

The Dwindling Supply of Empty Beds: Implications for Hospital Surge Capacity

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Hospital surge capacity

- Ability of hospitals to respond to mass casualty events (MCE's)
- Most critically ill/injured
- Elements of surge capacity
 - Beds*
 - Equipment
 - Personnel
 - Rx caches
 - Planning



HRSA benchmark for surge capacity

500 hospital beds
immediately available per
million population potentially
affected by a MCE



Research questions

1. How often is the benchmark met?
2. Is it being met more or less often over time?
3. What are the characteristics of areas that do not meet the benchmark?



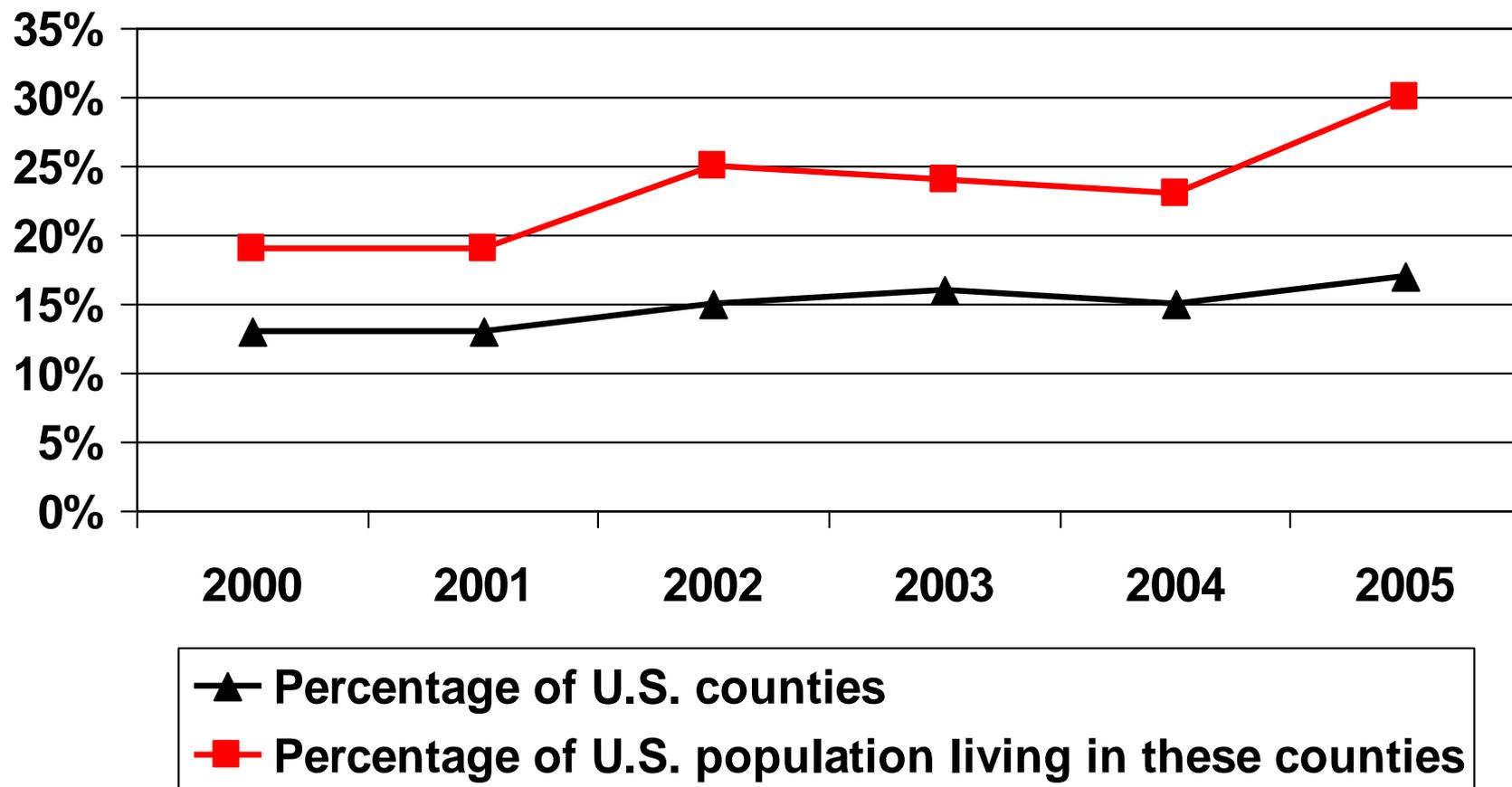
Methodology

- AHA Survey/U.S. Census 2000-2005
- Key concept: beds immediately available
- Empty staffed beds (ESB)
- $ESB = \text{Staffed beds} \times (1 - OR)$
- Aggregate ESB at county level
- Divide by county population
- Multiply by 1 million
- Compare to HRSA benchmark



MAIN FINDINGS

There is a growing percentage of counties that fail to meet the HRSA benchmark.



Sources: AHA Annual Survey, U.S. Census Bureau

Counties with limited surge capacity are more likely to be urban, have larger populations, & have had faster population growth.

Average county characteristics, 2005

	Limited surge cap	Not limited
% Urban (MSA)	53%	25%
Population	195,152	97,044
Population growth, 2000-2005	7%	1%

Sources: AHA Annual Survey, U.S. Census Bureau

Counties with limited surge capacity have fewer beds per capita.

Average no. beds per million population, 2005

	Limited surge cap	Not limited
Empty staffed beds	292.21	1,727.0
Total staffed beds	1,044.3	3,262.0
Total ICU beds	70.4	125.5
Total pediatric ICU beds	1.2	3.4
Total burn unit beds	0.2	1.0

Sources: AHA Annual Survey, U.S. Census Bureau

Despite higher OR's, counties with limited surge capacity have less utilization per capita and slower utilization growth.

Average occupancy & utilization, 2005

	Limited surge cap	Not limited
Occupancy rate (OR)	61%	45%
ED visits per 100 residents	30.2	48.5
Inpt days per 100 residents	28.5	56.0
<u>Growth</u> in ED visits per 100 residents, 2000-2005	10%	23%
<u>Growth</u> in inpt days per 100 residents, 2000-2005	3%	22%

Sources: AHA Annual Survey, U.S. Census Bureau

Summary

- Growing #counties w/limited surge capacity
- Typically urban, growing, East Coast & West
- Limitations on the supply side
Fewer beds per capita
- Utilization not excessive
Utilization is lower & growing more slowly



Discussion

- **Decline in empty staffed beds**
 - Incentives to reduce & redistribute capacity
 - Focus on profitable places & services
 - Competition from leaner/specialized facilities
 - Difficult to maintain capacity for disaster response
- **How can hospital surge capacity be maintained?**
 - Subsidies for “essential” hospitals
 - Enhanced reimbursement (like DSH, Critical Access Hosp)
 - Mobile hospitals/alternate sites of care
(Esp when capacity cannot be expanded)
- **Need for continued surveillance**
 - Market & demographic changes
 - Anticipate where mobile hospitals & other assets most needed

For more details ...

D. DeLia & E. Wood, “The Dwindling Supply of Empty Beds: Implications for Hospital Surge Capacity.” Forthcoming in Health Affairs.