



The HealthGrades
America's 50 Best
Hospitals Report

February 2007



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GUIDING AMERICA TO BETTER HEALTHCARE™

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Introduction

In its continuing effort to provide consumers with complete information about the quality differences between hospitals, and to help guide America to better healthcare, HealthGrades has named its first annual group of America's 50 Best Hospitals. HealthGrades America's 50 Best Hospitals designation recognizes hospitals that have demonstrated superior and sustained clinical quality over a seven-year time period, based upon an analysis of tens of millions of Medicare patient records from 1999 through 2005 (the most current year available).

The evaluation and selection criteria for HealthGrades America's 50 Best Hospitals are unique in the industry. In evaluating hospital performance, HealthGrades considers only clinical outcomes (survival and major complication rates) as measures of quality. Factors such as patient satisfaction, brand reputation, financial performance and other operational issues are not taken into account by HealthGrades, as these factors do not materially correlate to a quality patient experience in terms of clinical outcomes.

Recipients of HealthGrades America's 50 Best Hospitals (see *Exhibit A*) were selected by identifying those hospitals that have received the HealthGrades Distinguished Hospital Award for Clinical Excellence™ (DHA-CE) the most consecutive times from 2007 and previous years. Hospitals that are recognized by HealthGrades' DHA-CE award rank among the top five percent nationally for quality.

In *HealthGrades Fifth Annual Hospital Quality and Clinical Excellence Study* (released January 29, 2007), HealthGrades analyzed nearly 40 million Medicare patient records from 4,971 hospitals over a three-year period (2003 - 2005). This study identified the top U.S. hospitals based on overall performance of risk-adjusted outcomes associated with 28 common Medicare inpatient procedures and diagnoses. Of the 4,971 short-term, non-federal, non-children's, acute care hospitals, only 266 hospitals were designated as Distinguished Hospitals for Clinical Excellence™. The Distinguished Hospitals for Clinical Excellence were then compared to all other U.S. hospitals to identify trends in outcomes, relative risk, and improvement over the years 2003, 2004 and 2005.

Summary of Findings

Distinguished Hospitals for Clinical Excellence outperformed all other hospitals across all procedures and diagnoses studied. During 2003-2005, they had:

- On average, **28 percent overall lower inhospital risk-adjusted mortality** associated with the 16 procedures and diagnoses studied.
- On average, **5 percent overall lower inhospital risk-adjusted complications** associated with the 10 procedures studied.

As a group, DH-CE outperformed all other U.S. hospitals across all 26 procedures and diagnoses studied—a finding consistent with prior-year studies. Among the Medicare beneficiaries admitted to U.S. hospitals during 2003 - 2005, **158,264 lives may have been saved** and **12,410 patients may have avoided a major complication** if they had been treated at Distinguished Hospitals for Clinical Excellence.

HealthGrades America's 50 Best Hospitals are those hospitals that have achieved DHA-CE status in the most consecutive years (including 2007 and prior years). As leaders among the nation's elite hospitals, HealthGrades America's 50 Best Hospitals have therefore been achieving exceptional clinical excellence on a sustained and consistent basis, as confirmed by HealthGrades' annual clinical quality studies.

Three-Step Methodology Process

In order to evaluate overall hospital performance and to identify the 50 best performing hospitals in clinical excellence across the U.S., HealthGrades uses a three-step methodology process:

- 1 Mortality and Complication Based Outcomes Methodology
- 2 Distinguished Hospital Award – Clinical Excellence™ Methodology
- 3 HealthGrades America's 50 Best Hospitals Methodology

The *HealthGrades Fifth Annual Hospital Quality and Clinical Excellence Study* concentrated on the 26 procedures and diagnoses for which HealthGrades has developed a predictive logistic regression model. The 26 procedures and diagnoses are as follows.

- Atrial Fibrillation
- Back and Neck Surgery (Spinal Fusion)
- Back and Neck Surgery (except Spinal Fusion)
- Bowel Obstruction
- Carotid Endarterectomy
- Cholecystectomy
- Chronic Obstructive Pulmonary Disease (COPD)
- Community Acquired Pneumonia
- Coronary Bypass Surgery
- Coronary Interventional Procedures
- Diabetic Acidosis and Coma
- Gastrointestinal Bleed
- Heart Attack
- Heart Failure
- Hip Fracture Repair
- Pancreatitis
- Partial Hip Replacement
- Peripheral Vascular Bypass
- Prostatectomy
- Pulmonary Embolism
- Resection / Replacement of Abdominal Aorta
- Sepsis
- Stroke
- Total Hip Replacement
- Total Knee Replacement
- Valve Replacement Surgery

Mortality and Complication Based Outcomes 2007 Methodology Brief

To help consumers evaluate and compare hospital performance, HealthGrades analyzes patient outcome data for virtually every hospital in the country (all hospitals with the exception of government/military hospitals). HealthGrades purchases the initial data from the Centers for Medicare and Medicaid Services (CMS). The Medicare data (MedPAR file) from CMS contained the 40 million inpatient records for Medicare patients. The ratings for 28 procedures and diagnoses are based upon the HealthGrades methodology.

The purpose of risk adjustment is to obtain fair statistical comparisons between disparate populations or groups. Significant differences in demographic and clinical risk factors are found among patients treated in different hospitals. Risk adjustment of the data is needed to make accurate and valid comparisons of clinical outcomes at different hospitals. Developing ratings involves two steps.

- First, the **predicted** value for a specific outcome is estimated.
- Second, the predicted outcome is compared to the **actual outcome**.

HealthGrades determines if the difference between the predicted outcome and the actual outcome was statistically significant. This is important because in healthcare, patients differ from one another with respect to their health status, demographics, and type of procedure performed. Risk factors include gender, age, specific procedure performed, and current health conditions such as hypertension, diabetes, and congestive heart failure. The risk adjustment used by HealthGrades takes these factors into consideration to make fair and accurate comparisons of hospitals based upon the types of patients treated.

The following rating system was applied to the data for all procedures and diagnoses:

- ★ ★ ★ ★ ★ Actual performance was better than predicted and the difference was statistically significant.
- ★ ★ ★ Actual performance was not significantly different from what was predicted.
- ★ Actual performance was worse than predicted and the difference was statistically significant.

In general, 70 percent to 80 percent of hospitals in each procedure/diagnosis are classified as three stars, with actual results statistically the same as predicted results. Approximately 10 percent to 15 percent were one-star hospitals and 10 percent to 15 percent were five-star hospitals.

Visit www.HealthGrades.com to view hospital ratings and to read the complete methodology white paper *Hospital Report Card™ Mortality and Complication Based Outcomes 2007 Methodology White Paper*.

Distinguished Hospital Award – Clinical Excellence™ 2007 Methodology

For the Distinguished Hospital Award for Clinical Excellence™, hospitals were segregated into two groups:

- Teaching hospitals
- Non-teaching hospitals (which were further segmented by size with community hospitals being fewer than 200 beds)

To be considered for the Distinguished Hospital Award for Clinical Excellence (DHA-CE), a hospital had to have had in-hospital mortality or complication ratings in at least 22 of the 28 HealthGrades ratings using MedPAR data.

After creating a list of hospitals that met the above criteria, HealthGrades took the following steps to determine the DHA-CE recipients.

- 1 Calculated the average star rating for each hospital by averaging all of their MedPAR-based ratings.
- 2 Calculated the average z-score from all cohorts.
- 3 Ranked hospitals in descending order by their average star rating within the two groups: teaching and non-teaching.
- 4 Broke ranking ties by average z-score.
- 5 Selected the top 20 percent of hospitals from each group.
- 6 Excluded hospitals whose average star was less than 3.30.
- 7 Designated the hospitals that remained on the list as the 2007 DHA-CE recipients.

HealthGrades America's 50 Best Hospitals 2007 Methodology

HealthGrades' America's 50 Best Hospitals Award recognizes hospitals for consistent excellence by identifying those hospitals that have received HealthGrades' Distinguished Hospital Award for Clinical Excellence™ (DHA-CE) designation for the most consecutive years.

- 1 Hospitals who were DHA-CE recipients for all of the five years that HealthGrades has awarded the DHA-CE were identified.
- 2 Hospitals who were DHA-CE recipients for all of the last four years that HealthGrades has awarded DHA-CE were identified.
 - The four-year recipients were sorted by z-score, using the average z-score from the most recent DHP-CE analysis.
 - The top hospitals from this list were then added to the list from step 1 to create a list of America's 50 Best Hospitals.

Interpretation of Results

HealthGrades America's 50 Best Hospitals designation recognizes hospitals that have demonstrated superior and sustained clinical quality over a seven-year time period, based upon an analysis of tens of millions of Medicare patient records from 1999 through 2005 (the most current year available).

Recipients of HealthGrades America's 50 Best Hospitals were selected by identifying those hospitals that have received the HealthGrades Distinguished Hospital Award for Clinical Excellence™ (DHA-CE) the most consecutive times from 2007 and previous years. Hospitals that are recognized by HealthGrades' DHA-CE award rank among the top five percent nationally for quality.

As presented in *HealthGrades Fifth Annual Hospital Quality and Clinical Excellence Study*, Distinguished Hospitals for Clinical Excellence outperformed all other hospitals across all procedures and diagnoses studied. During 2003 - 2005, they had:

- On average, **28 percent overall lower in-hospital risk-adjusted mortality** associated with the 16 procedures and diagnoses studied (cardiac surgery, angioplasty, stent, heart attack, heart failure, atrial fibrillation, chronic obstructive pulmonary disease, community acquired pneumonia, stroke, abdominal aortic aneurysm repair, bowel obstruction, gastrointestinal bleed, pancreatitis, diabetic acidosis and coma, pulmonary embolism, and sepsis). For the second year in a row, the top four areas associated

with the greatest relative reduction in risk-adjusted in-hospital mortality associated with Distinguished Hospitals as compared to all other hospitals, were noted in:

- Diabetic Acidosis & Coma – approximately 40% lower
 - Pancreatitis – approximately 36% lower
 - Community Acquired Pneumonia – approximately 33% lower
 - Heart Failure – approximately 32% lower
- On average, **5 percent overall lower in-hospital risk-adjusted complications** associated with the 10 procedures studied (total knee replacement, total hip replacement, hip fracture repair, partial hip replacement, back and neck surgery, spinal fusion, carotid endarterectomy, peripheral vascular bypass, prostatectomy, and cholecystectomy). The top three areas associated with the greatest relative reduction in risk-adjusted in-hospital complications associated with Distinguished Hospitals as compared to all other hospitals, were noted in:
 - Hip Fracture Repair – approximately 11% lower
 - Partial Hip Replacement – approximately 10% lower
 - Prostatectomy – approximately 8% lower

When extrapolated, assuming all patients with any of the 26 conditions studied were treated at Distinguished Hospitals for Clinical Excellence during 2003 - 2005, **158,264 lives may have been saved** and **12,410 patients may have avoided an in-hospital complication**.

In conclusion, HealthGrades annual clinical quality study identified an overall quality benchmark that is quite high but demonstrably achievable by an elite group of distinguished hospitals. By identifying these Distinguished Hospitals for Clinical Excellence, HealthGrades is providing an objective measurement of overall quality and with statistical significance, and identifying those hospitals that have the most impact on quality healthcare. The benchmark set by the 266 top performing hospitals in the nation can be used by payers, employees, employers, physicians and patients to make informed choices about where to receive the highest overall quality of healthcare. Hospitals are encouraged to utilize the analysis and results of this study as a catalyst to assess their quality endeavors.

Lastly, HealthGrades America's 50 Best Hospitals are those hospitals that have achieved DHA-CE status in the most consecutive years (including 2007 and prior years). As leaders among the nation's elite hospitals, HealthGrades America's 50 Best Hospitals have therefore been achieving exceptional clinical excellence on a sustained and consistent basis, as confirmed by HealthGrades' annual clinical quality studies.

Exhibit A: List of HealthGrades America's 50 Best Hospitals

(Listed alphabetically.)

HealthGrades America's 50 Best Hospital*	City	State
Abbott – Northwestern Hospital Inc	Minneapolis	MN
Advocate Lutheran General Hospital	Park Ridge	IL
Akron General Medical Center	Akron	OH
Alexian Brothers Medical Center	Elk Grove Village	IL
Baptist Hospital of Miami Inc	Miami	FL
Cedars-Sinai Medical Center	Los Angeles	CA
Christ Hospital	Cincinnati	OH
CJW Medical Center – Chippenham Campus	Richmond	VA
including CJW Medical Center – Johnston Willis Campus	Richmond	VA
Cleveland Clinic	Cleveland	OH
Deaconess Hospital	Cincinnati	OH
including Regency Hospital of Cincinnati, LLC	Cincinnati	OH
Delray Medical Center	Delray Beach	FL
Easton Hospital	Easton	PA
Evanston Northwestern Healthcare	Evanston	IL
including Highland Park Hospital	Highland Park	IL
Fairview Hospital	Cleveland	OH
Genesys Regional Medical Center	Grand Blanc	MI
Glendale Memorial Hospital and Health Center	Glendale	CA
Good Samaritan Hospital	Los Angeles	CA
Good Shepherd Medical Center	Longview	TX
Hackensack University Medical Center	Hackensack	NJ
Hamot Medical Center	Erie	PA
Henrico Doctors' Hospital	Richmond	VA
including Henrico Doctors' Hospital – Parham	Richmond	VA
Hillcrest Hospital	Mayfield Heights	OH
Holmes Regional Medical Center	Melbourne	FL
Holy Cross Hospital	Fort Lauderdale	FL
Lancaster General Hospital	Lancaster	PA
Lawnwood Regional Medical Center and Heart Institute	Fort Pierce	FL
Lehigh Valley Hospital	Allentown	PA
Main Line Hospitals – Lankenau	Wynnewood	PA
Mayo Clinic Hospital	Phoenix	AZ
Memorial Healthcare System, Inc	Chattanooga	TN
Mercy Hospital Scranton	Scranton	PA
Mission Hospitals, Inc	Asheville	NC
Morton Plant Hospital	Clearwater	FL
Munroe Regional Medical Center	Ocala	FL

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HealthGrades America's 50 Best Hospitals continued...

HealthGrades America's 50 Best Hospital*	City	State
Munson Medical Center	Traverse City	MI
Oakwood Hospital and Medical Center – Dearborn	Dearborn	MI
Ocala Regional Medical Center	Ocala	FL
Palm Beach Gardens Medical Center	Palm Beach Garden	FL
Rio Grande Regional Hospital	Mcallen	TX
Rush North Shore Medical Center	Skokie	IL
Saint Joseph's Hospital of Atlanta	Atlanta	GA
Sarasota Memorial Hospital	Sarasota	FL
Southwest General Health Center	Middleburg Heights	OH
St Elizabeth Medical Center – South	Edgewood	KY
St Johns Hospital Health Center	Santa Monica	CA
St Luke's Hospital	Bethlehem	PA
including St Luke's Hospital – Allentown Campus	Allentown	PA
St Lukes Hospital	Chesterfield	MO
St Marys Hospital	Rochester	MN
Summa Health Systems Hospitals	Akron	OH
William Beaumont Hospital	Royal Oak	MI

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Some of the recipients of the America's 50 Best Hospital Award have multiple locations that report under the same Medicare Provider ID. In these cases, results for all locations were used in the analysis and each of the facilities is designated as a recipient of the award.