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The Healthcare Cost and Utilization Project (HCUP):
Data for Monitoring Patient Safety

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Disclaimer

The opinions expressed in this presentation are those of the presenter and do not reflect the official position of the Department of Health and Human Services (HHS), the Agency for Healthcare Research and Quality, or the Office for Civil Rights.
The HCUP Partnership

State

Federal

Industry
What is HCUP?

HCUP is a comprehensive set of publicly available all-payer health care data.

Includes multiyear inpatient and outpatient data based on hospital billing records.
Seven Types of Databases

- **Three State-Specific Databases**
  - State Inpatient Databases (SID)
  - State Ambulatory Surgery & Services Databases (SASD)
  - State Emergency Department Databases (SEDD)

- **Four National Databases**
  - National Inpatient Sample (NIS)
  - Nationwide Emergency Department Sample (NEDS)
  - Kids’ Inpatient Database (KID)
  - Nationwide Readmissions Database (NRD)
The Making of HCUP Data

Patient enters hospital

States store data in varying formats

Hospital sends data to state data organizations

Billing record created

AHRQ standardizes data to create uniform HCUP databases
Examples of Patient Safety Work

- HCUP Statistical Briefs
- Research Studies
- Analytic Tools
<table>
<thead>
<tr>
<th>Brief #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>#164</td>
<td>Characteristics of Adverse Drug Events Originating During the Hospital Stay, 2011</td>
</tr>
<tr>
<td>#158</td>
<td>Origin of Adverse Drug Events in U.S. Hospitals, 2011</td>
</tr>
<tr>
<td>#145</td>
<td>Readmissions following Hospitalizations with Clostridium difficile Infections, 2009</td>
</tr>
<tr>
<td>#124</td>
<td>Clostridium difficile Infections (CDI) in Hospital Stays, 2009</td>
</tr>
<tr>
<td>#109</td>
<td>Medication-Related Adverse Outcomes in U.S. Hospitals and Emergency Departments, 2008</td>
</tr>
<tr>
<td>#94</td>
<td>Adult Hospital Stays with Infections Due to Medical Care, 2007</td>
</tr>
<tr>
<td>#78</td>
<td>Hospitalizations in which Patients Leave the Hospital against Medical Advice (AMA), 2007</td>
</tr>
<tr>
<td>#</td>
<td>Brief Title</td>
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<tr>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>74</td>
<td>Potentially Avoidable Injuries to Mothers and Newborns During Childbirth, 2006</td>
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<td>64</td>
<td>Hospitalizations Related to Pressure Ulcers among Adults 18 Years and Older, 2006</td>
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<tr>
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<td>Racial and Ethnic Disparities in Hospital Patient Safety Events, 2005</td>
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<td>Clostridium Difficile-Associated Disease in U.S. Hospitals, 1993-2005</td>
</tr>
<tr>
<td>29</td>
<td>Adverse Drug Events in U.S. Hospitals, 2004</td>
</tr>
<tr>
<td>3</td>
<td>Hospitalizations Related to Pressure Sores, 2003</td>
</tr>
</tbody>
</table>
Medication-related Adverse Outcomes, by Setting of Care and Patient Age, 2008

General Causes of Adverse Drug Events, 2011

Rates of common adverse drug events originating during the hospital stay by payer, 2011

Potentially Avoidable Injuries to Newborns and Mothers During Childbirth-related Hospital Stays, 2006

Postsurgical acute care visits for clinically significant surgical site infections:

- 14 days post: 3.1 visits per 1,000 ambulatory procedures overall, and as high as 6.4 per 1,000 for hysterectomy.
- 30 days post: 4.8 visits per 1,000 ambulatory procedures overall, and as high as 11.4 per 1,000 for hernia repair.
Five most common reasons for 30-day hospital readmissions among children (1-17 years old): Average Costs & Length of Stay. 2014.

<table>
<thead>
<tr>
<th>Principal Diagnosis at Readmission</th>
<th>Average cost</th>
<th>Average LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septicemia</td>
<td>42,100</td>
<td>11</td>
</tr>
<tr>
<td>Complications of device, implant or graft</td>
<td>30,200</td>
<td>9</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>18,100</td>
<td>7</td>
</tr>
<tr>
<td>Complications of surgery or medical care</td>
<td>15,800</td>
<td>6</td>
</tr>
<tr>
<td>Diseases of white blood cells</td>
<td>13,500</td>
<td>5</td>
</tr>
</tbody>
</table>

NOTE: Approximately 70,000 children (8% stays) were readmitted in 2014.

Analysis Setup

Choose a setting of care.

- Inpatient
- Emergency Department
- Ambulatory Surgery
- Community

Choose how you would like to analyze data.

- Descriptive Statistics
- Trends
- Rank Order

Choose a year.

- 2014

Do you want data on a specific diagnosis or procedure?

- Yes
- No

Choose how you want to classify diagnoses or procedures.

- Choose a Classification
Analysis Setup

Do you want data on a specific diagnosis or procedure?

- Yes
- No

Choose how you want to classify diagnoses or procedures.

Diagnoses--ICD-9-CM Codes (ICD9)

Choose your diagnosis.

CTRL-click to select multiple options.

- 707.00 Decubitus Ulcer Site Nos
- 707.01 Decubitus Ulcer, elbow
- 707.02 Decubitus Ulcer, up Back
- 707.03 Decubitus Ulcer, low Back
- 707.04 Decubitus Ulcer, hip
- 707.05 Decubitus Ulcer, buttock
- 707.06 Decubitus Ulcer, ankle
- 707.07 Decubitus Ulcer, heel
- 707
- 707.09 Decubitus Ulcer, site Nec
- 707.10 Ulcer Of Lower Limb Nos
- 707.11 Ulcer Of Thigh
- 707.12 Ulcer Of Calf
- 707.13 Ulcer Of Ankle
- 707.14 Ulcer Of Heel & Midfoot
- 707.15 Ulcer Other Part Of Foot
- 707.19 Ulcer Oth Part Low Limb
- 707.20 Pressure Ulcer, Stage Nos
- 707.21 Pressure Ulcer, Stage I
- 707.22 Pressure Ulcer, Stage II
<table>
<thead>
<tr>
<th>Owner</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All discharges</td>
<td>738,810</td>
</tr>
<tr>
<td>Government</td>
<td>83,325</td>
</tr>
<tr>
<td>Private, Not For Profit</td>
<td>551,245</td>
</tr>
<tr>
<td>Private, For Profit</td>
<td>104,240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location/teaching status</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All discharges</td>
<td>70,300</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
</tr>
<tr>
<td>Urban Non-Teaching</td>
<td>192,935</td>
</tr>
<tr>
<td>Urban Teaching</td>
<td>475,576</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bedsize</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All discharges</td>
<td>138,855</td>
</tr>
<tr>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>217,480</td>
</tr>
<tr>
<td>Large</td>
<td>382,475</td>
</tr>
</tbody>
</table>
Then Create Graphs from Tables

Percent of discharges

- Government: 12.838
- Private, Not For Profit: 68.957
- Private, For Profit: 18.205
Where to Find This Material:

HCUP-US (User Support)

https://www.hcup-us.ahrq.gov/

HCUPnet

https://hcupnet.ahrq.gov/
Questions

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