

**METHODOLOGY HIGHLIGHTS**

# 50 TOP CARDIOVASCULAR HOSPITALS

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The Thomson Reuters 50 Top Cardiovascular Hospitals is a quantitative study that uses a balanced scorecard approach, based on publicly available data, to identify the top cardiovascular hospitals in the United States.

The main steps we take in selecting the 50 cardiovascular study winners are:

- Building the database of hospitals, including special selection and exclusion criteria
- Classifying hospitals into comparison groups
- Scoring hospitals on a set of weighted performance measures
- Determining the 50 hospitals with the best performance by ranking relative to comparison group

This document provides an overview of these steps. To read a detailed methodology of the study, you may download a free study abstract at [100tophospitals.com](http://100tophospitals.com).

## **BUILDING THE DATABASE OF HOSPITALS**

This study focuses on short-term, acute-care, nonfederal U.S. hospitals that treat a broad spectrum of cardiology patients. It includes patients that require 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 included in the study. Like all studies in the Thomson Reuters 100 Top Hospitals program, this uses only publicly available data. We use the most recent data available at the time of the study. The data primarily come from:

- Medicare Provider Analysis and Review (MedPAR) data from 2009 and 2010
- Medicare Cost Reports from 2009 and 2010
- The Centers for Medicare and Medicaid Services (CMS) Hospital Compare dataset for the second quarter of 2011.
- Residency program information from the American Medical Association and the American Osteopathic Association

## **Hospitals and Patient Groups Included**

The focus of the study is on hospitals that offer both medical and surgical options for patients with two of the most common cardiovascular conditions — coronary atherosclerosis, including heart attack, and heart failure. To build such a database, we included all hospitals that had, in the 2009 and 2010 data years combined, at least 30 unique cases in each of these four groups:

- Acute myocardial infarction (AMI)
- Heart failure (HF)
- Percutaneous coronary intervention (PCI)
- Coronary artery bypass graft (CABG)

In all, 1,036 hospitals were included in this study.

## CLASSIFYING HOSPITALS INTO COMPARISON GROUPS

To allow for the profound effects that bed size, teaching status, and residency/fellowship program involvement have on the types of patients a hospital treats and the scope of services it provides, we assigned each hospital to one of three comparison groups according to its bed size, residents-to-beds ratio, and involvement in graduate medical education (GME) programs (the number of hospitals included in this study is in parentheses):

- Teaching Hospitals With Cardiovascular Residency Programs (215)
- Teaching Hospitals Without Cardiovascular Residency Programs (283)
- Community Hospitals (538)

## SCORING HOSPITALS ON WEIGHTED PERFORMANCE MEASURES

We use a balanced scorecard approach, based on public data, to select the measures most useful for boards and CEOs in the current operating environment. The eight measures used in this year's study are:

### Clinical Outcome Measures

- Risk-Adjusted Mortality
- Risk-Adjusted Complications

### Clinical Process Measures

- Core Measures
- Percentage of CABG Patients With Internal Mammary Artery Use

### Extended Outcome Measures

- 30-Day Mortality (AMI, HF)
- 30-Day Readmissions (AMI, HF)

### Efficiency Measures

- Severity-Adjusted Average Length of Stay
- Wage- and Severity-Adjusted Average Cost per Case

## RANKING HOSPITALS RELATIVE TO THEIR COMPARISON GROUP

Within each of the three hospital comparison groups, we ranked hospitals based on their performance on each of the measures independently, relative to other hospitals in their group. Each performance measure is assigned a weight for use in overall ranking. Each hospital's measure ranks were summed to arrive at a total score for the hospital. The hospitals were then ranked based on their total scores, and the hospitals with the best overall rankings in each comparison group were selected as the benchmarks.

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