Finding and Using Health Statistics

NLM Tools: From Research to Presentation
Seminars in Health Services Research Methods

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Department of Health and Human Services

Acknowledgements

This presentation is based on **Finding and Using Health Statistics**, a course prepared by Dan Melnick, Ph.D. under the sponsorship of the National Library of Medicine.

The original course is available on the NICHSR Web Site at :

http://www.nlm.nih.gov/nichsr/usestats/index.htm

Statistical Information on the Web

- Provides for up-to-date data from federal and nonfederal health statistical sources.
- Provides data to use with spread sheet or statistical software.
- Provides the Web data to build your own statistical tables.

The Internet is a tool, NOT the complete answer

- Provides a variety of information in a variety of formats.
  - Summaries and secondary material
  - Full reports with tables
  - Digital versions of data
  - Full data sets
- Allows you to create your own tables.
- Is organized by a variety of Webmasters.

Finding Data on the Web

- Portals – tables of contents that show users where to go.
- Search engines - look for key words.
- Full documentation is not always included and is often difficult to interpret.

What are Internet Portals?

- Linked tables of contents that provide starting points for a search.
- Key word searches within portals are much more effective.
- Need to know what you are looking for and where it is likely to be found.

Health Statistics Portals

National Center for Health Statistics [NCHS] – Government Portal

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

Statistical Resources on the Web – University of Michigan

http://www.lib.umich.edu/govdocs/stats.html

Health Data – Why?

- Measure quality of life indicators for society.
- Provide comparisons for clinical studies.
- Assess costs of health care.
- Identify needed prevention targets.

The Context of Health Statistics

- **Consider how perspective and bias effect outcomes.**
  - What data is collected.
  - How it is collected.
  - How it is reported.

Key Features of Health Statistics

- Population based.
- Data collected and analyzed over time.
- Geographic coverage and comparisons.
- Focuses on variation over time, space and social groups.

Classification of Health Statistics
The 4 "C"s

- Correlates — factors that shape health of the population.
- Conditions — tracking disease and wellness.
- Care — data relating to physicians, hospitals, and other health care providers.
- Consequences — costs of illness and the effect on the healthcare infrastructure and on society.

Health Correlates

- Life Style and Risk Factors
  - Substance abuse
  - Tobacco use
  - Exercise
- The environment –exposure to toxic substances

Health Correlates

CDC Home | Search | Health Topics A-Z

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MMWR

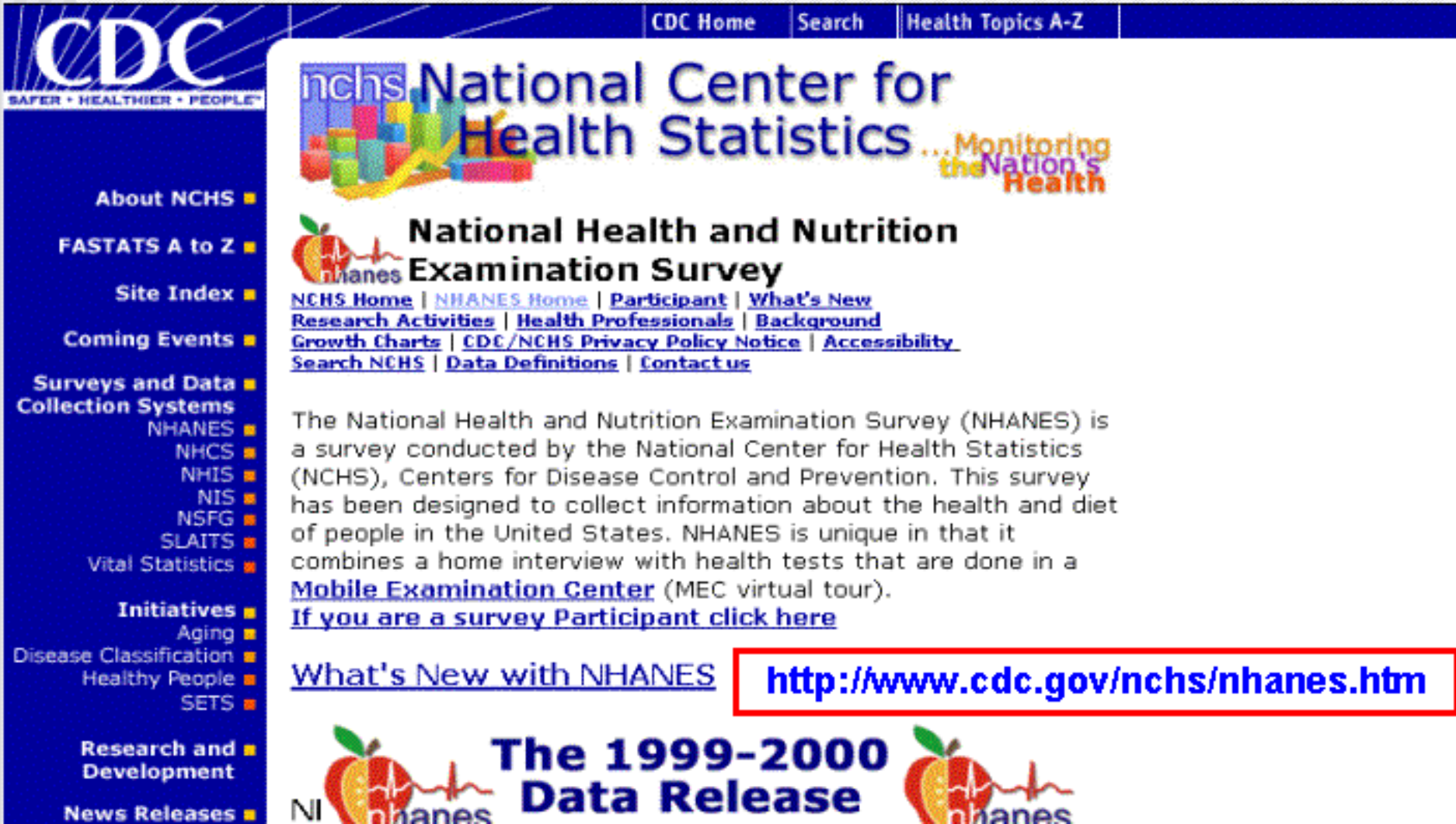
Weekly

December 22, 2000 / 49(50);1133-7

Blood Lead Levels in Young Children ---United States and Selected States, 1996--1999

Lead exposure adversely affects the cognitive development and behavior of young children (*1*). For children aged <6 years, CDC has defined an elevated blood lead level (BLL) as >10 µg/dL, but evidence exists for subtle effects at lower levels (*2*). Data from CDC's Third National Health and Nutrition Examination Survey, Phase 2 (1991--1994) (NHANES) showed that average BLLs in children had decreased approximately 80% since the late 1970s but that elevated BLLs remained more common among low-income children, urban children, and those living in older housing (*3,4*). Although these data provide national estimates of the prevalence of elevated BLLs among children, they do not provide information at the state or local level. To target prevention efforts and monitor progress toward reducing BLLs at the state and local level, CDC's Childhood Blood Lead Surveillance (CBLS) program supports state blood lead surveillance programs on the basis of blood lead tests from public and private clinical laboratories. This report summarizes data on BLLs in children aged 1--5 years from NHANES data collected in 1999 and children aged <6 years from state surveillance data provided to CDC by 19 state surveillance programs during 1996--1998. The findings indicate that, despite the decreases in mean BLL among children, the problem

Source for Original Data

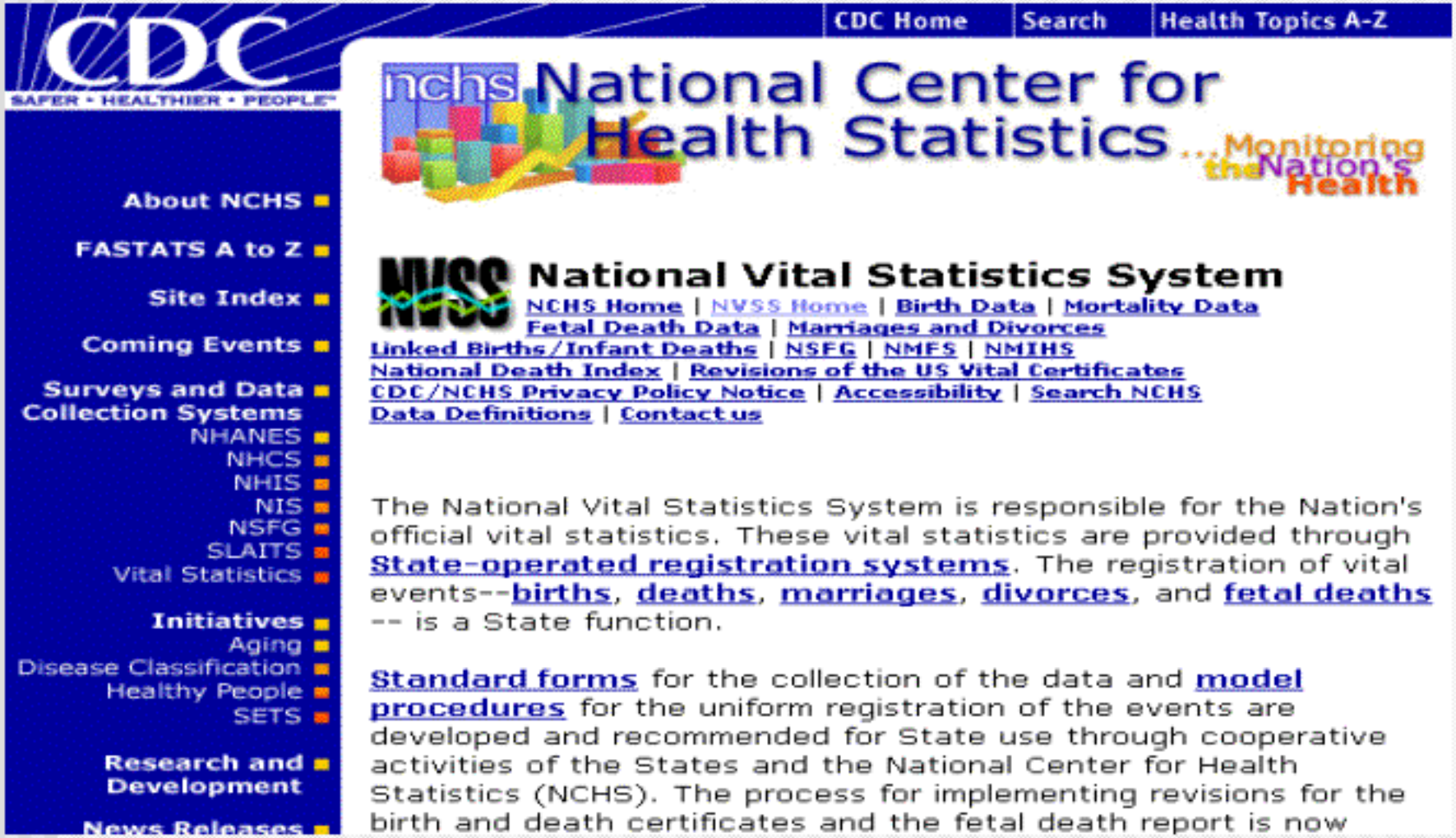


Health Conditions Indicators

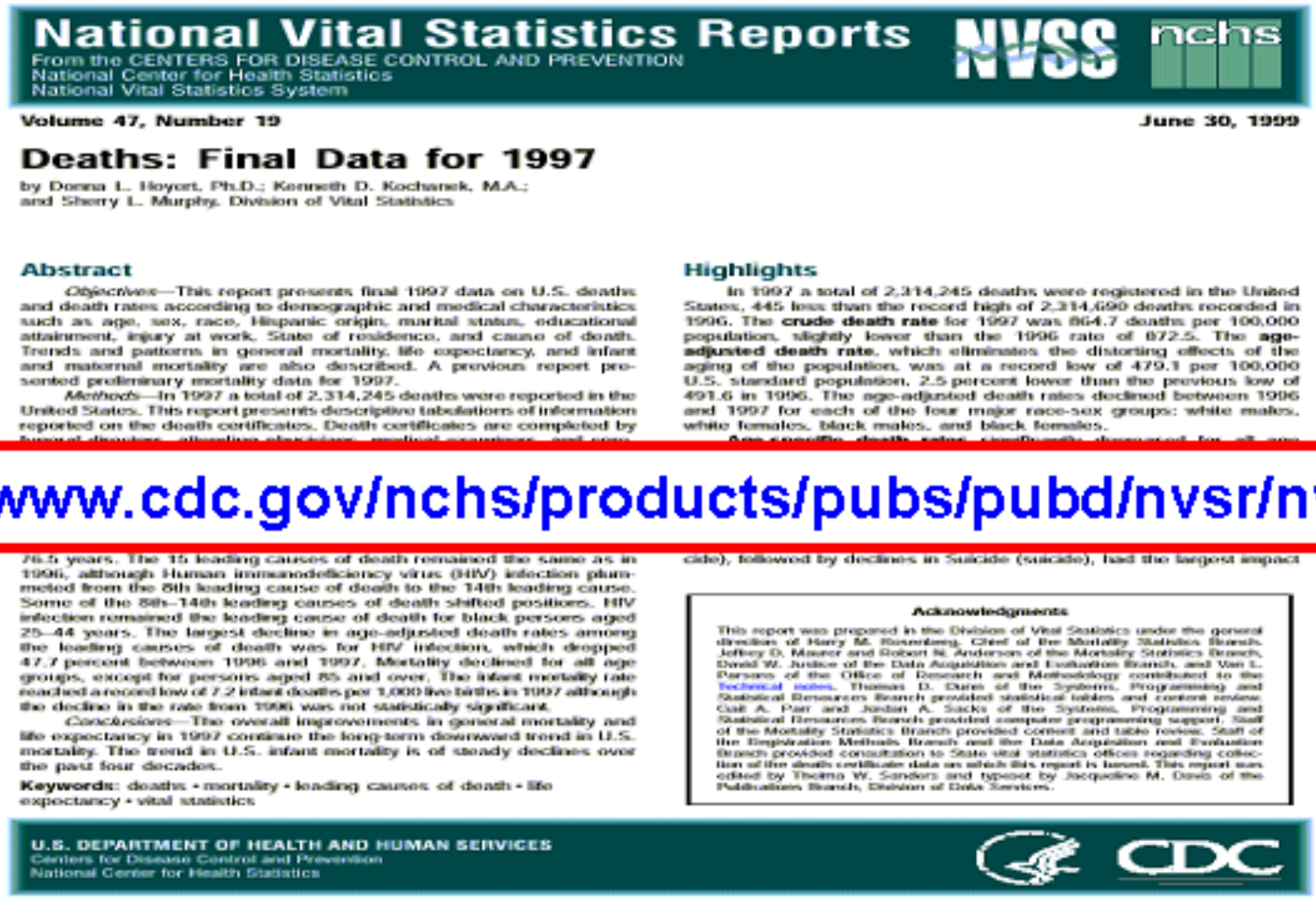
- Mortality – cause of death data based on death certificates.
- Morbidity – information about illnesses based on surveys and reports of outbreaks.
- Wellness – more difficult to measure - no comparable, generally accepted set of regularly reported indicators.

Health Conditions Data

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



Full Report Based on Data Collected



National Vital Statistics Reports
From the CENTERS FOR DISEASE CONTROL AND PREVENTION
National Center for Health Statistics
National Vital Statistics System

NVSS nchs

Volume 47, Number 19 June 30, 1999

Deaths: Final Data for 1997

by Donna L. Hoyert, Ph.D.; Kenneth D. Kochanek, M.A.;
and Sherry L. Murphy, Division of Vital Statistics

Abstract

Objectives—This report presents final 1997 data on U.S. deaths and death rates according to demographic and medical characteristics such as age, sex, race, Hispanic origin, marital status, educational attainment, injury at work, State of residence, and cause of death. Trends and patterns in general mortality, life expectancy, and infant and maternal mortality are also described. A previous report presented preliminary mortality data for 1997.

Methods—In 1997 a total of 2,314,245 deaths were reported in the United States. This report presents descriptive tabulations of information reported on the death certificates. Death certificates are completed by

7th–8th years. The 10 leading causes of death remained the same as in 1996, although Human immunodeficiency virus (HIV) infection plummeted from the 8th leading cause of death to the 14th leading cause. Some of the 8th–14th leading causes of death shifted positions. HIV infection remained the leading cause of death for black persons aged 25–44 years. The largest decline in age-adjusted death rates among the leading causes of death was for HIV infection, which dropped 47.7 percent between 1996 and 1997. Mortality declined for all age groups, except for persons aged 85 and over. The infant mortality rate reached a record low of 7.2 infant deaths per 1,000 live births in 1997 although the decline in the rate from 1996 was not statistically significant.

Conclusions—The overall improvements in general mortality and life expectancy in 1997 continue the long-term downward trend in U.S. mortality. The trend in U.S. infant mortality is of steady declines over the past four decades.

Keywords: deaths • mortality • leading causes of death • life expectancy • vital statistics

Highlights

In 1997 a total of 2,314,245 deaths were registered in the United States, 445 less than the record high of 2,314,690 deaths recorded in 1996. The **crude death rate** for 1997 was 864.7 deaths per 100,000 population, slightly lower than the 1996 rate of 872.5. The **age-adjusted death rate**, which eliminates the distorting effects of the aging of the population, was at a record low of 479.1 per 100,000 U.S. standard population, 2.5 percent lower than the previous low of 491.6 in 1996. The age-adjusted death rates declined between 1996 and 1997 for each of the four major race-sex groups: white males, white females, black males, and black females.

cide), followed by declines in Suicide (suicide), had the largest impact

Acknowledgments

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

CDC

http://hwww.cdc.gov/nchs/products/pubs/pubd/nvsr/nvsr.htm

Health Care Data - Examples

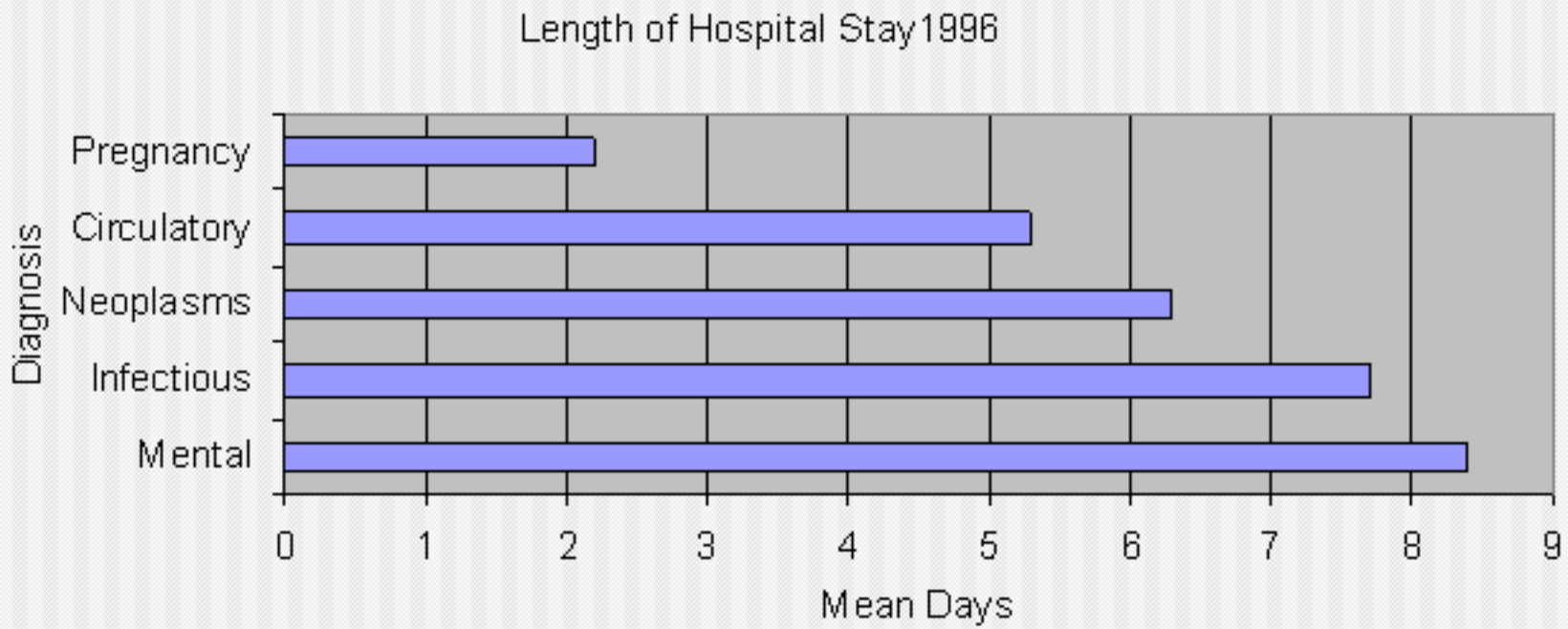
- Hospital discharges
- Ambulatory service
- Cost benefit analysis
- Amount of care by diagnosis and procedure
- Surveys of hospitals, physicians, and nursing homes

HCUP- Healthcare Cost and Utilization Project

http://ahrq.gov/data/hcup/

- Provides a family of health care databases and related software tools.
- Brings together data collection efforts of states, hospitals, private organizations, and the Federal government.
- Includes the largest collection of longitudinal hospital care data in the U.S.

Utilization of HCUP Data



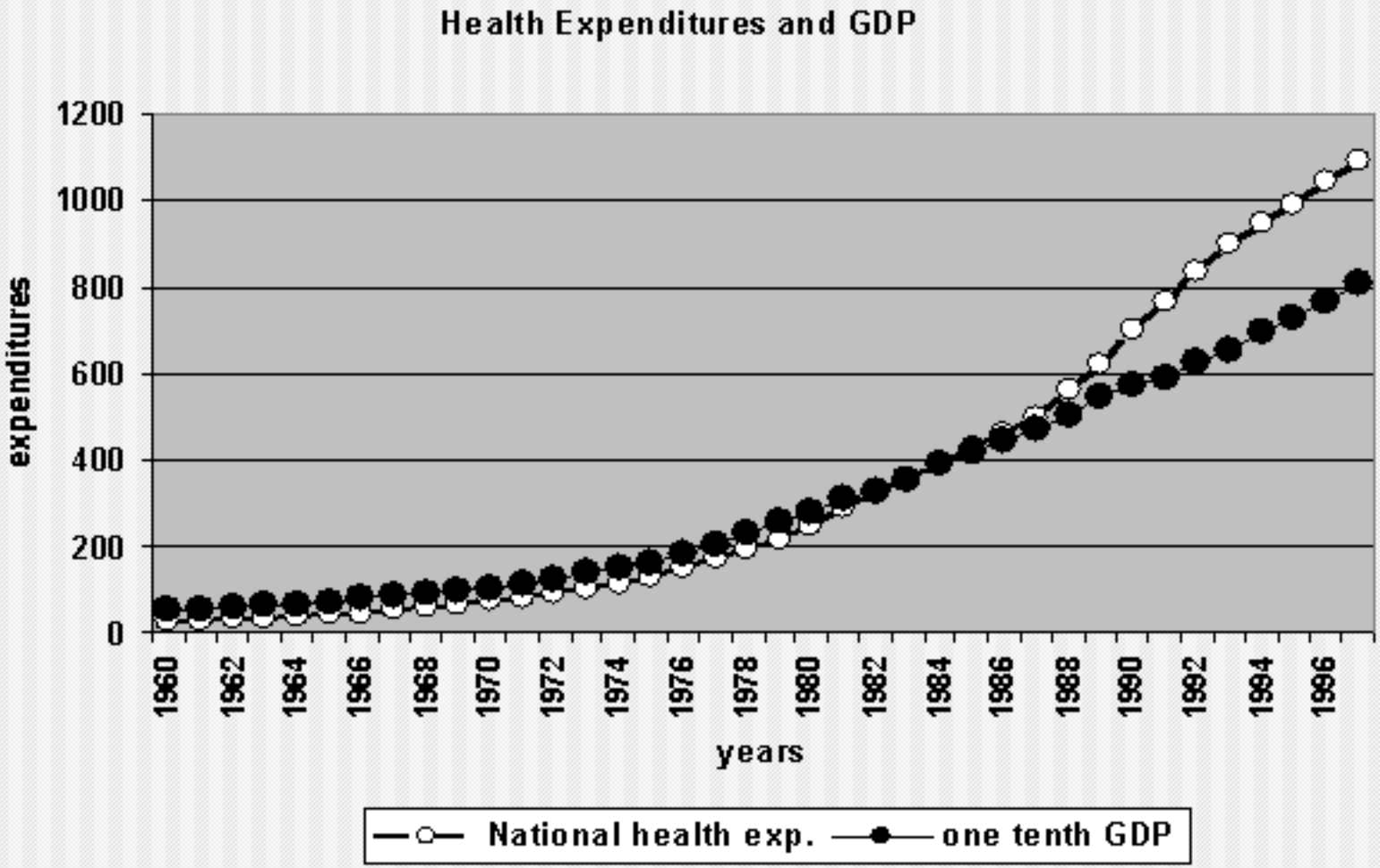
Health Consequences

Health care costs

- Impact on society, individuals and the entire healthcare infrastructure.

Health Consequences

Cost to Society



Data Sources

State and Local Data

- Some state and local data can be found in federal sources.
- Each state has its own system for reporting data.

MASSCHIP

Massachusettes Community Health Information Profile

http://masschip.state.ma.us/

- Provides health statistics for the entire state, as well as cities and communities within the state.
- Allows you to use data to create predefined or custom reports.
- Provides free access to the site but requires registration.

Finding International Data

- **United Nations**

http://unstats.un.org/unsd/

- **World Health Organization**

http://www3.who.int/whosis/menu.cfm

- **PanAmerican Health Organization (PAHO)**

http://www.paho.org/

Hospital and Healthcare Data Sources

- National Hospital Discharge and Ambulatory Surgery Data

http://www.cdc.gov/nchs/about/major/hdasd/listpubs.htm

- Medical Expenditure Panel Survey [MEPS]

http://ahrq.gov/data/mepsix.htm

- HCUP

http://ahrq.gov/data/hcup/

- Center for Mental Health Services [CMHS]

http://www.mentalhealth.org/cmhs/MentalHealthStatistics/

Other Federal Data Sources

- **Bureau of Transportation Statistics**

http://www.transtats.bts.gov/

- **Census Bureau – Disability Data**

http://www.census.gov/hhes/www/disability.html

- **Bureau of Labor Statistics**

http://www.bls.gov/

Using the Data
Building Report and Tables

- Federal Electronic Research and Review Extraction Tool [FERRET]

http://ferret.bls.census.gov/

- DataWeb – "a pot luck supper for data". An infrastructure of software and systems for accessing data on the Internet. Uses Ferret as its browser.

http://www.thedataweb.org/

Using the Data

- HCUPnet - A tool for identifying, tracking, analyzing, and comparing statistics on hospitals at the national, regional, and state level. http://ahrq.gov/data/hcup/hcupnet.htm

- Injury Maps - An interactive mapping system that allows you to create county-level and state-level maps of age-adjusted mortality rates for the entire U.S.and for individual states.

http://www.cdc.gov/ncipc/maps/default.htm

Building Your Own Tables

- **WISQARS** (Web-based Injury Statistics Query and Reporting System) - An interactive database system that provides customized reports of injury related data.

http://www.cdc.gov/ncipc/wisqars/

- **Data Warehouse on Trends in Health and Aging** - using the Beyond 20/20 browser.

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

More Resources!

We have listed some of the federal data sets and statistical resources available on the Internet. For a more complete list go to the NICHSR site.

Data Sets

http://www.nlm.nih.gov/nichsr/hsrsites.html#dsds

Health Statistics

http://www.nlm.nih.gov/nichsr/hsrsites.html#ephs