NCDR®
NATIONAL CARDIOVASCULAR DATA REGISTRY

ACTION Registry®

Version 2.4 Outcomes Report Companion Guide

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Overview

The ACTION Registry Institutional Outcomes Report provides detailed analysis of a hospital's individual performance in relation to the entire registry population. This gives insight into care variations and quality improvement opportunities. The report provides the opportunity to compare hospital practice patterns to NCDR benchmarks.

Frequently Used Terminology

R4Q (Rolling Four Quarters)	The four (4) consecutive quarters included in this report. (Example: The 2011Q1 report includes 2010Q2, 2010Q3, 2010Q4 and 2011Q1. The "Q" in 'R4Q" indicates the last quarter of the rolling four quarters).
Benchmark Inclusion Status	Indicates whether a submission will be included in the R4Q aggregated data (benchmark) and comparison group statistics. "Green," "Yellow" and "Red" stoplights denote the status.
Green status	A "Green" status G indicates the submission (one quarter/timeframe) is included in the benchmark and comparison group statistics. The data has successfully passed all data assessment and completeness checks.
Yellow status	A "Yellow" status Y indicates the submission (one quarter/timeframe) is not included in the benchmark and comparison group statistics. Data is displayed in the quarterly column, but is not included in the "My Hospital R4Q" summary. The data has not passed the overall completeness assessment checks.
Red status	A "Red" status R indicates the submission (one quarter/timeframe) is not included in the benchmark or comparison group statistics. Data is not displayed in the quarterly column.
Null status	A null or blank status indicates no submission has been received for that quarter/timeframe. Data is not displayed in the quarterly column.
My Hospital R4Q	The values for a metric/measure (over R4Q) of data submitted by your facility with a Benchmark Inclusion Status of "Green".
All Hospital 50th Pctl	The median (or midpoint or 50th percentile) of all participants' aggregated data for the metric or measure. Half of all participants will be above the median, and half will be below. This value will correspond to the midpoint of the box/whisker plot with a Benchmark Inclusion Status of "Green".
All Hospital 90th Pctl	The 90th percentile of all participants' aggregated data for the metric or measure. 10% of all participants will be above the 90th percentile value, and 90% will be below. This value will correspond to the right-most endpoint of the box/whisker plot with a Benchmark Inclusion Status of "Green".
Comparison Group Pts R4Q	Participating hospitals with same PCI annual volume based on reported data.
DQR	The online system used to check that data are well formed and complete. Data must first be submitted to the DQR to be included in the Outcomes Report.

Access to your Report

Step 1: Check Settings

1. Set privileges to ensure access to your Outcomes Reports on the NCDR Dashboard's Comparator and eReports page.
   a. Your registry site manager (RSM) must check the box next to the Comparator and eReports privilege options within the **Site User Administration** menu for each user.
   b. This privilege only needs to be set once.

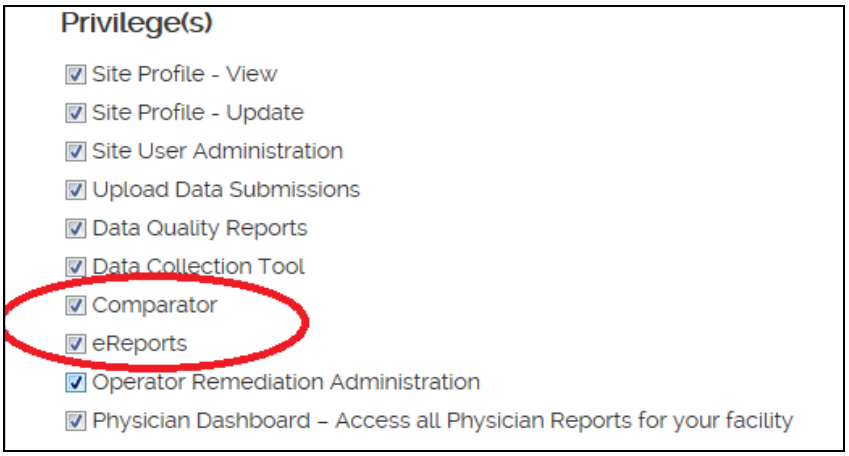


Figure 1: Selecting Privileges: Outcomes Report

2. Set **Email Preferences** to receive the automated Outcomes Report notification.
   a. Click **Individual Profile** from the **Administration** menu.
   b. Check the box next to the privilege marked "Email me when the V4.0 Outcomes Report has been created"
   c. This ensures you will receive an email when a new Outcomes Report is available for download.

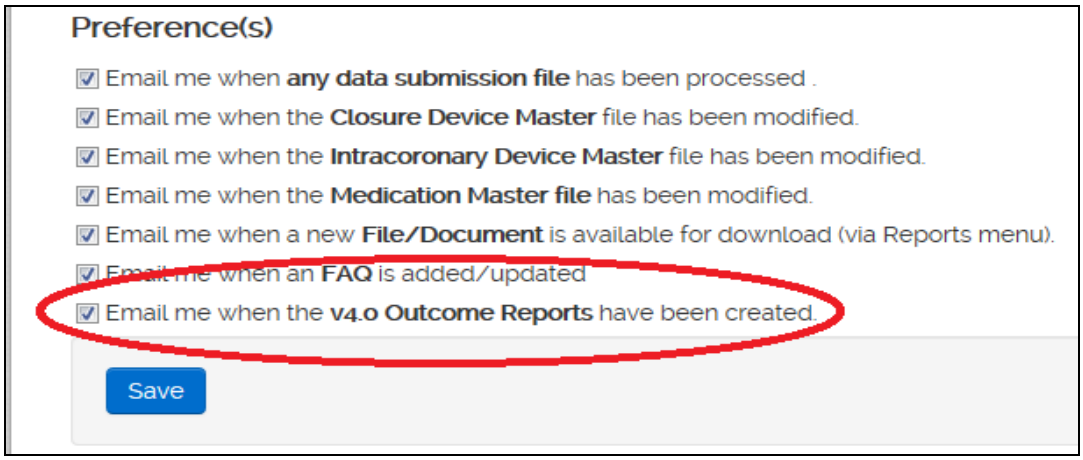


Figure 2: Selecting Email Preferences

Step 2: Download the Report

1) Login to the ACTION Registry website
2) Select Dashboard from the left menu
   - You must have privileges set to access this function (See Step 1).

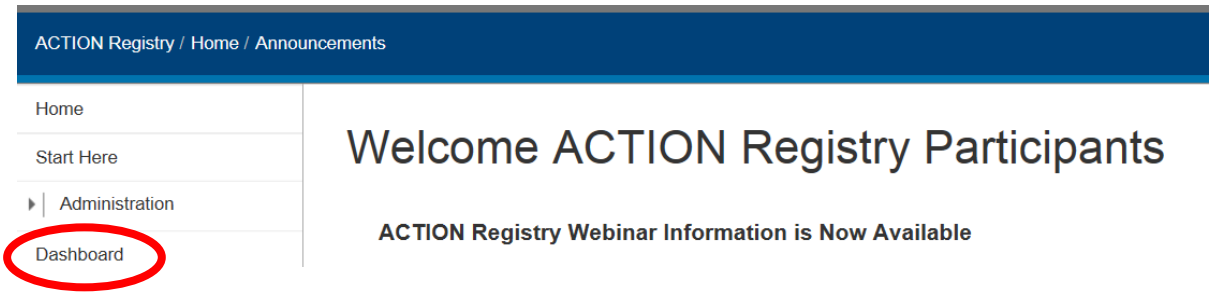


Figure 3: Locating the Dashboard

3) From the Outcomes Report table found on the Dashboard, select your preferred PDF or EXCEL format.

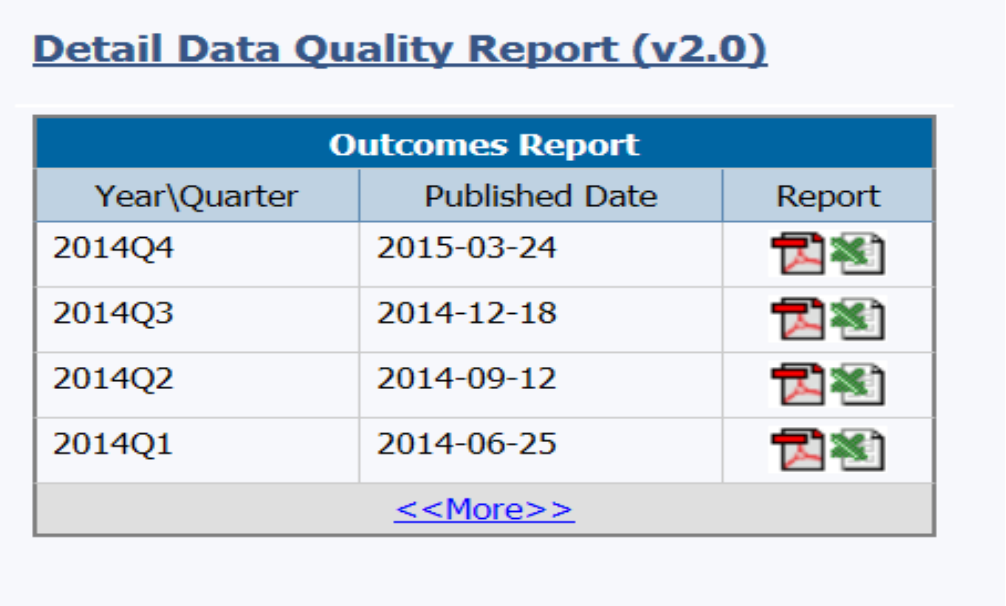
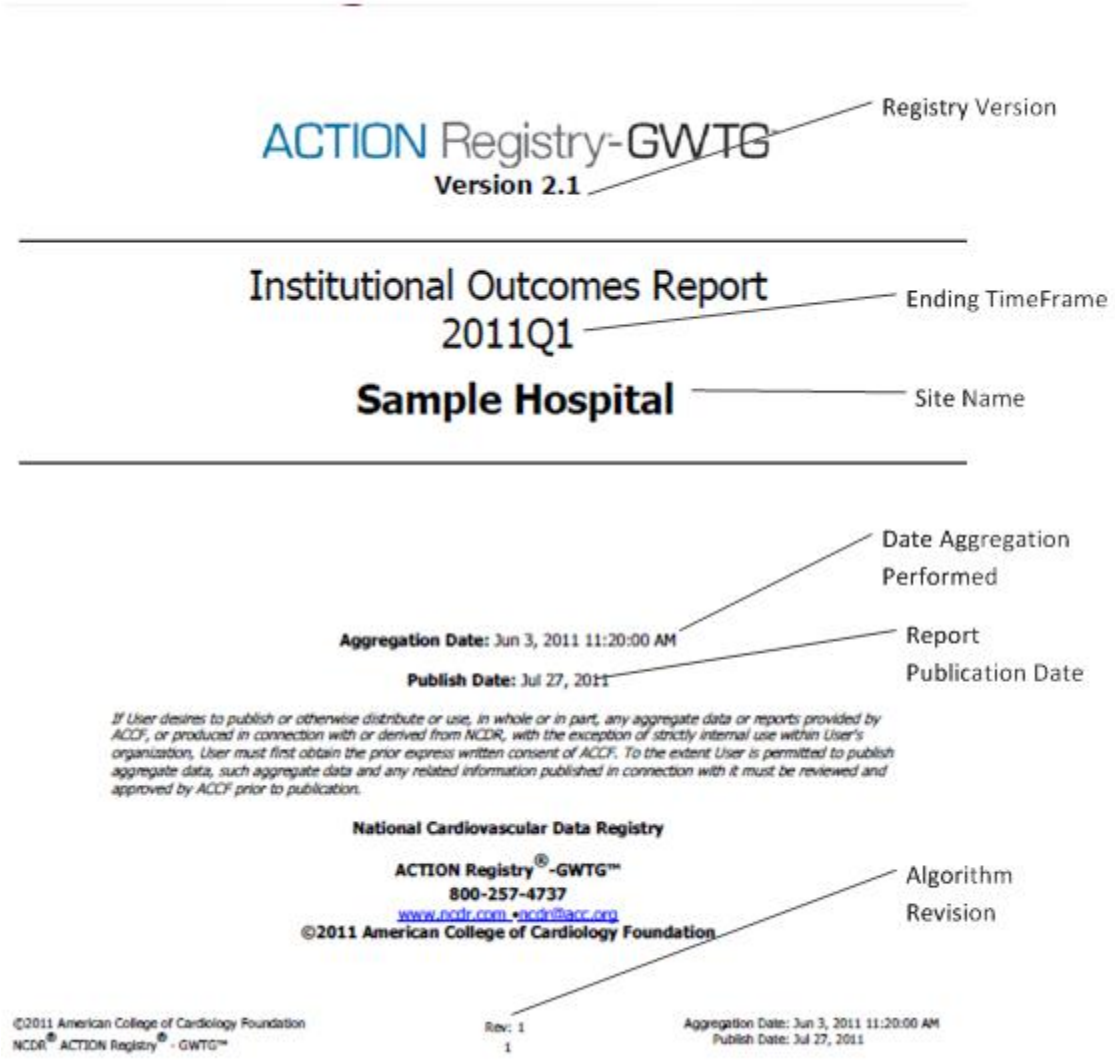


Figure 4: Locating the Reports on the Dashboard

4) When the File Download dialog box appears, select save. Save the file to your local system.

The title page provides a quick snapshot of the report's contents.



Title Page Explained

1. Registry Version
   a. The current release of the ACTION Registry®.

2. Ending Timeframe
   a. Last "year/quarter" of the report
   b. Each report includes the ending timeframe and the previous three consecutive quarters referred to as rolling four quarters (When data is submitted for the 5th Quarter, the oldest data set is dropped from the calculations, thus the term "Rolling 4 Quarters").

3. Site Name and NCDR Participant ID
   a. Facility name as reported on the ACTION Registry® Site Profile.

4. Aggregation Date
   a. Indicates the date that the last aggregation calculations were performed on all the data contained in the data warehouse.
   b. Aggregation only includes data which passes Level 3 of the DQR.

5. Publish Date
   a. Indicates the date when the report was posted to participant's portal on www.ncdr.com.

6. Revision Number
   a. Indicates the "version" of the report.
   b. The Revision Number will increase only if algorithms or fundamental changes have been made to the report since the previous report release.

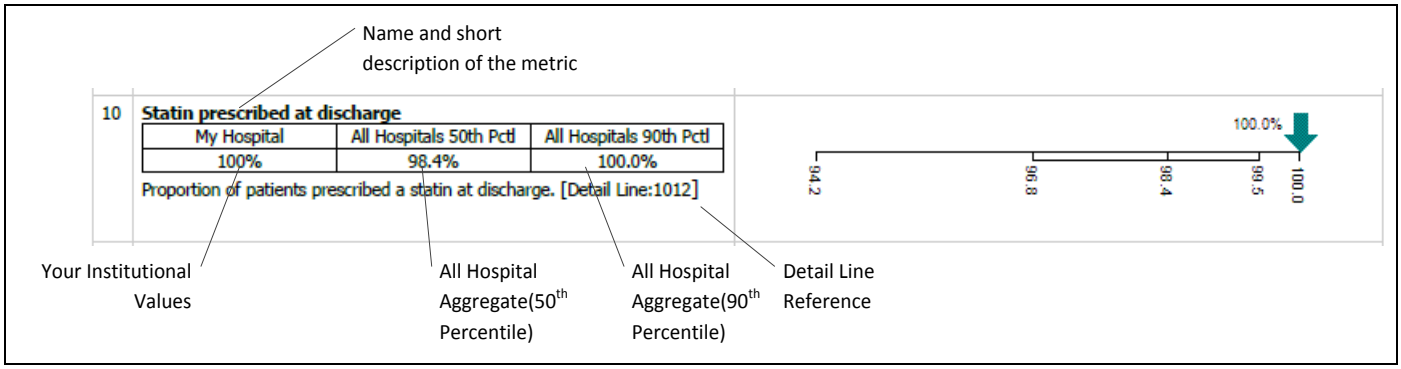


Figure 1: The Executive Summary

Executive Summary

The Executive Summary contains key performance measures and metrics:

1. The Executive summary is divided into three sections: Composite Performance Measures, Performance Measures and Quality Metrics.

2. The performance measures are endorsed by the American College of Cardiology and American Heart Association Task Force on Performance Measures and are appropriate for public reporting.

3. Quality metrics are used to support self-assessment and quality improvement at the provider, hospital, and/or health care system level.

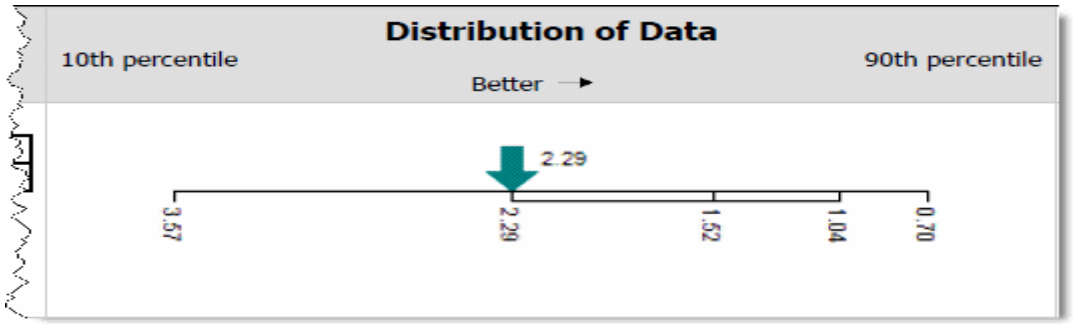
4. Metric Name and Description
   a. The name and a brief description of the metric are listed in the left-most column.

5. Detail Line
   a. This refers directly to the line number in the Detail Section of the report. Each of the metrics refers to lines in the ACTION Registry® outcome report.

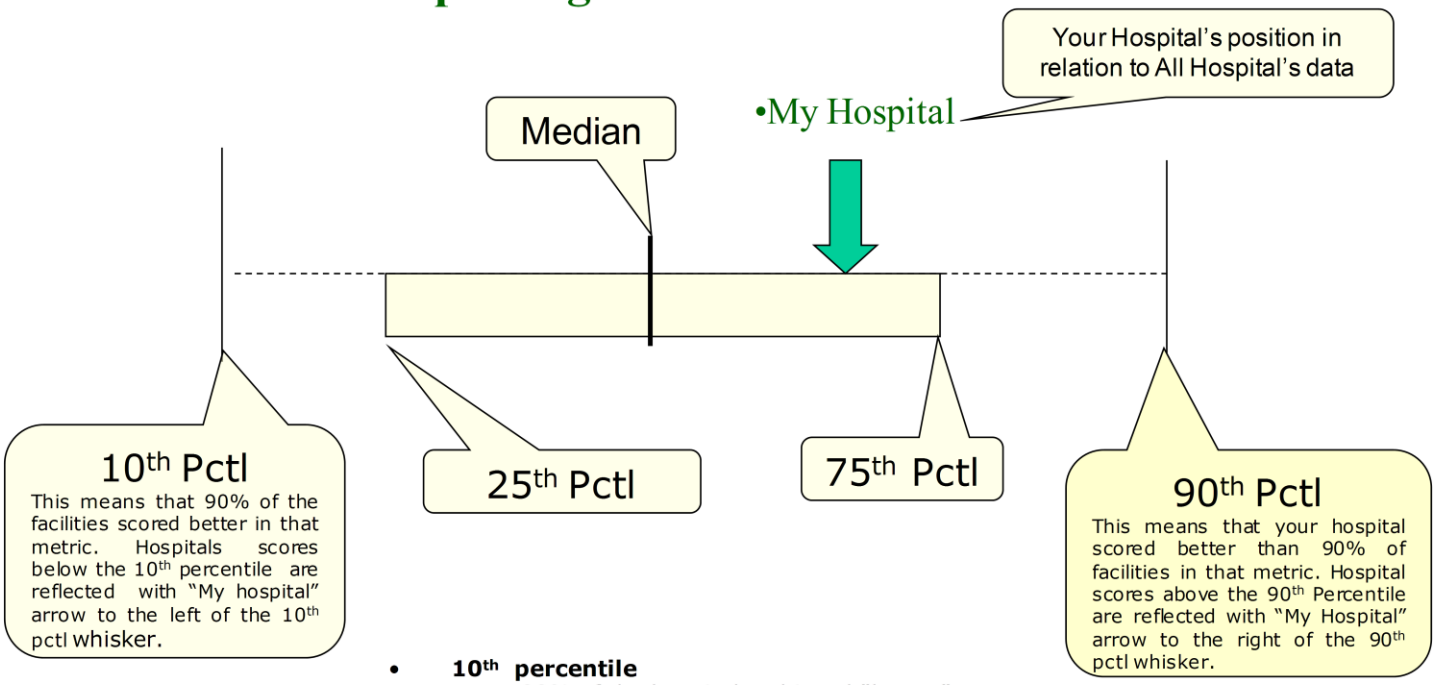
6. My Hospital
    a. Refers to the "My Hospital R4Q %" column of the Detail Section of the report.
    b. This is the value for your institution over the rolling four quarters (R4Q) period.

7. All Hospitals
    a. Refers to the values for all institutions submitting data to the registry, including the total number of instances and the overall percentage.
    b. Median (50th percentile) is the midpoint in a series of numbers; half the data values are above the median, and half are below. For metrics where there are very few instances, the median may read "0", due to the precision in the decimal place.
    c. The Range is the lowest and highest percentiles based on all participants.

Executive Summary—Understanding Box and Whisker



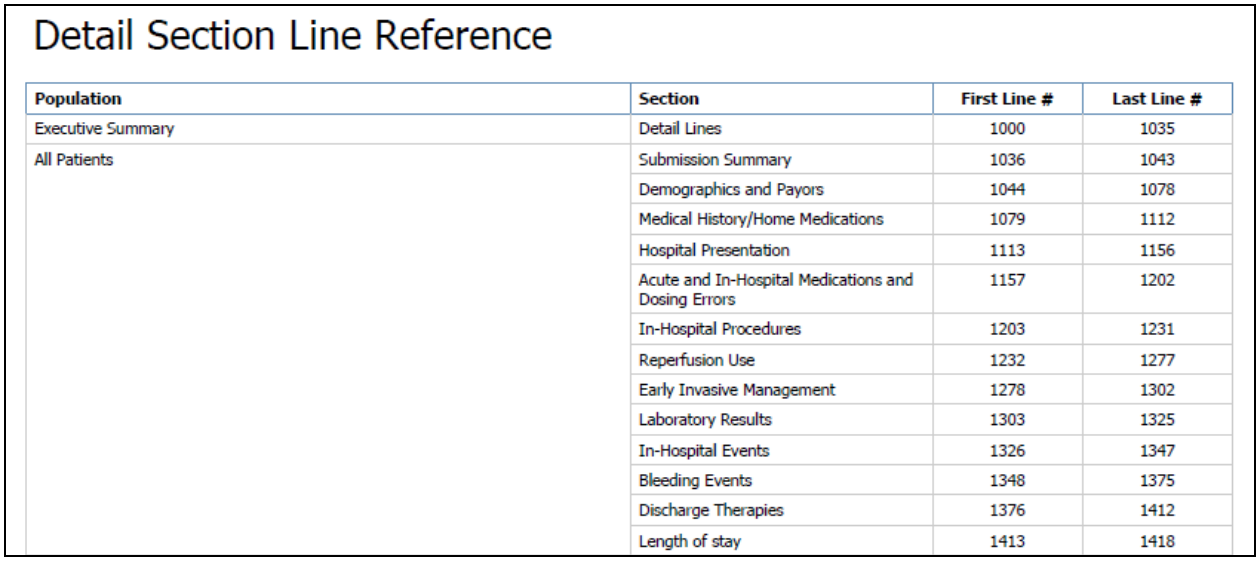
Interpreting Box and Whisker Plots



- **10th percentile**
  - 90% of the hospitals achieved "better" scores than the 10th percentile.
- **25th percentile** or **1st Quartile**
  - 75% of the hospitals achieved "better" scores than the 25th percentile.
- **50th percentile or 2nd Quartile (Median)**
  - Middle of the distribution Half of All Hospital's data is above and half are below the median.
- **75th percentile** or **3rd Quartile**
  - 25% of the hospitals achieved "better" scores; than the 75th percentile.
- **90th percentile**
  - 10% of the hospitals achieved "better" scores than the 90th percentile.

Detail Section Lines

This page is an "index" or "quick guide" to finding sections and subsections within the report.



Detail Section Line Reference

Population	Section	First Line #	Last Line #
Executive Summary	Detail Lines	1000	1035
All Patients	Submission Summary	1036	1043
	Demographics and Payors	1044	1078
	Medical History/Home Medications	1079	1112
	Hospital Presentation	1113	1156
	Acute and In-Hospital Medications and Dosing Errors	1157	1202
	In-Hospital Procedures	1203	1231
	Reperfusion Use	1232	1277
	Early Invasive Management	1278	1302
	Laboratory Results	1303	1325
	In-Hospital Events	1326	1347
	Bleeding Events	1348	1375
	Discharge Therapies	1376	1412
	Length of stay	1413	1418

Figure 2: The Detail Section Line Reference

The report is first sectioned by Population, then by Section. The beginning and ending line numbers of the corresponding section are then provided.

1. Population
   a. This section shows which subgroups of the registry were identified for further comparison e.g. All Patients, STEMI and NSTEMI and Overall AMI Subgroups. **STEMI population includes patients with STEMI Noted = Yes AND AGE ≥ 18. NSTEMI population includes patients STEMI Noted = No AND Positive Cardiac Markers w/in First 24 Hours = Yes AND AGE ≥ 18**.

2. Section
   a. The patient population contains "lines," or algorithms, corresponding to the subject or source of the data. The sections generally correspond to those on the Data Collection Form, i.e., admissions, history and risk factors, procedure data, adverse events, and medications.

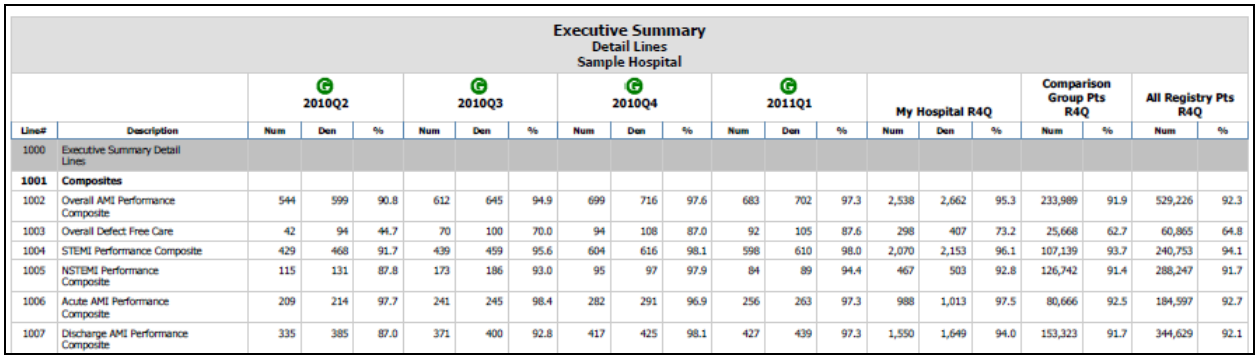
3. First Line #
   a. Displays the first "line" or algorithm for the corresponding section. Use this to quickly locate specific sections of the report.

4. Last Line #
   a. Displays the last "line" or algorithm for the corresponding section.

Detail Section Columns

The Detail Sections are the greater part of the ACTION Registry® Report.

These pages give individual detail on the number of responses that were coded for specific elements.



Executive Summary
Detail Lines
Sample Hospital

		2010Q2			2010Q3			2010Q4			2011Q1			My Hospital R4Q			Comparison Group Pts R4Q		All Registry Pts R4Q	
Line#	Description	Num	Den	%	Num	Den	%	Num	Den	%	Num	Den	%	Num	Den	%	Num	%	Num	%
1000	Executive Summary Detail Lines																			
1001	**Composites**																			
1002	Overall AMI Performance Composite	544	599	90.8	612	645	94.9	699	716	97.6	683	702	97.3	2,538	2,662	95.3	233,989	91.9	529,226	92.3
1003	Overall Defect Free Care	42	94	44.7	70	100	70.0	94	108	87.0	92	105	87.6	298	407	73.2	25,668	62.7	60,865	64.8
1004	STEMI Performance Composite	429	468	91.7	439	459	95.6	604	616	98.1	598	610	98.0	2,070	2,153	96.1	107,139	93.7	240,753	94.1
1005	NSTEMI Performance Composite	115	131	87.8	173	186	93.0	95	97	97.9	84	89	94.4	467	503	92.8	126,742	91.4	288,247	91.7
1006	Acute AMI Performance Composite	209	214	97.7	241	245	98.4	282	291	96.9	256	263	97.3	988	1,013	97.5	80,666	92.5	184,597	92.7
1007	Discharge AMI Performance Composite	335	385	87.0	371	400	92.8	417	425	98.1	427	439	97.3	1,550	1,649	94.0	153,323	91.7	344,629	92.1

Figure 3: Detail Section

1. Header
   a. Population
   b. Section
   c. Facility Name/Participant ID

2. Column Headers
   a. Submission Year and Quarter with Benchmark Inclusion Status
      - The timeframes (YYYYQQ) are displayed from left to right, with the "stoplight" beneath.
   b. My Hospital R4Q
      - Aggregate over the R4Q period (Rolling Four Quarters) for your facility's data.
      - Sums the data from the "Green" timeframes.
   c. Comparison Group Patients R4Q
      - This column displays the aggregate data for all of the facilities that are in your facilities comparison group.
   d. All Registry Patients R4Q
      - This column displays the aggregate data for all of the facilities submitting data to the Registry with a "Green" stoplight.
      - Based on quarterly data. For example, if one participant submits 4 "green" quarters, and one participant submits only 2 "green" quarters, those 6 "green" quarters are included in the Registry Aggregate.

3. Line #
   a. ACTION Registry®- line numbers begin with 1000.
   b. Line numbers are consecutive, even if algorithms have been removed or added.
   c. "Header" rows also have line numbers, even if no data is contained in the row.

4. Description
   a. "Header" rows are shaded in gray. These are often the element, or Sequence Number, coded from the data collection form. The indented lines below the "header row" are the selections for the element.
   b. Not all lines are repeated for all populations. For example, the Median Time to Primary PCI is only reported for STEMI patients.

5. Numerator / Denominator / Percentage
   a. **Num** is the abbreviation for "Numerator." The numerator is the number of occurrences (the count) of the item, element, or selection that meet the criteria. (Mean, median, or standard deviations excluded.)
   b. **Den** is the abbreviation for "Denominator". The denominator is the total number of occurrences of the item, element, or selection that are eligible based on criteria.
   c. **%** is the abbreviation for "Percentage." The percentage is calculated from the numerator and denominator of the line. Lines containing mean, median, and standard deviation calculations do not contain percentages.
   d. Due to available spacing **Comparison Group R4Q and All Registry Patients** columns do not contain denominators.

Understanding Individual Detail Lines

Each line in each the Detail Section corresponds to one or more elements from the data collection form. Most lines contain "counts" of the number of times an element is answered. Some lines are calculated, such as Median Age.

1. To begin, read the "header row" for a line item, it is the element for which we are reporting on how it was coded. In the example below, the element being reported on is Male.

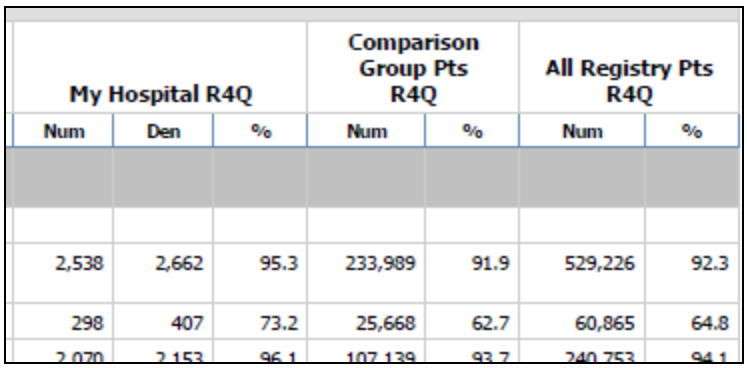
2. Read down to the individual selection. The "Num" column within that row displays the number of times "Male" was coded. The "Den" column displays the denominator value Sex was coded. In the example below, "Male" was coded 77 times out of 97.
3. The percentage is shown in the % column. See Figure 4, below

All Patients
Demographics and Payors
Sample Hospital

		2010Q1			2010Q2			2010Q3			2010Q4			My Hospital R4Q			Comparison Group Pts R4Q		All Registry Pts R4Q	
Line#	Description	Num	Den	%	Num	Den	%	Num	Den	%	Num	Den	%	Num	Den	%	Num	%	Num	%
1100	Demographics																			
1101	**Sex**																			
1102	Male	77	97	79.4	74	99	74.8	76	105	72.4	89	114	78.1	316	415	76.1	26,762	64.9	63,221	64.5
1103	Female	20	97	20.6	25	99	25.3	29	105	27.6	25	114	21.9	99	415	23.9	14,461	35.1	34,878	35.6
1104	**Age at admission**																			
1105	Mean age	61			59			60			61			60			64		65	
1106	Median age	59			57			60			59			58			63		64	
1107	18-44	8	97	8.3	11	99	11.1	11	105	10.5	10	114	8.8	40	415	9.6	3,182	7.7	6,948	7.1
1108	45-54	20	97	20.6	33	99	33.3	23	105	21.9	30	114	26.3	106	415	25.5	7,849	19.0	17,906	18.3
1109	55-64	36	97	37.1	30	99	30.3	35	105	33.3	31	114	27.2	132	415	31.8	10,947	26.6	24,989	25.5
1110	65-69	15	97	15.5	10	99	10.1	11	105	10.5	9	114	7.9	45	415	10.8	5,092	12.4	11,617	11.8
1111	70-74	5	97	5.2	3	99	3.0	12	105	11.4	14	114	12.3	34	415	8.2	4,172	10.1	9,915	10.1
1112	75-79	5	97	5.2	1	99	1.0	7	105	6.7	6	114	5.3	19	415	4.6	3,658	8.9	8,962	9.1
1113	>= 80	8	97	8.3	11	99	11.1	6	105	5.7	14	114	12.3	39	415	9.4	6,322	15.3	17,761	18.1
1114	Medicare age (>= 65)	33	97	34.0	25	99	25.3	36	105	34.3	43	114	37.7	137	415	33.0	19,245	46.7	48,256	49.2

Figure 4: Example - Header rows, Numerator, Denominator

4. Reading to the right, across the same line #, the **My Hospital R4Q** columns display the total number of times the element was coded over the 4 timeframes (inclusion status rules apply). See Figure 5, below.



My Hospital R4Q			Comparison Group Pts R4Q		All Registry Pts R4Q	
Num	Den	%	Num	%	Num	%
2,538	2,662	95.3	233,989	91.9	529,226	92.3
298	407	73.2	25,668	62.7	60,865	64.8
2,070	2,153	96.1	107,139	93.7	240,753	94.1

Figure 5: Example - My Hospital R4Q, Comparison Group Pts, and All Registry Patients columns

5. Significance of the "Element Threshold"
   a. Not all elements have a 100% Element Threshold (see the DQR Companion Guide for a complete description). Depending on the element and composite threshold percentages, you may see lines where the total number does not equal the total number of procedures/patients.

Example:

- For Q1, suppose you submit 100 patients. However, of those, you were only required to complete the element Heart Failure (on first medical contact) in 90% of your Admissions (90 out of 100).
- As a result, you will see "90" as the denominator for lines. This is due to the fact that you only coded the element 90 out of 100 times.

Detail Section

The ACTION Registry® Report in spreadsheet format is a simplified view of the data as reported in the PDF version. Figure 6 illustrates how the format varies from the PDF format:

Sample Hospital (999999)				G			G			G			G								
				2010Q2			2010Q3			2010Q4			2011Q1			My Hospital R4Q			Comparison Group Pts R4Q		All Hospitals R4Q	
Line #	Major Category	Minor Category	Description	Num	Den	%	Num	Den	%	Num	Den	%	Num	Den	%	Num	Den	%	Num	%	Num	%
1000	Executive Summary	Detail Lines	Executive Summary Detail Lines																			
1001	**Executive Summary**	**Detail Lines**	**Composites**																			
1002	Executive Summary	Detail Lines	Overall AMI Performance Composite	398	462	86.2	388	474	81.9	392	505	77.6	302	365	82.7	1,480	1,806	82.0	233,989	91.9	529,226	92.3
1003	Executive Summary	Detail Lines	Overall Defect Free Care	27	80	33.8	11	81	13.6	10	87	11.5	9	63	14.3	57	311	18.3	25,668	62.7	60,865	64.8
1004	Executive Summary	Detail Lines	STEMI Performance Composite	141	159	88.7	95	117	81.2	138	170	81.2	100	120	83.3	474	566	83.8	107,139	93.7	240,753	94.1
1005	Executive Summary	Detail Lines	NSTEMI Performance Composite	257	303	84.8	293	357	82.1	254	333	76.3	202	243	83.1	1,006	1,236	81.4	126,742	91.4	288,247	91.7
1006	Executive Summary	Detail Lines	Acute AMI Performance Composite	136	145	93.8	142	148	96.0	149	158	94.3	108	113	95.6	535	564	94.9	80,666	92.5	184,597	92.7
1007	Executive Summary	Detail Lines	Discharge AMI Performance Composite	262	317	82.7	246	326	75.5	243	347	70.0	194	252	77.0	945	1,242	76.1	153,323	91.7	344,629	92.1
1008	**Executive Summary**	**Detail Lines**	**Performance measures**																			
1009	Executive Summary	Detail Lines	Aspirin at arrival	47	51	92.2	63	63	100.0	59	60	98.3	42	43	97.7	211	217	97.2	24,839	97.5	58,820	97.7
1010	Executive Summary	Detail Lines	Aspirin prescribed at discharge	68	70	97.1	66	68	97.1	63	72	87.5	52	53	98.1	249	263	94.7	35,078	97.8	78,698	98.0

Figure 6: ACTION Registry® Report in XLS Format

1. The major differences are:
   a. No Inclusion Summary
   b. No Detail Line Reference Page
   c. No Section breaks
   d. No "Benchmark Inclusion Status" stoplights

2. Without a Title Page or Inclusion Summary, the file name is the primary indicator of Year/Quarter of the report, as well as the report Revision Number.
   a. For example, the file named "20011Q1_999999_ACTIONv2_OR_rev1[1].xls" indicates that the ending timeframe is "2011Q1", the participant ID is "999999" and the algorithm revision is "r1."

3. The column headers for this report format are:

a.	Registry Name	ACTION Registry®
b.	Participant Name	The six-digit identifier for your institution
c.	Line Number	Line Number (Begins with 1000, matches the PDF version.)
d.	Line Description	Element Description/Algorithm
e.	Timeframe 1	1st timeframe
f.	Timeframe 1 Num	Numerator for the 1st timeframe data
g.	Timeframe 1 Den	Denominator for the 1st timeframe data
h.	Timeframe 1 Per	Percentage for the 1st timeframe data
i.	Timeframe 2	2nd timeframe
j.	Timeframe 2 Num	Numerator for the 2nd timeframe data
k.	Timeframe 2 Den	Denominator for the 2nd timeframe data
l.	Timeframe 2 Per	Percentage for the 2nd timeframe data
m.	Timeframe 3	3rd timeframe
n.	Timeframe 3 Num	Numerator for the 3rd timeframe data
o.	Timeframe 3 Den	Denominator for the 3rd timeframe data
p.	Timeframe 3 Per	Percentage for the 3rd timeframe data
q.	Timeframe 4	4th timeframe
r.	Timeframe 4 Num	Numerator for the 4th timeframe data
s.	Timeframe 4 Den	Denominator for the 4th timeframe data
t.	Timeframe 4 Per	Percentage for the 4th timeframe data

u. My Hospital R4Q Num — Numerator for your hospital's R4Q of data
v. My Hospital R4Q Den — Denominator for your hospital's R4Q of data
w. My Hospital R4Q Per — Percentage for your hospital's R4Q of data
x. Comparison Group PtsR4Q Num — Numerator for the ACTION Registry® Aggregate
y. Comparison Group PtsR4Q R4Q Per — Percentage for the ACTION Registry® Aggregate
z. All Registry Pts R4Q Num — Numerator for the ACTION Registry® Aggregate
aa. All Registry Pts R4Q Per — Percentage for the ACTION Registry® Aggregate

Specifications for Executive Summary Measures and Metrics

Section I: Composite Measures

1. Overall AMI performance composite **Description:** Proportion of performance measure opportunities that were met among eligible opportunities.	
Numerator	Count performance measure opportunities that were met.
Denominator	Count of performance measure opportunities.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Measures include: • Aspirin at Arrival • Evaluation of LV Systolic Function • Reperfusion Therapy (STEMI only) • Time to Fibrinolytics (STEMI only) • Time to Primary PCI (STEMI only) • Aspirin at Discharge • Beta Blocker at Discharge • ACE-I or ARB for LVSD at Discharge • Statin at Discharge • Adult Smoking Cessation Advice • Cardiac Rehab Referral
Exclusion Criteria	Per the individual performance measure.
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).

2. Overall defect free care **Description:** The proportion of patients that receive "perfect care" based upon their eligibility for each performance measure	
Numerator	Count one for all performance measure opportunities that were met. ALL performance measures must be met in order to be included in the numerator. (All or nothing composite measure).
Denominator	Count of performance measure opportunities.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Per the individual performance measure.
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Relevant Citations	This measure has been endorsed by the National Quality Forum, Measure #2377 (http://www.qualityforum.org/Measures_List.aspx)

Endorsed by the National Quality Forum and appropriate for public reporting

3. STEMI performance composite. **Description:** Proportion of performance measure opportunities that were met among eligible opportunities.	
Numerator	Count performance measure opportunities that were met.
Denominator	Count of performance measure opportunities.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds. Measures include: • Aspirin at Arrival • Evaluation of LV Systolic Function • Reperfusion Therapy (STEMI only) • Time to Fibrinolytics (STEMI only) • Time to Primary PCI (STEMI only) • Aspirin at Discharge • Beta Blocker at Discharge • ACE-I or ARB for LVSD at Discharge • Statin at Discharge • Adult Smoking Cessation Advice • Cardiac Rehab Referral
Exclusion Criteria	Per the individual performance measure.
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).

4. NSTEMI performance composite **Description:** Proportion of performance measure opportunities that were met among eligible opportunities.	
Numerator	Count performance measure opportunities that were met.
Denominator	Count of performance measure opportunities.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Measures include: • Aspirin at Arrival • Evaluation of LV Systolic Function • Aspirin at Discharge • Beta Blocker at Discharge • ACE-I or ARB for LVSD at Discharge • Statin at Discharge • Adult Smoking Cessation Advice • Cardiac Rehab Referral
Exclusion Criteria	Per the individual performance measure.
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).

5. Acute AMI performance composite **Description:** Proportion of performance measure opportunities that were met among eligible opportunities.	
Numerator	Count performance measure opportunities that were met.
Denominator	Count of performance measure opportunities.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Measures include: • Aspirin at Arrival • Evaluation of LV Systolic Function • Reperfusion Therapy (STEMI only) • Time to Fibrinolytics (STEMI only) • Time to Primary PCI (STEMI only)
Exclusion Criteria	Per the individual performance measure.
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).

6. Discharge AMI performance composite **Description:** Proportion of performance measure opportunities that were met among eligible opportunities.	
Numerator	Count performance measure opportunities that were met.
Denominator	Count of performance measure opportunities.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Measures include: • Aspirin at Discharge • Beta Blocker at Discharge • ACE-I or ARB for LVSD at Discharge • Statin at Discharge • Adult Smoking Cessation Advice • Cardiac Rehab Referral
Exclusion Criteria	Per the individual performance measure.
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).

Section II: Performance Measures

7. Aspirin at arrival (*Retired with v2.4– See Metric #33)*

Description: Proportion of patients prescribed aspirin at arrival excluding patients transferred in and out.

8. Aspirin prescribed at discharge (*Retired with v2.4– See Metric #34)*

Description: Proportion of patients prescribed aspirin at discharge.

9. Beta-blocker prescribed at discharge **Description: Proportion of patients prescribed a beta-blocker at discharge.**	
Numerator	Count of AMI patients that were prescribed a beta-blocker at discharge.
Denominator	Count of all AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Patients with hospice care Patients contraindicated to beta-blockers Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Beta blockers administered chronically reduce the risk of recurrent ischemic events and long-term mortality in patients surviving myocardial infarction.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

10. Statin prescribed at discharge **Description: Proportion of patients prescribed a statin at discharge.**	
Numerator	Count of AMI patients that were prescribed a stain at discharge.
Denominator	Count of all AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Patients with hospice care Patients contraindicated to Statin and reason documented Patients with an LDL <100 and not discharged on a statin Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	HMG co-A reductase inhibitors (statins) reduce the risk of vascular events and death in patients surviving myocardial infarction.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

11. Evaluation of LV systolic function **Description: Proportion of patients evaluated for LV systolic function.**	
Numerator	Count of AMI patients that had a documented evaluation of LV systolic function during the hospitalization or LVEF Planned for After Discharge.
Denominator	Count of all AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Left ventricular systolic function (LVSF) is important from a therapeutic and prognostic standpoint for patients with AMI. Patients with left ventricular systolic dysfunction may be candidates for specific therapies, such as ACE-inhibitor or ARB treatment or the presence of systolic dysfunction may prompt invasive management during ACS hospitalization (e.g., coronary angiography). In addition, systolic dysfunction following AMI predicts long term survival. Accordingly, clinical practice guidelines have incorporated the assessment of LVSF via any modality (echocardiogram, radionuclide angiogram, or left ventriculography) as a class I recommendation in patients with AMI (NSTEMI or STEMI).
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

12. ACE-I or ARB for LVSD at discharge **Description: Proportion of patients prescribed an ACE-I or ARB for LVSD at discharge.**	
Numerator	Count of AMI patients that have a documented LV systolic function of <40% prescribed ACE-I or ARB at discharge.
Denominator	Count of all AMI patients that have a documented LV systolic function of <40%
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Patients with hospice care Patients that were contraindicated to both an ACE-I or ARB Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	ACE inhibitors reduce the risk of vascular events and death in patients with established coronary artery disease. Among patients surviving myocardial infarction, the benefits of ACE inhibitors are greatest in patients with left ventricular systolic dysfunction. Angiotensin receptor blockers are reasonable alternatives to ACE inhibitors in patients with MI and left ventricular systolic dysfunction or who are intolerant to ACE inhibitors.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

13. Proportion of STEMI patients receiving fibrinolytics within 30 minutes **Description: Proportion of STEMI patients with a time from your hospital arrival (or subsequent ECG if ST elevation first noted on subsequent ECG) to fibrinolytics <= 30 minutes.**	
Numerator	Count of all STEMI patients that received fibrinolytics within 30 minutes of arrival or subsequent ECG (if ST elevation first noted on subsequent ECG)
Denominator	Count of all STEMI patients that received fibrinolytic (thrombolytic) therapy
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 6 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients transferred in Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Acute reperfusion therapy for patients with STEMI significantly reduces the risk of death. This benefit is most effective when provided promptly after presentation.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

14. Median time to fibrinolytic therapy for STEMI patients **Description: Your hospital's median time from hospital arrival to fibrinolytics for STEMI patients in minutes.**	
Median	Arrival to fibrinolytic dose start date/time when ST elevation noted on first ECG (or subsequent ECG with STEMI or STEMI equivalent)
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 6 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients transferred in Patients with a non-system reason for delay for thrombolytic Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Acute reperfusion therapy for patients with STEMI significantly reduces the risk of death. This benefit is most effective when provided promptly after presentation.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

15. Proportion of STEMI patients receiving primary PCI within 90 minutes **Description: Proportion of STEMI patients with a time from your hospital arrival (or subsequent ECG if ST elevation first noted on subsequent ECG) to primary PCI <= 90 minutes.**	
Numerator	Count of all STEMI patients that received a primary PCI within 90 minutes of arrival or subsequent ECG (if STEMI first noted on subsequent ECG).
Denominator	Count of all STEMI patients that receive a primary PCI
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 24 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients transferred in Patients that received fibrinolytics prior to PCI PCI indication described as Rescue PCI for STEMI, PCI for NSTEMI, PCI for STEMI (stable after successful full-dose lytic), PCI for STEMI (unstable, >12 hr from symptom onset), PCI for STEMI (stable, >12 hr from symptom onset) or Other Patients with a non-system reason for delay for PCI ***and*** a time to First Device Activation >90 minutes Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Door to balloon time represents the date/time difference between “Arrival Date” and “Reperfusion Date”. According the ACC/AHA performance measures for STEMI/NSTEMI report, “Acute reperfusion therapy for patients with STEMI significantly reduces the risk of death and should be provided to all eligible patients.” Hospital policies and procedures materially affect door-to-balloon time. This measure is insensitive to differences in case mix. 2007 ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction recommends: “Primary PCI should be performed as quickly as possible with a goal of a medical contact–to-balloon or door-to-balloon interval of within 90 minutes.”
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

16. Median Time to primary PCI for STEMI patients **Description: Your hospital's median time from hospital arrival to primary PCI for STEMI patients in minutes.**	
Median	Arrival to first device activation date/time when STEMI noted on first ECG or subsequent ECG (if STEMI first noted on subsequent ECG).
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 24 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients transferred in Patients that received fibrinolytics prior to PCI PCI indication described as Rescue PCI for STEMI, PCI for NSTEMI, PCI for STEMI (stable after successful full-dose lytic), PCI for STEMI (unstable, >12 hr from symptom onset), PCI for STEMI (stable, >12 hr from symptom onset) or Other Patients with a non-system reason for delay for PCI ***and*** a time to First Device Activation >90 minutes Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Door to balloon time represents the date/time difference between “Arrival Date” and “Reperfusion Date”. According the ACC/AHA performance measures for STEMI/NSTEMI report, “Acute reperfusion therapy for patients with STEMI significantly reduces the risk of death and should be provided to all eligible patients.” Hospital policies and procedures materially affect door-to-balloon time. This measure is insensitive to differences in case mix. 2007 ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction recommends: “Primary PCI should be performed as quickly as possible with a goal of a medical contact–to-balloon or door-to-balloon interval of within 90 minutes.”
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

17. Reperfusion therapy **Description: Proportion of STEMI patients that received either fibrinolytics or a primary PCI.**	
Numerator	Count of all STEMI patients that received fibrinolytic therapy, a primary PCI or whose discharge location is other hospital and transfer for PCI.
Denominator	Count of all STEMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 12 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients with a discharge location of AMA Patients with comfort measures only Patients with Reason for PCI not performed and Reason thrombolytic not administered Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Acute reperfusion therapy for patients with STEMI significantly reduces the risk of death, and should be provided to all eligible patients.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

18. Time from ED arrival at STEMI referral facility to ED discharge from STEMI referral facility in patients transferred for PCI **Description: Your hospital's median time in minutes from ED arrival at referral facility to ED discharge at referral facility among patients transferred for a primary PCI.**	
Median	Arrival at outside facility to transfer from outside facility when ST elevation noted on first ECG or subsequent ECG (if STEMI first noted on subsequent ECG).
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 24 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients that received thrombolytic (fibrinolytic) PCI indication described as Rescue PCI for STEMI, PCI for NSTEMI, PCI for STEMI (stable after successful full-dose lytic), PCI for STEMI (unstable, >12 hr from symptom onset), PCI for STEMI (stable, >12 hr. from symptom onset) or Other Patients with a non-system reason for delay for PCI Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q)
Clinical Rationale/ Recommendation	Class I: 1. Patients with STEMI who have cardiogenic shock and are less than 75 years of age should be brought immediately or secondarily transferred to facilities capable of cardiac catheterization and rapid revascularization (PCI or CABG) if it can be performed within 18 hours of onset of shock. (Level of Evidence: A) 2. Patients with STEMI who have contraindications to fibrinolytic therapy should be brought immediately or secondarily transferred promptly (i.e., primary receiving hospital door-to-departure time less than 30 minutes) to facilities capable of cardiac catheterization and rapid revascularization (PCI or CABG). (Level of Evidence: B)
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

19. Time from ED arrival at STEMI referral facility to Primary PCI at STEMI receiving facility among transferred patients **Description: Your hospital's median time in minutes from arrival at STEMI referring facility to primary PCI at STEMI receiving facility among patients transferred for a primary PCI.**	
Median	Arrival at outside facility to first device activation date/time when ST elevation noted on first ECG or subsequent ECG (if STEMI first noted on subsequent ECG).
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds Within 24 hours of arrival or subsequent ECG (whichever was used to determine the STEMI)
Exclusion Criteria	Patients with a thrombolytics dose start date/time prior to arrival date/time PCI indication described as Rescue PCI for STEMI, PCI for NSTEMI, PCI for STEMI (stable after successful full-dose lytic), PCI for STEMI (unstable, >12 hr from symptom onset), PCI for STEMI (stable, >12 hr from symptom onset) or Other Patients who are Lytic Ineligible and requiring prolonged transfer time for primary PCI Patients with a non-system reason for delay for PCI Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	The benefits of timely acute reperfusion for STEMI with either fibrinolysis or primary percutaneous coronary intervention (PCI) are substantial. In centers where PCI is not available on site, patients may be transferred to another facility for treatment. Because delayed PCI may not be as beneficial as timely fibrinolysis, opting for transfer for PCI rather than fibrinolysis requires that transfer be performed in a timely manner.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

20. Adult smoking cessation advice counseling **Description: Proportion of patients that received smoking cessation advice/counseling among those that have smoked within the past year.**	
Numerator	Count of AMI patients that received smoking counseling.
Denominator	Count of all AMI patients that are current/recent smokers
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Patients with hospice care Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Smoking cessation is essential to their recovery, long-term health, and the prevention of subsequent reinfarction In patients surviving MI.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

21. Cardiac rehabilitation patient referral from an inpatient setting **Description: Proportion of patients that received a cardiac rehab referral.**	
Numerator	Count of AMI patients that a received cardiac rehab referral from an inpatient setting.
Denominator	Count of all AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients with medical reason, patient reason, or health care system reason for no cardiac rehabilitation referral Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Patients with hospice care Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	A key component to outpatient CR program utilization is the appropriate and timely referral of patients. Generally, the most important time for this referral to take place is while the patient is hospitalized for a qualifying event/diagnosis (MI, CSA, CABG, PCI, cardiac valve surgery, or cardiac transplantation). This performance measure has been developed to help health care systems implement effective steps in their systems of care that will optimize the appropriate referral of a patient to an outpatient CR program. This measure is designed to serve as a stand-alone measure or, preferably, to be included within other performance measurement sets that involve disease states or other conditions for which CR services have been found to be appropriate and beneficial (e.g., following MI, CABG surgery). Effective referral of appropriate inpatients to an outpatient CR program is the responsibility of the health care team within a health care system that is primarily responsible for providing cardiovascular care to the patient during the hospitalization.

Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK; ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99 Masoudi, FA, DeLong, E, Erwin, JP, Goff, DC, Grady, K, Green, LA, Heidenreich, PA, Jenkins, KJ, Loth, AR, Peterson, ED, Shahian, DM; AACVPR/ACCF/AHA 2010 Update: Performance Measures on Cardiac Rehabilitation for Referral to Cardiac Rehabilitation/Secondary Prevention Services. J Am Coll Cardiology 2010; 56(14): 735-1097

Section III: Quality Metrics - *to support self-assessment and quality improvement at the provider, hospital, and/or health care system level.*

22. Door to 1st ECG **Description: Proportion of AMI patients that received an ECG within 10 minutes of arrival at participating hospital.**	
Numerator	Count of AMI patients who received an ECG within 10 minutes of arrival at participating hospital.
Denominator	Count of AMI patients.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients with the first ECG obtained pre-hospital Patients with first ECG date/time > 24 hours after arrival date/time Patients with a transferred from an outside facility Patients with non-system reason for delay, First ECG Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	A 12-lead ECG should be obtained immediately (within 10 min) in patients with ongoing chest discomfort and as rapidly as possible in patients who have a history of chest discomfort consistent with acute coronary syndrome but whose discomfort has resolved by the time of evaluation.
Relevant Citations	Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;():. doi:10.1016/j.jacc.2014.09.017. O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

23. Acute ADP receptor inhibitor therapy among STEMI patients **Description: Proportion of STEMI patients prescribed ADP Receptor Inhibitors 24 hours prior to or after 1st hospital arrival**	
Numerator	Count of STEMI patients prescribed ADP Receptor Inhibitors 24 hours prior to or 24 hours after 1st hospital arrival
Denominator	Count of STEMI patients
Inclusion Criteria	All STEMI patients Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients transferred in Patients with a discharge date equal to arrival date Patients with comfort measures only Patients with hospice care and discharge date is the day of or day after arrival date Patients with a discharge location of AMA the day of or day after arrival date Patients with a discharge status of deceased with a discharge date the day of or day after arrival date Clopidogrel, Prasugrel,or Ticagrelor contraindicated Patients with CABG= 'Yes' Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called "rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

24. Acute anticoagulant agent for NSTEMI **Description:** Proportion of NSTEMI patients prescribed unfractionated Heparin, Enoxaparin, or Bivalirudin 24 hours prior to or 24 hours after 1st hospital arrival.	
Numerator	All NSTEMI patients who are prescribed unfractionated Heparin, Enoxaparin, or Bivalirudin 24 hours prior to or 24 hours after hospital arrival.
Denominator	All NSTEMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients transferred in Patients with a discharge date equal to arrival date Patients with hospice care and discharge date the day of or day after arrival date Patients with a discharge location of AMA date the day of or day after arrival date Patients with comfort measures only Patients with a discharge status of deceased with a discharge date the day of or day after arrival date Anticoagulant contraindicated Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	
Relevant Citations	Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;():. doi:10.1016/j.jacc.2014.09.017.

25. Excessive initial unfractionated heparin (UFH) dose **Description:** Proportion of AMI patients that received: • Initial bolus dose of UFH >70 units per kilogram OR • Total initial bolus dose exceeding 4000 units OR • Initial infusion > 12 units per kilogram per hour OR • Total initial infusion >1000 units per hour.	
Numerator	Count of AMI patients who received: • Initial bolus dose of UFH >70 units per kilogram OR • Total initial bolus dose exceeding 4000 units OR • Initial infusion >12 units per kilogram per hour OR • Total initial infusion > 1000 units per hour.
Denominator	Count of AMI patients who received intravenous UFH within 24 hours of hospital arrival
Inclusion Criteria	All AMI patients who receive UFH within 24 hours of hospital arrival Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	STEMI patients with a PCI indication of primary PCI for STEMI Patients given another anticoagulant therapy (Enoxaparin or Bivalirudin) prior to intravenous UFH Patients with IV UFH start date/time after diagnostic coronary angiography date/time Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Test performance measure
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019. Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;64(24):e139-e228. doi:10.1016/j.jacc.2014.09.017.

26. Excessive initial enoxaparin dose **Description:** Proportion of AMI patients that received an initial dose of subcutaneous Enoxaparin >1.05 mg per kilogram.	
Numerator	Count of AMI patients who received an initial dose of subcutaneous enoxaparin >1.05 mg per kilogram.
Denominator	Count of AMI patients who received subcutaneous Enoxaparin within 24 hours after hospital arrival.
Inclusion Criteria	All AMI patients who receive enoxaparin within 24 hours of hospital arrival Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients given another anticoagulant therapy (unfractionated Heparin or Bivalirudin) prior to subcutaneous Enoxaparin Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Test performance measure
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

27. Excessive initial GPIIb-IIIa inhibitor therapy **Description:** Proportion of AMI patients that received GPIIb-IIIa (Full dose of Tirofiban if CrCL <30 cc/min and/or dialysis = yes or full dose of Eptifibatide if CrCL <50 cc/min and /or dialysis = yes)	
Numerator	Count of patients who received: GP IIb-IIIa (Full dose of Tirofiban if CrCL <30 cc/min and/or dialysis = yes or full dose of Eptifibatide if CrCL <50 cc/min and/or dialysis = yes)
Denominator	Count of AMI patients who received Eptifibatide or Tirofiban within 24 hours of hospital arrival
Inclusion Criteria	All AMI patients who received Eptifibatide or Tirofiban within 24 hours of hospital arrival. Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients who received Abciximab Patients with initial Creatinine Clearance value missing and no dialysis Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	Test performance measure
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

28. AMI Revascularized patients discharged on ADP Receptor Inhibitors
(Retired with v2.4- See Metric #35)

Description: Proportion of AMI revascularized patients prescribed an ADP receptor inhibitor at discharge.

29. ADP receptor inhibitors prescribed at discharge for medically treated AMI patients **Description:** Proportion of AMI medically treated patients prescribed an ADP receptor inhibitor at discharge.	
Numerator	Count of AMI patients who are prescribed ADP Receptor Inhibitors at hospital discharge
Denominator	Count of Medically treated AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients with a discharge location of other acute care hospital Patients with comfort measures only Patients with hospice care Patients with a discharge status of deceased Contraindication to ADP Receptor Inhibitors (Clopidogrel, Ticlopidine, Ticagrelor and Prasugrel) Patients with a discharge location of AMA Patients who had a coronary artery bypass graft (CABG) procedure performed Patients who received percutaneous coronary intervention (PCI) with or without stent placement Patients with a discharge medication of Warfarin, Dabigatran, Rivaroxaban, or Apixaban Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	For ACS patients who are treated medically without PCI and stenting, dual anti-platelet therapy has been demonstrated to reduce recurrent cardiovascular events. For UA/NSTEMI patients, the CURE trial demonstrated the benefit of Clopidogrel versus placebo in addition to aspirin for reducing cardiovascular death, MI or stroke. There was a 20% relative risk reduction for patients treated with Clopidogrel for an average of 9 months following ACS hospitalization. For STEMI patients, the COMMIT trial showed a 9% relative risk reduction of Clopidogrel versus placebo in addition to aspirin for the combined endpoint of death, re-infarction or stroke at 30 days among medically treated patients not planned to receive PCI. Patients received an average of 15 days of Clopidogrel.
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019

30. Aldosterone blocking agents at discharge for AMI patients **Description:** Proportion of AMI patients prescribed an aldosterone blocking agent at discharge.	
Numerator	Count of AMI patients with LVSD who receive an aldosterone blocking agent at discharge
Denominator	Count of AMI patients with an EF<40% AND diabetes mellitus or heart failure.
Inclusion Criteria	All AMI patients with an EF<40% (moderate or severe), AND history of diabetes mellitus OR; history of heart failure, heart failure on presentation, or heart failure as an in-hospital event Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients with a discharge location of other acute care hospital Patients with comfort measures only Patients with hospice care Patients with a discharge location of AMA Patients with a discharge status of deceased Contraindicated to aldosterone blocking agents Creatinine >2.5 mg/dL in men and >2.0 mg/dL in women Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	
Relevant Citations	Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;():. doi:10.1016/j.jacc.2014.09.017. O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

31. LDL-Cholesterol Assessment (*Retired with v2.4)* **Description: Proportion of patients that had an LDL cholesterol assessment**

32. Aspirin at arrival for all patients **Description:** Proportion of patients that received an aspirin on arrival.	
Numerator	Count of patients that received Aspirin within 24 hours of arrival.
Denominator	Count of AMI patients.
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients with a discharge location of AMA date the day of or day after arrival date Patients with a discharge status of deceased with a discharge date the day of or day after arrival date Patients with comfort measures only Patients contraindicated to Aspirin Patients on Warfarin, Dabigatran, Rivaroxaban, or Apixaban at home (If submission type of Premier) Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	The use of aspirin has been shown to reduce mortality with myocardial infarction. Intent was to remove the transfer in and transfer out exclusions from the PM so that facilities will see true metric at their site, particularly for referral facilities.
Relevant Citations	Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;():. doi:10.1016/j.jacc.2014.09.017. O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

33. Aspirin at arrival *(Implemented effective 2015 Q1)* **Description:** Proportion of patients prescribed aspirin at arrival excluding patients transferred in and out.	
Numerator	Count of AMI patients that received aspirin within 24 hours prior to or after arrival.
Denominator	Count of all AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients with a transferred out date equal to arrival date Patients transferred in Patients with a discharge date equal to arrival date Patients with a discharge location of AMA date the day of or day after arrival date Patients with a discharge status of deceased with a discharge date the day of or day after arrival date Patients with comfort measures only Patients contraindicated to Aspirin Patients on Warfarin, Dabigatran, Rivaroxaban, Apixaban at home (If submission type of Premier) Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	The use of aspirin has been shown to reduce mortality with myocardial infarction.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

34. Aspirin prescribed at discharge *(Implemented effective 2015 Q1)* **Description:** Proportion of patients prescribed aspirin at discharge.	
Numerator	Count of AMI patients that were prescribed aspirin at discharge.
Denominator	Count of all AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred to other acute care hospital Patients with a discharge status of deceased Patients with a discharge location of AMA Patients with comfort measures only Patients with hospice care Patients contraindicated to aspirin Patients prescribed Warfarin, Dabigatrin, Rivaroxaban, Apixaban at discharge Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	The use of aspirin has been shown to reduce recurrent MI and death in patients surviving myocardial infarction.
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

35. AMI revascularized patients discharged on ADP receptor inhibitors ***(Implemented effective 2015 Q1)*** **Description:** Proportion of AMI revascularized patients prescribed an ADP receptor inhibitor at discharge.	
Numerator	All PCI patients prescribed ADP Receptor Inhibitors at discharge.
Denominator	All AMI patients that underwent a PCI
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds.
Exclusion Criteria	Patients with a discharge location of other acute care hospital Patients with comfort measures only Patients with a discharge status of deceased Contraindicated to ADP Receptor Inhibitors (Clopidogrel, Ticlopidine, Ticagralor and Prasugrel) Patients with hospice care Patients with a discharge location of AMA Patients with a discharge medication of Warfarin, Dabigatran, Rivoraxaban, or Apixaban Records that are incomplete for data elements used in the algorithm
Time Period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019. Amsterdam EA, Wenger NK, Brindis RG, et al. 2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;64(24):e139-e228. doi:10.1016/j.jacc.2014.09.017.

36. High Intensity Statin Therapy for all AMI Patients *(Implemented effective 2015 Q1)* **Description:** Proportion of all AMI patients that received intensive statin therapy (includes Rosuvastatin 20 to 40 mg, or Atorvastatin 40 to 80 mg) at discharge	
Numerator	All AMI patients that received intensive statin therapy at discharge
Denominator	All AMI patients
Inclusion Criteria	Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients with a transferred to other acute care hospital Patients with hospice care Patients with a discharge location of AMA Patients with comfort measures only Patients with a discharge status of deceased Patient contraindicated to Statin and reason documented Patients >75 years of age
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	On the basis of this large and consistent body of evidence, 4 major statin benefit groups were identified for whom the ASCVD risk reduction clearly outweighs the risk of adverse events based on a strong body of evidence. These are: 1) Secondary prevention in individuals with clinical ASCVD 2) Primary prevention in individuals ≥ 21 years of age with LDL-C ≥190mg/dL 3) Primary prevention in individuals with diabetes and LDL 70-189 m/g dL 4) Primary prevention in individuals with out diabetes and with LDL-C 79-189 mg/dL Clinical ASCVD includes acute coronary syndromes, a history of MI, stable or unstable angina, coronary or other arterial revascularization, stroke, transient ischemic attack, or peripheral arterial disease presumed to be of atherosclerotic origin.
Relevant Citations	Stone NJ, Robinson JG, Lichtenstein AH, et al. 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;63(25_PA):. doi:10.1016/j.jacc.2013.11.002.

37. FMC to Primary PCI (Device Activation) for Non-transferred STEMI patients ***(Implemented effective 2015 Q1)*** **Description:** Proportion of STEMI patients that were not transferred that had a First Medical Contact to Device time of 90 minutes or less.	
Numerator	All STEMI patients that received a primary PCI within 90 minutes of First Medical Contact (FMC) or subsequent ECG (if ST elevation first noted on subsequent ECG)
Denominator	All STEMI patients that receive a primary PCI.
Inclusion Criteria	If non-EMS FMC use arrival time If EMS FMC use EMS FMC time If both non-EMS and EMS FMC available time use EMS FMC time If ST elevation first noted on subsequent ECG, use Subsequent ECG time Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred in Patients that received fibrinolytic prior to PCI PCI indication described as Rescue PCI for STEMI, PCI for NSTEMI, PCI for STEMI (stable after successful full-dose lytic), PCI for STEMI (unstable, >12 hr from symptom onset), PCI for STEMI (stable, >12 hr from symptom onset) or Other Patients with a EMS FMC non-system reason for delay Patients with a non-system reason for delay in PCI ***and*** a time to First Device Activation >90 minutes Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	The benefits of timely acute reperfusion for STEMI with either fibrinolysis or primary percutaneous coronary intervention (PCI) are substantial. In centers where PCI is not available on site, patients may be transferred to another facility for treatment. Because delayed PCI may not be as beneficial as timely fibrinolysis, opting for transfer for PCI rather than fibrinolysis requires that transfer be performed in a timely manner.
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140. doi:10.1016/j.jacc.2012.11.019.

38. Median time from FMC to Primary PCI (Device Activation) for Non-transferred STEMI patients *(Implemented effective 2015 Q1)* **Description:** Median time from first medical contact to primary percutaneous coronary intervention (PCI) in acute myocardial infarction patients that were not transferred to another acute care facility	
Median	First Medical Contact to first device activation
Inclusion Criteria	If non-EMS FMC use arrival time If EMS FMC use EMS FMC time If both non-EMS and EMS FMC time available use EMS FMC time If ST elevation first noted on subsequent ECG, use Subsequent ECG time Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred in Patients that received fibrinolytic prior to PCI PCI indication described as Rescue PCI for STEMI, PCI for NSTEMI, PCI for STEMI (stable after successful full-dose lytic), PCI for STEMI (unstable, >12 hr from symptom onset), PCI for STEMI (stable, >12 hr from symptom onset) or Other Patients with a EMS FMC non-system reason for delay Patients with a non-system reason for delay in PCI ***and*** a time to First Device Activation >90 minutes Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	The benefits of timely acute reperfusion for STEMI with either fibrinolysis or primary percutaneous coronary intervention (PCI) are substantial. In centers where PCI is not available on site, patients may be transferred to another facility for treatment. Because delayed PCI may not be as beneficial as timely fibrinolysis, opting for transfer for PCI rather than fibrinolysis requires that transfer be performed in a timely manner.
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140.

39. Time from Emergency Department (ED) Arrival at STEMI Referral to discharge from STEMI Referral facility in patients transferred for primary PCI ***(Implemented effective 2015 Q1)*** **Description:** Your hospital's median time in minutes from ED arrival at referral facility to ED discharge at referral facility among patients transferred for a primary PCI.	
Median	Arrival at outside facility to transfer from outside facility when STEMI noted on first ECG or subsequent ECG.
Inclusion Criteria	STEMI patients who are reperfusion candidates and transfer for PCI Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients that received fibrinolytic Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	’Door in Door Out’ (Metric 18) as reported specific to referral facilities
Relevant Citations	Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FM, Nallamothu BK. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). J Am Coll Cardiol 2008;52:2046–99.

40. Pre-Hospital ECG ***(Implemented effective 2015 Q1)*** **Description:** Proportion of AMI patients that had an ECG prior to arrival	
Numerator	All AMI patients that received a pre-hospital ECG.
Denominator	All AMI patients with an EMS First Medical Contact
Inclusion Criteria	Patients with an EMS First Medical Contact Data from submissions that pass NCDR data inclusion thresholds
Exclusion Criteria	Patients transferred in Records that are incomplete for data elements used in the algorithm
Time period	Four (4) consecutive quarters (example: the 2013 q4 report would include q1-4). This is also called “rolling four quarters (R4Q).
Clinical Rationale/ Recommendation	In addition, the performance of prehospital ECGs by trained personnel is associated with shorter reperfusion times and lower mortality rates from STEMI. The use of prehospital ECGs, particularly when coupled with communication of STEMI diagnosis and preferential transport to a PCI-capable hospital, has been shown to result in rapid reperfusion times and excellent clinical outcomes
Relevant Citations	O'Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2013;61(4):e78-e140.