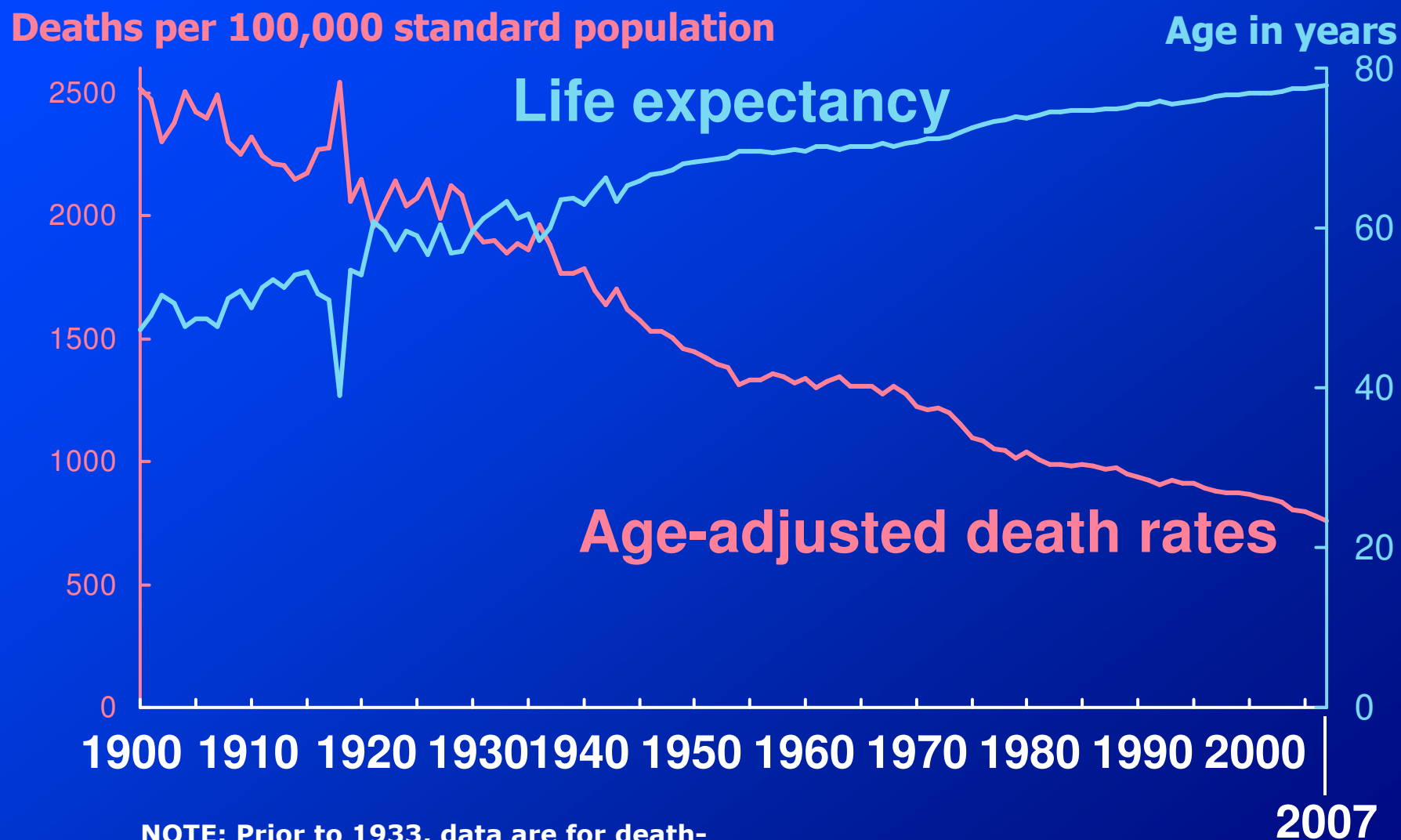


Tracking Our Nation's Health Using NCHS Data and Resources

**Association of Public Data Users
September 22, 2011**



Life Expectancy and Age-Adjusted Death Rates



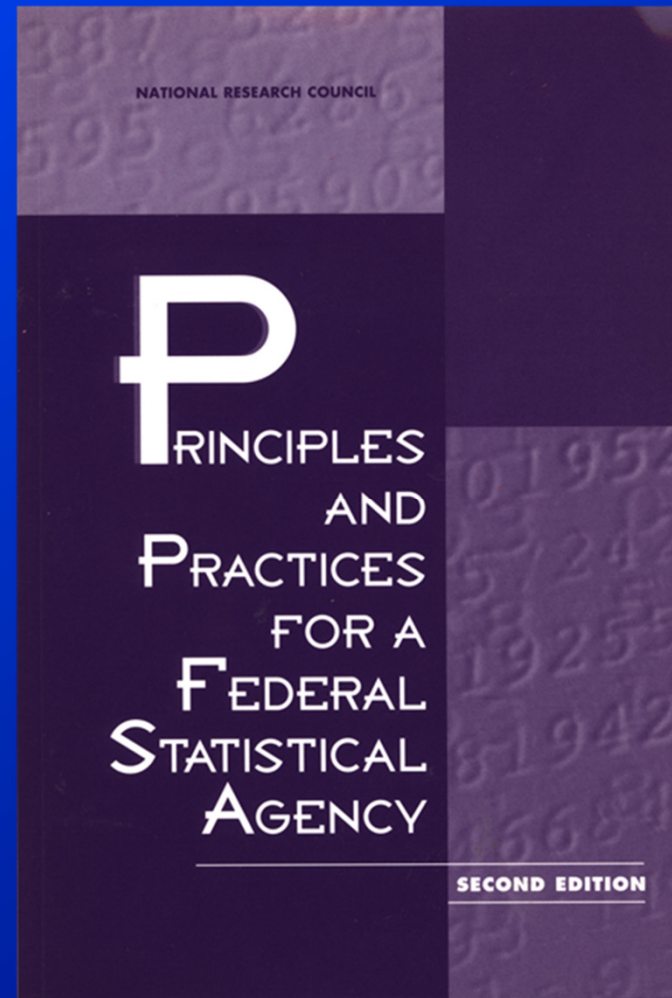
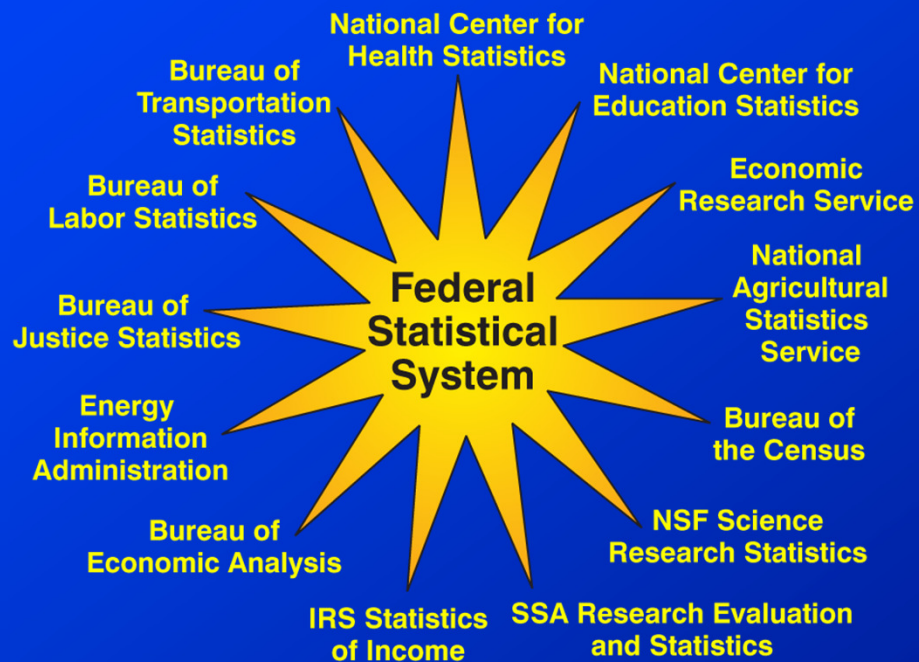
NCHS Mission

- To monitor the nation's health—to collect, analyze and disseminate health data
- To provide statistical information that will guide actions and policies to improve the health of the American people through ...
 - Policy
 - Research
 - Industry
- And by directly informing the public



The Prime Directives

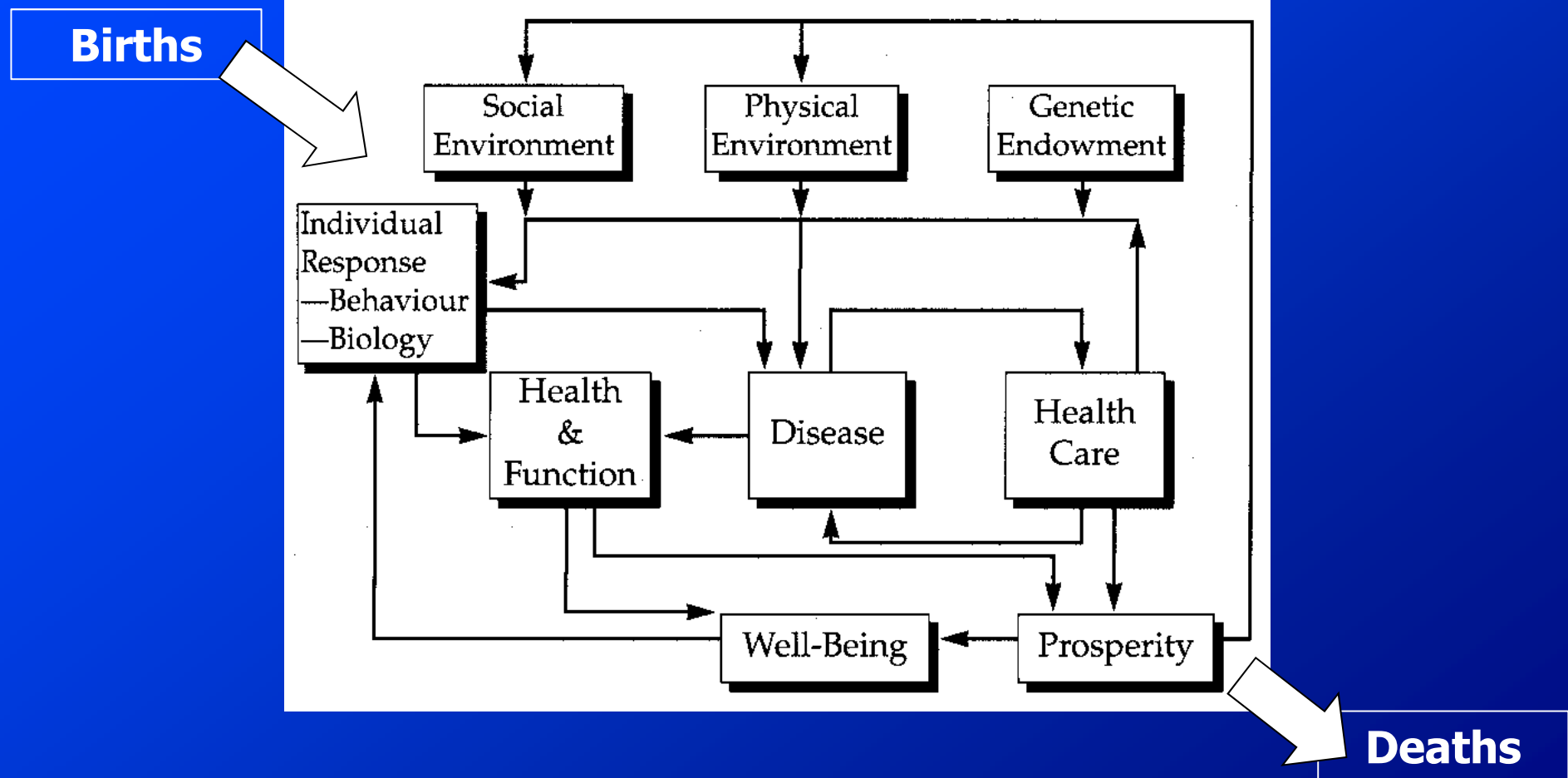
- **Data for Policy and Research**
- **Timely Release to all**



Health System Model

A Dynamic Model of Health Status

--from Evans and Stoddart



Four Major Data Systems

- **Births and Deaths**
 - **National Vital Statistics System and surveys**
- **Health Status (Disease, functioning, risk factors, ...)**
 - **National Health Interview Survey (NHIS)**
 - **National Health and Nutrition Examination Survey (NHANES)**
- **Health Care (Visits, diseases, physicians, care quality, waiting time, ...)**
 - **National Health Care Surveys**
 - **Ambulatory care**
 - **Hospital care**
 - **Long term care + others**

National Health Interview Survey

- **Data source**
 - **Representative in person, in home survey of 87,500 respondents**
- **Data applications**
 - **Health status and disability**
 - **Insurance coverage**
 - **Access to and use of health services**
 - **Extent of illness and disability**
 - **Immunization**
 - **Health behaviors**

National Health and Nutrition Examination Survey

- Data source
 - Standardized physical examinations, laboratory tests, personal interviews with annual sample of 5,000
- Data applications
 - Disease or condition prevalence
 - Risk factors
 - Nutrition monitoring
 - Anthropometry
 - Growth and development
 - Disease monitoring



Budget and Data

- **Priorities:**
 - **Maintain critical data series to track changes in health**
 - **Provide base to evaluate policy changes**
 - **Provide base for health research (Policy, Health Care, Biomedical)**

Meeting New Initiatives

Health Reform Initiatives

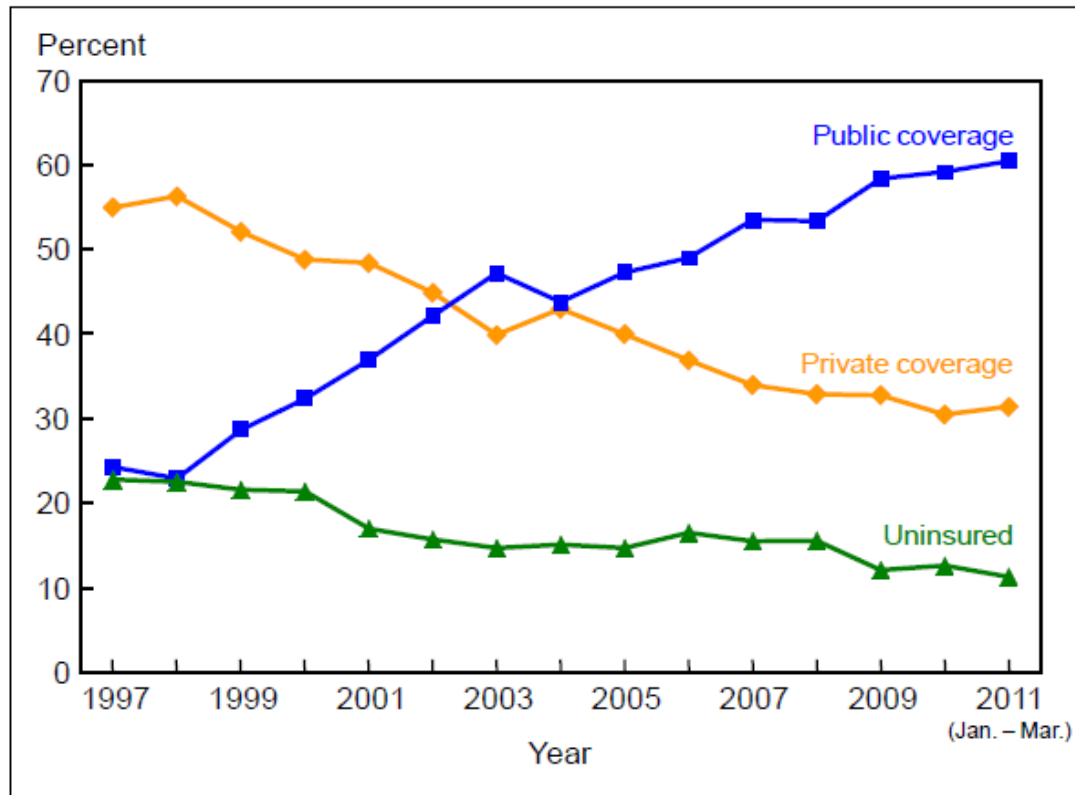
Representative Measures

- **Insurance**
 - **Prevention**
 - **Electronic Records**
- **Questions on coverage, exchanges**
 - **Sample expanded to Selected States**
 - **Longitudinal tracking on ambulatory cardiovascular prevention**
 - **Sample expanded to Selected States**
 - **Physician surveys on adoption/use of electronic health records**

Budget and Data Management 's Tools

- Budget **increase/decrease**:
 - Vital Statistics
 - Extent of birth and death detailed information
 - Surveys
 - Sample size
 - Population and geographic detail
 - Length of time data pooled for analysis
 - Use of modeling to fill gaps in time

Health Insurance Trends

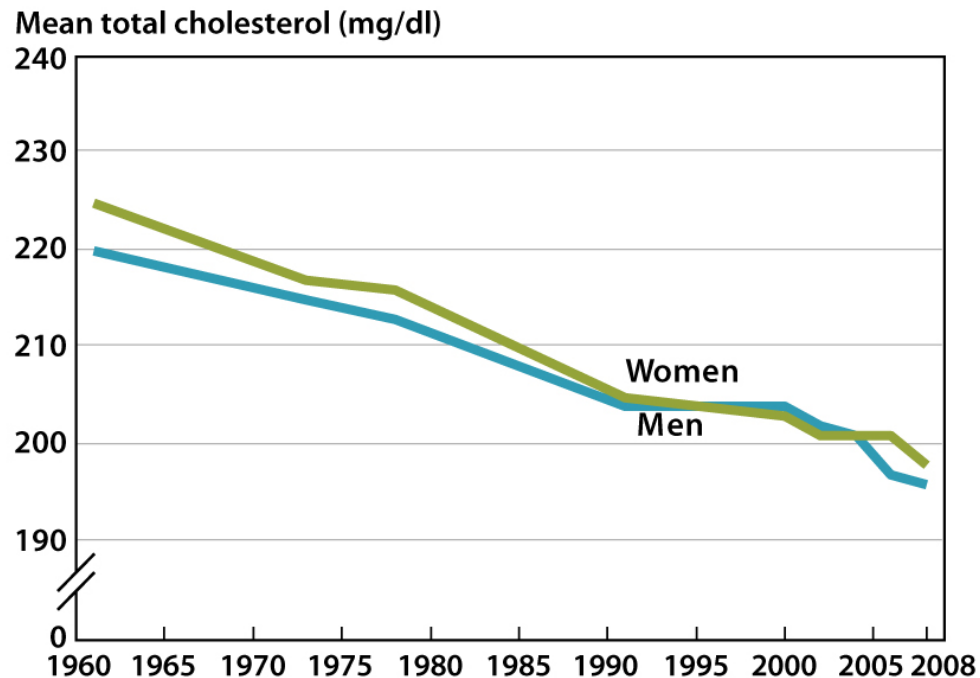


**Budget affects
detail: E.g.**

- **Age**
- **Race**
- **State**
- **Income**
- **Health status**

Risk Factor Trends

Trends in Mean Total Cholesterol



SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, Ages 20–74 years

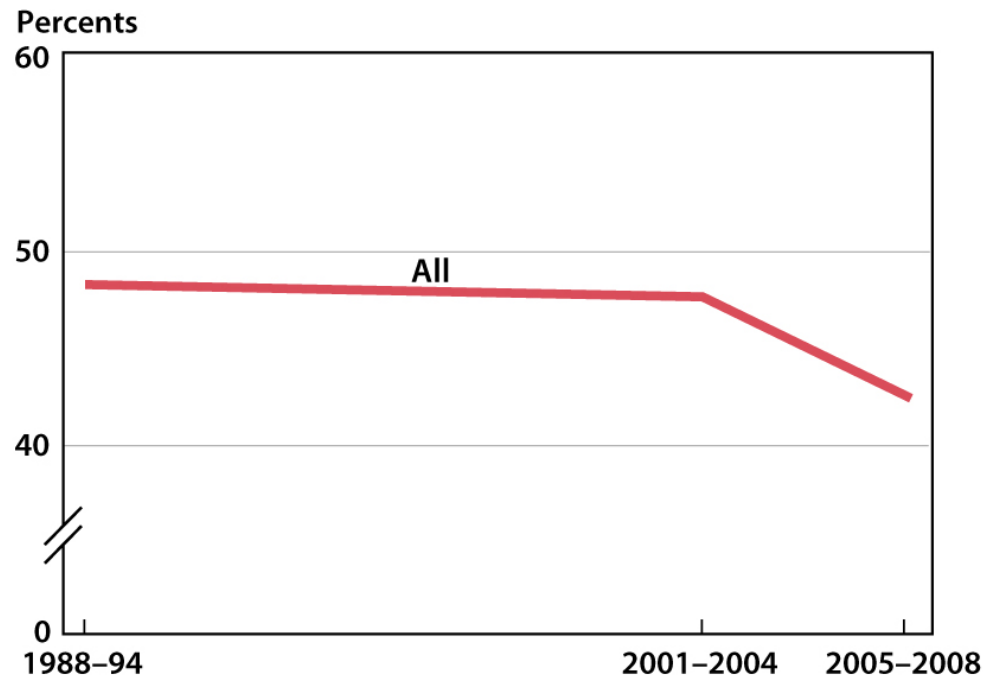


**Budget affects
detail: E.g.**

- Age
- Race
- State
- Income
- Health status

Risk Factor Trends

Trend in Elevated Blood Pressure



SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, Ages 65+ years

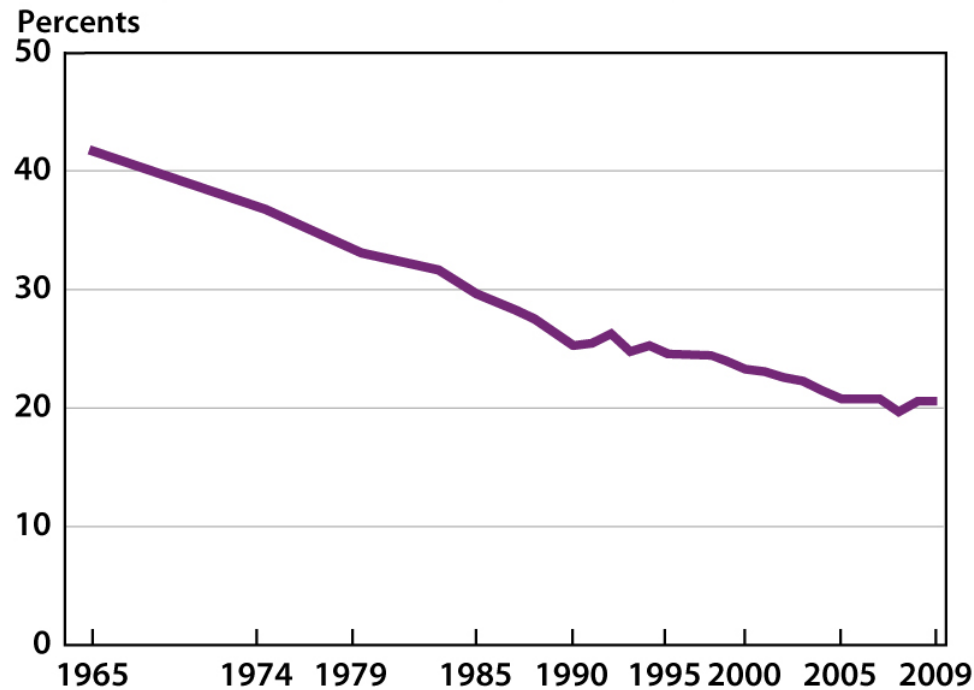


**Budget affects
detail: E.g.**

- Age
- Race
- State
- Income
- Health status

Risk Factor Trends

Cigarette Smoking Among Adults



SOURCE: CDC/NCHS, National Health Interview Survey



**Budget affects
detail: E.g.**

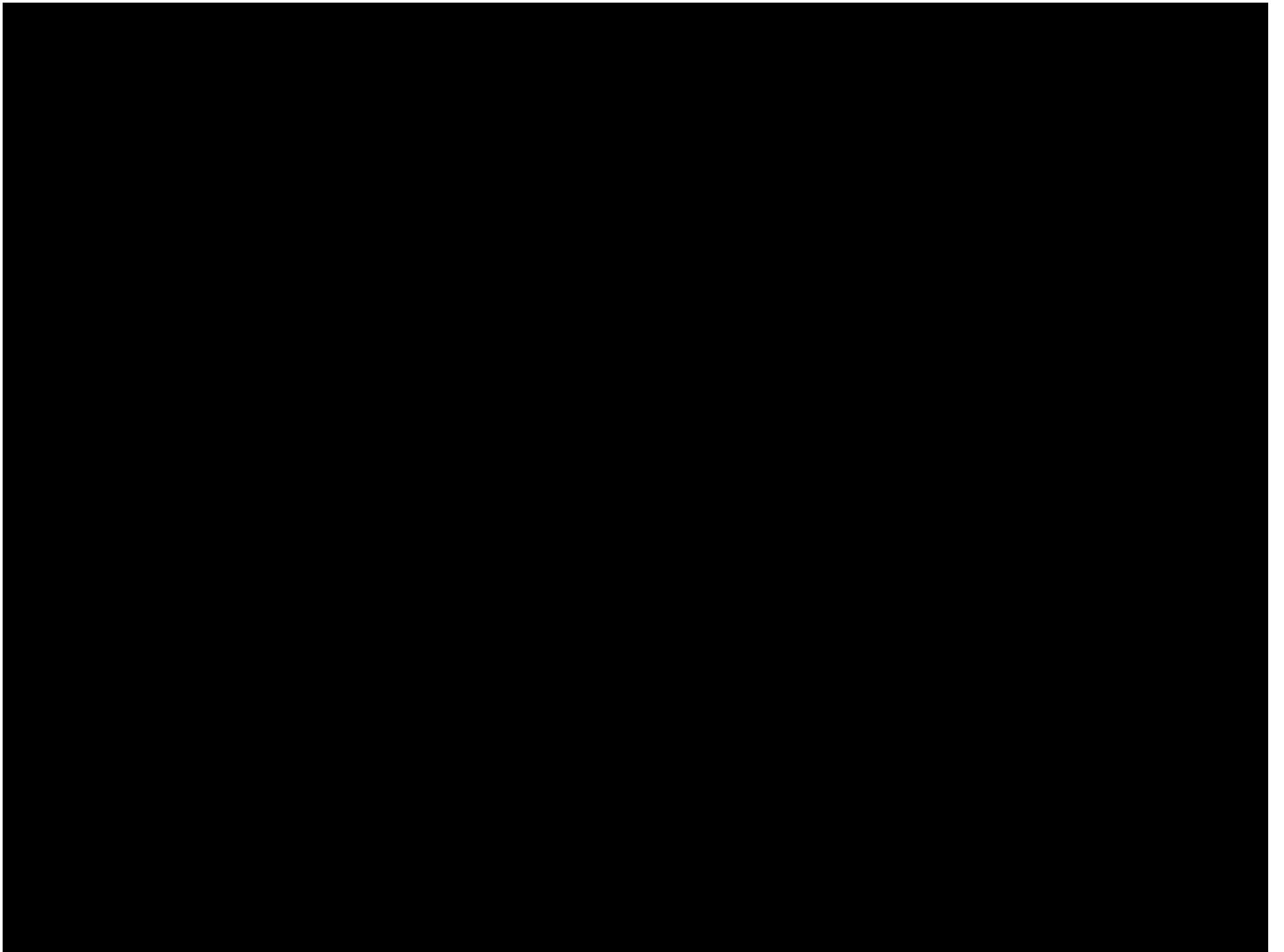
- Age
- Race
- State
- Income
- Health status

NCHS Mission

- **To monitor the nation's health—to collect, analyze and disseminate health data**
- **To provide statistical information that will guide actions and policies to improve the health of the American people through ...**
 - **Policy**
 - **Research**
 - **Industry**
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NCHS Mission

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 - **Policy**
 - **Research**
 - **Industry**
- And by directly informing the **public**



Budget and Data

- Budget **decrease**/Program adjustments
 - Vital Statistics
 - Reduce birth and death detailed information
 - Surveys
 - Reduce sample size
 - Reduce detail
 - Collect over several years
 - Collect data less frequently
 - Use modeling to fill gaps in time
 - Use less precise data sources

National Center for Health Statistics

What We Do:

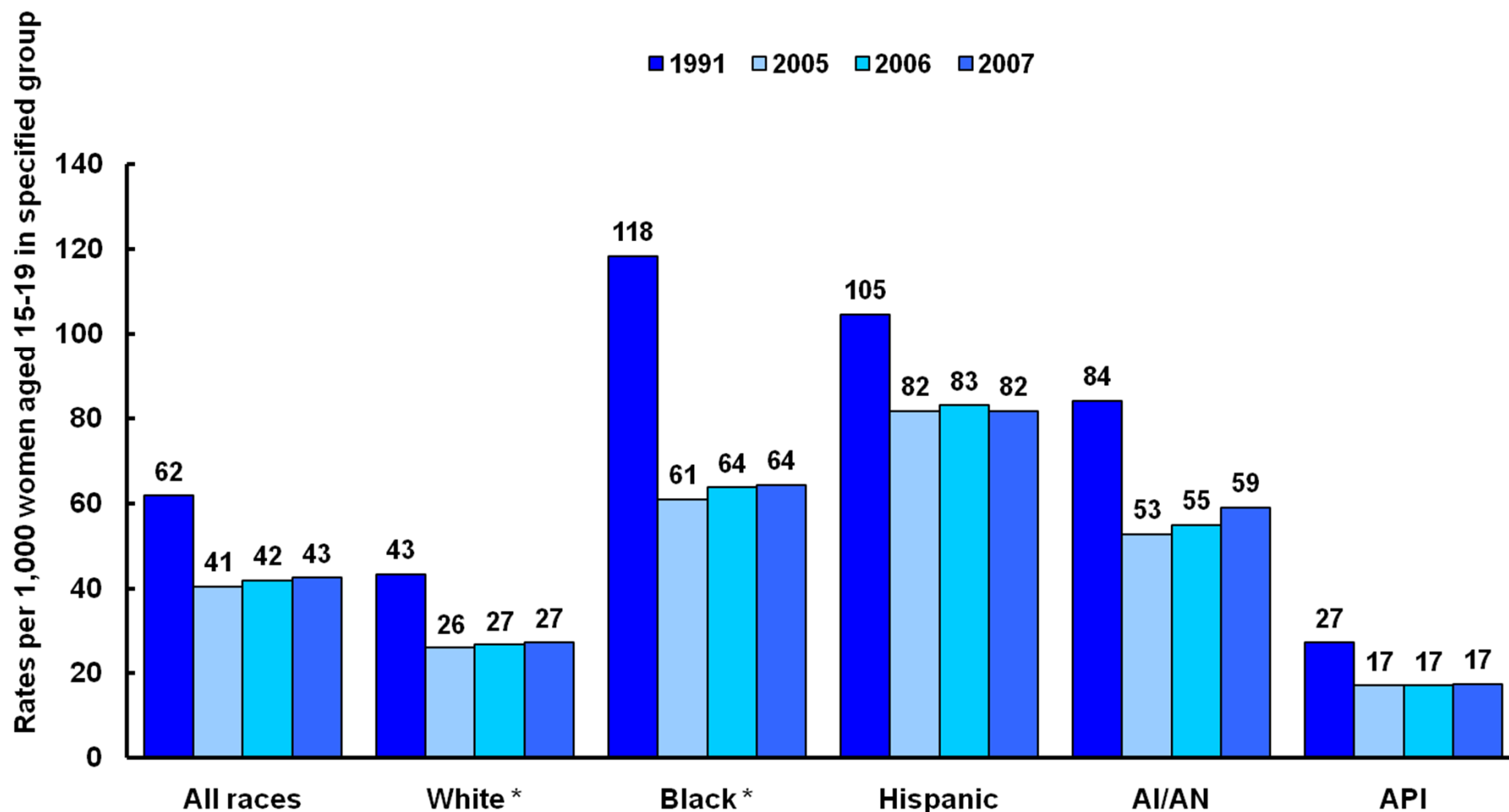
Monitor the nation's health by collecting, analyzing and disseminating health data

- Compare across time, populations, providers and geographic areas
- Identify health problems, risk factors, and disease patterns
- Inform actions and policies to improve the health of the American people

NCHS Data Systems Use These Sources ...

- Birth and death records
- Medical records in hospitals, nursing homes, emergency rooms, doctors' offices
- Interviews with staff in hospice and home care agencies
- Physical examinations and laboratory testing in mobile exam centers
- Personal interviews in the home and via phone

Birth rates for teenagers 15 - 19 years: United States 1991, 2005, 2006, and 2007



National Survey of Family Growth

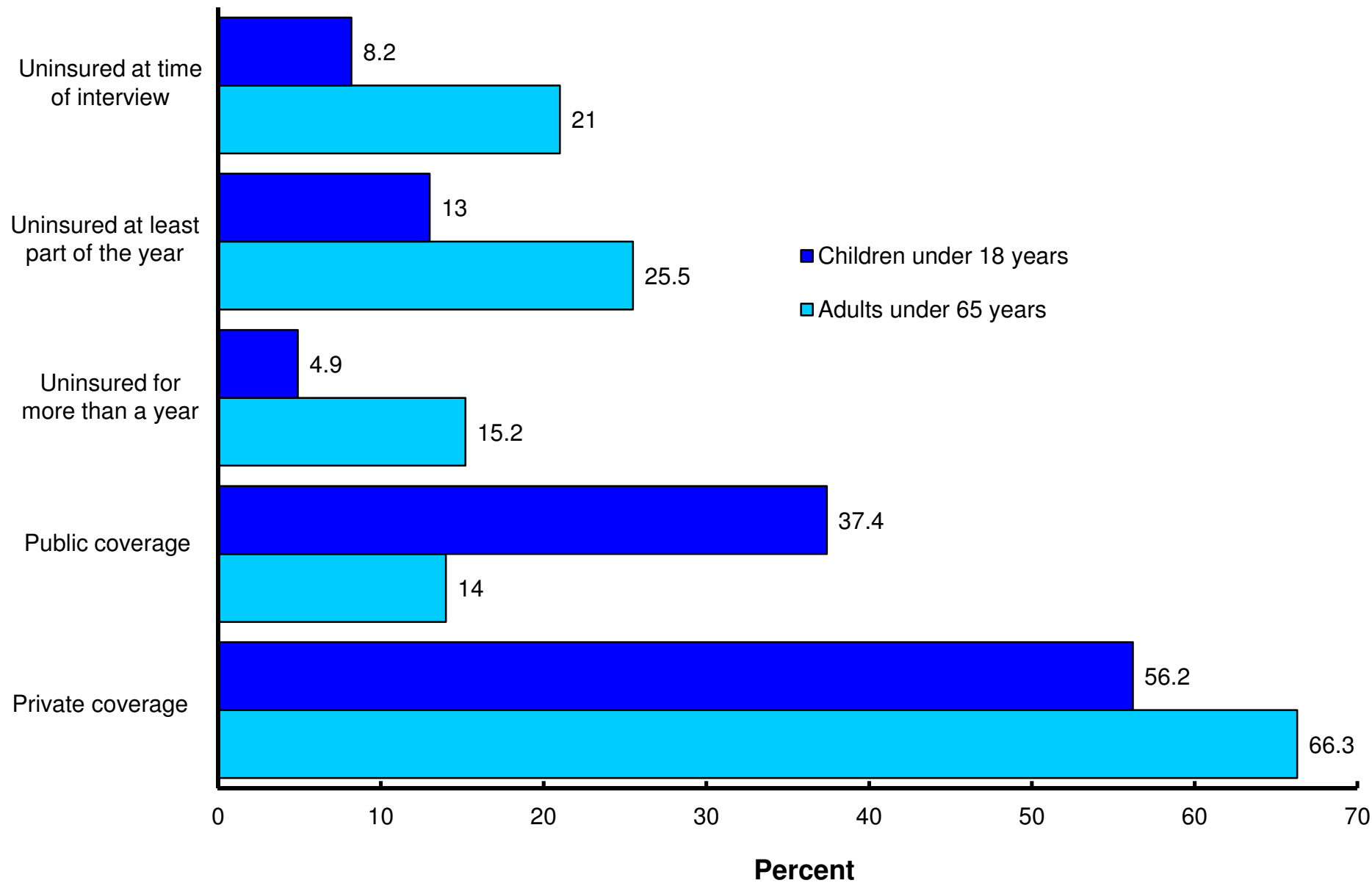
Data source and sample

- In-person interviews in the home
- Annual sample of 7,600 women and 5,000 men, representative of the civilian US population, ages 15-44

Findings

- Reproductive health
 - Fertility/infertility
 - Contraception
 - Pregnancy
 - Sexual activity
- Family formation
 - Marriage, divorce, cohabitation

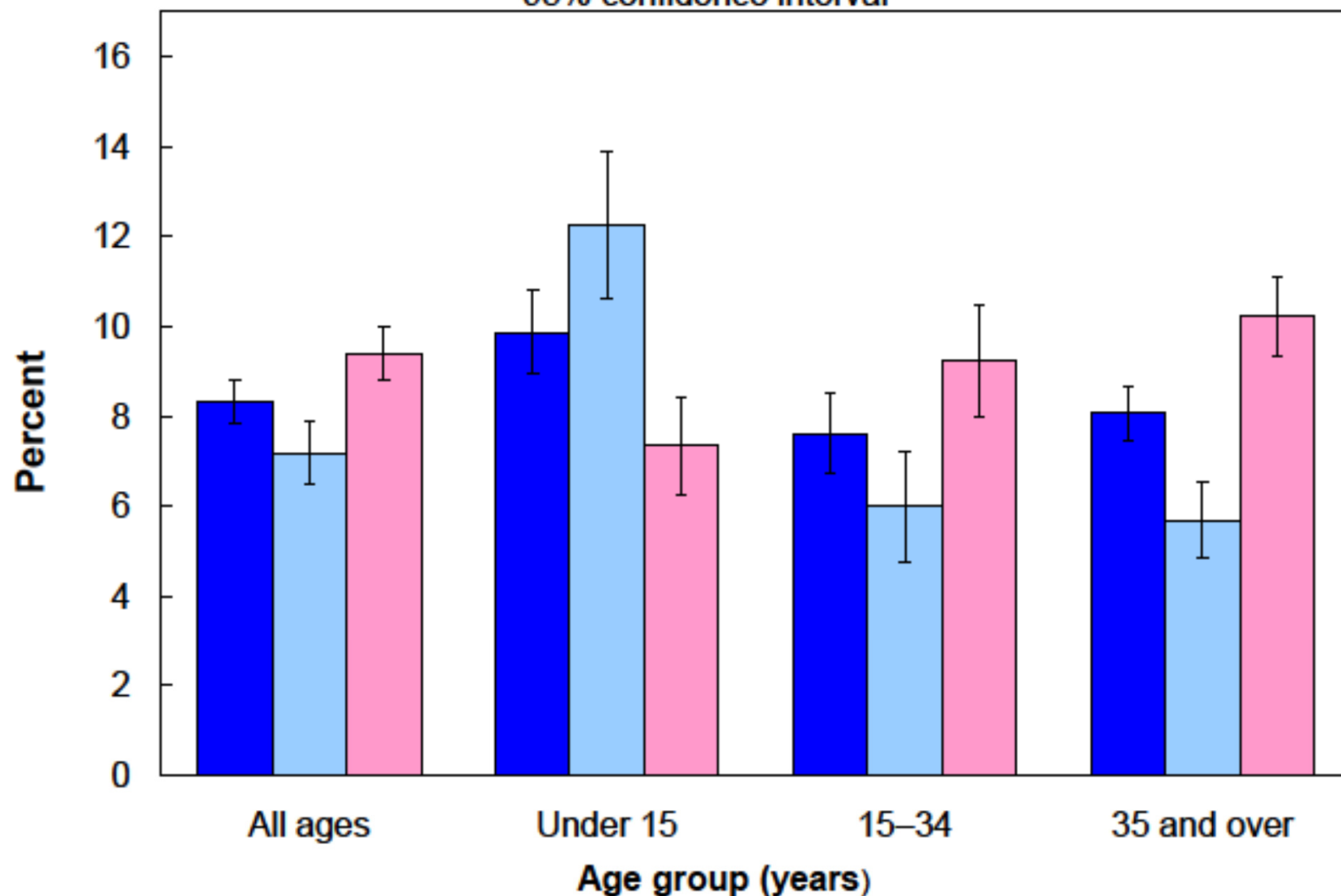
**Health Insurance coverage status among persons under 65 years of age,
January-September, 2009**



**Prevalence of current asthma among persons
of all ages, by age group and sex, Jan - Sept 2009**

■ Total □ Male □ Female

95% confidence interval



Other Health Interview Surveys

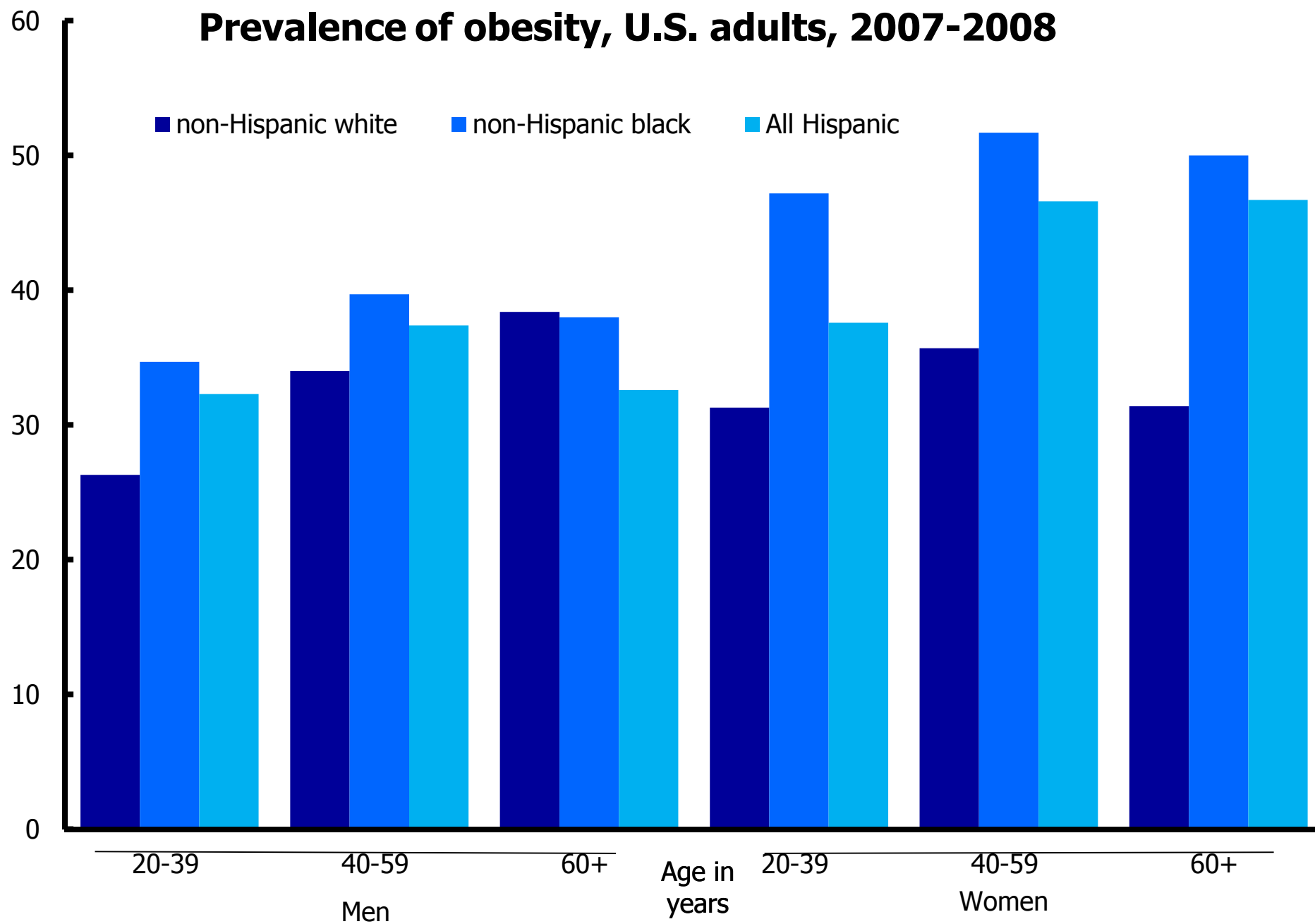
- **National Immunization Survey**
- **State and Local Area Integrated Telephone Survey (SLAITS)**

National Health and Nutrition Examination Survey

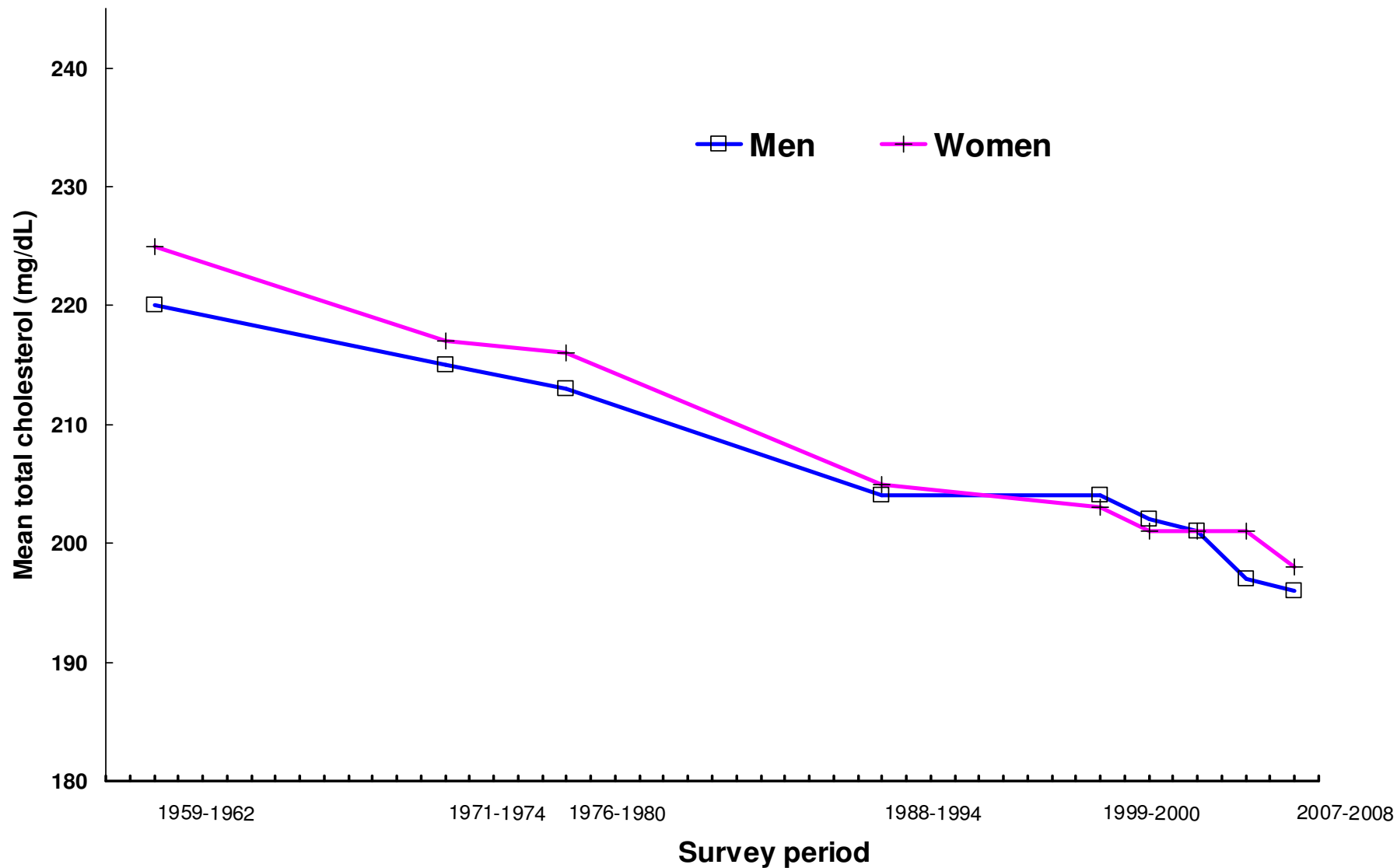
NHANES Mobile Exam Center



Prevalence of obesity, U.S. adults, 2007-2008



Average total cholesterol among Men and Women 20-74 years of age—1959-1962 to 2007-2008





**GIRLS: 2 TO 18 YEARS
PHYSICAL GROWTH
NCHS PERCENTILES**

RECORD #

DATE

AGE (YEARS)

HEIGHT (cm)

WEIGHT (kg)

SKIN FOLD THICKNESS (mm)

HAIR

TEETH

COMMENTS

DATE

AGE (YEARS)

HEIGHT (cm)

WEIGHT (kg)

SKIN FOLD THICKNESS (mm)

HAIR

TEETH

COMMENTS

DATE

AGE (YEARS)

HEIGHT (cm)

WEIGHT (kg)

SKIN FOLD THICKNESS (mm)

HAIR

TEETH

COMMENTS

DATE

AGE (YEARS)

HEIGHT (cm)

WEIGHT (kg)

SKIN FOLD THICKNESS (mm)

HAIR

TEETH

COMMENTS

**PRE-PUBERTAL BOYS FROM 2 TO 11½ YEARS
WEIGHT FOR STATURE**

Stature (cm.)

Weight (kg.)

Weight (lb.)

Stature (in.)

Weight (kg.)

Weight (lb.)

Stature (cm.)

Weight (kg.)

Weight (lb.)

Stature (in.)

Weight (kg.)

Weight (lb.)

Stature (cm.)

Weight (kg.)

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Stature (cm.)

Weight (kg.)

Weight (lb.)

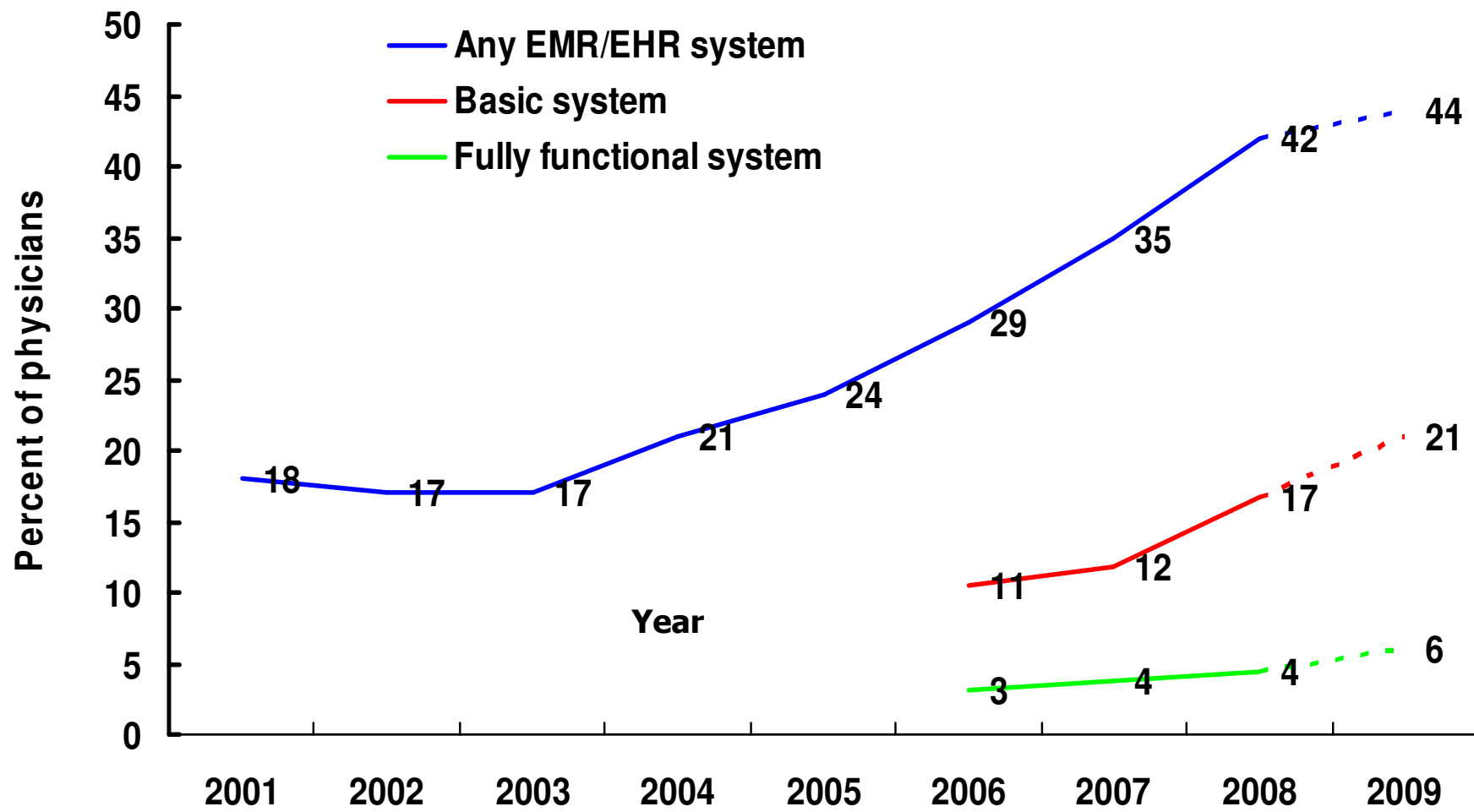
Examples of National Health Care Survey Data

- **Diagnosis**
- **Treatment and services**
- **Characteristics of patients**
- **Characteristics of health care
providers**

Examples of National Health Care Survey Data, Con't

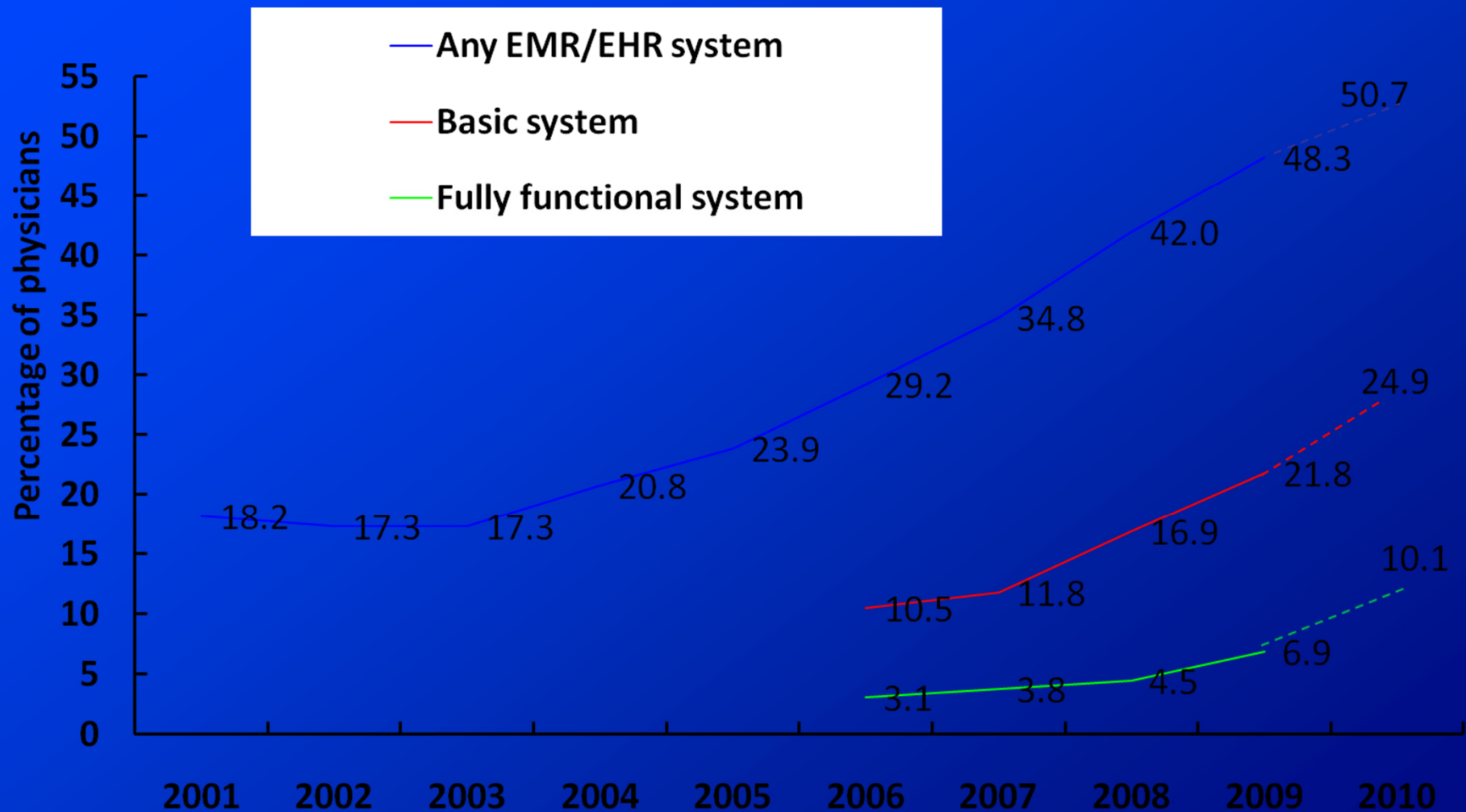
- **Patterns of disease**
- **Use of technology and drugs**
- **Emergence of alternative care sites**

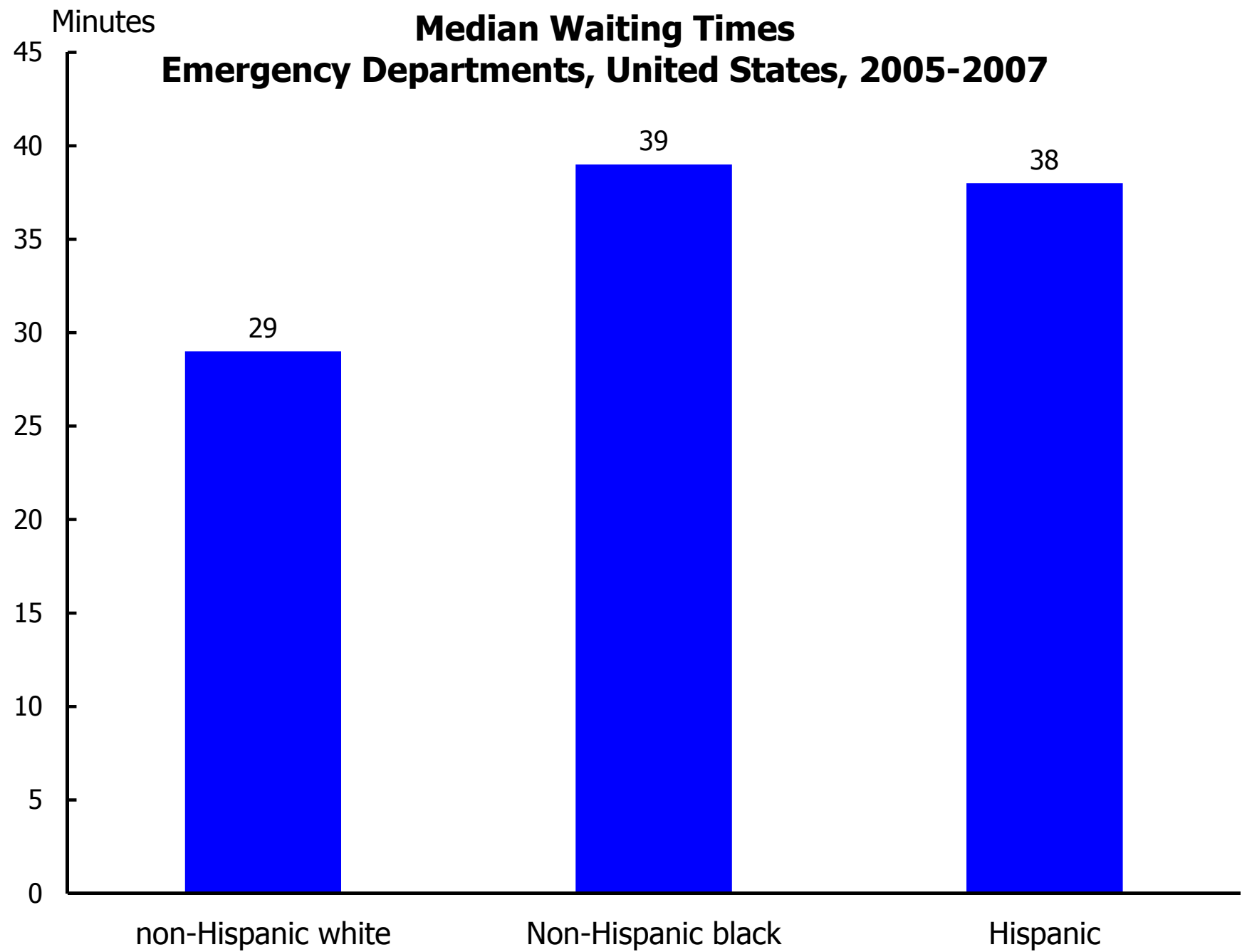
Electronic Medical Records/Electronic Health Records (EMR/EHR):
United States, 2001-2008, and preliminary 2009



Note: Dashes indicate preliminary data

Percentage of office-based physicians with electronic medical records/electronic health records (EMRs/EHRs): United States, 2001-2009 and preliminary 2010





Data Confidentiality

- **Section 308(d), Public Health Service Act**
- **Privacy Act**
- **Confidential Information Protection and Statistical Efficiency Act (P.L. 107-347)**

NCHS - RDC - Welcome to the RDC Website - Windows Internet Explorer provided by ITSO

http://www.cdc.gov/nchs/r&d/rdc.htm

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RESEARCH DATA CENTER Welcome to the RDC Website!
Confidential and Secure Access

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The NCHS Research Data Center (RDC) is in the unique position of being able to provide secure access to the full range of health and vital statistics information collected by the National Center for Health Statistics data systems, while continuing to protect the confidentiality of the respondents and records.

Our **mission** is to give wide public access to the data, while maintaining strict confidentiality, and to offer our statistical, programming, and consulting expertise to facilitate the data analysis for your research project. Please review the Guidelines for Use of the Research Data Center [PDF](#).

We provide a dataset created for you, using variables from virtually any NCHS data collection activity. For more information see the NCHS Summary Matrix [PDF](#).

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NCHS - Health Data Interactive - Windows Internet Explorer provided by ITS0

http://www.cdc.gov/nchs/hdi.htm

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Health Data Interactive

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Welcome! Health Data Interactive presents tables with national health statistics for infants, children, adolescents, adults, and older adults. Tables can be customized by age, gender, race/ethnicity, and geographic location to explore different trends and patterns.

Table Topics

Health and functional status	Mortality and life expectancy
Health care use and expenditures	Pregnancy and birth
Health conditions	Risk factors and disease prevention
Health insurance and access	

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Survey Orientation

> [Survey Overview](#)

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Tutorial Home



Jump Start Guide

Use this guide to discover key features in the tutorial and optimize your experience.
[more](#)



Objectives

Review the learning objectives for each module in the tutorial.
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Use these troubleshooting tips if you encounter problems while using the tutorial.
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cochis update - M...

Current NHANES ...



7:14 AM

Affordable Care Act Data and Measurement Provisions

- **Vital statistics**
- **Quality improvement**
- **Disparities**
- **Levels of geography**
- **Health outcomes**
- **Oral health**
- **National health indicators**

NCHS Program Changes ...

Affordable Care Act: New survey questions

- On the NHIS about **health insurance coverage**
- New questions to long-term care surveys to respond to anticipated direct care **workforce** shortages
- Assessing adoption and meaningful use of **Electronic Health Records**

Program Changes ...

Expanding sample size of our surveys to provide more data for subpopulations

- **Selected state-level estimates** from the NAMCS on primary care visits

Surveying **new provider settings** including community health centers and residential care places

NCHS Record Linkage

Purpose: To maximize the scientific value of the NCHS data (surveys and vital statistics)

- **Survey data are routinely linked to administrative records**
- **Add a longitudinal component to cross-sectional survey data**
- **Linkage enables the study of factors that influence chronic disease, disability, health care utilization, morbidity, and mortality**

NCHS Surveys Linked to Administrative Records

- **National Health Interview Survey (NHIS)**
 - **Each year since 2000**
- **NHANES:**
 - **NHANES 1999-2004**
 - **NHANES III and**
 - **NHANES II**
 - **NHANES I Epidemiologic Follow-up Study (NHEFS)**
- **The Second Longitudinal Study of Aging (LSOA II)**
- **National Nursing Home Survey (NNHS)**

Examples of Administrative Records Linked to Surveys

- National Death Index
- Medicare and Medicaid enrollment and claims
- Social Security Administration Retirement and Disability
- Pilot projects
 - Florida Cancer Data System
 - Texas Supplemental Nutrition Assistance Program (SNAP)
 - Natality data for NHANES children and infants of pregnant women
- Geographic linkage projects
 - Air quality, traffic, climate

Products - Data Briefs - Number 68 - August 2011 - Windows Internet Explorer provided by ITS0

http://www.cdc.gov/nchs/data/databriefs/db68.htm

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NCHS Data Brief

Number 68, August 2011

Childbearing Differences Among Three Generations of U.S. Women

PDF Version  (446 KB)

Sharon E. Kirmeyer, Ph.D.; and Brady E. Hamilton, Ph.D.

Key findings

- Of three generations of women born in 1910, 1935, and 1960, those born in 1935 had the most children (on average 3.0 children per woman) and those born in 1960 had the

On This Page

- Key findings
- Women born in 1935 had on average three births—the highest of the three cohorts.
- Women born in 1960 started their childbearing at an older age.
- Women born in 1935 had the highest number of children; women born in 1910 had the

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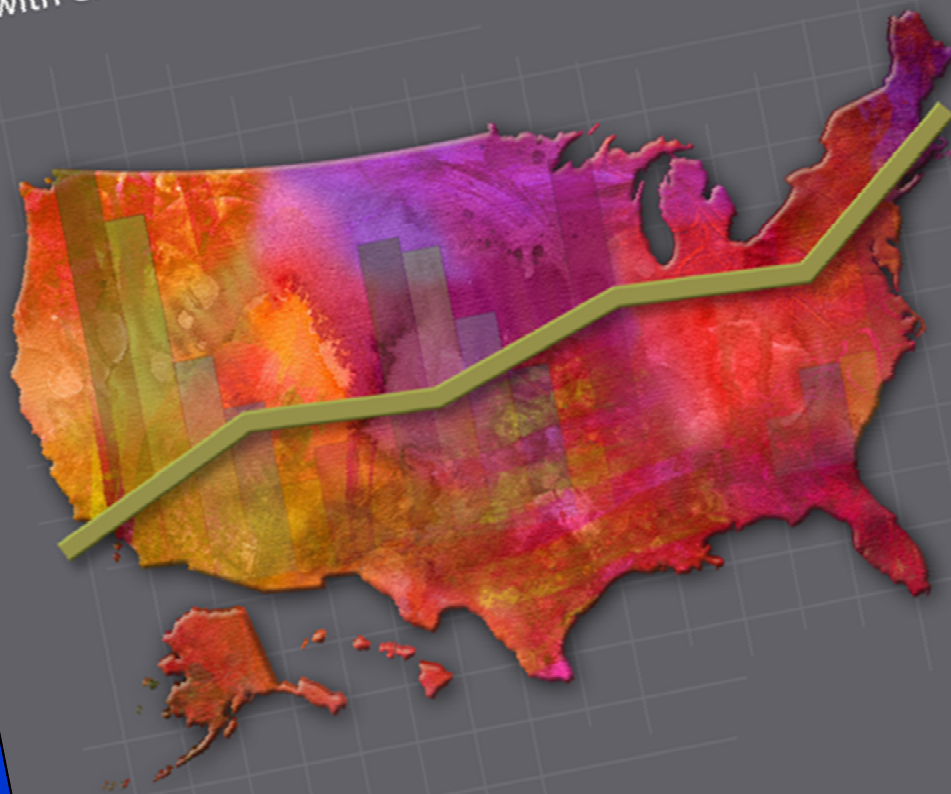
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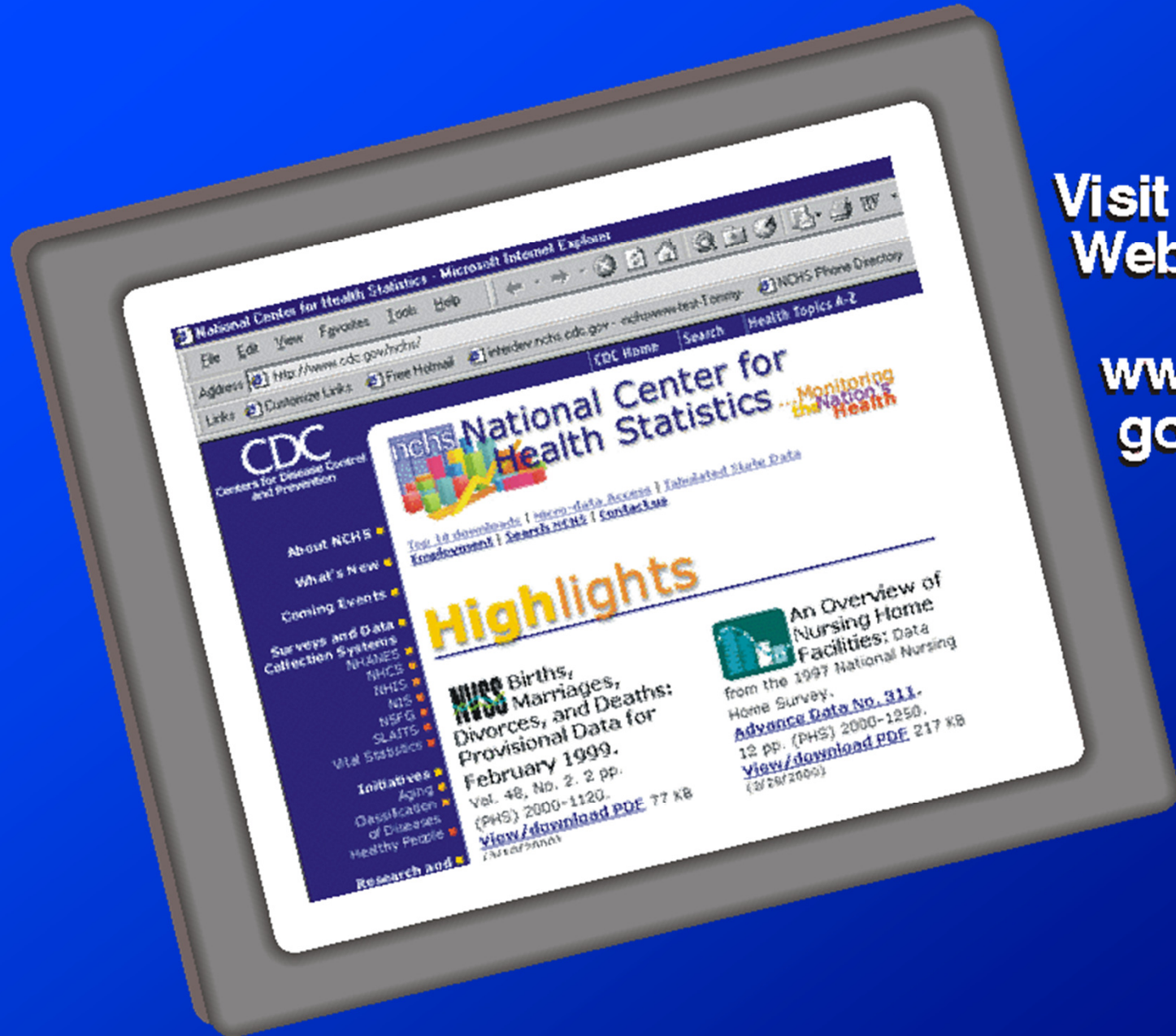
javascript:window.print(); Trusted sites 100

Health, United States, 2010

with Chartbook on Death and Dying



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics



Visit our
Web site at:

**www.cdc.
gov/nchs/**

Healthy People 2020

- **General Health Status**

- Life expectancy
- Healthy life expectancy
- Years of potential life lost
- Physically and mentally unhealthy days
- Self-assessed health status
- Limitation of activity
- Chronic disease prevalence

- .

- **Health-Related Quality of Life and Well-Being**

- Physical, mental, and social health-related quality of life
- Well-being/satisfaction
- Participation in common activities

- **Determinants of Health**

Determinants of health include, for example, biology, genetics, individual behavior, access to health services, and the environment in which people are born, live, learn, play, work, and age.

- **Disparities**

Measures of Disparities and inequity include differences in health status based on:

- Race/ethnicity
- Gender
- Physical and mental ability
- Geography

→ **Total: 42 topics areas and nearly 600 objectives -- by some counts over 1,000 objectives**

Leading Health Indicators Institute of Medicine (2010)

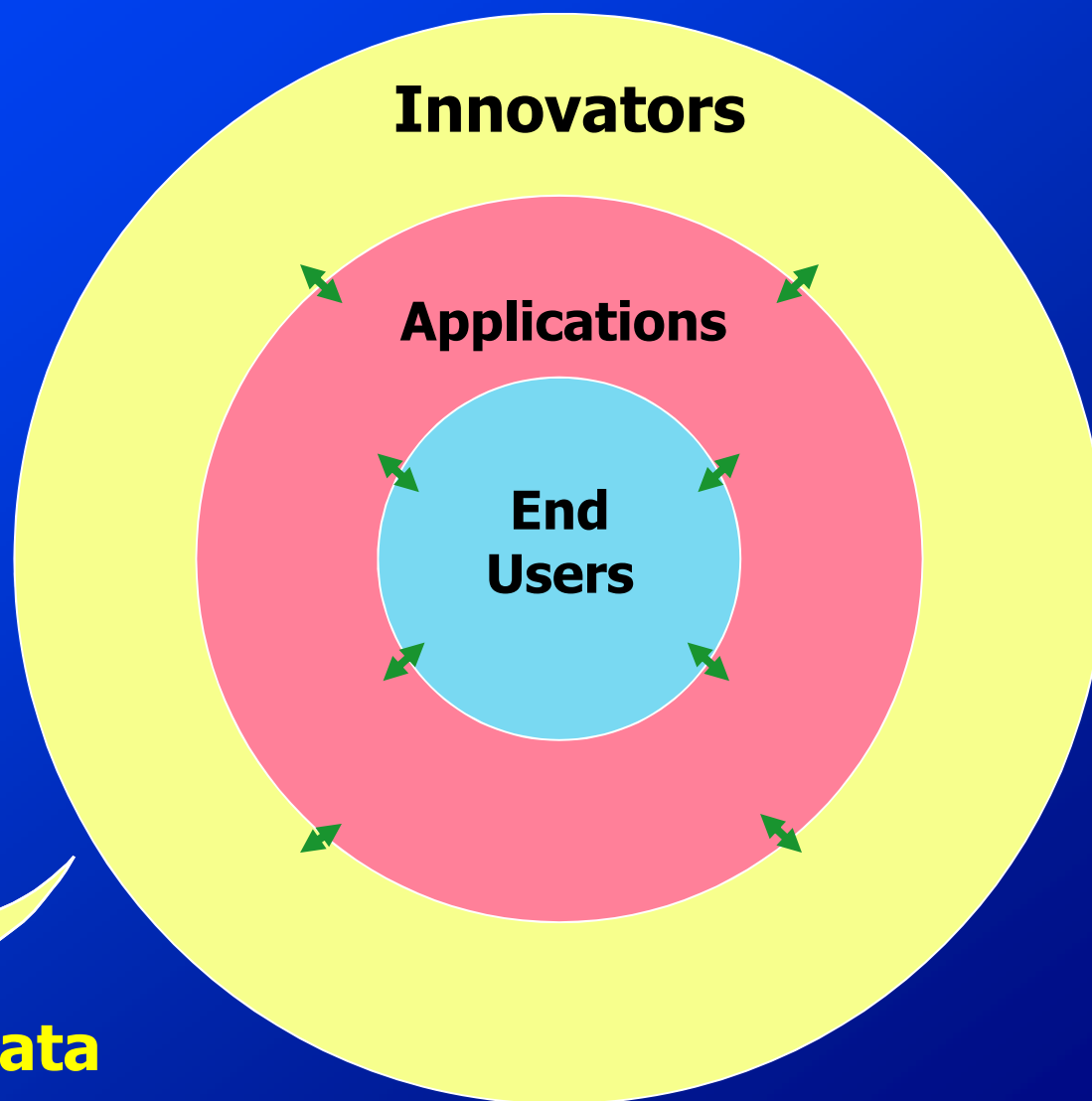
- **Access to health care services**
- **Healthy behaviors**
- **Chronic disease**
- **Healthy physical environment**
- **Healthy social environment**
- **Injury**
- **Positive mental health**
- **Healthy births**
- **Responsible sexual behavior**
- **Substance abuse**
- **Tobacco**
- **Quality health care services**

Community Health Data Initiative

Data Sources

- Health Indicators Warehouse (HIW)
- Other federal data sets
 - State and local governments
 - Private sector data suppliers
 - Others

Feedback on data





WELCOME TO THE HEALTH DATA COMMUNITY

You've found a public resource designed to bring together high-value datasets, tools, and applications using data about health and health care to support your need for better knowledge and to help you to solve problems. These datasets and tools have been gathered from agencies across the Federal government with the goal of improving health for all Americans. Check back frequently because the site will be updated as more datasets and tools become available.

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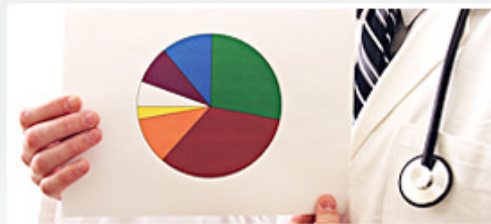


Learning about Employee Benefit Survey Data

Posted on: 4/8/2011

By: Bill Wiatrowski, Bureau of Labor Statistics
There are many hidden gems available through healthdata.gov. One such jewel, the Employee

What's New



Learn about our newest high-value datasets and APIs.

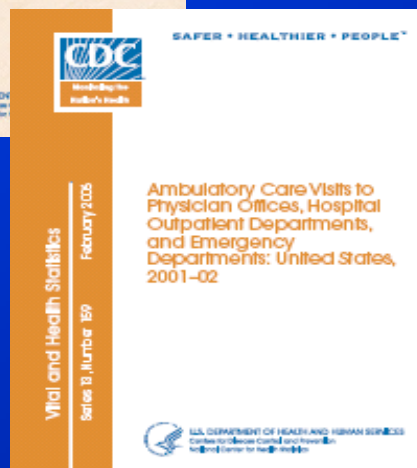
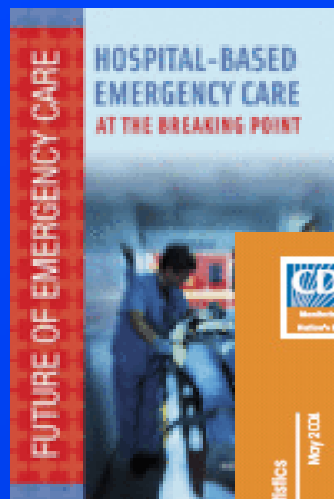
- [CDC BioSense: Tarrant County, Texas](#)
- [Medicare Prescription Drug Benefit Dashboard BETA](#)
- [DailyMed](#)

Challenges



Get inspired to create your own application using the data and tools made available through HealthData.gov. Challenges and contests where you can compete against other programmers to create great health-related applications can be found through the following links.

Sources for the IOM Study of the Future of Emergency Care: NCHS Surveys on Ambulatory Care



PFIZER FACTS

A Profile of Uninsured Persons in the United States



PFIZER FACTS

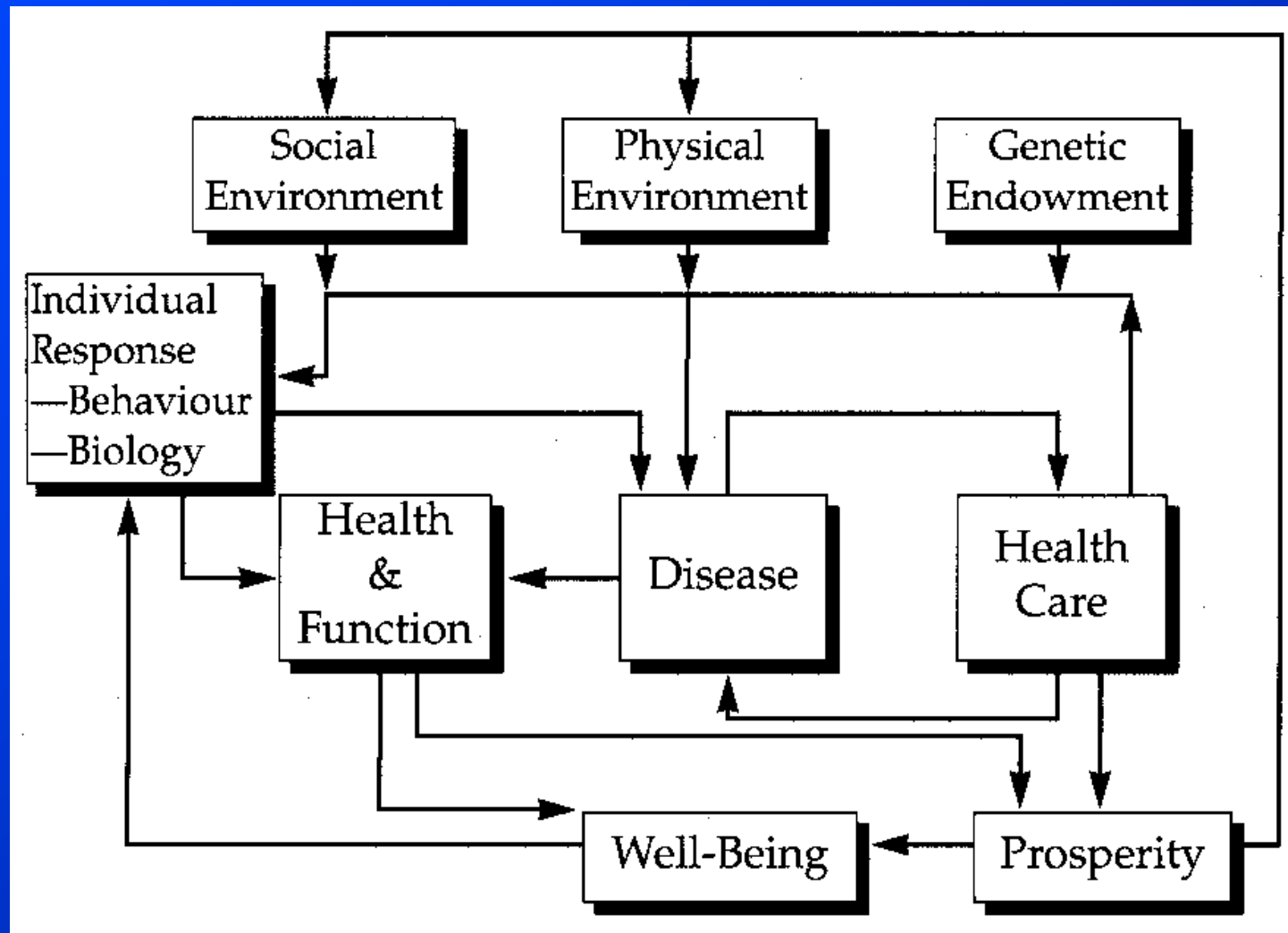
The Burden of Pain Among Adults in the United States

Findings from the National Health and Nutrition Examination Survey, the National Health Care Surveys, and the National Health Interview Survey



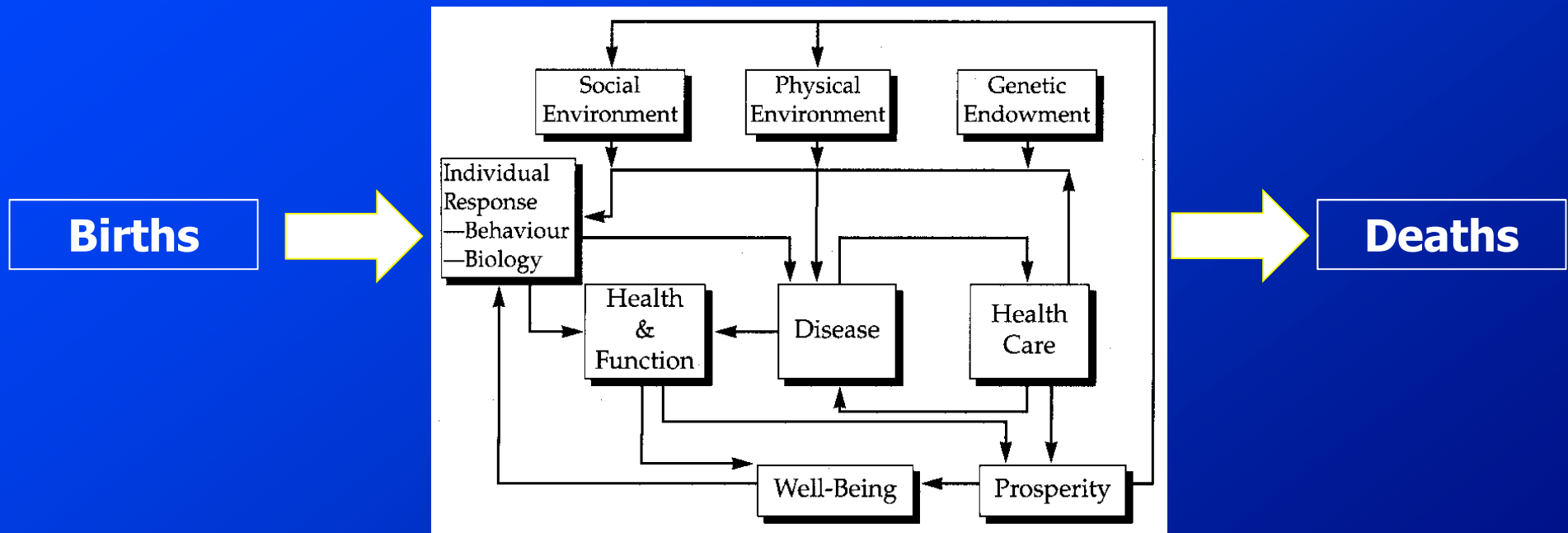
A Dynamic Model of Health Status

--from Evans and Stoddart



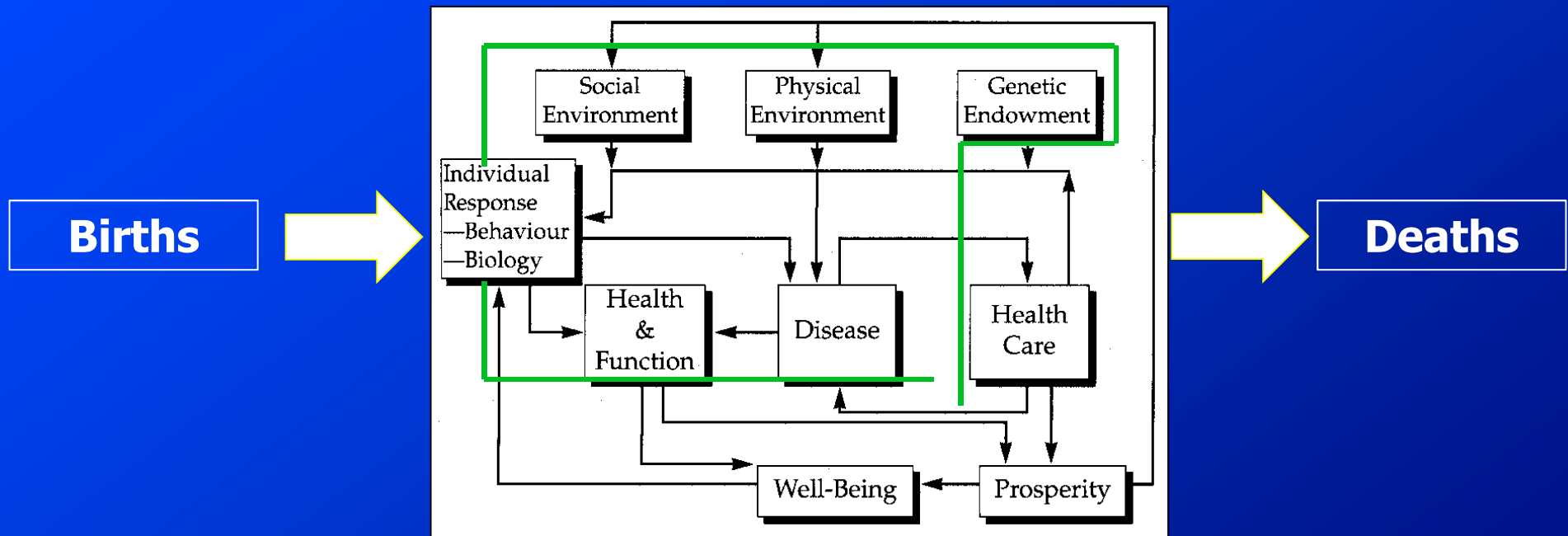
A Dynamic Model of Health Status

--from Evans and Stoddart



A Dynamic Model of Health Status

--from Evans and Stoddart



Meeting the New Initiatives

- **Health Insurance**
- **Prevention**
- **Electronic Records**
- **Insurance questions on coverage, exchanges**

Meeting the New Initiatives

Initiative	Representative Measures
• Health Insurance	<ul style="list-style-type: none"> • Questions on coverage, exchanges • Expansion to Selected States
• Prevention	<ul style="list-style-type: none"> • Longitudinal tracking on ambulatory cardiovascular prevention • Expansion to Selected States <div>Initiative Representative Measures</div> <ul style="list-style-type: none"> • • Health Insurance • • • Questions on coverage, exchanges • • Expansion to Selected States • • Prevention • • • Longitudinal tracking on ambulatory cardiovascular prevention • • Expansion to Selected States • • Electronic Records • • Physician surveys
• Electronic Records	Physician surveys

Four Major Data Systems

- **National Vital Statistics System and surveys**
- **National Health Interview Survey**
- **National Health and Nutrition Examination Survey**
- **National Health Care Surveys**

National Vital Statistics System

- **Birth and death records**
 - **National Vital Statistics System Cooperative Program—partnership with registration areas (State and Territories)**
 - **Information at the State and local level**

National Health Care Surveys

- **Hospital Discharge Survey**
- **Ambulatory Care Survey**
- **Hospital Ambulatory Care Survey**
- **Nursing Home Survey**
- **Home and Hospice Survey**
- **Residential Care Survey**

Examples of Critical Measures

- Vital Statistics
- Longevity

Examples of Critical Measures

- Health Status
- Insurance

Examples of Critical Measures

- **Health Status**
- **Control of Blood Pressure**

Examples of Critical Measures

- Health Care
- ?????? (Waiting times?)
- Community Health Centers
- 3 47 Primary Care sites