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Investment in Teaching Hospitals Benefits All Americans

According to two recent studies, across a range of common medical and surgical conditions and almost all levels of patient severity, care provided at major teaching hospitals leads to better mortality outcomes.

According to a recent study published in *JAMA*, when it comes to a tangible quality measure that the public cares about — mortality — patients fare better at teaching hospitals.[1]

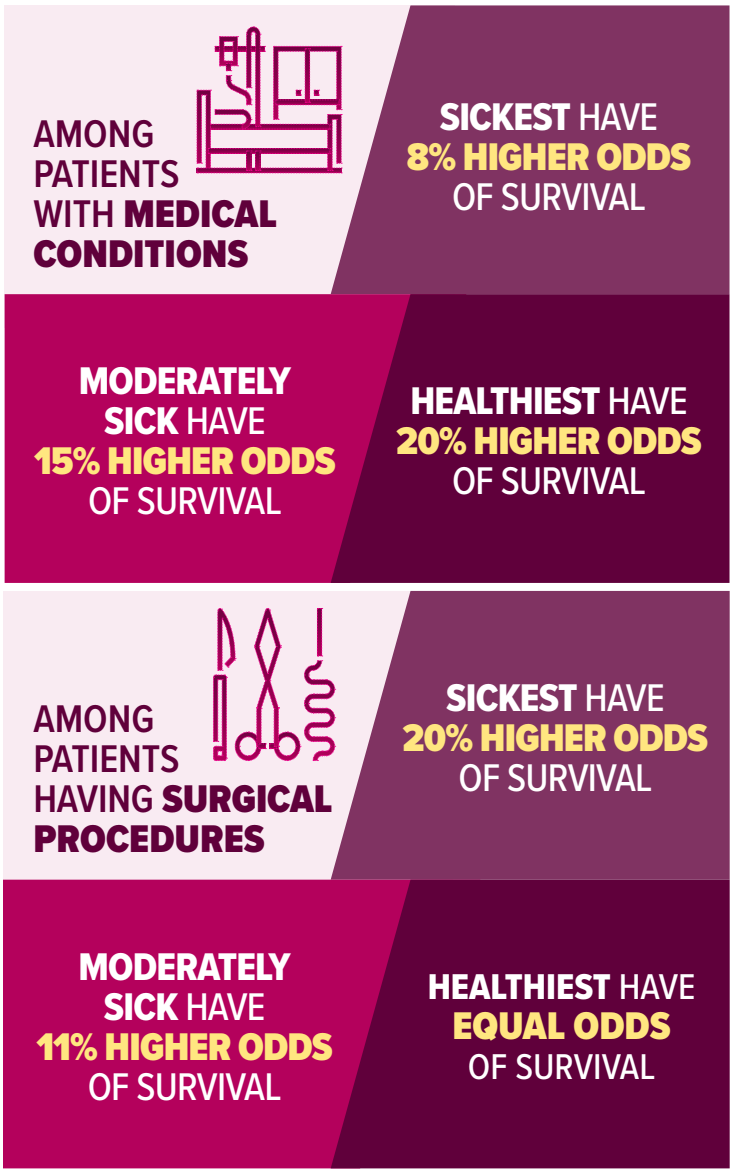
- Overall and for almost all conditions — ranging from pneumonia to hip replacement to heart failure — a greater percentage of Medicare patients treated at major teaching hospitals survive after 30 days than those treated elsewhere. Similar patterns were seen after seven and 90 days.
- Major teaching hospitals offer the greatest benefit, and there is still significant benefit for patients at minor teaching hospitals.
- These patterns persist even with adjustments for both hospital and patient characteristics, such as age, race and ethnicity, Medicaid eligibility, and comorbidities, reinforcing the conclusion that a hospital's teaching status affects mortality outcomes.

Another recent study in *Health Affairs* expanded on these results.[2] Contrary to conventional wisdom that only the most severely ill and medically complex patients benefit from care at teaching hospitals, these facilities offer a higher likelihood of survival for nearly all patients.

- The study found that Medicare patients treated at teaching hospitals have up to 20% higher odds of survival compared with those treated elsewhere.[3]
  - For hospitalizations related to a medical condition, the sickest patients have 8% higher odds of survival at a teaching hospital, the moderately sick have 15% higher odds, and the healthiest patients have 20% higher odds of survival compared with patients treated at nonteaching hospitals.
  - Patients hospitalized for surgical procedures also benefit from being treated at a teaching hospital — the sickest patients have 20% higher odds of survival and the moderately sick have 11% higher odds.
- These data suggest that the positive impact associated with teaching hospitals extends beyond just the most acutely ill. Limitations on patients' access to teaching hospitals may lead to less favorable outcomes.

What Is the Value of Being Treated at a Teaching Hospital?

Patients treated at a teaching hospital have up to 20% higher odds of survival, and it's not just the sickest and most medically complex who benefit.[2]



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Number Needed to Treat

One way to analyze the relative value of clinical interventions is by examining the "number needed to treat" (NNT) — a statistical projection of the number of patients who have to be treated to save one person as a result of a given intervention. The lower the NNT, the more impactful the intervention. According to data from these studies, the benefit associated with inpatient care at teaching hospitals becomes apparent with an NNT of 67. How does this number compare with other well-known clinical interventions in the number of people needed to treat to prevent one death?[4]

42
for aspirin taken immediately for a major heart attack

42
for warfarin to lower the risk of stroke for those with atrial fibrillation

67
for inpatient treatment at major teaching hospital

83
for statins that lower cholesterol levels

125
for five years of blood pressure medication

333
for anti-clotting medication after a stroke or heart attack

Together, these data show that the nation's investment in teaching hospitals benefits a wide range of patients by helping provide high-quality care and better outcomes.

- Some, but not all, of the difference in outcomes may be accounted for by the expertise required to maintain ancillary and highly specialized services available almost exclusively at teaching hospitals, the use of more advanced technology, and the involvement of more clinicians in care.[5]
- Teaching hospitals are also the only places where patient care, medical education, and research come together. The intersection of these missions creates an environment that not only advances health care broadly but, as the studies suggest, also offers benefits for individual patients.

"Efforts to limit care at academic medical centers have the potential to lead to worse outcomes."[2]

Notes

1. Burke LG, Frakt AB, Khullar D, Orav EJ, Jha AK. Association between teaching status and mortality in US hospitals. *JAMA*. 2017;317(20):2105-2113. doi:10.1001/jama.2017.5702.
2. Burke L, Khullar D, Orav EJ, Zheng J, Frakt A, Jha AK. Do academic medical centers disproportionately benefit the sickest patients? *Health Aff (Millwood)*. 2018;37(6):864-872. doi:10.1377/hlthaff.2017.1250.
3. Unpublished data from research reported in Burke et al (2018).
4. The NNT. www.thennt.com.
5. Khullar D, Frakt A. Can low-intensity care solve high health care costs? *New York Times*. June 11, 2018. www.nytimes.com/2018/06/11/upshot/can-low-intensity-care-solve-high-health-care-costs.html.

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