

50 Top Cardiovascular Hospitals, 2020 Competitor Report

Sample Hospital

November 18, 2019

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Background and Approach

The 50 Top Cardiovascular Hospitals Competitor Report shows national hospital performance in two dimensions – five year rate of improvement and current year performance

- Each hospital is compared to similar hospital peers across the U.S.

(Three comparison groups: Cardio Teaching, Teaching, Community Hospital)

- Because hospital improvement and performance are calculated as rank percentiles, hospitals falling into different comparison groups can be directly compared

The competitor report provides objective comparative analysis of four key medical and surgical cardiovascular patient groups:

- Acute myocardial infarction (AMI)
- Heart failure (HF)
- Coronary artery bypass graft (CABG)
- Percutaneous coronary intervention (PCI)

Measures fall into five domains: Clinical outcomes, clinical process, extended outcomes, operational efficiency, cost efficiency

Profiled client hospital and competitors

- **Profiled Hospital**
- Profiled Competitor 1
- Profiled Competitor 2
- Profiled Competitor 3
- Profiled Competitor 4
- Profiled Competitor 5
- Profiled Competitor 6
- Profiled Competitor 7

Overall national performance

- **Profiled Hospital** falls into the 50th percentile nationally for 2018 performance and the 88th for 2014-2018 rate of improvement
- 3 competitors out-performed Profiled Hospital in 2018 with Competitor 5 leading this group with a percentile of 98, based on performance on all 50 Top Cardiovascular Hospitals measures

AMI and HF Patients

Where **Profiled Hospital** is strong among peers, and improving

- AMI risk-adjusted inpatient mortality, 30-day mortality, cost per case
- HF risk-adjusted inpatient mortality, 30-day mortality, 30-day readmissions

Where **Profiled Hospital** might have significant opportunity to improve nationally, and compared to these competitors

- AMI 30-day readmissions, ALOS
- HF cost per case, 30-day payment

Executive Summary (cont'd)

CABG and PCI Patients

Where **Profiled Hospital** is strong among peers, and improving

- CABG risk-adjusted inpatient mortality, 30-day readmissions, CABG w IMA use
- PCI risk-adjusted complications, cost per case

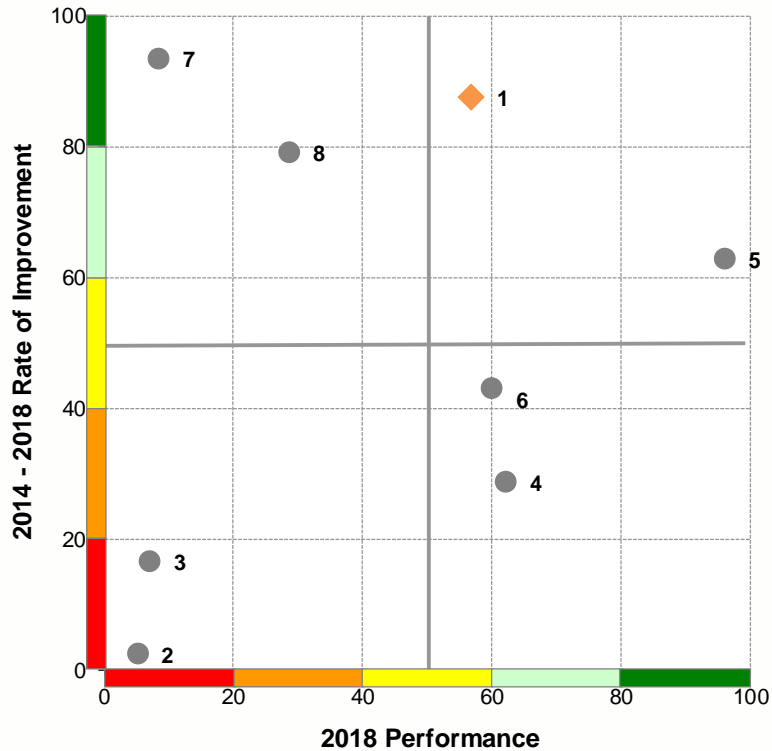
Where **Profiled Hospital** might have significant opportunity to improve nationally, and compared to these competitors

- CABG risk-adjusted complications, 30-day mortality
- PCI risk-adjusted inpatient mortality, ALOS

Overall performance

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Overall performance



Hospital key

- 1** Profiled Hospital
- 2 Competitor 1
- 3 Competitor 2
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- 5 Competitor 4
- 6 Competitor 5
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- 8 Competitor 7

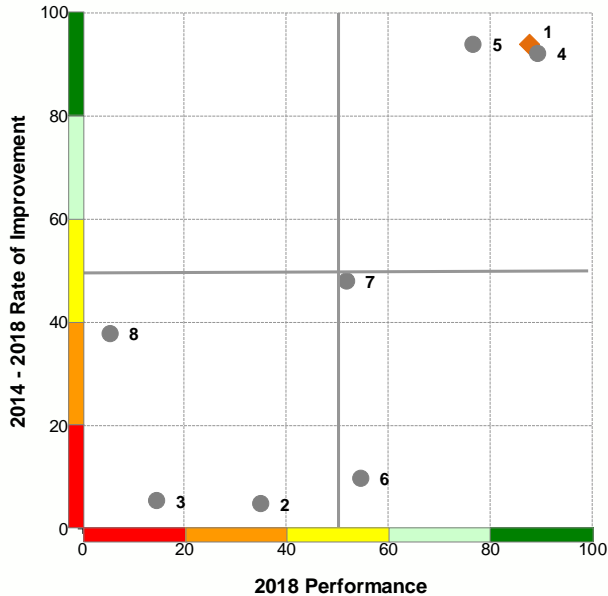
Quintile key

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- > 20 to 40
- > 0 to 20

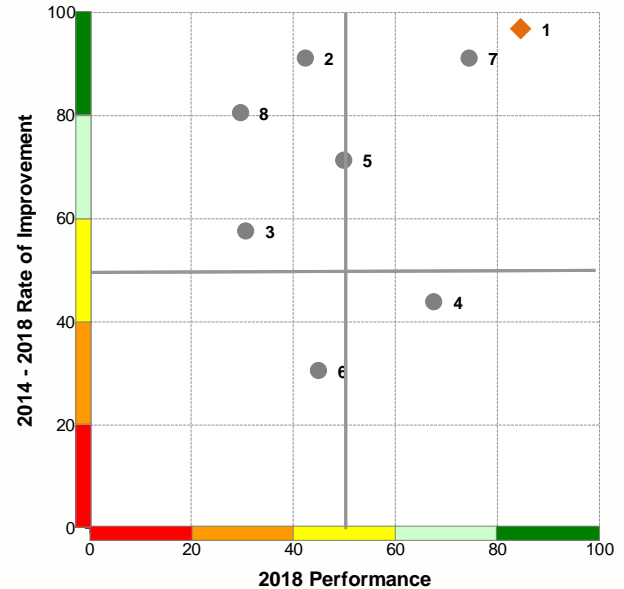
AMI patient group

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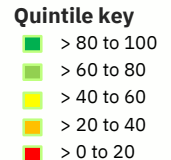
AMI risk-adjusted inpatient mortality



AMI 30-day mortality

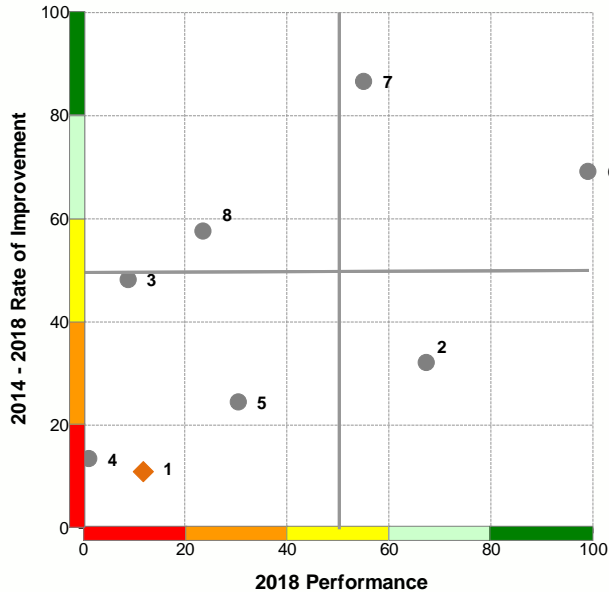


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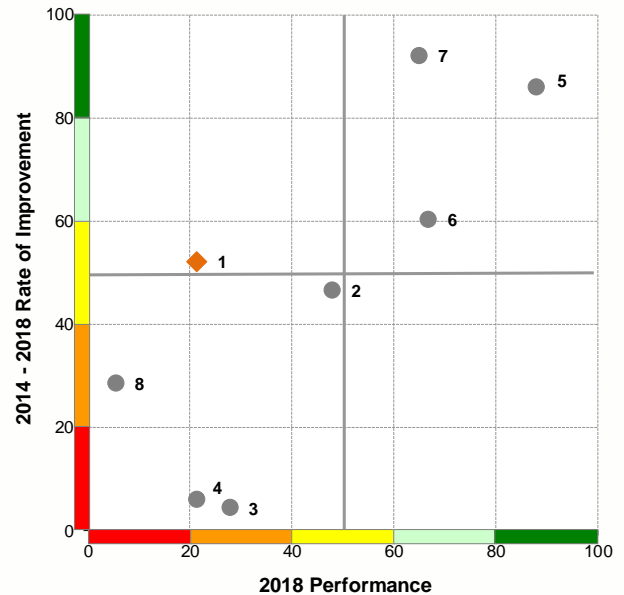


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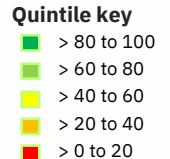
AMI 30-day readmissions



AMI severity-adjusted ALOS

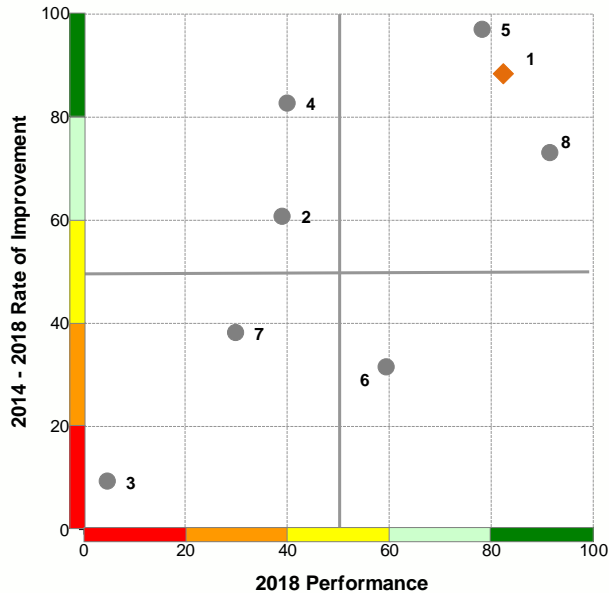


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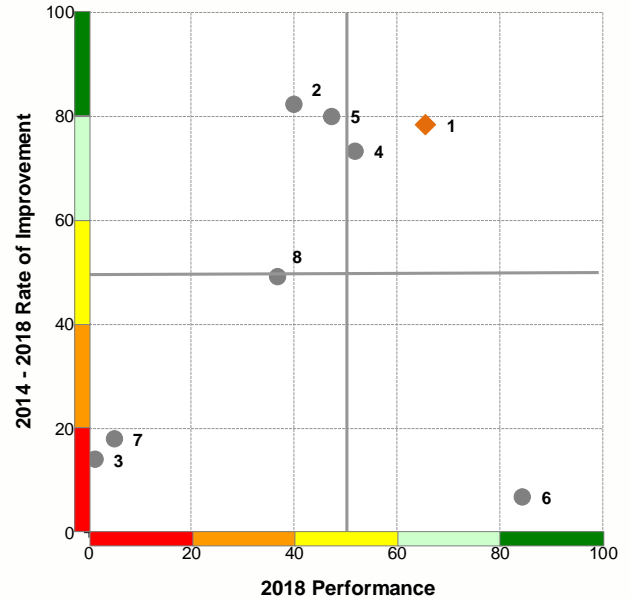
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AMI AWI & severity-adjusted cost per case



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AMI 30-day episode payment

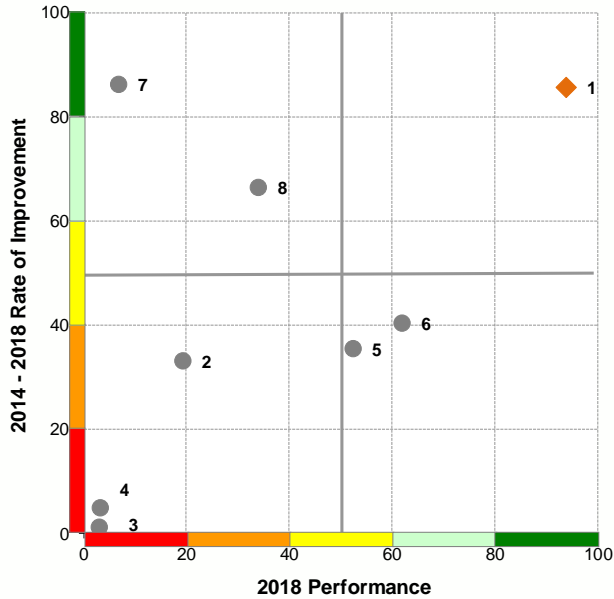


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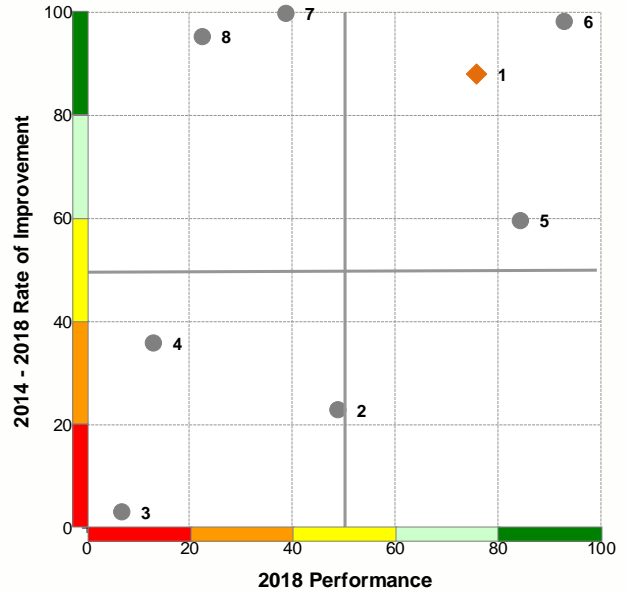
HF patient group

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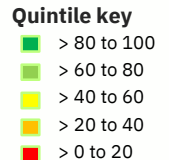
HF risk-adjusted inpatient mortality



HF 30-day mortality

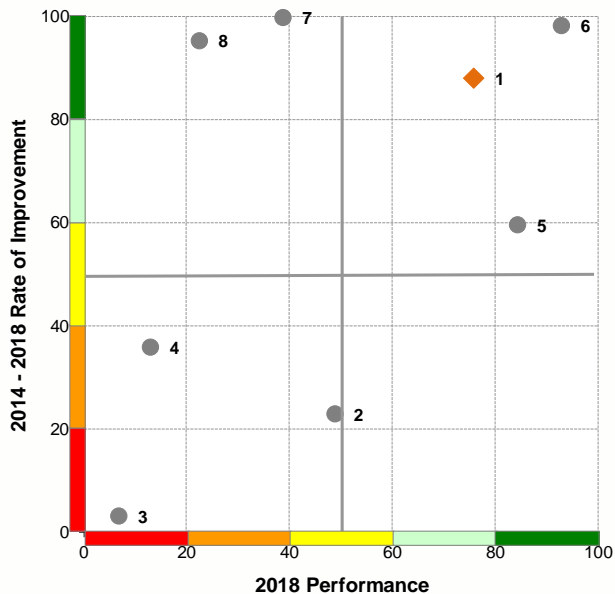


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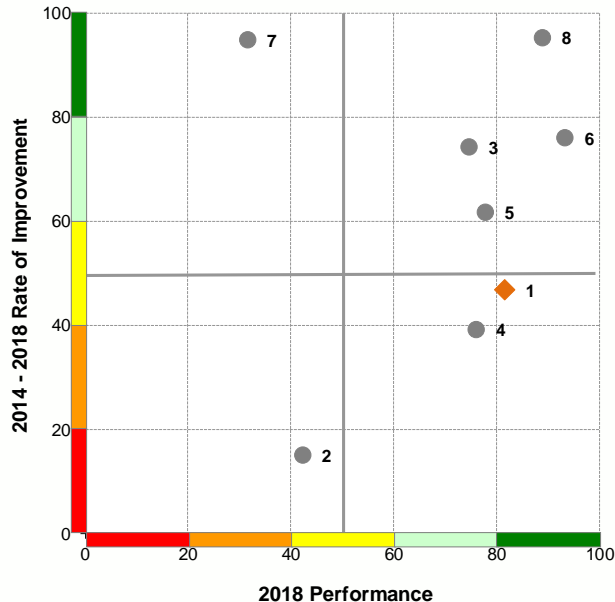


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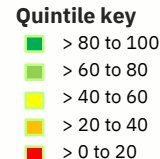
HF 30-day readmissions



HF severity-adjusted ALOS

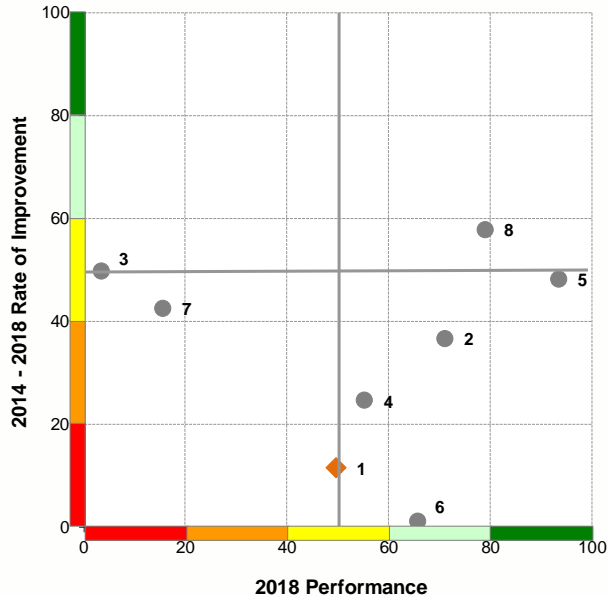


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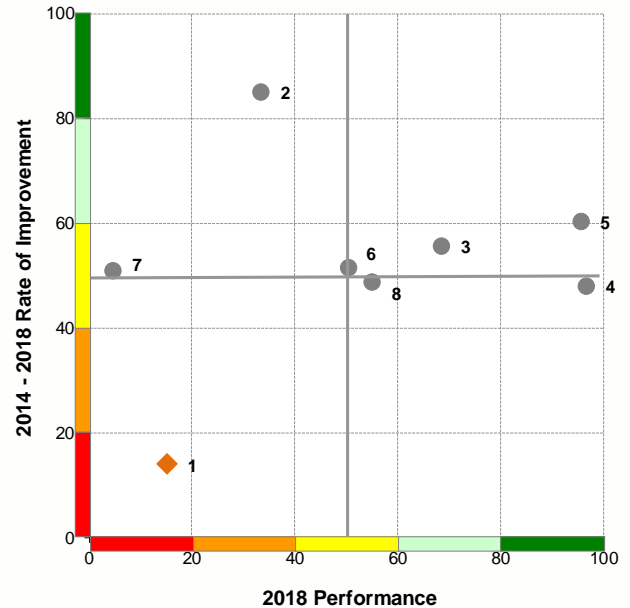
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HF AWI & severity-adjusted cost per case



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30-day episode payment

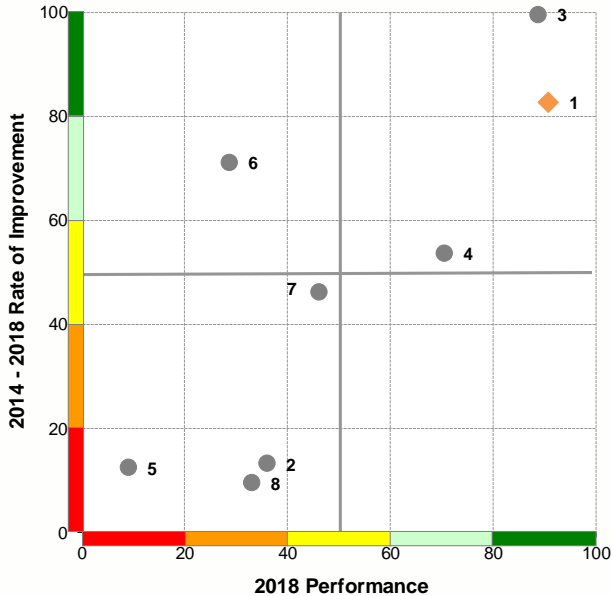


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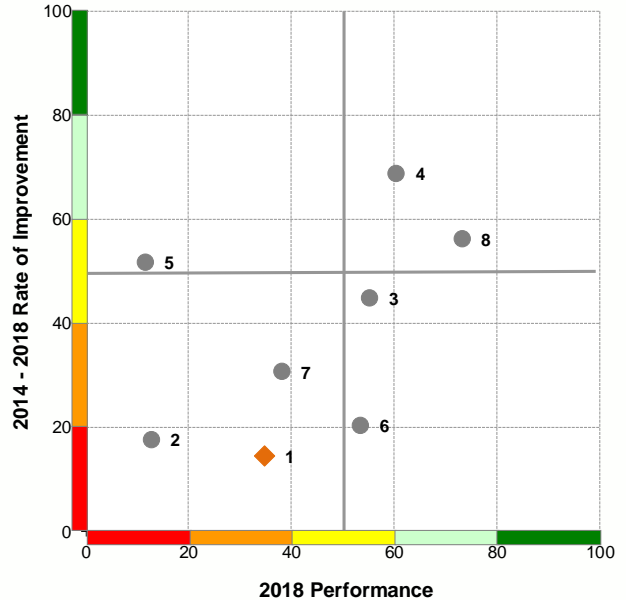
CABG patient group

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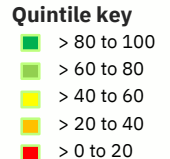
CABG risk-adjusted inpatient mortality



CABG risk-adjusted complications

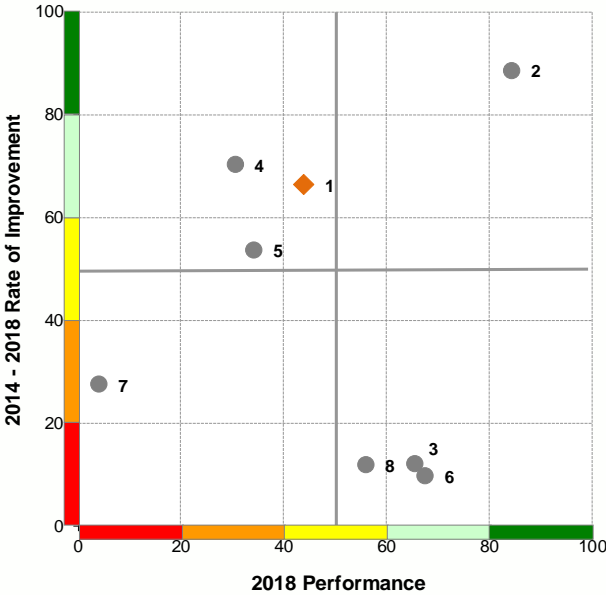


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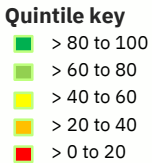


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CABG with IMA use

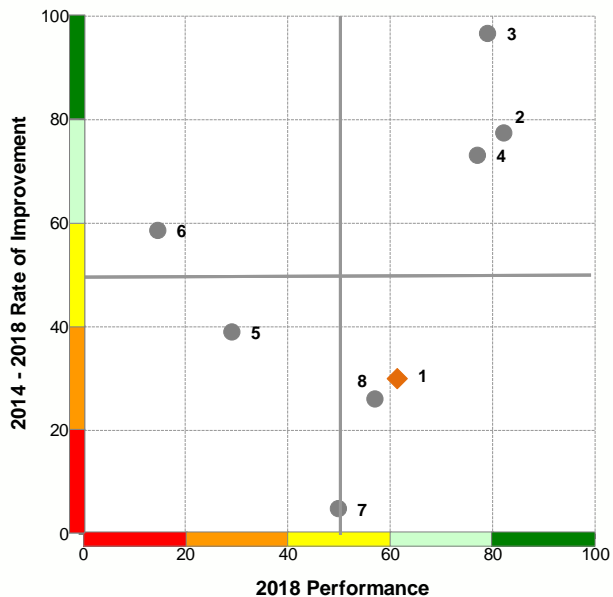


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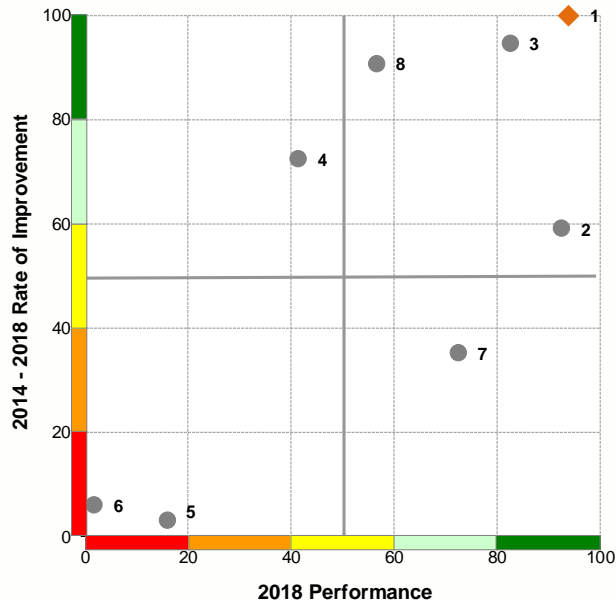


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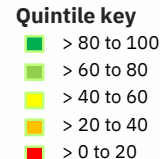
CABG 30-day mortality



CABG 30-day readmissions

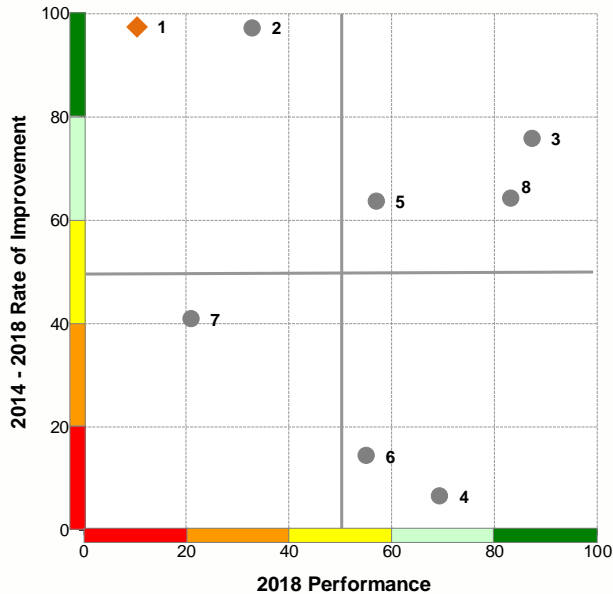


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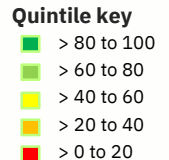
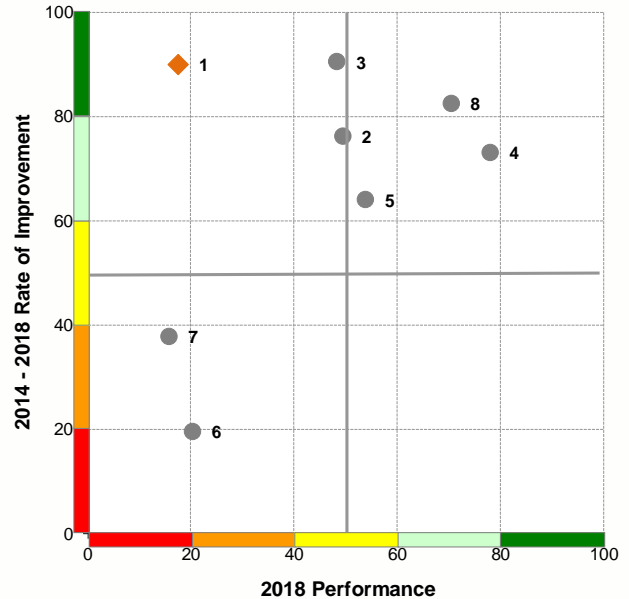
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CABG severity-adjusted ALOS



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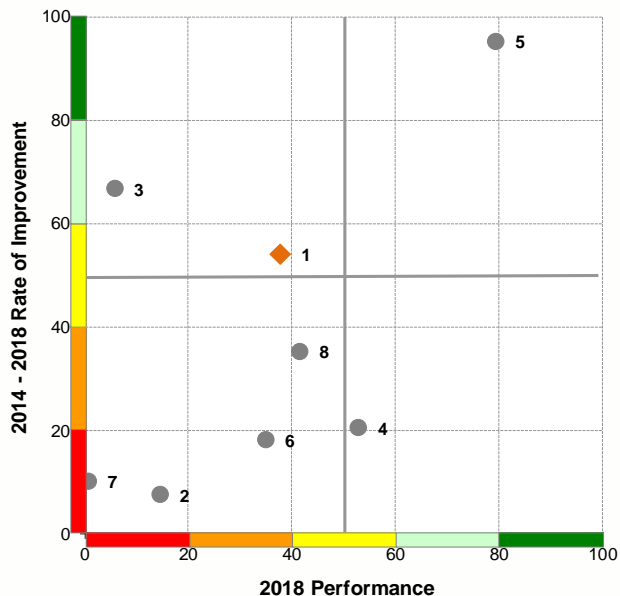
CABG AWI & severity-adjusted cost per case



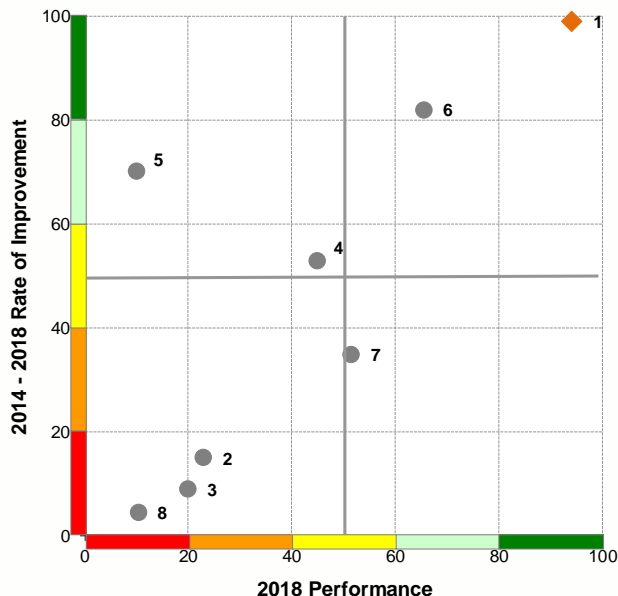
PCI patient group

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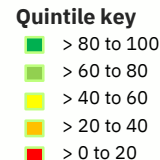
PCI risk-adjusted inpatient mortality



PCI risk-adjusted complications

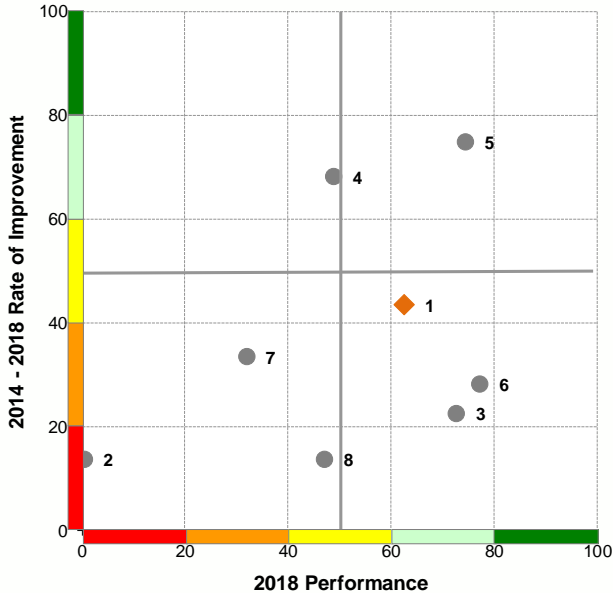


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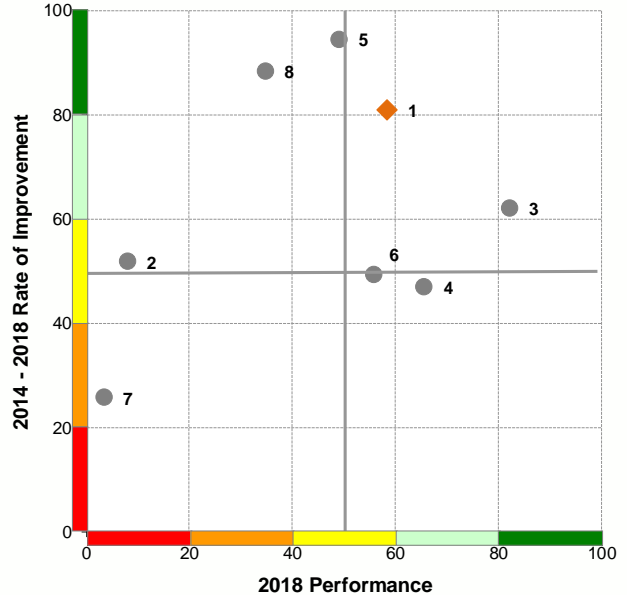
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PCI AWI & severity-adjusted cost per case



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Methodology overview

50 Top Cardiovascular Study Eligibility

All non-federal U.S. acute care hospitals with an open heart program are eligible

- Must have Medicare patient claims, with POA coding (2017-2018)
- Must have data for all included measures

To be in-study, a hospital must have a minimum of 30 cases for each of the included groups:

- Heart Attack patients (AMI)
- Heart Failure patients (HF)
- Percutaneous Coronary Intervention patients (PCI)
- Coronary Artery Bypass Graft patients (CABG)

General ranking methodology

2018 performance

- Uses most current public data (various data set ending in 2018)
- Each measure ranked independently by peer comparison group
- Ranks are weighted, summed and the sum is re-ranked by comparison group to determine each hospital's overall performance score
- Winners are the top scoring overall performers in each comparison group

2014-2018 rate of improvement

- Regression line t-statistic is produced for each measure
- Each measure ranked independently by peer comparison group
- Ranks are weighted, summed and the sum is re-ranked by comparison group to determine each hospital's overall rate of improvement score
- Trend results are presented to guide leadership decision-making. They are not used in the selection of winners.

Patient group definitions

Patient groups are mutually exclusive.

- Coronary artery bypass graft (CABG) group: Includes any patients with CABG (principal or secondary procedure); isolated cases only
- Percutaneous cardiac intervention (PCI) group: Includes any patient with PCI (principal or secondary procedure); excludes patient with CABG or open chest coronary artery angioplasty
- Acute myocardial infarction (AMI) group: Includes medical cases only
- Heart failure (HF) group: Includes medical cases only

CABG patient inclusion rules different for calculation of Percent CABG with IMA use.

- Includes isolated CABGs only
- Excludes all cases with prior CABG px

Hospital Classification

Hospital Comparison Groups	Winners	Total
Teaching Hospitals <i>with</i> Cardiovascular Residency <ul style="list-style-type: none"> – Meet the definition of a Teaching Hospital, below; and – Participate in a Cardio residency / fellowship program accredited by ACGME or AOA: <ul style="list-style-type: none"> ●Adult congenital heart disease ●Advanced heart failure and transplant cardiology ●Cardiology ●Cardiothoracic surgery ●Cardiovascular disease ●Cardiovascular medicine ●Clinical Cardiac Electrophysiology ●Interventional cardiology ●Thoracic surgery ●Thoracic surgery - Integrated. 	15	275
Teaching Hospitals <i>without</i> Cardiovascular Residency <ul style="list-style-type: none"> – Meet at least two (2) of the following three (3) criteria: <ul style="list-style-type: none"> • 200 or more acute-care beds in service • An intern/resident-per-bed ratio of at least 0.03 • Total GME programs of at least 3 	15	291
Community Hospitals <ul style="list-style-type: none"> – Both of the following criteria: <ul style="list-style-type: none"> • 25 or more acute-care beds in service • Not a teaching hospital (as defined above) 	20	423
Totals	50	989

Scorecard domains, measures and rank weights

Domain	Performance Measure	2018 Weight	Trend Weight
Clinical outcomes	Risk-adjusted inpatient mortality (AMI, HF, CABG, PCI)	½ ea	½ ea
	Risk-adjusted complications (CABG, PCI)	¼ ea	¼ ea
Clinical process	Percent CABG patients with IMA use	½	½
Extended outcomes	30-day mortality rate (AMI, HF, CABG)	⅙ ea	⅙ ea
	30-day readmission rate (AMI, HF, CABG)	⅙ ea	⅙ ea
Efficiency	Severity-adjusted average length of stay (AMI, HF, CABG, PCI)	¼ ea	¼ ea
	Wage- and severity-adjusted cost per case (AMI, HF, CABG, PCI)	¼ ea	¼ ea
Extended efficiency	30-day episode payment (AMI, HF)	½ ea	½ ea

Data sources and time frames

Performance Measure	2018 Performance (50 Top Award)	5-Year Trend
Inpatient mortality	MEDPAR Federal Fiscal Year (FFY) 2017 and 2018 ¹	MEDPAR FFY 2013-2018 ¹
Complications	MEDPAR FFY 2017 and 2018 ¹	MEDPAR FFY 2013-2018 ¹
% CABG with IMA use	MEDPAR FFY 2017 and 2018 ¹	MEDPAR FFY 2012-2017 ¹
30-day mortality rates	CMS Hospital Compare (CMSHC) July 1, 2015-June 30, 2018	CMSHC 2014, 2015, 2016, 2017, 2018 3-yr datasets
30-day readmission rates	CMSHC July 1, 2015-June 30, 2018	Same as above
Average length of stay	MEDPAR FFY 2018	MEDPAR FFY 2014-2018
Cost per case	MEDPAR FFY 2018	MEDPAR FFY 2014-2018
30-day episode payment	CMSHC July 1, 2015-June 30, 2018	CMSHC 2014, 2015, 2016, 2017, 2018 3-yr datasets

1. Two years of MEDPAR data are combined to calculate each study year data point.

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