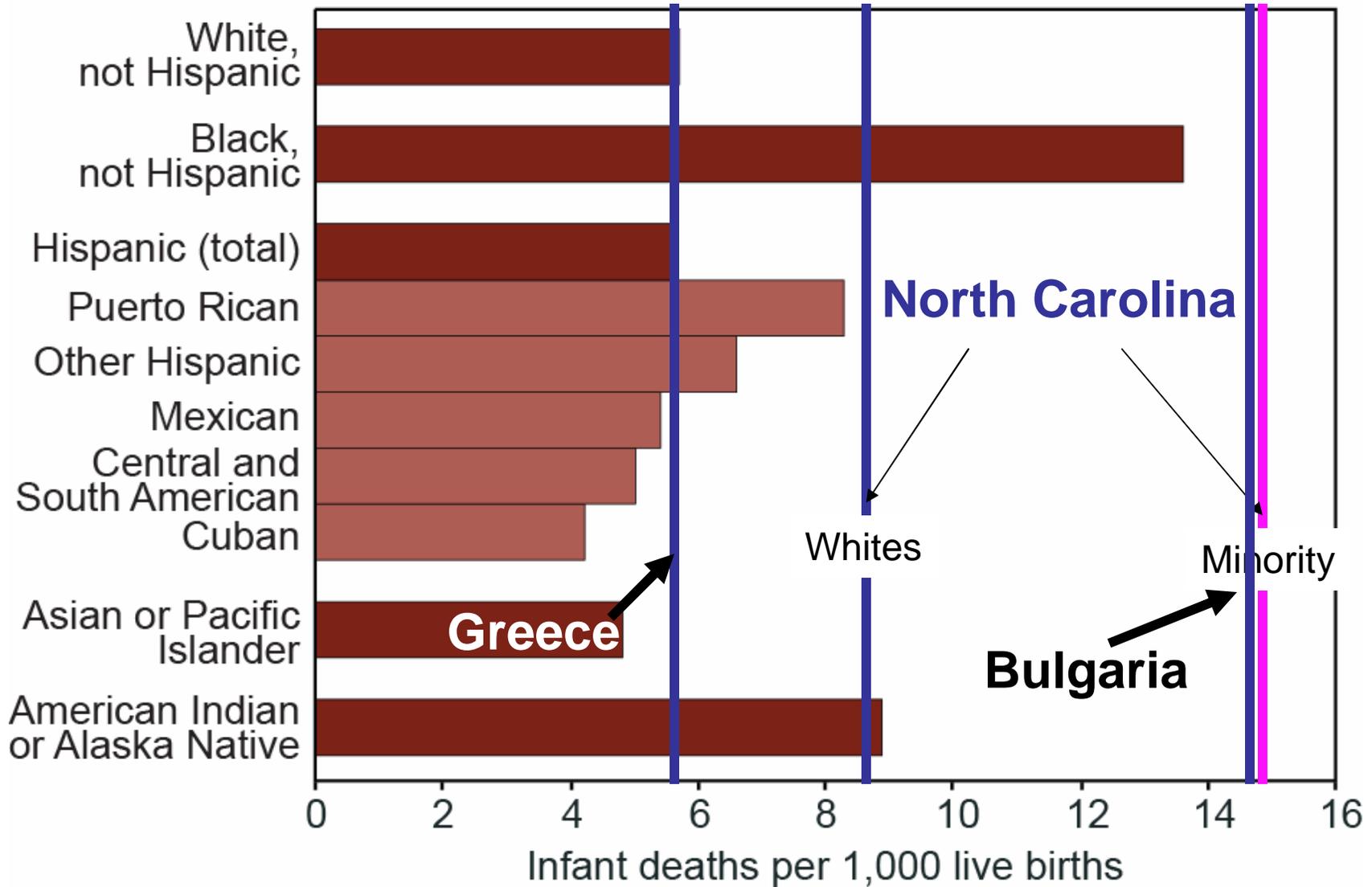
SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2006*, Figure 10. Data from the National Health Interview Survey, Youth Risk Behavior Survey, National Vital Statistics System.

# Influenza vaccination in past year, 2003-04



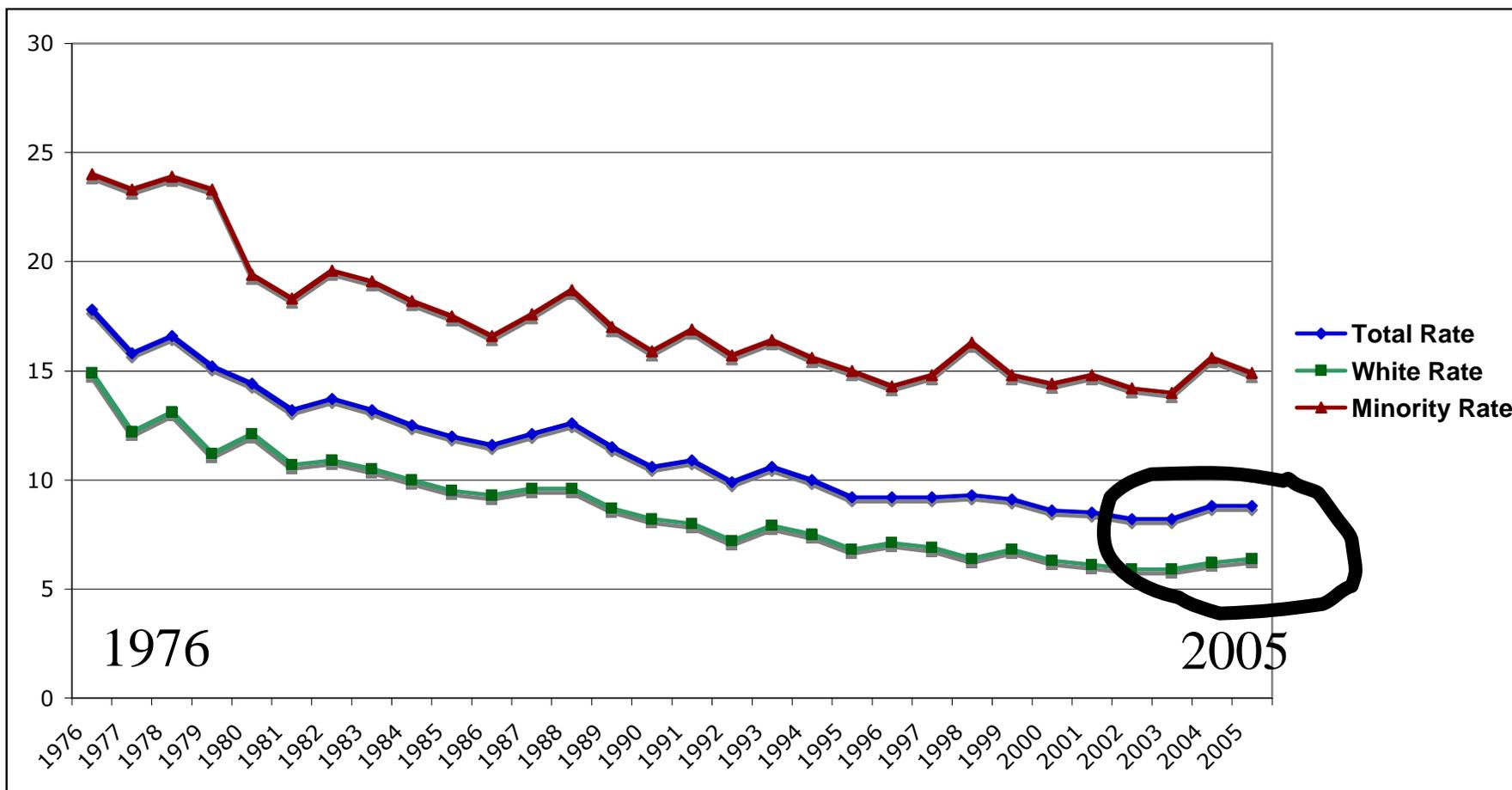
SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2006*, Figure 20. Data from the National Health Interview Survey.

# Infant mortality rates by race/ethnicity, 2001-03

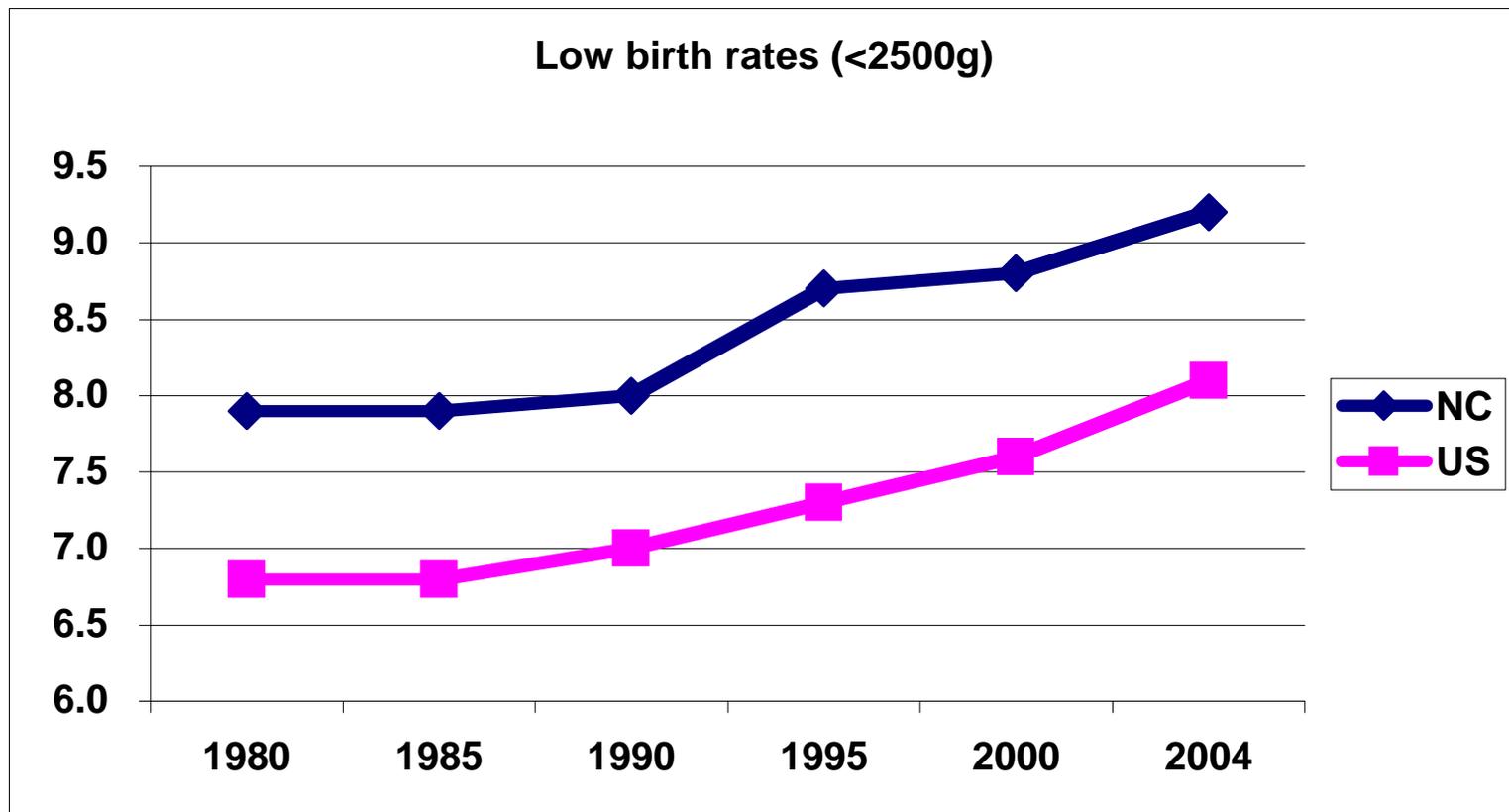


SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2006*, Figure 26. Data from the National Vital Statistics System.

# Infant Mortality Trend, NC

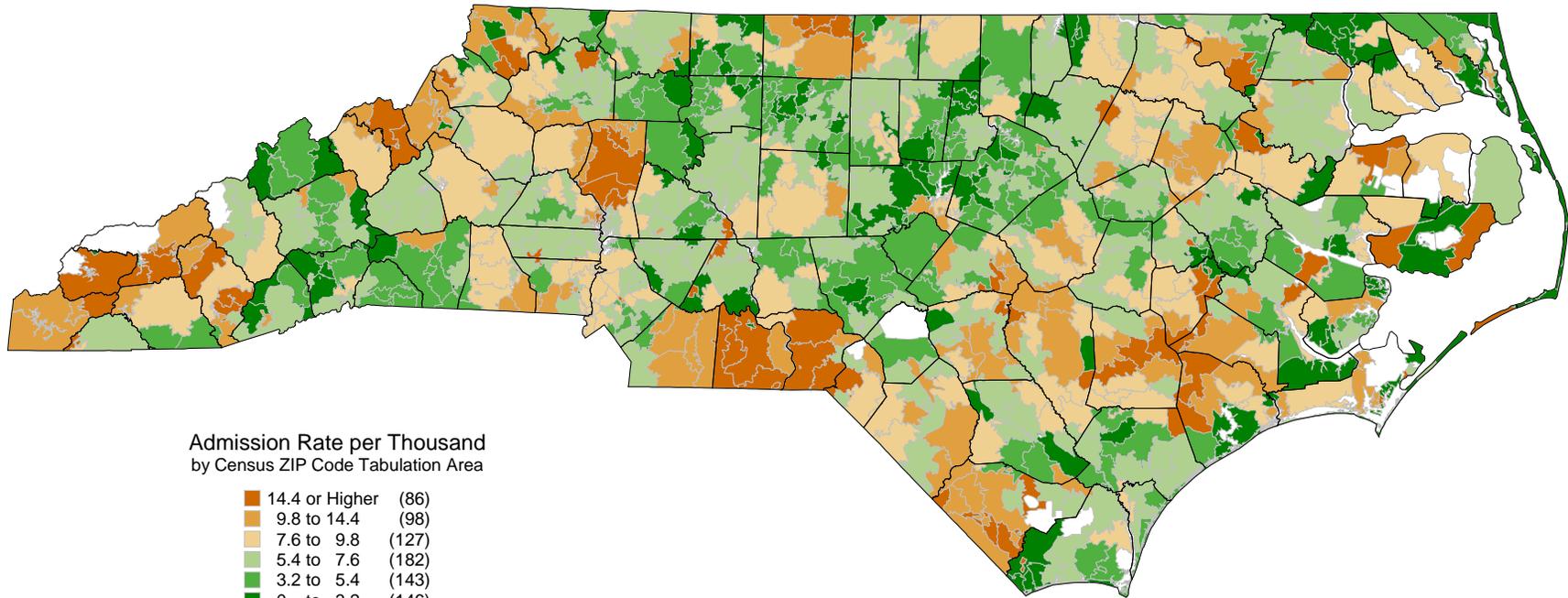


# An awkward paradox, LBW



# Ambulatory Care Sensitive Condition Hospital Admissions (2005)

by ZIP Code Tabulation Areas for Persons Under 18 Years

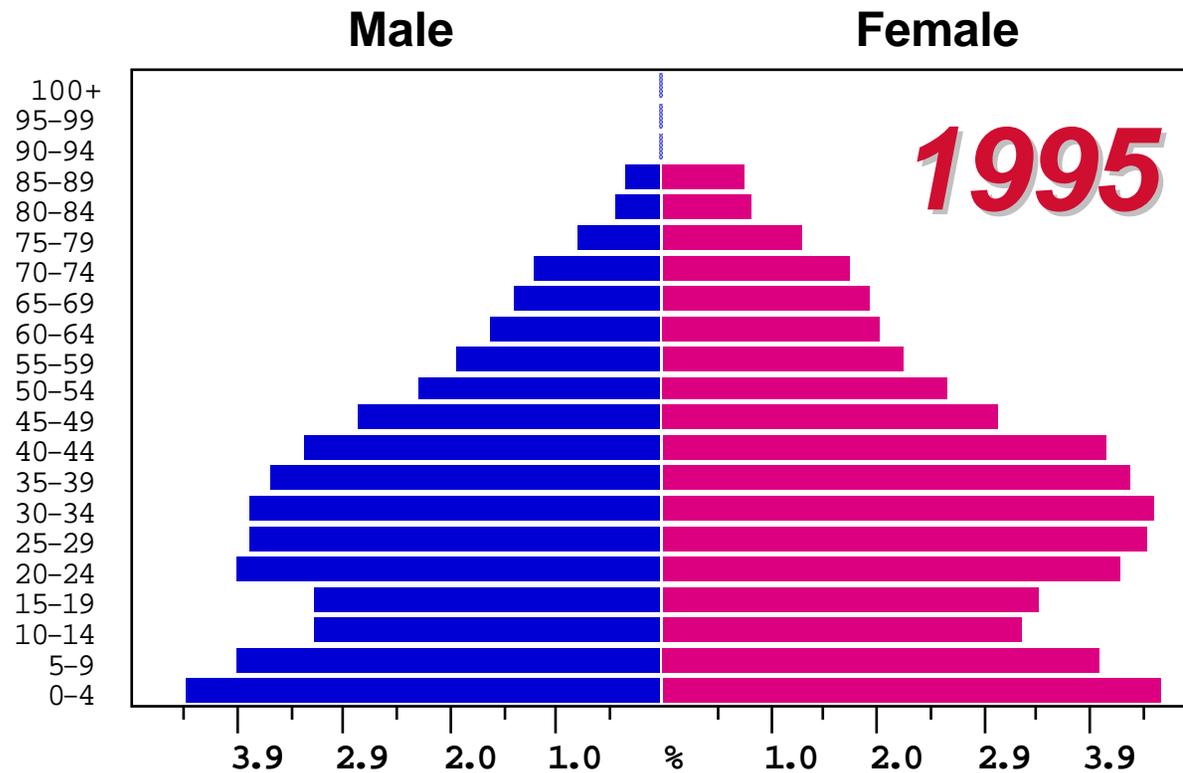


Note: Only admissions to North Carolina Hospitals are included.

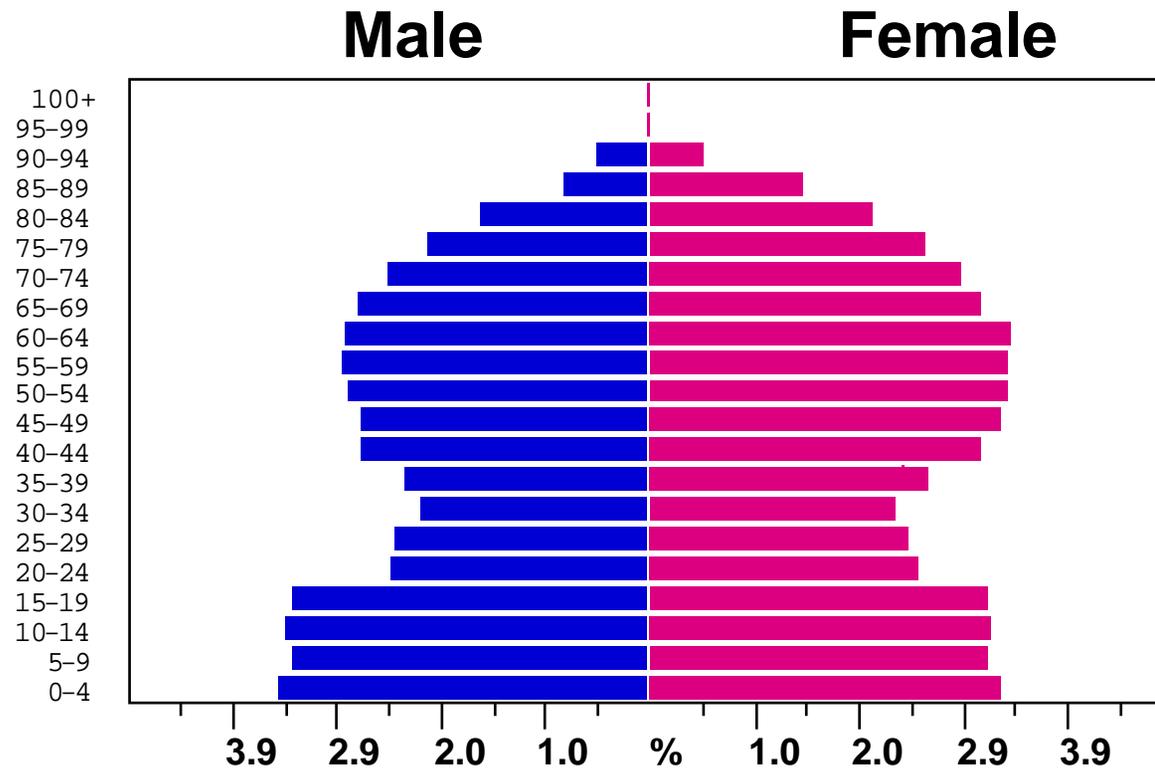
Sources: HCIA Inpatient Discharge Database, October 1, 2004 to September 30, 2005; US Census Bureau, 2000.

Produced by: North Carolina Rural Health Research and Policy Analysis Center, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

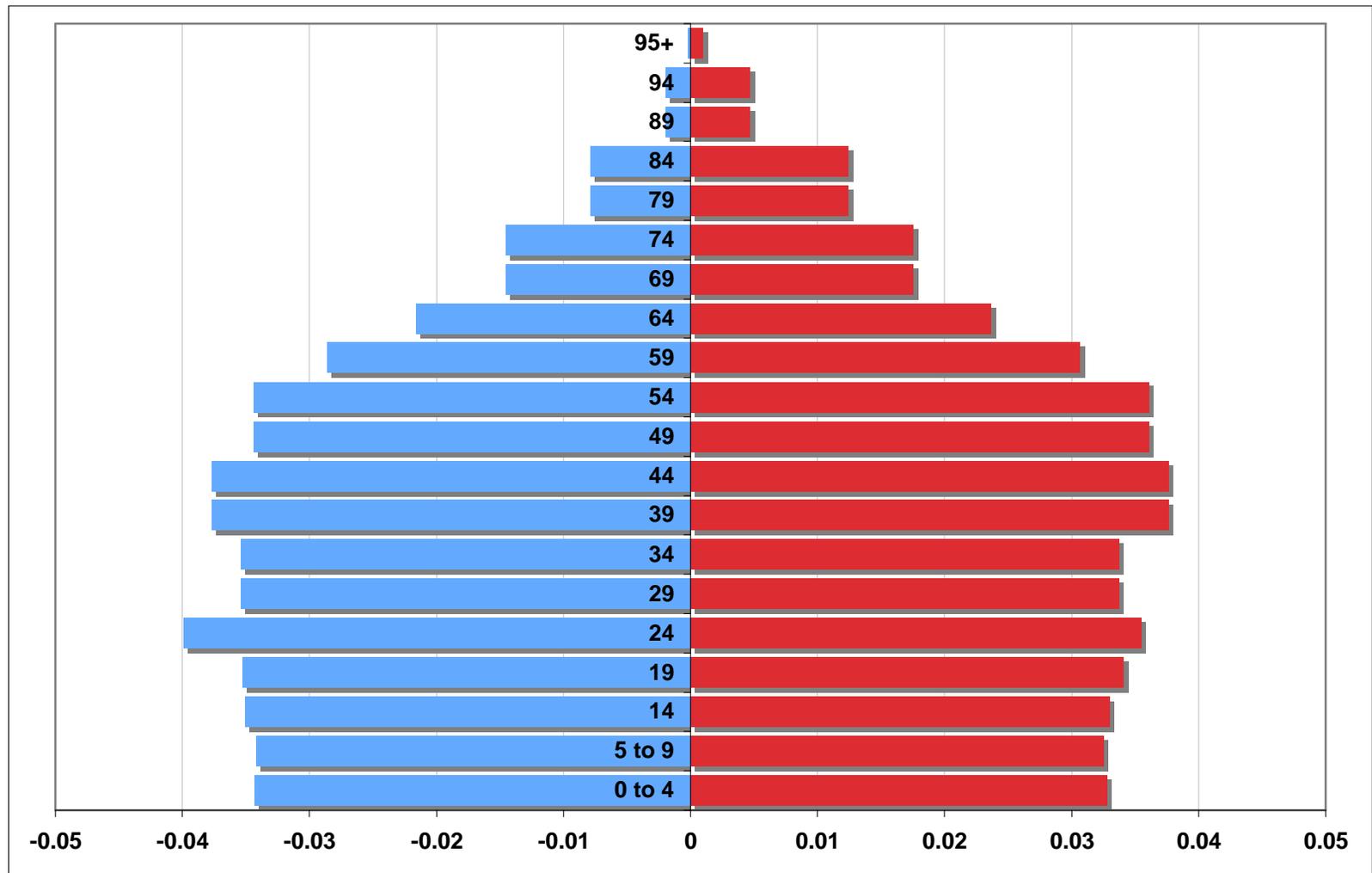
# An Aging Population? NC



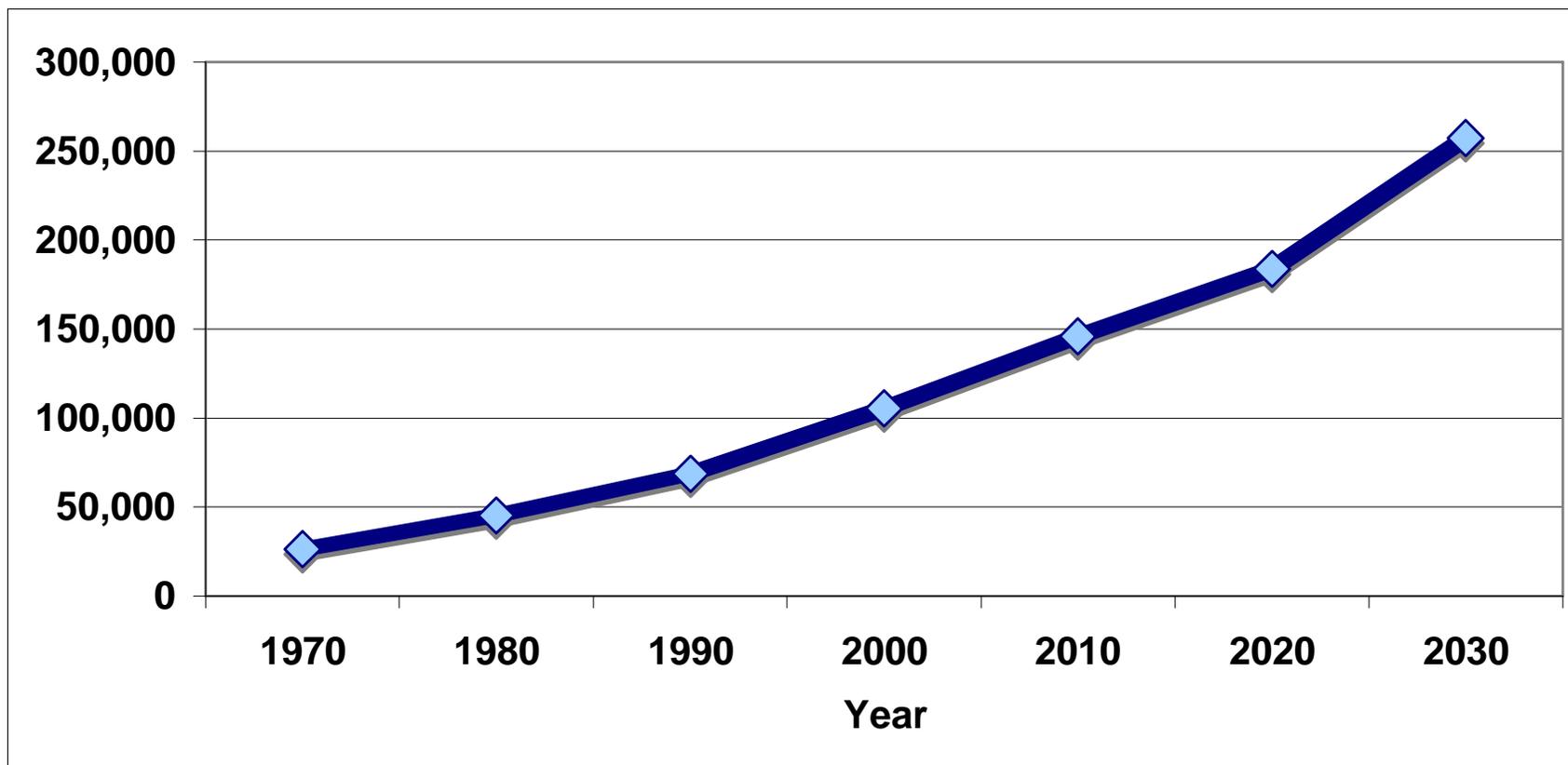
# 2015 Projected



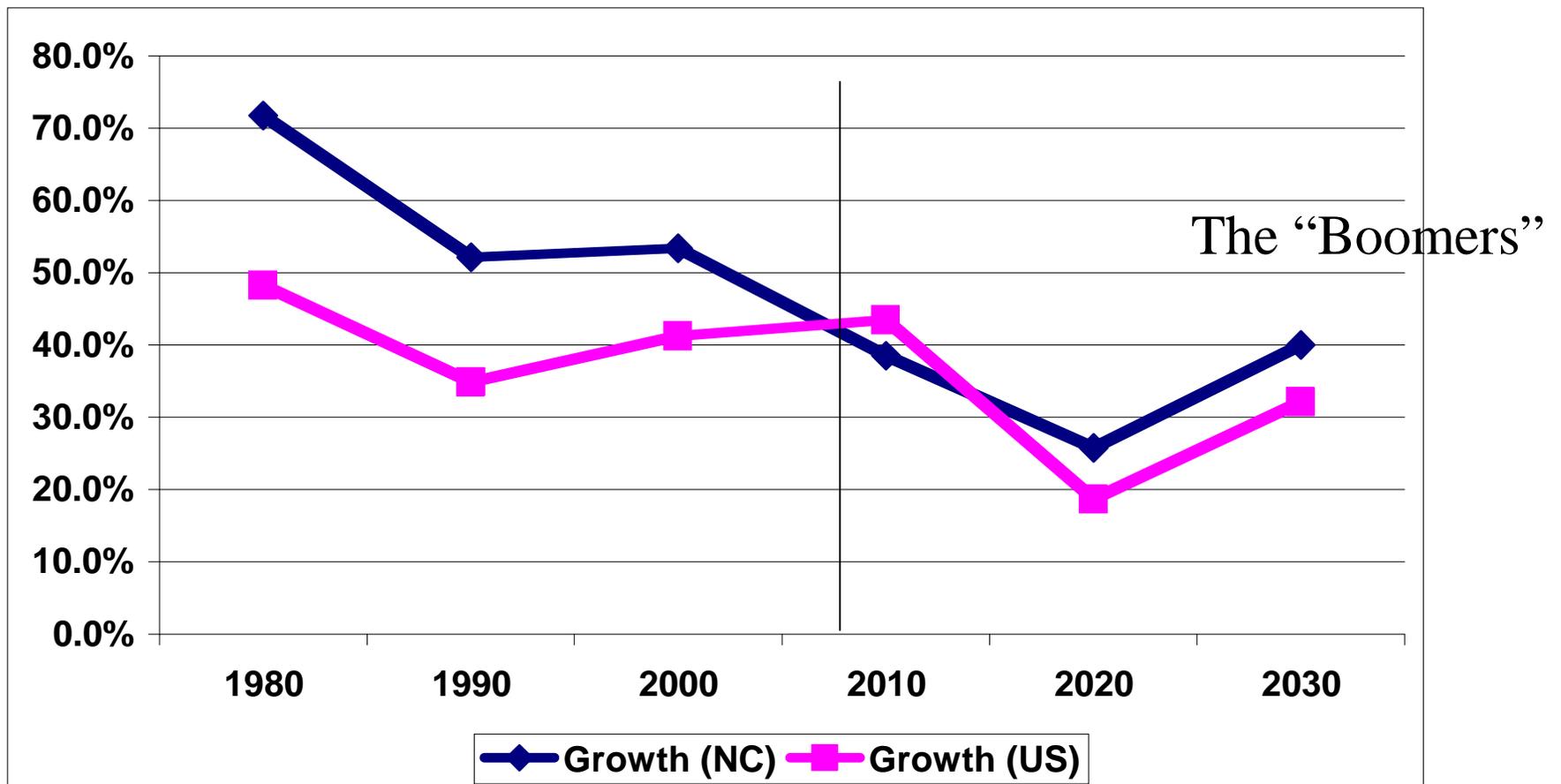
# 2005 Actual



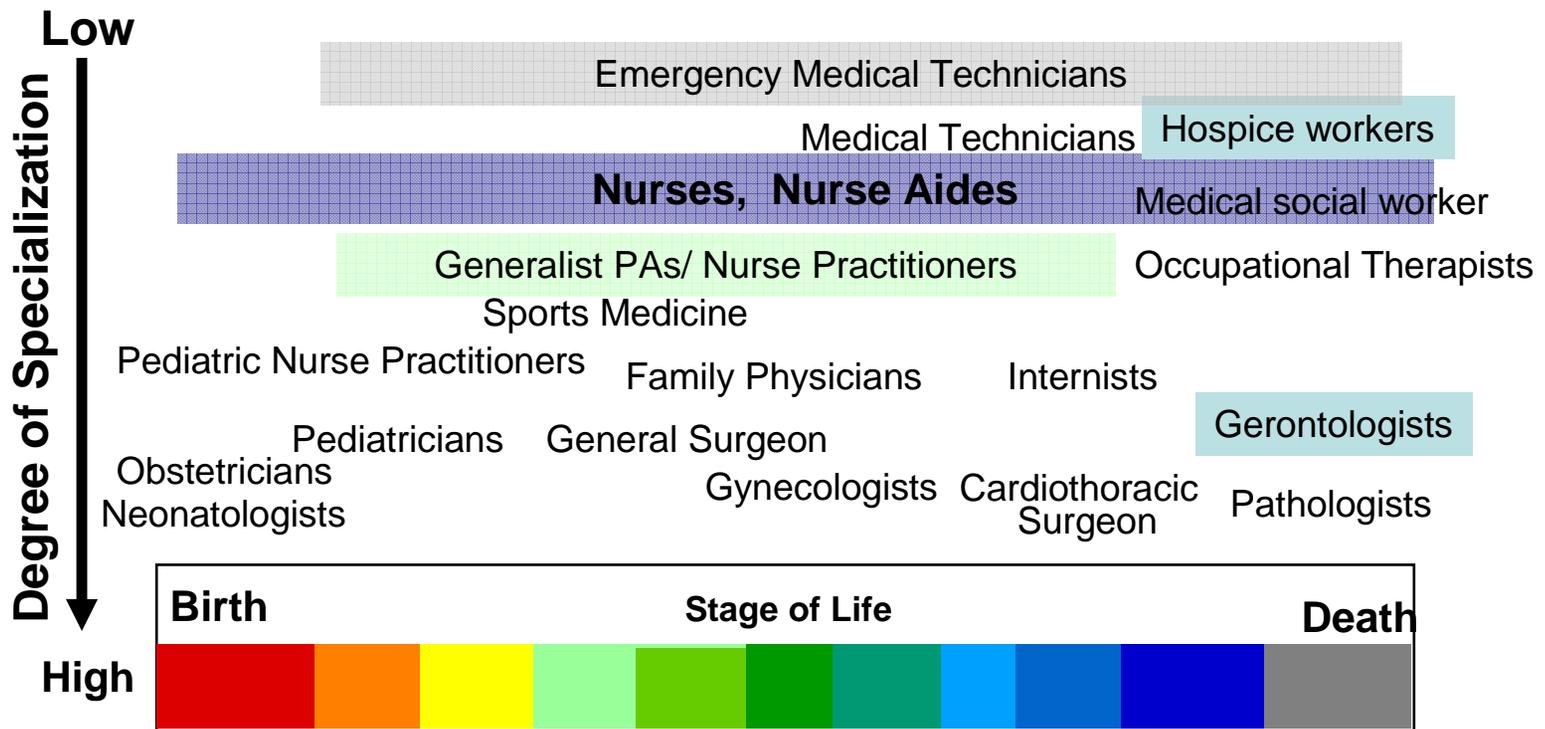
# Persons 85 and Older, NC



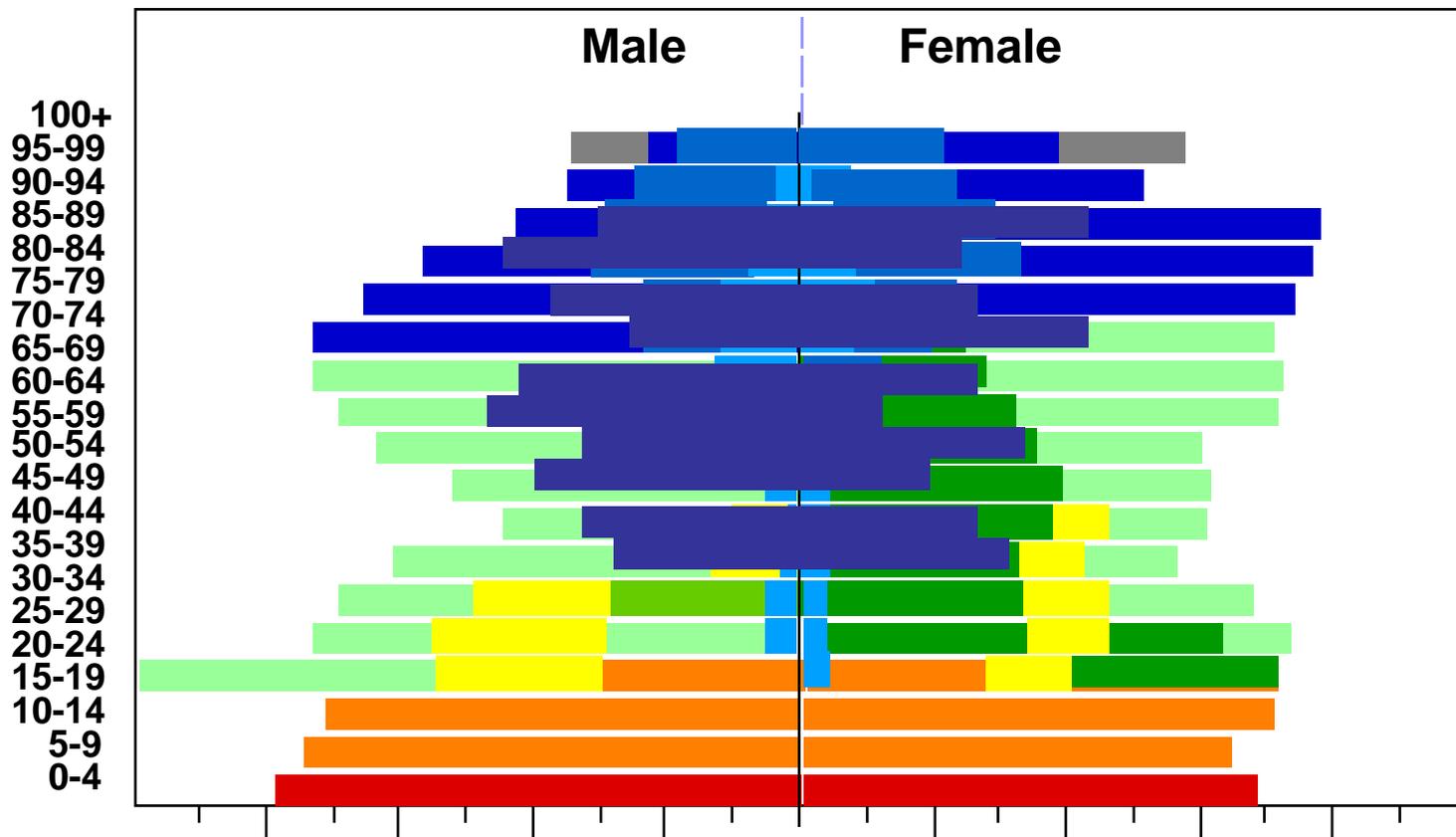
# Proportional growth of 85+ group has actually slowed



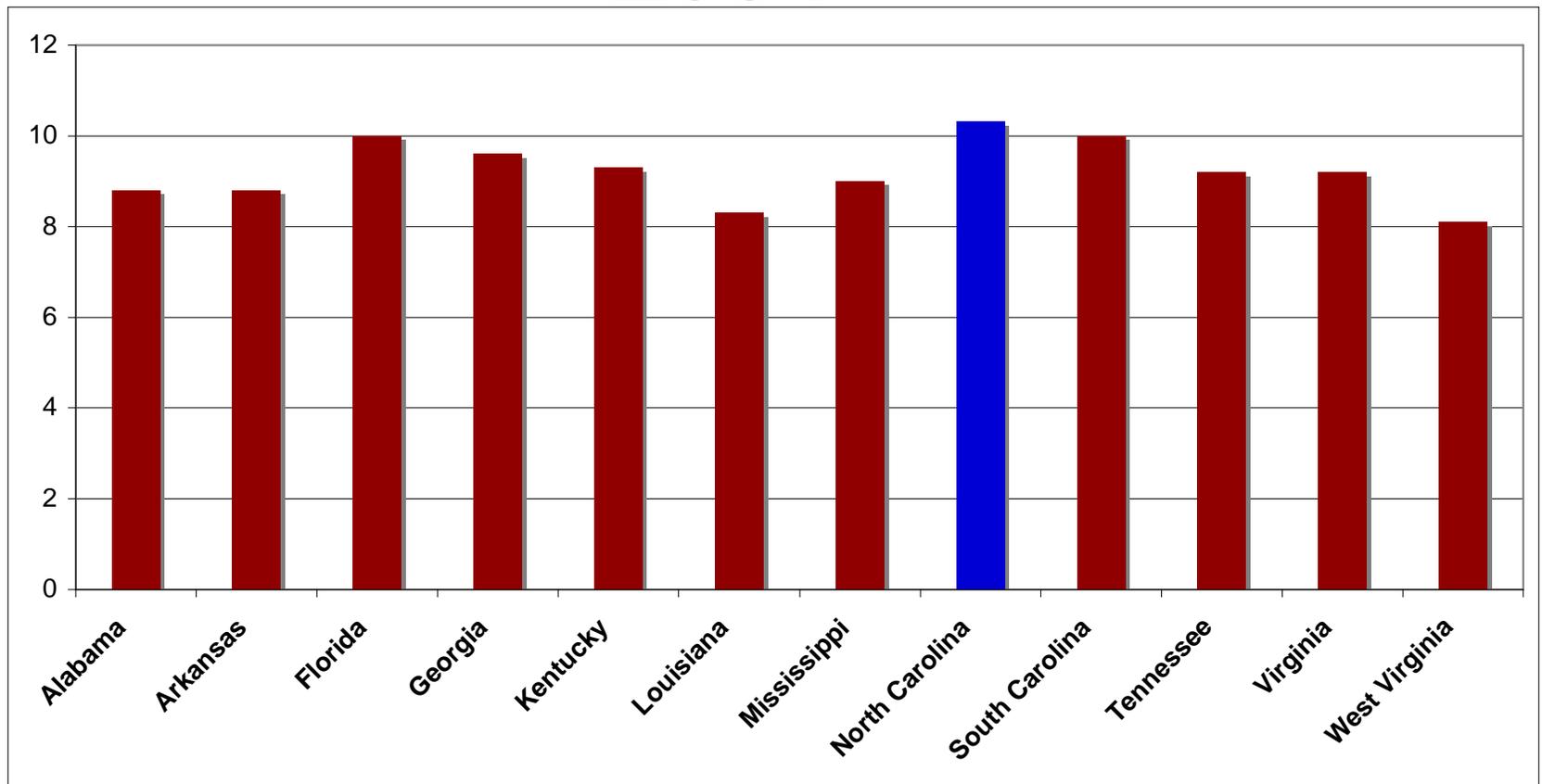
# The population profile will need different health workers



# The aging cohort will require increases of the “blue” occupations

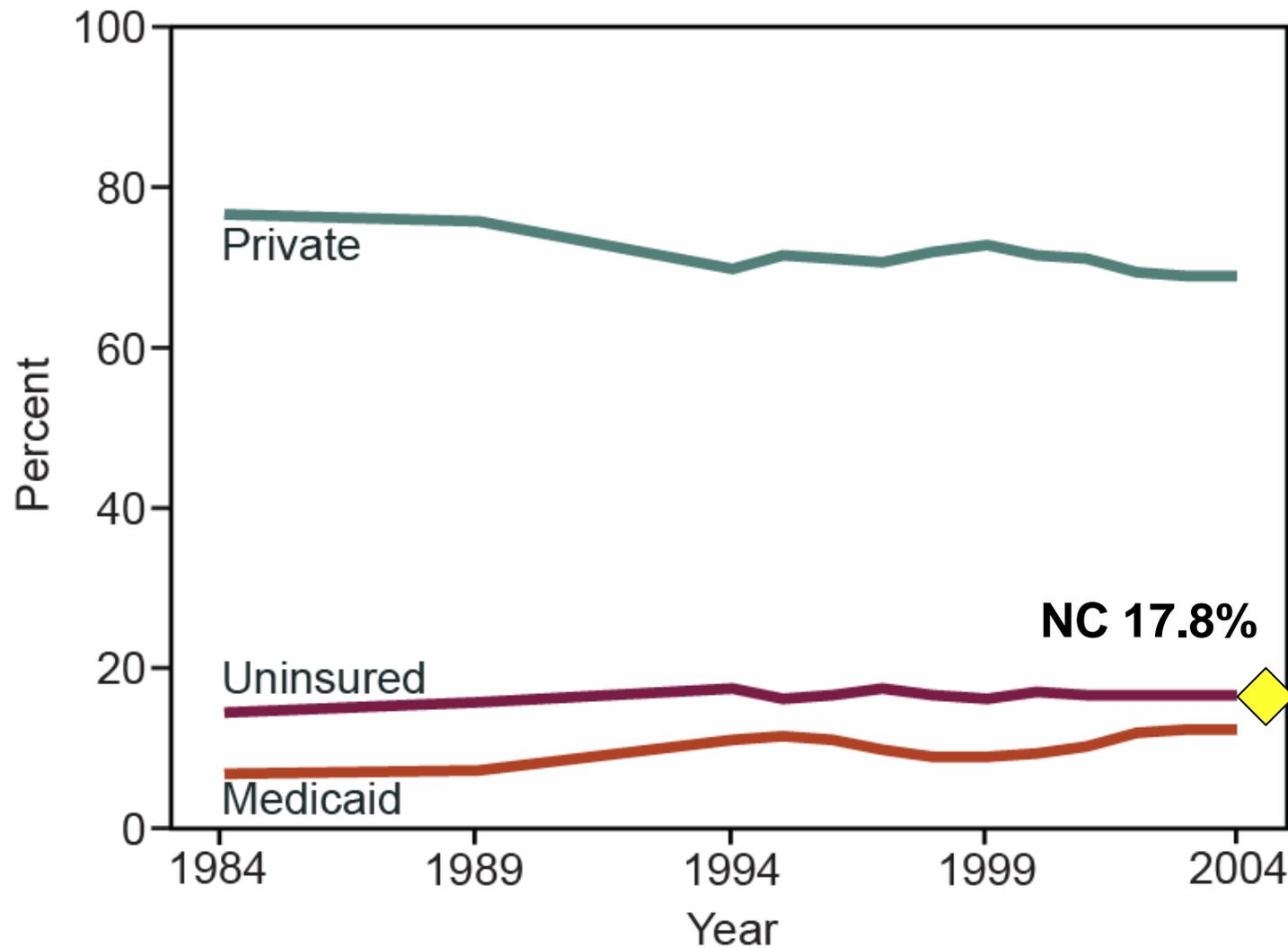


# Average annual growth of expenditures for health 1980-2004



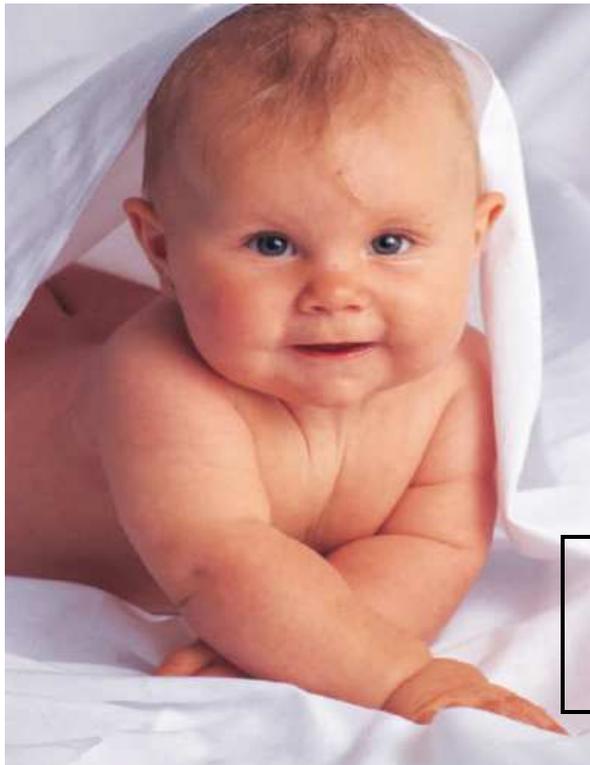
Source, CMS National Health Accounts, Health Expenditures by State of Provider, Summary Tables 2006

# Health insurance coverage among people <65 years



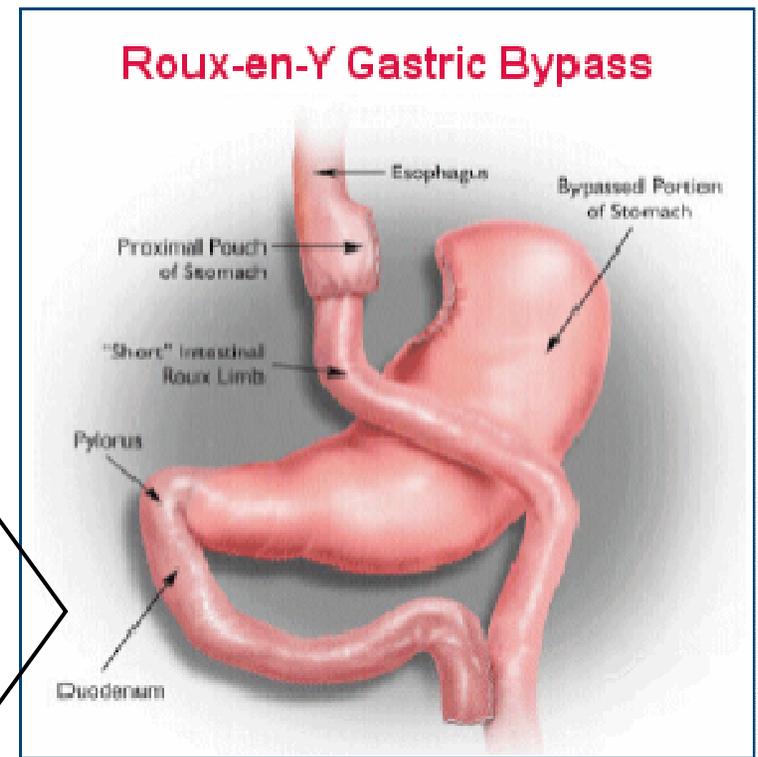
SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2006*, Figure 6. Data from the National Health Interview Survey.

# Costs and futures...

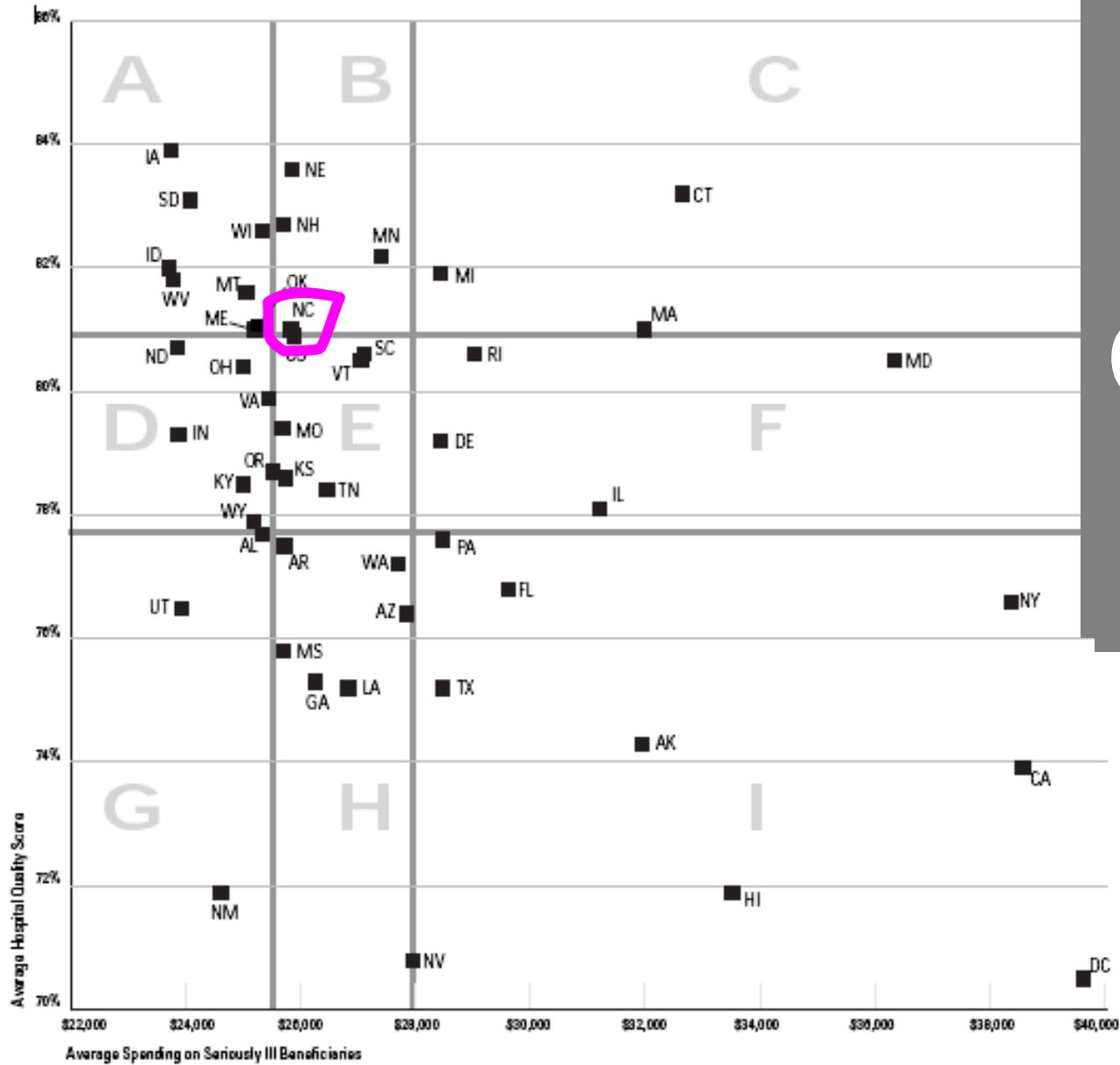


Will she be able to afford her gastric bypass in 2040?

\$\$\$?



**Graph 4**  
Quality of Care vs. Average Spending



Cost-  
Quality  
Controversy