



# 15 Top Health Systems, 2019

## A National Benchmarks Report

Prepared for:  
Any Health System  
Any City, US

# Report Methodology Notes

## HEALTH SYSTEM SELECTION

In the Watson Health™ 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	>= \$2 billion	5
Medium Health System	\$900 million - < \$2 billion	5
Small Health System	< \$900 million	5
<b>Overall</b>		<b>15</b>

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 invalid POA code '0', we made the following adjustments to the MEDPAR data:

- 1) Original, valid (Y,N,U,W or 1) POA codes assigned to diagnoses were retained
- 2) Where a POA code of '0' appeared, we took the next four steps:
  - a) We treated all principal diagnoses (dx) as 'present on admission'
  - b) We treated all secondary dx on the CMS exempt list as 'exempt'
  - c) We treated secondary dx for which the POA code 'Y' or 'W' appeared more than 50 percent of the time in Watson Health's all-payer database as 'present on admission'
  - d) All others were treated as 'not present'

For mortality and complications, six data years were combined in two-year increments (2012-13; 2013-14; 2014-15; 2015-16; 2016-17) 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 <sup>1</sup> 2012-2017
Risk-Adjusted Complications	1	MEDPAR FFY <sup>1</sup> 2012-2017
Healthcare-Associated Infections <sup>2</sup>	1	CMS Hospital Compare CY 2017
30-Day Mortality (AMI, Heart Failure, Pneumonia, COPD, Stroke)	1	CMS Hospital Compare 3-yr data sets ending June 30 in 2013, 2014, 2015, 2016, 2017
30-Day Readmissions (AMI, Heart Failure, Pneumonia, THA/TKA, COPD, Stroke)	1	CMS Hospital Compare 3-yr data sets ending June 30 in 2013, 2014, 2015, 2016, 2017
Severity-Adjusted Average Length of Stay	1	MEDPAR FFY <sup>1</sup> 2013-2017
Emergency Department Throughput	1	CMS Hospital Compare CY 2014, 2015, 2016, 2017; FY 2013
Medicare Spend Per Beneficiary	1	CMS Hospital Compare CY 2013-2017
HCAHPS	1	CMS Hospital Compare CY 2013-2017

<sup>1</sup>Federal Fiscal year is Oct 1 through Sep 30.

<sup>2</sup>Trend data not available for healthcare-associated infections. Matrix data point cannot 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).

# 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 2017 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).

## PERFORMANCE MATRIX NOTES

### Missing Matrix Graph or Matrix Data Point

Your matrix graph will be absent from the report 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.

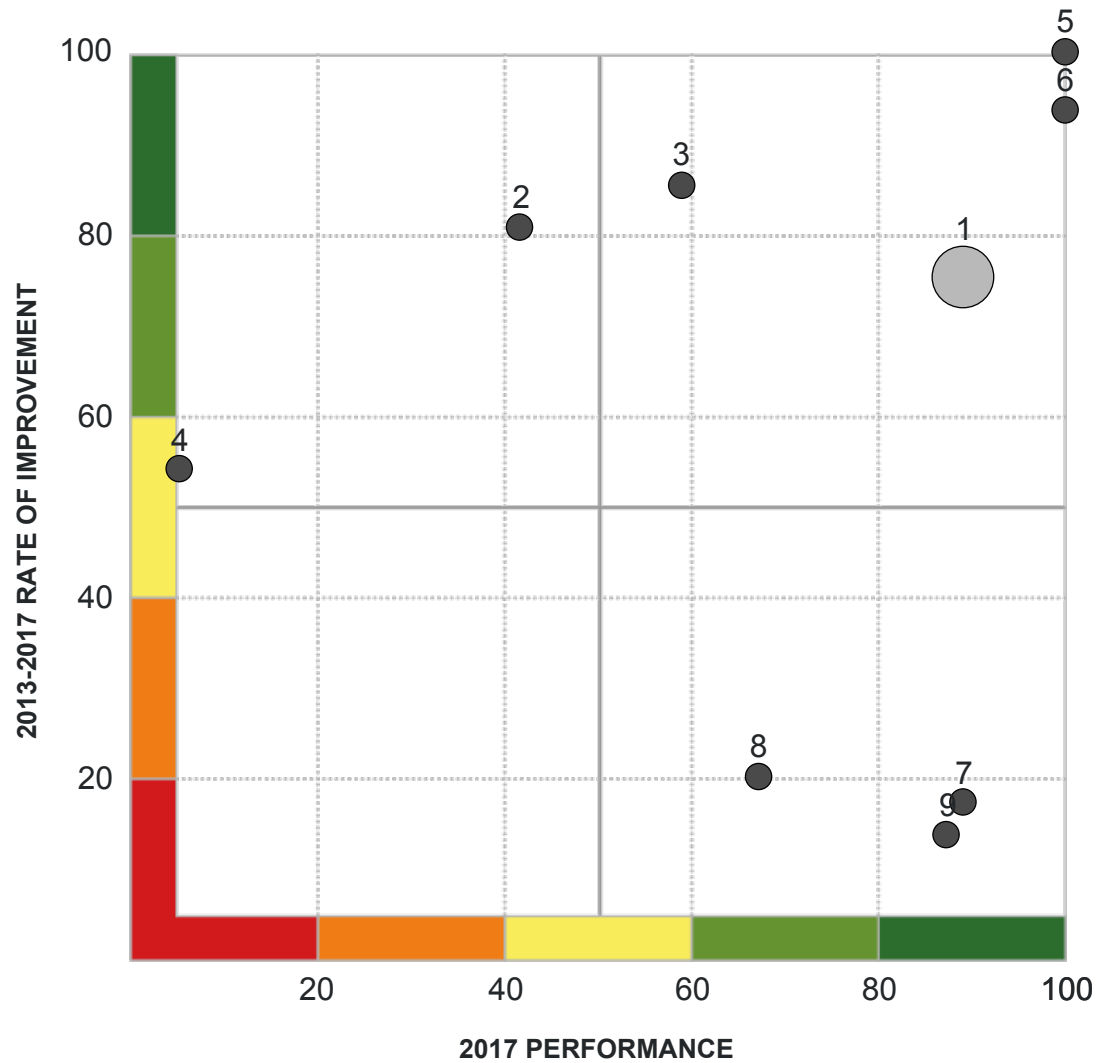
## WINNER SELECTION

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.

# 15 Top Health Systems Performance Comparison Group

**Profiled health system compared to large health systems**

# 2017 Performance and Five-Year Rate of Improvement Matrix



**DATA POINT KEY**

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

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

**PROFILED HEALTH SYSTEM compared to:**

2017 large health systems: n = 110

2013-2017 large health systems: n = 109

# Performance and Improvement – Rank Percentiles Graphs

## UNDERSTANDING THE GRAPHS

### 2017 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.

### 2013-2017 Rate of Improvement Rank Percentiles

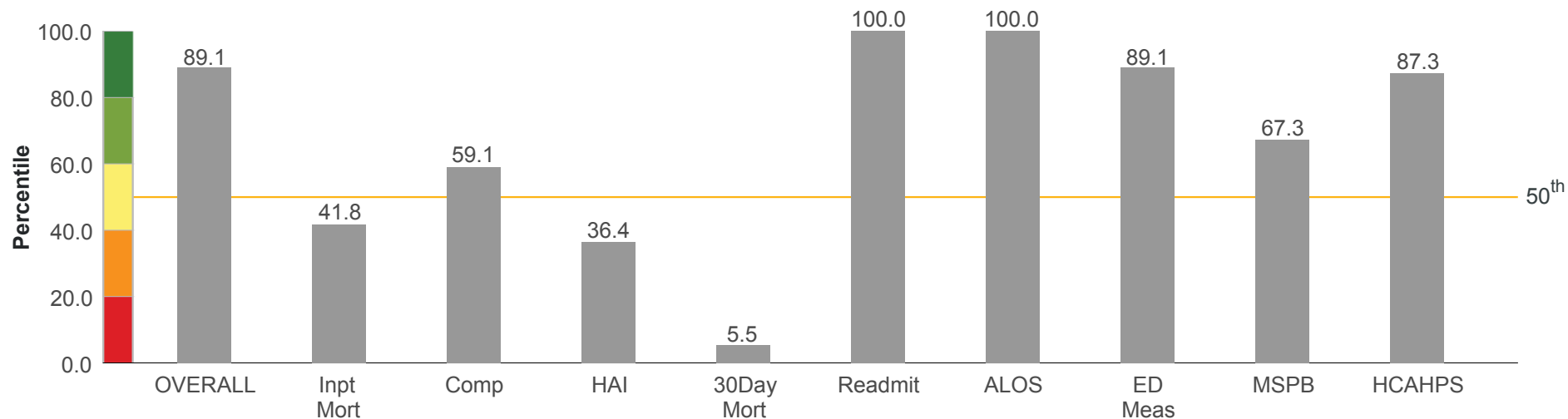
This bar graph shows your system's rate of improvement on each measure, and overall, reported as rank percentiles. Individual measure percentiles are calculated by dividing your measure rank within your comparison group by the number of systems in the group and multiplying by 100. The overall rank percentile 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.

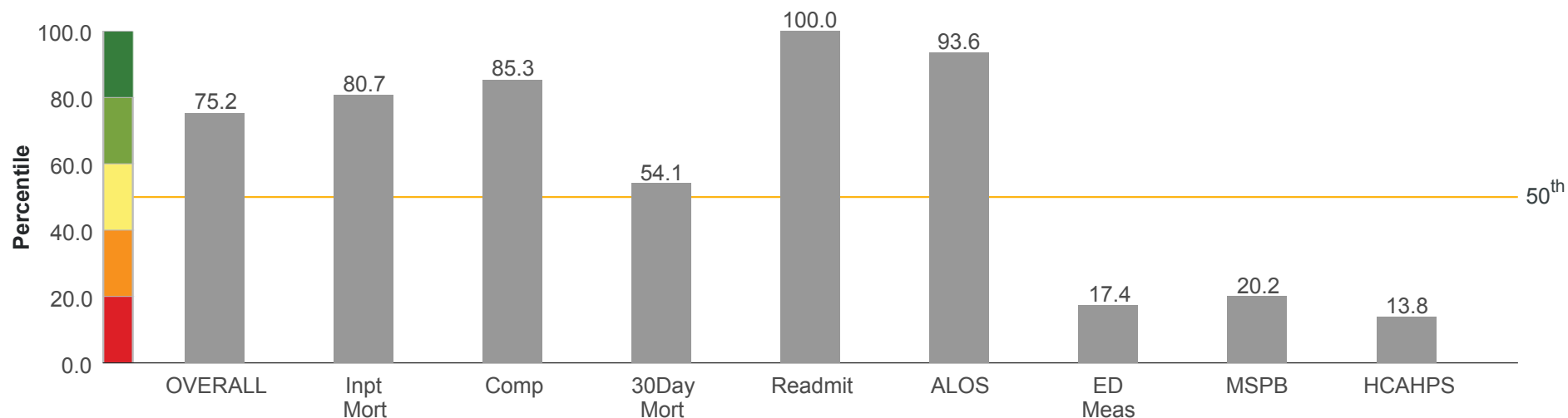
**The 15 Top benchmark systems (winners) are selected based only on 2017 performance.**

## 2017 Performance Rank Percentiles



Profiled system compared to large health systems: n = 110

## 2013-2017 Rate of Improvement Rank Percentiles



Profiled system compared to large health systems: n = 109

# 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
- Mean Healthcare-Associated Infection Index
- Mean 30-Day Mortality Rate (AMI, heart failure, pneumonia, COPD, stroke)
- Mean 30-Day Readmission Rate (AMI, heart failure, pneumonia, THA/TKA, COPD, stroke)
- Severity-Adjusted Average Length of Stay
- Mean Emergency Department Throughput
- Medicare Spend Per Beneficiary Index
- HCAHPS Score (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.

Healthcare-associated infections, 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 two 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 member hospital 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).

### Healthcare-Associated Infections, 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 mean healthcare-associated infections, 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 (STGAC) hospitals that report system membership on the hospital cost report
- 50% or more STGAC hospital members are missing valid data
- System has one or more missing measures
- POA not coded for 2016 or 2017 Medicare claims

## System Winner Exclusions

A system is winner excluded if:

- Observed mortality or complications are statistically worse than expected (99% confidence)
- Medicare spend per beneficiary (MSPB) index is missing or incomplete
- Had a 15 Top Health System award rescinded by Watson Health 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:

- 30-day mortality rates (AMI, HF, pneumonia, COPD, stroke)
- 30-day readmission rates (AMI, HF, pneumonia, THA/TKA, COPD, stroke)
- Medicare spend per beneficiary index

## 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](http://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 Index
- Risk-Adjusted Complications Index
- Mean 30-Day Mortality Rate (AMI, heart failure, pneumonia, COPD, stroke)
- Mean 30-Day Readmission Rate (AMI, heart failure, pneumonia, THA/TKA, COPD, stroke)
- Severity-Adjusted Average Length of Stay
- Mean Emergency Department Throughput
- Medicare Spend Per Beneficiary Index
- HCAHPS Score (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.

## 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 individual 30-day measures are 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

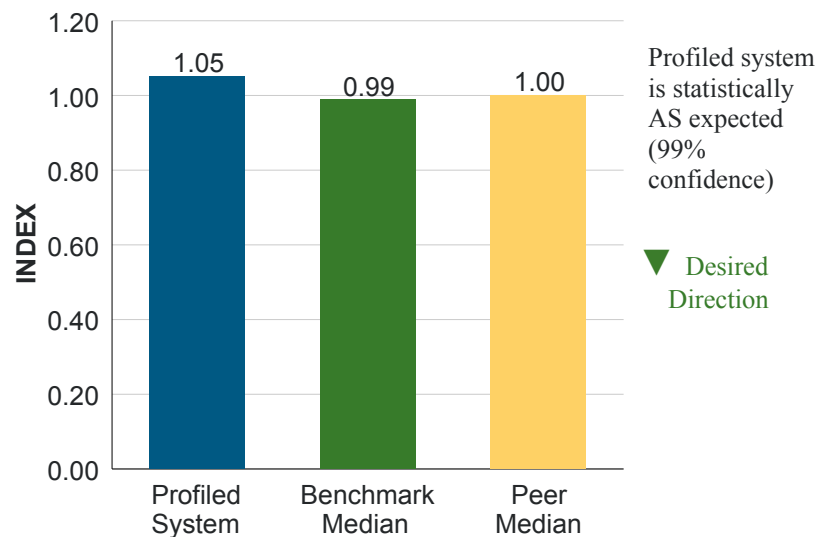
Individual data points are missing on the Color Quintile Graphs when values are not reported, or your comparison group median value has been substituted in a specific year.

### Data Point Time Periods

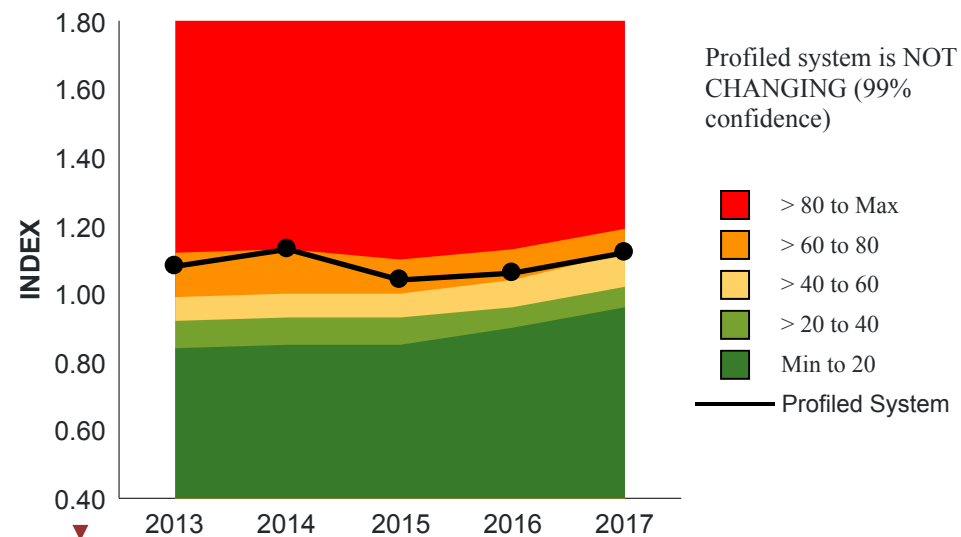
Data points on the graphs – labeled 2013, 2014, 2015, 2016, 2017 – represent various data periods. See Report Methodology Notes page, Rank Weights and Public Data Sources table for more details.

# Risk-adjusted inpatient mortality index

## 2017 IP MORTALITY PERFORMANCE



## 2013-2017 IP MORTALITY RATE OF IMPROVEMENT



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

Peer systems are the non-winners in the comparison group:  $n = 105$

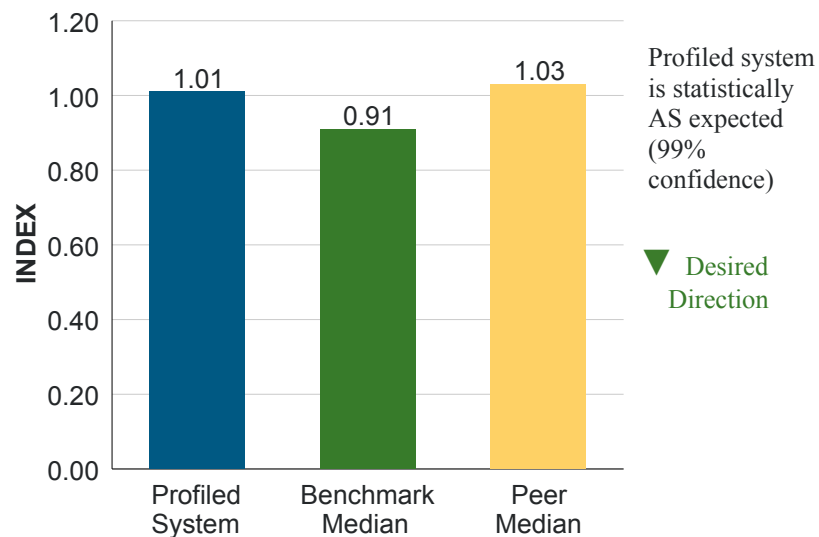
Note: 2017 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

System performance compared to peer system quintiles:  $n = 109$

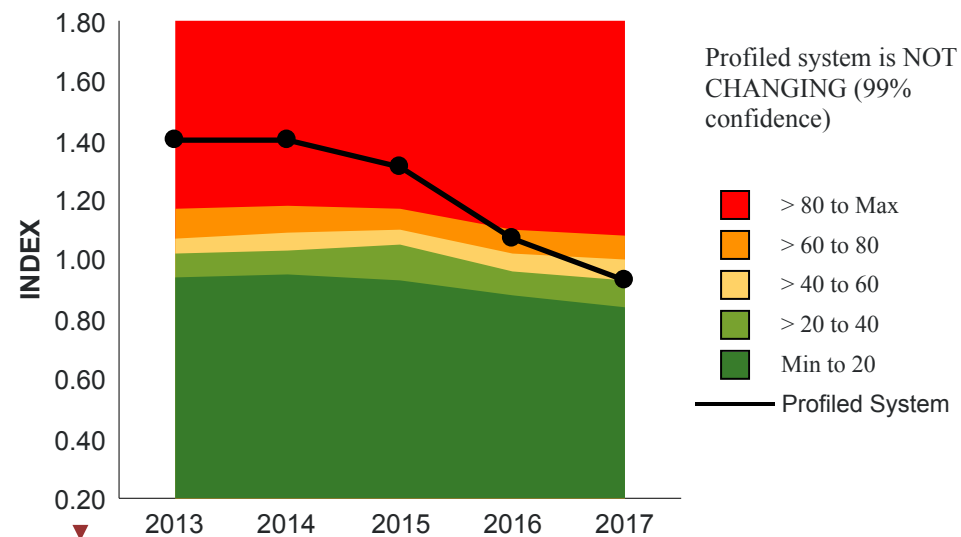
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2013	0.84	0.92	0.99	1.12	1.08	1.15	1.01
	2014	0.85	0.93	1.00	1.13	1.13	1.21	1.06
	2015	0.85	0.93	1.00	1.10	1.04	1.11	0.97
	2016	0.90	0.96	1.04	1.13	1.06	1.13	0.99
	2017	0.96	1.02	1.12	1.19	1.12	1.20	1.04

# Risk-adjusted complications index

## 2017 COMPLICATIONS PERFORMANCE



## 2013-2017 COMPLICATIONS RATE OF IMPROVEMENT



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

Peer systems are the non-winners in the comparison group:  $n = 105$

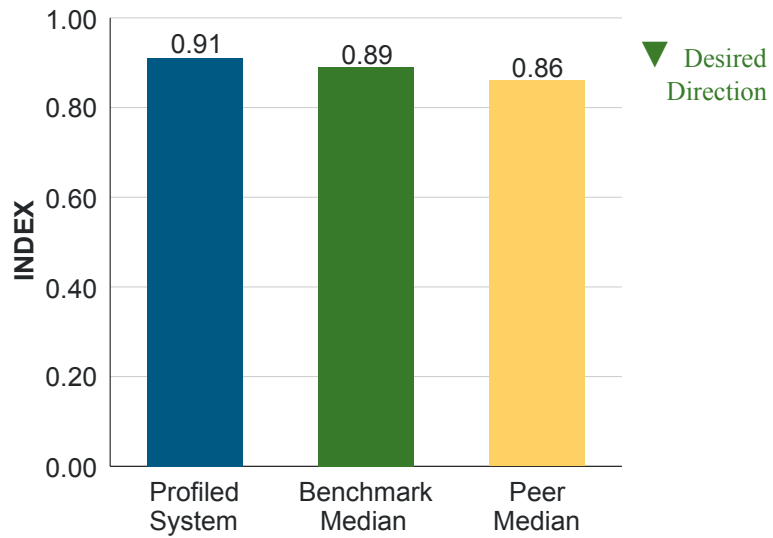
Note: 2017 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

System performance compared to peer system quintiles:  $n = 109$

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2013	0.94	1.02	1.07	1.17	1.40	1.48	1.33
	2014	0.95	1.03	1.09	1.18	1.40	1.48	1.32
	2015	0.93	1.05	1.10	1.17	1.31	1.40	1.24
	2016	0.88	0.96	1.02	1.10	1.07	1.14	1.00
	2017	0.84	0.93	1.00	1.08	0.93	1.00	0.87

# Mean HAI standardized infection ratio

## 2017 HAI SIR PERFORMANCE



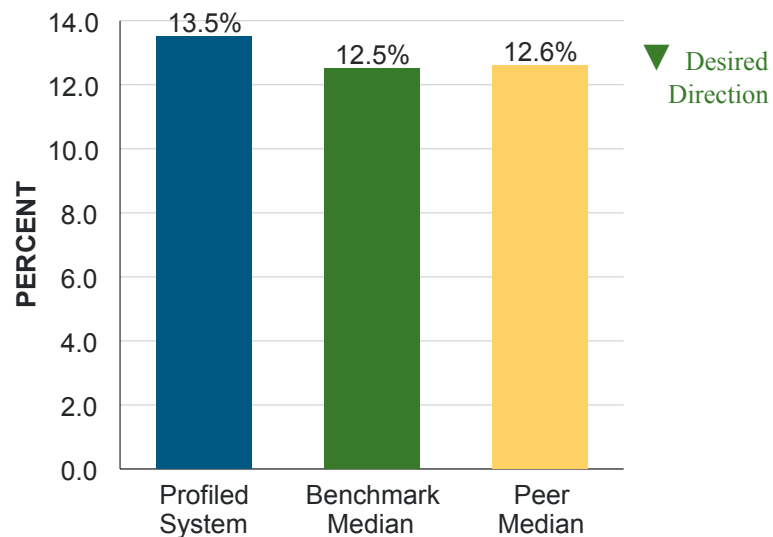
NO TREND GRAPH, TOO FEW DATA YEARS AVAILABLE

*Benchmark systems are the winners in the comparison group: n = 5*

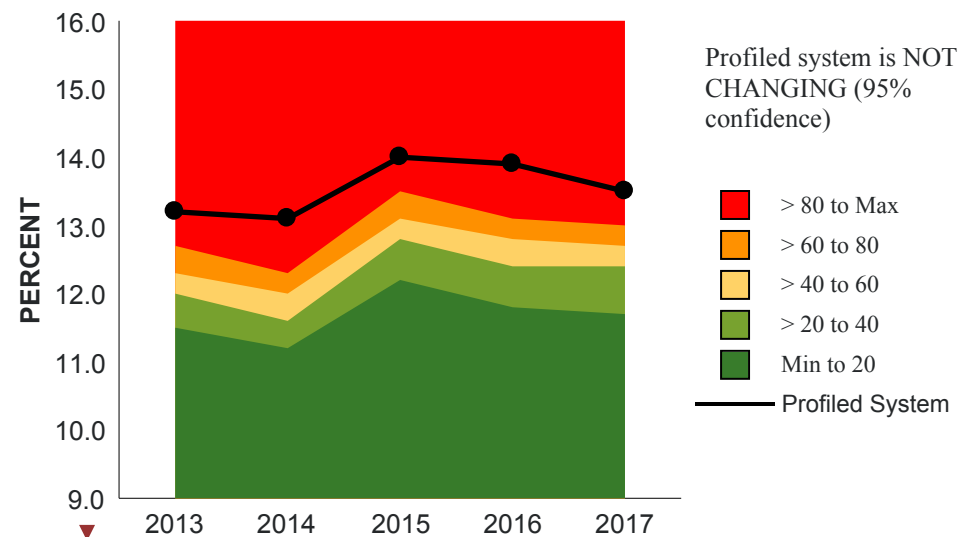
*Peer systems are the non-winners in the comparison group: n = 105*

# Mean 30-day mortality rate

## 2017 30D MORTALITY PERFORMANCE



## 2013-2017 30D MORTALITY RATE OF IMPROVEMENT



System performance compared to peer system quintiles: n = 109

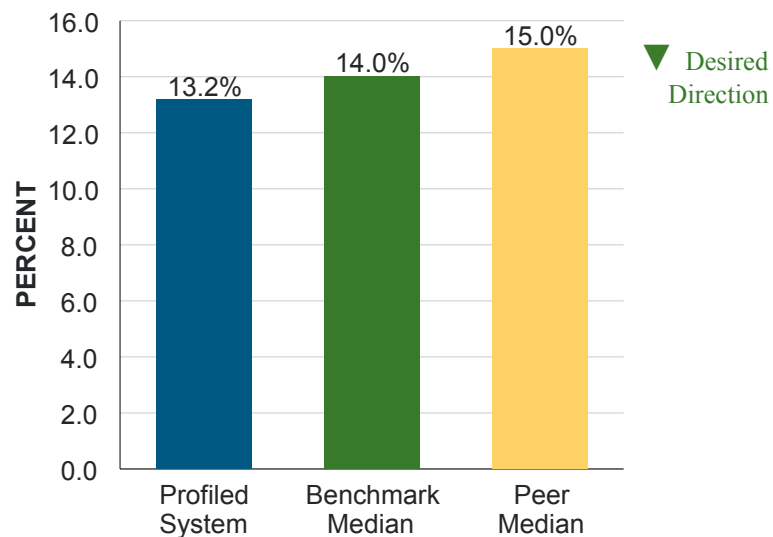
Benchmark systems are the winners in the comparison group: n = 5

Peer systems are the non-winners in the comparison group: n = 105

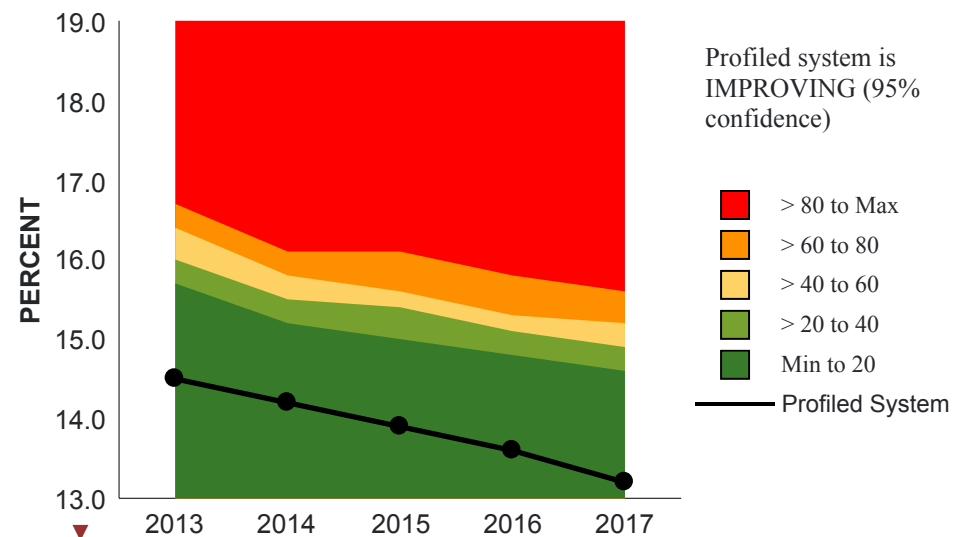
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2013	11.5	12.0	12.3	12.7	13.2
	2014	11.2	11.6	12.0	12.3	13.1
	2015	12.2	12.8	13.1	13.5	14.0
	2016	11.8	12.4	12.8	13.1	13.9
	2017	11.7	12.4	12.7	13.0	13.5

# Mean 30-day readmission rate

## 2017 30D READMISSION PERFORMANCE



## 2013-2017 30D READMISSION RATE OF IMPROVEMENT



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

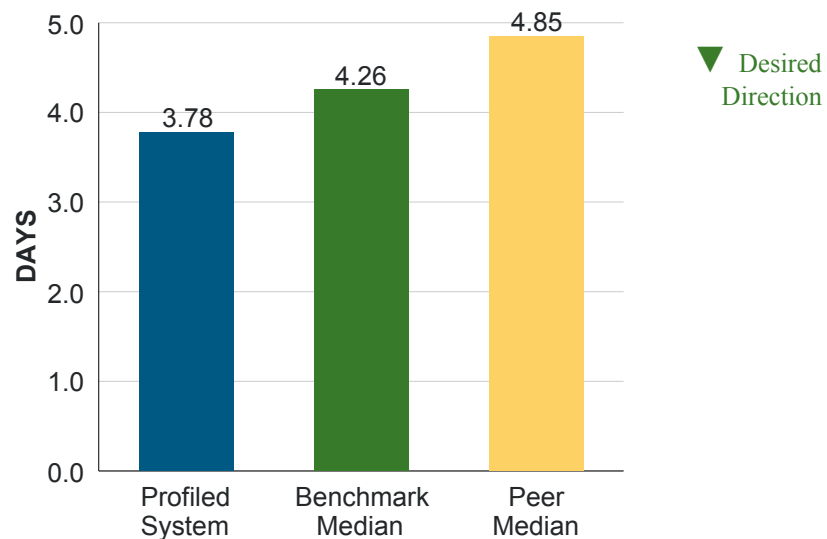
Peer systems are the non-winners in the comparison group: n = 105

System performance compared to peer system quintiles: n = 109

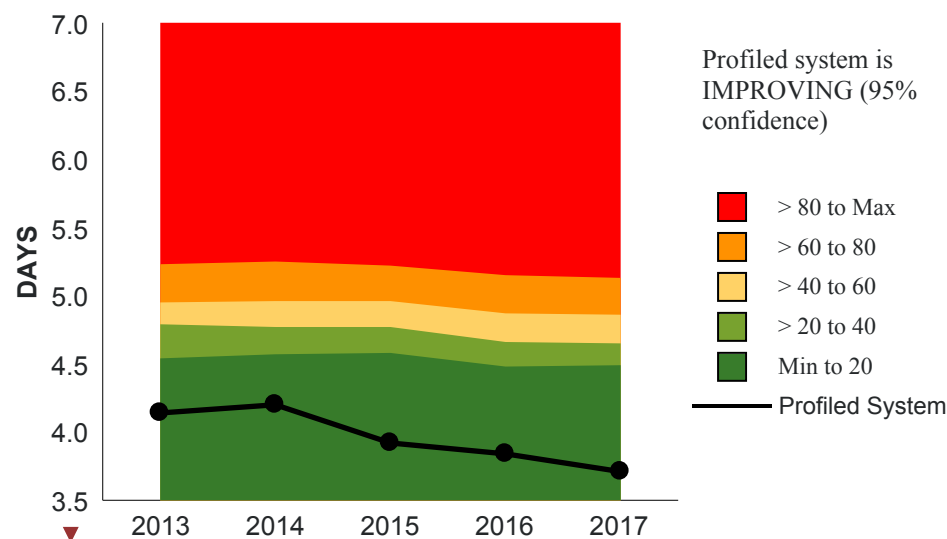
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2013	15.7	16.0	16.4	16.7	14.5
	2014	15.2	15.5	15.8	16.1	14.2
	2015	15.0	15.4	15.6	16.1	13.9
	2016	14.8	15.1	15.3	15.8	13.6
	2017	14.6	14.9	15.2	15.6	13.2

# Severity-adjusted average length of stay

## 2017 ALOS PERFORMANCE



## 2013-2017 ALOS RATE OF IMPROVEMENT



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

Peer systems are the non-winners in the comparison group: n = 105

Note: 2017 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

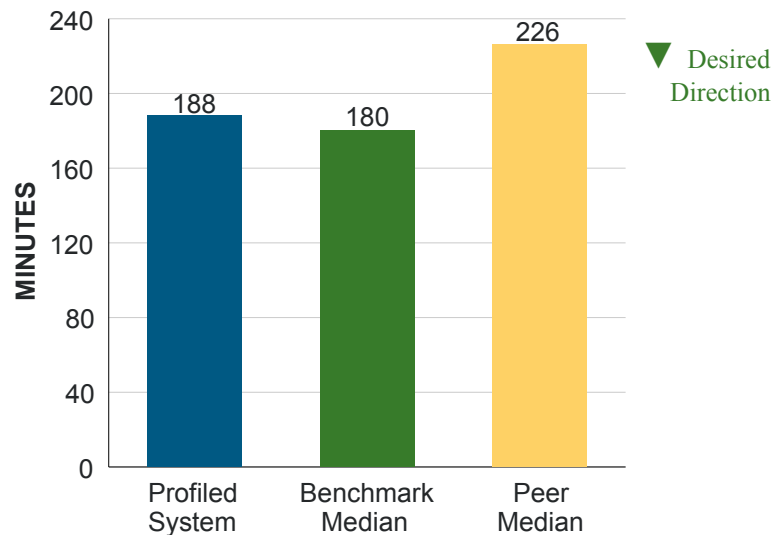
System performance compared to peer system quintiles: n = 109

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2013	4.54	4.79	4.95	5.23	4.14
	2014	4.57	4.77	4.96	5.25	4.20
	2015	4.58	4.77	4.96	5.22	3.92
	2016	4.48	4.66	4.87	5.15	3.84
	2017	4.49	4.65	4.86	5.13	3.71

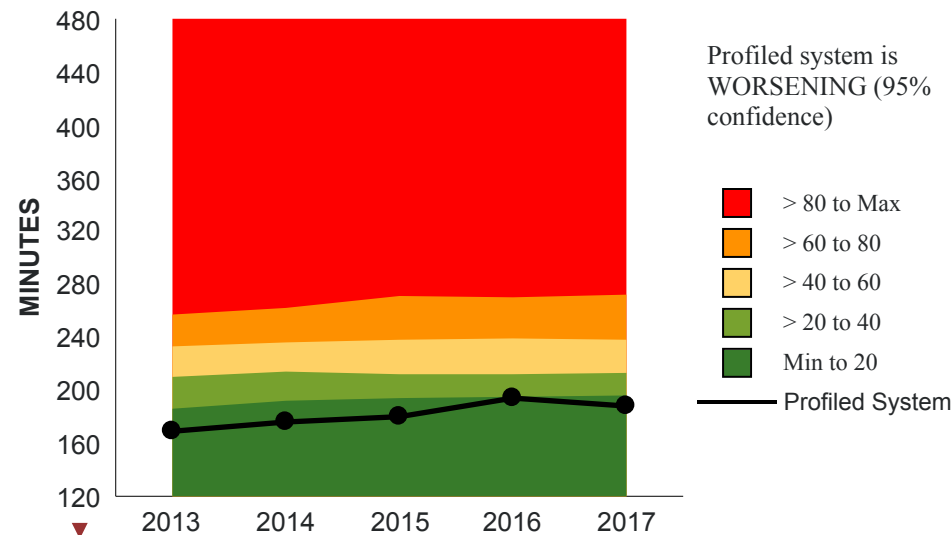


# Mean emergency department throughput

2017 ED PERFORMANCE



2013-2017 ED RATE OF IMPROVEMENT



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

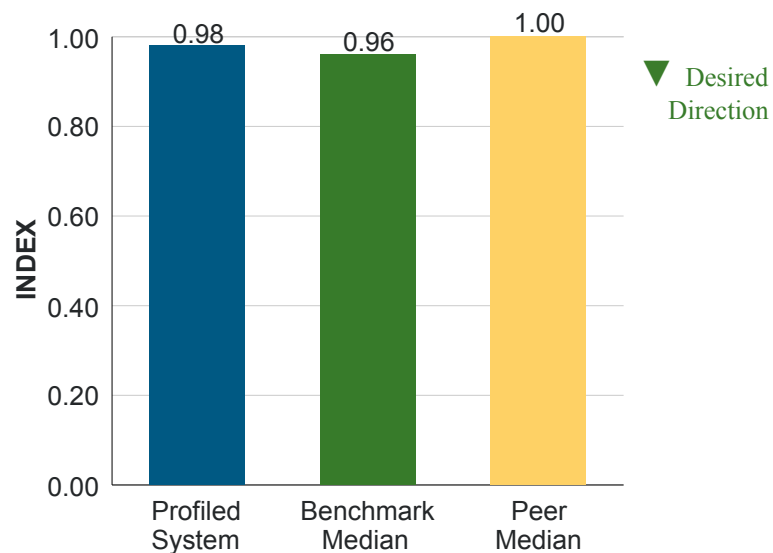
Peer systems are the non-winners in the comparison group:  $n = 105$

System performance compared to peer system quintiles:  $n = 109$

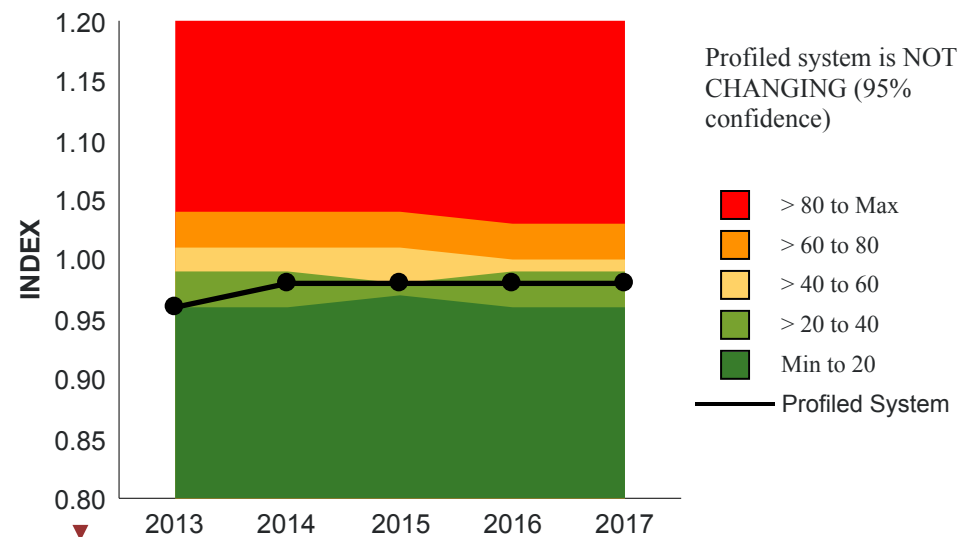
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2013	186	210	233	257	169
	2014	192	214	236	262	176
	2015	194	212	238	271	180
	2016	195	212	239	270	194
	2017	196	213	238	272	188

# Medicare spend per beneficiary index

## 2017 MSPB PERFORMANCE



## 2013-2017 MSPB RATE OF IMPROVEMENT



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

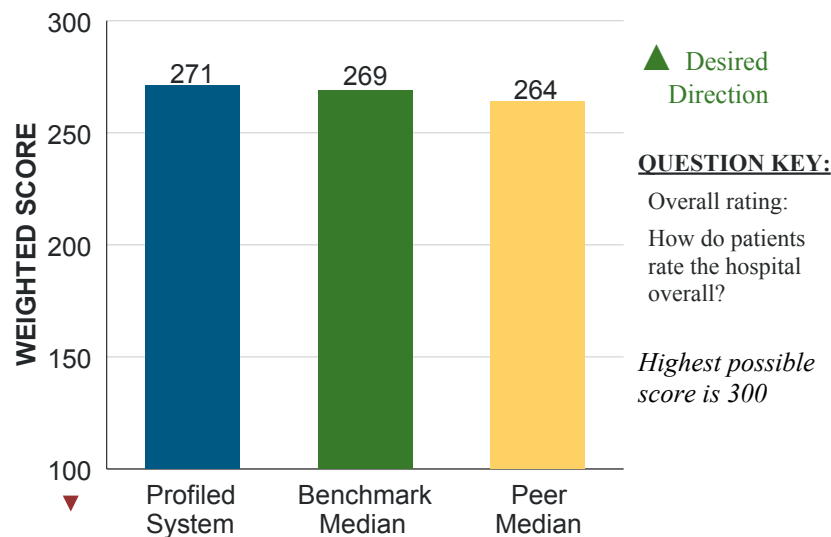
Peer systems are the non-winners in the comparison group:  $n = 105$

System performance compared to peer system quintiles:  $n = 109$

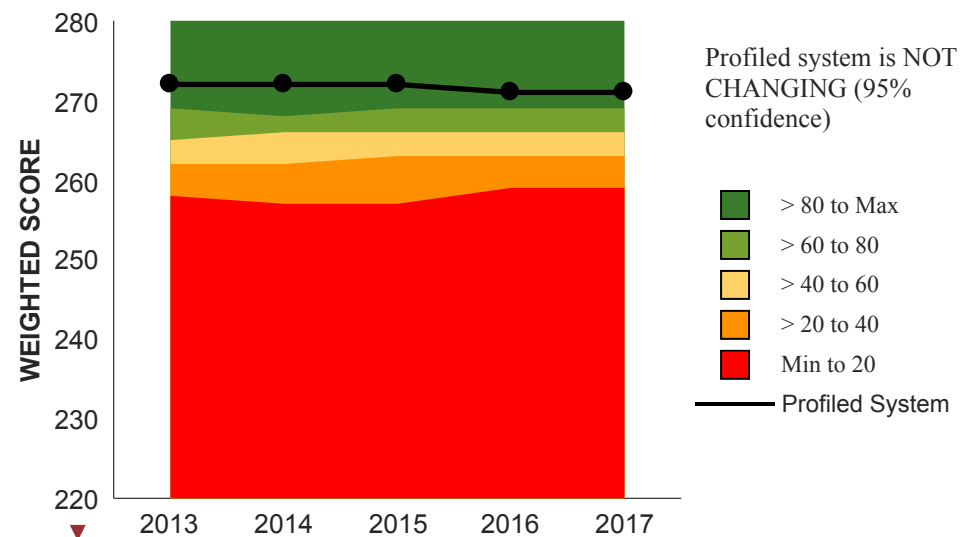
PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2013	0.96	0.99	1.01	1.04	0.96
	2014	0.96	0.99	1.01	1.04	0.98
	2015	0.97	0.98	1.01	1.04	0.98
	2016	0.96	0.99	1.00	1.03	0.98
	2017	0.96	0.99	1.00	1.03	0.98

# HCAHPS score: overall rating question

## 2017 HCAHPS PERFORMANCE



## 2013-2017 HCAHPS RATE OF IMPROVEMENT



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

System performance compared to peer system quintiles: n = 109

Peer systems are the non-winners in the comparison group: n = 105

PERCENTILE POINTS ►		HEALTH SYSTEM COMPARISON GROUP				PROFILED SYSTEM
		20th	40th	60th	80th	Value
YEARS	2013	258	262	265	269	272
	2014	257	262	266	268	272
	2015	257	263	266	269	272
	2016	259	263	266	269	271
	2017	259	263	266	269	271

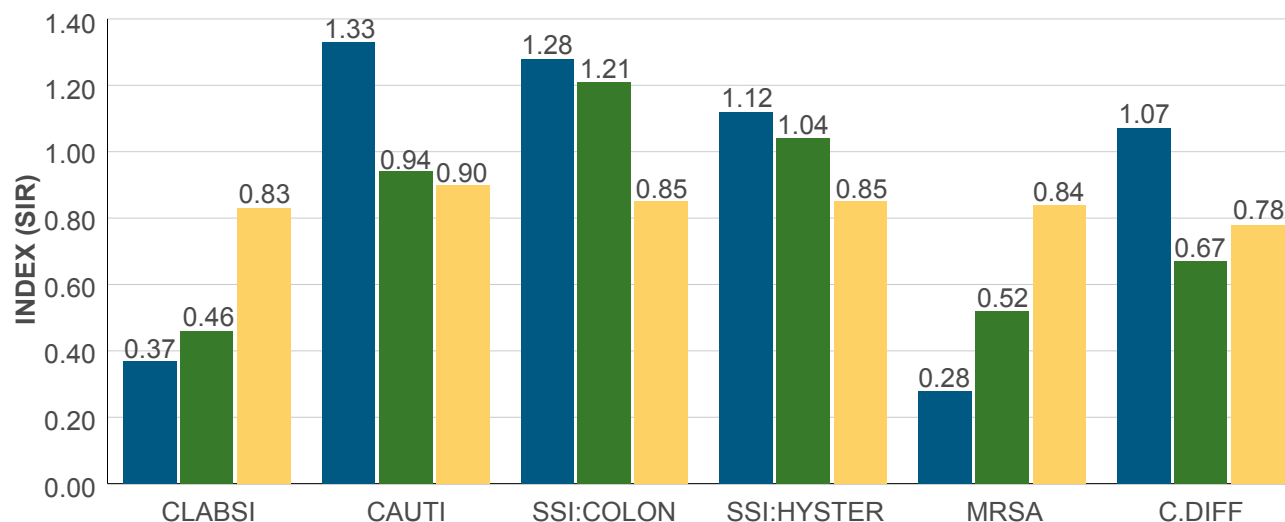
## 2017 Health System Performance – Detail Graphs

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

- Healthcare-associated infections (HAIs)
- 30-day mortality (AMI, HF, pneumonia, COPD and stroke)
- 30-day readmission (AMI, HF, pneumonia, THA/TKA, COPD and stroke)
- Emergency department throughput (avg min to adm; avg min to ed d/c)
- 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.

# HAI SIR measure detail

## 2017 HAI 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

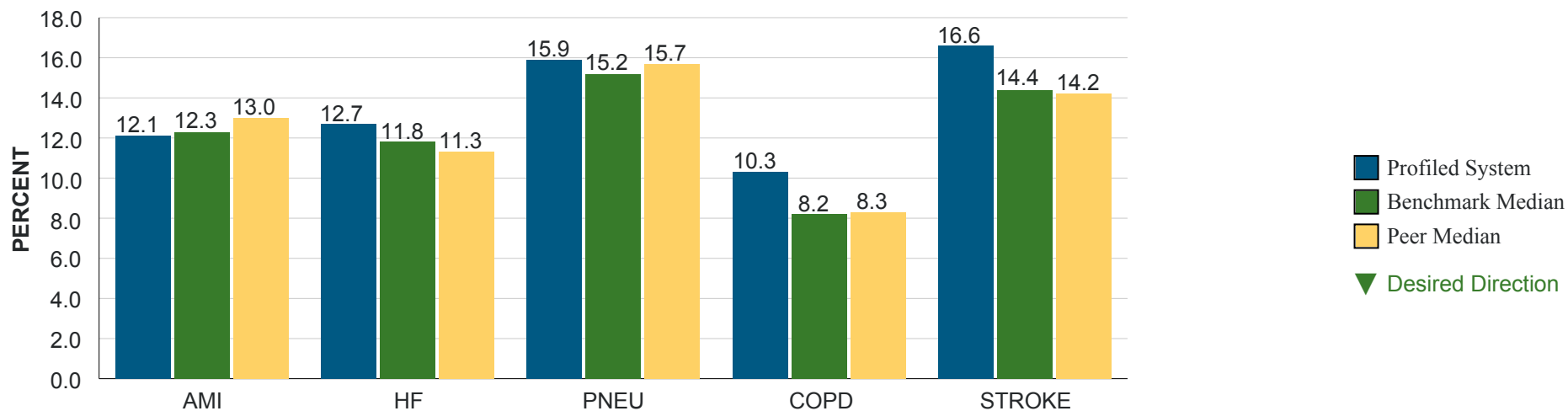


Benchmark systems are the winners in the comparison group: n = 5

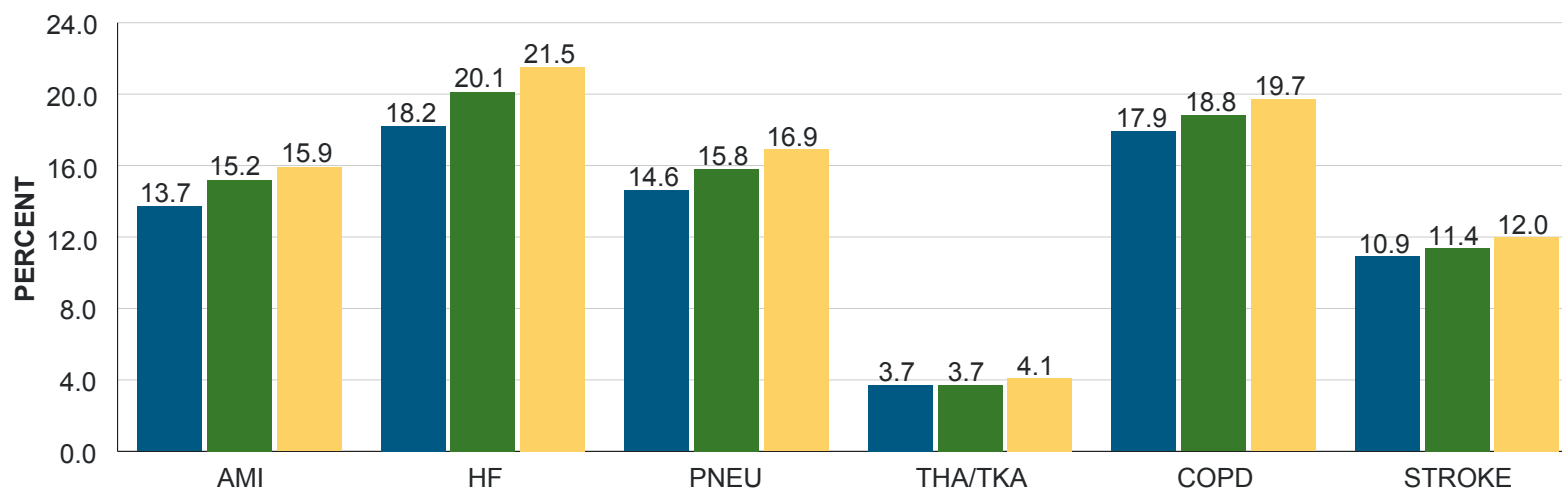
Peer systems are the non-winners in the comparison group: n = 105

# 30-day rates by patient condition

## 2017 PERFORMANCE FOR 30D MORTALITY



## 2017 PERFORMANCE FOR 30D READMISSIONS

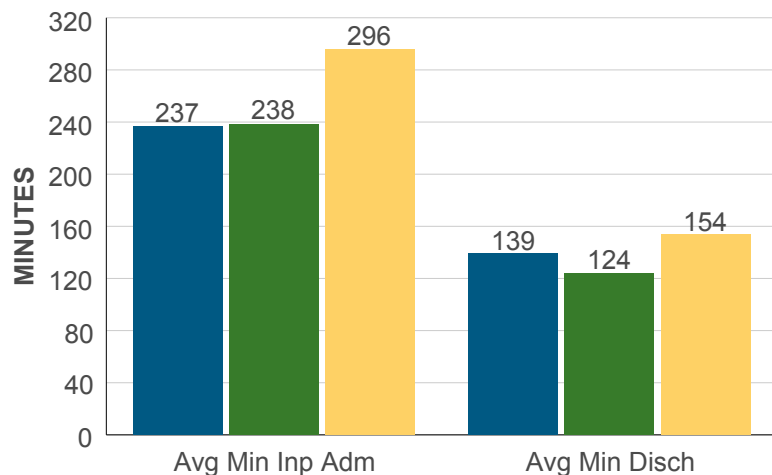


Benchmark systems are the winners in the comparison group: n = 5

Peer systems are the non-winners in the comparison group: n = 105

# Emergency department throughput measure detail

## 2017 ED 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

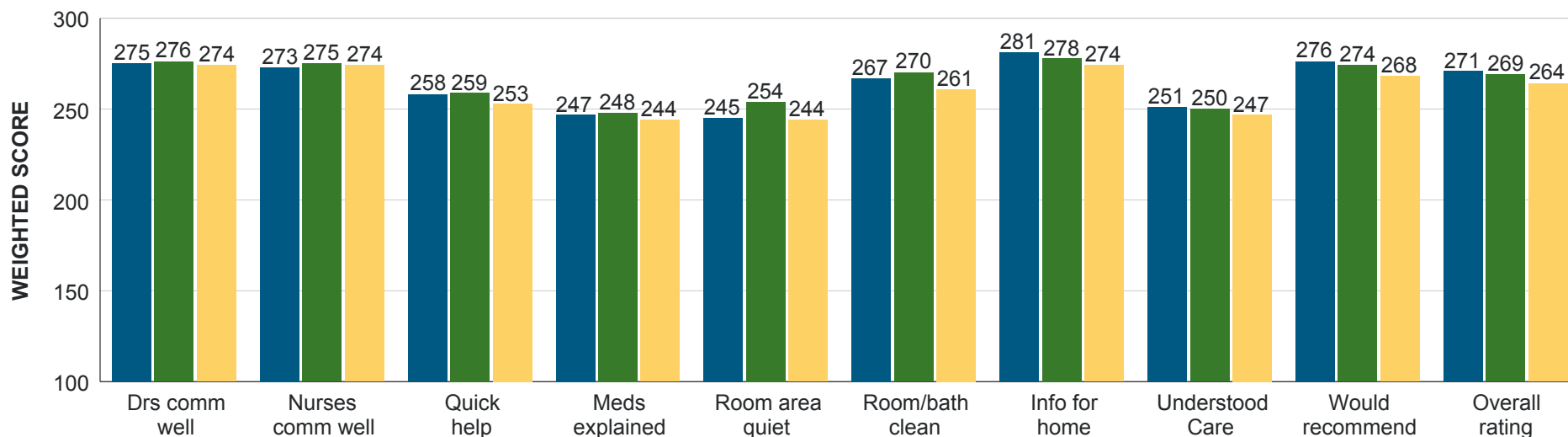
- Profiled System
- Benchmark Median
- Peer Median
- ▼ Desired Direction

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

Peer systems are the non-winners in the comparison group: n = 105

# HCAHPS questions – only overall rating used in ranking

## 2017 HCAHPS 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?
- 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

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

Peer systems are the non-winners in the comparison group: n = 105



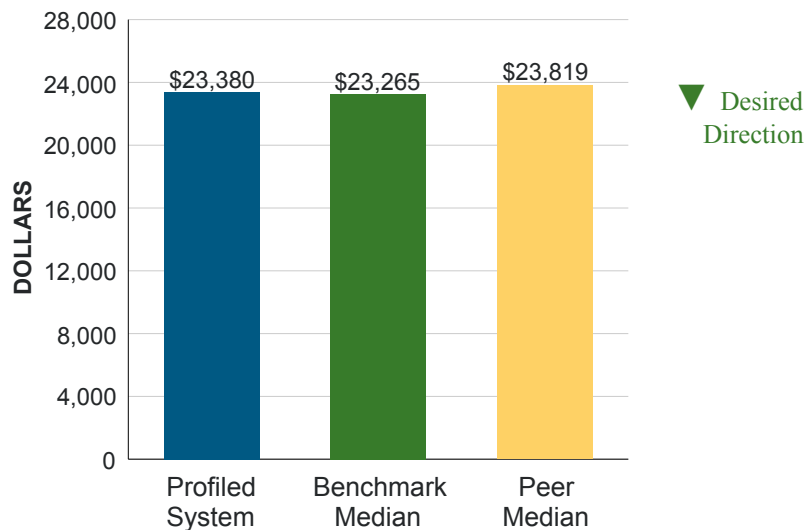
## Supplemental Information-only Measures

This section of your report contains measures that we are profiling only for informational purposes; they were not included in the ranking or determination of winners. 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.

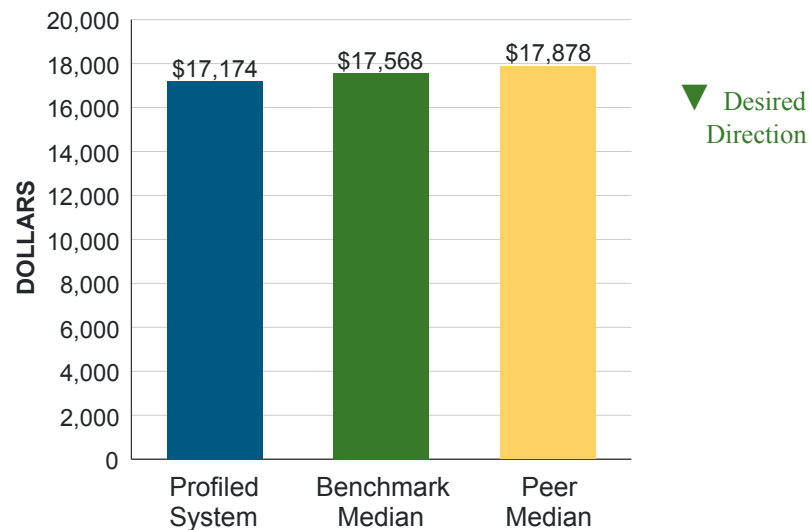
- Medicare Episode of Payment measures
  - 30-day payment for AMI / HF / Pneumonia patients
  - 90-day payment for THA/TKA replacement patients
- Excess days in acute care (EDAC) measures
  - 30-day excess days in acute care for AMI / HF / Pneumonia patients
- Readmission measure
  - 30-day readmission rate, hospital-wide
- Complication measure
  - 90-day complication rate for THA/TKA patients
- Outpatient imaging efficiency measures
  - Abdomen CT use of contrast material (OP-10)
  - Thorax CT use of contrast material (OP-11)
  - Mammography follow-up rates (OP-9)
- Process of care measures
  - Rate of appropriate care given for patients with severe sepsis or septic shock (SEP-1)
- Health System financial performance measures
  - Operating margin
  - Long-term debt to capitalization

# 30-day episode of payment measures by patient condition

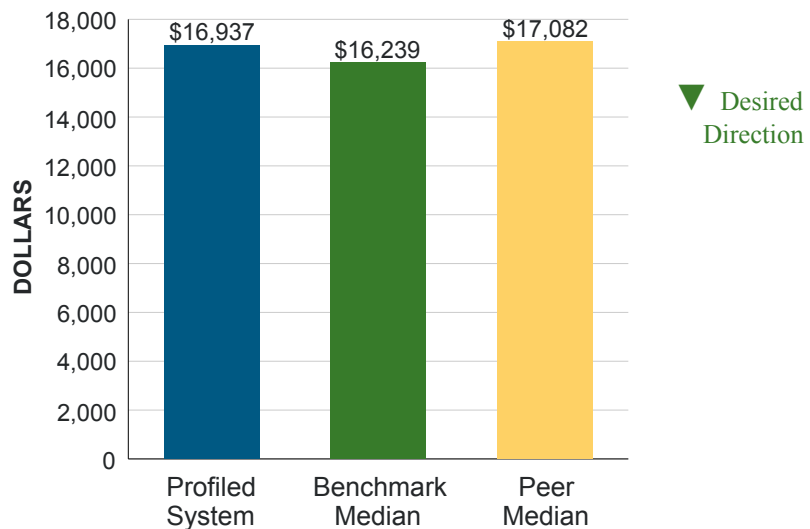
2017 30D PAYMENT PERFORMANCE FOR AMI



2017 30D PAYMENT PERFORMANCE FOR PNEUMONIA



2017 30D PAYMENT PERFORMANCE FOR HF

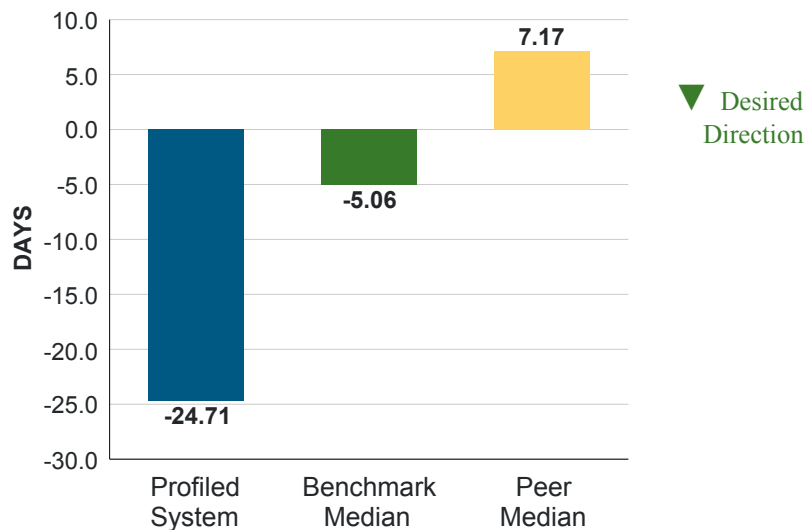


Benchmark systems are the winners in the comparison group: n = 5

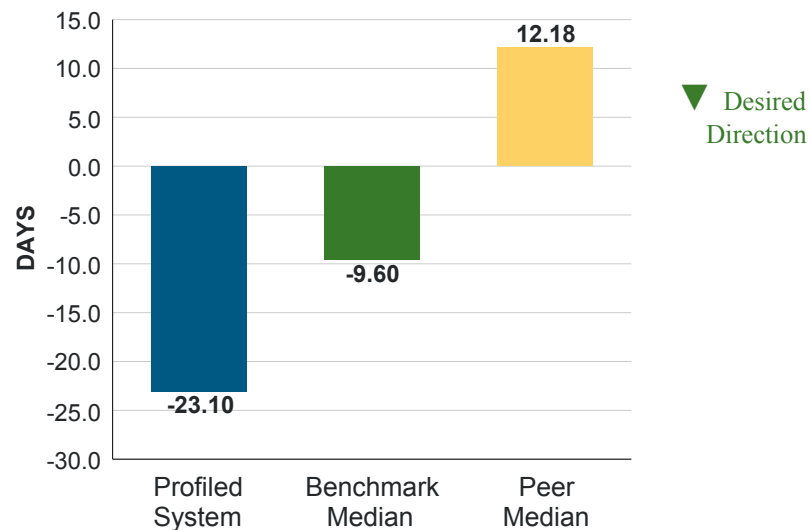
Peer systems are the non-winners in the comparison group: n = 105

# 30-day excess days in acute care measures by patient condition

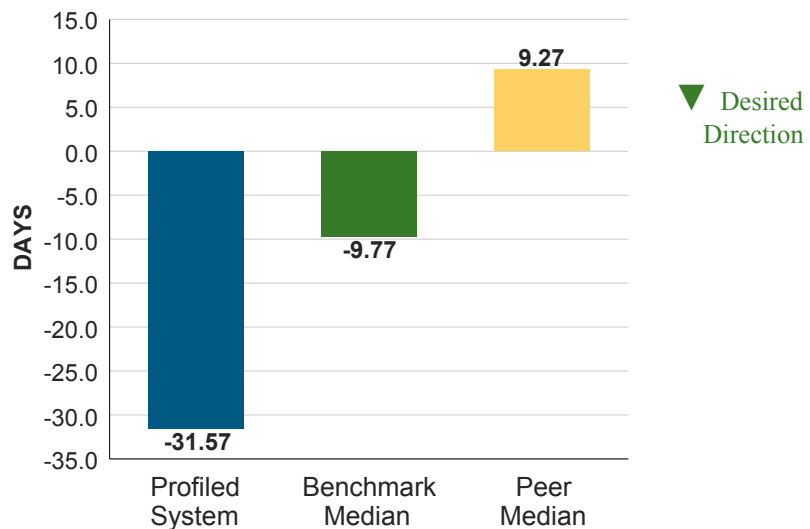
2017 30D EDAC PERFORMANCE FOR AMI



2017 30D EDAC PERFORMANCE FOR PNEUMONIA



2017 30D EDAC PERFORMANCE FOR HF

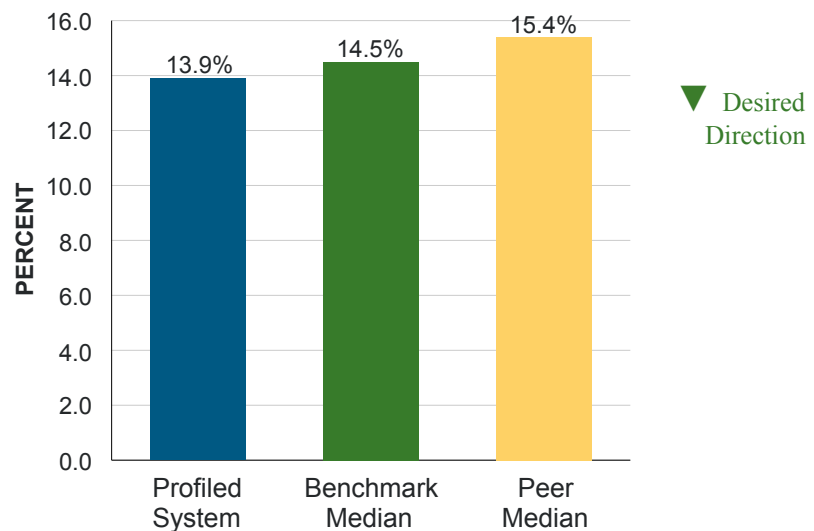


Benchmark systems are the winners in the comparison group: n = 5

Peer systems are the non-winners in the comparison group: n = 105

## 30-day readmission rate hospital-wide

2017 30D READMISSION PERFORMANCE FOR ANY CAUSE

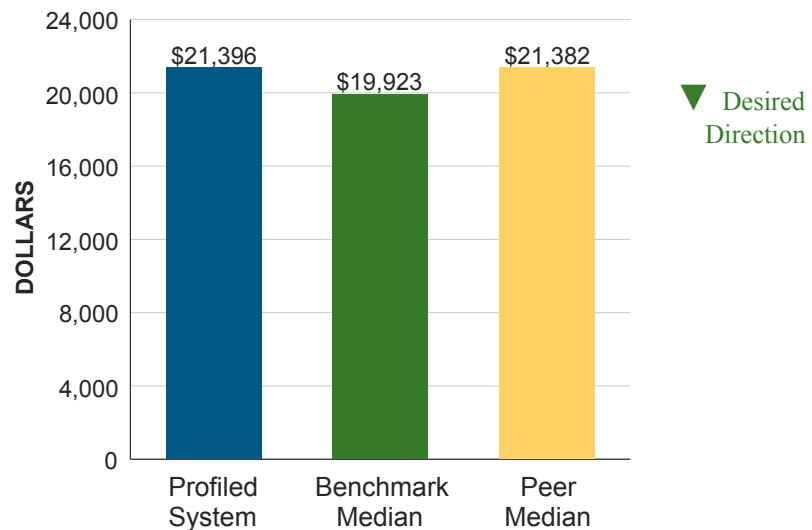


*Benchmark systems are the winners in the comparison group: n = 5*

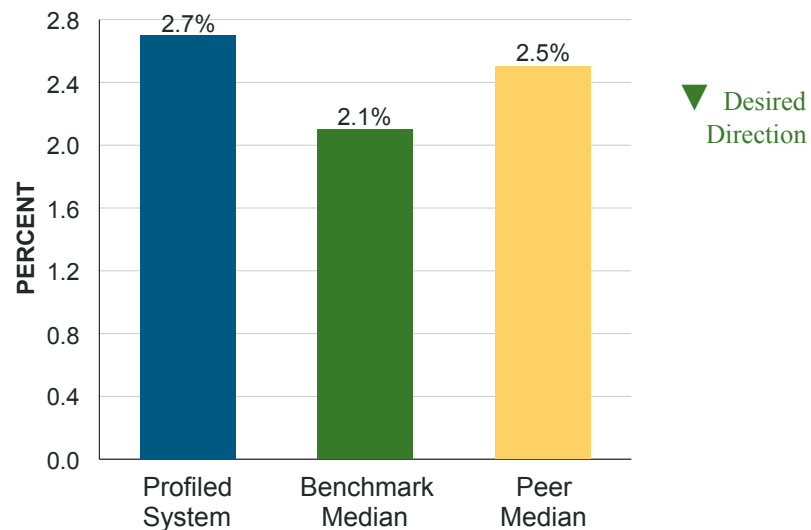
*Peer systems are the non-winners in the comparison group: n = 105*

# 90-day episode payment and complication rate for THA/TKA replacement

2017 90D PAYMENT PERFORMANCE FOR THA/TKA



2017 90D COMPLICATION PERFORMANCE FOR THA/TKA

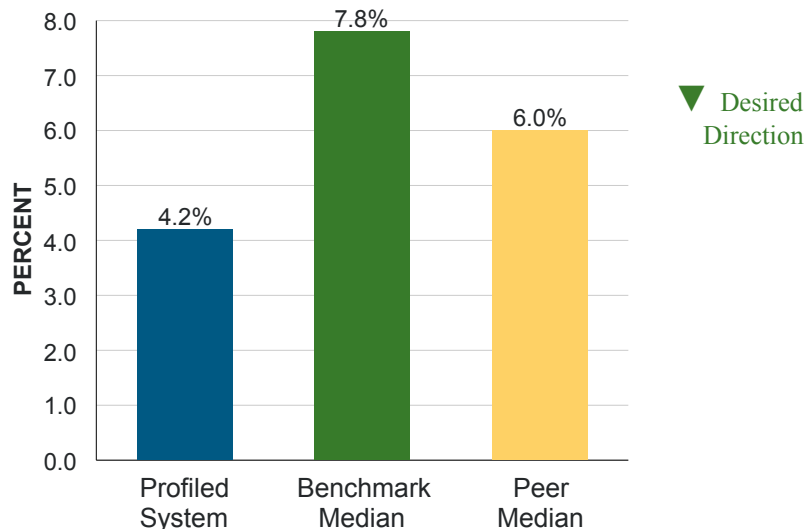


Benchmark systems are the winners in the comparison group: n = 5

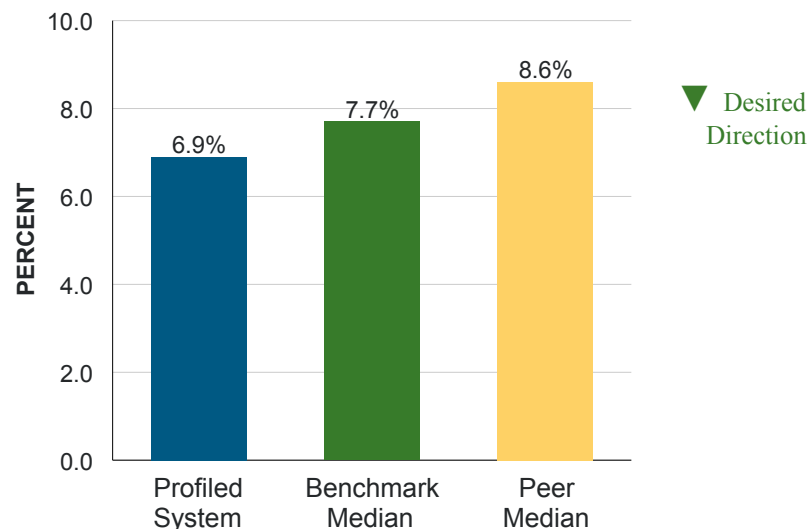
Peer systems are the non-winners in the comparison group: n = 105

# Outpatient imaging efficiency measures

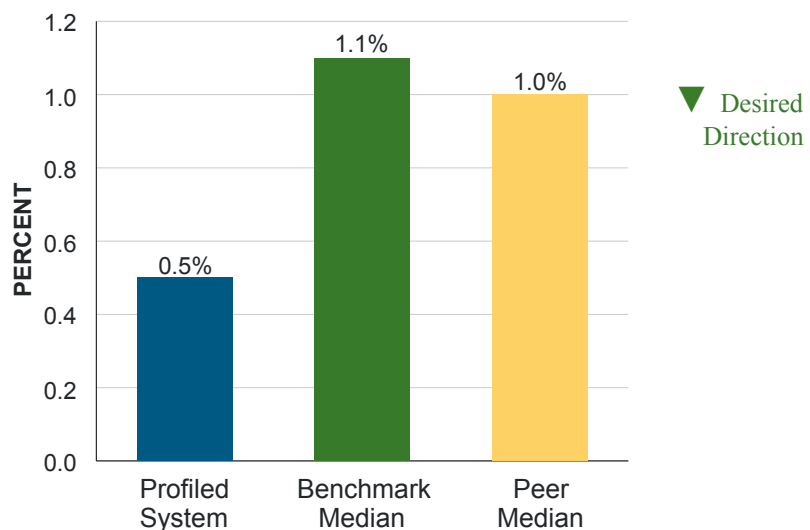
2017 ABDOMEN CT USE OF CONTRAST PERFORMANCE



2017 MAMMOGRAPHY FOLLOW-UP PERFORMANCE



2017 THORAX CT USE OF CONTRAST PERFORMANCE

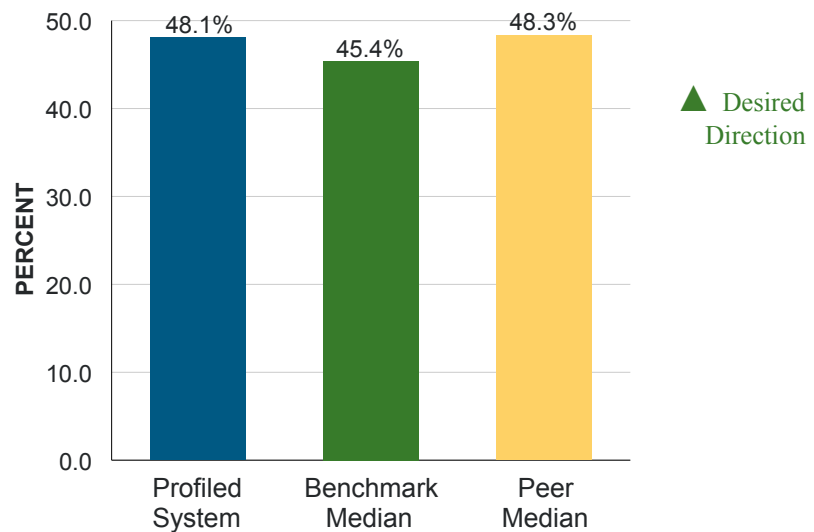


Benchmark systems are the winners in the comparison group: n = 5

Peer systems are the non-winners in the comparison group: n = 105

# Appropriate care for severe sepsis and septic shock

## 2017 SEPSIS PROCESS OF CARE PERFORMANCE

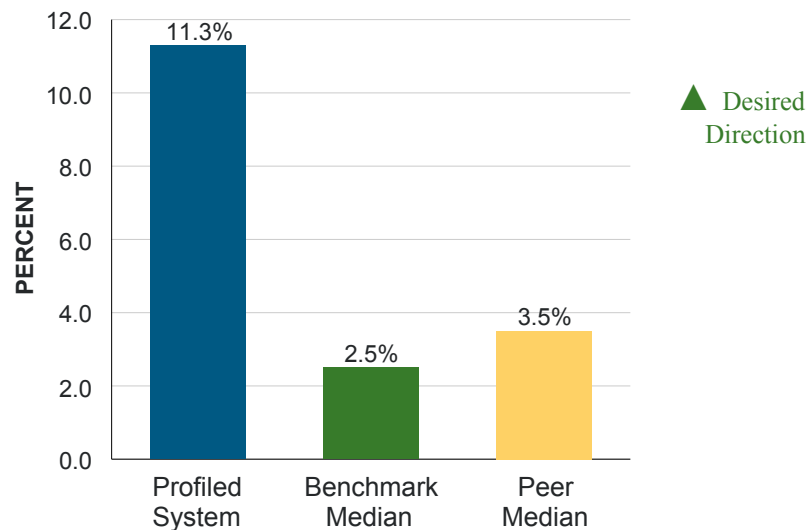


*Benchmark systems are the winners in the comparison group: n = 5*

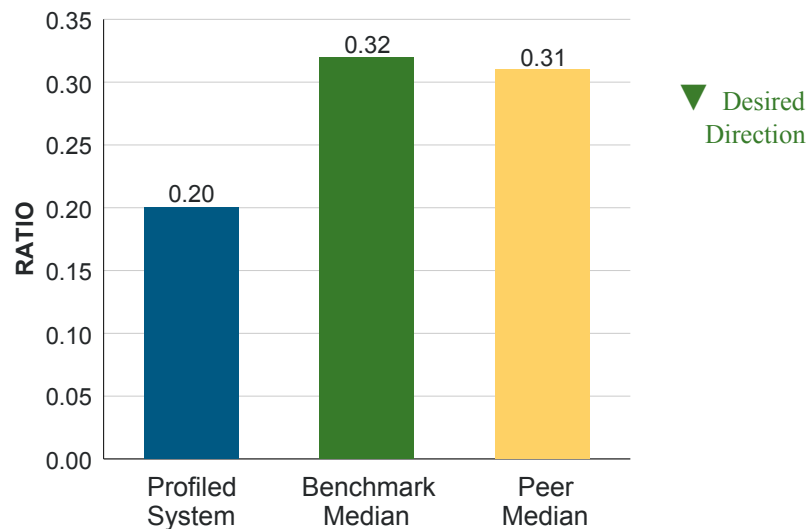
*Peer systems are the non-winners in the comparison group: n = 105*

# Financial performance measures

## 2017 PERFORMANCE FOR OPERATING MARGIN



## 2017 PERFORMANCE FOR LONG-TERM DEBT TO CAPITALIZATION



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

Peer systems are the non-winners in the comparison group: n = 105



# 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, 2019 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.

**Critical Access Hospitals (CAH)** with valid data are 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.

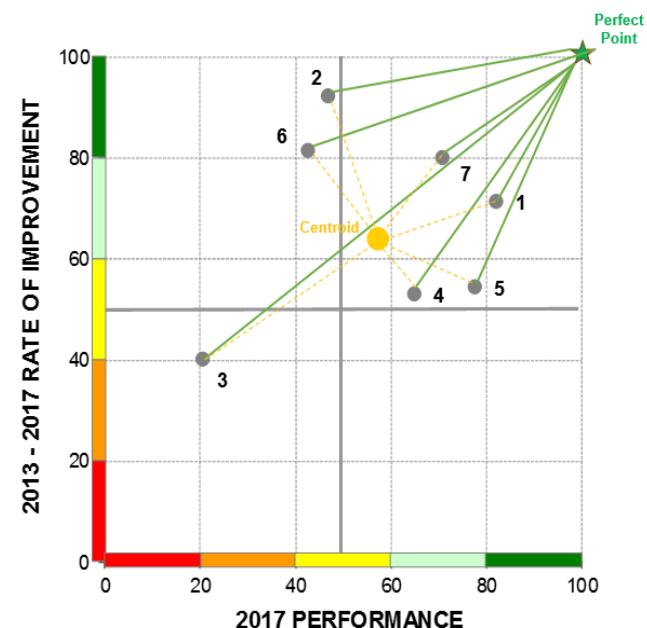
**Women's, Cardiac and Orthopedic hospitals** that are **included** in the 15 Top Health Systems study are not graphed in this section because we do not include these hospitals when comparing short term general acute care hospital performance in the 100 Top Hospitals study.

## 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

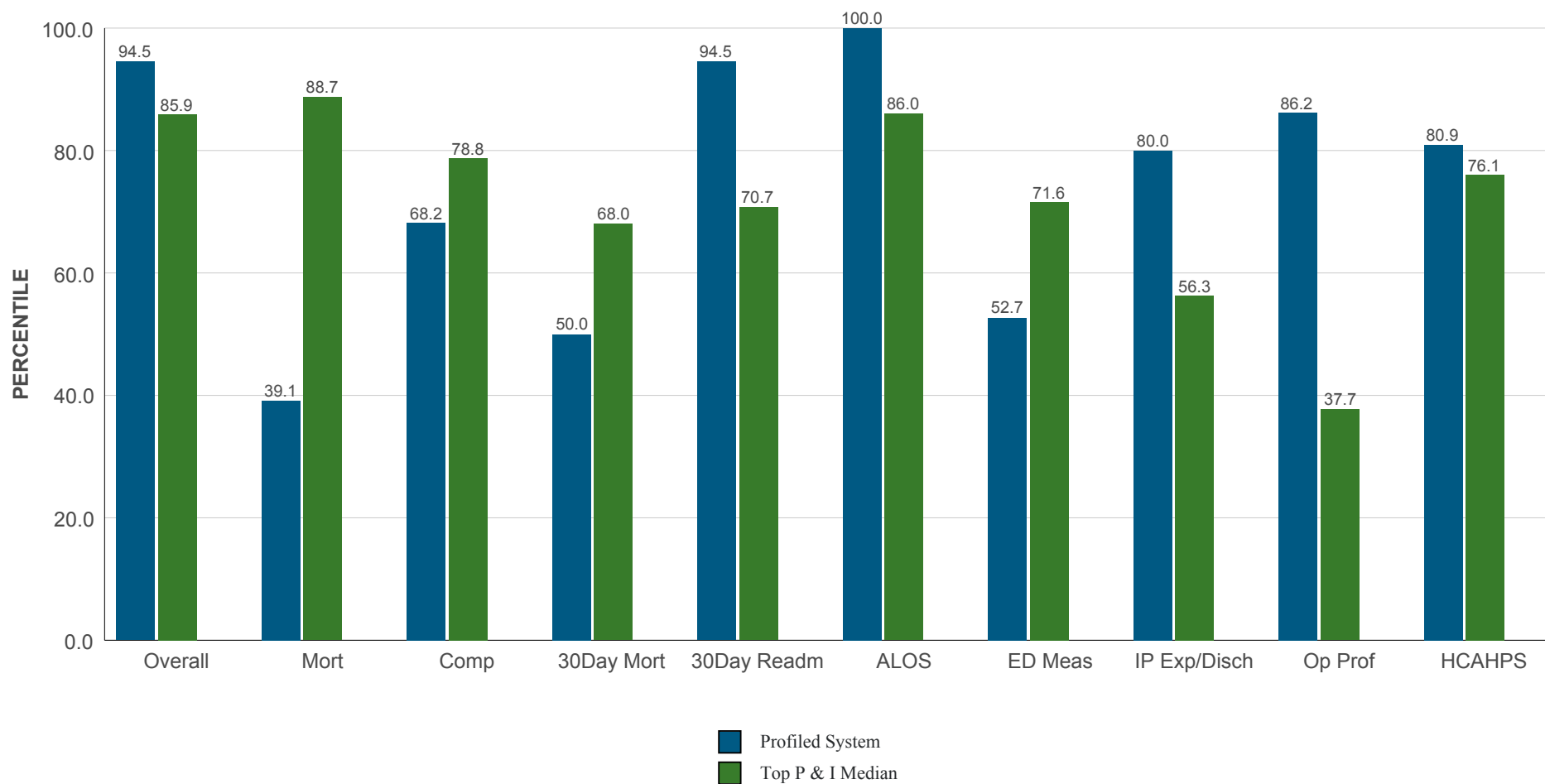
Each system performance-weighted alignment score is the average of the distance of each member hospital from their central point (Centroid) and the distance of each of those hospitals from the 100th – 100th percentile point (Perfect Point), weighted by the distance from the perfect point. A score is 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

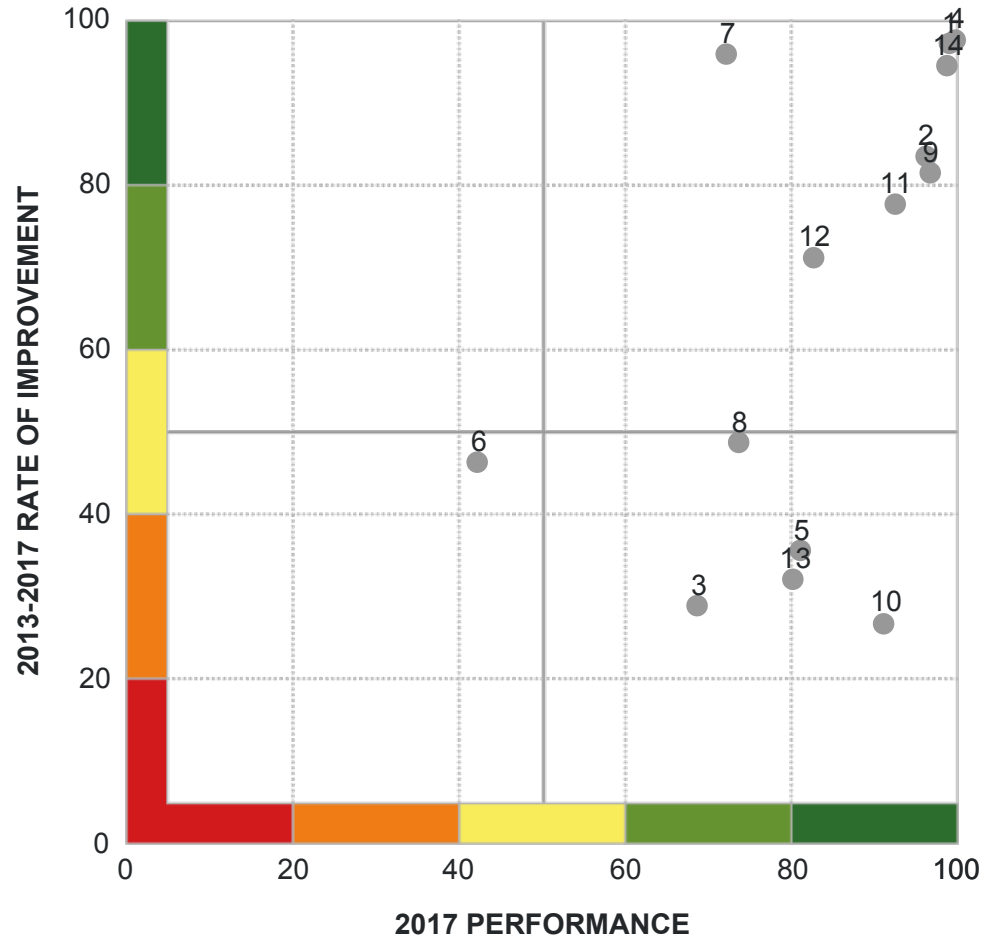
Profiled System Compared to Top Performance and Improvement Health Systems\*



\* Top Performance & Improvement health systems: n = 7

# Member hospitals – Overall Performance

## 2017 Performance versus Rate of Improvement



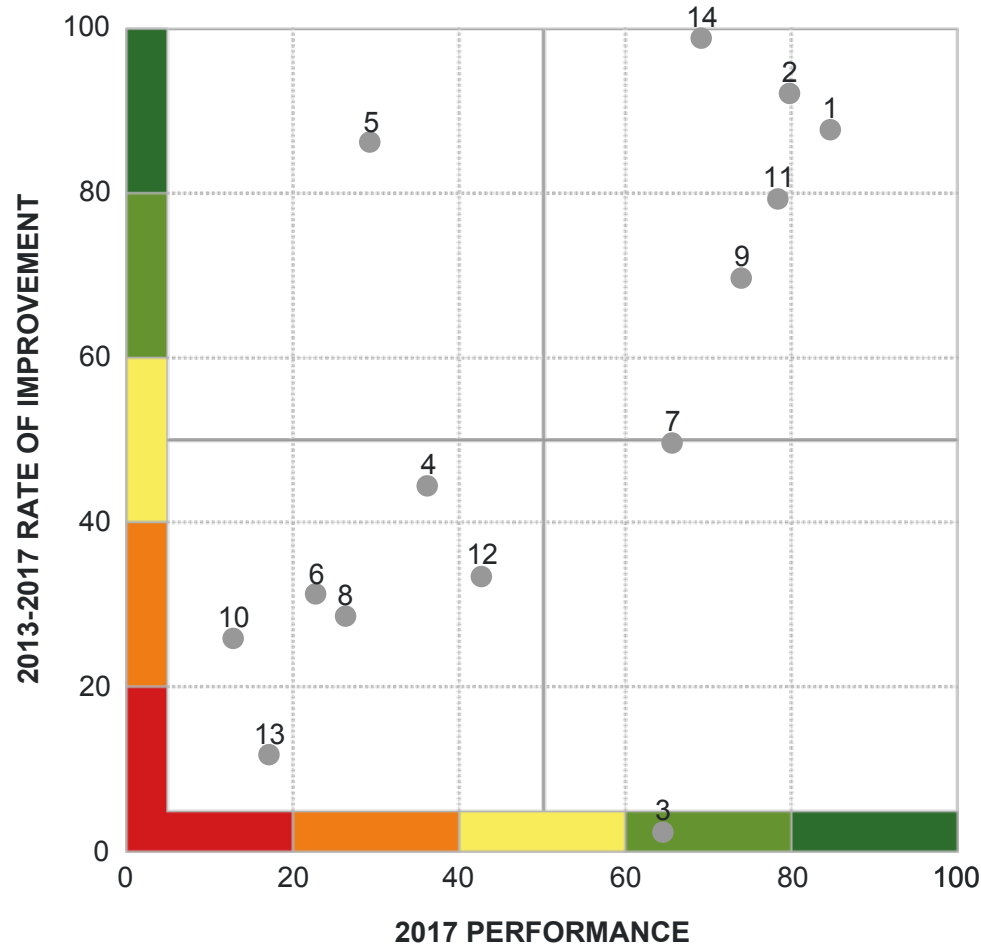
**Hospital Key:**

- 1 Comfort Hospital
- 2 Holy Hospital
- 3 Grand Hospital
- 4 Blessings Hospital
- 5 Country Hospital
- 6 Medical Hospital
- 7 City Hospital
- 8 County Hospital
- 9 Region Hospital
- 10 State Hospital
- 11 Lake Hospital
- 12 Wonderful Hospital
- 13 River Hospital
- 14 Creek Valley Hospital



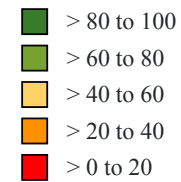
# Member hospitals – Inpatient Mortality

## 2017 Performance versus Rate of Improvement



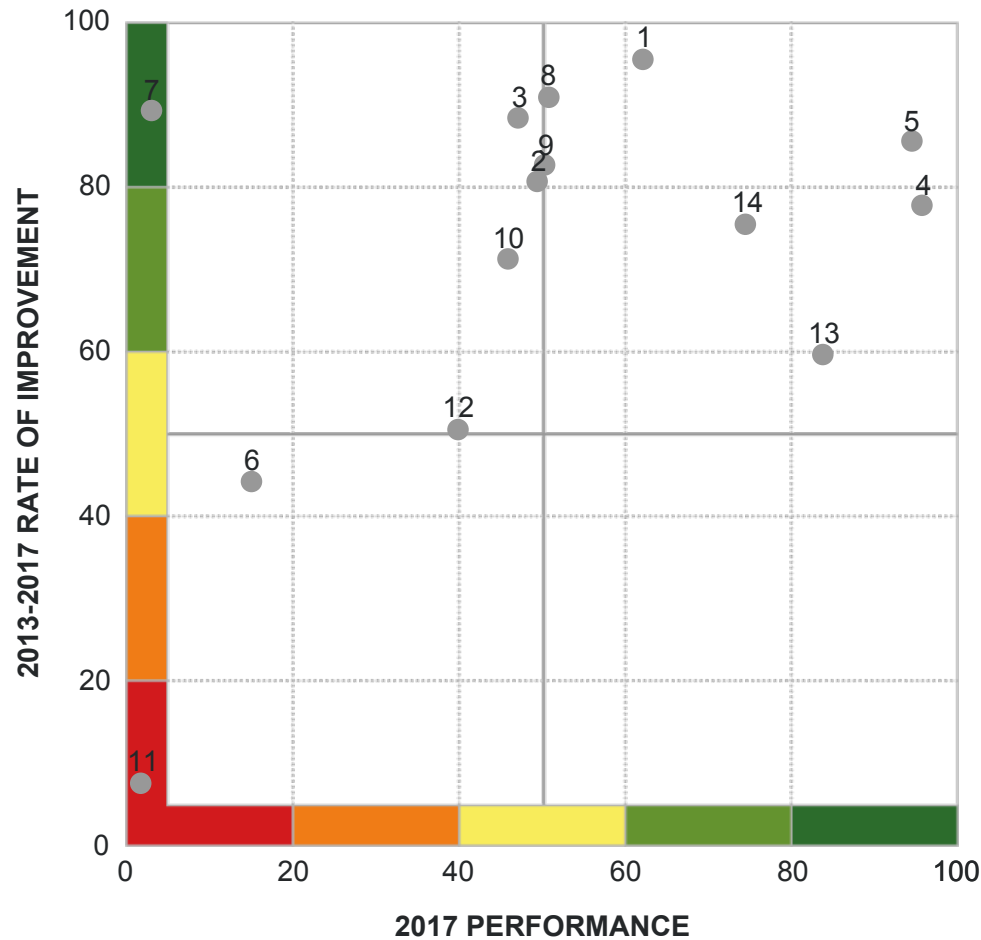
**Hospital Key:**

- 1 Comfort Hospital
- 2 Holy Hospital
- 3 Grand Hospital
- 4 Blessings Hospital
- 5 Country Hospital
- 6 Medical Hospital
- 7 City Hospital
- 8 County Hospital
- 9 Region Hospital
- 10 State Hospital
- 11 Lake Hospital
- 12 Wonderful Hospital
- 13 River Hospital
- 14 Creek Valley Hospital



# Member hospitals – Complications

## 2017 Performance versus Rate of Improvement



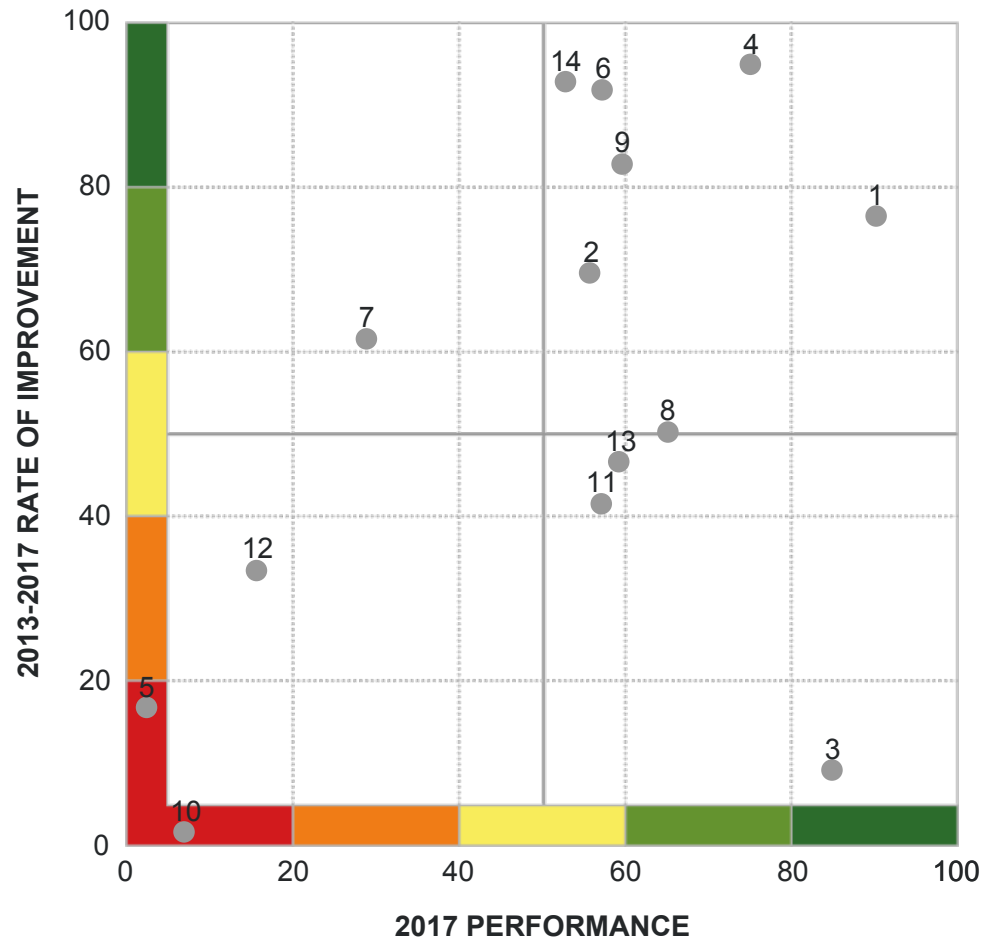
**Hospital Key:**

- 1 Comfort Hospital
- 2 Holy Hospital
- 3 Grand Hospital
- 4 Blessings Hospital
- 5 Country Hospital
- 6 Medical Hospital
- 7 City Hospital
- 8 County Hospital
- 9 Region Hospital
- 10 State Hospital
- 11 Lake Hospital
- 12 Wonderful Hospital
- 13 River Hospital
- 14 Creek Valley Hospital



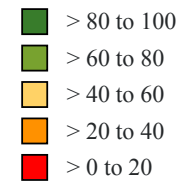
# Member hospitals – 30-day Mortality

## 2017 Performance versus Rate of Improvement



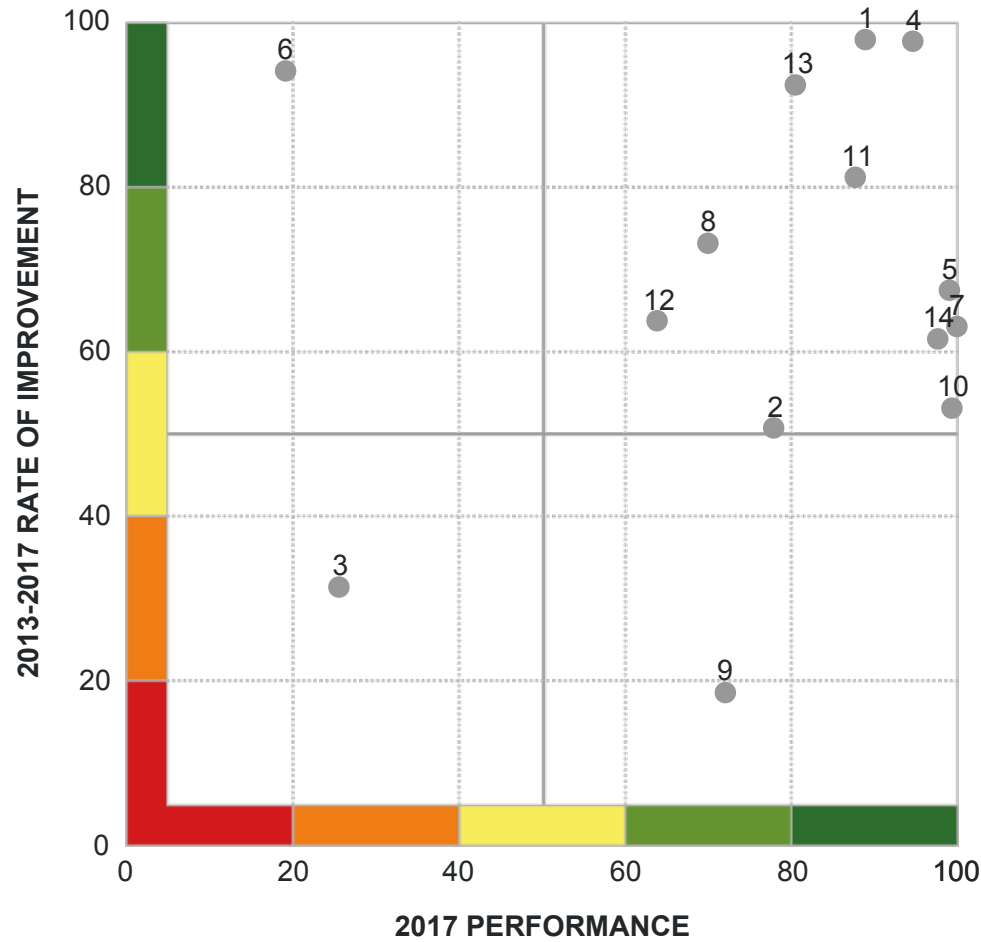
**Hospital Key:**

- 1 Comfort Hospital
- 2 Holy Hospital
- 3 Grand Hospital
- 4 Blessings Hospital
- 5 Country Hospital
- 6 Medical Hospital
- 7 City Hospital
- 8 County Hospital
- 9 Region Hospital
- 10 State Hospital
- 11 Lake Hospital
- 12 Wonderful Hospital
- 13 River Hospital
- 14 Creek Valley Hospital



# Member hospitals – 30-day Readmissions

## 2017 Performance versus Rate of Improvement



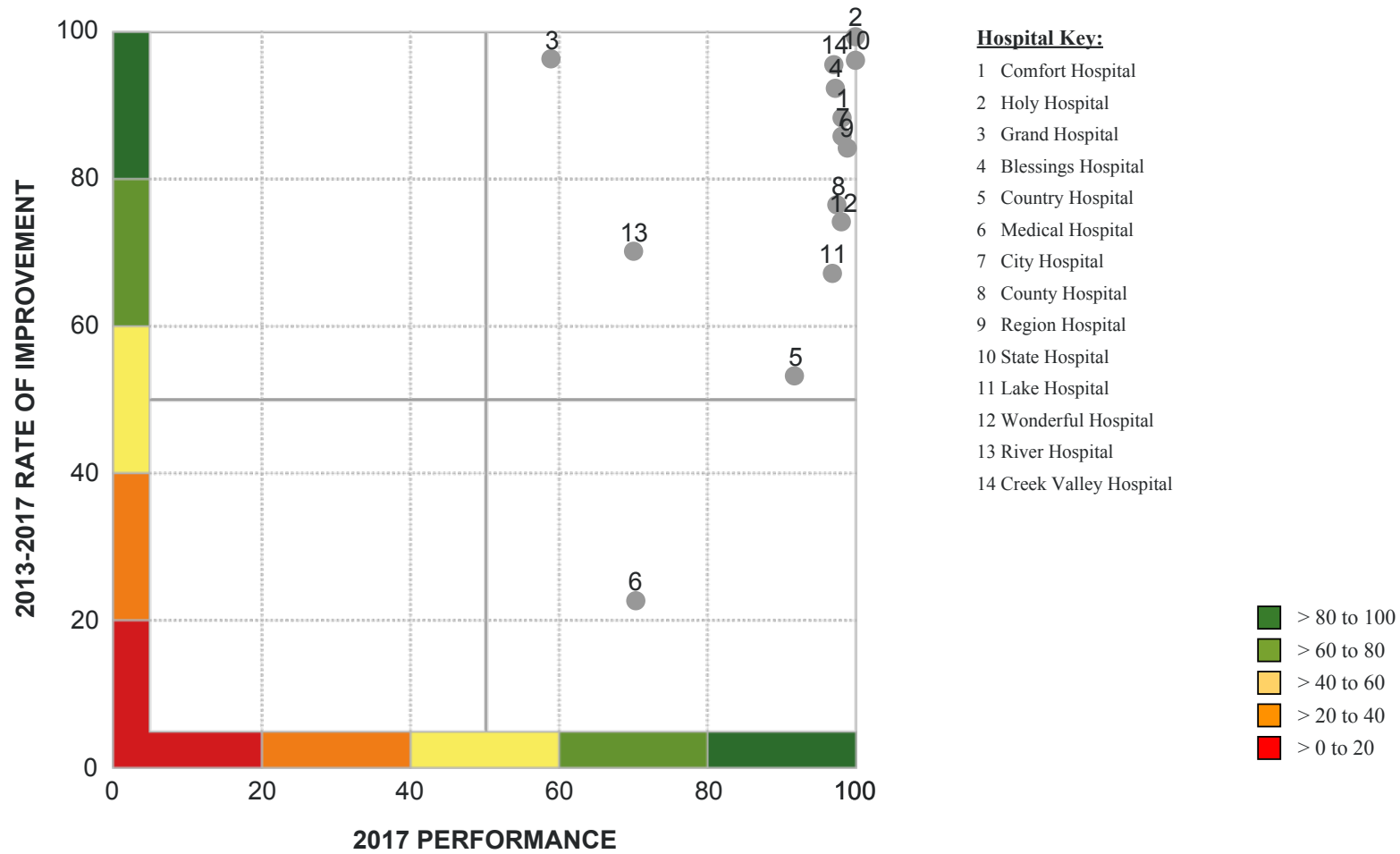
**Hospital Key:**

- 1 Comfort Hospital
- 2 Holy Hospital
- 3 Grand Hospital
- 4 Blessings Hospital
- 5 Country Hospital
- 6 Medical Hospital
- 7 City Hospital
- 8 County Hospital
- 9 Region Hospital
- 10 State Hospital
- 11 Lake Hospital
- 12 Wonderful Hospital
- 13 River Hospital
- 14 Creek Valley Hospital



# Member hospitals – Average Length of Stay

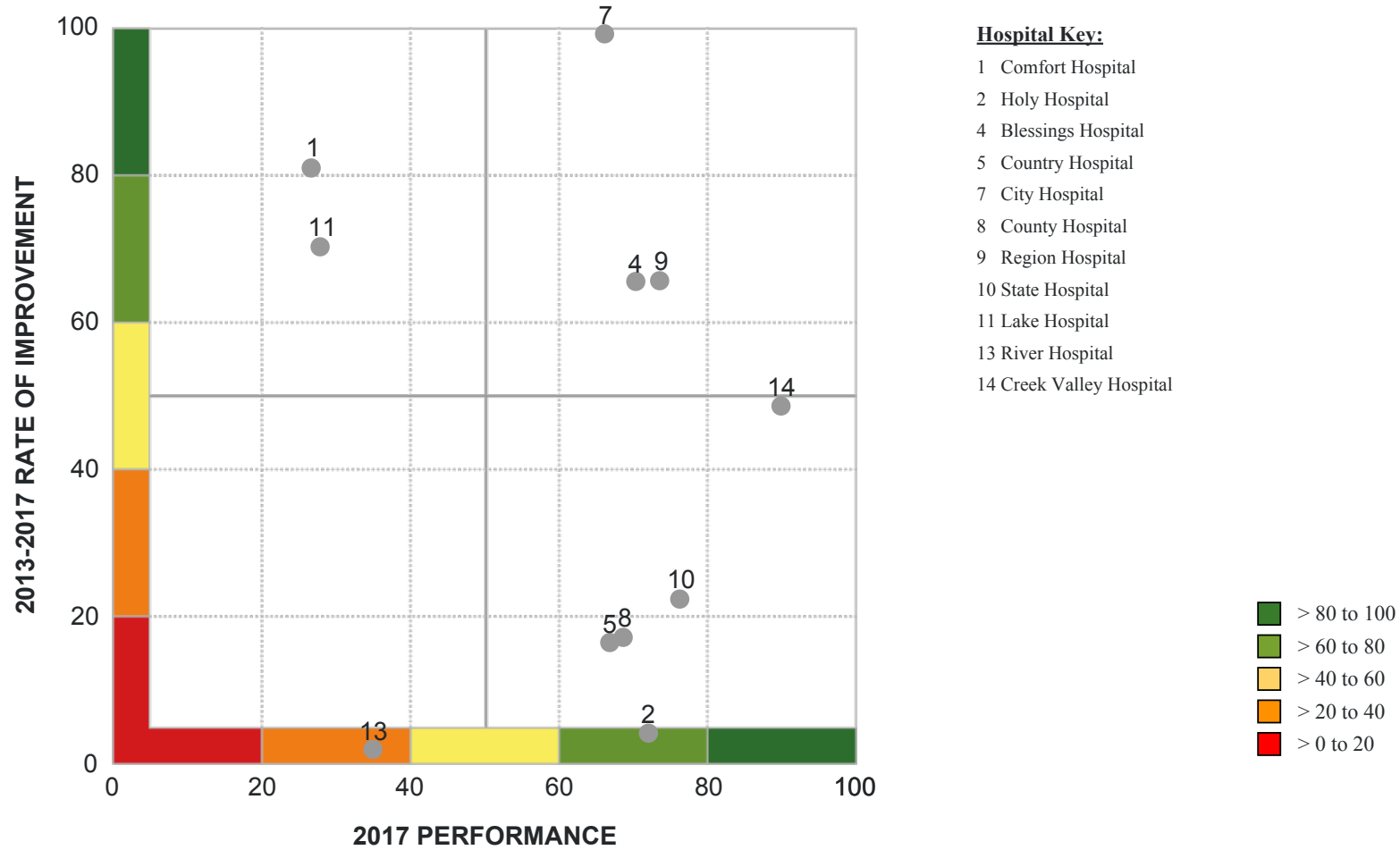
## 2017 Performance versus Rate of Improvement





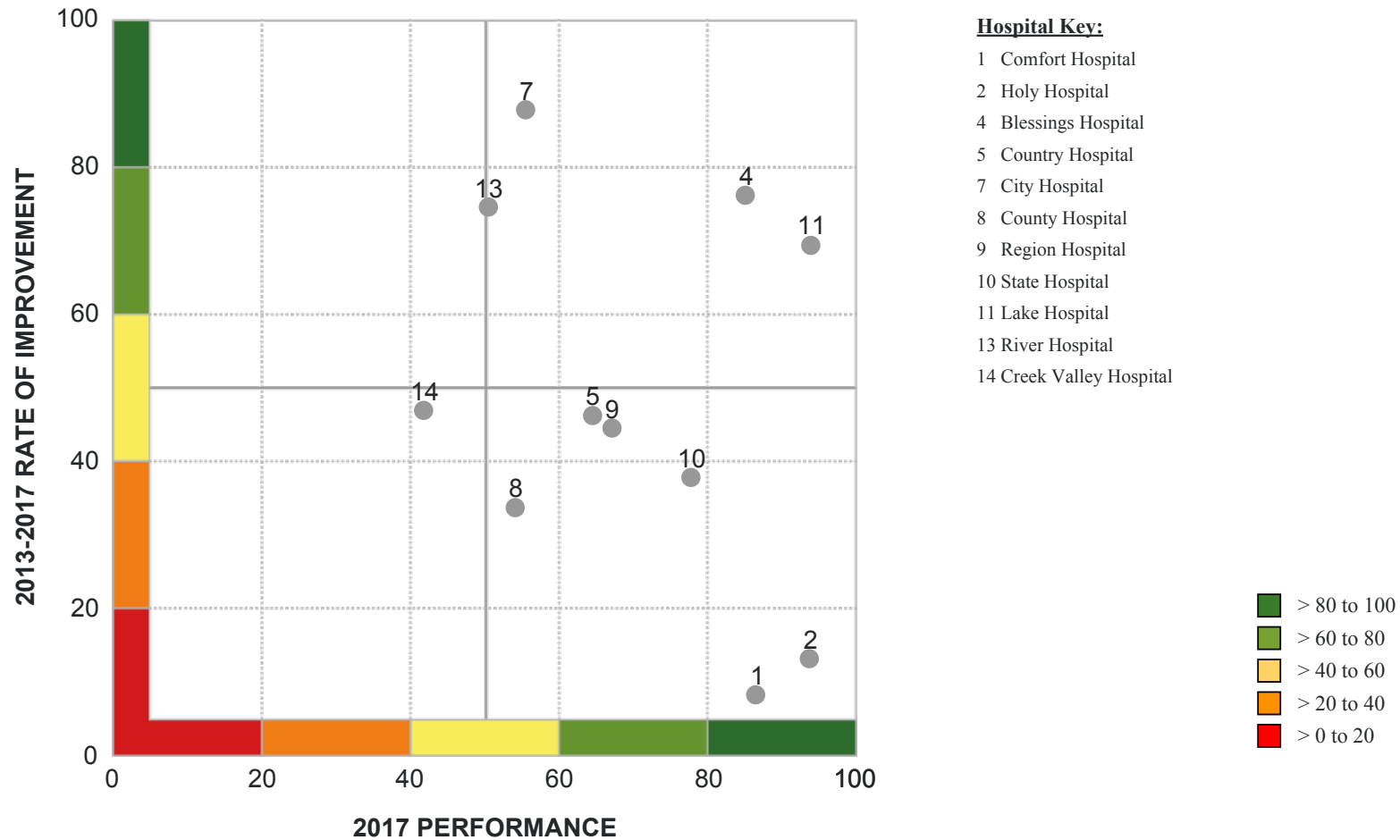
# Member hospitals – Emergency Department Throughput

## 2017 Performance versus Rate of Improvement



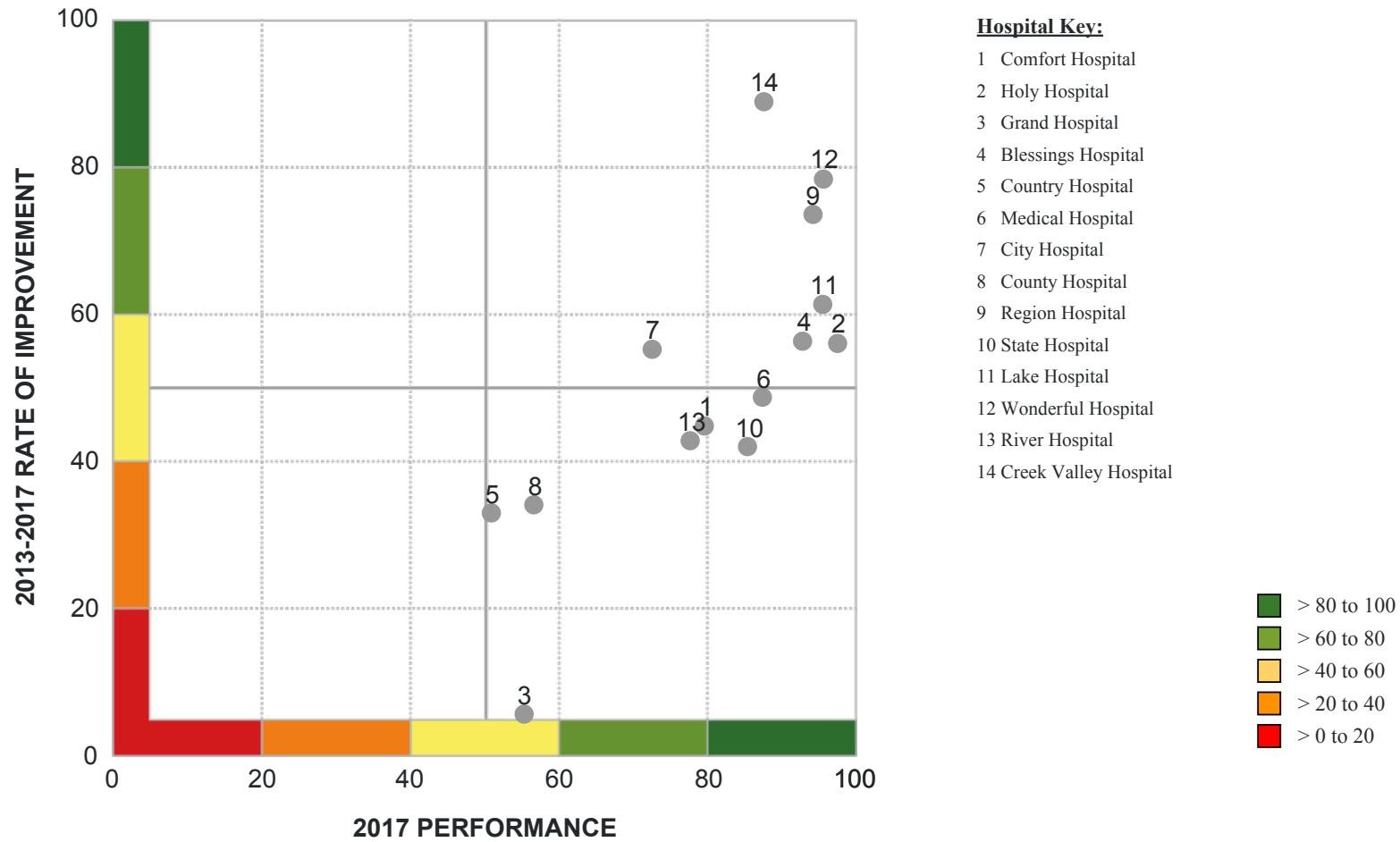
# Member hospitals – Adjusted Inpatient Expense per Discharge

## 2017 Performance versus Rate of Improvement



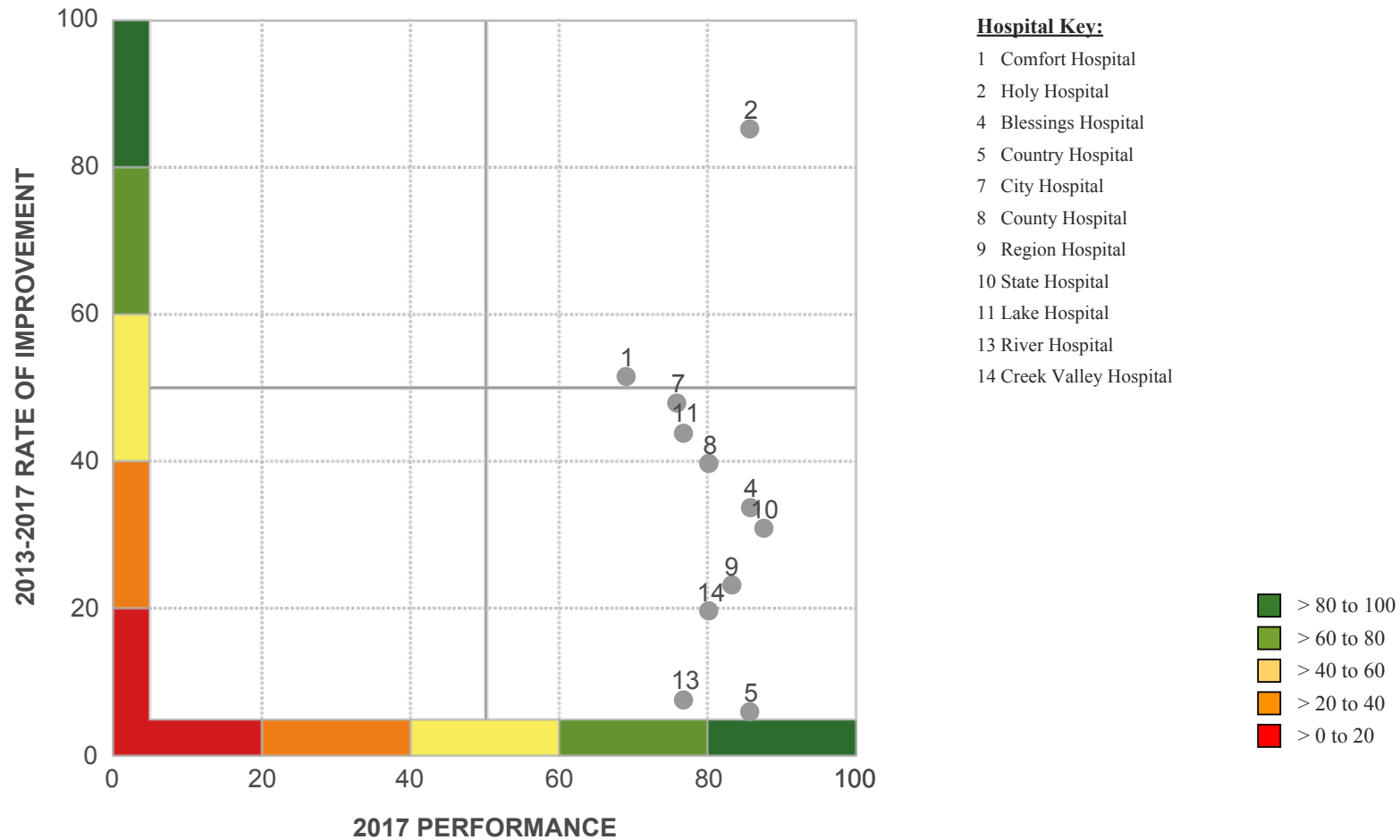
# Member hospitals – Adjusted Operating Profit Margin

## 2017 Performance versus Rate of Improvement



# Member hospitals – HCAHPS Overall Hospital Rating

## 2017 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 2019 study, identified using 2017 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 2019 study are graphed on the preceding pages. These hospitals will have an overall 2017 percentile and 2013-2017 trend percentile from that study displayed in the table.

Included again 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 2017 percentile and 2013-2017 trend percentiles displayed in the table.

## Health System Included Member Hospitals

GRAPH KEY	MCARE ID	HOSPITAL NAME	CITY	STATE	2017 OVERALL PERCENTILE	2013-17 OVERALL PERCENTILE
1	999999	Comfort Hospital	Any City	US	99.1	97.0
2	999999	Holy Hospital	Any City	US	96.3	83.3
3	999999	Grand Hospital	Any City	US	68.8	28.8
4	999999	Blessings Hospital	Any City	US	99.8	97.4
5	999999	Country Hospital	Any City	US	81.2	35.5
6	999999	Medical Hospital	Any City	US	42.4	46.2
7	999999	City Hospital	Any City	US	72.3	95.7
8	999999	County Hospital	Any City	US	73.8	48.6
9	999999	Region Hospital	Any City	US	96.8	81.3
10	999999	State Hospital	Any City	US	91.2	26.6
11	999999	Lake Hospital	Any City	US	92.6	77.5
12	999999	Wonderful Hospital	Any City	US	82.8	71.0
13	999999	River Hospital	Any City	US	80.3	32.0
14	999999	Creek Valley Hospital	Any City	US	98.8	94.3
	999999	Beach Hospital	Any City	US	NA	NA
	999999	Mountain Hospital	Any City	US	NA	NA
	999999	First Rate Hospital	Any City	US	NA	NA
	999999	Top Hospital	Any City	US	NA	NA

## Health System Included Member Hospitals

GRAPH KEY	MCARE ID	HOSPITAL NAME	CITY	STATE	2017 OVERALL PERCENTILE	2013-17 OVERALL PERCENTILE
	999999	Excellent Hospital	Any City	US	92.8	NA
	999999	Fantastic Hospital	Any City	US	NA	NA

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or can result in damage to or misuse  
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