Measuring Health

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Learning Objectives

- Define health and diseases
- Discuss measurement of disease and health
- Discuss issues regarding comparisons

Competencies To be Addressed

- **Analysis and Assessment**
- Policy Development and Program Planning
- **Communication**
- Cultural Competency
- Community Dimensions for Practice
- **Basic Public Health Sciences**
- Financial Planning and Management
- Leadership and Systems Thinking

Why Measuring Health?

- Identify the major health problems confronting society.
- Contribute to the process of setting policy goals.
- Monitor the effectiveness of medical and health care.

What Is Health?

Health is the absence of negative biological circumstances (altered DNA, abnormal physiological states, abnormal anatomy, disease, disability, or death).

Who Is the Healthiest One?

What Is Health?

Definition of health is likely to reflect the ideology and culture of the most powerful groups in society.

What Is Health?

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

WHO, 1946

Health and Disease

Disease is a physical and/or psychological dysfunction.

A person can have a disease or injury and still be healthy or at least feel well.

What Is Health?

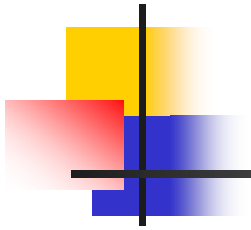
Health is ... seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources as well as physical capacities.

WHO, 1986

Commonly Used Measures

- Reflect disease and death, rather than health itself.
- Mortality as a proxy for health is widely used, and perhaps one of the most reliable health indicators

Two Building Blocks of Epidemiological Measurement



- **Incidence**: measure the risk of diseases
- **Prevalence**: Measure the burden of diseases

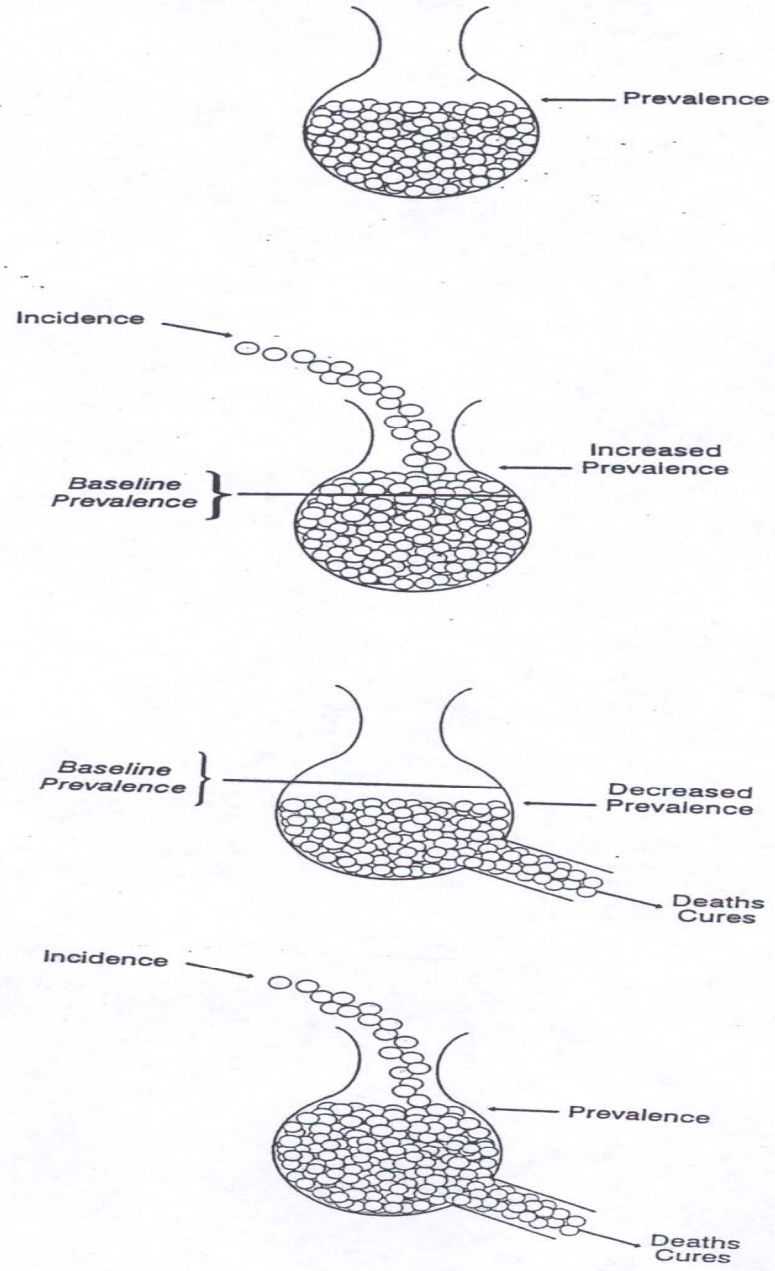
Incidence Rate

$$\text{Incidence} = \frac{\#\text{ of new cases in a period of time}}{\text{Population at risk}}$$

Prevalence Rate

$$\text{Prevalence} = \frac{\#\text{ of existing cases (old + new) in a period of time}}{\text{Population at risk}}$$

Relationship between Incidence and Prevalence



Test Your Knowledge…

- What disease has a high incidence and low prevalence?
- What conditions have a high prevalence and low incidence?
- What condition has low incidence and low prevalence?
- What condition has high incidence and high prevalence?

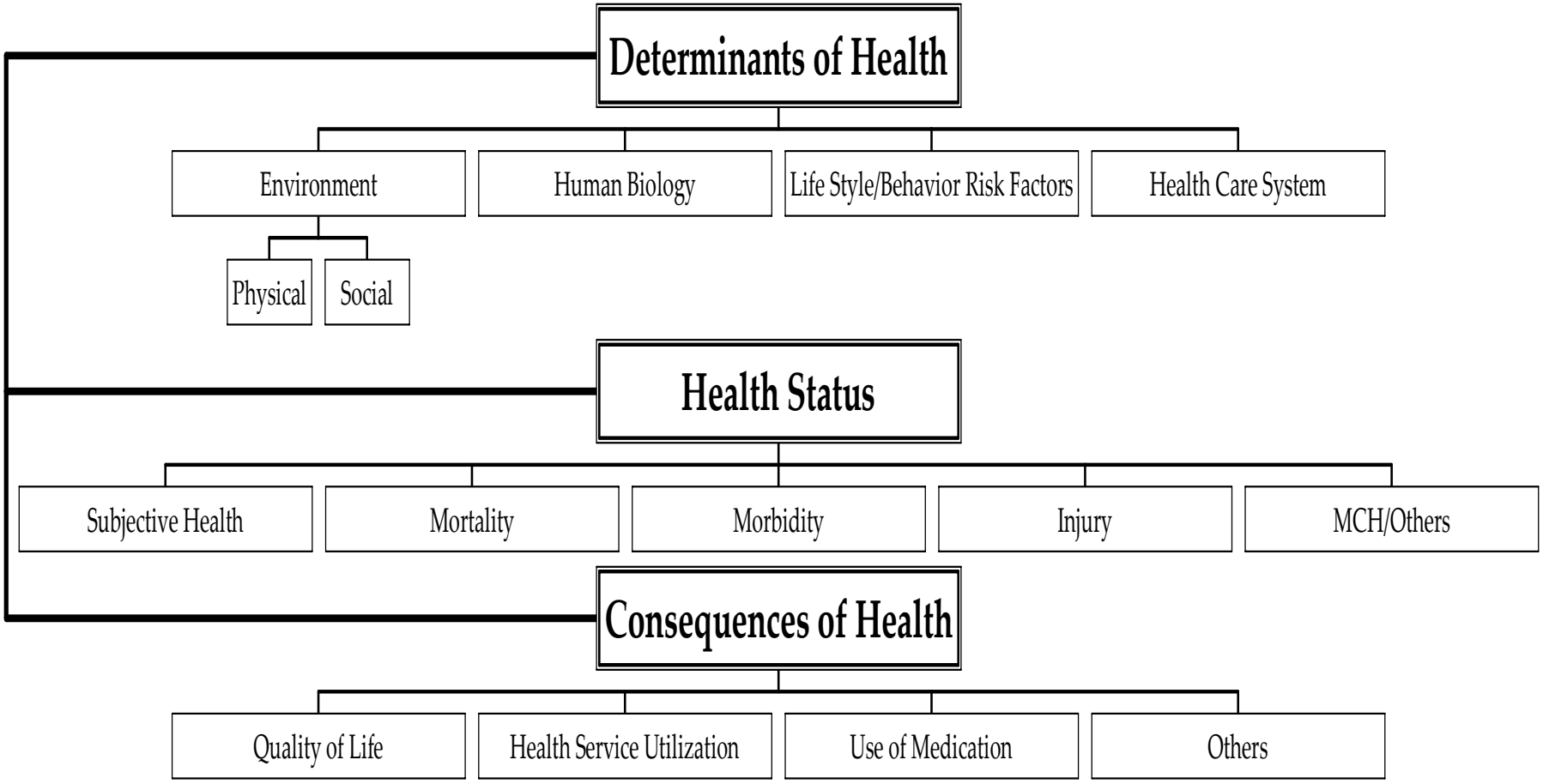
How To Measure Health?

- Mortality-based measures
  - Crude mortality
  - Age-specific mortality
  - Age adjusted mortality
  - Leading causes of deaths
  - Life expectancy
  - Years of potential life lost (YPLL)

How To Measure Health?

- Morbidity and injury
- Risk behavioral factors
- Social and cultural influence
- Genetic factors

Health Model



Issues Regarding Comparisons

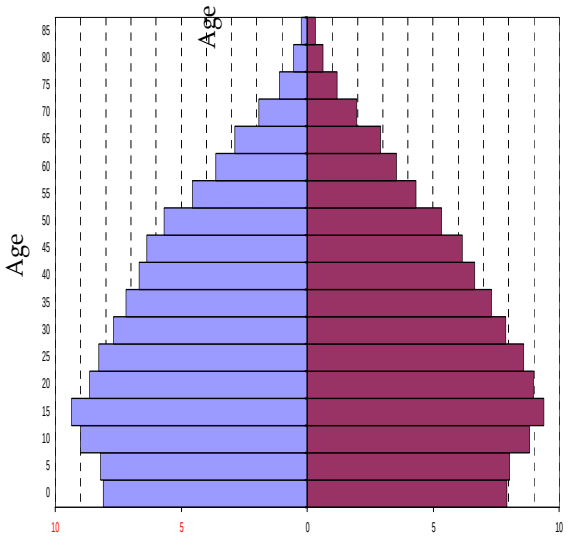
The central tools of epidemiology are the measurement and comparison of rate of health related events in group of people.

Issues Regarding Comparisons

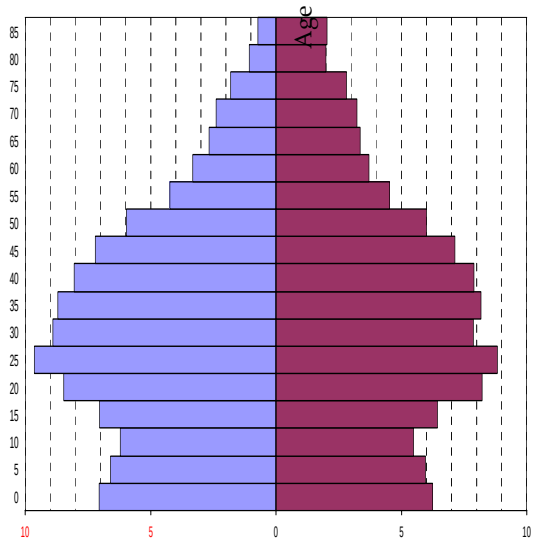
- Standardization
  - Age adjustment
- Ranking: who is number one?

Age Adjustment: Standard Population

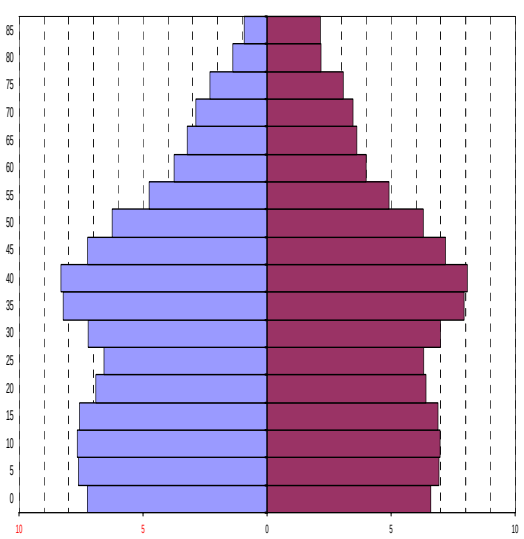
United States 1940 Standard Population



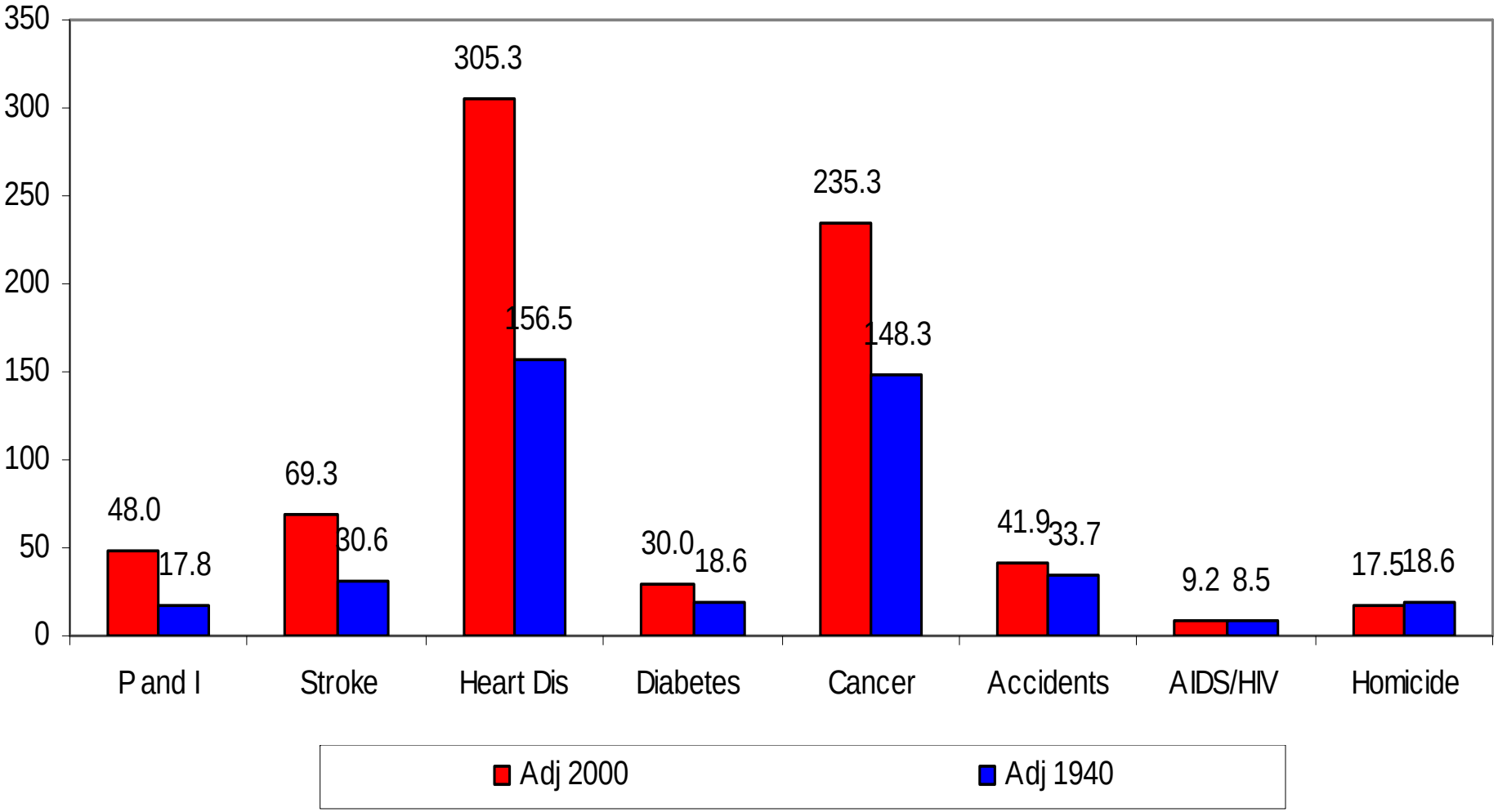
Davidson County Census 2000 Population



United States 2000 Standard Population



Change in Mortality Age Adjusted Rates for Selected Causes, Nashville, TN, 1998



Fall Semester 2002

Lentz University
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Thank you.