Hospitalization data for community health assessment

Assessment, Policy Development and Evaluation
Public Health – Seattle & King County
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Why use hospitalization data?

- Estimate patterns in chronic disease prevalence or incidence
- Data on injury/violence
- Estimate lack of access to health care ("avoidable" hospitalizations and uncompensated care)
- Estimate partial costs of illness from health condition
- Look at health inequities
Data sources

• WA Comprehensive Hospital Abstract Reporting System (CHARS)
  – Primary diagnosis (occasionally secondary diagnoses)
  – Age
  – Sex
  – Year
  – ZIP code of residence
• Detailed current population estimates (for rates)
• Census data (for looking at inequities)
Examples

• Asthma (Data Watch report)
• Ambulatory care-sensitive hospitalizations (Health of King County)
• Assault (Community Health Indicators)
Figure 2. Asthma Hospitalization in King County

Note: Numbers next to the trend lines are the actual number of hospitalizations.

Source: Washington State Department of Health, Center for Health Statistics, CHARS.
Asthma Hospitalizations, Age 0 to 17, King County, 1987-2006: JoinPoint Output
Figure 4. Asthma Hospitalization Rate Among King County Children Age 0-17, 5-Year Averages, 2000-2004

- **Age**
  - <1: 364.5
  - 1-4: 467.3
  - 5-9: 150.3
  - 10-14: 79.8
  - 15-17: 43.8

- **Gender**
  - Males: 235.5
  - Females: 147.6

- **Neighborhood Poverty Level**
  - High: 375.8
  - Medium: 210.1
  - Low: 130.1

- **Region**
  - East: 134.8
  - South: 162.3
  - Seattle: 326.0
  - North: 176.0

*Source: Washington State Department of Health, Center for Health Statistics, CHARS.*
Health Planning Area (ZIP code base) Reference Map
Figure 5. Asthma Hospitalization Rate Among Children Age 0-17 by Health Planning Area 2000-2004

Legend
Asthma Rates for Children per 100,000
- 61.2 - 116.8
- 116.9 - 172.0
- 172.1 - 266.7
- 266.8 - 493.1

Source: Washington State Department of Health, Center for Health Statistics, CHARS.
Avoidable Hospitalizations in King County, Three Year Average, 2002-2004

- Bacterial Pneumonia: 23%
- Congestive Heart Failure: 20%
- Kidney/Urinary Infection: 10%
- COPD: 9%
- Asthma: 9%
- Septicemia: 8%
- Volume Depletion: 7%
- Cellulitis: 6%
- Ketoacidosis/Coma: 3%
- Other*: 5%

*Other* includes: incarcerated hernia, primary hypertension, angina, dental conditions, Grand Mal status, and hypoglycemia

Data Source: Hospitalization Discharge Data, Washington State Department of Health, Office of Hospital and Patient Data Systems
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County
Community Health Indicators

• Purpose: make comprehensive analysis of community health data publicly and readily available
• Systematic and comprehensive analysis of over 60 indicators
• Analysis includes current numbers and rates, geographic distribution, demographic differences, inequities and trends over time
• Data available in both tables and charts
Assault Hospitalizations, King County, 1995 - 2004

Data Source: WA State Department of Health, Office of Hospital and Patient Data Systems, Hospital Discharge Data
Produced By: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation, 12/06
Update: assault hospitalizations
Limitations of hospitalization data (I)

• May not include ER visits that do not result in hospital admission
• Do not include ambulatory care visits
• Cannot separate new from ongoing conditions (and thus incidence from prevalence)
• Race not included in some state datasets
• Not unduplicated in some state datasets
• Requires special statistical techniques because of lack of independence
Limitations of hospitalization data (II)

- Hospitalizations reflect many complex factors:
  - Trends in providing health care (e.g., migration to outpatient care)
  - Severity of condition
  - Risks based on demographics (e.g., ACS conditions)
- Billing database being used for epidemiology
- Residence vs. occurrence should be clarified
- Data quality and completeness:
  - People residing in areas near state borders may get care elsewhere
  - Payor field can be inaccurate
- Access, cost of hospitalization data can be uneven from place to place
Summary

• Hospitalizations can provide data on chronic diseases, access to care in the absence of or in addition to more direct measures
• Data can be used to track trends, residential distribution and inequities
• Other data, such as Census data and detailed intercensal population estimates, need to be available
• Temper interpretation with limitations
Resources

• Asthma and other short reports: http://www.metrokc.gov/health/datawatch/
• Health of King County 2006 http://www.metrokc.gov/health/hokc/index.htm
• Community Health Indicators http://www.metrokc.gov/health/CHI/
• JoinPoint software from National Cancer Institute (free) http://srab.cancer.gov/joinpoint/