

Watson Health®

**50 Top Cardiovascular
Hospitals 2022**

National Benchmarks

Prepared for:

Sample Hospital

City, ST

Medicare ID: 999999

IBM.

Report Methodology Notes

COMPARISON GROUPS

So that we can compare your hospital with others most like it, we assign each hospital to one of three comparison groups according to size, teaching status, and residency/fellowship program involvement:

- Teaching hospitals with cardiovascular residency programs (CARDIO TEACHING)
- Teaching hospitals without cardiovascular residency programs (TEACHING)
- Community hospitals (COMMUNITY)

BENCHMARK AND PEER GROUPS

In the Watson Health™ 50 Top Cardiovascular Hospitals study, we select 50 **Benchmark hospitals** (winners) based on overall performance in the most recent year of data available:

CARDIO TEACHING	20
TEACHING	20
COMMUNITY	10

Peer group hospitals include all U.S. hospitals in our study database, *excluding* benchmark hospitals.

INCLUDED PATIENT GROUPS

The focus of the study is on hospitals that offer both medical and surgical treatment options for patients with two of the most common cardiovascular conditions — coronary atherosclerosis and heart failure. We include data for acute myocardial infarction (AMI), heart failure (HF), coronary artery bypass graft (CABG) and primary percutaneous coronary intervention (PCI) patients in our analysis. Patients are assigned to mutually exclusive groups, as follows:

- CABG patients (primary or secondary)
- PCI patients (excludes open chest coronary artery angioplasty)
- AMI patients (restricted to non-surgical)
- HF patients (restricted to non-surgical)

Patients with both PCI and CABG are grouped as CABG. Patients with both AMI and HF are excluded.

POA METHODOLOGY NOTES

Present on Admission (POA) coding is used in risk models for inpatient mortality, complications, average LOS, and cost per case. 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 diagnoses 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’

RANK WEIGHTS AND PUBLIC DATA SOURCES

Ranked Performance Metric	Current Wt	Trend Wt	Source
Risk-Adjusted IP Mortality (AMI, HF, CABG, PCI)	1/2 ea	1/2 ea	MEDPAR FFY ¹ 2016-2020
Risk-Adjusted Complications (CABG, PCI)	1/4 ea	1/4 ea	MEDPAR FFY ¹ 2016-2020
30-Day Mortality Rate (AMI, HF, CABG)	1/6 ea	1/6 ea	CMS Hospital Compare: 3-yr datasets ending Jun 30 in 2016, 2017, 2018, 2019*
30-Day Readmission Rate (AMI, HF, CABG)	1/6 ea	1/6 ea	CMS Hospital Compare: 3-yr datasets ending Jun 30 in 2016, 2017, 2018, 2019*
Severity-Adjusted ALOS (AMI, HF, CABG, PCI)	1/4 ea	1/4 ea	MEDPAR FFY ¹ 2016-2020
Wage- and Severity-Adjusted Average Cost per Case (AMI, HF, CABG, PCI)	1/4 ea	1/4 ea	MEDPAR FFY ¹ 2016-2020
30-Day Episode Payment (AMI, HF)	1/2 ea	1/2 ea	CMS Hospital Compare: 3-yr datasets ending Jun 30 in 2016, 2017, 2018, 2019*
HCAHPS	1/2	NA	CMS Hospital Compare: CY 2019

¹ Federal Fiscal Year is Oct 1 through Sep 30.

* Two data points end in 2019 due to CMS removal of Q1 and Q2 2020 data from measure data sets in current year, 2 ½ years of data in 2020 data point.

FOR MORE INFORMATION

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

50 Top Cardiovascular Hospitals Performance Matrix

INTEGRATED HOSPITAL PERFORMANCE COMPARISON

The 50 Top Cardiovascular Hospitals Performance Matrix, in a single view, compares your hospital's current level of performance achievement and five-year rate of improvement in percentiles. These percentiles are based on your hospital's rank, overall and by measure, within your comparison group. This integrated performance comparison provides insight into the success of hospital performance improvement strategies relative to other similar hospitals.

INTERPRETING HOSPITAL PERFORMANCE

The matrix "Overall" dot displays your national rank percentile for current overall performance with your national rank percentile for five-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).

Overall hospital performance in the most current year is a composite score based on the weighted sum of the ranks of individual measures. This sum is used to rank your hospital within your comparison group and produce your 2020 Performance Percentile.

Overall hospital performance on the multi-year rate of improvement is also a composite score based on the sum of the weighted ranks of individual measures on improvement. This sum is used to rank your hospital within your comparison group and produce your Rate of Improvement Percentile.

50 Top Cardiovascular Hospitals award winners are selected based on highest **current** overall performance. Winners fall into either the "Leading" or "At-Risk" quadrants, depending on their five-year rate of improvement. Those with a high rate of improvement will be "Leading" performers, and those who have fallen behind their comparison group mean are "At Risk" for falling out of the winner circle, if performance improvement continues to be stalled.

PERFORMANCE MATRIX NOTES

Overall Dot

Due to the number of individual measures in this study, two matrix graphs are provided to better visualize the performance of each measure. One graph shows the medical patient group measures (AMI and HF) and the other shows the surgical patient group measures (CABG and PCI). **However**, the "Overall" dot on each matrix graph represents the hospital overall performance and rate of improvement based on **all** measures and patient groups, combined (AMI, HF, CABG, PCI). Therefore, it is identical on each matrix graph.

Missing Matrix Graphs

The matrix graphs will be missing if your hospital did not have enough years of data to be trended. A minimum of four years of data, including the most current year, are required. There also will be no trend graphs in the report.

If there were too few years of data for one or more measures, but not all, there will be no matrix graphs; but there will be trend graphs for the measures that were not missing. Notes on excluded data points are in the Appendix following the Trend Profile.

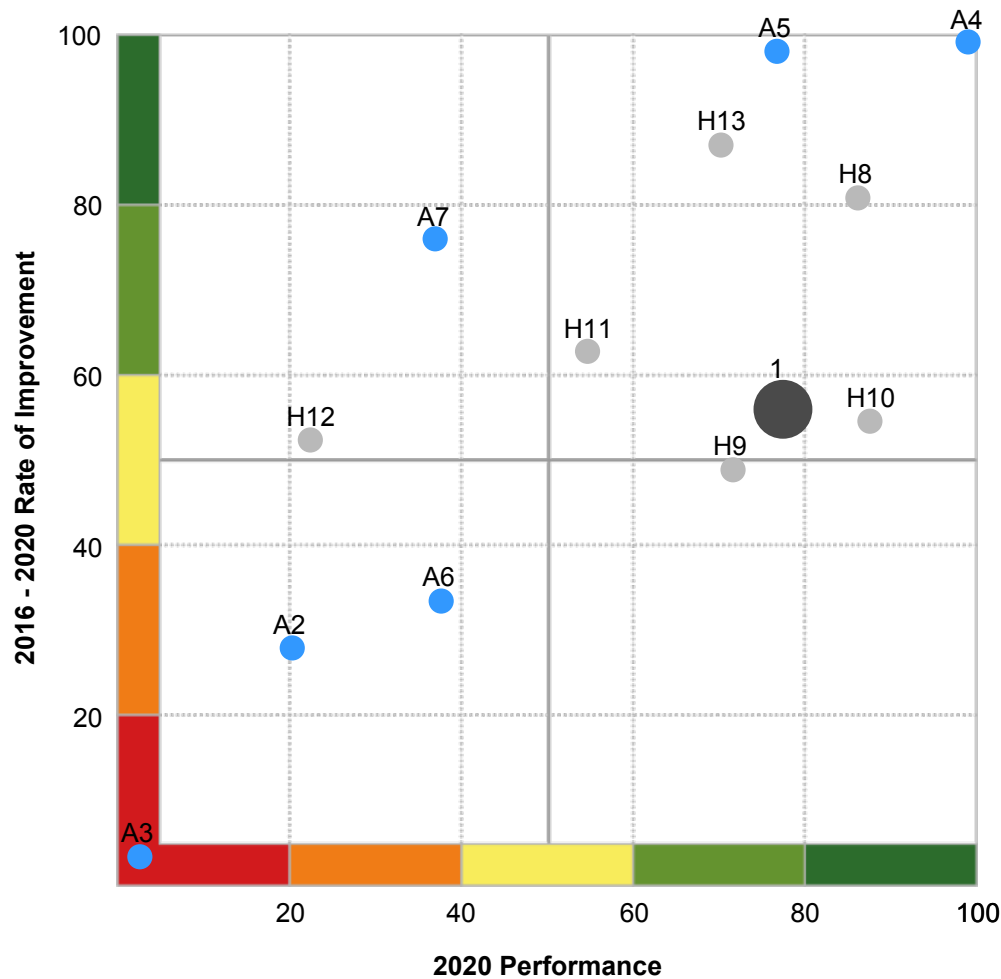
Missing Measure Dots

A measure dot will be missing from the matrix if your hospital had too few usable data points (after outlier exclusions) to calculate a regression line t-statistic, which is the ranked variable. If this occurs, the dot for the affected measure(s) will be missing on the matrix graph **and** there will be no "Overall" dot. In addition, data points will be missing from the affected trend measure graphs. Notes on excluded data points are in the Appendix following the Performance Matrix graph and the current and trend graphs.

50 Top Cardiovascular Hospitals Performance Comparison Group

Profiled hospital compared to cardio teaching hospitals

AMI and HF patients: 2020 Performance and Five-Year Rate of Improvement Matrix



DATA POINT KEY

- 1 **OVERALL***
- A2 AMI IP Mortality
- A3 AMI 30-Day Mortality
- A4 AMI 30-Day Readmit
- A5 AMI Avg LOS
- A6 AMI Cost per Case
- A7 AMI 30-Day Payment
- H8 HF IP Mortality
- H9 HF 30-Day Mortality
- H10 HF 30-Day Readmit
- H11 HF Avg LOS
- H12 HF Cost per Case
- H13 HF 30-Day Payment

QUINTILES

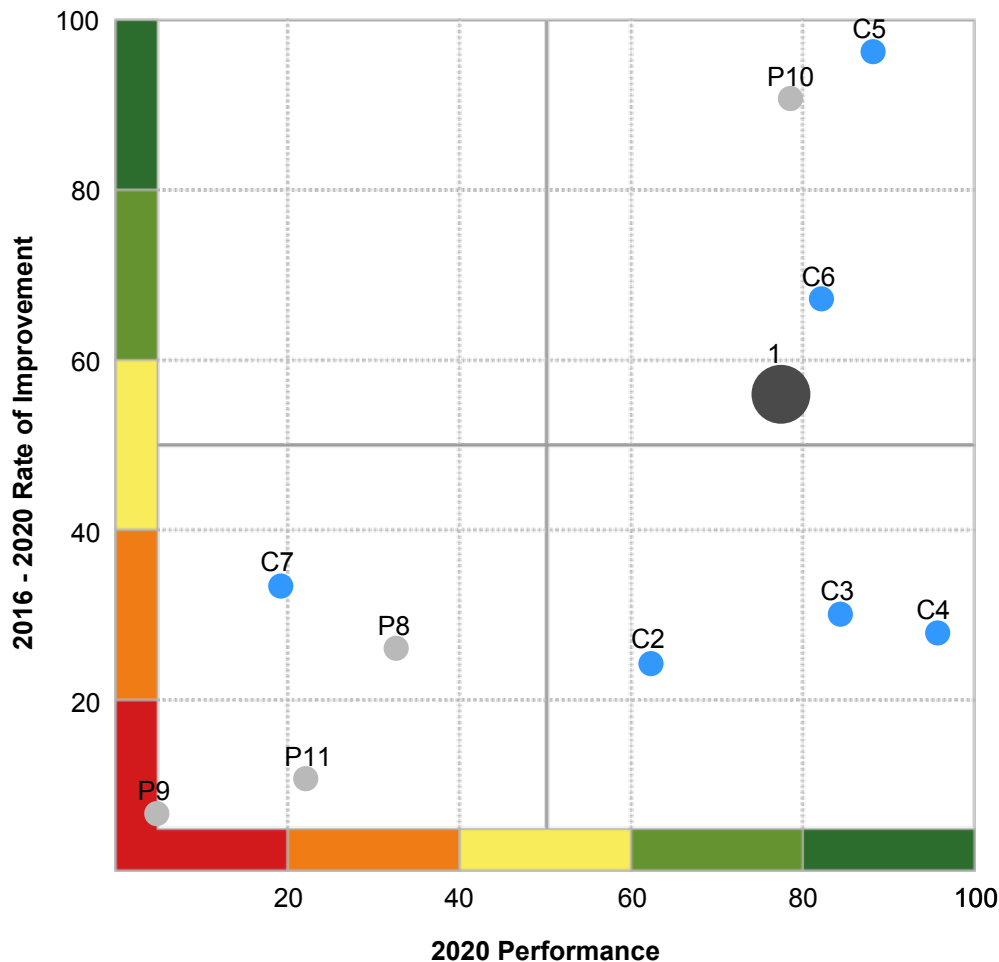
- 80 TO 100
- 60 TO 80
- 40 TO 60
- 20 TO 40
- 0 TO 20

**Overall Measure includes all 4 patient groups of measures: AMI, HF, CABG, PCI*

PROFILED HOSPITAL compared to:

2020 cardio teaching hospitals: n = 277
 2016-2020 cardio teaching hospitals: n = 273

CABG and PCI patients: 2020 Performance and Five-Year Rate of Improvement Matrix



DATA POINT KEY

- 1 **OVERALL***
- C2 CABG IP Mortality
- C3 CABG Complications
- C4 CABG 30-Day Mortality
- C5 CABG 30-Day Readmit
- C6 CABG Avg LOS
- C7 CABG Cost per Case
- P8 PCI IP Mortality
- P9 PCI Complications
- P10 PCI Avg LOS
- P11 PCI Cost per Case

QUINTILES

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

*Overall Measure includes all 4 patient groups of measures: AMI, HF, CABG, PCI

PROFILED HOSPITAL compared to:

2020 cardio teaching hospitals: n = 277
 2016-2020 cardio teaching hospitals: n = 273

Performance and Improvement – Rank Percentiles Graphs

UNDERSTANDING THE GRAPHS

2020 Performance Rank Percentiles

This bar graph shows your hospital'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 hospitals in the group and multiplying by 100.

A new measure is being ranked this year, HCAHPS Top Box Percent, from the CMS Hospital Compare dataset. The overall hospital rating question is the ranked measure and includes all patients. This measure is not being trended and therefore only appears on the 2020 Operational Performance Rank Percentile graph.

2016-2020 Rate of Improvement Rank Percentiles

This bar graph shows your hospital's relative 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 hospitals in the group and multiplying by 100.

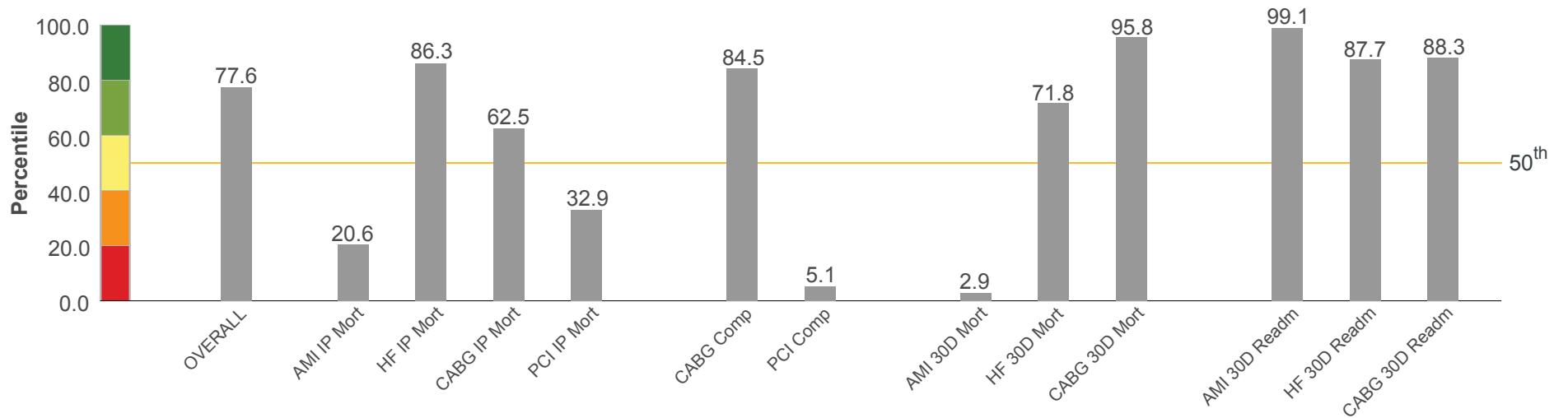
The overall rank percentile is based on the sum of your individual measure ranks, re-ranked by comparison group. The overall rank sum is then converted into a percentile. The overall rank percentile is not the average of the individual measure percentiles.

Hospitals with overall and measure-specific rank percentiles above the median are likely to move ahead of peers on performance in the future, if those rates of improvement have continued.

Hospitals 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 future risk of dropping out of the winner circle entirely.

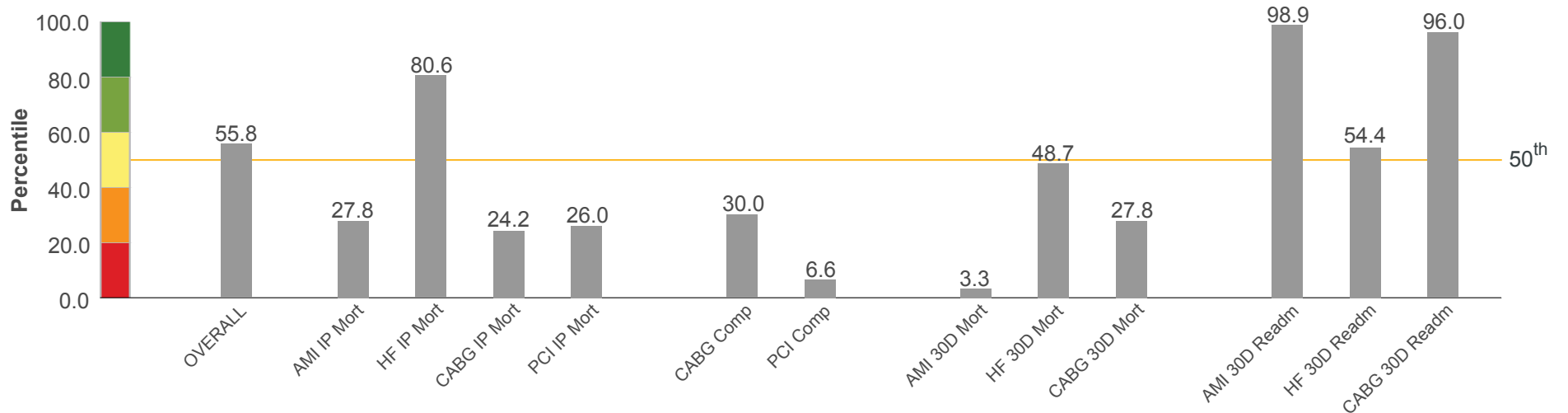
The 50 Top Cardiovascular Hospitals benchmark hospitals (winners) are selected based only on 2020 performance.

2020 Clinical Performance Rank Percentiles



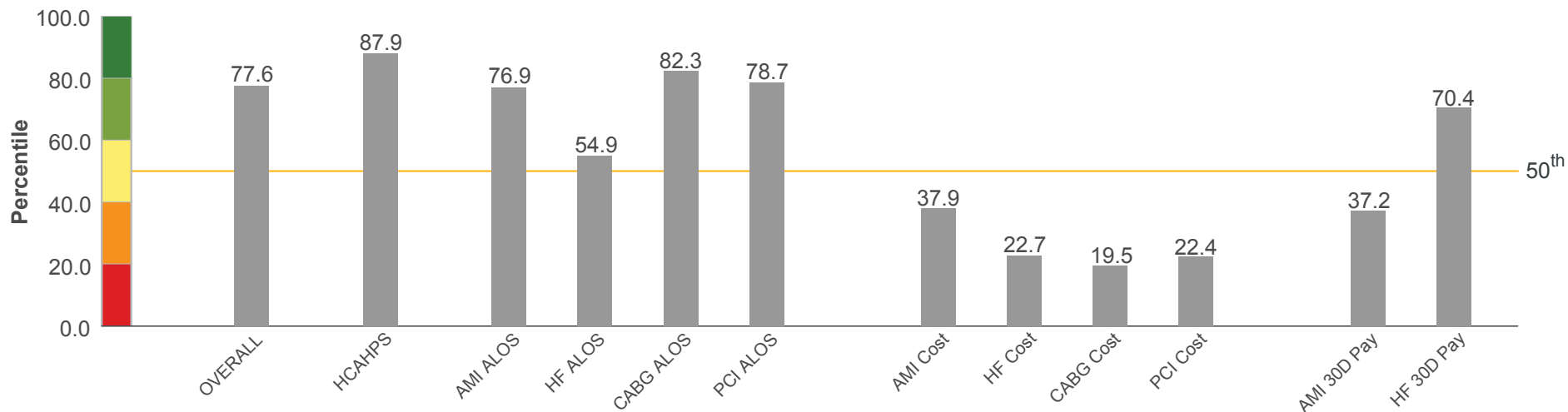
Profiled hospital compared to cardio teaching hospitals: n = 277

2016 - 2020 Clinical Rate of Improvement Rank Percentiles



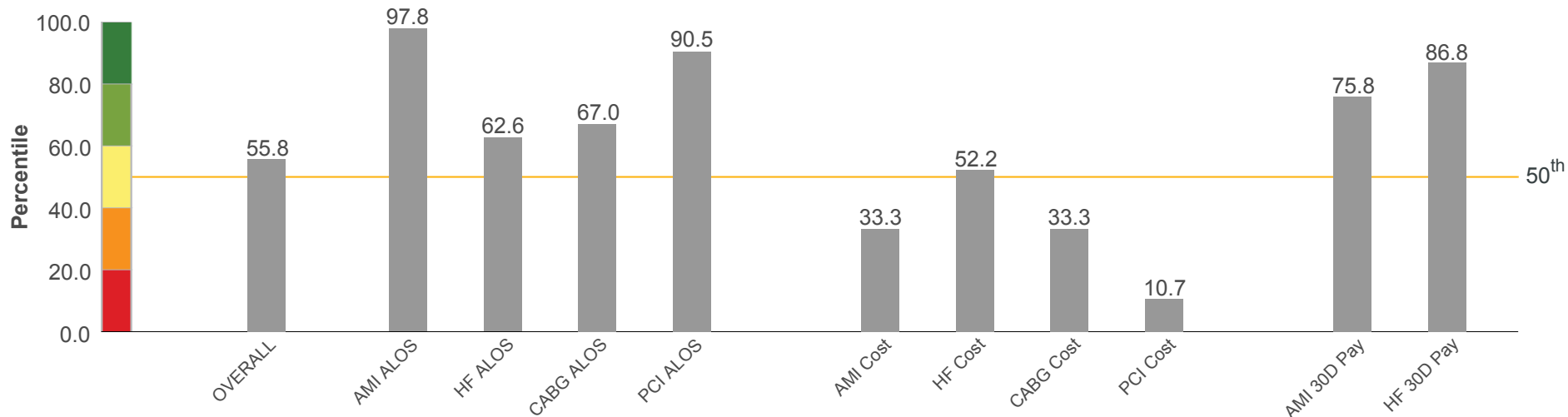
Profiled hospital compared to cardio teaching hospitals: n = 273

2020 Operational Performance Rank Percentiles



Profiled hospital compared to cardio teaching hospitals: n = 277

2016 - 2020 Operational Rate of Improvement Rank Percentiles



Profiled hospital compared to cardio teaching hospitals: n = 273

50 Top Cardiovascular Hospitals Current Profile Notes

CURRENT PROFILE

The 50 Top Cardiovascular Hospitals winners are selected based on performance in the most current year of the Study (Current Profile).

The Current Profile analyzes your hospital'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
- 30-Day Mortality Rate (AMI, HF, CABG)
- 30-Day Readmission Rate (AMI, HF, CABG)
- Severity-Adjusted Average Length of Stay
- Wage- and Severity-Adjusted Average Cost per Case
- 30-Day Episode Payment (AMI, HF)
- HCAHPS Top Box Percent (Overall Hospital Rating)

Using this Profile, you can identify your hospital's level of performance achievement by individual measure and overall, and target higher performance. In addition, the Profile shows the median level of achievement of national **award-winning** ("benchmark") hospitals and the median performance of **non-winning** ("peer") hospitals in your comparison group.

UNDERSTANDING THE GRAPHS

Profiled Hospital Compared with Benchmark and Peer

The hospital's current performance is represented by individual bar graphs for each of the performance measures included in the 50 Top Cardiovascular Hospitals balanced scorecard, organized by patient group. **Each bar graph shows performance achievement levels for three groups: your hospital, the benchmark group median, and the peer group median.**

Binomial Measures

The graphs for the binomial measures – inpatient mortality and complications – have a statistical significance note that indicates whether your hospital's performance is better than expected, as expected, or worse than expected (99% confidence). For binomial measures, we rank your hospital on the z-score calculated from your observed and normalized expected values. Z-scores take statistical significance into account. If your note indicates your performance is "as expected," your performance is 'normal', regardless of how high or low the index value.

Missing Bars and Measure Rank Percentiles

A measure's performance bar and its associated rank percentile value are not displayed if one or more of the following conditions apply:

- Measure data for a specific year was missing in the source data file (CMS Hospital Compare; HCRIS hospital cost reports)
- Measure was in calculable due to insufficient MEDPAR POA coding (impacts inpatient mortality, complications, ALOS, cost per case)
- Measure was based on fewer than 11 patient records (HIPAA)

Measure Data Periods

Measure	Data Period Used for 2020 Performance
Inpatient Mortality and Complications	FFY 2019-2020
30-Day Mortality, Readmissions and Episode Payment	July 1, 2017-Dec 1, 2019*
ALOS; Cost per Case	FFY 2020
HCAHPS	CY 2019

* Measures have only 2 ½ years of data instead of 3 due to CMS removal of Q1 and Q2 2020 data from measure data sets

50 Top Cardiovascular Hospitals Current Profile Notes

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 hospital can be ranked. This was done only for the following measures:

- 30-day mortality rates (AMI, HF, CABG)
- 30-day readmission rates (AMI, HF, CABG)

Note: Hospitals missing all 30-day mortality rates or all 30-day readmission rates are excluded from the study.

WINNER EXCLUSIONS

A hospital was not eligible to be a winner if one of the following applied in the most current year:

- Statistically poor performance on any inpatient mortality or complications measure (99% confidence interval).
- One or more outliers for the cost per case measures (IQR methodology).
- Less than 11 cases in any of the patient groups (AMI, HF, CABG, PCI) in the most current year.
- One or more 30-day mortality measures missing.
- One or more 30-day readmission measures missing.

MEASURES FOR INFORMATION ONLY

We continue to include measures for information only 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 50 Top award-winning hospitals. You will find these measures at the end of the report.

MORE INFORMATION ON METHODOLOGIES

The Methodology and Appendix sections of the 50 Top Cardiovascular Hospitals Study Overview provide more detail on the calculation of each performance measure. The Overview also describes the methodology used to calculate IQR outliers and to determine statistically poor performance on the inpatient mortality and complications measures.

See Study Overview for more details. Visit www.100tophospitals.com.

50 Top Cardiovascular Hospitals Trend Profile Notes

TREND PROFILE

The Trend analysis is intended to provide insight into progress toward performance improvement. Its results are **not** used to select winners.

The 50 Top Cardiovascular Hospitals Trend Profile analyzes your hospital'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
- 30-Day Mortality Rate (AMI, HF, CABG)
- 30-Day Readmission Rate (AMI, HF, CABG)
- Severity-Adjusted Average Length of Stay
- Wage- and Severity-Adjusted Average Cost per Case
- 30-Day Episode Payment (AMI, HF)

UNDERSTANDING THE GRAPHS

Multi-Year Trend Graphs – Profiled Hospital and Comparison Group Quintiles

The hospital's rate of improvement for each of the individual performance measures is represented by graphs showing your hospital's actual data points for each year. These data points are displayed against a background of quintile ranges for the data points of all hospitals 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 hospitals.

Missing Data Points

Data points will be missing from a trend graph if one or more of the following conditions apply:

- Measure data for a specific year was missing in the source data file (CMS Hospital Compare; HCRIS hospital cost reports)
- Measure was incalculable due to insufficient MEDPAR POA coding (impacts inpatient mortality, complications, ALOS, cost per case)
- Measure was excluded from trend analysis as a high or low outlier. We apply an interquartile range ("IQR") methodology to identify high and low outlier trim points (impacts cost per case measures).
- Measure was based on 11 or fewer patient records (HIPAA Privacy Rule-based exclusion applied to MEDPAR as a Limited Data Set)

Measure Data Periods

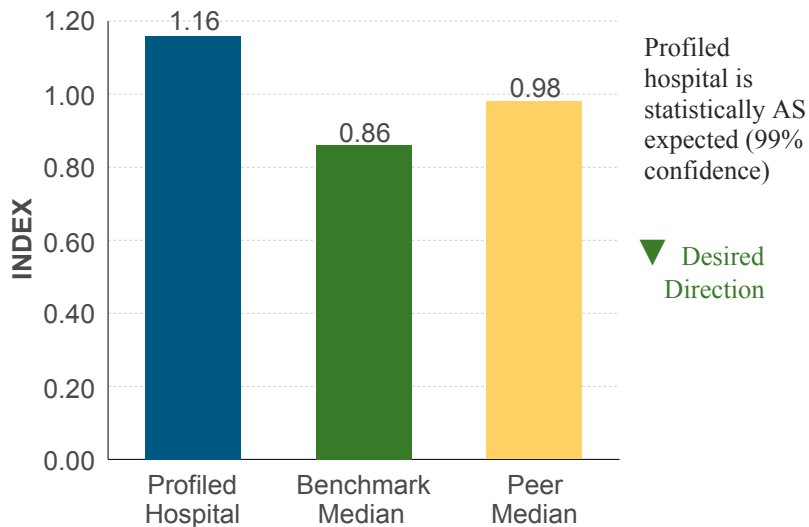
Measure	Data Point	Data Period
Inpatient Mortality and Complications	2020	FFY 2019-2020
	2019	FFY 2018-2019
	2018	FFY 2017-2018
	2017	FFY 2016-2017
	2016	FFY 2016-2016*
30-Day Mortality, Readmissions and Episode Payment	2020	July 1, 2017-Dec 1, 2019**
	2019	July 1, 2016-June 30, 2019
	2018	July 1, 2015-June 30, 2018
	2017	July 1, 2014-June 30, 2017
	2016	July 1, 2013-June 30, 2016
ALOS, Cost per Case	2016-2020	FFY 2016-2020

* Same FFY used in the 2016 data point for those measures that have two years of combined data, due to ICD-10-CM availability.

**Measures have only 2 ½ years of data instead of 3 due to CMS removal of Q1 and Q2 2020 data from measure data sets

AMI patients: Risk-adjusted inpatient mortality index

2020 IP MORTALITY PERFORMANCE

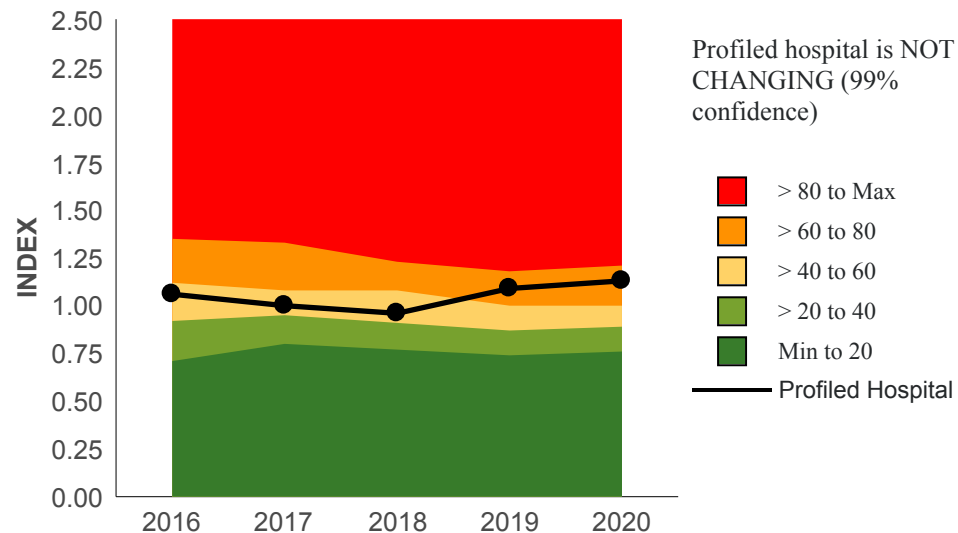


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 IP MORTALITY RATE OF IMPROVEMENT

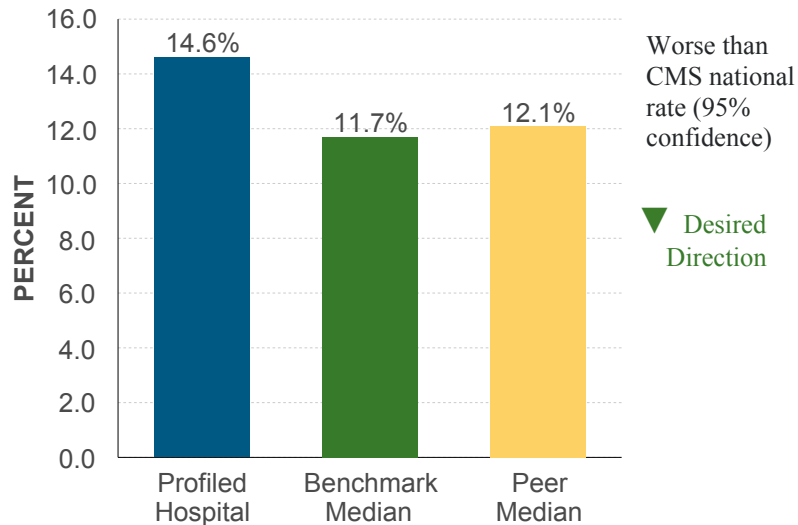


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2016	0.71	0.92	1.12	1.35	1.06	1.70	0.62
	2017	0.80	0.95	1.08	1.33	1.00	1.70	0.53
	2018	0.77	0.91	1.08	1.23	0.96	1.64	0.51
	2019	0.74	0.87	1.00	1.18	1.09	1.74	0.64
	2020	0.76	0.89	1.00	1.21	1.13	1.96	0.59

AMI patients: 30-day mortality rate

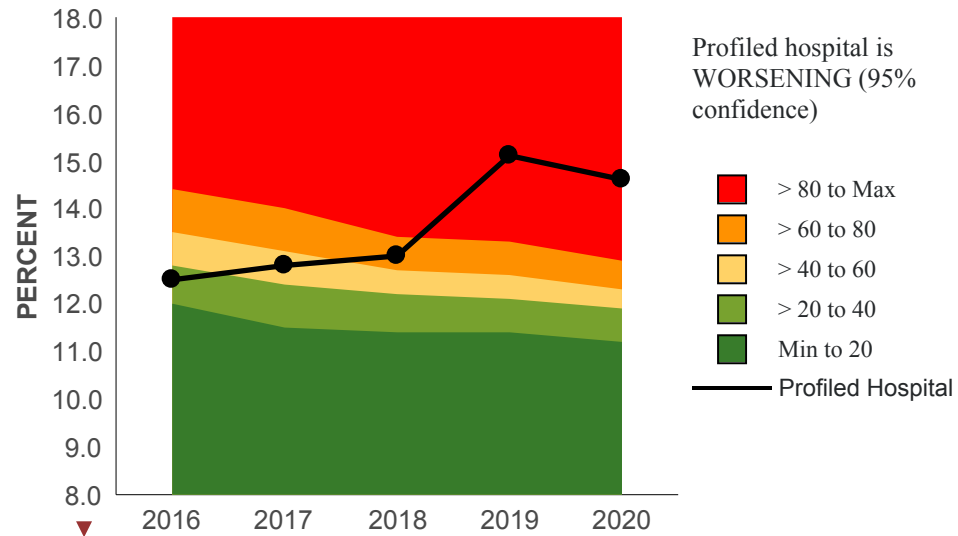
2020 30D MORTALITY PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D MORTALITY RATE OF IMPROVEMENT

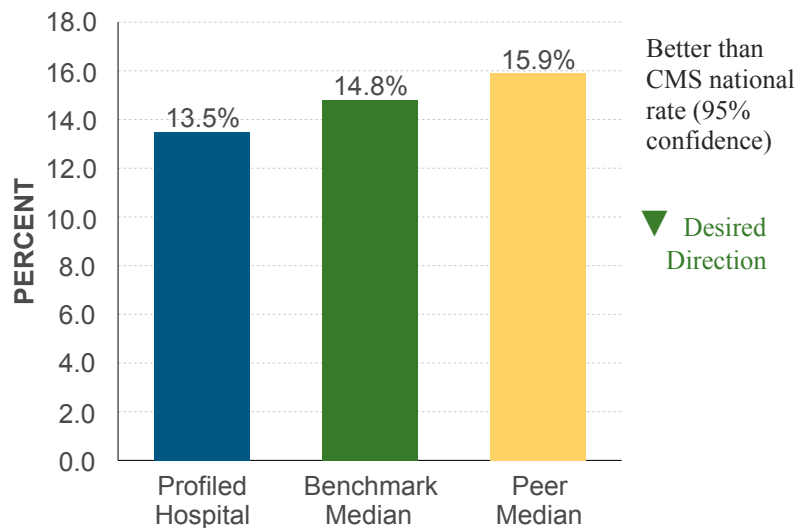


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	12.0	12.8	13.5	14.4	12.5
	2017	11.5	12.4	13.1	14.0	12.8
	2018	11.4	12.2	12.7	13.4	13.0
	2019	11.4	12.1	12.6	13.3	15.1
	2020	11.2	11.9	12.3	12.9	14.6

AMI patients: 30-day readmission rate

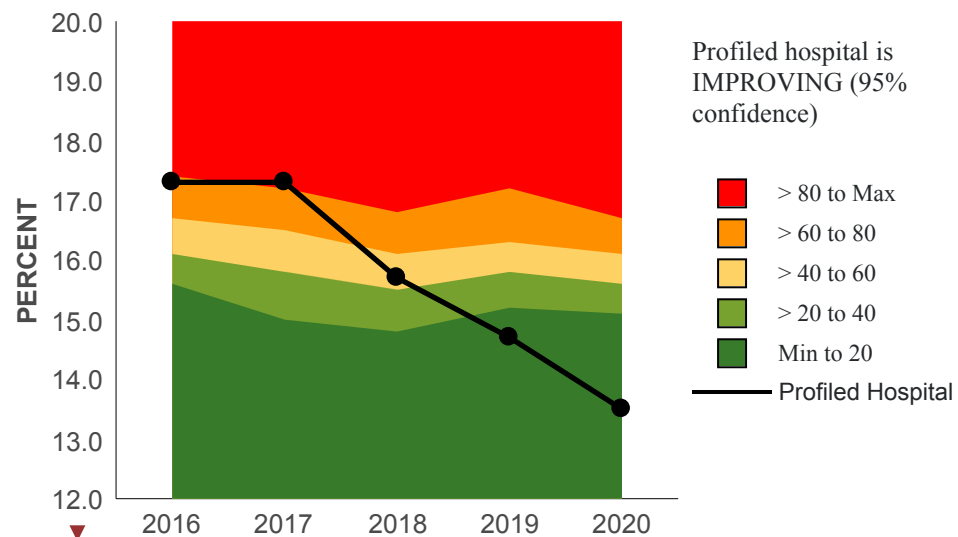
2020 30D READMISSION PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D READMISSION RATE OF IMPROVEMENT

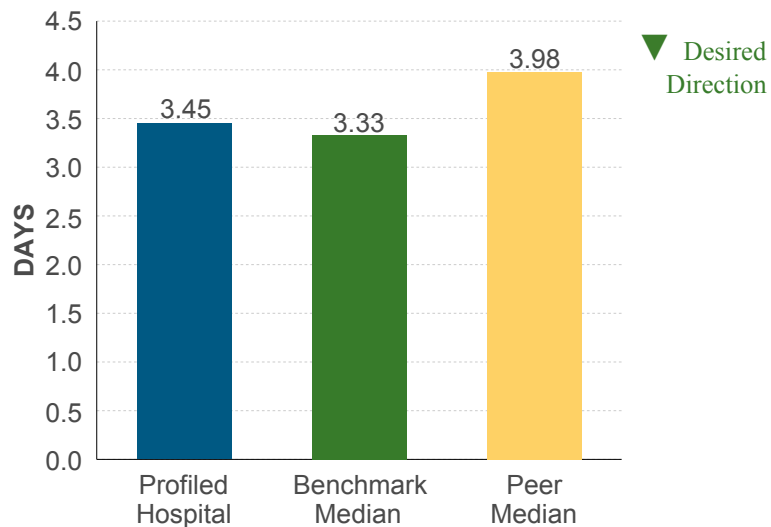


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	15.6	16.1	16.7	17.4	17.3
	2017	15.0	15.8	16.5	17.2	17.3
	2018	14.8	15.5	16.1	16.8	15.7
	2019	15.2	15.8	16.3	17.2	14.7
	2020	15.1	15.6	16.1	16.7	13.5

AMI patients: Severity-adjusted average length of stay

2020 ALOS PERFORMANCE

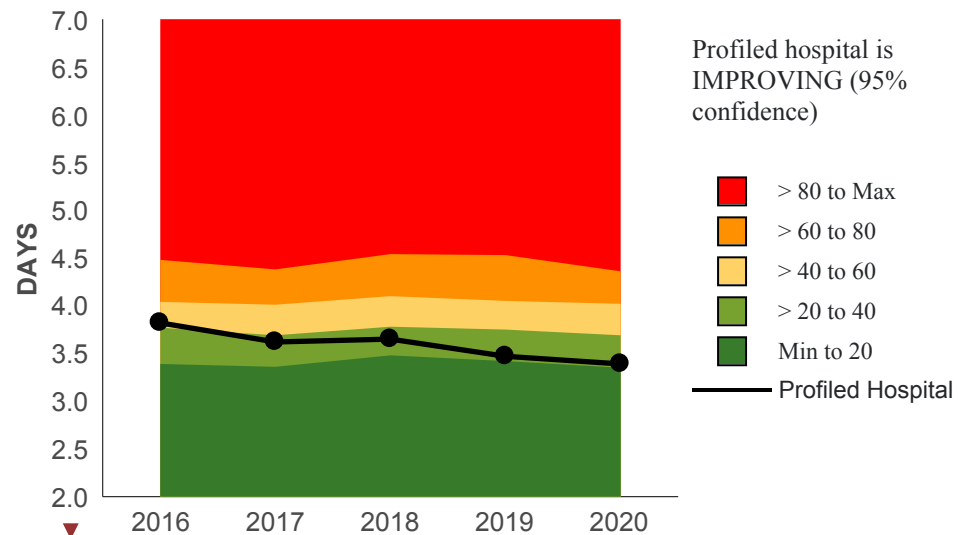


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 ALOS RATE OF IMPROVEMENT

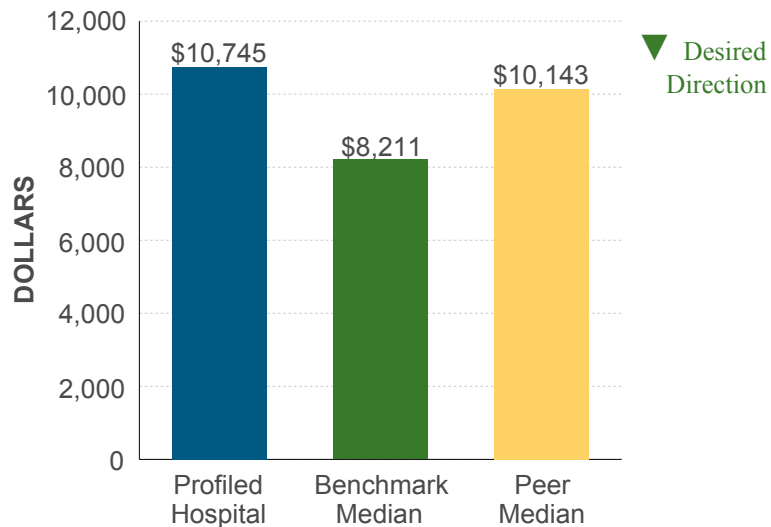


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	3.39	3.77	4.04	4.48	3.82
	2017	3.36	3.69	4.01	4.38	3.62
	2018	3.48	3.78	4.10	4.54	3.65
	2019	3.42	3.75	4.05	4.53	3.47
	2020	3.35	3.69	4.02	4.36	3.39

AMI patients: Wage- and severity-adjusted cost per case

2020 COST PER CASE PERFORMANCE

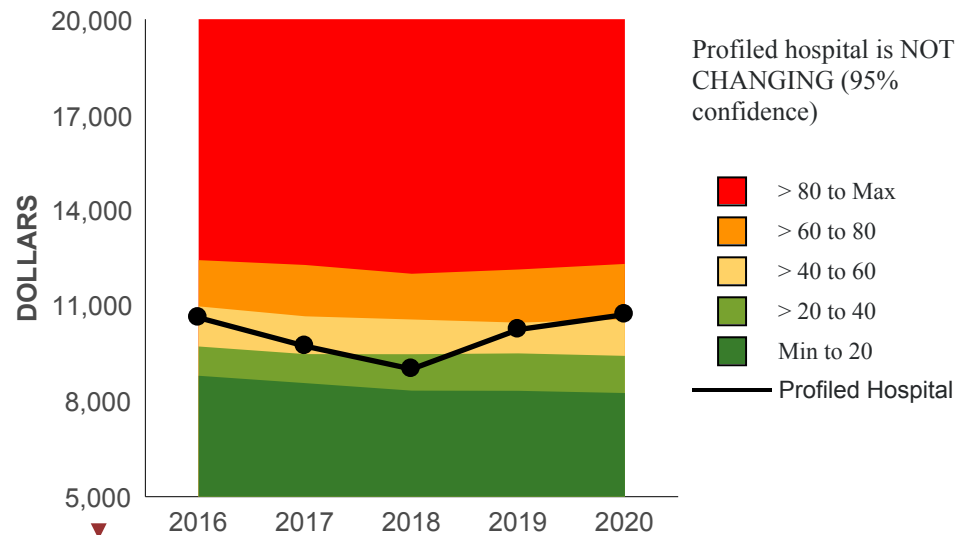


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 COST PER CASE RATE OF IMPROVEMENT

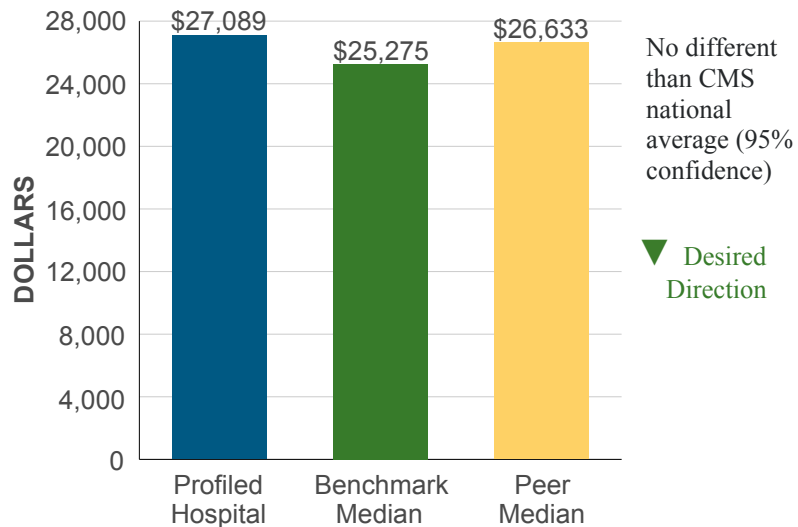


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	8,798	9,718	10,979	12,431	10,623
	2017	8,568	9,479	10,667	12,279	9,729
	2018	8,331	9,475	10,567	12,003	9,009
	2019	8,326	9,502	10,468	12,137	10,250
	2020	8,256	9,424	10,573	12,311	10,720

AMI patients: 30-day episode payment

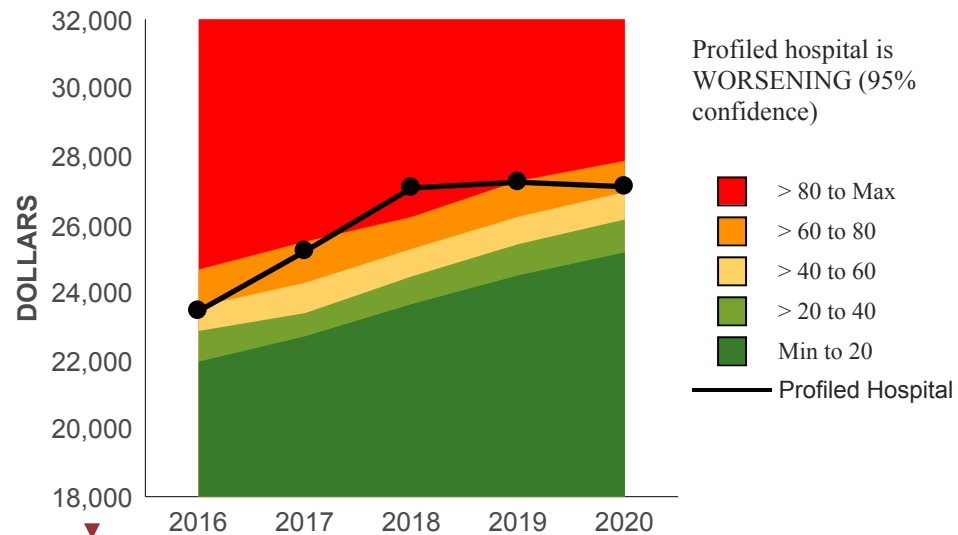
2020 30D EPISODE PAYMENT PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D EPISODE PAYMENT RATE OF IMPROVEMENT

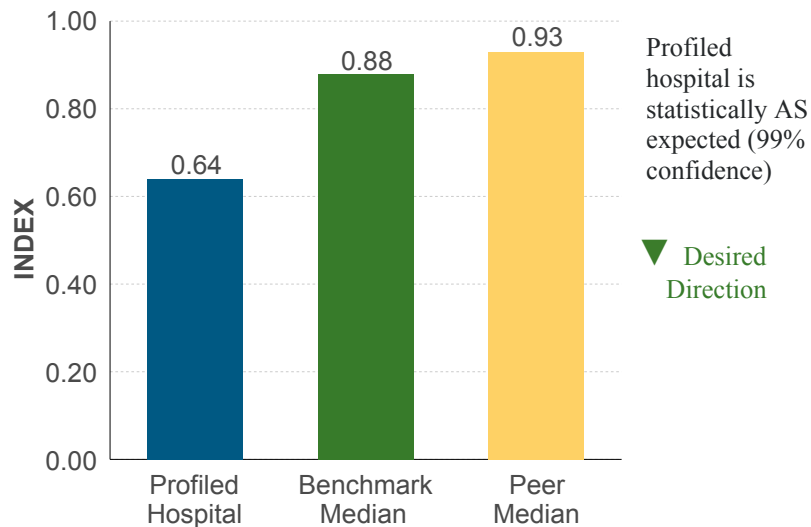


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	21,959	22,859	23,579	24,660	23,443
	2017	22,703	23,383	24,272	25,479	25,196
	2018	23,647	24,458	25,266	26,203	27,052
	2019	24,489	25,405	26,207	27,257	27,219
	2020	25,163	26,128	26,931	27,847	27,089

HF patients: Risk-adjusted inpatient mortality index

2020 IP MORTALITY PERFORMANCE

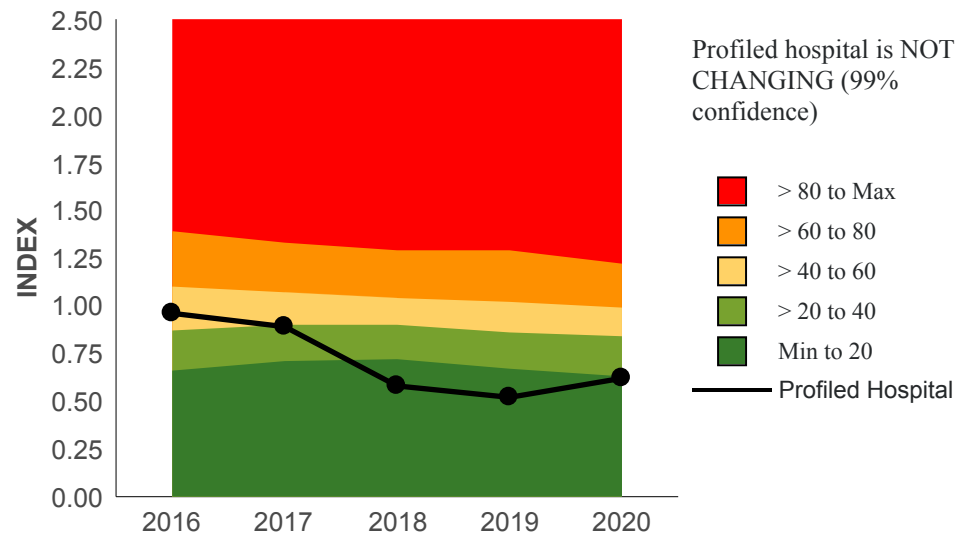


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 IP MORTALITY RATE OF IMPROVEMENT

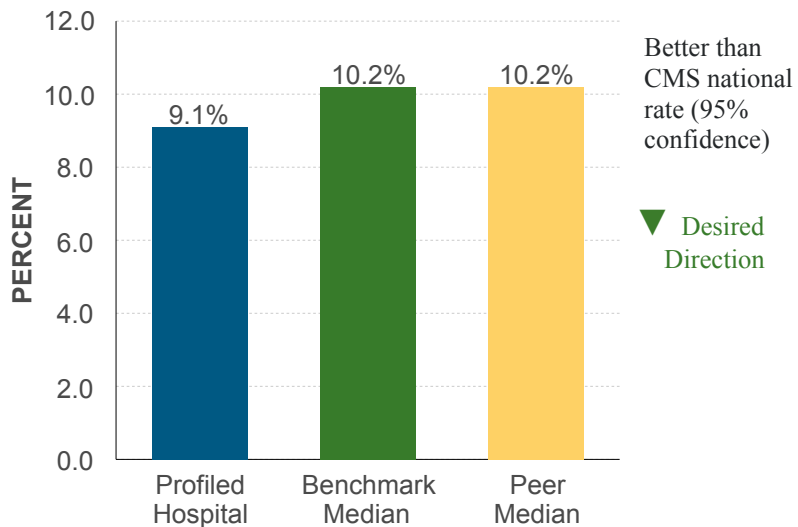


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2016	0.66	0.87	1.10	1.39	0.96	1.67	0.49
	2017	0.71	0.90	1.07	1.33	0.89	1.59	0.45
	2018	0.72	0.90	1.04	1.29	0.58	1.18	0.24
	2019	0.67	0.86	1.02	1.29	0.52	1.04	0.21
	2020	0.63	0.84	0.99	1.22	0.62	1.18	0.28

HF patients: 30-day mortality rate

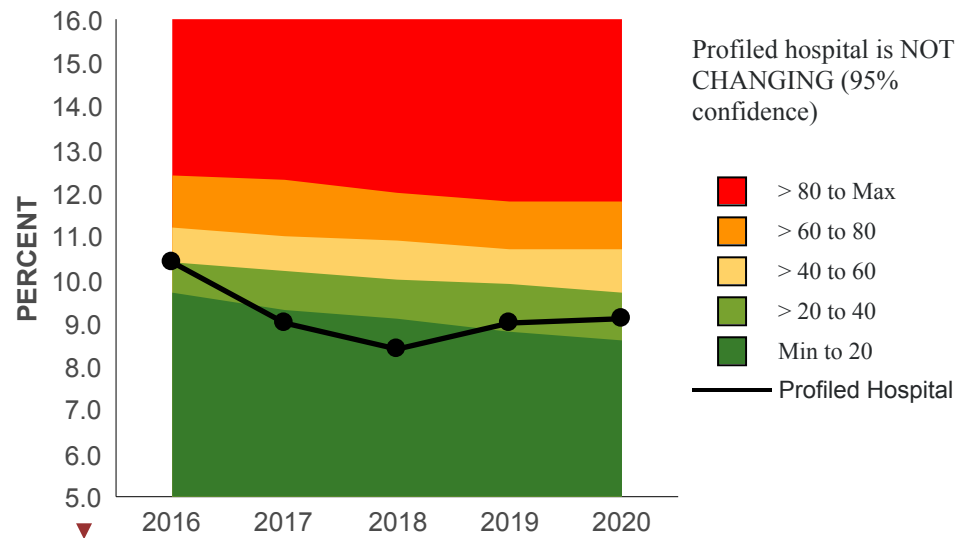
2020 30D MORTALITY PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D MORTALITY RATE OF IMPROVEMENT

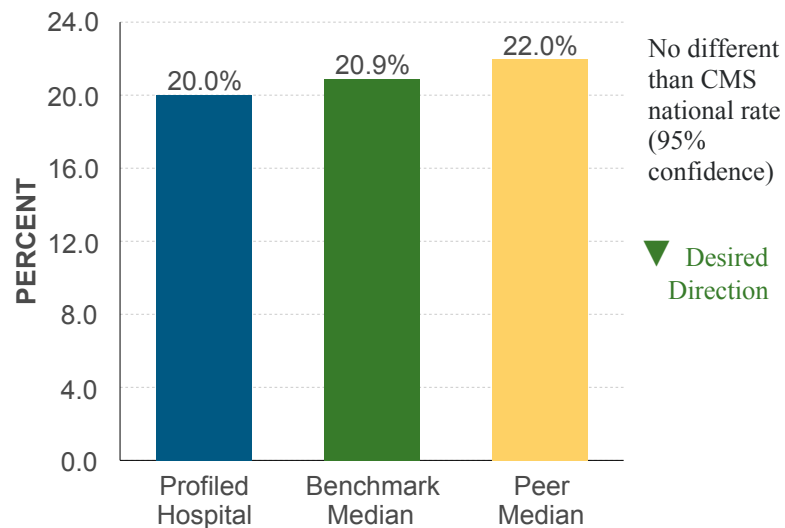


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	9.7	10.4	11.2	12.4	10.4
	2017	9.3	10.2	11.0	12.3	9.0
	2018	9.1	10.0	10.9	12.0	8.4
	2019	8.8	9.9	10.7	11.8	9.0
	2020	8.6	9.7	10.7	11.8	9.1

HF patients: 30-day readmission rate

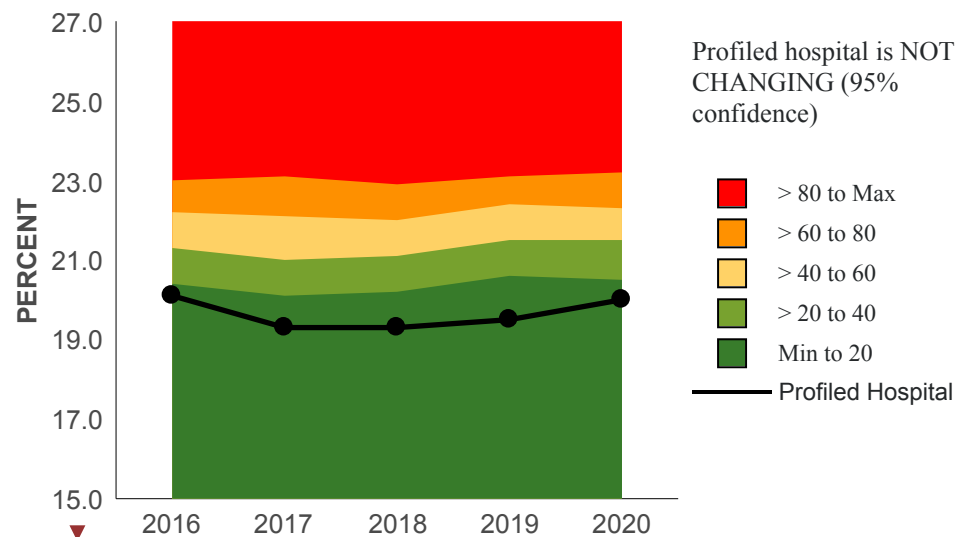
2020 30D READMISSION PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D READMISSION RATE OF IMPROVEMENT

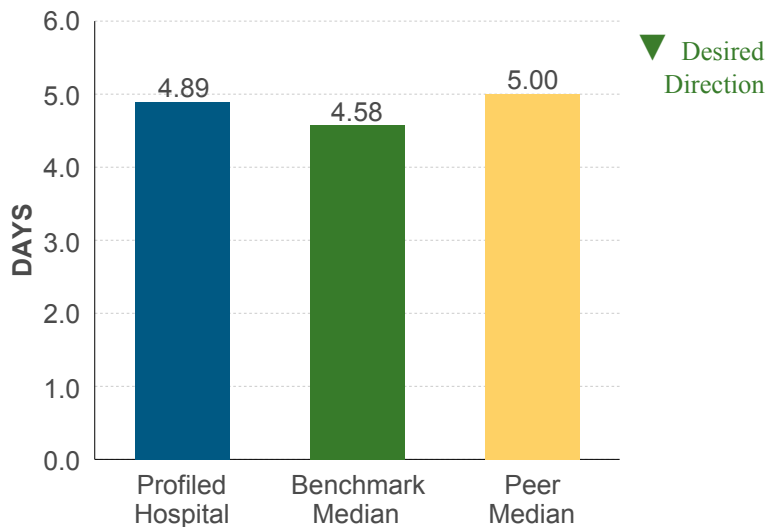


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	20.4	21.3	22.2	23.0	20.1
	2017	20.1	21.0	22.1	23.1	19.3
	2018	20.2	21.1	22.0	22.9	19.3
	2019	20.6	21.5	22.4	23.1	19.5
	2020	20.5	21.5	22.3	23.2	20.0

HF patients: Severity-adjusted average length of stay

2020 ALOS PERFORMANCE

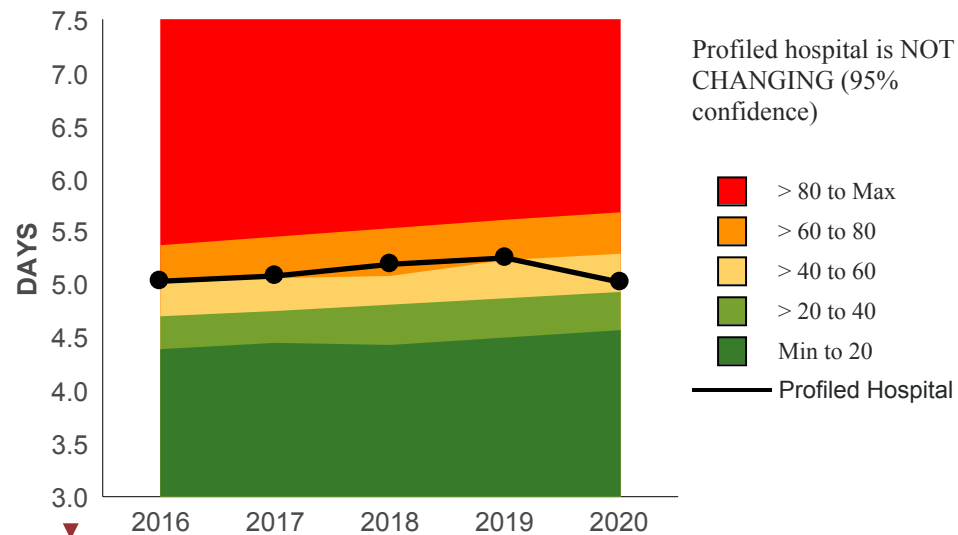


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 ALOS RATE OF IMPROVEMENT

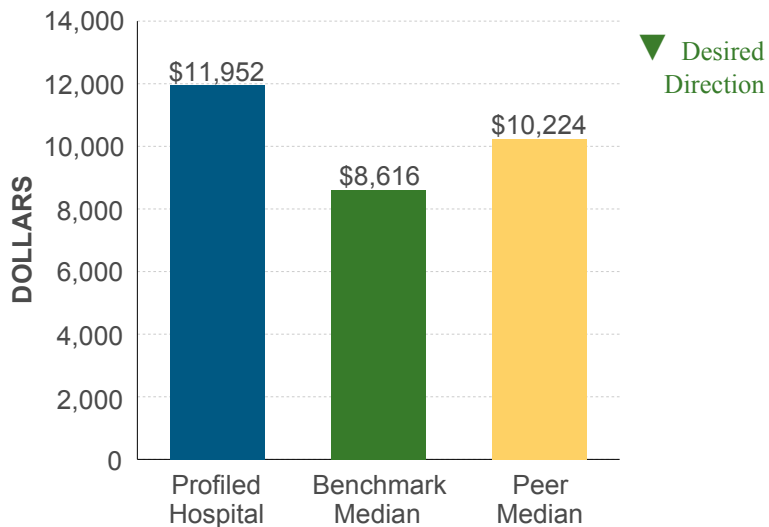


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	4.39	4.70	5.01	5.37	5.03
	2017	4.45	4.75	5.06	5.45	5.08
	2018	4.43	4.81	5.08	5.53	5.19
	2019	4.50	4.87	5.23	5.61	5.25
	2020	4.57	4.93	5.29	5.68	5.02

HF patients: Wage- and severity-adjusted cost per case

2020 COST PER CASE PERFORMANCE

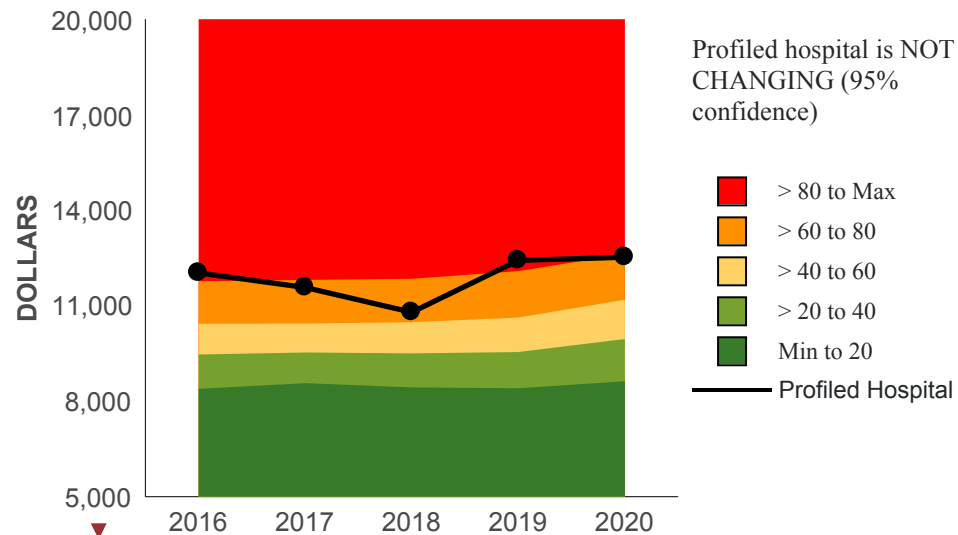


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 COST PER CASE RATE OF IMPROVEMENT

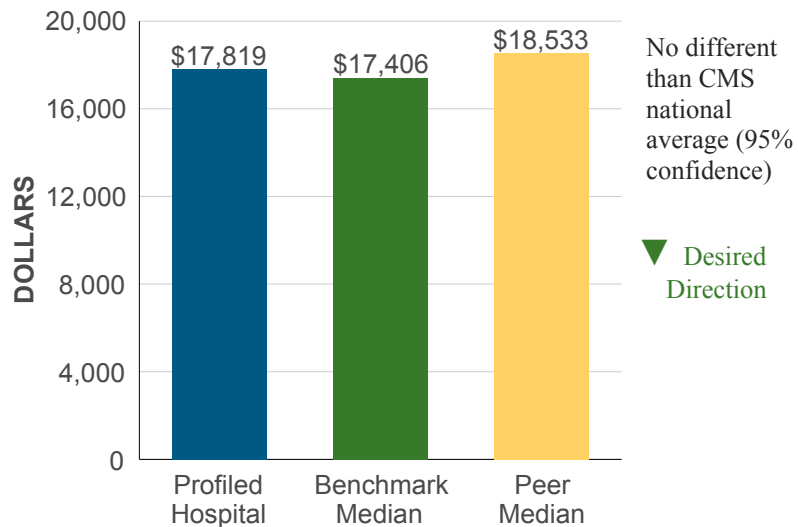


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	8,387	9,466	10,430	11,768	12,029
	2017	8,567	9,530	10,439	11,809	11,572
	2018	8,433	9,502	10,481	11,846	10,794
	2019	8,406	9,544	10,627	12,085	12,421
	2020	8,627	9,952	11,189	12,626	12,523

HF patients: 30-day episode payment

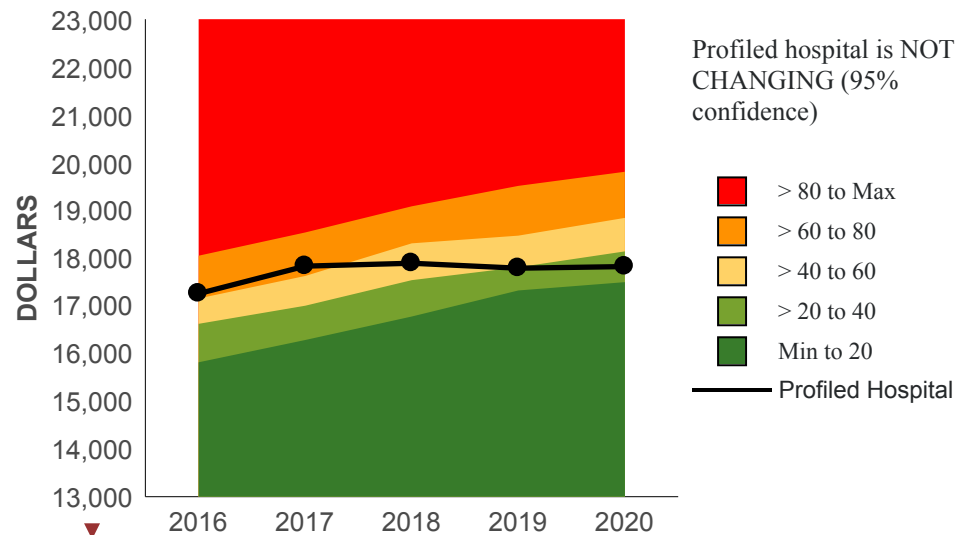
2020 30D EPISODE PAYMENT PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D EPISODE PAYMENT RATE OF IMPROVEMENT

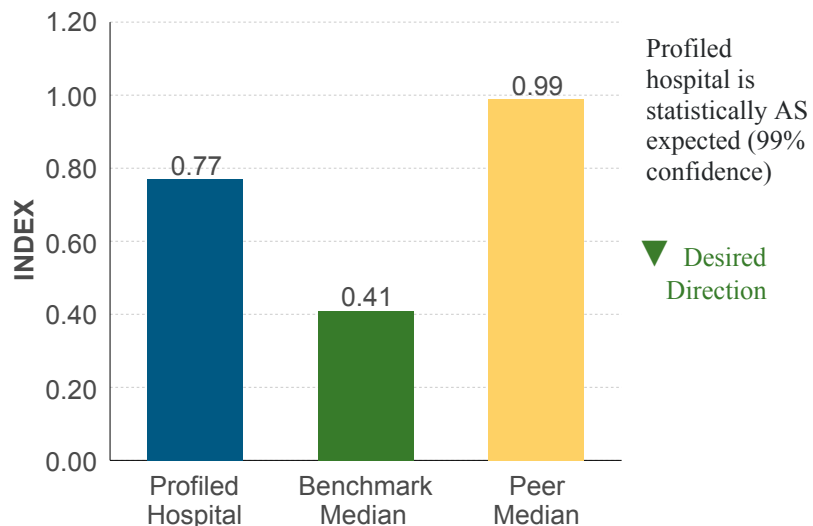


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	15,815	16,620	17,152	18,047	17,253
	2017	16,281	16,999	17,622	18,533	17,828
	2018	16,773	17,535	18,306	19,081	17,889
	2019	17,319	17,805	18,467	19,509	17,785
	2020	17,493	18,137	18,839	19,805	17,819

CABG patients: Risk-adjusted inpatient mortality index

2020 IP MORTALITY PERFORMANCE

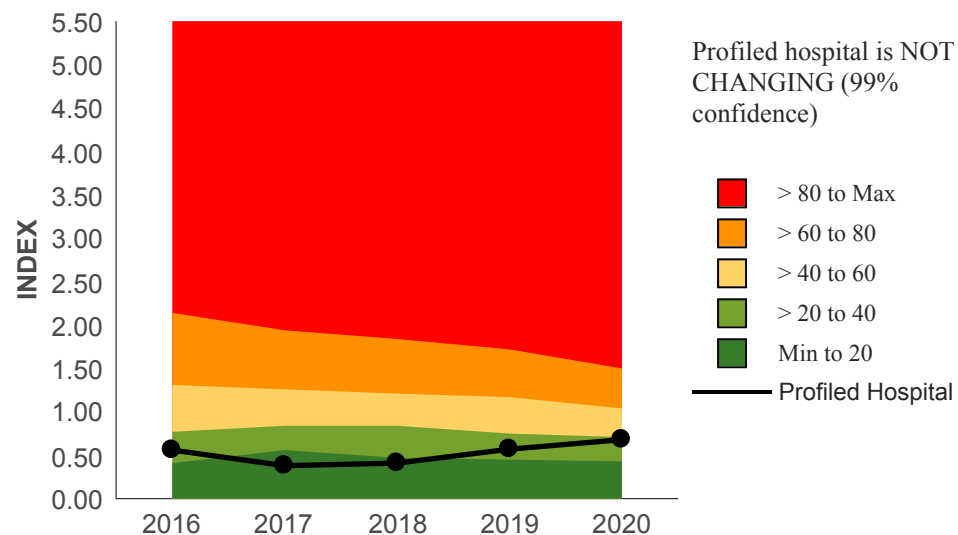


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 IP MORTALITY RATE OF IMPROVEMENT

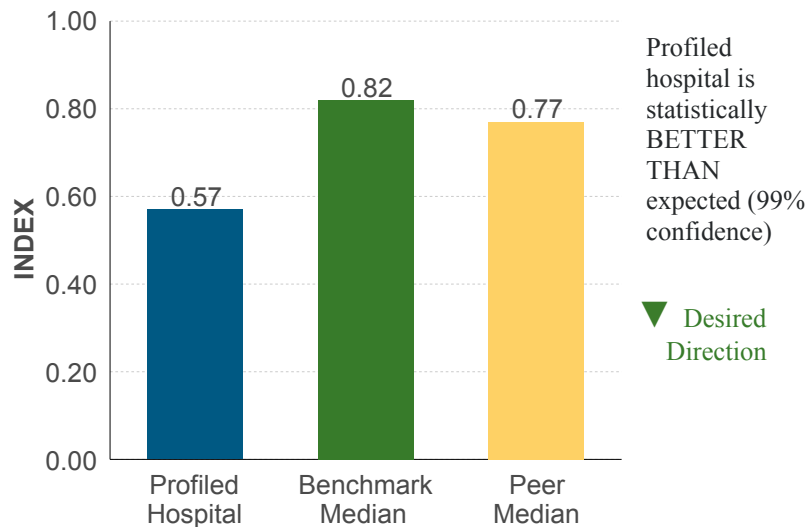


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2016	0.41	0.77	1.31	2.14	0.56	2.41	0.04
	2017	0.56	0.84	1.26	1.94	0.38	2.58	0.00
	2018	0.47	0.84	1.21	1.84	0.41	2.78	0.00
	2019	0.45	0.75	1.17	1.72	0.57	2.44	0.04
	2020	0.43	0.71	1.04	1.50	0.68	2.33	0.09

CABG patients: Risk-adjusted complications index

2020 COMPLICATIONS PERFORMANCE

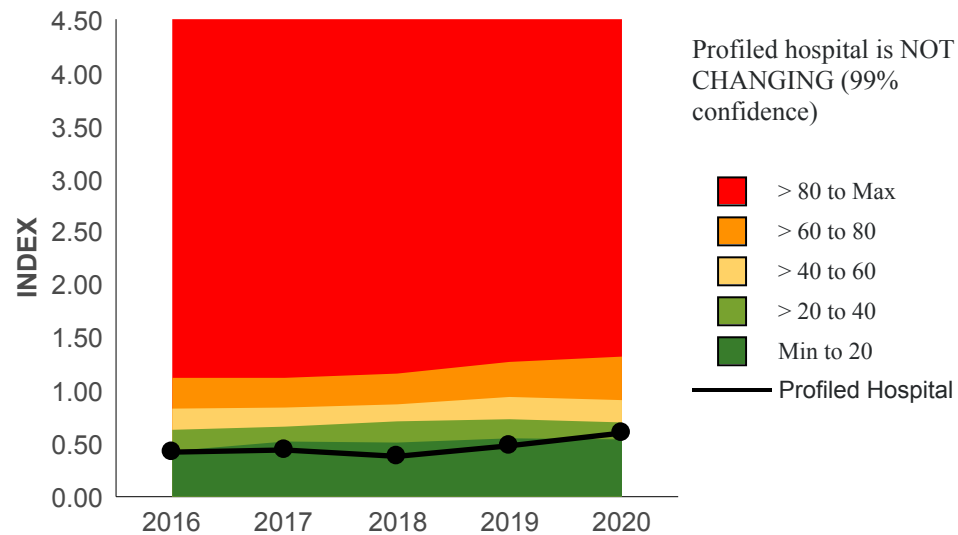


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 COMPLICATIONS RATE OF IMPROVEMENT

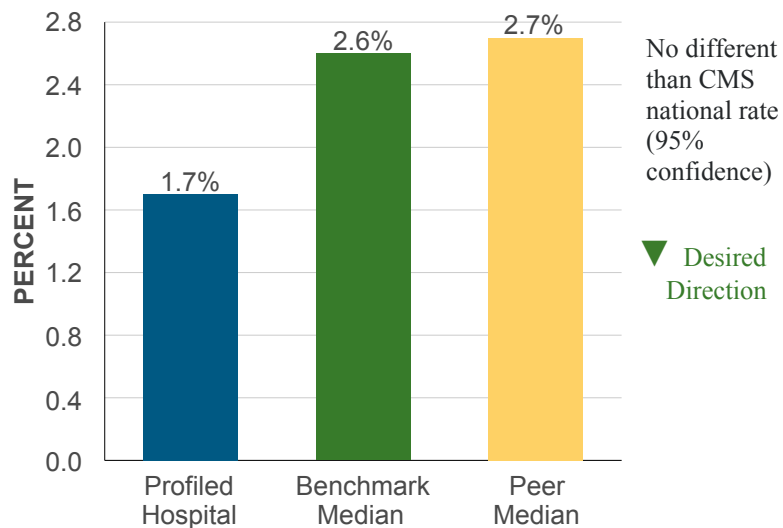


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2016	0.43	0.63	0.83	1.12	0.42	0.82	0.18
	2017	0.52	0.66	0.84	1.12	0.44	0.82	0.21
	2018	0.51	0.71	0.87	1.16	0.38	0.72	0.18
	2019	0.55	0.73	0.94	1.27	0.48	0.84	0.25
	2020	0.54	0.70	0.91	1.32	0.60	0.99	0.33

CABG patients: 30-day mortality rate

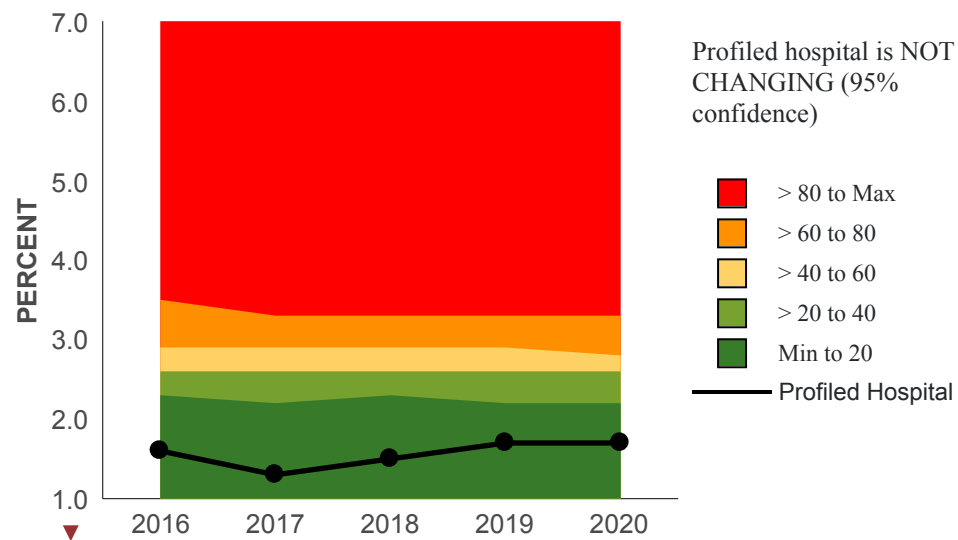
2020 30D MORTALITY PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D MORTALITY RATE OF IMPROVEMENT

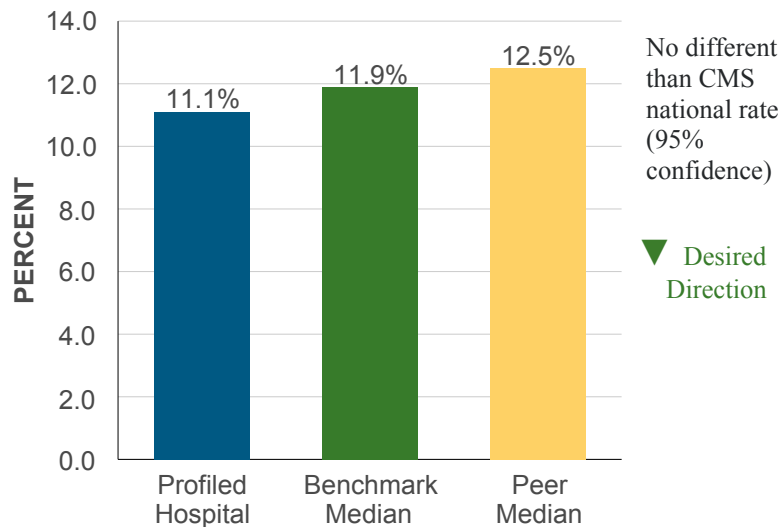


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	2.3	2.6	2.9	3.5	1.6
	2017	2.2	2.6	2.9	3.3	1.3
	2018	2.3	2.6	2.9	3.3	1.5
	2019	2.2	2.6	2.9	3.3	1.7
	2020	2.2	2.6	2.8	3.3	1.7

CABG patients: 30-day readmission rate

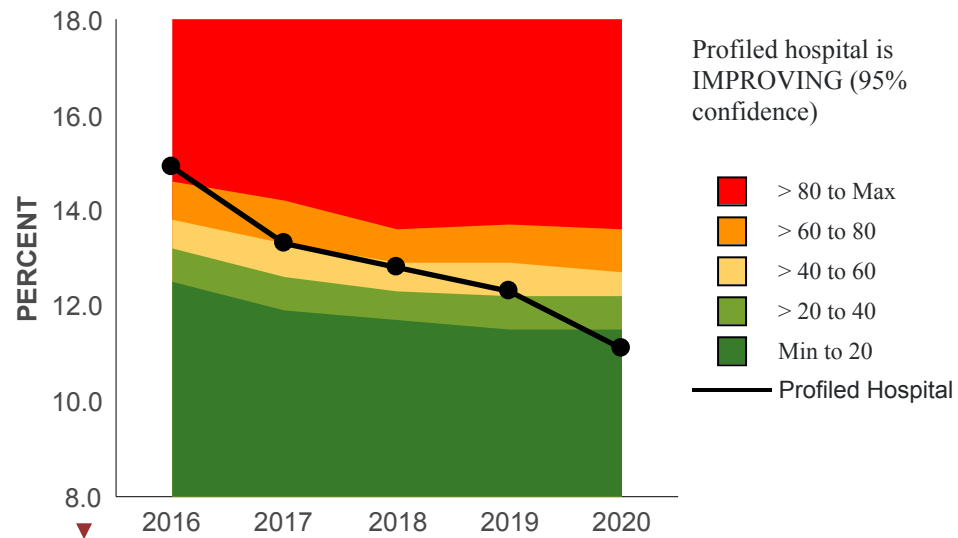
2020 30D READMISSION PERFORMANCE



Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

2016-2020 30D READMISSION RATE OF IMPROVEMENT

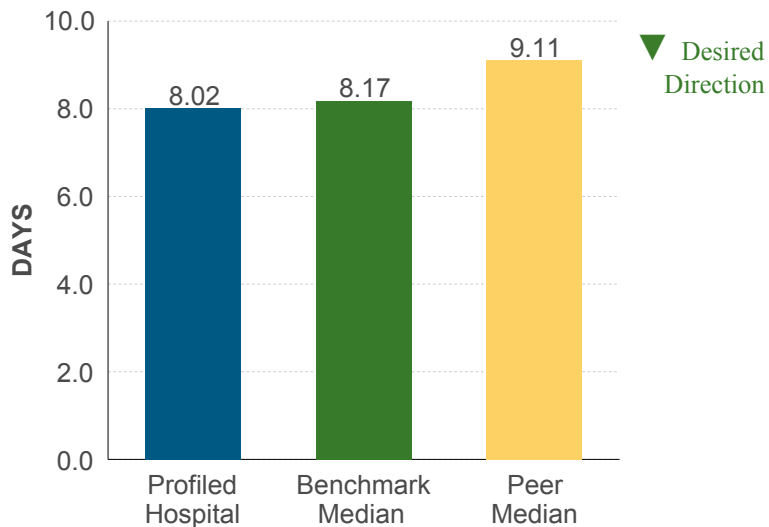


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	12.5	13.2	13.8	14.6	14.9
	2017	11.9	12.6	13.3	14.2	13.3
	2018	11.7	12.3	12.9	13.6	12.8
	2019	11.5	12.2	12.9	13.7	12.3
	2020	11.5	12.2	12.7	13.6	11.1

CABG patients: Severity-adjusted average length of stay

2020 ALOS PERFORMANCE

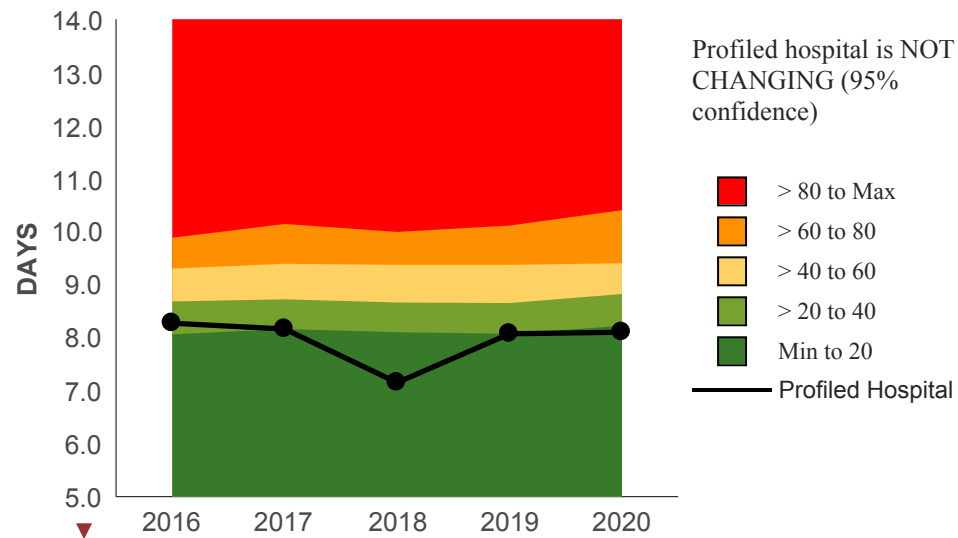


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 ALOS RATE OF IMPROVEMENT

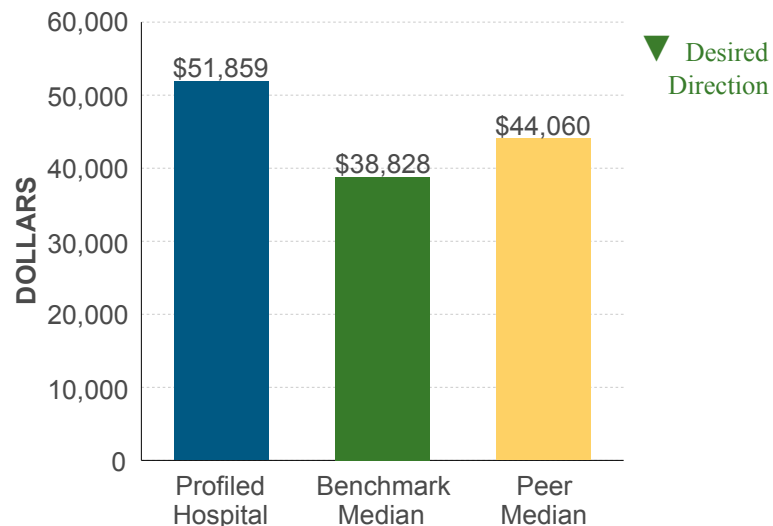


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	8.06	8.68	9.30	9.88	8.27
	2017	8.16	8.72	9.39	10.14	8.16
	2018	8.10	8.66	9.37	9.99	7.15
	2019	8.07	8.65	9.37	10.11	8.07
	2020	8.22	8.82	9.40	10.40	8.10

CABG patients: Wage- and severity-adjusted cost per case

2020 COST PER CASE PERFORMANCE

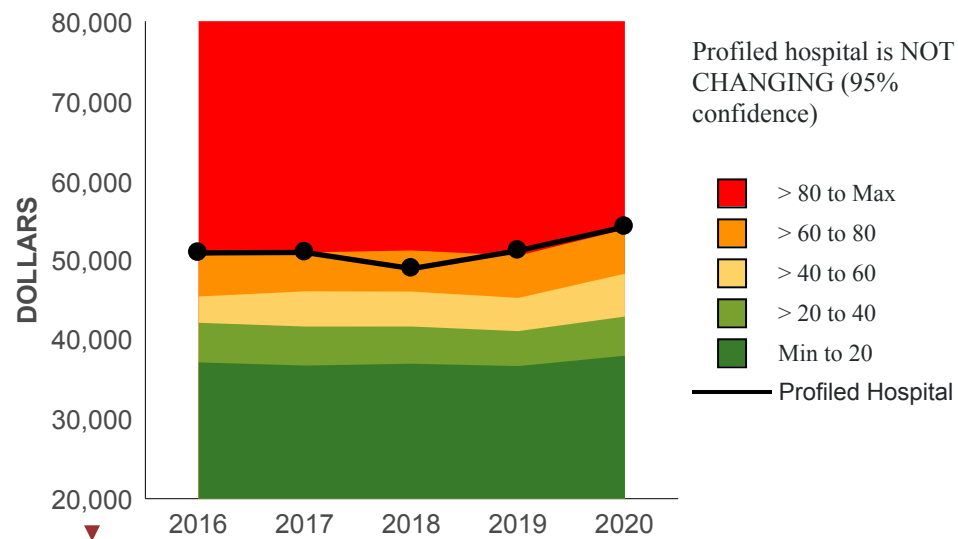


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 COST PER CASE RATE OF IMPROVEMENT

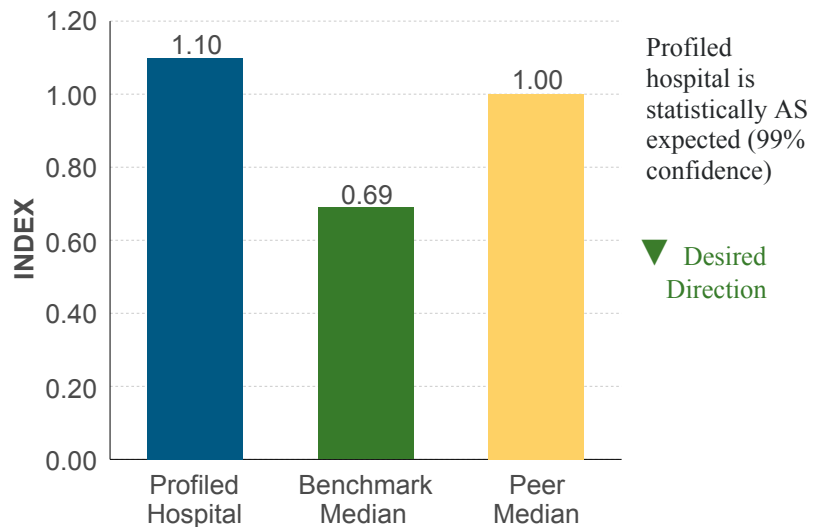


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	37,125	42,103	45,405	50,543	50,882
	2017	36,729	41,630	46,060	50,940	50,940
	2018	36,961	41,634	46,024	51,193	48,910
	2019	36,663	41,052	45,231	50,540	51,165
	2020	37,966	42,883	48,272	53,843	54,153

PCI patients: Risk-adjusted inpatient mortality index

2020 IP MORTALITY PERFORMANCE

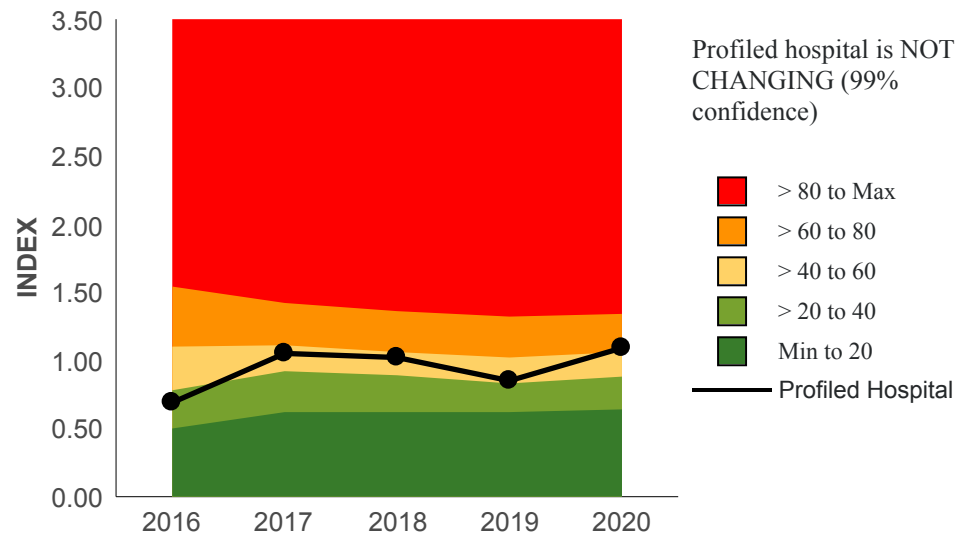


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 IP MORTALITY RATE OF IMPROVEMENT

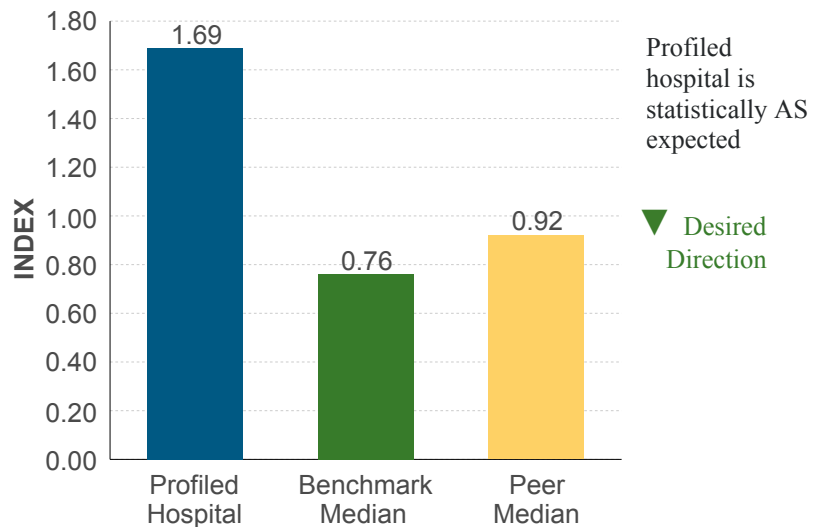


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2016	0.50	0.78	1.10	1.54	0.69	1.56	0.24
	2017	0.62	0.92	1.11	1.42	1.05	2.05	0.45
	2018	0.62	0.89	1.06	1.36	1.02	2.05	0.42
	2019	0.62	0.83	1.02	1.32	0.85	1.66	0.37
	2020	0.64	0.88	1.06	1.34	1.09	2.09	0.49

PCI patients: Risk-adjusted complications index

2020 COMPLICATIONS PERFORMANCE

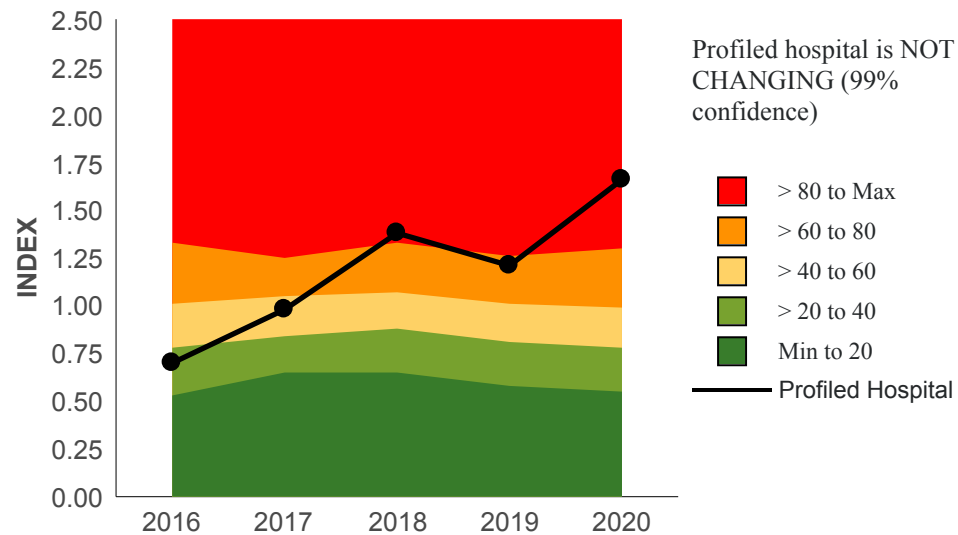


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 COMPLICATIONS RATE OF IMPROVEMENT

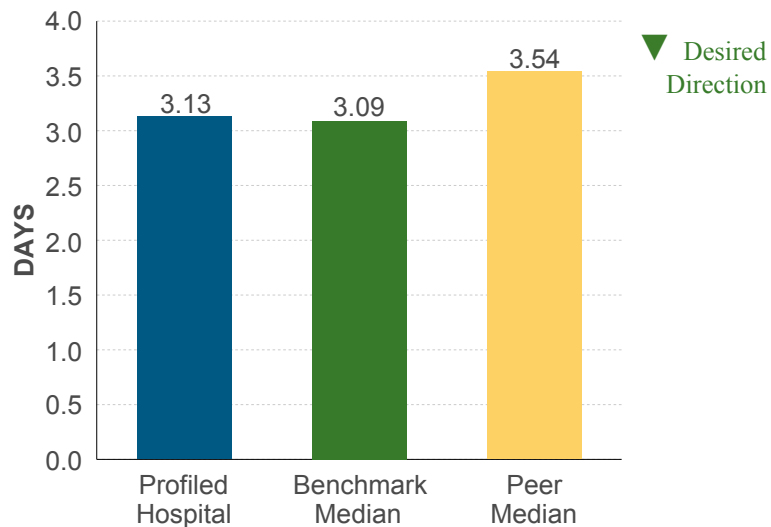


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL		
		20th	40th	60th	80th	Value	Upper C.I.	Lower C.I.
YEARS	2016	0.53	0.78	1.01	1.33	0.70	1.32	0.33
	2017	0.65	0.84	1.05	1.25	0.98	1.68	0.52
	2018	0.65	0.88	1.07	1.33	1.38	2.17	0.82
	2019	0.58	0.81	1.01	1.26	1.21	1.93	0.71
	2020	0.55	0.78	0.99	1.30	1.66	2.53	1.03

PCI patients: Severity-adjusted average length of stay

2020 ALOS PERFORMANCE

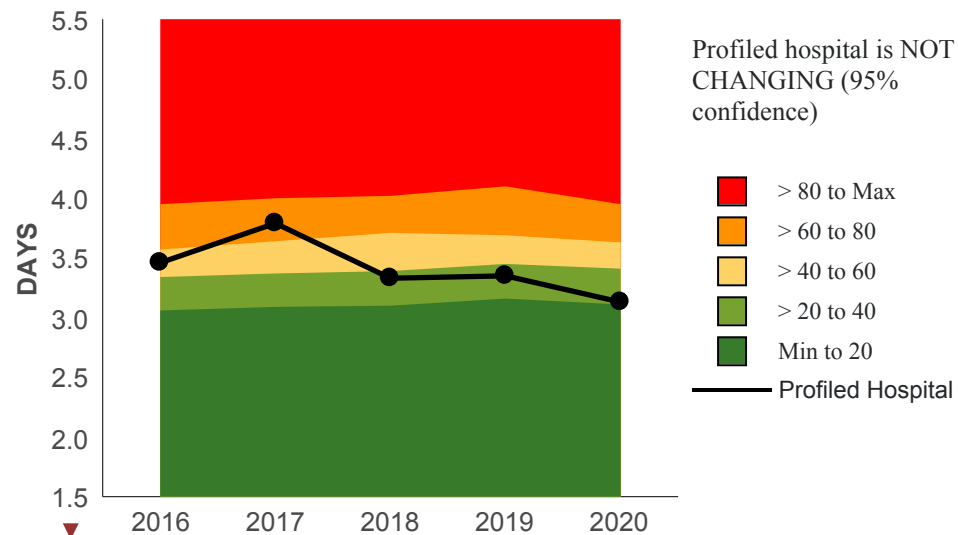


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 ALOS RATE OF IMPROVEMENT

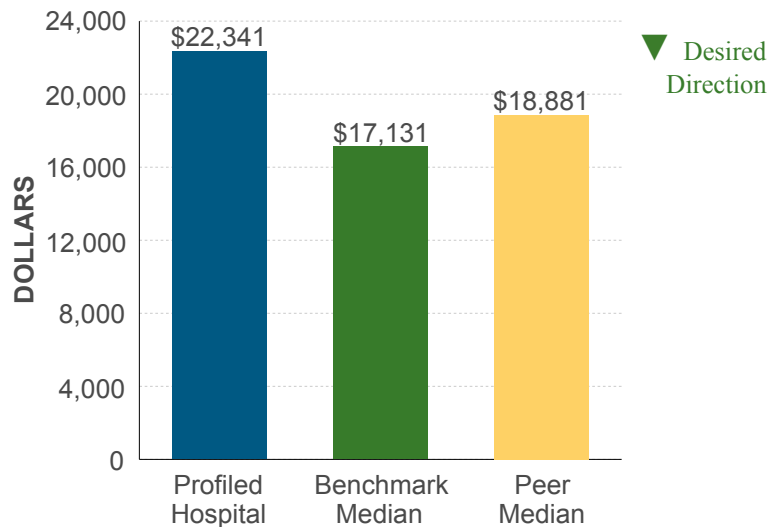


Hospital performance compared to peer hospital quintiles: n = 273

PERCENTILE POINTS ►		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
		20th	40th	60th	80th	Value
YEARS	2016	3.06	3.34	3.57	3.95	3.46
	2017	3.09	3.37	3.64	4.00	3.79
	2018	3.10	3.39	3.71	4.02	3.33
	2019	3.16	3.45	3.69	4.10	3.35
	2020	3.11	3.41	3.63	3.95	3.13

PCI patients: Wage- and severity-adjusted cost per case

2020 COST PER CASE PERFORMANCE

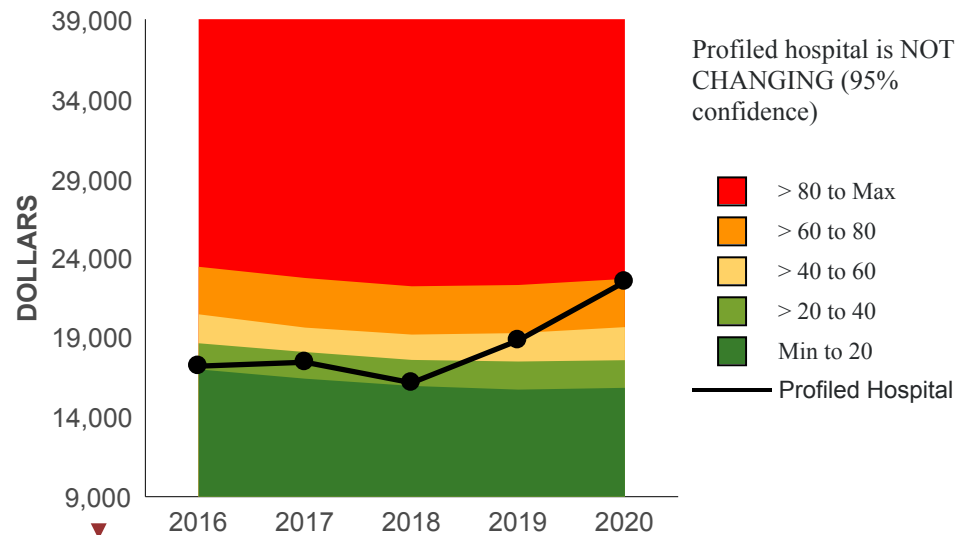


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Note: 2020 values on the current and trend graphs will not match due to different norm factors used to normalize the expected values.

2016-2020 COST PER CASE RATE OF IMPROVEMENT

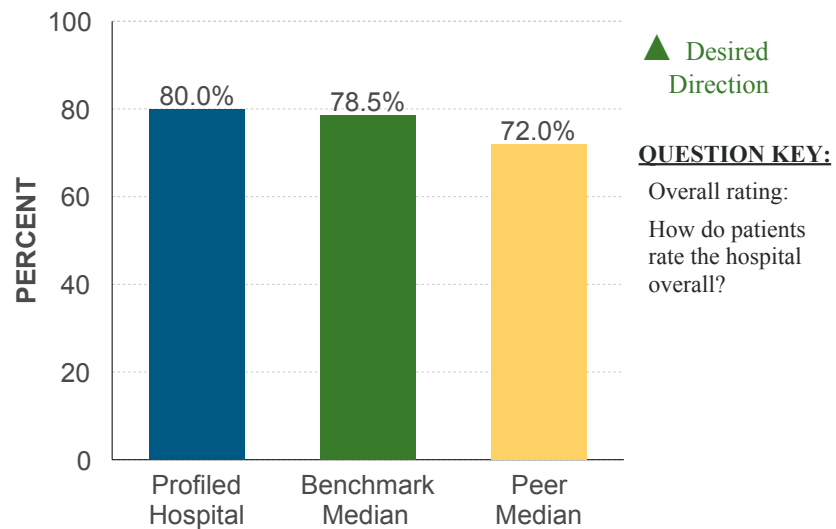


Hospital performance compared to peer hospital quintiles: n = 273

		HOSPITAL COMPARISON GROUP				PROFILED HOSPITAL
PERCENTILE POINTS ►		20th	40th	60th	80th	Value
YEARS	2016	16,998	18,639	20,458	23,445	17,200
	2017	16,413	18,089	19,622	22,740	17,447
	2018	15,959	17,592	19,184	22,218	16,154
	2019	15,727	17,492	19,278	22,300	18,819
	2020	15,838	17,576	19,653	22,684	22,501

HCAHPS: overall rating question

2020 HCAHPS TOP BOX PERFORMANCE



MEASURE NOT IN TREND PROFILE

Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Supplemental information-only measures

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

- **Excess days in acute care (EDAC) measures:**
 - 30-day excess days in acute care for AMI patients
 - 30-day excess days in acute care for HF patients

As defined by the Centers for Medicare & Medicaid Services (CMS), the “EDAC measures capture excess days that a hospital’s patients spent in acute care within 30 days after discharge.”

The values of these measures are the number of risk-adjusted days a hospital’s patients spend in an emergency department (ED), a hospital observation unit, or a hospital inpatient unit (“days in acute care”) during the 30 days following a hospitalization for AMI or HF.”

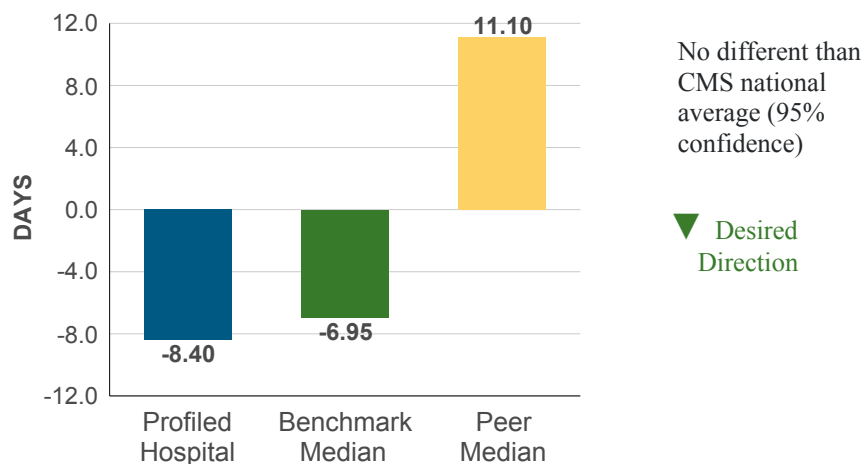
The measures report the difference (“excess”) between each hospital’s average days in acute care (“predicted days”) and the number of days in acute care that each hospital’s patients would have been expected to spend if discharged from an average-performing hospital (“expected days”). The measure is reported as excess days per 100 discharges.

- **HCAHPS**

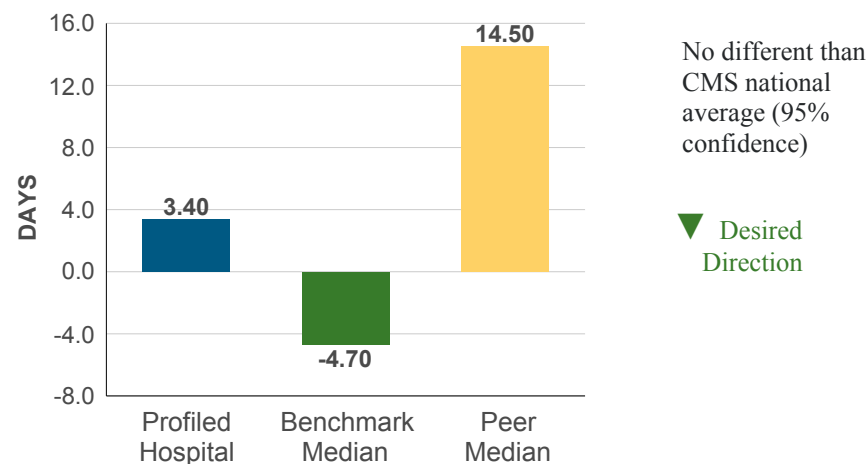
The ranked measure is the overall hospital rating question. The individual detailed survey questions are displayed for information only.

AMI and HF patients: 2020 Performance Compared to Benchmark¹ and Peer² Hospitals

AMI 30D EXCESS DAYS IN ACUTE CARE



HF 30D EXCESS DAYS IN ACUTE CARE



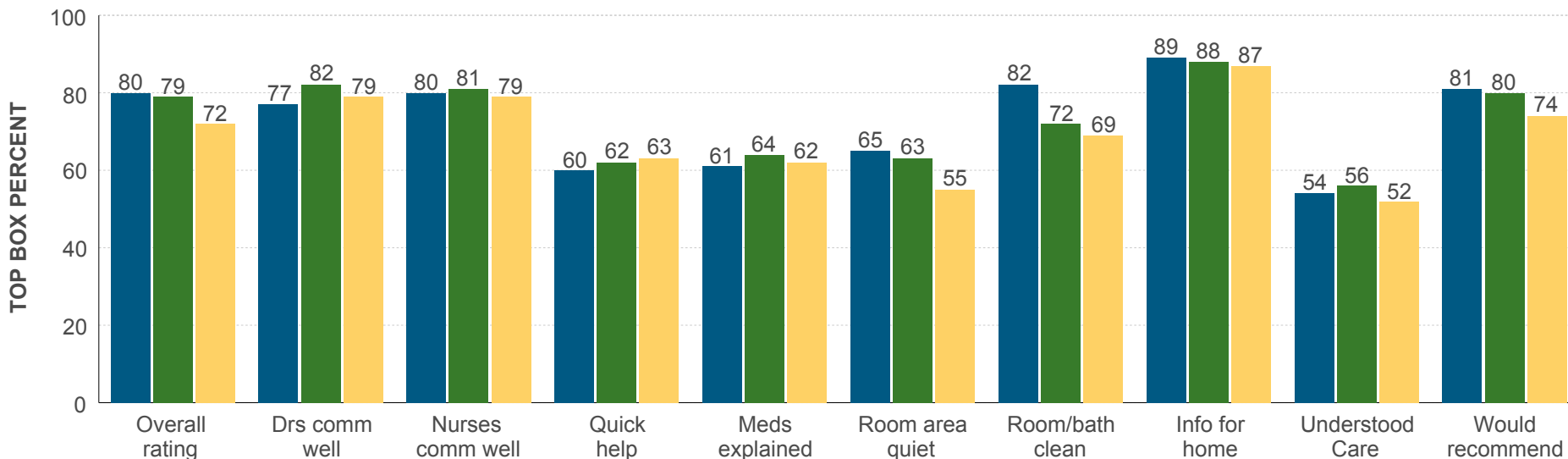
Note: Profiled hospital compared to cardio teaching hospitals

¹ Benchmark hospitals are the winners in the comparison group: n = 20

² Peer hospitals are the non-winners in the comparison group: n = 257

HCAHPS questions - only overall rating used in ranking

2020 HCAHPS PERFORMANCE



QUESTION KEY

- Overall rating How do patients rate the hospital overall?
- 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?

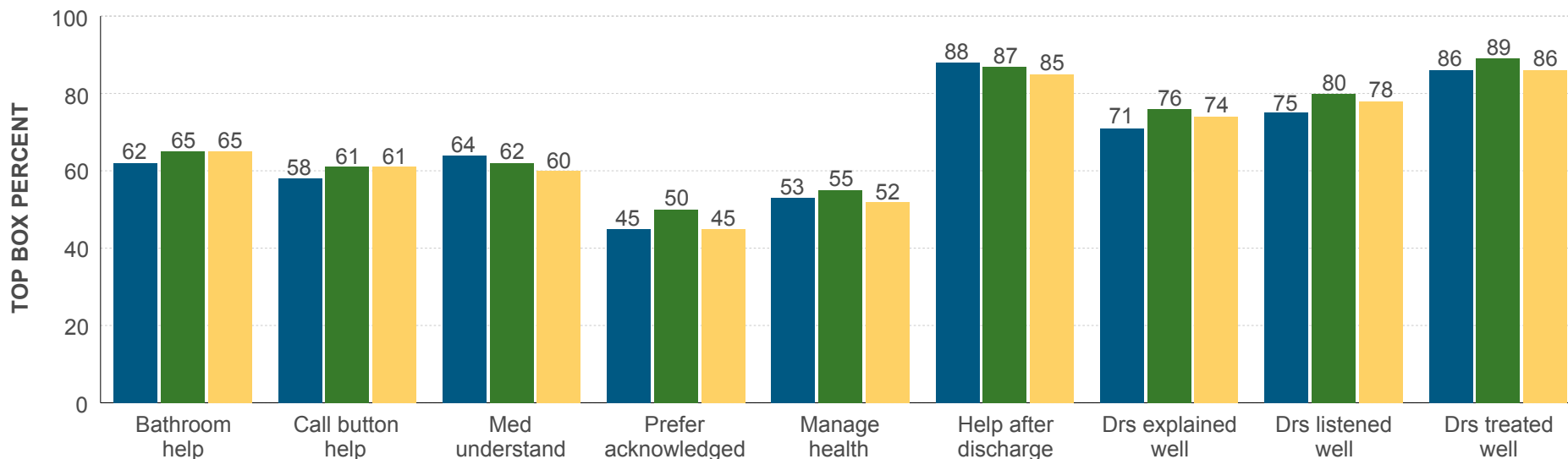
- Profiled Hospital
- Benchmark Median
- Peer Median
- ▲ Desired Direction

Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

HCAHPS questions, con't

2020 HCAHPS PERFORMANCE



QUESTION KEY

- Bathroom help How often did patients receive bathroom help as soon as they wanted?
- Call button help How often did patients receive help after using the call button as soon as they wanted?
- Med understanding How often did patients understand the purpose of their medications when leaving the hospital?
- Prefer acknowledged How often did the staff take patients' preferences into account when determining health care needs?
- Manage health How often did patients understand their responsibilities in managing their health?
- Help after discharge How often did patients discuss whether they would need help after discharge?
- Drs explained well How often did doctors explain things in a way patients could understand?
- Drs listened well How often did doctors listen carefully to patients?
- Drs treated well How often did doctors treat patients with courtesy and respect?

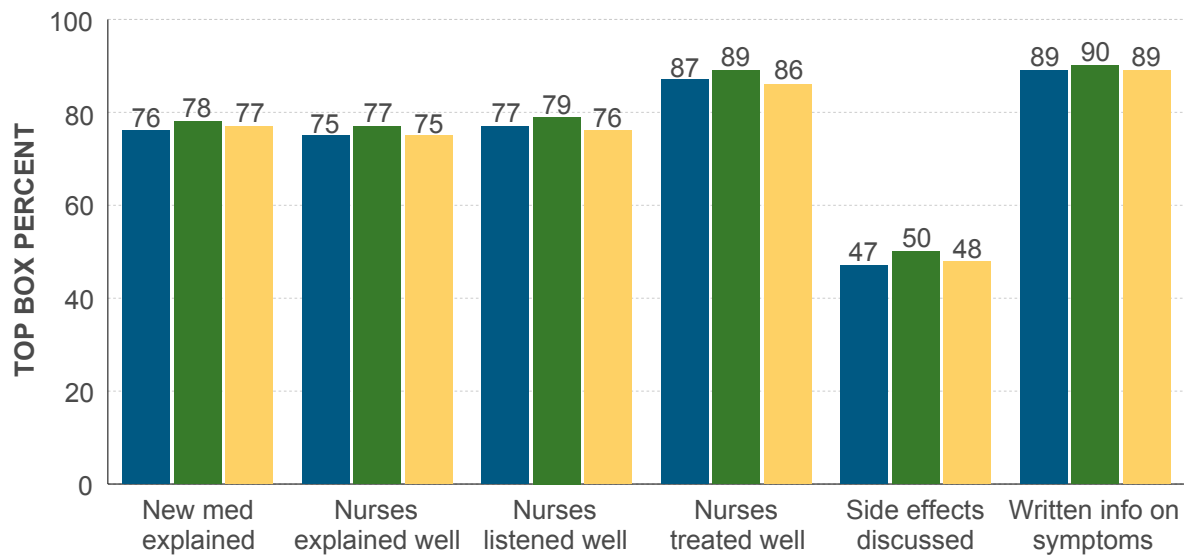


Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

HCAHPS questions, con't

2020 HCAHPS PERFORMANCE



QUESTION KEY

- New med explained: How often did staff communicate what the new medication was for?
- Nurses explained well: How often did nurses explain things in a way patients could understand?
- Nurses listened well: How often did nurses listen carefully to patients?
- Nurses treated well: How often did nurses treat patients with courtesy and respect?
- Side effects discussed: How often did staff discuss possible side effects when receiving a new medication?
- Written info on symptoms: Did patients receive written information about possible symptoms to look out for after discharge?

- Profiled Hospital
- Benchmark Median
- Peer Median
- Desired Direction

Benchmark hospitals are the winners in the comparison group: n = 20

Peer hospitals are the non-winners in the comparison group: n = 257

Legal Disclaimer

© IBM Corporation 2021. All Rights Reserved.

The information contained in this publication is provided for informational purposes only. While efforts were made to verify the completeness and accuracy of the information contained in this publication, it is provided AS IS without warranty of any kind, express or implied. In addition, this information is based on IBM's current product plans and strategy, which are subject to change by IBM without notice. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this publication or any other materials. Nothing contained in this publication is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software.

References in this presentation to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in this presentation may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. Nothing contained in these materials is intended to, nor shall have the effect of, stating or implying that any activities undertaken by you will result in any specific sales, revenue growth or other results.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

IBM, the IBM logo, ibm.com, Watson, and Watson Health are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at ibm.com/legal/copytrade.