

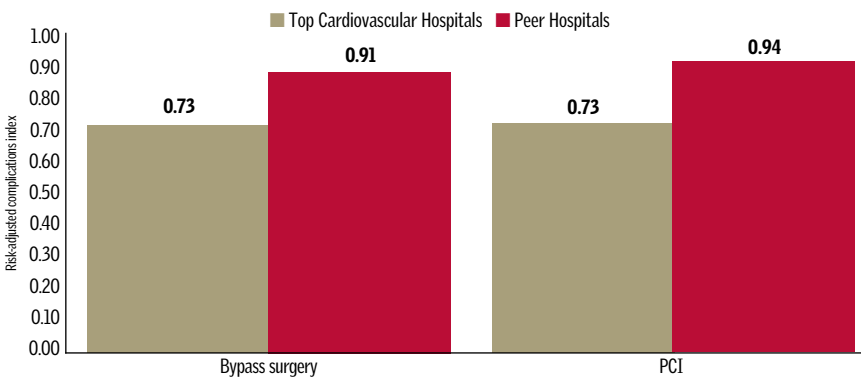
FACTFILE

Cardiac Hospital Performance

Cardiovascular care affects hundreds of thousands of patients annually and adds billions of dollars to overall U.S. healthcare costs. The *Truven Health 50 Top Cardiovascular Hospitals* study uses a national scorecard of metrics to identify the nation's highest-performing cardiovascular services lines. If all cardiovascular providers performed at the level of the study's 50 top performers, approximately 9,100 additional lives and \$1.4 billion could be saved. More than 6,100 additional bypass and percutaneous coronary interventions (PCI) patients' care could be complication-free. **1**

FEWER COMPLICATIONS

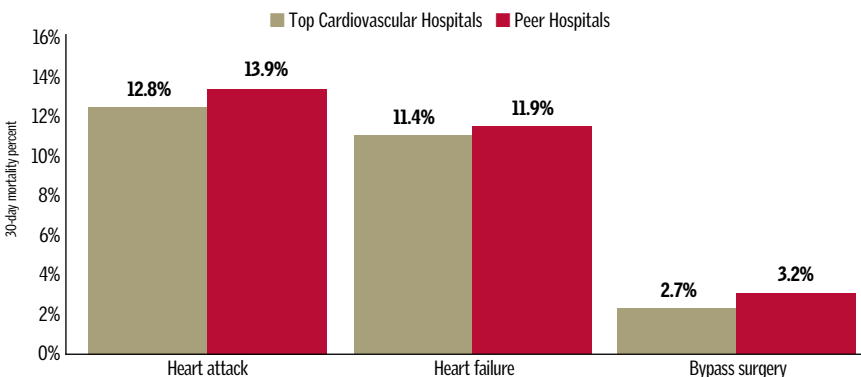
The median complications index is the ratio of observed complications to what was expected, given patient illness severity. The 2017 cardiovascular study top scorers had significantly lower complications indexes for bypass surgery and PCI, respectively, when compared to their peers.



SOURCE: Truven Health Analytics.

LOWER 30-DAY MORTALITY RATES

Top-scoring hospitals' 30-day heart failure, heart attack, and CABG mortality rates were lower than their peers, meaning a smaller percentage of patients died, of any cause, 30 days after admission. The difference was particularly dramatic for AMI patients.



SOURCE: Truven Health Analytics.

ABOUT THE DATA: The *Truven Health 50 Top Cardiovascular Hospitals* study is based on quantitative research that uses a balanced scorecard approach based on publicly available data to identify the top-performing cardiovascular hospitals in the United States. This study focuses on short-term, acute-care, nonfederal U.S. hospitals that treat a broad spectrum of cardiology patients. It includes patients requiring medical management as well as those who receive invasive or surgical procedures. Because multiple measures are used, a hospital must provide all forms of cardiovascular care, including open-heart surgery, to be considered in the study. Only objective, public data sources are used for calculating study metrics. This eliminates bias, ensures inclusion of as many health systems as possible, and facilitates uniformity of definitions and data.

For more information, email povidorsolutions@truvenhealth.com, call 1-800-525-9038, option 4, or visit www.truvenhealth.com.

U.S. Heart Disease Deaths per 100,000 Population, by State

Heart disease is a leading cause of death in the United States, but the number of deaths per 100,000 population differs markedly by state. In 2014, 21 states and the District of Columbia had heart disease death rates above the U.S. national average. Of the states with death rates below the national average, Minnesota had the lowest rate of death due to heart disease.

State	Overall Avg.
U.S. Overall	167.0
Mississippi	229.9
Oklahoma	228.1
Alabama	224.0
Arkansas	217.5
Louisiana	216.3
District of Columbia	207.8
Tennessee	205.6
Michigan	200.9
Kentucky	200.5
Nevada	197.2
Missouri	194.7
West Virginia	192.9
Ohio	186.4
Indiana	182.7
South Carolina	181.1
Georgia	179.7
New York	178.3
Pennsylvania	175.8
Texas	169.9
Illinois	169.7
Delaware	168.7
Maryland	167.8
New Jersey	166.3
Wyoming	162.2
Rhode Island	160.8
North Carolina	158.7
Kansas	157.4
Iowa	157.3
Vermont	156.6
Virginia	156.1
Wisconsin	155.1
South Dakota	154.6
Idaho	152.8
Florida	151.3
Utah	151.0
North Dakota	149.2
Maine	147.9
New Hampshire	147.9
Montana	147.8
Alaska	146.6
Connecticut	145.6
New Mexico	143.3
Nebraska	143.0
California	142.2
Washington	137.2
Massachusetts	137.1
Hawaii	136.7
Arizona	136.4
Oregon	132.1
Colorado	130.3
Minnesota	116.5

Notes: Data represent age-adjusted rates per 100,000 U.S. standard population in 2014. Since death rates are affected by the population composition of a given area, age-adjusted death rates should be used for comparisons between areas because they control for differences in population composition.

Sources: Kaiser State Health Facts, Number of Deaths Due to Heart Disease per 100,000 Population, 2014, <http://kff.org/other/state-indicator/number-of-deaths-due-to-diseases-of-the-heart-per-100000-population/>; Centers for Disease Control and Prevention, National Center for Health Statistics, Underlying Cause of Death 1999-2014 on CDC WONDER Online Database, released 2015. Data are from the Multiple Cause of Death Files, 1999-2014, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Causes of death attributable to heart disease mortality include ICD-10 Codes I00-109; I11; I13; I20-151.

Upcoming Topic:

> The Impact of Change in Performance Measures Over Time: 30-Day Readmissions

FACT FILE PARTNER:

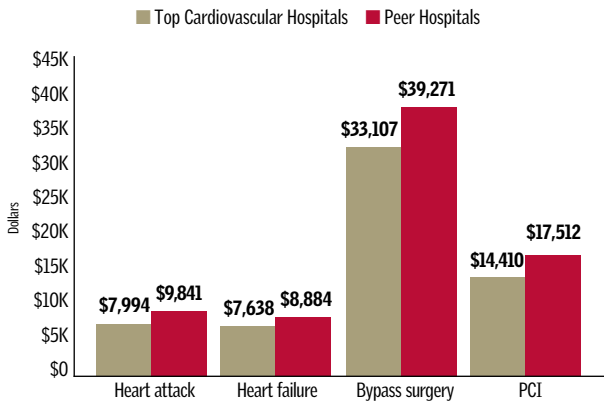


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LOWER COST PER CASE

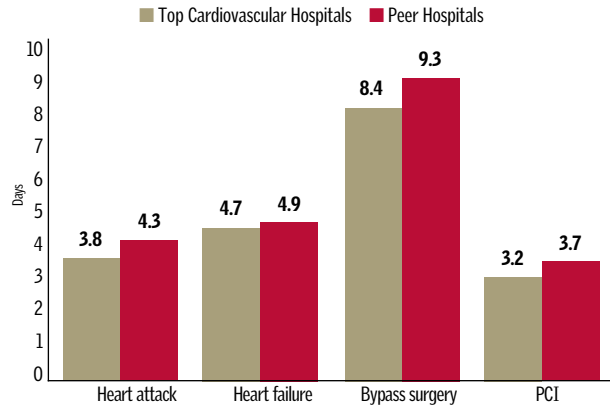
The 50 Top Cardiovascular Hospitals managed all of these clinical gains while still keeping costs lower. The typical top performer spent more than \$6,000 less per CABG patient and nearly \$2,000 less per admitted AMI patient than peers.



SOURCE: Truven Health Analytics.

SHORTER LENGTH OF STAY

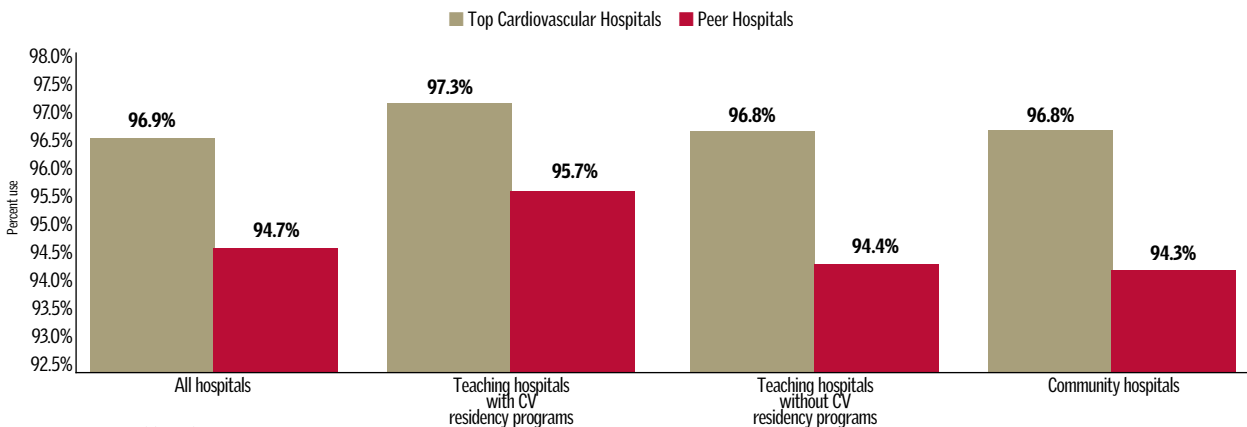
Top-performing hospitals were more efficient, releasing patients sooner than their peers. The typical 50 Top hospital released CABG patients a full day sooner, and heart attack patients were released a half day sooner than at peer hospitals.



SOURCE: Truven Health Analytics.

BETTER USE OF INTERNAL MAMMARY ARTERY

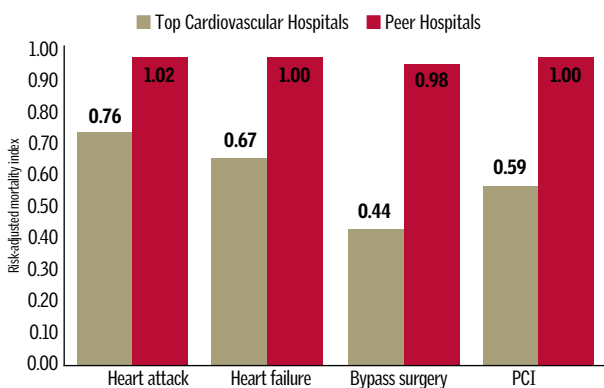
Top-scoring hospitals were more likely than peer hospitals to use internal mammary artery graft in bypass surgery in all the hospitals groups studied, with the most marked difference of 2.4% in teaching hospitals without CV residency programs.



SOURCE: Truven Health Analytics.

LOWER MORTALITY

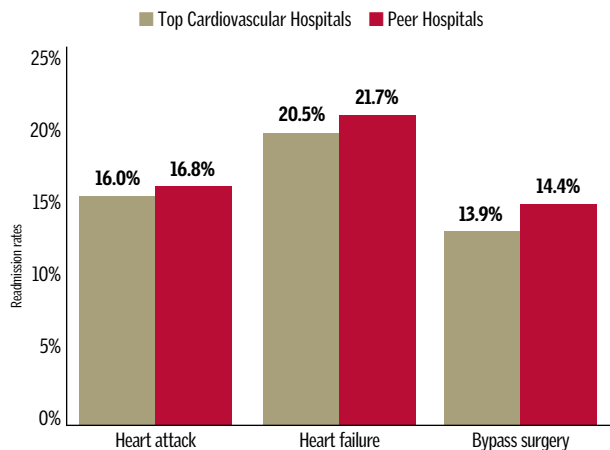
Survival rates were better at benchmark (top-scoring) hospitals, particularly for patients receiving CABG surgeries and percutaneous coronary interventions (PCI). The median benchmark hospitals had a risk-adjusted CABG mortality index of 0.44, meaning there were 56% fewer deaths than would be expected, given patient severity.



SOURCE: Truven Health Analytics.

BETTER 30-DAY READMISSION RATES

The top-scoring hospitals had lower readmission rates, with a smaller percentage of patients returning to the hospital, for any cause, within 30 days of discharge. Heart failure patient readmissions showed the biggest difference, with a 30-day readmission rate of 20.5% for top facilities versus 21.7% for others.



SOURCE: Truven Health Analytics.

