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SCHOOL of PUBLIC HEALTH

Morbidity

Adnan Hyder, MD, PhD
Maria Segui-Gomez, MD, MPH, ScD
Johns Hopkins University

Lecture Topics

- Morbidity data systems
- Morbidity coding systems
- Data-poor environments
- Case study #2
  - Lower extremity fractures

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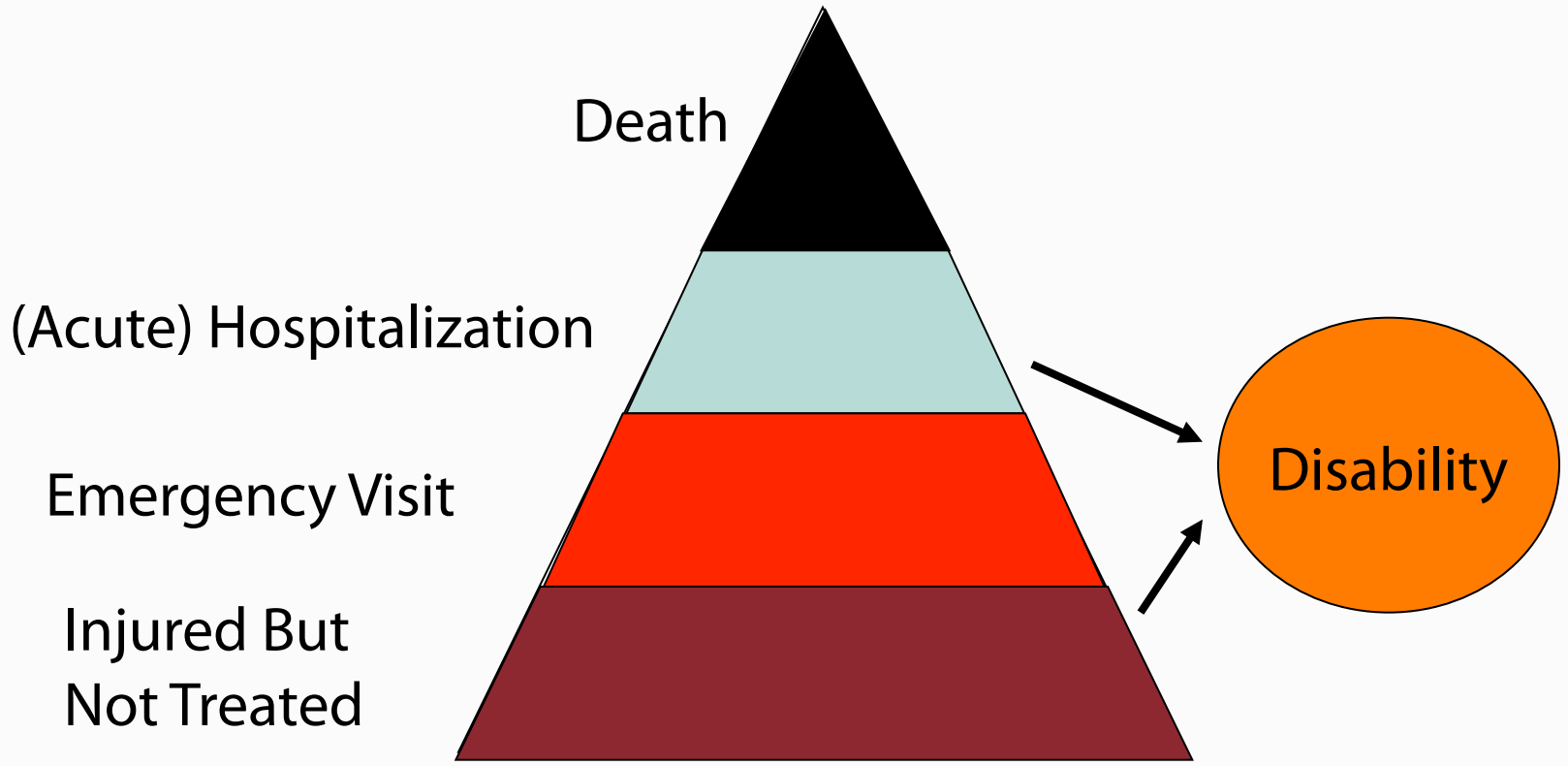
Section A: Morbidity Data Systems

Maria Segui-Gomez, MD, MPH, ScD

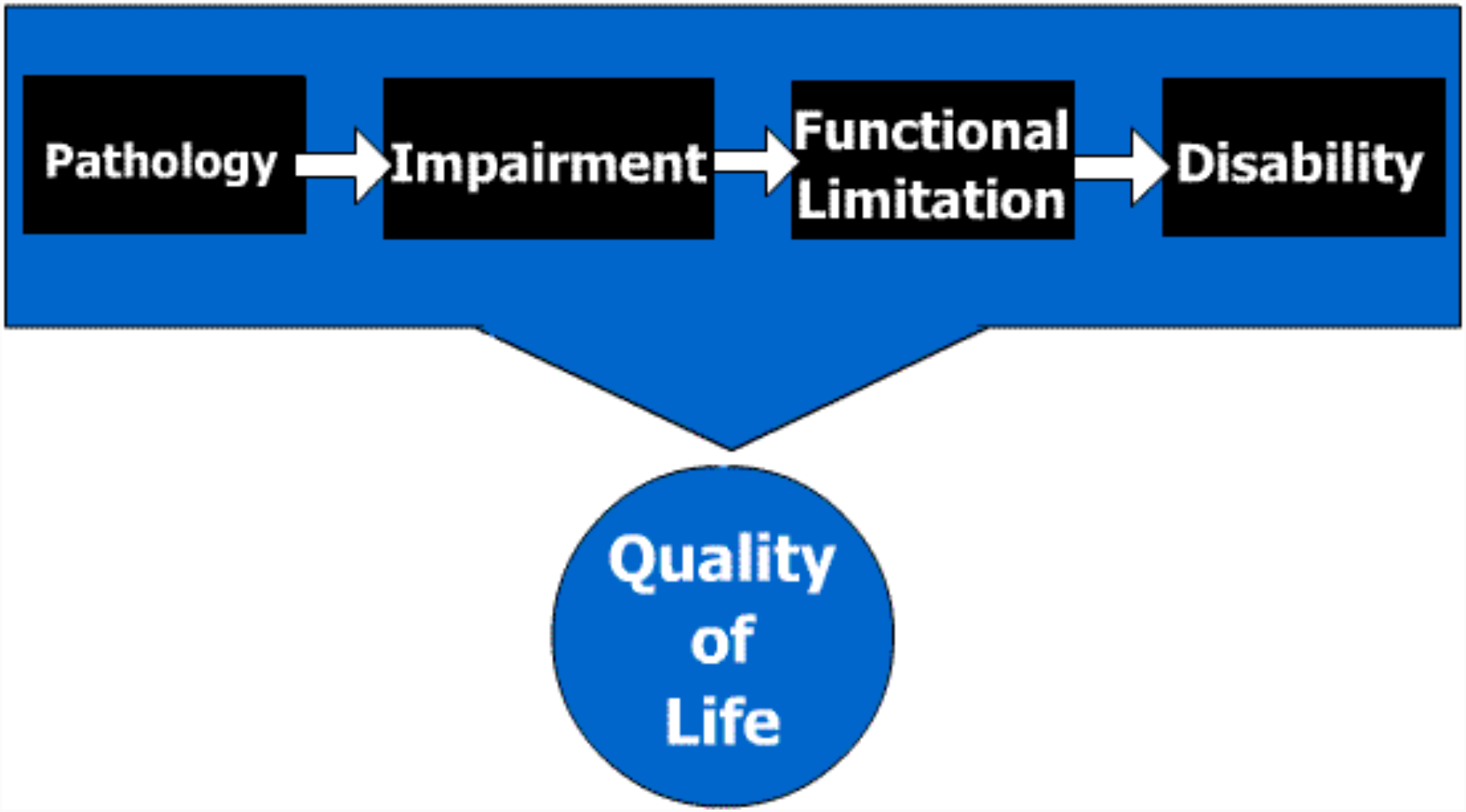
Morbidity

- Short-term morbidity requiring acute care
  - Emergency care level
    - Outpatient setting
    - Hospital setting
  - Hospital admission
- Mid-term and long-term consequences
  - Requiring institutionalization (rehabilitation, nursing)
  - Limiting functionality

The Injury Pyramid



The Disability Model



Adapted from: Power and Tarlov. (1991). IOM.

Relevance of Injury Morbidity Data

- Acute consequences—hospitalizations, ED visits
  - Counts; rates
- Mid-term and long-term consequences
  - Counts; rates
- Effects on quality of life
  - (Age at injury—fixed age*) x quality of life** = quality-adjusted life years (QALYs)
    - *Fixed age—65, 75, life expectancy at birth, or life expectancy at time of event
    - ** Quality-, disability-, health-adjustment, and other variations

Leading Causes of Global Burden of Disease, 2001

- Leading causes of global burden of disease (DALY), 2001

Ranking	Disease or injury	Thousands
1	Perinatal conditions	98,422
2	Lower respiratory infections	90,748
3	HIV/AIDS	88,429
4	Unipolar depressive disorders	65,911
5	Diarrheal disorders	62,451

9	Road traffic injuries	37,719

15	Violence	20,167

Source: (2002). WHO Injuries and the World Health Report.

What Would We Like to Know about Nonfatal Injuries?

- Similar to fatal injuries except
  - Victim characteristic—for example, age, gender, ethnicity
  - Injury characteristics—where, what, severity (threat to life, intensity of resources needed to heal, threat to long-term consequences, etc.)
  - Event characteristics—when, where, while doing what

Data Sources

- Hospital discharge
- Trauma registries
- Emergency departments
- Outpatient settings

Data Sources

- Health surveys
- Forensic records (for disability payments)
- Insurance companies
- Police reports (special events—motor vehicle crashes, homicides, etc.)
- Others

Data Sources

- Special surveys
- Community-based surveillance
- Sport records
- School records
- Transportation entities, etc.

Data Sources

- Population covered
  - Census—total population
  - Sample
    - Random (representative of population)
    - Stratified (representative of population)
    - Convenience (not representative)

Data Sources

- Population covered
  - Census—total population
  - Sample
    - Random (representative of population)
    - Stratified (representative of population)
    - Convenience (not representative)
- Periodicity
  - Frequently—surveillance
  - One time

In Particular

- Hospital discharge
  - Information on individual and acute condition
  - At times, info on co-morbid conditions and circumstances of injury
  - Computerized data available

In Particular

- Hospital discharge
  - Information on individual and acute condition
  - At times, info on co-morbid conditions and circumstances of injury
  - Computerized data available
  - One problem
    - Population catchment area ill-defined (except if aggregated data are available)

In Particular

- Trauma registries
  - Emergency departments
  - Same as hospital except availability in computerized format

In Particular

- Police reports
  - Underreporting of cases
  - Misreporting of conditions and circumstances
  - Computerized files rarely available
  - Population catchment area ill-defined
- Health surveys
  - Scarce
  - Limited info on injuries and circumstances
  - Population based

Morbidity Data Availability and Comparability

- Availability
  - Fragmented
  - Aggregated across inconsistent levels
- Variability
  - Definition of injury
  - Outcome being measured—anatomic injury, physiologic injury, threat to life, disability
  - Classification system
  - Accuracy of diagnoses
  - Completeness rates

When Comparing Morbidity Data

- Check for definition of injury
- Validity of data sources
- Age- and gender- (severity) adjust
- Other adjustments (e.g., exposure?)
- Statistical significance