



15 Top Health Systems, 2017

A National Benchmarks Report

Prepared For:
Any Health System
Any City, US

REPORT METHODOLOGY 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:

Comparison Group	Tot Operating Expense	Winners
Large Health System	> \$1.75 billion	5
Medium Health System	\$750 million - \$1.75 billion	5
Small Health System	< \$750 million	5
Overall		15

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 and average length of stay (ALOS). In addition, due to increasing numbers of diagnoses with missing POA coding, we made the following adjustments to the MEDPAR data in processing the study:

- 1) We treated all diagnosis codes on the CMS exempt list as 'exempt', regardless of POA coding.
- 2) We treated all principal diagnoses as 'present on admission'.
- 3) We treated secondary diagnoses where POA code 'Y' or 'W' appeared more than 50 percent of the time in Truven's all-payer database, as 'present on admission'.

For mortality and complications six data years were combined in two year increments (2010-11; 2011-12; 2012-13; 2013-14; 2014-15) to develop 5 data points for trend. ALOS was trended across the 5 single data years.

RANK WEIGHTS AND PUBLIC DATA SOURCES

Measures	Rank Wt	Source
Risk-Adjusted Inpatient Mortality	1	MEDPAR FFY 2010-2015
Risk-Adjusted Complications	1	MEDPAR FFY 2010-2015
Core Measures Mean Percent (Stroke, Blood Clot Prevention) ¹	1	CMS Hospital Compare CY 2015
Mean 30 Day Mortality ² (AMI, Heart Failure, Pneumonia, COPD, Stroke)	1	CMS Hospital Compare 3 yr data sets ending June 30 in 2011, 2012, 2013, 2014, 2015
Mean 30 Day Readmissions ² (AMI, Heart Failure, Pneumonia, Hip/Knee, COPD, Stroke)	1	CMS Hospital Compare 3 yr data sets ending June 30 in 2011, 2012, 2013, 2014, 2015
Severity-Adjusted Average Length of Stay	1	MEDPAR FFY 2011-2015
Mean Emergency Department Throughput	1	CMS Hospital Compare CY 2012, 2014, 2015; FY 2013
Medicare Spend Per Beneficiary Index	1	CMS Hospital Compare CY 2012-2015
HCAHPS	1	CMS Hospital Compare CY 2011-2015

¹Trend data not available for Core Measures. Matrix data point cannot be graphed.

²Trend includes only AMI, Heart Failure, and Pneumonia.

FOR MORE INFORMATION

For a Study Abstract, with full details on performance measures, methods used and winner list, visit www.100tophospitals.com.

15 TOP HEALTH SYSTEMS PERFORMANCE MATRIX

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 2015 Performance overall, all measures had a weight of 1 in both the current and trend 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 (lower left), Improving (upper left), Leading (upper right), or At Risk (lower right).

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.

30-Day Rate Measures

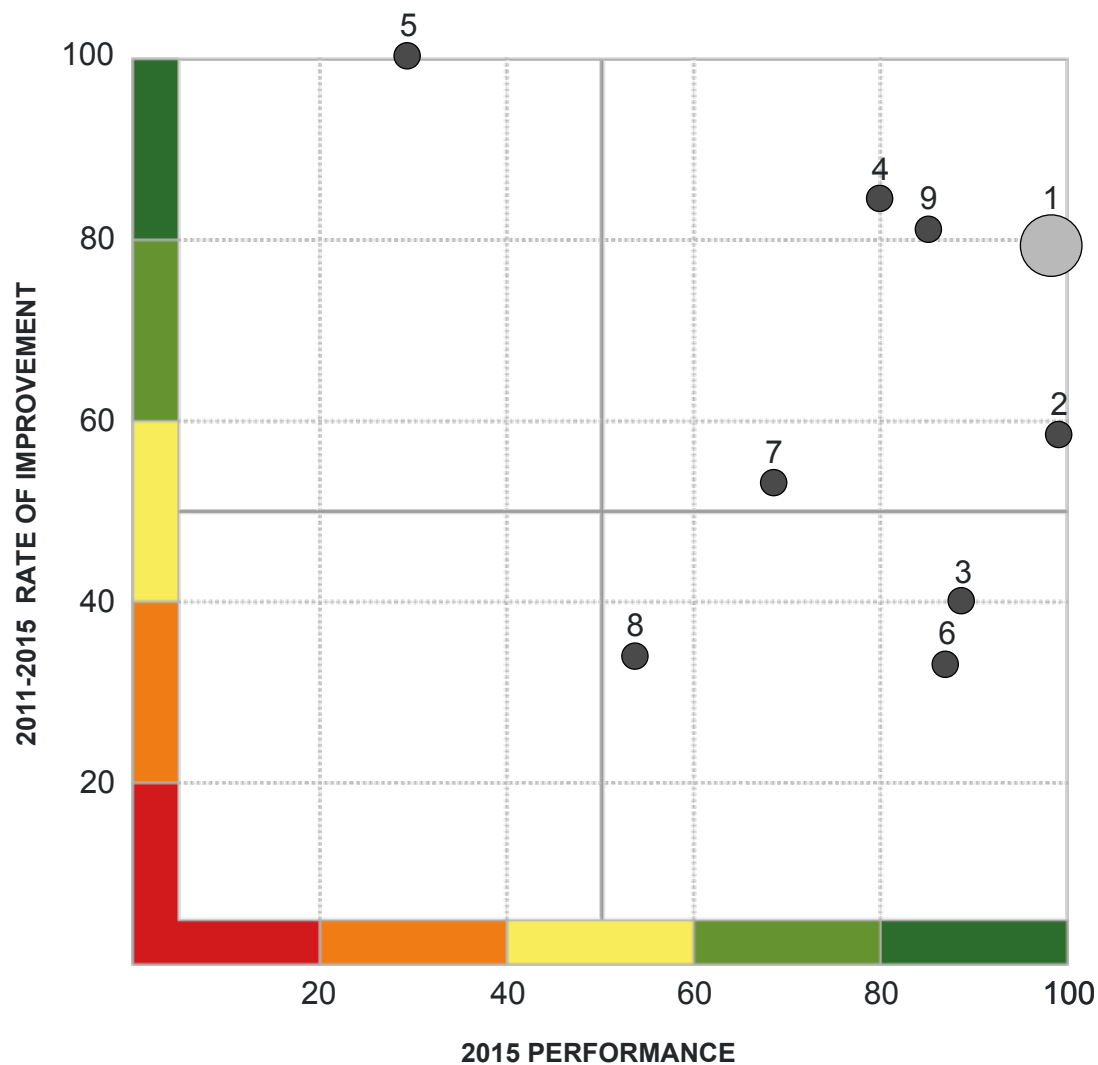
Mean 30-day mortality: 2015 Performance includes AMI, heart failure, pneumonia, COPD and stroke; 2011-2015 Rate of Improvement includes AMI, heart failure and pneumonia.

Mean 30-day readmissions: 2015 Performance includes AMI, heart failure, pneumonia, hip/knee, COPD and stroke; 2011-2015 Rate of Improvement includes AMI, heart failure and pneumonia.

15 TOP HEALTH SYSTEMS PERFORMANCE COMPARISON GROUP

Profiled Health System compared to Medium Health Systems

2015 PERFORMANCE AND 5-YEAR RATE OF IMPROVEMENT MATRIX



DATA POINTS

- 1 **OVERALL**
- 2 Inpatient Mortality
- 3 Complications
- 4 30-Day Mortality
- 5 30-Day Readmit
- 6 ALOS
- 7 ED Measure
- 8 MSPB
- 9 HCAHPS

- > 80 to 100
- > 60 to 80
- > 40 to 60
- > 20 to 40
- > 0 to 20

PROFILED HEALTH SYSTEM:

2015 Medium Health Systems: n = 115
 2011-2015 Medium Health Systems: n = 115

IMPROVEMENT AND PERFORMANCE – RANK PERCENTILES GRAPHS

UNDERSTANDING THE GRAPHS

2011-2015 Rate of Improvement Rank Percentiles

This bar graph shows your system's rate of improvement on each measure, and overall, reported as rank percentiles. Individual measure percentiles are calculated by dividing your measure rank within your comparison group by the number of systems in the group and multiplying by 100. The overall rank percentile is based on the sum of your individual measure ranks, re-ranked by comparison group. The overall rank sum is then converted into a percentile. The overall rank percentile is not the average of the individual measure percentiles.

Measures with rank percentiles above the median are likely to move ahead of peers on performance in the future, if those rates of improvement have continued.

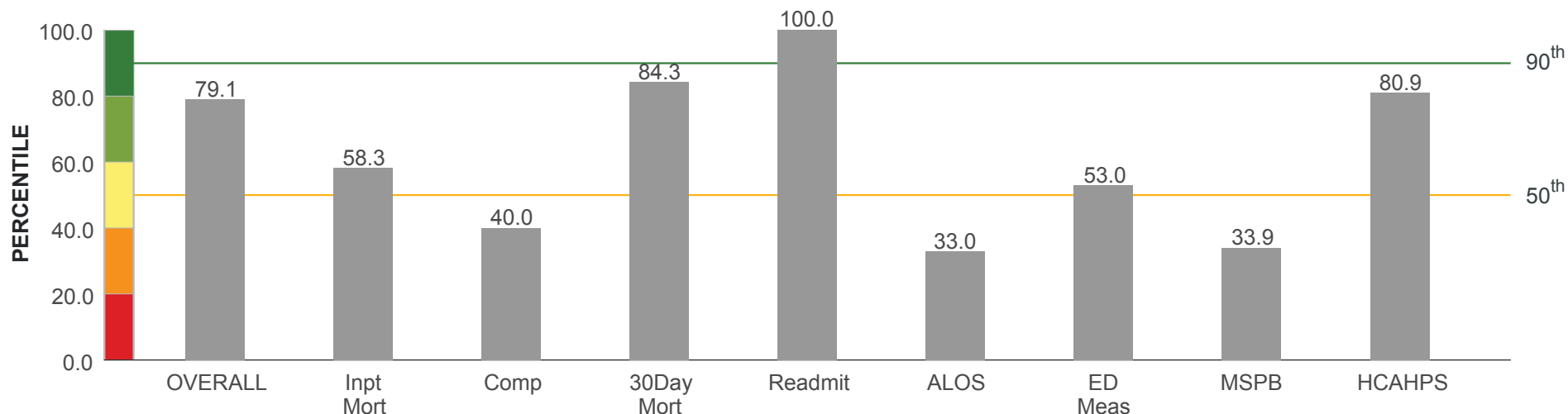
Systems with overall and measure-specific rank percentiles below the median are likely to fall behind peers on performance in the future, if those low rates of improvement have continued. And winners with a low overall rate of improvement are at risk for dropping out of the winner circle entirely.

2015 Performance Rank Percentiles

The bar graph shows your system's performance on each measure, in the most current year of data we analyzed, reported as rank percentiles. Individual measure percentiles are calculated by dividing your measure rank within your comparison group by the number of systems in the group and multiplying by 100.

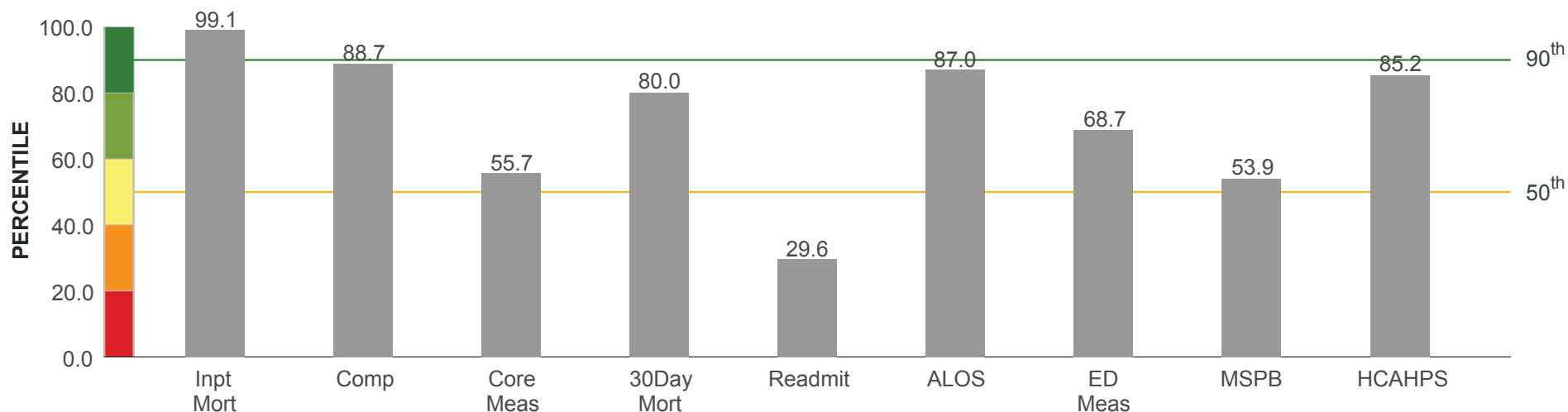
The 15 Top benchmark systems (winners) are selected based only on 2015 performance.

2011-2015 RATE OF IMPROVEMENT RANK PERCENTILES



Profiled system compared to Medium systems: n = 115

2015 PERFORMANCE RANK PERCENTILES



Profiled system compared to Medium systems: n = 115

15 TOP HEALTH SYSTEMS CURRENT PROFILE NOTES

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 Inpatient Mortality Index
- Risk-Adjusted Complications Index
- Core Measures Mean Percent
- 30-Day Mortality (AMI, HF, PN, Stroke, COPD)
- 30-Day Readmissions (AMI, HF, PN, HipKnee, Stroke, COPD)
- Severity-Adjusted Average Length of Stay
- Mean Emergency Department Throughput
- 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 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 percent or rate.

The system-level emergency department throughput measure is the arithmetic mean of the three included ED throughput measures. Each individual ED measure is aggregated to the system level by summing

the member hospital wait time minutes and dividing by the sum of the hospital ED patient count.

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 and complications — also have a statistical significance note that indicates whether your performance is better than expected, as expected, or worse than expected (99% confidence).

Core Measures, 30-Day Rates, Emergency Department Throughput and HCAHPS Detail

This section contains bar graphs for the individual measures that make up the composite ranked measures for Core Measures Mean Percent, Mean 30-Day Mortality, Mean 30-Day Readmissions and Mean Emergency Department Throughput. In addition, performance on each HCAHPS question is included for information. Only the Overall Hospital Rating question (an HCAHPS outcome metric) is ranked.

15 TOP HEALTH SYSTEMS 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
- No reported Medicare deaths

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 2014 or 2015 Medicare claims

System Winner Exclusions

A system is winner excluded if:

- Observed mortality or complications are statistically worse than expected (99% confidence)
- Had a 15 Top Health System award rescinded by Truven Health Analytics within three years

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, COPD, Stroke)
- 30-day readmission rates (AMI, HF, Pneumonia, Hip/Knee, COPD, Stroke)
- Individual emergency department throughput measures

New Measures for Information Only

We are including several 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.

See Abstract for more details. Visit www.100tophospitals.com.

15 TOP HEALTH SYSTEMS TREND PROFILE NOTES

TREND PROFILE OVERVIEW

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 Inpatient Mortality
- Risk-Adjusted Complications
- 30-Day Mortality (AMI, heart failure, pneumonia)
- 30-Day Readmissions (AMI, heart failure, pneumonia)
- Severity-Adjusted Average Length of Stay
- Mean Emergency Department Throughput
- Medicare Spend Per Beneficiary
- HCAHPS Score (Patient Overall Hospital Rating)

Minimum Data Requirements for Ranking

We require a minimum of four (4) valid data points for each measure (including the most current year) to include a system in the Trend Profile ranking. This year, for the newer measures (ED Throughput and MSPB) we required only three (3) data points, since there are only four (4) years of trend data available.

UNDERSTANDING THE GRAPHS

Improvement Trends Versus Comparison Group Quintiles (Color Quintile Graphs)

Trend performance for the system is displayed by the color quintile 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.

A statistical significance note is displayed for each graph, indicating whether your performance is improving, not changing, or worsening over the five years we analyzed (99% confidence for mortality and complications; 95% for all other measures). We rank each measure using the t-statistic of the regression line through the data points (slope/S.E.)

Use of Median Values for Missing Measures

For each data year, when an individual Emergency Department throughput 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.

Missing Data Points

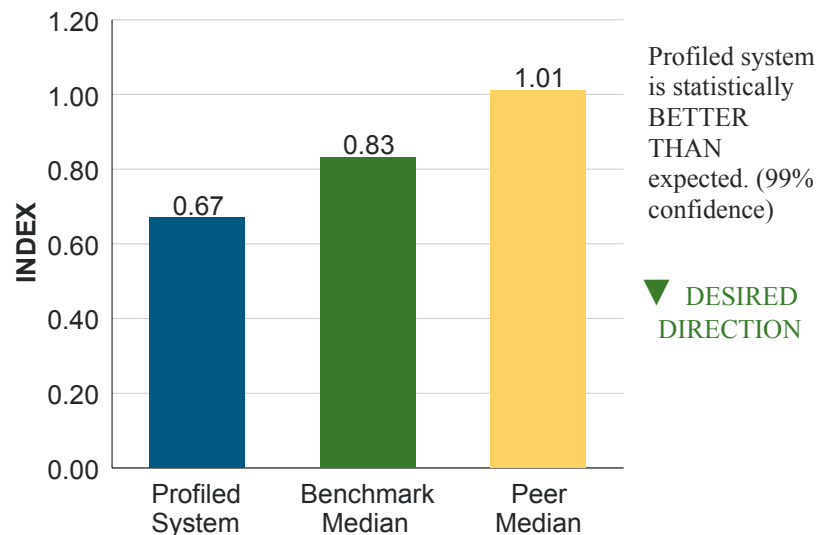
Individual data points are missing on the Color Quintile Graphs when values are not reported, or your comparison group median value has been substituted in a specific year.

Data Point Time Periods

Data points on the graphs – labeled 2011, 2012, 2013, 2014, 2015 – represent various data periods. See Report Methodology Notes page, Rank Weights and Public Data Sources table for more details.

RISK-ADJUSTED INPATIENT MORTALITY INDEX

2015 MORTALITY PERFORMANCE

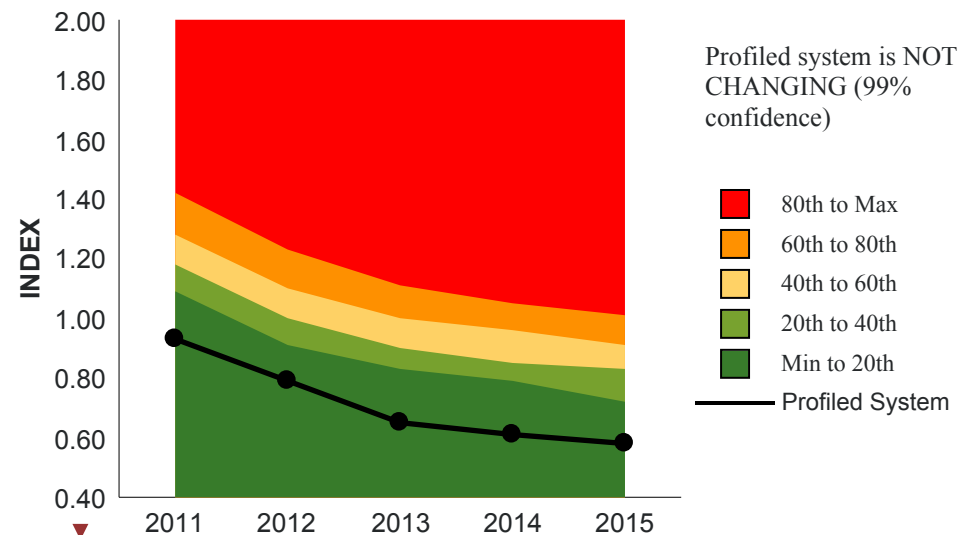


Benchmark Systems are the winners in the comparison group: n = 5

Peer Systems are the non-winners in the comparison group: n = 110

Note: 2015 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2011-2015 MORTALITY RATE OF IMPROVEMENT

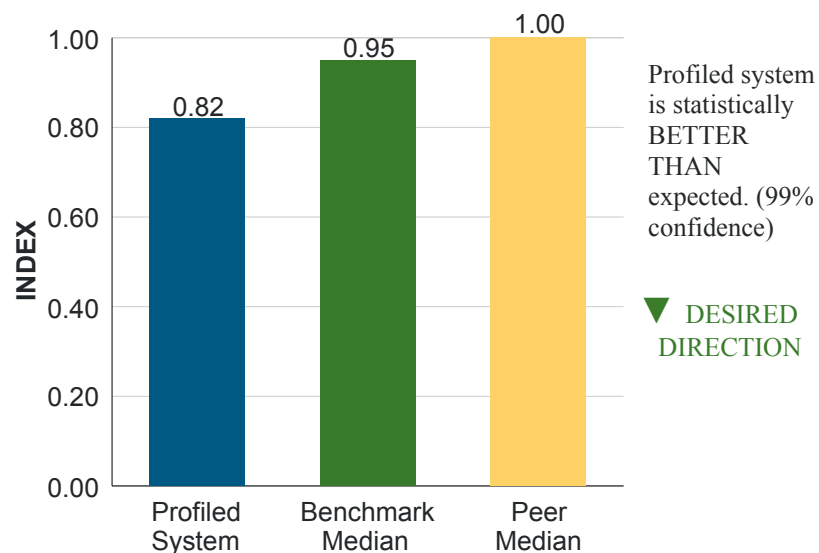


System performance compared to Medium Health Systems Quintiles: n = 115

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2011	1.09	1.18	1.28	1.42	0.93	1.01	0.86
	2012	0.91	1.00	1.10	1.23	0.79	0.86	0.72
	2013	0.83	0.90	1.00	1.11	0.65	0.72	0.58
	2014	0.79	0.85	0.96	1.05	0.61	0.67	0.55
	2015	0.72	0.83	0.91	1.01	0.58	0.64	0.52

RISK-ADJUSTED COMPLICATIONS INDEX

2015 COMPLICATIONS PERFORMANCE

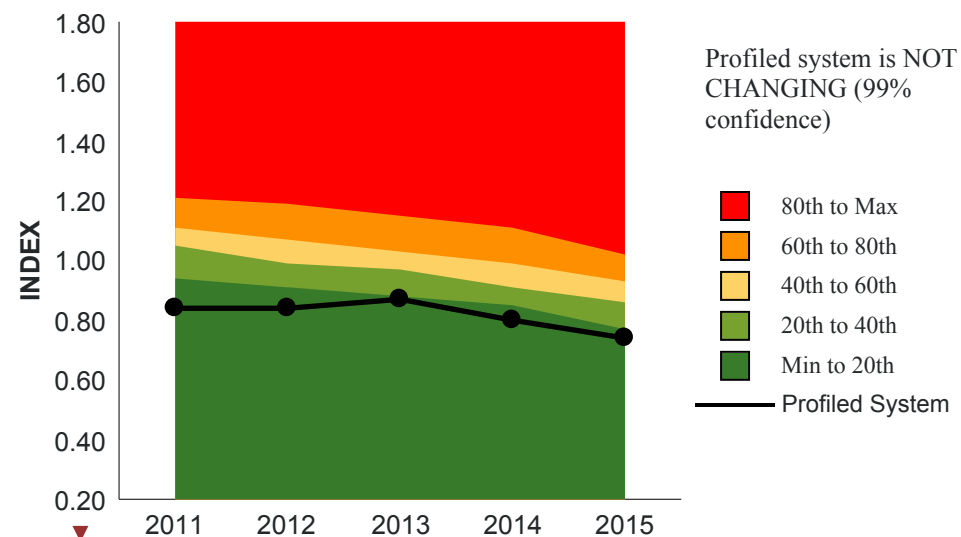


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Note: 2015 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2011-2015 COMPLICATIONS RATE OF IMPROVEMENT

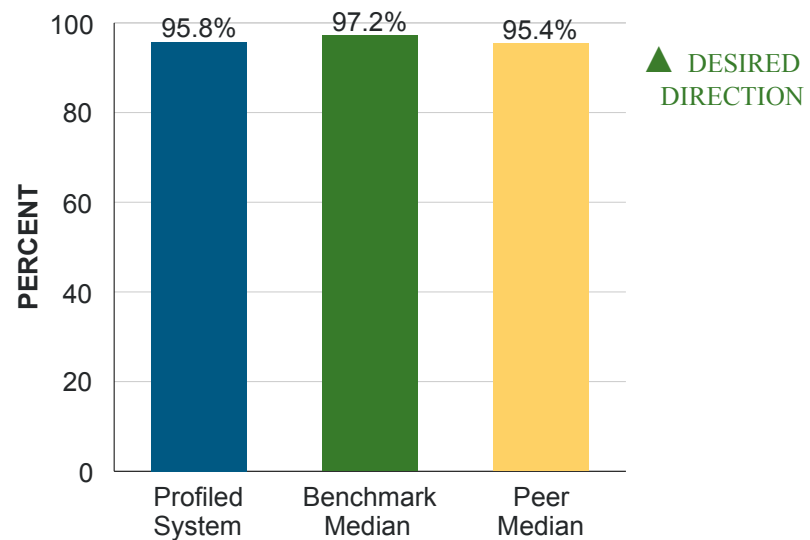


System performance compared to Medium Health Systems Quintiles: n = 115

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2011	0.94	1.05	1.11	1.21	0.84	0.93	0.76
	2012	0.91	0.99	1.07	1.19	0.84	0.93	0.76
	2013	0.88	0.97	1.03	1.15	0.87	0.96	0.79
	2014	0.85	0.91	0.99	1.11	0.80	0.88	0.72
	2015	0.77	0.86	0.93	1.02	0.74	0.81	0.66

CORE MEASURES MEAN PERCENT

2015 CM PERFORMANCE



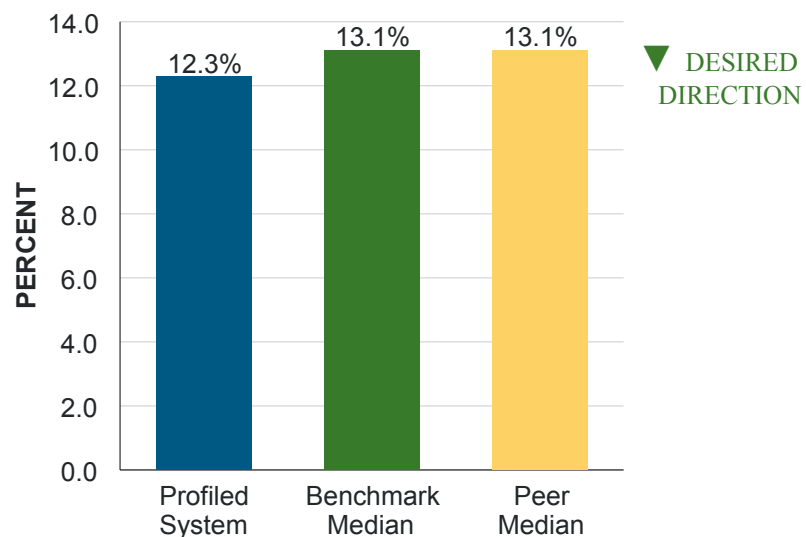
NO TREND GRAPH, TOO FEW DATA YEARS AVAILABLE

Benchmark Systems are the winners in the comparison group: n = 5

Peer Systems are the non-winners in the comparison group: n = 110

30-DAY MORTALITY RATE *

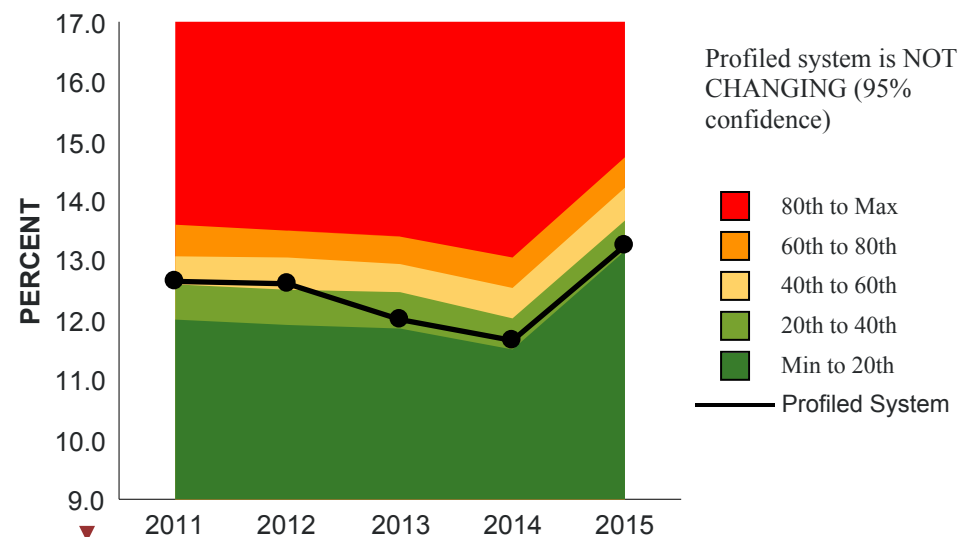
2015 30D MORTALITY PERFORMANCE



Benchmark Systems are the winners in the comparison group: n = 5

Peer Systems are the non-winners in the comparison group: n = 110

2011-2015 30D MORTALITY RATE OF IMPROVEMENT



System performance compared to Medium Health Systems Quintiles: n = 115

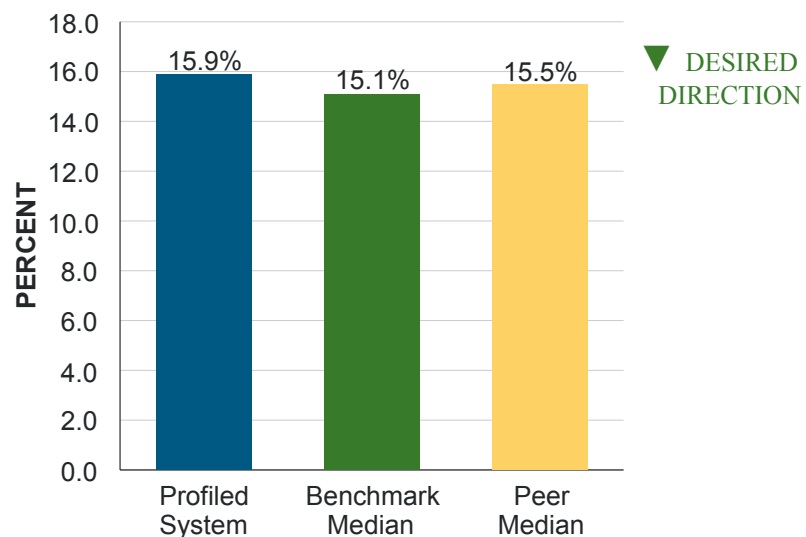
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2011	12.0	12.6	13.1	13.6	12.6
	2012	11.9	12.5	13.0	13.5	12.6
	2013	11.9	12.5	12.9	13.4	12.0
	2014	11.5	12.0	12.5	13.0	11.7
	2015	13.2	13.7	14.2	14.7	13.2

* 30-Day Mortality Rate for 2015 performance includes AMI, HF, PNEU, COPD and Stroke patient groups

* 30-Day Mortality Rate for 2011-2015 rate of improvement includes AMI, HF and PNEU patient groups

30-DAY READMISSION RATE *

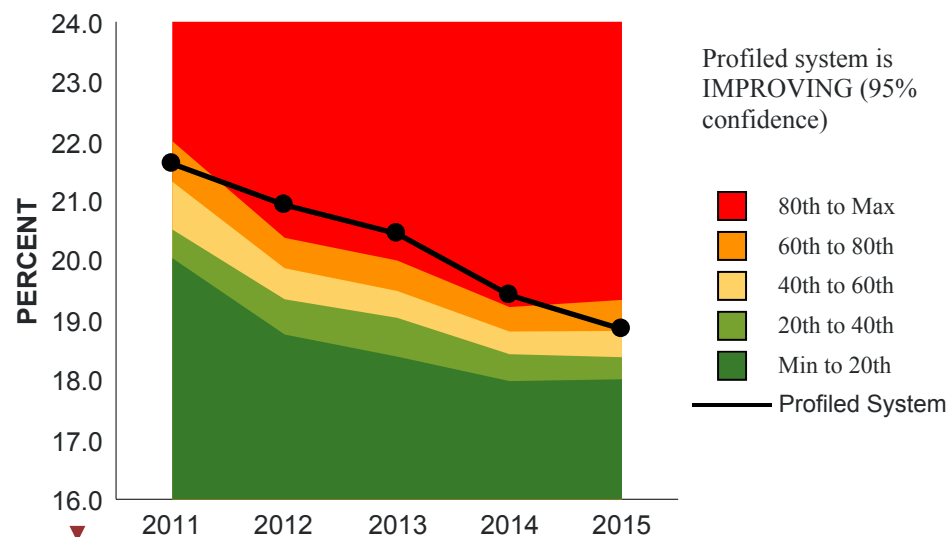
2015 READMISSION PERFORMANCE



Benchmark Systems are the winners in the comparison group: n = 5

Peer Systems are the non-winners in the comparison group: n = 110

2011-2015 READMISSION RATE OF IMPROVEMENT



System performance compared to Medium Health Systems Quintiles: n = 115

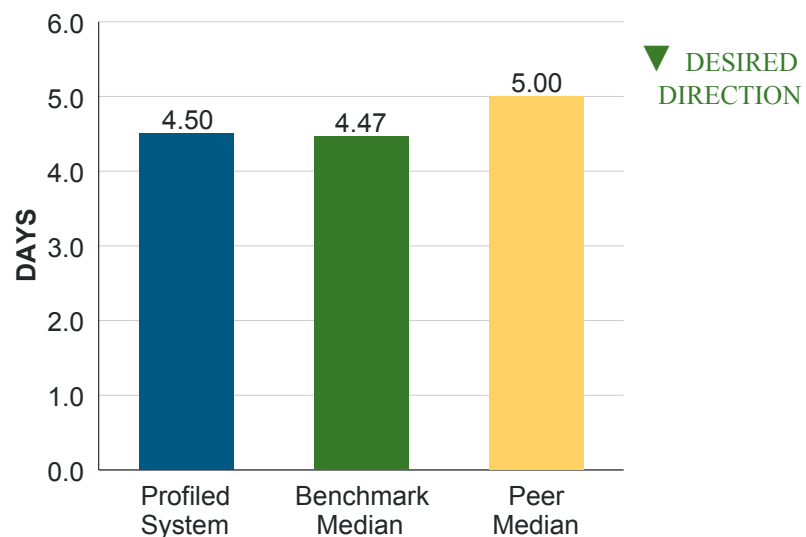
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2011	20.0	20.5	21.3	22.0	21.6
	2012	18.8	19.4	19.9	20.4	20.9
	2013	18.4	19.0	19.5	20.0	20.4
	2014	18.0	18.4	18.8	19.2	19.4
	2015	18.0	18.4	18.8	19.3	18.8

* 30-Day Readmission Rate for 2015 performance includes AMI, HF, PNEU, Hip/Knee, COPD and Stroke patient groups

* 30-Day Readmission Rate for 2011-2015 rate of improvement includes AMI, HF and PNEU patient groups

SEVERITY-ADJUSTED AVERAGE LENGTH OF STAY

2015 ALOS PERFORMANCE

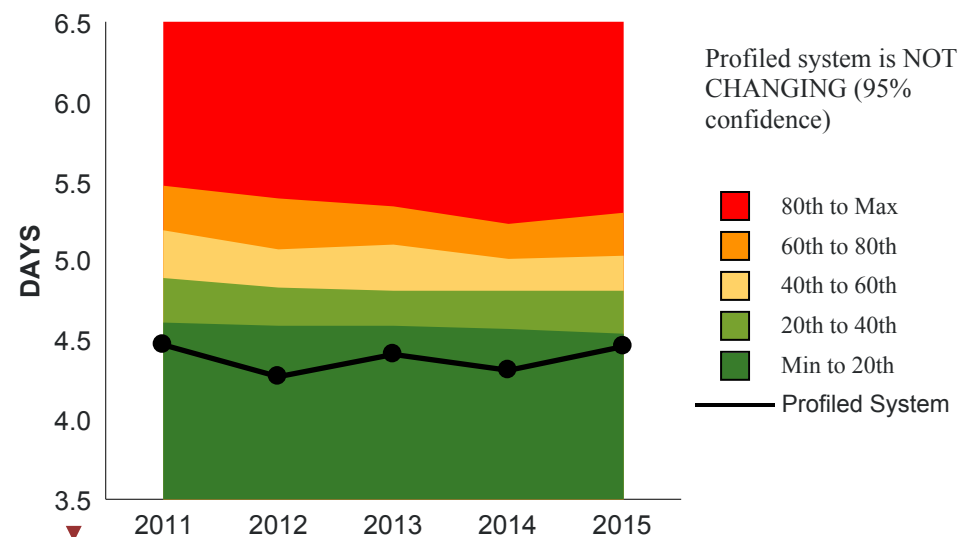


Benchmark Systems are the winners in the comparison group: $n = 5$

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Note: 2015 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2011-2015 ALOS RATE OF IMPROVEMENT

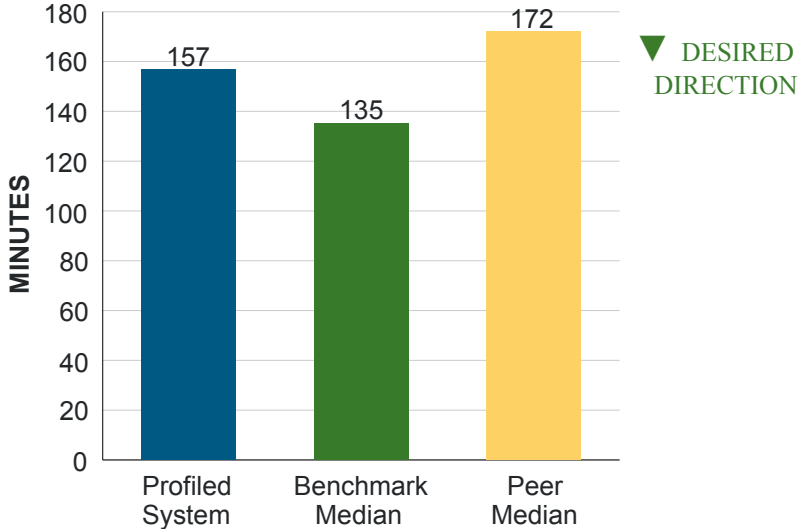


System performance compared to Medium Health Systems Quintiles: $n = 115$

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2011	4.61	4.89	5.19	5.47	4.47
	2012	4.59	4.83	5.07	5.39	4.27
	2013	4.59	4.81	5.10	5.34	4.41
	2014	4.57	4.81	5.01	5.23	4.31
	2015	4.54	4.81	5.03	5.30	4.46

MEAN EMERGENCY DEPARTMENT THROUGHPUT

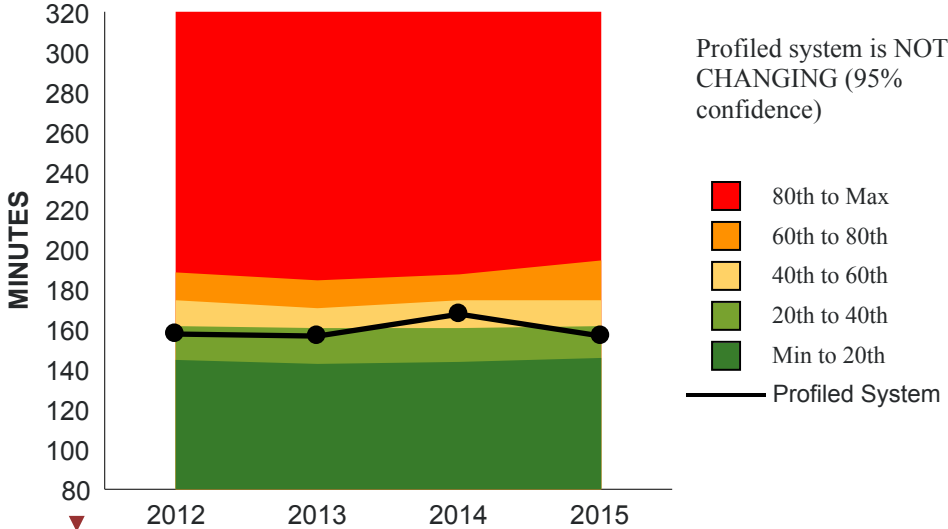
2015 ED PERFORMANCE



Benchmark Systems are the winners in the comparison group: n = 5

Peer Systems are the non-winners in the comparison group: n = 110

2012-2015 ED RATE OF IMPROVEMENT

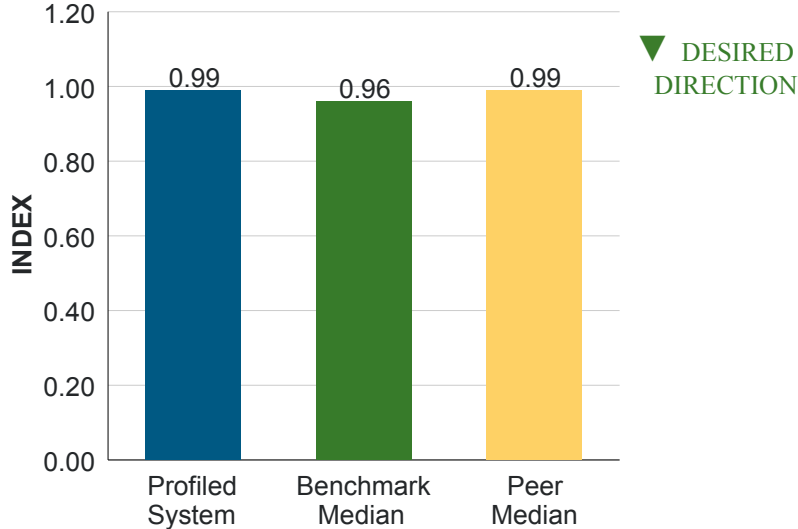


System performance compared to Medium Health Systems Quintiles: n = 115

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2012	145	162	175	189	158
	2013	143	161	171	185	157
	2014	144	161	175	188	168
	2015	146	162	175	195	157

MEDICARE SPEND PER BENEFICIARY INDEX

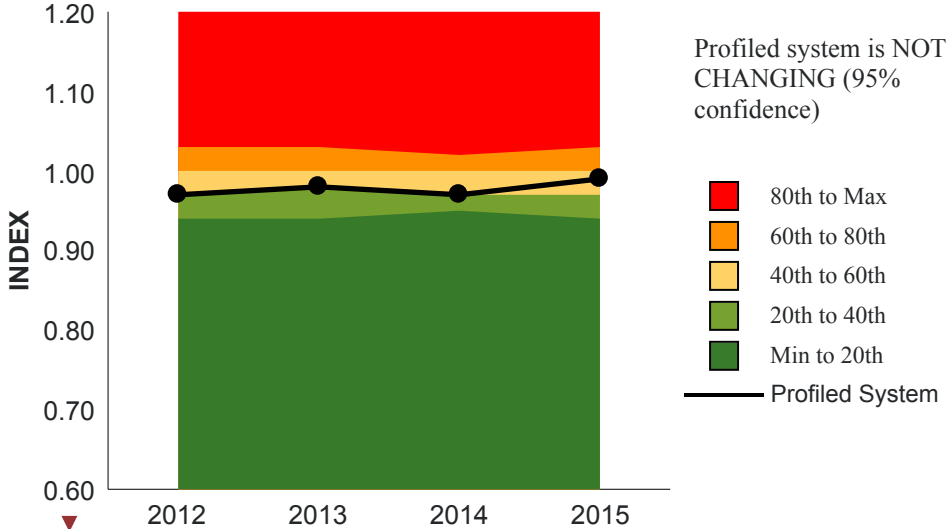
2015 MSPB PERFORMANCE



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2012-2015 MSPB RATE OF IMPROVEMENT

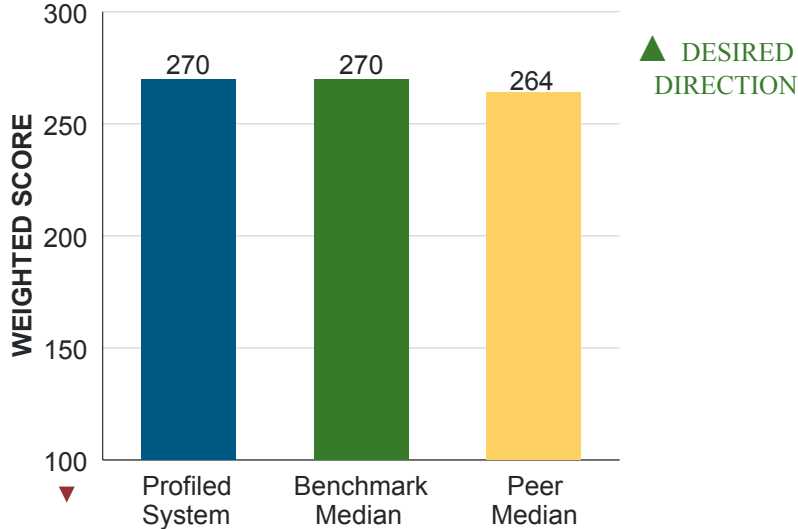


System performance compared to Medium Health Systems Quintiles: n = 115

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2012	0.94	0.97	1.00	1.03	0.97
	2013	0.94	0.98	1.00	1.03	0.98
	2014	0.95	0.97	1.00	1.02	0.97
	2015	0.94	0.97	1.00	1.03	0.99

HCAHPS QUESTION: OVERALL RATING

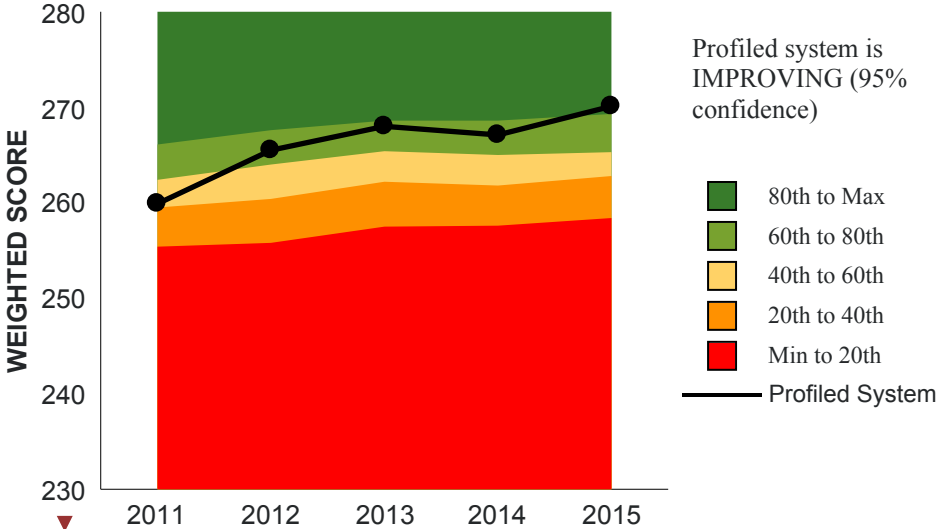
2015 HCAHPS PERFORMANCE



Benchmark Systems are the winners in the comparison group: n = 5

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2011-2015 HCAHPS RATE OF IMPROVEMENT



System performance compared to Medium Health Systems Quintiles: n = 115

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2011	255	260	262	266	260
	2012	256	260	264	268	266
	2013	258	262	265	269	268
	2014	258	262	265	269	267
	2015	258	263	265	269	270

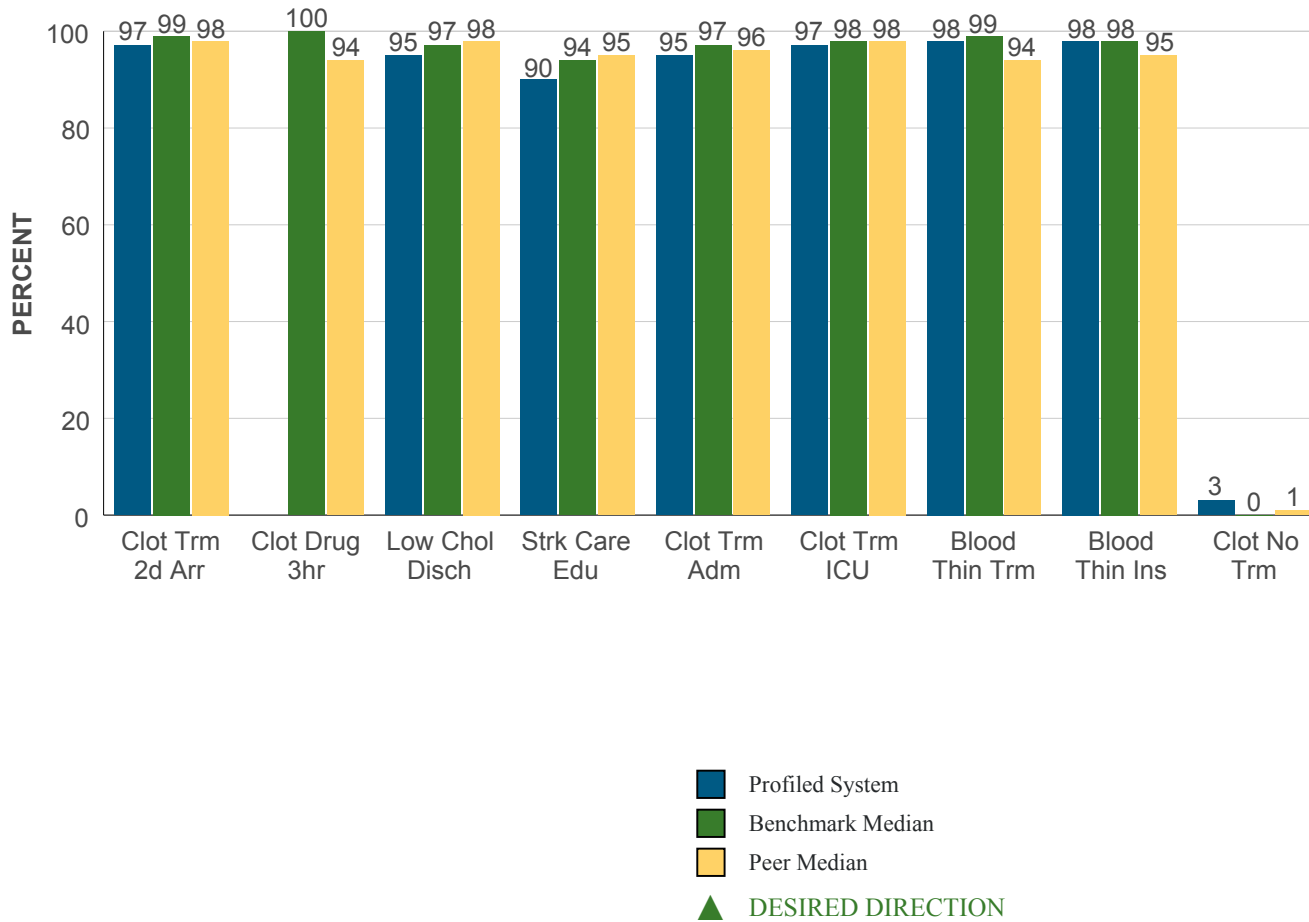
2015 HEALTH SYSTEM PERFORMANCE – DETAIL GRAPHS

This section of your report contains the detail graphs of those measures that are ranked based on a composite of individual measures. These include:

- Core Measures (stroke and blood clot prevention)
- 30-Day Mortality (AMI, HF, Pneumonia, COPD and Stroke)
- 30-Day Readmission (AMI, HF, Pneumonia, Hip/Knee, COPD and Stroke)
- Emergency Department Throughput (Avg Min to Adm, Avg Min to ED D/C, Avg Min to Pain Med)
- HCAHPS – NOTE: we do not rank on the composite of the individual measures, the ranked measure is for the Overall Rating Question. The individual measures are displayed for information only.

STROKE CARE AND BLOOD CLOT PREVENTION MEASURE DETAIL

2015 PERFORMANCE

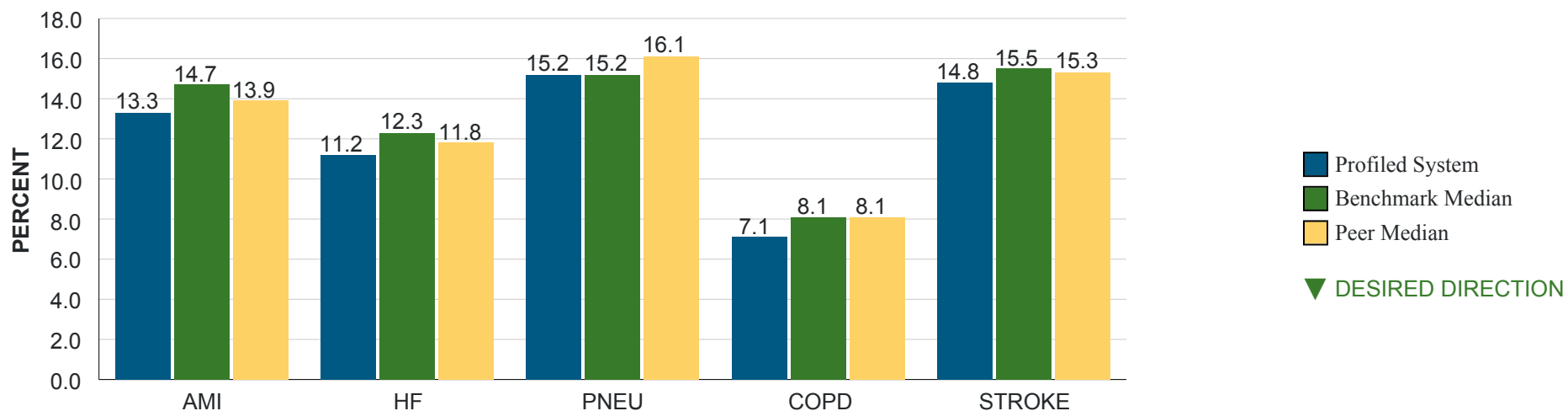


STROKE CARE AND BLOOD CLOT ABBREVIATION KEY:

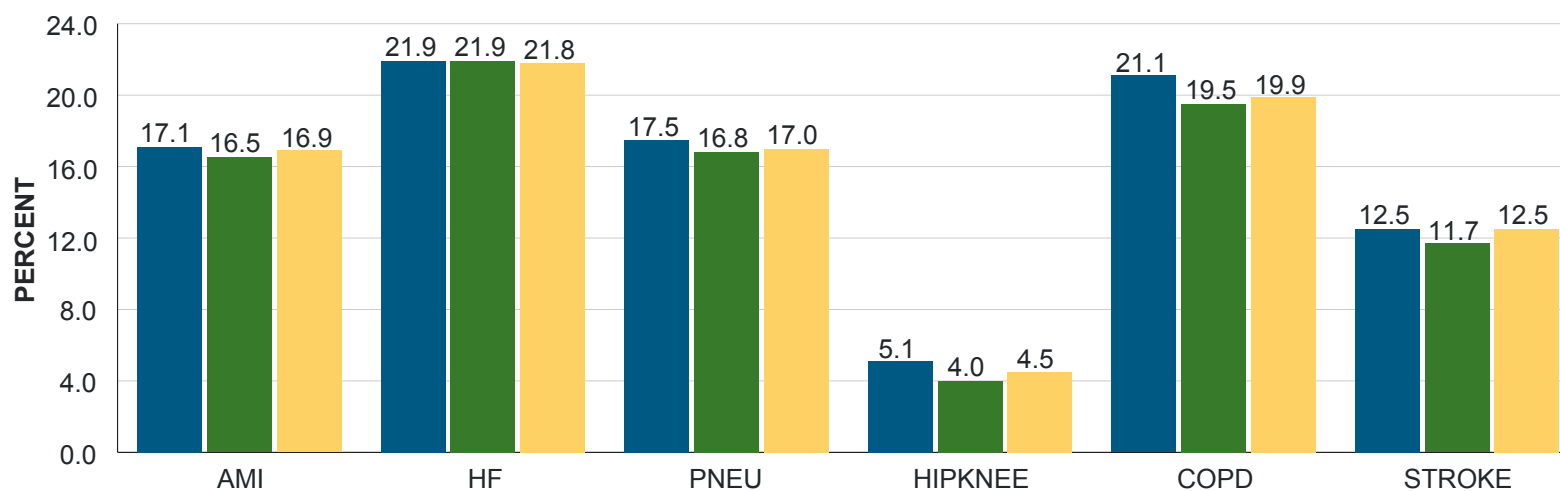
- Clot Trm 2d Arr: Venous Thromboembolism (VTE) Prophylaxis
- Clot Drug 3hr: Thrombolytic Therapy
- Low Chol Disch: Discharged on Statin Medication
- Strk Care Edu: Stroke Education
- Clot Trm Adm: Venous Thromboembolism Prophylaxis
- Clot Trm ICU: Intensive Care Unit Venous Thromboembolism Prophylaxis
- Blood Thin Trm: Venous Thromboembolism Patients with Anticoagulation Overlap Therapy
- Blood Thin Ins: Venous Thromboembolism Warfarin Therapy Discharge Instructions
- Clot No Trm: Hospital Acquired Potentially-Preventable Venous Thromboembolism (**lower is better**)

30-DAY RATES BY PATIENT CONDITION

2015 PERFORMANCE FOR 30-DAY MORTALITY



2015 PERFORMANCE FOR 30-DAY READMISSIONS

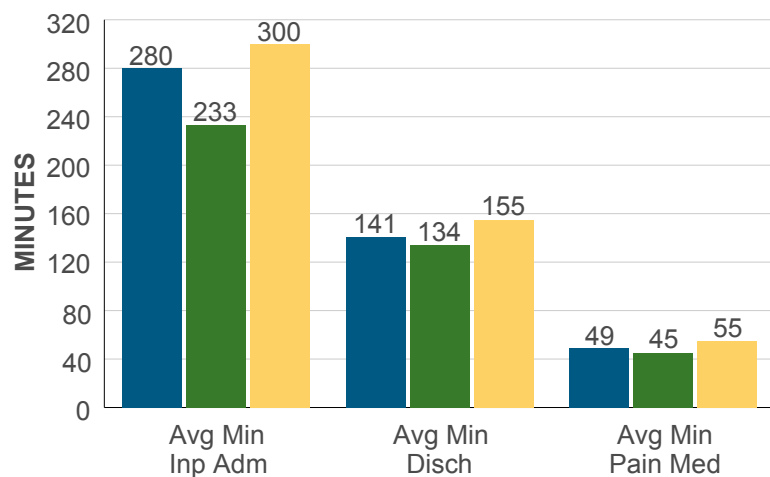


Benchmark health systems n=5

Peer health systems n=110

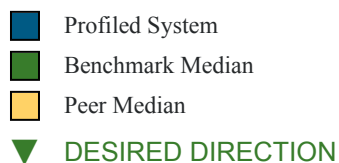
EMERGENCY DEPARTMENT THROUGHPUT MEASURE DETAIL

2015 PERFORMANCE



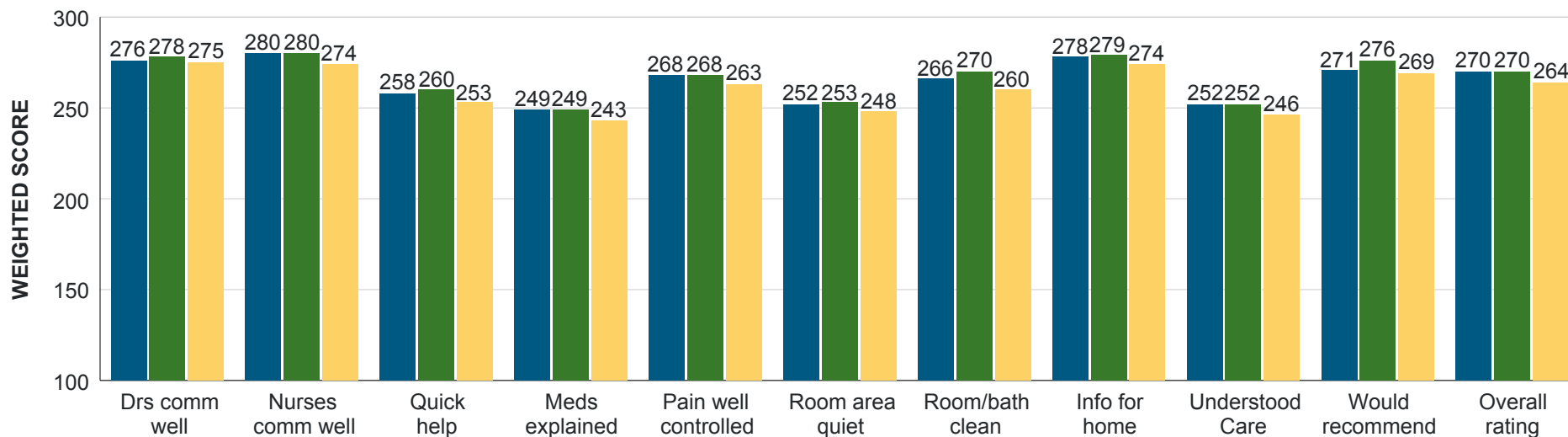
EMERGENCY DEPARTMENT ABBREVIATION KEY:

- Avg Min Inp Adm: Average time patients spent in the ED, before they were admitted to the hospital as an inpatient
- Avg Min Disch: Average time patients spent in the ED before being sent home
- Avg Min Pain Med: Average time patients who came to the ED with broken bones had to wait before receiving pain medication



HCAHPS QUESTIONS – ONLY OVERALL RATING USED IN RANKING

2015 PERFORMANCE



QUESTION KEY:

- Drs comm well How often did doctors communicate well with patients?
- Nurses comm well How often did nurses communicate well with patients?
- Quick help How often did patients receive help quickly from hospital staff?
- Meds explained How often did staff explain about medicines before giving them to patients?
- Pain well controlled How often was patients pain well controlled?
- Room area quiet How often was the area around patients rooms kept quiet at night?
- Room/bath clean How often were the patients rooms and bathrooms kept clean?
- Info for home Were patients given information about what to do during their recovery at home?
- Understood care How often did patients understand their care at discharge?
- Would recommend Would patients recommend the hospital to friends and family?
- Overall rating How do patients rate the hospital overall?

- Profiled System
- Benchmark Median
- Peer Median
- ▲ DESIRED DIRECTION

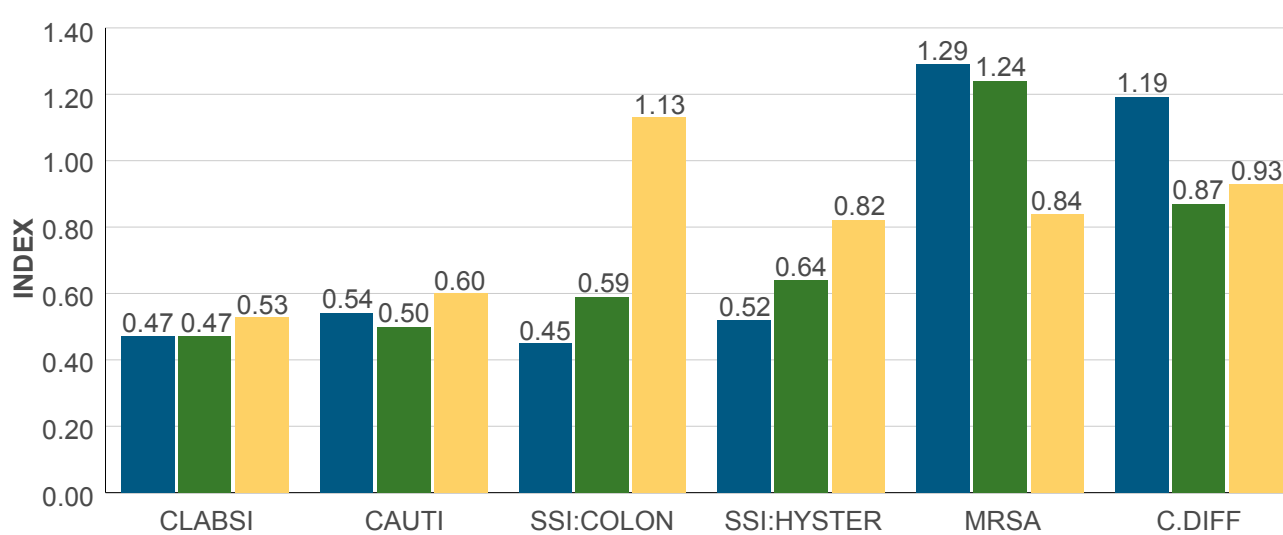
NEW METRICS UNDER CONSIDERATION

This section of your report contains new measures that we are currently considering for future inclusion in the study. Some of the measures move outside the inpatient acute care setting and look at extended care from a clinical standpoint and others from a cost efficiency perspective. Other new measures focus on inpatient outcomes.

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.

HEALTHCARE ASSOCIATED INFECTION MEASURES

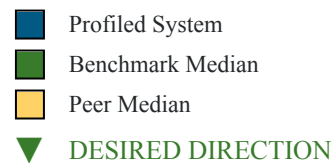
2015 PERFORMANCE



HEALTHCARE ASSOCIATED INFECTIONS

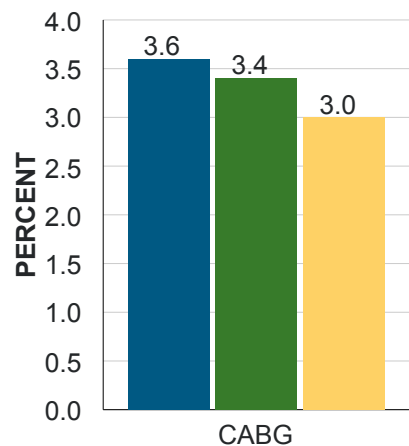
ABBREVIATION KEY:

- CLABSI Central line-associated blood stream infections
- CAUTI Catheter-associated urinary tract infections
- SSI:COLON Surgical site infection from colon surgery
- SSI:HYSTER Surgical site infection from abdominal hysterectomy
- MRSA Methicillin-resistant staphylococcus aureus blood laboratory-identified events
- C.DIFF Clostridium difficile laboratory identified events

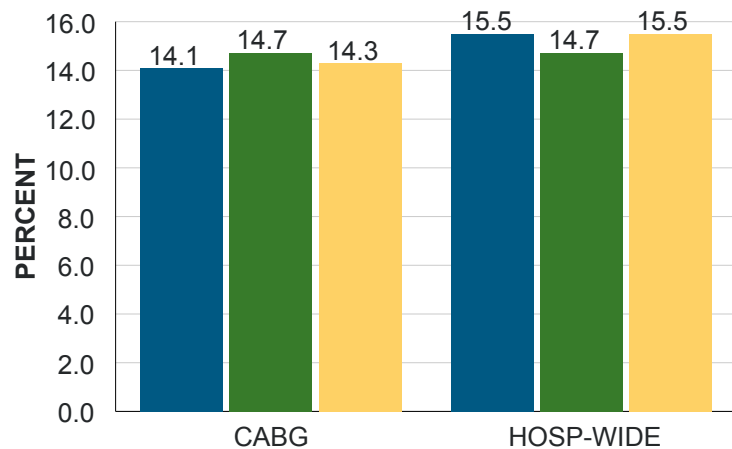


30-DAY RATES BY PATIENT CONDITION

2015 PERFORMANCE FOR 30-DAY MORTALITY



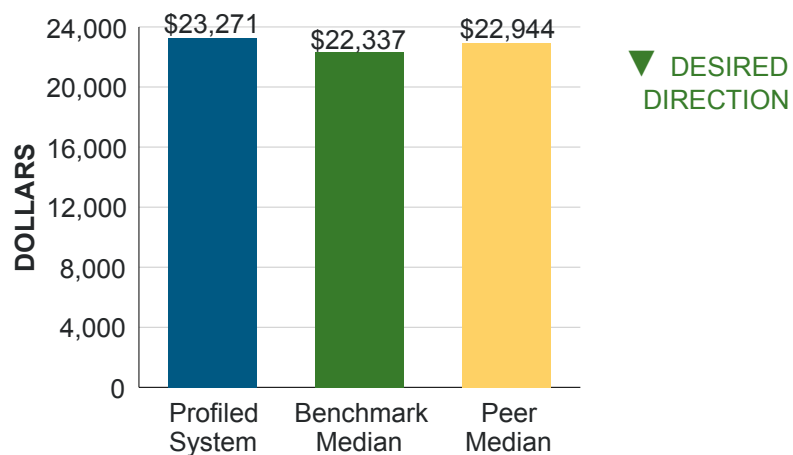
2015 PERFORMANCE FOR 30-DAY READMISSIONS



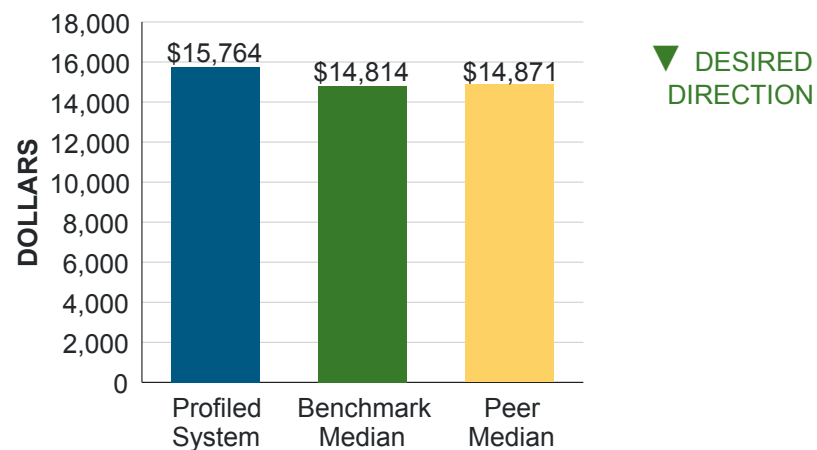
- Profiled System
- Benchmark Median
- Peer Median
- ▼ DESIRED DIRECTION

30-DAY EPISODE OF PAYMENT MEASURES BY PATIENT CONDITION

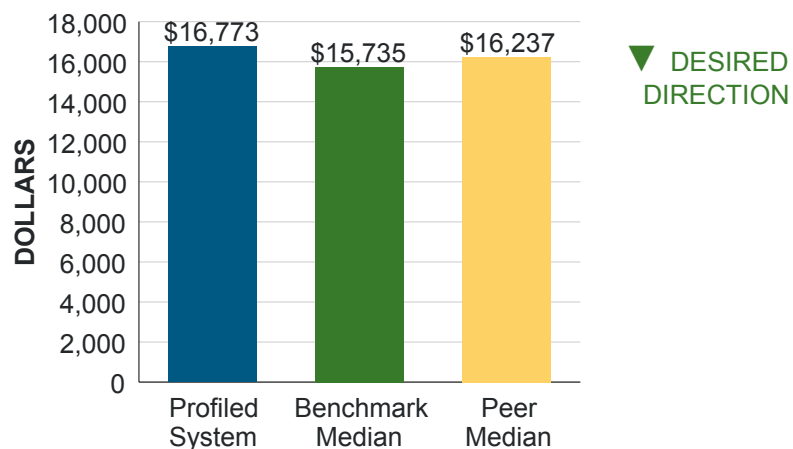
2015 PERFORMANCE FOR AMI



2015 PERFORMANCE FOR PNEUMONIA



2015 PERFORMANCE FOR HF

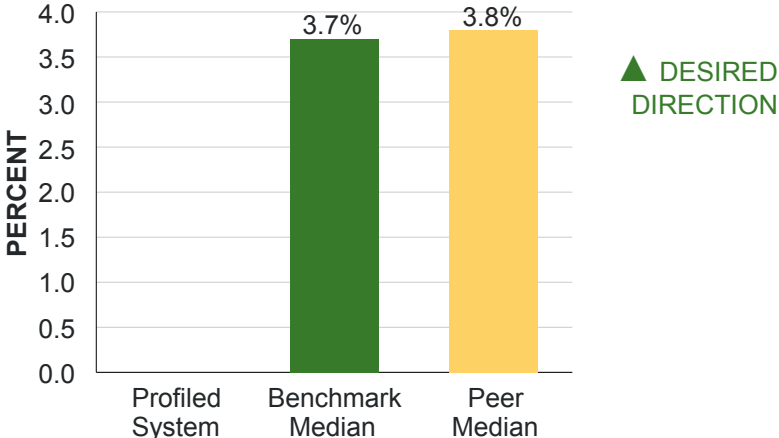


Benchmark health systems n=5

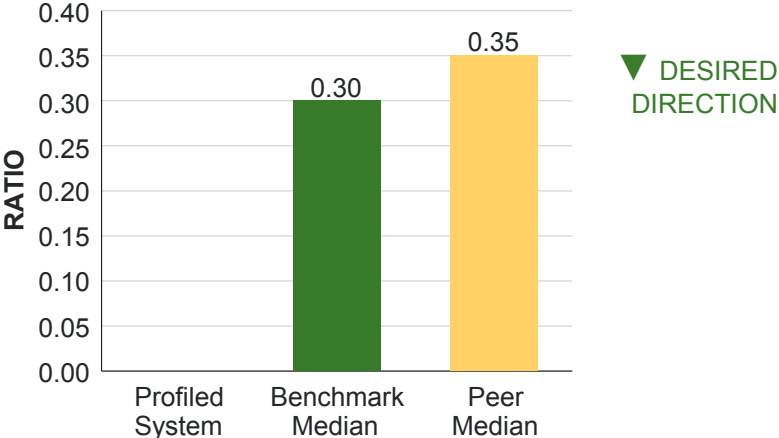
Peer health systems n=110

HEALTH SYSTEM FINANCIAL PERFORMANCE MEASURES

2015 PERFORMANCE FOR OPERATING MARGIN



2015 PERFORMANCE FOR LONG-TERM DEBT TO CAPITALIZATION



Benchmark health systems n=5

Peer health systems n=110

HEALTH SYSTEM MEMBER HOSPITAL ALIGNMENT

Overview

This section shows the performance and improvement alignment of health system member acute care hospitals. There are two components to the alignment view. First, we are providing a summary graph showing **performance-weighted alignment** for the health system compared to the best systems in both performance and improvement. This is a new feature of the report. Second, we provide member hospital performance overall and for each individual measure on comparison matrix graphs.

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, 2017 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.

NEW: Critical Access Hospitals (CAH) with valid data are now included in the alignment profile. Their performance overall is calculated based on six measures: inpatient mortality, complications, Pneumonia 30-day mortality and readmissions, ALOS and operating profit margin. Dots for these hospitals will appear only on the graphs for these measures. Note: Any available data for other measures will be included in the system roll-up, even though CAHs are not ranked on those measures.

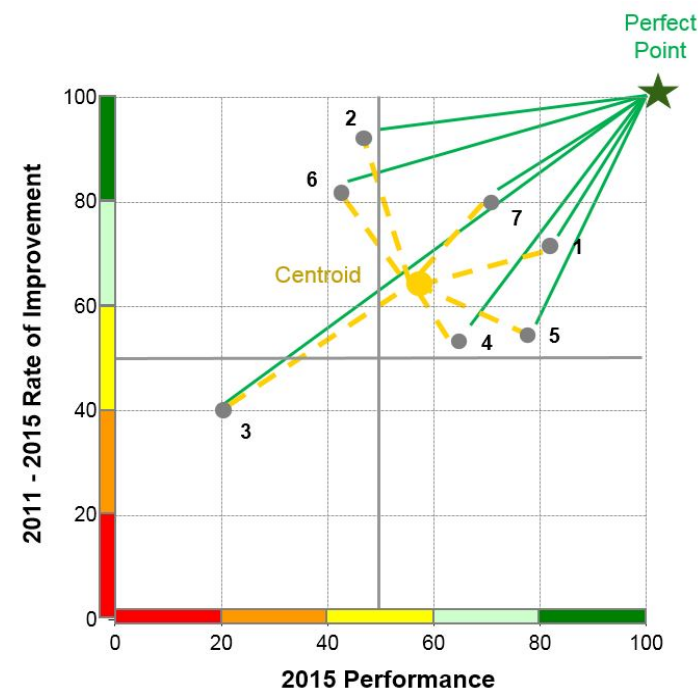
Women's, Cardiac and Orthopedic hospitals that are **included** in the 15 Top Health Systems study are not graphed in this section because we do not include these hospitals when comparing short term general acute care hospital performance in the 100 Top Hospitals study.

Performance-Weighted Alignment Score Findings

The performance-weighted alignment scores (PWAS) measure how consistently the system delivers on high level performance and improvement across their member hospitals, overall and for each measure. Better-performing health systems have better Overall alignment, and the difference is statistically significant.

Methodology

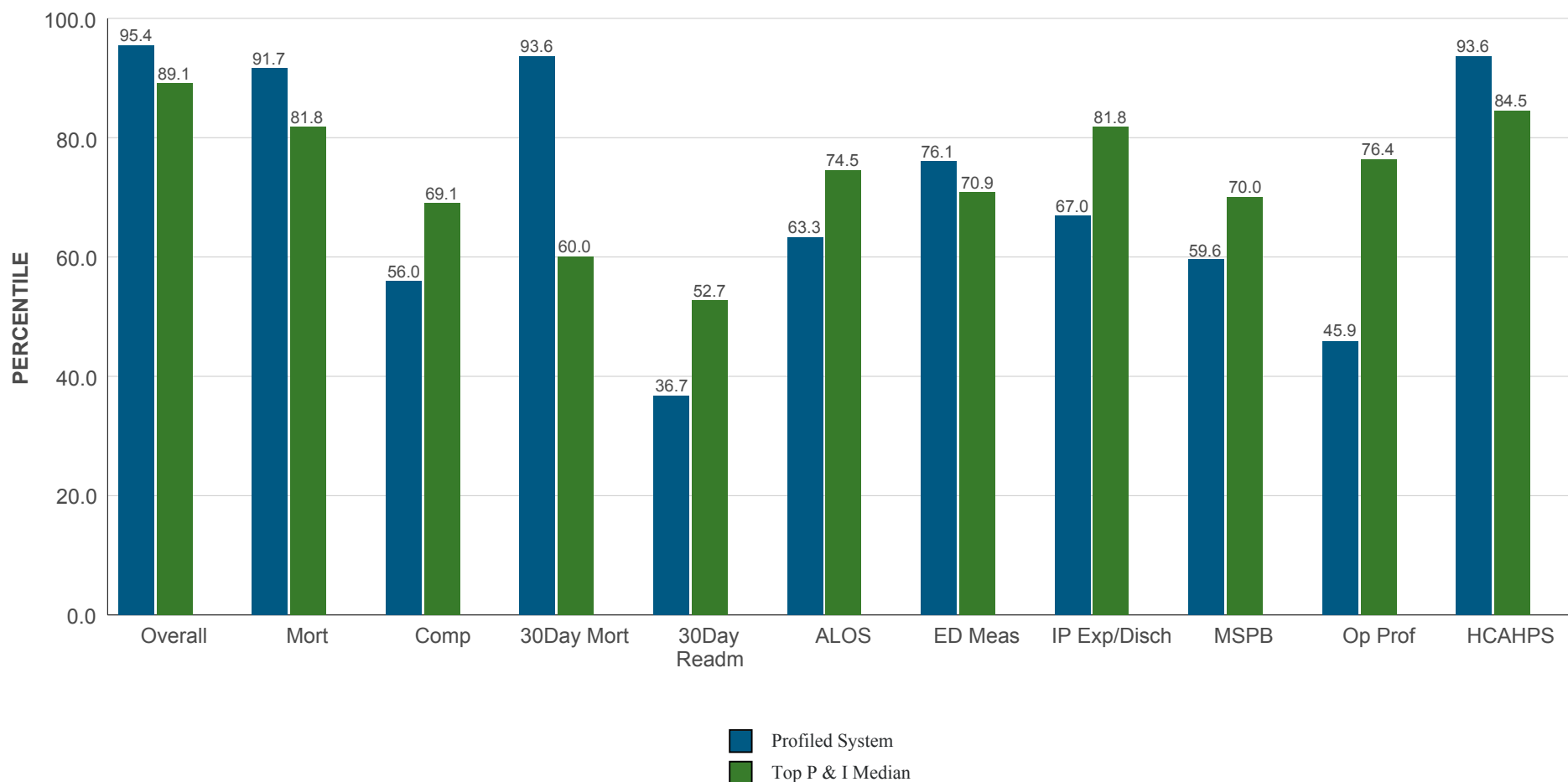
Each system performance-weighted alignment score is the average of the distance of each member hospital from their central point (Centroid) and the distance of each of those hospitals from the 100th – 100th percentile point (Perfect Point), weighted by the distance from the perfect point. A score is calculated overall and for each measure. **Higher percentiles mean better performance.** See Study Overview for details.



The system performance-weighted alignment scores are ranked by comparison group and reported as rank percentiles. Higher percentiles mean better performance. The profiled system performance is compared to the median alignment scores for the hospitals that were in the top quintile on both Performance and Improvement (Top P & I Group). This group was selected using the study ranked metrics, **not** member hospital alignment. We find that high alignment has not yet been achieved uniformly across all measures, even in this high performing group.

PERFORMANCE-WEIGHTED ALIGNMENT SCORE PERCENTILES

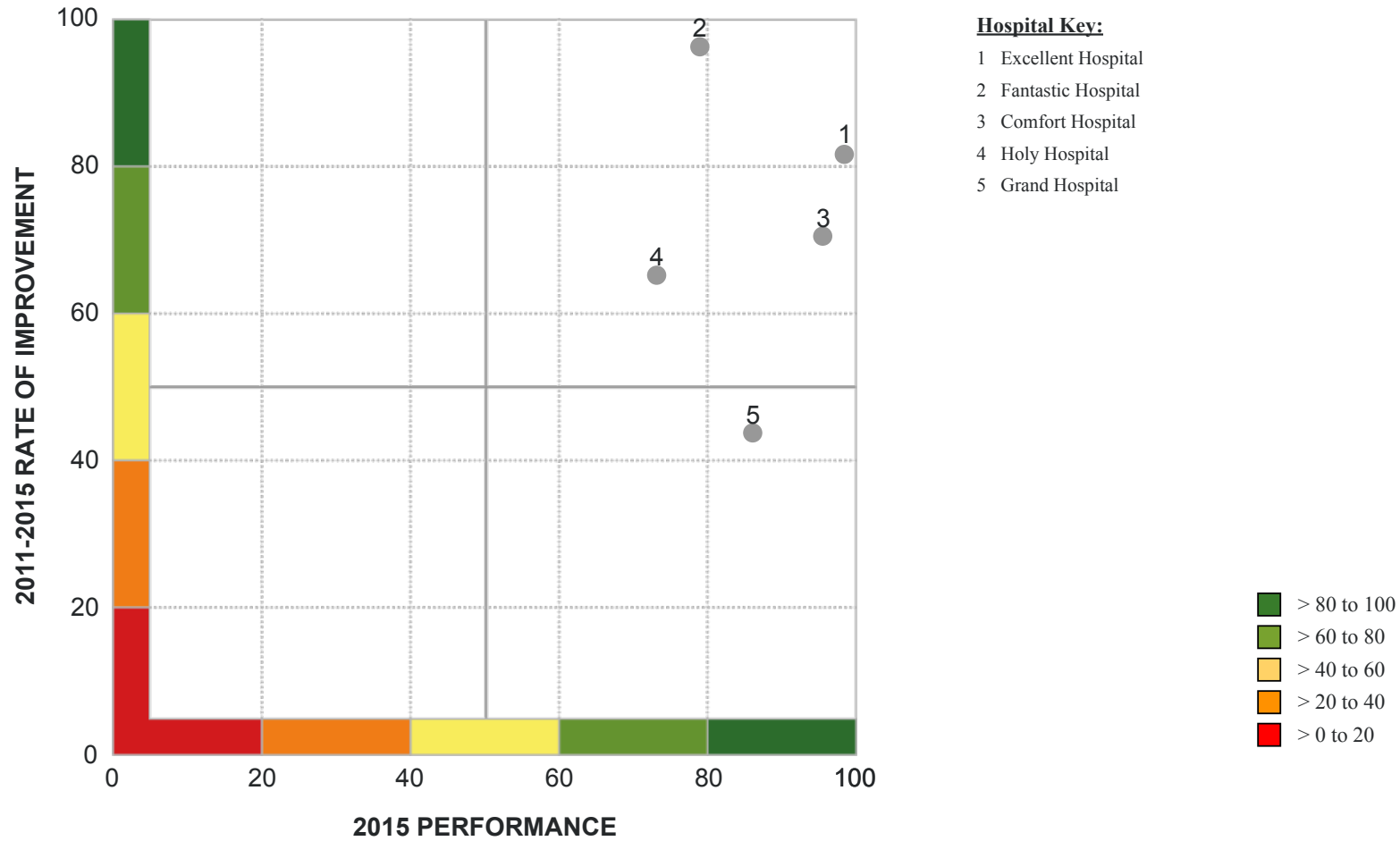
Profiled System Compared to Top Performance and Improvement Health Systems*



* Top Performance & Improvement health systems n=8

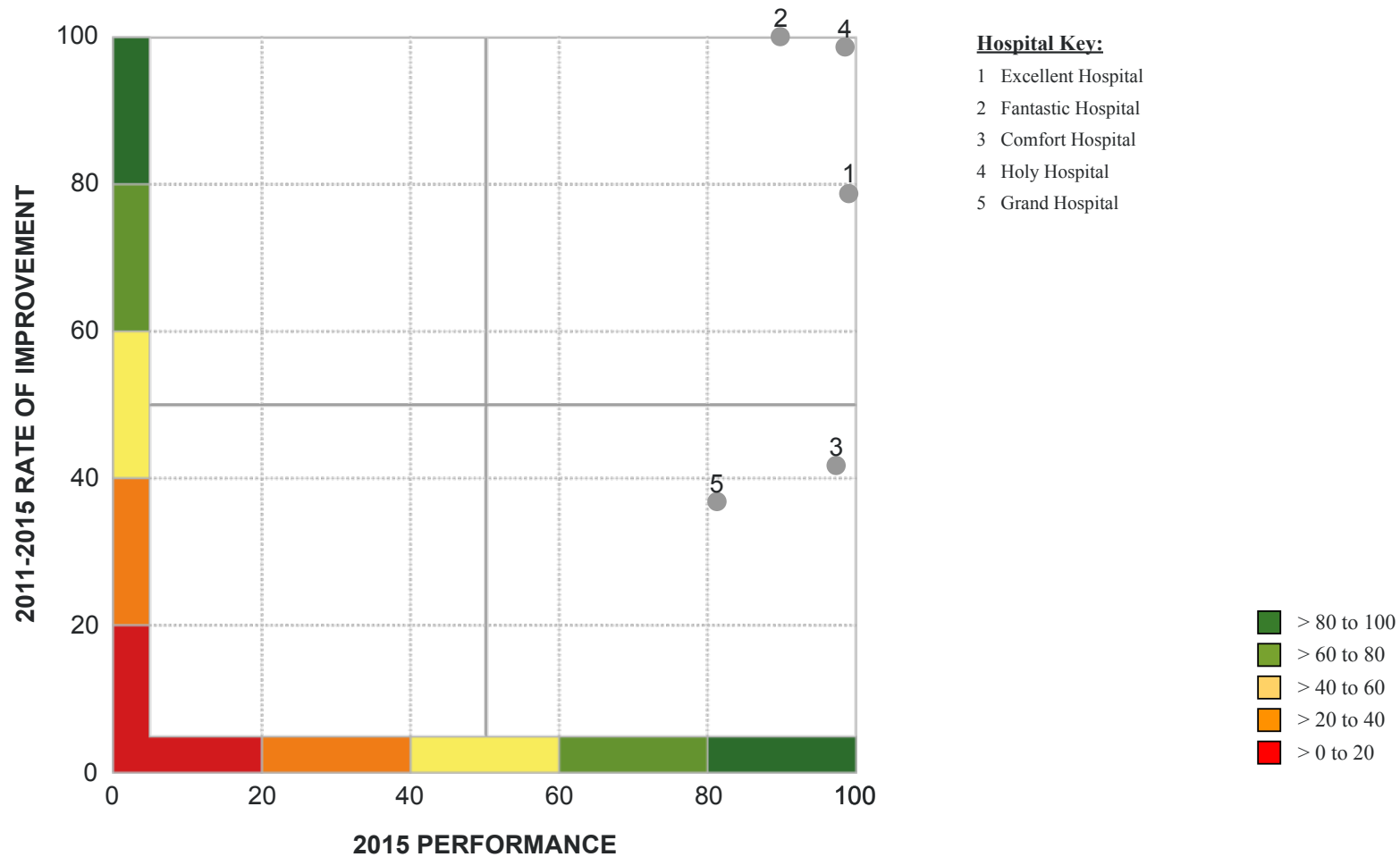
MEMBER HOSPITALS - OVERALL PERFORMANCE

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



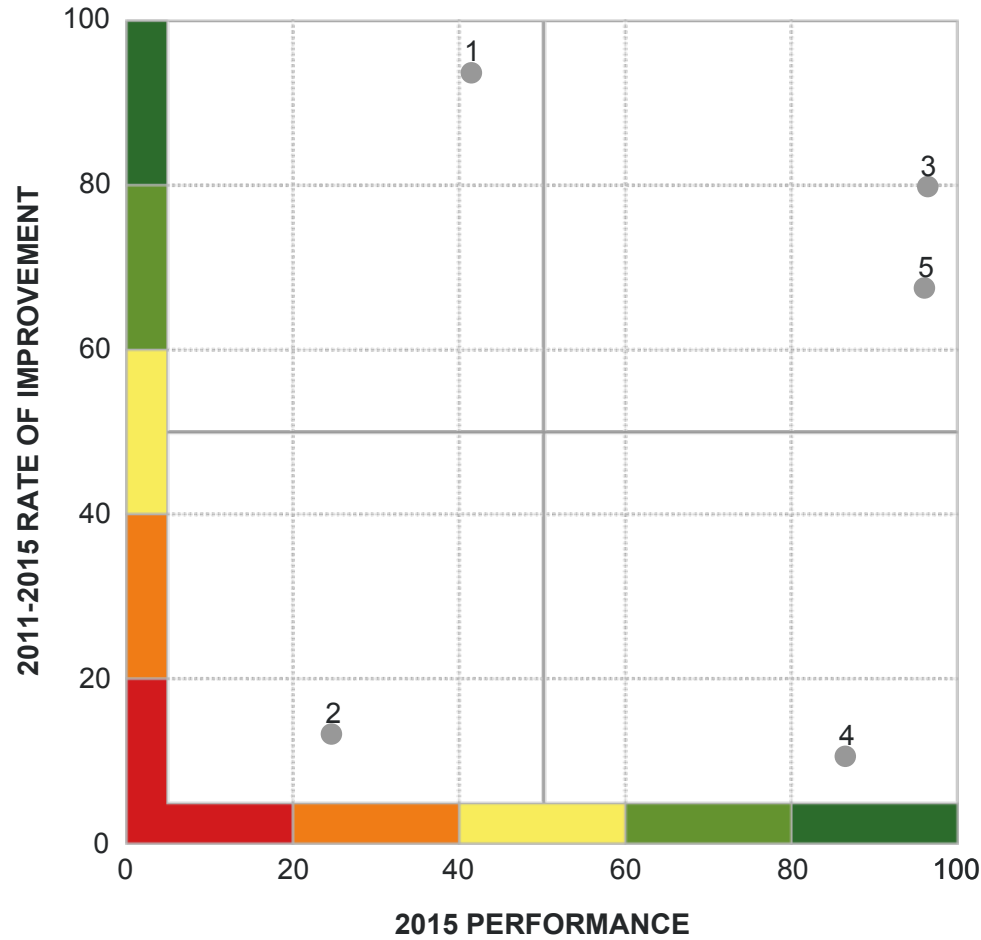
MEMBER HOSPITALS - INPATIENT MORTALITY

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



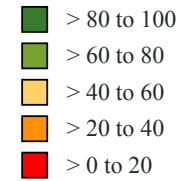
MEMBER HOSPITALS - COMPLICATIONS

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



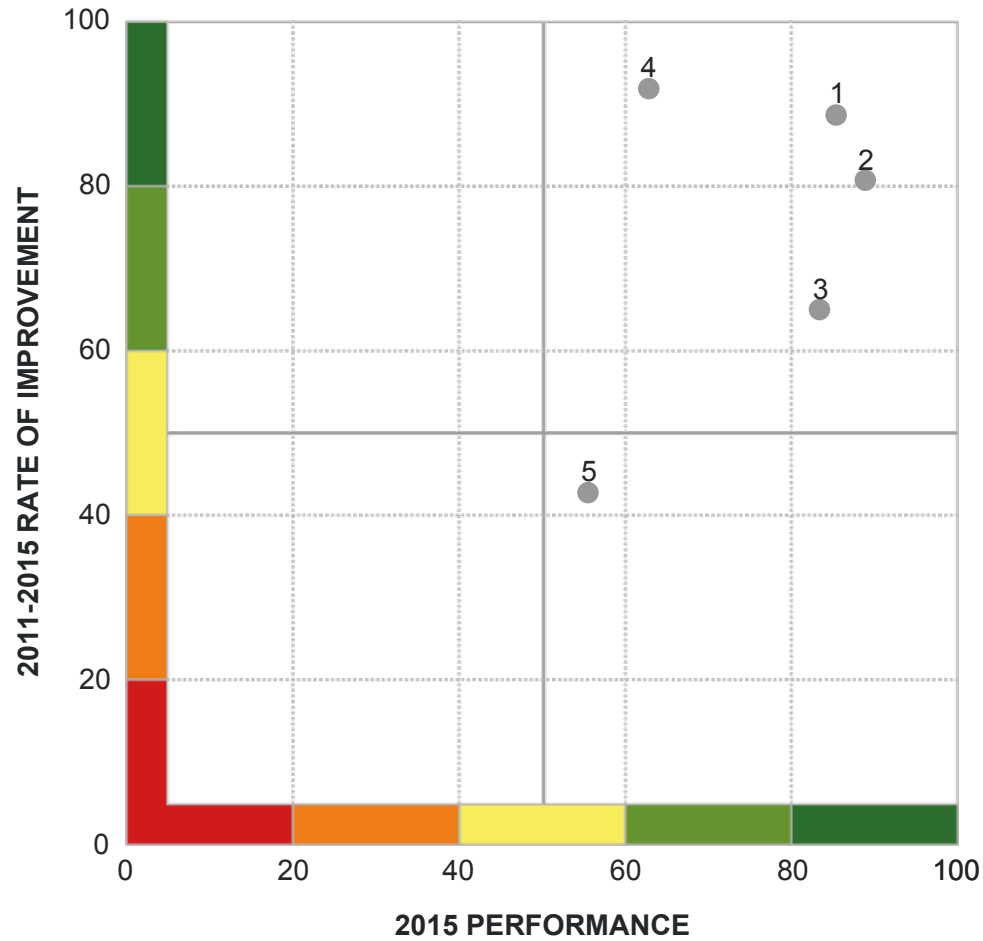
Hospital Key:

- 1 Excellent Hospital
- 2 Fantastic Hospital
- 3 Comfort Hospital
- 4 Holy Hospital
- 5 Grand Hospital



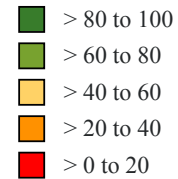
MEMBER HOSPITALS - 30-DAY MORTALITY

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



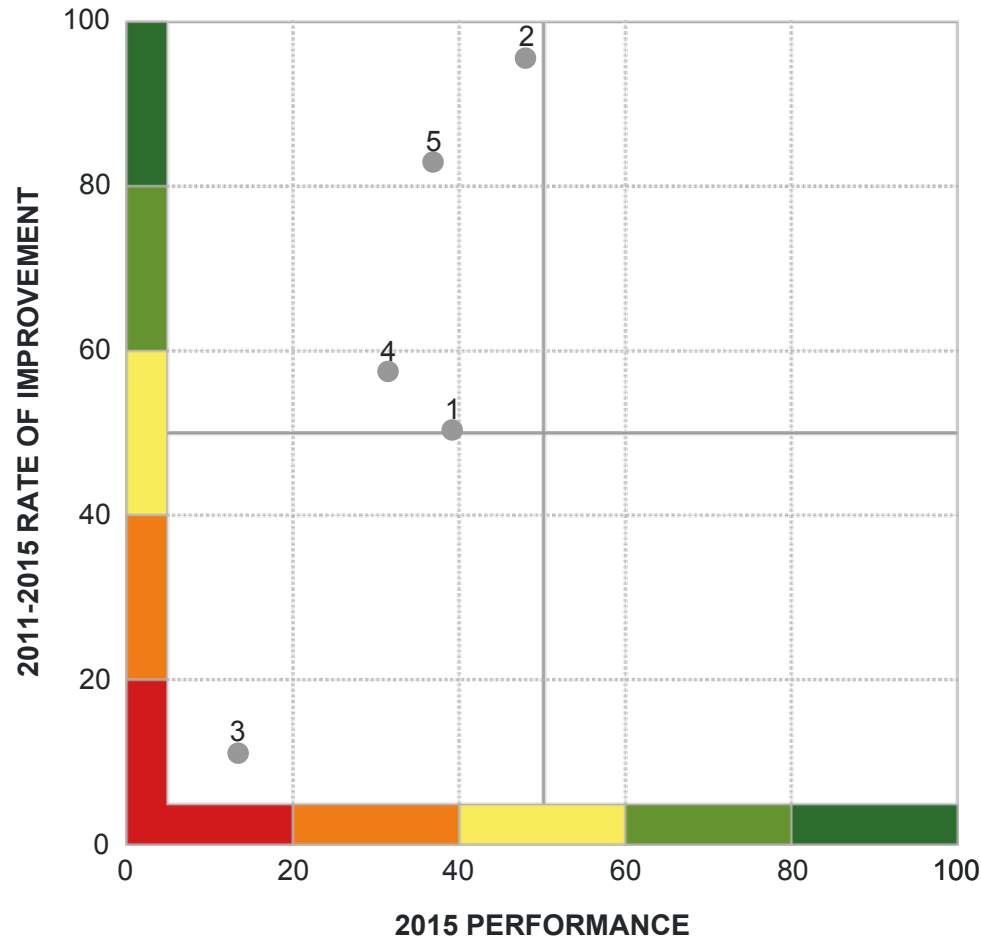
Hospital Key:

- 1 Excellent Hospital
- 2 Fantastic Hospital
- 3 Comfort Hospital
- 4 Holy Hospital
- 5 Grand Hospital



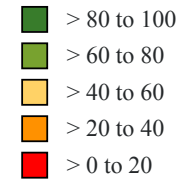
MEMBER HOSPITALS - 30-DAY READMISSIONS

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



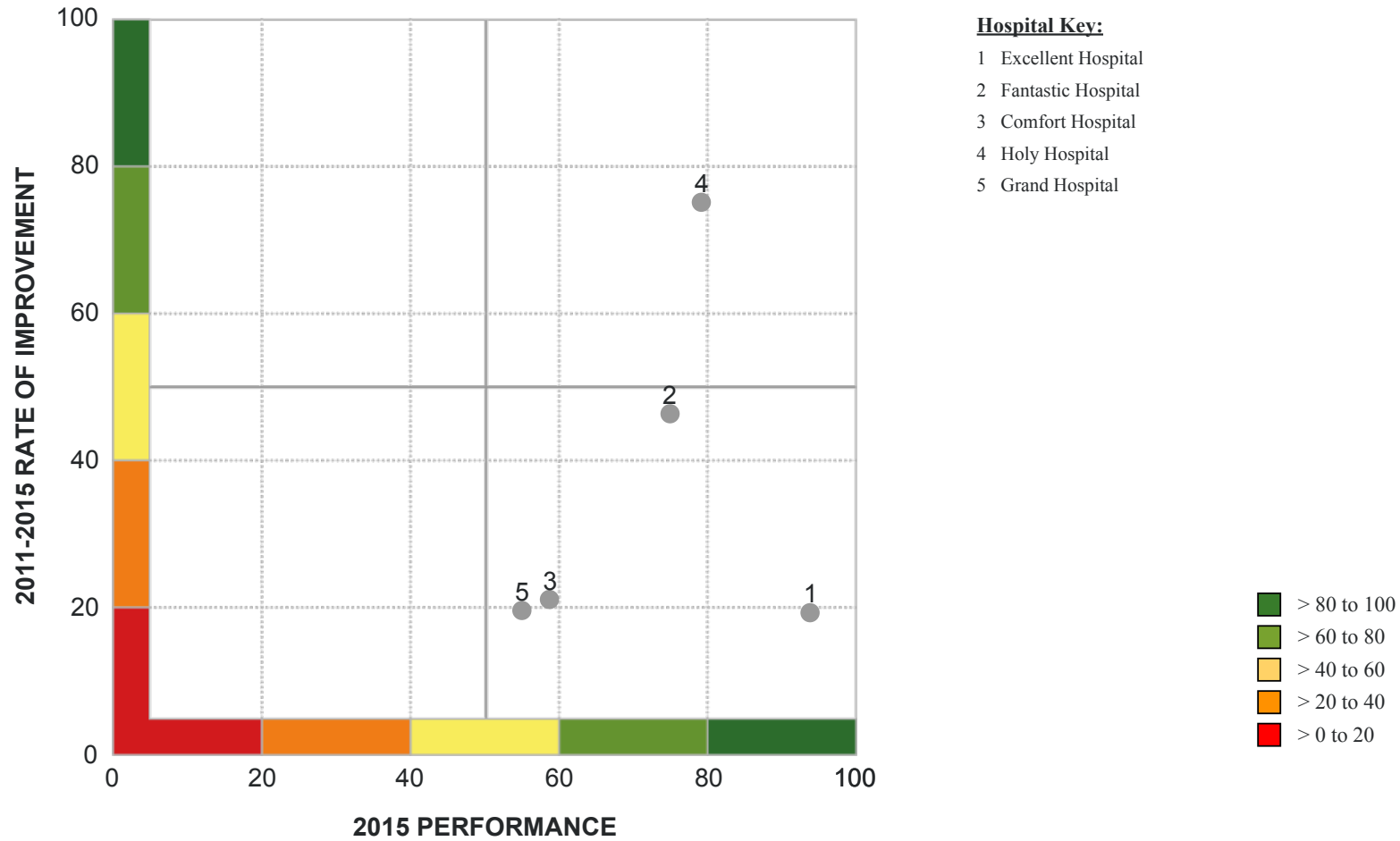
Hospital Key:

- 1 Excellent Hospital
- 2 Fantastic Hospital
- 3 Comfort Hospital
- 4 Holy Hospital
- 5 Grand Hospital



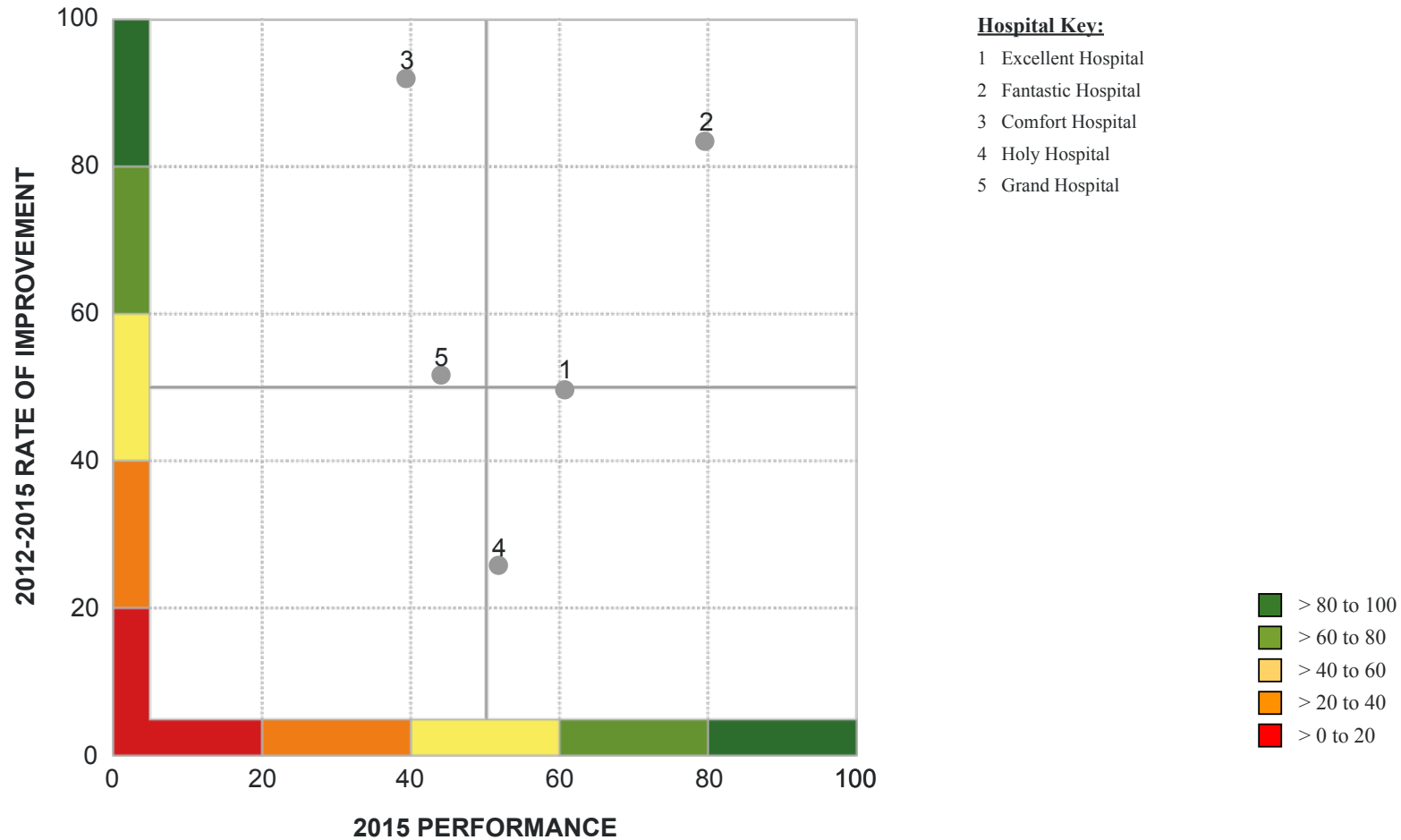
MEMBER HOSPITALS - AVERAGE LENGTH OF STAY

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



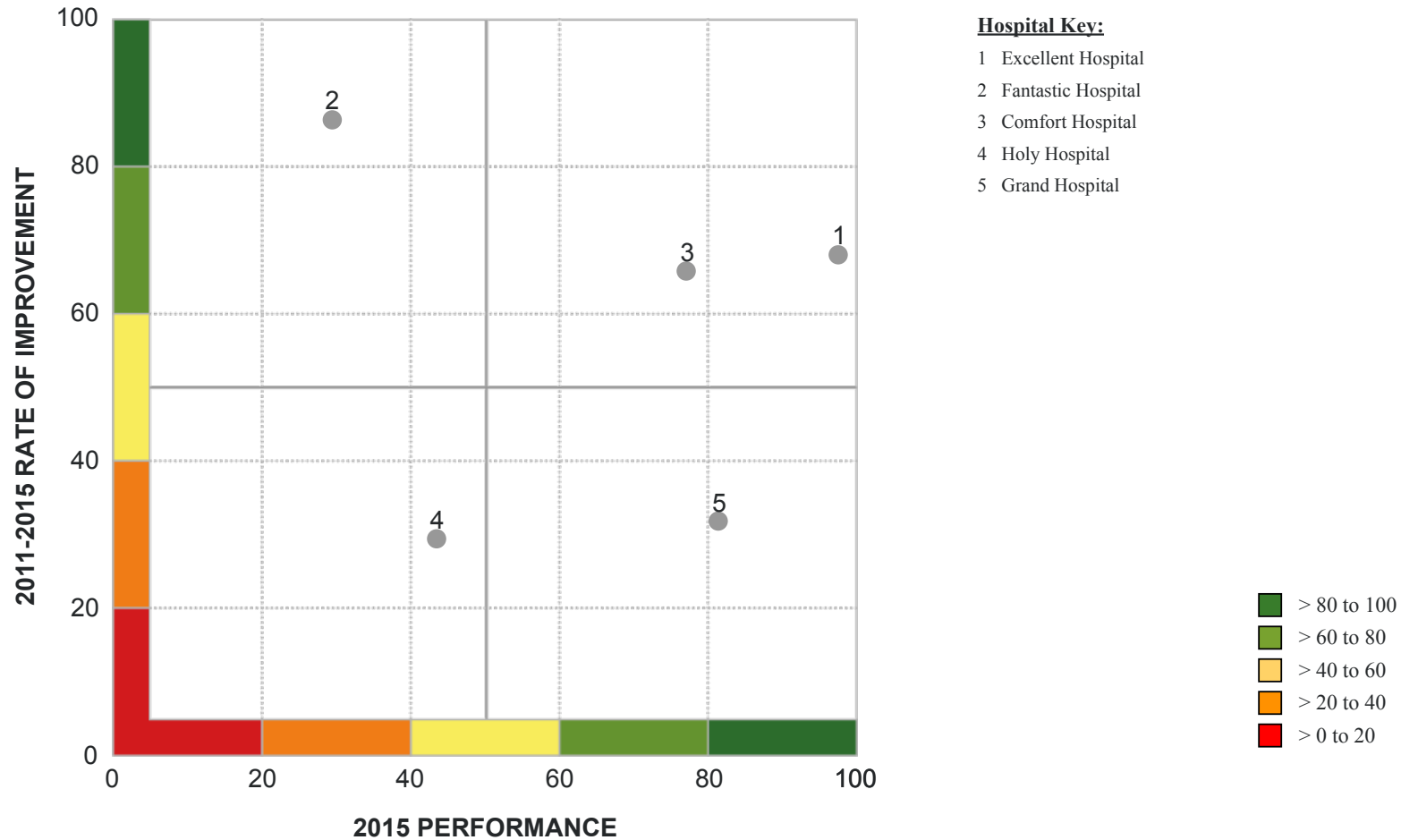
MEMBER HOSPITALS - EMERGENCY DEPARTMENT THROUGHPUT

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



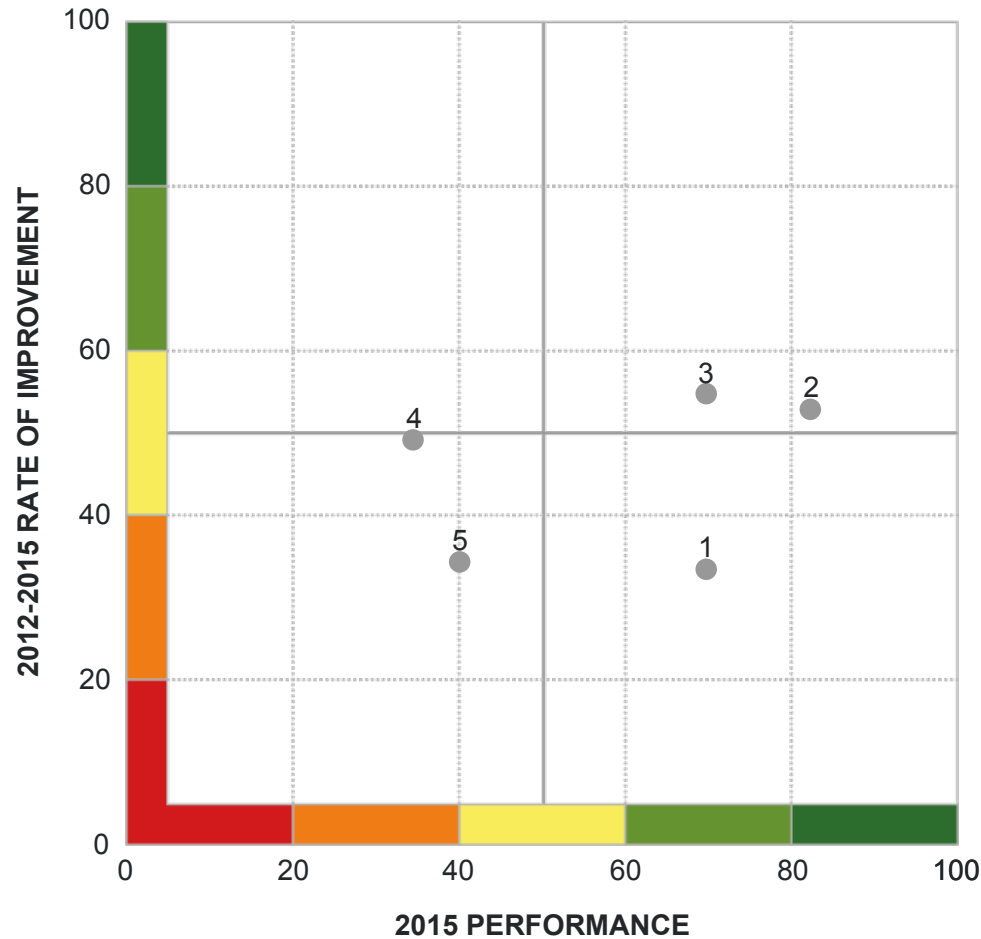
MEMBER HOSPITALS - ADJUSTED INPATIENT EXPENSE PER DISCHARGE

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



MEMBER HOSPITALS - MEDICARE SPEND PER BENEFICIARY

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



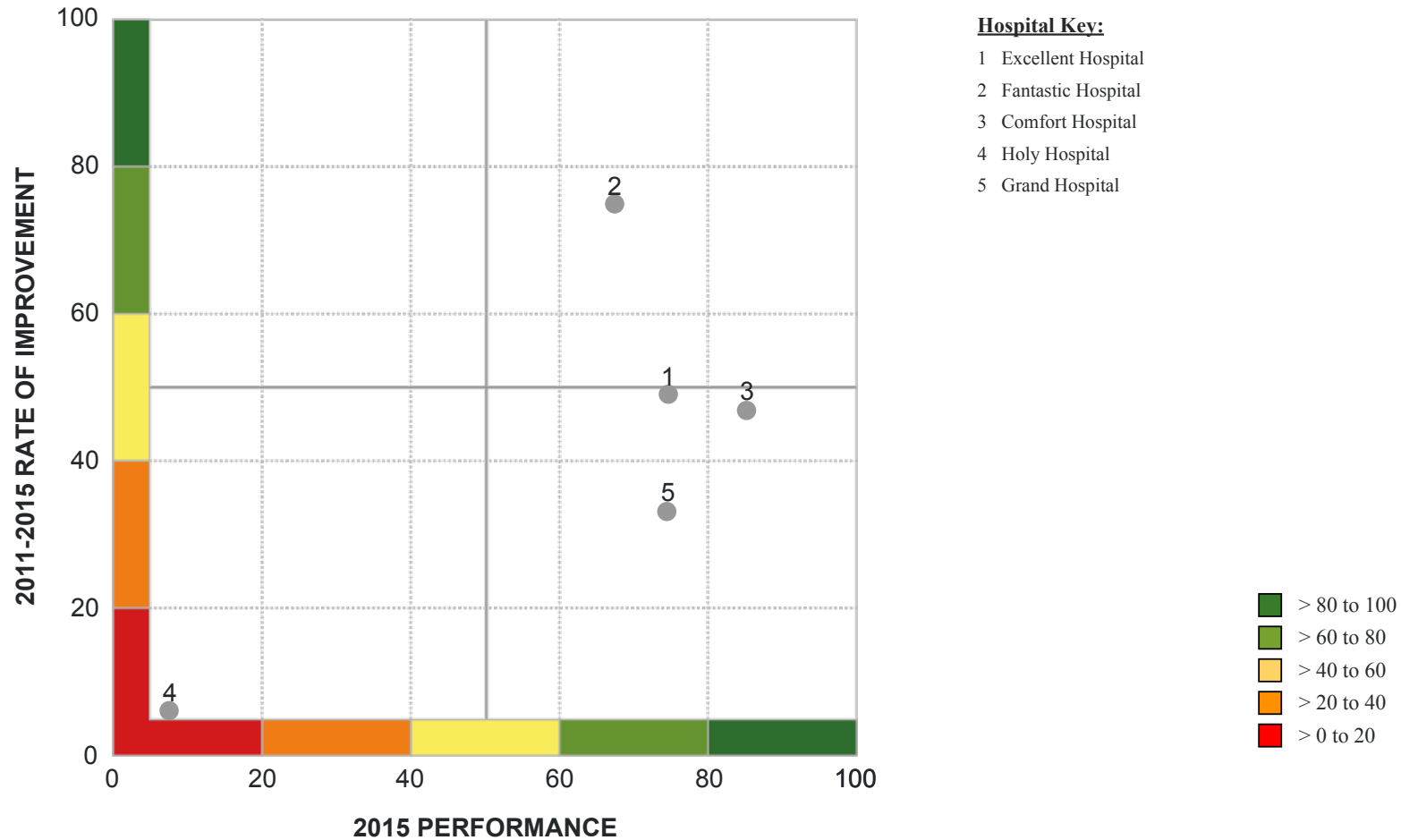
Hospital Key:

- 1 Excellent Hospital
- 2 Fantastic Hospital
- 3 Comfort Hospital
- 4 Holy Hospital
- 5 Grand Hospital



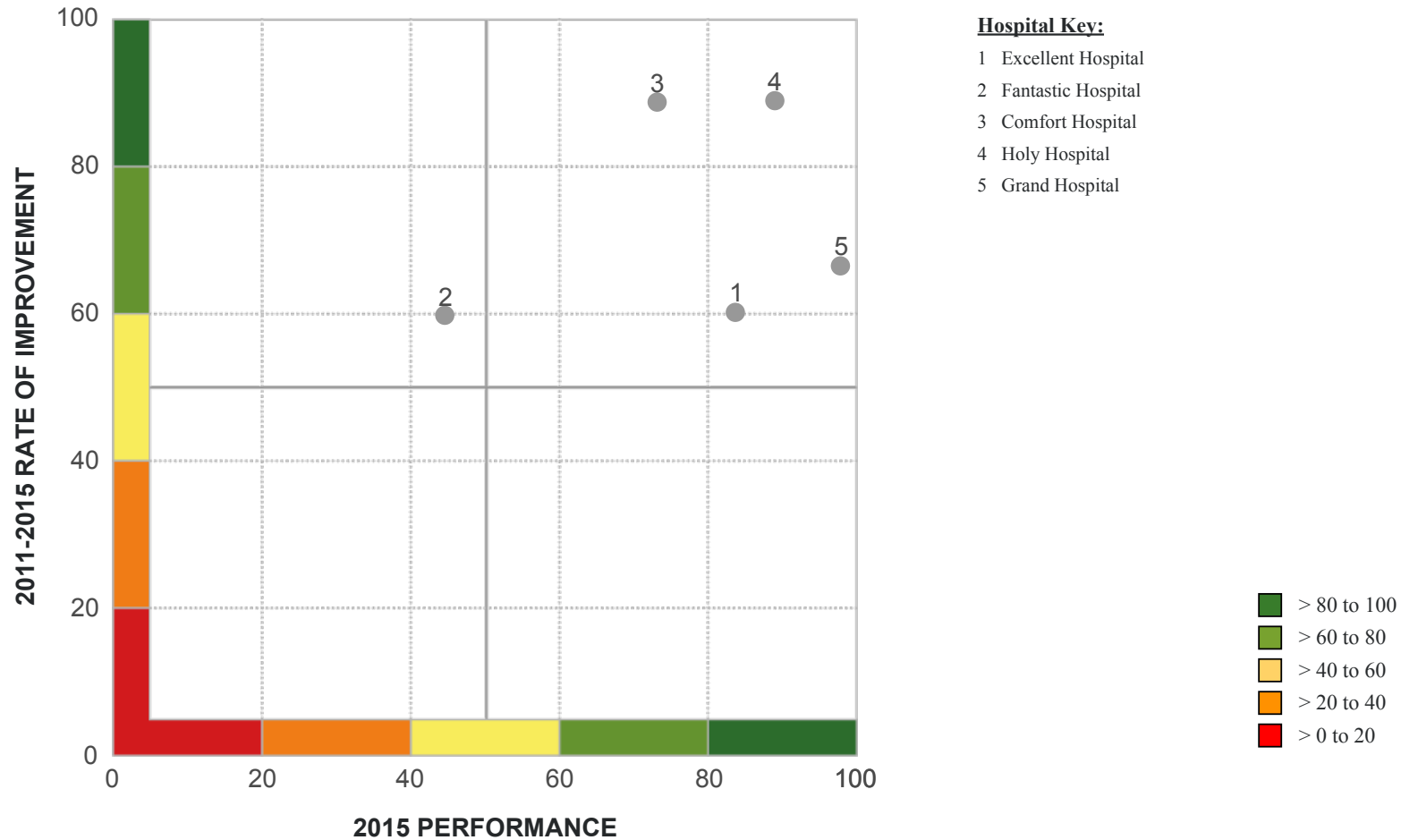
MEMBER HOSPITALS - ADJUSTED OPERATING PROFIT MARGIN

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



MEMBER HOSPITALS – HCAHPS OVERALL PATIENT RATING

2015 PERFORMANCE VERSUS RATE OF IMPROVEMENT



APPENDIX

INCLUDED MEMBER HOSPITALS

This section contains the list of health system member hospitals included in the 15 Top Health Systems 2017 study, identified using 2015 cost reports.

Acute care general, cardiac, orthopedic, women's, and critical access hospitals are included when aggregating data to the system level.

Only acute care hospitals that were ranked in the 100 Top Hospitals 2017 study are graphed on the preceding pages. These hospitals will have an overall 2015 percentile and 2011-2015 trend percentile from that study displayed in the table.

New this year, critical access hospitals (CAH) are ranked on six metrics. CAH's with valid data for all six measures are graphed on the preceding pages as well. These hospitals will have an overall 2015 percentile and 2011-2015 trend percentiles displayed in the table.

HEALTH SYSTEM INCLUDED MEMBER HOSPITALS

GRAPH KEY	MCARE ID	HOSPITAL NAME	CITY	STATE	2015 OVERALL PERCENTILE	2011-15 OVERALL PERCENTILE
1	999999	Excellent Hospital	Any City	US	98.5	81.4
2	999999	Fantastic Hospital	Any City	US	79.1	96.0
3	999999	Comfort Hospital	Any City	US	95.6	70.3
4	999999	Holy Hospital	Any City	US	73.3	65.0
5	999999	Grand Hospital	Any City	US	86.2	43.6