15 Top Health Systems, 2015
A National Benchmarks Report

Prepared For:
Any Health System
Any City, US
PERFORMANCE REPORT NOTES

HEALTH SYSTEM SELECTION
In the Truven Health Analytics 15 Top Health Systems study, we identify health systems as follows:
• Must have at least two acute care hospitals
• Must report a parent or related organization relationship on the hospital Medicare cost report
We also include Women’s, Cardiac and Orthopedic hospitals, as well as Critical Access Hospitals in the system analysis.
If a health system has separately reported subsystems as members, we rank each subsystem's performance independent of its parent, as well as including it in its parent system. A hospital may be included in both a parent system and a subsystem analysis.

HEALTH SYSTEM COMPARISON GROUPS AND WINNERS
We divide health systems into three comparison groups to develop more actionable performance benchmarks. Total operating expense was used to classify:

<table>
<thead>
<tr>
<th>Comparison Group</th>
<th>Tot Operating Expense</th>
<th>Winners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Health System</td>
<td>&gt; $1.5 billion</td>
<td>5</td>
</tr>
<tr>
<td>Medium Health System</td>
<td>$750 million - $1.5 billion</td>
<td>5</td>
</tr>
<tr>
<td>Small Health System</td>
<td>&lt; $750 million</td>
<td>5</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

We select 15 Benchmark health systems (winners) based on overall performance across all included measures, in the most recent year of data available. Overall performance is determined by ranking each measure individually, by comparison group, summing the weighted ranks and re-ranking overall.
Peer health systems include all U.S. health systems in our study database, excluding benchmark systems.

HEALTH SYSTEM MEASURE CALCULATION
We produce health system measures by aggregating patient level and hospital data to the health system level. See study Abstract for details.

METHODOLOGY NOTES
Present on Admission (POA) coding was used in the risk models for mortality, complications, AHRQ Patient Safety Indicators (PSIs) and average length of stay (ALOS). For mortality, complications and PSI, five data years were combined in two year increments (2009-10; 2010-11; 2011-12; 2012-13) to develop 4 data points for trend. ALOS was trended across the 5 single data years.

RANK WEIGHTS AND PUBLIC DATA SOURCES

<table>
<thead>
<tr>
<th>Measures</th>
<th>Rank Wt</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-Adjusted Mortality</td>
<td>1</td>
<td>MedPAR FFY 2009-2013</td>
</tr>
<tr>
<td>Risk-Adjusted Complications</td>
<td>1</td>
<td>MedPAR FFY 2009-2013</td>
</tr>
<tr>
<td>Risk-Adjusted Patient Safety</td>
<td>1</td>
<td>MedPAR FFY 2009-2013</td>
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<tr>
<td>Core Measures Mean Percent</td>
<td>1</td>
<td>CMS Hospital Compare FFY 2009-2013</td>
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<td>Severity-Adjusted Average Length of Stay</td>
<td>1</td>
<td>MedPAR FFY 2009-2013</td>
</tr>
<tr>
<td>Medicare Spend per Beneficiary Index(^2)</td>
<td>1</td>
<td>CMS Hospital Compare CY 2013</td>
</tr>
<tr>
<td>HCAHPS</td>
<td>1</td>
<td>CMS Hospital Compare CY 2009-2013</td>
</tr>
</tbody>
</table>

\(^1\)Hip/Knee only included in current profile composite; not trend. Weights for trend are 1/6 each for AMI, HF and PN.
\(^2\)Trend data not available for Medicare spend per beneficiary index. Matrix data point will not be graphed.

FOR MORE INFORMATION
For a Study Abstract, with full details on performance measures, methods used and winner list, visit [www.100tophospitals.com](http://www.100tophospitals.com).
INTEGRATED SYSTEM PERFORMANCE COMPARISON

The 15 Top Health Systems Performance Matrix, in a single view, compares your system’s current level of achievement and 5-year rate of improvement in percentiles. These percentiles are based on your rank, by measure and overall, versus all other health systems in your comparison group. This integrated performance comparison provides insight into the success of your performance improvement strategies relative to other similar health systems.

INTERPRETING SYSTEM PERFORMANCE

Overall health system performance is a composite score based on the sum of the ranks of individual measures. For 2013 Performance overall, the 30-day mortality rates were weighted 1/6th each and the 30-day readmission rates, 1/8th each. For Rate of Improvement overall, 30 Day mortality and 30 Day readmission rates were weighted 1/6th each. All other measures had a weight of 1 in both profiles. This sum is used to rank your health system versus your comparison group. The matrix “Overall” dot integrates your national rank percentile for current overall performance with your national rank percentile for 5-year overall rate of improvement. Rank percentiles for each individual measure are also graphed. Measures may fall into any one of four quadrants: Declining, Improving, Leading, or At Risk.

WINNER SELECTION

15 Top Health Systems award winners are selected based on highest overall current performance achievement only. Winners may have a wide range of performance on 5-year rate of improvement. Those with very low rates of improvement are “At Risk” for losing their benchmark status in future studies.

PERFORMANCE MATRIX NOTES

Missing Matrix Graph or Matrix Data Point

Your matrix graph will be missing if your health system is out-of-study due to missing data needed to calculate one or more measures. Also, there will be no matrix graph if your system has too few years of data to trend. A minimum of four years of data are required.

Your health system will have no matrix graph overall dot and one or more missing measure dots if one or more performance measures could not be trended due to outlier trimming. A minimum of three good data points is needed to calculate the trend statistic used for ranking rate of improvement.
15 TOP HEALTH SYSTEMS PERFORMANCE MATRIX

2013 PERFORMANCE AND RATE OF IMPROVEMENT COMPARED WITH MEDIUM HEALTH SYSTEM QUINTILES

DATA POINTS
1: OVERALL
2: Mortality
3: Complications
4: Patient Safety
5: Core Measures
6: 30-Day Mortality
7: 30-Day Readmission
8: ALOS
9: HCAHPS

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20

PROFILED HEALTH SYSTEM:
2013 Comparison group: n = 98
2009 - 2013 Comparison group: n = 98
15 TOP HEALTH SYSTEMS TREND PROFILE

TREND PROFILE
The 15 Top Health Systems Trend Profile analyzes your health system's rate of performance improvement over five years, using a balanced scorecard of critical performance metrics:
• Risk-Adjusted Mortality (in-hospital)
• Risk-Adjusted Complications
• Risk-Adjusted Patient Safety
• Core Measures Mean Percent
• 30-Day Mortality (AMI, heart failure, pneumonia)
• 30-Day Readmissions (AMI, heart failure, pneumonia)
• Severity-Adjusted Average Length of Stay
• HCAHPS Score (Patient Overall Hospital Rating)

UNDERSTANDING THE GRAPHS

Performance Trends by Measure (Regression Line Graphs)
This section of the Profile contains graphs for each individual performance measure. Regression lines, calculated from your included years of data, are displayed for your health system and the benchmark and peer health systems in your comparison group.

A statistical significance note is also displayed for each graph, indicating whether your performance is improving, not changing, or worsening (95% confidence) over the five years (99% confidence for the measures that have four data points).

You can easily identify the consistency of your rates of improvement across all measures from these graphs. In addition, you can compare your rates of performance improvement to benchmark rates to identify areas of greatest opportunity.

Performance Trends Versus Comparison Group Quintiles (Color Quintile Graphs)
This section of the Profile contains graphs for each individual performance measure showing your health system's actual data points for each year. These data points are displayed against a background of quintile ranges for the data points of all health systems in your comparison group. Each range is color-coded to indicate level of performance, from dark green (best quintile) to red (worst quintile). You can use these graphs to see whether you are moving ahead of or falling behind other similar health systems.

REPORT NOTES

Use of Median Values for Missing Measures
For each data year, when an individual core measure, 30 day mortality or 30 day readmission rate is missing or the reported value is insufficiently precise (patient count too low) to be included, the median value of your comparison group is substituted. Median values are not displayed on the Color Quintile Graphs.

Regression Line Graphs - Missing Line
No health system trend line is displayed on the Regression Line Graphs if fewer than three data points are available. Benchmark and peer median values will still be displayed.

Color Quintile Graphs - Missing Data Points
Individual data points are missing on the Color Quintile Graphs when the following occur:
• values are not reported
• comparison group median value has been substituted, in a specific year (applies to core measures and 30 day rates)

If a health system was excluded from the trend profile analysis for missing one or more measures, the details are noted at the end of the Trend Profile section.
PROFILED SYSTEM PERFORMANCE TRENDS COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS

### Risk-Adjusted Mortality Index

- **Profiled health system is IMPROVING (99% confidence)**
  - ▼ **DESIRED DIRECTION**

### Risk-Adjusted Complications Index

- **Profiled health system is NOT CHANGING (99% confidence)**
  - ▼ **DESIRED DIRECTION**

### Risk-Adjusted Patient Safety Index

- **Profiled health system is NOT CHANGING (99% confidence)**
  - ▼ **DESIRED DIRECTION**

### Severeity-Adjusted Average Length of Stay

- **Profiled health system is NOT CHANGING (99% confidence)**
  - ▼ **DESIRED DIRECTION**

---

\(^1\)Benchmark health systems \(n=5\)

\(^2\)Non-benchmark health systems \(n=93\)

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PROFILED SYSTEM PERFORMANCE TRENDS COMPARED WITH MEDIUM BENCHMARK¹ AND PEER² SYSTEMS

**30-DAY MORTALITY RATE (AMI, HF, PNEU)**

Profiled health system is IMPROVING (95% confidence)

▲ DESIRED DIRECTION

**CORE MEASURES MEAN PERCENT**

Profiled health system is IMPROVING (95% confidence)

▲ DESIRED DIRECTION

**30-DAY READMISSION RATE (AMI, HF, PNEU)**

Profiled health system is NOT CHANGING (95% confidence)

▼ DESIRED DIRECTION

**HCAHPS SCORE OVERALL RATING**

Profiled health system is IMPROVING (95% confidence)

▲ DESIRED DIRECTION

¹ Benchmark health systems n=5

² Non-benchmark health systems n=93
PROFILED SYSTEM PERFORMANCE TRENDS COMPARED WITH MEDIUM HEALTH SYSTEM QUINTILES (n=98)

RISK-ADJUSTED MORTALITY INDEX

<table>
<thead>
<tr>
<th>YEARS</th>
<th>HEALTH SYSTEM COMPARISON GROUP</th>
<th>PROFILED SYSTEM</th>
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<tr>
<td>2011</td>
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RISK-ADJUSTED COMPLICATIONS INDEX

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<td>2013</td>
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PROFILED SYSTEM PERFORMANCE TRENDS COMPARED WITH MEDIUM HEALTH SYSTEM QUINTILES (n=98)

RISK-ADJUSTED PATIENT SAFETY INDEX

SEVERITY-ADJUSTED AVERAGE LENGTH OF STAY

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PROFILED SYSTEM PERFORMANCE TRENDS COMPARED WITH MEDIUM HEALTH SYSTEM QUINTILES (n=98)

30-DAY MORTALITY RATE (AMI, HF, PNEU)

30-DAY READMISSION RATE (AMI, HF, PNEU)

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<tr>
<th>PERCENTILE POINTS</th>
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PROFILED SYSTEM PERFORMANCE TRENDS COMPARED WITH MEDIUM HEALTH SYSTEM QUINTILES (n=98)

CORE MEASURES MEAN PERCENT

HCAHPS SCORE OVERALL RATING

<table>
<thead>
<tr>
<th>YEARS</th>
<th>HEALTH SYSTEM COMPARISON GROUP</th>
<th>PROFILED SYSTEM</th>
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<tbody>
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<th>YEARS</th>
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</tr>
<tr>
<td>2013</td>
<td>258.4</td>
<td>263.1</td>
</tr>
</tbody>
</table>
15 TOP HEALTH SYSTEMS CURRENT PROFILE

CURRENT PROFILE

The 15 Top Health Systems Current Profile analyzes your health system's performance in the most recent year available, using a national balanced scorecard of critical performance metrics:

- Risk-Adjusted Mortality Index (in-hospital)
- Risk-Adjusted Complications Index
- Risk-Adjusted Patient Safety Index
- Core Measures Mean Percent
- 30 Day Mortality (AMI, heart failure, pneumonia)
- 30 Day Readmissions (AMI, heart failure, pneumonia, hip/knee)
- Severity-Adjusted Average Length of Stay
- Medicare Spend per Beneficiary Index
- HCAHPS Score (Patient Overall Hospital Rating)

Using this Profile, you can identify your health system's level of performance achievement by individual measure and overall, and target higher performance. In addition, the Profile shows the level of achievement of national award-winning (benchmark) health systems and the median performance of non-winning (peer) systems.

MEASURE CALCULATION OVERVIEW

Mortality, complications, patient safety and length of stay (LOS) indexes are calculated by summing hospital observed and expected values to the health system level. Expected values are normalized by system class. LOS indexes are converted to average length of stay in days for reporting using the in-study health system grand mean LOS.

Core measures, 30 day mortality and 30 day readmissions are calculated by summing member hospital observed and eligible patient counts to the health system level to calculate the percents or rates.

Medicare spend per beneficiary index (MSPB) is calculated by weighting the member hospital MSPB indexes by the hospital MedPAR discharges. The weighted indexes are summed and divided by the total member hospital discharges. This produces the weighted MSPB for each system.

The HCAHPS score is calculated by weighting the member hospital HCAHPS scores by the hospital MedPAR discharges. Weighted scores are summed and divided by the total member hospital discharges. This produces the weighted HCAHPS score for each system.

UNDERSTANDING THE GRAPHS

Profiled System Compared with Benchmark and Peer

This section contains individual bar graphs for each of the performance measures included in the 15 Top Health Systems national balanced scorecard. Each bar graph shows performance achievement levels for three groups: your health system, the benchmark group median, and the peer group median.

The graphs for the binomial measures — in-hospital mortality, complications and patient safety — also have a statistical significance note that indicates whether your performance is better than expected, as expected, or worse than expected (95% confidence).

Patient Safety Indicators, Core Measures and HCAHPS Detail

This section contains bar graphs for the individual measures that make up the composite ranked measures for Patient Safety Index and Core Measures Mean Percent. In addition, performance on each HCAHPS question is included for information. Only the Overall Hospital Rating question (an HCAHPS outcome metric) is ranked.
CURRENT PROFILE NOTES

Member Hospital Exclusions

Member hospitals are excluded from the parent health system analysis if one or more of the following conditions exist:

- Identified as a specialty hospital (Children’s, Cancer, LTAC, Psych or SNF)
- Identified as a Federally-owned hospital
- Identified as a non-U.S. hospital (Guam, Puerto Rico, Virgin Islands)
- Medicare average length of stay longer than 30 days

Any member hospital measures for which there are useable data will be included when aggregating member hospital data to the system level.

System Study Exclusions (No Report Available)

- Organization does not have at least two short term general acute care hospitals that report system membership on the hospital cost report
- System has one or more missing measures
- POA not coded for 2012 or 2013 Medicare claims

System Winner Exclusions

A system is winner excluded if:

- Observed mortality or complications are statistically worse than expected (95% confidence)
- Mean PSI index is an extreme high outlier (IQR methodology)
- MSPB is missing

Use of Median Values

When individual measures are missing or the reported value is insufficiently precise (patient count too low), we substitute class median values so your health system can be ranked. This was done for the following measures:

- Individual core measures
- 30 day mortality rates (AMI, HF, Pneumonia)
- 30 day readmission rates (AMI, HF, Pneumonia, Hip/Knee)

Because CMS does not publish Medicare spend per beneficiary data for Maryland hospitals, we substitute health system class median values so Maryland systems can be included in the study. These systems are not eligible to be 15 Top benchmark systems.

New Measures for Information Only

We are including a number of new measures in this report, to allow you to compare your performance relative to your peer and benchmark groups. These measures are not included in your overall performance rating and are not used to select the 15 Top award-winning health systems. You will find these measures in a separate section of this Current Profile.

HCAHPS QUESTIONS

We ranked health systems on the Overall Rating question only. All other question results are reported for information only.

PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

### Risk-Adjusted Mortality Index

- Profiled health system is statistically BETTER THAN expected. (95% confidence)

### Risk-Adjusted Complications Index

- Profiled health system is statistically AS expected. (95% confidence)

### Risk-Adjusted Patient Safety Index

- Profiled health system is statistically AS expected. (95% confidence)

### Core Measures Mean Percent

- ▲ DESIRED DIRECTION

\(\text{Benchmark health systems } n=5\)

\(\text{Non-benchmark health systems } n=93\)

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PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

30-DAY MORTALITY RATE (AMI, HF, PNEU)

<table>
<thead>
<tr>
<th>PERCENT</th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.0%</td>
<td>12.9%</td>
<td>12.7%</td>
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</table>

\(^{\text{▼ DESIRED DIRECTION}}\)

30-DAY READMISSION RATE (AMI, HF, PNEU, HIP/KNEE)

<table>
<thead>
<tr>
<th>PERCENT</th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.7%</td>
<td>14.2%</td>
<td>15.8%</td>
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</table>

\(^{\text{▼ DESIRED DIRECTION}}\)

\(^1\) Benchmark health systems \(n=5\)

\(^2\) Non-benchmark health systems \(n=93\)
### Severeity-Adjusted Average Length of Stay

<table>
<thead>
<tr>
<th></th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
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<tbody>
<tr>
<td>Days</td>
<td>4.40</td>
<td>4.53</td>
<td>5.00</td>
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- **Desired Direction:** Lower is better.

### HCAHPS Question: Overall Rating

<table>
<thead>
<tr>
<th></th>
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<th>Benchmark Median</th>
<th>Peer Median</th>
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<tbody>
<tr>
<td>Weighted Score</td>
<td>268.0</td>
<td>269.5</td>
<td>264.4</td>
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</tbody>
</table>

- **Desired Direction:** Higher is better.

### Medicare Spend Per Beneficiary (Index)

<table>
<thead>
<tr>
<th></th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
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<tbody>
<tr>
<td>Index</td>
<td>0.88</td>
<td>0.94</td>
<td>0.99</td>
</tr>
</tbody>
</table>

- **Desired Direction:** Lower is better.

---

1. Benchmark health systems n=5
2. Non-benchmark health systems n=93
3. Highest possible score is 300
PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

PATIENT SAFETY INDICATORS

PSI KEY:
PSI 03  Pressure ulcer
PSI 06  Iatrogenic pneumothorax
PSI 07  Central venous catheter-related bloodstream infections
PSI 09  Perioperative hemorrhage or hematoma
PSI 10  Postoperative physiologic and metabolic derangements
PSI 11  Postoperative respiratory failure
PSI 12  Perioperative pulmonary embolism or deep vein thrombosis
PSI 13  Postoperative sepsis
PSI 14  Postoperative wound dehiscence

\(^1\)Benchmark health systems n=5
\(^2\)Non-benchmark health systems n=93
PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK¹ AND PEER² SYSTEMS 2013

AMI, HF, PNEU CORE MEASURES

Per Cent

Aspirin Disch 99 100
PCI 90 Min 94 98 97
Statin Disch 99 100 99
Disch Instr 97 98 97
LVSF Assess 100 100
ACE LVSD 99 99 98
Blood Cult 99 99 98
Init Antibiot 98 98 97

AMI, HF, PNEU ABBREVIATION KEY:
- Aspirin Disch: Heart Attack Patients Given Aspirin at Discharge
- PCI 90 Min: Heart Attack Patients Given PCI Within 90 Minutes Of Arrival
- Statin Disch: Heart Attack Patients Given a Prescription for a Statin at Discharge
- Disch Instr: Heart Failure Patients Given Discharge Instructions
- LVSF Assess: Heart Failure Patients Given an Evaluation of Left Ventricular Systolic (LVS) Function
- ACE LVSD: Heart Failure Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
- Blood Cult: Pneumonia Patients Whose Initial Emergency Room Blood Culture Was Performed Prior To The Administration Of The First Hospital Dose Of Antibiotics
- Init Antibiot: Pneumonia Patients Given the Most Appropriate Initial Antibiotic(s)

¹Benchmark health systems n=5
²Non-benchmark health systems n=93

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PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

**SURGERY ABBREVIATION KEY:**

- **Antibiot 1Hr:** Surgery Patients Who Were Given an Antibiotic at the Right Time (Within One Hour Before Surgery) to Help Prevent Infection
- **Antibiot Stop:** Surgery Patients Whose Preventive Antibiotics Were Stopped at the Right Time (Within 24 Hours After Surgery)
- **Pre Antibiot:** Surgery Patients Who Were Given the Right Kind of Antibiotic to Help Prevent Infection
- **24Hr Prev Clots:** Patients Who Got Treatment at the Right Time (Within 24 Hours Before or After Their Surgery) to Help Prevent Blood Clots After Certain Types of Surgery
- **Glucose Control:** Heart Surgery Patients Whose Blood Sugar (Blood Glucose) is Kept Under Good Control in the Days Right After Surgery
- **Cath Remove:** Surgery Patients Whose Urinary Catheters Were Removed on the First or Second Day After Surgery
- **OR Warm:** Patients Having Surgery Who Were Actively Warmed in the Operating Room or Whose Body Temperature Was Near Normal by the End of Surgery
- **Peri-op Beta B:** Surgery Patients Who Were Taking Heart Drugs Called Beta Blockers Before Coming to the Hospital, Who Were Kept on the Beta Blockers During the Period Just Before and After Their Surgery

\(1\) *Benchmark health systems n=5*  
\(2\) *Non-benchmark health systems n=93*
PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

30-DAY MORTALITY RATES BY PATIENT CONDITION

<table>
<thead>
<tr>
<th>Condition</th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI</td>
<td>13.4</td>
<td>14.0</td>
<td>14.7</td>
</tr>
<tr>
<td>HF</td>
<td>11.5</td>
<td>12.4</td>
<td>11.5</td>
</tr>
<tr>
<td>PNEU</td>
<td>11.1</td>
<td>11.2</td>
<td>11.6</td>
</tr>
</tbody>
</table>

30-DAY READMISSION RATES BY PATIENT CONDITION

<table>
<thead>
<tr>
<th>Condition</th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI</td>
<td>19.0</td>
<td>16.7</td>
<td>17.9</td>
</tr>
<tr>
<td>HF</td>
<td>24.1</td>
<td>20.0</td>
<td>22.4</td>
</tr>
<tr>
<td>PNEU</td>
<td>18.3</td>
<td>16.0</td>
<td>17.5</td>
</tr>
<tr>
<td>HIPKNEE</td>
<td>5.3</td>
<td>4.7</td>
<td>5.1</td>
</tr>
</tbody>
</table>

\(^1\) Benchmark health systems n=5

\(^2\) Non-benchmark health systems n=93
PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

HCAHPS QUESTIONS

<table>
<thead>
<tr>
<th>QUESTION KEY:</th>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drs comm well</td>
<td>276, 278, 275</td>
<td>How often did doctors communicate well with patients?</td>
</tr>
<tr>
<td>Nurses comm well</td>
<td>278, 277, 274</td>
<td>How often did nurses communicate well with patients?</td>
</tr>
<tr>
<td>Quick help</td>
<td>258, 258, 254</td>
<td>How often did patients receive help quickly from hospital staff?</td>
</tr>
<tr>
<td>Meds explained</td>
<td>249, 250, 243</td>
<td>How often did staff explain about medicines before giving them to patients?</td>
</tr>
<tr>
<td>Pain well controlled</td>
<td>267, 267, 264</td>
<td>How often was patients pain well controlled?</td>
</tr>
<tr>
<td>Room area quiet</td>
<td>250, 252, 246</td>
<td>How often was the area around patients rooms kept quiet at night?</td>
</tr>
<tr>
<td>Room/bath clean</td>
<td>267, 263, 261</td>
<td>How often were the patients rooms and bathrooms kept clean?</td>
</tr>
<tr>
<td>Info for home</td>
<td>274, 279, 271</td>
<td>Were patients given information about what to do during their recovery at home?</td>
</tr>
<tr>
<td>Understood Care</td>
<td>250, 250, 246</td>
<td>How often did patients understand their care at discharge?</td>
</tr>
<tr>
<td>Would recommend</td>
<td>271, 274, 270</td>
<td>Would patients recommend the hospital to friends and family?</td>
</tr>
<tr>
<td>Overall rating</td>
<td>268, 270, 264</td>
<td>How do patients rate the hospital overall?</td>
</tr>
</tbody>
</table>

\(^1\)Benchmark health systems n=5
\(^2\)Non-benchmark health systems n=93

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NEW METRICS UNDER CONSIDERATION

This section of your report contains new measures that we are currently considering, some of which move outside of the inpatient acute care setting, such as emergency department efficiency and extended outcome performance, as well as the financial health of the system.

Methodologies

- Emergency Department Core Measures
  - For each core measure, we weighted member hospital average minutes by Medicare discharges and calculated a weighted average for each system

- Process of Care Measures
  - Stroke Care – Eight measures
  - Blood Clot Prevention and Treatment – Six measures

- 30 Day Mortality and Readmissions COPD and Stroke
  - We calculated the system rate by dividing the sum of the numerators by the sum of the denominators of the member hospital rates

- Financial Performance Metrics
  - Operating Margin: \( ((\text{Operating revenue}-\text{total operating expense})/\text{total operating revenue}) \times 100 \)
  - Debt-To-Capitalization: \( \text{Long-term debt}/(\text{long-term debt}+\text{unrestricted net assets}) \)

We welcome your comments and feedback on the usefulness and relevance of these measures in assessing leadership’s ability to drive high level balanced performance.
Metrics Under Consideration

EMERGENCY DEPARTMENT MEASURES

EMERGENCY DEPARTMENT ABBREVIATION KEY:

- **Avg Min**: Average time patients spent in the ED, before they were admitted to the hospital as an inpatient
- **Inp Adm**: Average time patients spent in the ED, after the doctor decided to admit them as an inpatient before leaving the ED for their inpatient room
- **Avg Min Inp Rm**: Average time patients spent in the ED before being sent home
- **Avg Min Disch**: Average time patients spent in the ED before they were seen by a healthcare professional
- **Avg Min Seen**: Average time patients who came to the ED with broken bones had to wait before receiving pain medication

Profiled System
Benchmark Median
Peer Median

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¹ Benchmark health systems n=5
² Non-benchmark health systems n=93
StrokE Care MeasurEs

Metrics Under Consideration

StrokE Care Abbreviation Key:
- Clot Trm
  Ischemic or hemorrhagic stroke patients who received treatment to keep blood clots from forming anywhere in the body within 2 days of arriving at the hospital
- Clot Prv
  Ischemic stroke patients who received a prescription for medicine known to prevent complications caused by blood clots before discharge
- Bld Thin
  Ischemic stroke patients with a type of irregular heartbeat who were given a prescription for a blood thinner at discharge
- Clot Drug
  Ischemic stroke patients who got medicine to break up a blood clot within 3 hours after symptoms started
- Clot Prv
  Ischemic stroke patients who received medicine known to prevent complications caused by blood clots within 2 days of arriving at the hospital
- Low Chol
  Ischemic stroke patients needing medicine to lower cholesterol, who were given a prescription for this medicine before discharge
- Strk Care
  Ischemic or hemorrhagic stroke patients or caregivers who received written educational materials about stroke care and prevention during the hospital stay
- Rehab
  Ischemic or hemorrhagic stroke patients who were evaluated for rehabilitation services

1 Benchmark health systems n=5
2 Non-benchmark health systems n=93

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PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

**Metrics Under Consideration**

**BLOOD CLOT PREVENTION AND TREATMENT MEASURES**

### BLOOD CLOT PREVENTION AND TREATMENT ABBREVIATION KEY:

- **Clot Trm Adm**: Patients who got treatment to prevent blood clots on the day of or day after hospital admission or surgery.
- **Clot Trm ICU**: Patients who got treatment to prevent blood clots on the day of or day after being admitted to the intensive care unit (ICU).
- **Blood Thin Trm**: Patients with blood clots who got the recommended treatment, which includes using two different blood thinner medicines at the same time.
- **IV Blood Thin**: Patients with blood clots who were treated with an intravenous blood thinner, and then were checked to determine if the blood thinner was putting the patient at an increased risk of bleeding.
- **Blood Thin Ins**: Patients with blood clots who were discharged on a blood thinner medicine and received written instructions about that medicine.
- **Clot No Trm**: Patients who developed a blood clot while in the hospital who did not get treatment that could have prevented it (Lower percentages are better with this measure).

\(1\) Benchmark health systems \(n=5\)

\(2\) Non-benchmark health systems \(n=93\)

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Metrics Under Consideration

30-DAY MORTALITY (COPD, STROKE)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>7.6%</td>
<td>8.5%</td>
<td>7.8%</td>
</tr>
<tr>
<td>STROKE</td>
<td>15.8%</td>
<td>15.9%</td>
<td>15.6%</td>
</tr>
</tbody>
</table>

30-DAY READMISSION (COPD, STROKE)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Profiled System</th>
<th>Benchmark Median</th>
<th>Peer Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>22.4%</td>
<td>19.4%</td>
<td>20.7%</td>
</tr>
<tr>
<td>STROKE</td>
<td>13.3%</td>
<td>12.3%</td>
<td>13.2%</td>
</tr>
</tbody>
</table>

1 Benchmark health systems n=5

2 Non-benchmark health systems n=93

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PROFILED SYSTEM COMPARED WITH MEDIUM BENCHMARK\(^1\) AND PEER\(^2\) SYSTEMS 2013

**Metrics Under Consideration**

**OPERATING MARGIN**

- Profiled System: 2.4%
- Benchmark Median: 1.7%
- Peer Median: 3.1%

▲ DESIRED DIRECTION

**LONG-TERM DEBT TO CAPITALIZATION**

- Profiled System: 0.36
- Benchmark Median: 0.38
- Peer Median: 0.37

▼ DESIRED DIRECTION

\(^1\) Benchmark health systems \(n=5\)

\(^2\) Non-benchmark health systems \(n=93\)

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HEALTH SYSTEM MEMBER HOSPITAL ALIGNMENT

Overview
This section shows the alignment of member acute care hospitals in the health system. Matrix graphs for hospital performance overall and each individual measure are included. In addition, an alignment score is provided to help you assess the degree of alignment across your health system and compare it to alignment scores of the best performing systems and peer median for your comparison group. Your comments on the value and analytical characteristics of this metric are welcome. Call 1.800.366.7526 or e-mail us at 100tophospitals@truvianhealth.com.

Graphed Member Hospitals
Short-term, general, acute care hospitals are included in the alignment analysis. Only member hospitals that are ranked in the 100 Top Hospitals, 2015 study are graphed. Some acute care hospitals that are included in the 15 Top Health Systems study cannot be graphed because they were missing data for one or more measures used only in the 100 Top Hospitals study and were, therefore, not ranked in that study.

Women’s, Cardiac, Orthopedic, and Critical Access hospitals that are included in the 15 Top Health Systems study are not graphed in this section because we do not include these hospitals when comparing short term general acute care hospital performance in the 100 Top Hospitals study.

Alignment Score Findings
The alignment score measures the degree to which hospitals within the system are moving in the same direction and achieving the same levels of performance. Our preliminary results suggest that better-performing Health Systems have modestly better alignment, and the difference is statistically significant.

Methodology
The alignment score represents the average squared distance between the center point of performance and improvement for the hospitals and the respective points of the various system hospitals. To the extent that the member hospitals perform and improve in a similar fashion, the alignment score would show a smaller value than that of a system in which the member hospitals have more disbursed patterns of performance and improvement.

![Fig. 1 Tightly Aligned System](image1.png)
![Fig. 2 Loosely Aligned System](image2.png)

The health system alignment scores are reported on each hospital alignment matrix graph, along with the median alignment scores for the following:

**Top P & I Group Median:** Median alignment score for systems that were in both the top quintile for performance (P) and the top quintile for rate of improvement (I).

**Peer Group Median:** Median alignment score for all other in-study systems (not in Top P & I Group).
MEMBER HOSPITALS - OVERALL PERFORMANCE

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1. Comfort Hospital
2. Holy Hospital
3. Grand Hospital
4. Blessings Hospital
5. Country Hospital

Profiled System:
Alignment Score: 23.6
Top P & I Median: 26.2
Peer Group Median: 27.3

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - MORTALITY

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1 Comfort Hospital
2 Holy Hospital
3 Grand Hospital
4 Blessings Hospital
5 Country Hospital

Profiled System:
- Alignment Score: 16.0
- Top P & I Median: 30.4
- Peer Group Median: 28.2

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20

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MEMBER HOSPITALS - COMPLICATIONS

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1. Comfort Hospital
2. Holy Hospital
3. Grand Hospital
4. Blessings Hospital
5. Country Hospital

Alignment Score: 41.1
Top P & I Median: 31.0
Peer Group Median: 29.4

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - PATIENT SAFETY

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1 Comfort Hospital
2 Holy Hospital
3 Grand Hospital
4 Blessings Hospital
5 Country Hospital

Profiled System: 42.3
Top P & I Median: 32.0
Peer Group Median: 29.5

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
**MEMBER HOSPITALS - CORE MEASURES**

**2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT**

**HOSPITAL KEY:**
1. Comfort Hospital
2. Holy Hospital
3. Grand Hospital
4. Blessings Hospital
5. Country Hospital

**Alignment Score**
- Profiled System: 34.8
- Top P & I Median: 22.3
- Peer Group Median: 25.3

**QUINTILES**
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - 30-DAY MORTALITY

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1 Comfort Hospital
2 Holy Hospital
3 Grand Hospital
4 Blessings Hospital
5 Country Hospital

Alignment Score
Profiled System: 33.8
Top P & I Median: 24.7
Peer Group Median: 30.0

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - 30-DAY READMISSION

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1. Comfort Hospital
2. Holy Hospital
3. Grand Hospital
4. Blessings Hospital
5. Country Hospital

Alignment Score
Profiled System: 32.2
Top P & I Median: 31.0
Peer Group Median: 29.6

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - AVERAGE LENGTH OF STAY

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1. Comfort Hospital
2. Holy Hospital
3. Grand Hospital
4. Blessings Hospital
5. Country Hospital

Profiled System:
- Alignment Score: 21.9
- Top P & I Median: 25.3
- Peer Group Median: 26.7

QUINTILES:
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - ADJUSTED INPATIENT EXPENSE PER DISCHARGE

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1 Comfort Hospital
2 Holy Hospital
3 Grand Hospital
4 Blessings Hospital
5 Country Hospital

Alignment Score: 40.9
Top P & I Median: 27.2
Peer Group Median: 27.7

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
MEMBER HOSPITALS - ADJUSTED OPERATING PROFIT MARGIN

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1. Comfort Hospital
2. Holy Hospital
3. Grand Hospital
4. Blessings Hospital
5. Country Hospital

Alignment Score: 40.1
Top P & I Median: 31.0
Peer Group Median: 26.4
MEMBER HOSPITALS - HCAHPS

2013 PERFORMANCE VERSUS RATE OF IMPROVEMENT

HOSPITAL KEY:
1 Comfort Hospital
2 Holy Hospital
3 Grand Hospital
4 Blessings Hospital
5 Country Hospital

Profiled System: 33.1
Top P & I Median: 27.0
Peer Group Median: 26.3

Alignment Score: 33.1

QUINTILES
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20
APPENDIX
INCLUDED MEMBER HOSPITALS

This section contains the list of health system member hospitals included in the 15 Top Health Systems, 2015 study, identified using 2013 cost reports.

The following hospitals were included in the 15 Top Health Systems, 2015 study: acute care general, cardiac, orthopedic, women's and critical access hospitals.
HEALTH SYSTEM
INCLUDED MEMBER HOSPITALS

<table>
<thead>
<tr>
<th>GRAPH KEY</th>
<th>MCARe ID</th>
<th>HOSPITAL NAME</th>
<th>CITY</th>
<th>STATE</th>
<th>2013 OVERALL PERCENTILE</th>
<th>2009-13 OVERALL PERCENTILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>999999</td>
<td>Comfort Hospital</td>
<td>Any City</td>
<td>US</td>
<td>75.8</td>
<td>48.6</td>
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<tr>
<td>2</td>
<td>999999</td>
<td>Holy Hospital</td>
<td>Any City</td>
<td>US</td>
<td>99.7</td>
<td>98.9</td>
</tr>
<tr>
<td>3</td>
<td>999999</td>
<td>Grand Hospital</td>
<td>Any City</td>
<td>US</td>
<td>94.7</td>
<td>83.2</td>
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<td>4</td>
<td>999999</td>
<td>Blessings Hospital</td>
<td>Any City</td>
<td>US</td>
<td>94.8</td>
<td>57.7</td>
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<tr>
<td>5</td>
<td>999999</td>
<td>Country Hospital</td>
<td>Any City</td>
<td>US</td>
<td>57.1</td>
<td>58.9</td>
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<td></td>
<td>999999</td>
<td>Medical Hospital</td>
<td>Any City</td>
<td>US</td>
<td>NA</td>
<td>NA</td>
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