Emergency Department Overload: A Growing Crisis

The Results of the AHA Survey of Emergency Department (ED) and Hospital Capacity

April 2002
ED Overload: Key Findings

❖ A majority of hospital EDs perceive they are “at” or “over” operating capacity
  • 62% of all hospitals surveyed
  • More than 3 out of 4 urban hospitals
  • 90% of Level I Trauma Centers and hospitals over 300 beds

❖ One third of all hospitals experienced “ED diversion” — i.e., times when their EDs could no longer accept all or specific types of patients by ambulance
  • More than half of urban hospitals reported ED diversions
  • 1 in 8 urban hospitals reported time on diversion at 20 percent or more
ED Overload: Key Findings

- Lack of available staffed critical care beds was the #1 reason cited for ED diversion
- Hospitals reporting time on diversion at 20% or more had an average RN vacancy rate of 16%
- ED volume continues to rise
  - ED visit volume grew by 5 percent from 2000 to 2001 at surveyed hospitals
Study Objectives and Methodology

- Survey commissioned by AHA to gather nationally representative data on key issues:
  - Perceptions of volume vs. capacity
  - Diversion rates
  - Reasons for diversion
  - Impact on service levels
  - Volume trends
  - Volume of uninsured

- 1501 hospitals with ED services responded -- representing 36% of all hospitals with EDs

- Respondents asked to provide data for November 2001

- Distribution of respondents closely matches the universe of hospitals on key dimensions
  - Urban/rural, bed size, teaching status, regional distribution
Most EDs are “at” or “over” capacity

Percent of Hospitals Reporting ED Capacity Issues by Type of Hospital

- **Urban Hospitals**: 31% at capacity, 48% over capacity, 79% total
- **Rural Hospitals**: 26% at capacity, 19% over capacity, 45% total
- **Teaching Hospitals**: 34% at capacity, 47% over capacity, 81% total
- **Non-Teaching Hospitals**: 26% at capacity, 30% over capacity, 56% total
- **All Hospitals**: 28% at capacity, 34% over capacity, 62% total

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
ED capacity is a problem across the country - but most acute for Northeast and West Coast

Percent of Hospitals Reporting that Their ED is Operating “Over” Capacity: By Region

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
More than 90 percent of large hospitals (300 plus beds) report EDs “at” or “over” capacity

Percent of Hospitals Reporting that Their ED is Operating “At” or “Over” Capacity

<table>
<thead>
<tr>
<th>Bed Size*</th>
<th>ED is &quot;At&quot; Capacity</th>
<th>ED is &quot;Over&quot; Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Plus</td>
<td>29%</td>
<td>61%</td>
</tr>
<tr>
<td>300 to 499</td>
<td>30%</td>
<td>61%</td>
</tr>
<tr>
<td>100 to 299</td>
<td>32%</td>
<td>45%</td>
</tr>
<tr>
<td>Less than 100</td>
<td>21%</td>
<td>13% 34%</td>
</tr>
</tbody>
</table>

*Staffed beds in November 2001

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
Among Level I Trauma Centers, nearly 90 percent are “at” or “over” capacity.

Percent of Hospitals Reporting ED Capacity Issues by Trauma Level

- Level I (Most Complex Care): 30% is "At" Capacity, 57% is "Over" Capacity
- Level II: 32% is "At" Capacity, 47% is "Over" Capacity
- Level III: 29% is "At" Capacity, 30% is "Over" Capacity
- Level IV: 25% is "At" Capacity, 12% is "Over" Capacity
- No Trauma Designation: 27% is "At" Capacity, 31% is "Over" Capacity

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
A majority of urban and teaching hospitals experienced some time on ED diversion

Percent of Hospitals Reporting Time on Diversion in November 2001

Urban
Rural

Teaching
Urban
Rural

Non-teaching
Urban
Rural

All Hospitals

Note: diversion is not an option for most rural hospitals which are their communities’ only provider

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
In many regions, two-thirds or more of urban hospitals experienced time on diversion

Percent of Urban Hospitals Experiencing Time on ED Diversion in November 2001

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
One in eight urban hospitals experienced diversion more than 20 percent of the time

Percent of Time on Diversion - Urban Hospitals in November 2001

<table>
<thead>
<tr>
<th>Percent of Time on Diversion</th>
<th>Percent of Hospitals</th>
<th>Mean Days per Month on which a Period of ED Diversion Occurred</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Diversion Time</td>
<td>44%</td>
<td>Zero Days</td>
</tr>
<tr>
<td>Up to 9.9% of Time</td>
<td>33%</td>
<td>5 Days</td>
</tr>
<tr>
<td>10-19.9% of Time</td>
<td>10%</td>
<td>13 Days</td>
</tr>
<tr>
<td>20% or More of Time</td>
<td>13%</td>
<td>20 Days</td>
</tr>
</tbody>
</table>

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
ED diversion time exceeding 20 percent is most common in the West

Hospitals Reporting Time on Diversion at 20% or More As a Percent of Total Urban Hospitals in November 2001

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
Capacity constraints translate into longer waiting times for treatment…

Average Waiting Time for Treatment by a Physician or Other Provider in November (in minutes)

Hospitals reporting that ED volume is:

- Over Capacity: 65 minutes
- At Capacity: 54 minutes
- Good Balance: 39 minutes
- Under-Capacity: 34 minutes

Hospitals Reporting Time on Diversion ≥ 20%: 72 minutes

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
...longer stays in the ED...

Average Length of Stay in ED Treatment Area in November
(in hours)

<table>
<thead>
<tr>
<th>Hospitals reporting that ED volume is:</th>
<th>Average Length of Stay (in hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over Capacity</td>
<td>3.7</td>
</tr>
<tr>
<td>At Capacity</td>
<td>3.6</td>
</tr>
<tr>
<td>Good Balance</td>
<td>2.5</td>
</tr>
<tr>
<td>Under-Capacity</td>
<td>3.4</td>
</tr>
<tr>
<td>Hospitals Reporting Time on Diversion $\geq$ 20%</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
...and longer waiting times to get admitted to a general acute or critical care bed...

Average Time Waiting for Transfer from ED to an Acute or Critical Care Bed in November (in hours)

- Over Capacity: 4.6 hours
- At Capacity: 3.3 hours
- Good Balance: 2.2 hours
- Under-Capacity: 1.3 hours
- Hospitals Reporting Time on Diversion ≥ 20%: 5.8 hours

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
... or a psychiatric bed

Average Time Waiting for Transfer from ED to Psychiatric Bed (in hours)

- **Over Capacity**: 4.7 hours
- **At Capacity**: 3.8 hours
- **Good Balance**: 2.3 hours
- **Under-Capacity**: 2.2 hours
- **Hospitals Reporting Time on Diversion ≥ 20%**: 5.4 hours

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
“Lack of critical care beds” most often ranked as the #1 reason for diversion

Number One Reason for Ambulance Diversion: Percent of Hospitals Experiencing Diversions by Reason

- Lack of Critical Care Beds: 43%
- ER Overcrowded: 24%
- Lack of General Acute Beds: 14%

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
Hospitals experiencing ED diversions have higher RN vacancy rates

RN Vacancy Rate vs. Percent of Time on Diversion

<table>
<thead>
<tr>
<th>Percent of Time on Diversion</th>
<th>RN Vacancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Diversion Time</td>
<td>11%</td>
</tr>
<tr>
<td>0-4.9% of Time</td>
<td>14%</td>
</tr>
<tr>
<td>5-9.9% of Time</td>
<td>14%</td>
</tr>
<tr>
<td>10-19.9% of Time</td>
<td>16%</td>
</tr>
<tr>
<td>20% or more of Time</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
Neurosurgery, neurology, and cardio/thoracic surgery were the hardest physician coverage slots to fill.

Percent of Hospitals Naming Specialty Among Top Three Hardest to Fill for ED Coverage

- Neurosurgery: 20.3%
- Neurology: 15.9%
- Cardio/Thoracic Surgery: 15.8%
- General Surgery: 7.7%
- Ophthalmic Surgery: 7.2%
- Oral/Max Surgery: 5.9%
- Anesthesiology: 5.2%
- Orthopedics: 4.7%
- Neonatology: 4.5%
- Ob/Gyn: 4.0%
- Plastic Surgery: 1.9%
- Emergency Medicine: 1.6%
- Psychiatric & Psychology: 1.5%
- Pediatrics: 0.5%
- Radiology: 0.3%
- Urology: 0.3%

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
Nationally the self-pay *portion* of ED volume has been fairly constant since 1999...

Self-Pay ED visits as a Percent of Total 1999-2001

- Data on self-pay patients used as a proxy for “uninsured”
- Category includes all patients who have no third party source of payment
- Includes charity care patients

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
...but the number of self-pay ED visits is growing rapidly in some regions

Percent Increase/(Decrease) in Self-Pay ED Visits
By Region
1999-2001

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
Overall ED volume is growing: pressures on hospital EDs will likely mount in future years...

Number of ED Visits
All Community Hospitals, All Payers
1990 - 2001 Estimated

...especially in regions experiencing the highest levels of ED visit growth

Percent Increase/(Decrease) ED Visits
By Region
1999-2001

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
ED Overload: A Growing Crisis

Summary

- EDs represent the most critical access point to our nation’s health delivery system
  - Available 24/7, 365 days a year
  - Guaranteed access point for all who need care regardless of ability to pay
  - First response to epidemics and disasters

- Today 62% of all hospital EDs and 3 out of 4 urban EDs perceive they are “at” or “over” capacity
  - A majority of urban hospitals experienced ED diversion--some more than 20 percent of the time

- ED overload is symptomatic of other capacity issues--lack of critical care beds and staff shortages

- ED volume is rising -- capacity problems likely to worsen
Appendix
### Number of Respondents vs. Universe of Hospitals

#### Urban/Rural Numbers

<table>
<thead>
<tr>
<th>Location</th>
<th>2000 AHA Annual Survey</th>
<th>AHA ED Survey</th>
<th>Percent Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>2740</td>
<td>713</td>
<td>26.0%</td>
</tr>
<tr>
<td>Rural</td>
<td>2175</td>
<td>719</td>
<td>33.1%</td>
</tr>
</tbody>
</table>

#### Regional Distribution

<table>
<thead>
<tr>
<th>Location</th>
<th>2000 AHA Annual Survey</th>
<th>AHA ED Survey</th>
<th>Percent Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>205</td>
<td>64</td>
<td>31.2%</td>
</tr>
<tr>
<td>Mid Atlantic</td>
<td>502</td>
<td>177</td>
<td>35.3%</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>739</td>
<td>254</td>
<td>34.4%</td>
</tr>
<tr>
<td>East North Central</td>
<td>732</td>
<td>263</td>
<td>35.9%</td>
</tr>
<tr>
<td>East South Central</td>
<td>429</td>
<td>96</td>
<td>22.4%</td>
</tr>
<tr>
<td>West North Central</td>
<td>673</td>
<td>151</td>
<td>22.4%</td>
</tr>
<tr>
<td>West South Central</td>
<td>717</td>
<td>200</td>
<td>27.9%</td>
</tr>
<tr>
<td>Mountain</td>
<td>347</td>
<td>100</td>
<td>28.8%</td>
</tr>
<tr>
<td>Pacific</td>
<td>571</td>
<td>189</td>
<td>33.1%</td>
</tr>
</tbody>
</table>

#### Bed Size Distribution

<table>
<thead>
<tr>
<th>Bed Size</th>
<th>2000 AHA Annual Survey</th>
<th>AHA ED Survey</th>
<th>Percent Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100 Beds</td>
<td>2253</td>
<td>518</td>
<td>23.0%</td>
</tr>
<tr>
<td>100-299 Beds</td>
<td>1892</td>
<td>533</td>
<td>28.2%</td>
</tr>
<tr>
<td>300-499 Beds</td>
<td>523</td>
<td>176</td>
<td>33.7%</td>
</tr>
<tr>
<td>500 Beds and More</td>
<td>247</td>
<td>70</td>
<td>28.3%</td>
</tr>
</tbody>
</table>

#### Teaching Status

<table>
<thead>
<tr>
<th>Teaching</th>
<th>2000 AHA Annual Survey</th>
<th>AHA ED Survey</th>
<th>Percent Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>1175</td>
<td>347</td>
<td>29.5%</td>
</tr>
<tr>
<td>Non-Teaching</td>
<td>3740</td>
<td>1108</td>
<td>29.6%</td>
</tr>
</tbody>
</table>

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
## Distribution of Respondents vs. Universe of Hospitals

### Urban/Rural Distribution

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<tr>
<th></th>
<th>2000 AHA Annual Survey</th>
<th>AHA ED Survey</th>
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<tbody>
<tr>
<td>Urban</td>
<td>55.7%</td>
<td>49.8%</td>
</tr>
<tr>
<td>Rural</td>
<td>44.3%</td>
<td>50.2%</td>
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### Regional Distribution

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<tr>
<th>Location</th>
<th>2000 AHA Annual Survey</th>
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<tbody>
<tr>
<td>New England</td>
<td>4.2%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Mid Atlantic</td>
<td>10.2%</td>
<td>11.8%</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>15.0%</td>
<td>16.9%</td>
</tr>
<tr>
<td>East North Central</td>
<td>14.9%</td>
<td>17.5%</td>
</tr>
<tr>
<td>East South Central</td>
<td>8.7%</td>
<td>6.4%</td>
</tr>
<tr>
<td>West North Central</td>
<td>13.7%</td>
<td>10.1%</td>
</tr>
<tr>
<td>West South Central</td>
<td>14.6%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Mountain</td>
<td>7.1%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Pacific</td>
<td>11.6%</td>
<td>12.6%</td>
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<th>2000 AHA Annual Survey</th>
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<tbody>
<tr>
<td>Less than 100 Beds</td>
<td>45.8%</td>
<td>39.9%</td>
</tr>
<tr>
<td>100-299 Beds</td>
<td>38.5%</td>
<td>41.1%</td>
</tr>
<tr>
<td>300-499 Beds</td>
<td>10.6%</td>
<td>13.6%</td>
</tr>
<tr>
<td>500 Beds and More</td>
<td>5.0%</td>
<td>5.4%</td>
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### Teaching Status

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<tr>
<th></th>
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<th>AHA ED Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>23.9%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Non-Teaching</td>
<td>76.1%</td>
<td>76.2%</td>
</tr>
</tbody>
</table>

Source: The Lewin Group Analysis of AHA ED and Hospital Capacity Survey, 2002
ED Diversion Defined

- Hospitals divert when their Emergency Departments can no longer accept all or specific types of patients by ambulance.

- ED diversion is a short-term, temporary approach used to assure that patients get the right care at the right time.

- If one ED is overcrowded and another is available, diversion assures a patient is treated in a timely manner.

- ED diversion is a warning sign of capacity constraints under normal conditions.