



**Department  
of Health**

**Medicaid  
Redesign Team**

# Chronic Heart Condition Episodes

Clinical Advisory Group Meeting 2

Meeting Date: 9/28

# Content

Tentative Meeting Schedule and Agenda

**Part I - Short Review and Questions from Previous CAG Meeting**

**Part II - Quality Measures for Chronic Heart Episodes**

# Tentative Meeting Schedule & Agenda

Depending on the number of issues addressed during each meeting, the meeting agenda for each CAG will likely consist of the following:

## Meeting 1

- Introduction to Value Based Payment
- Clinical Advisory Group- Roles and Responsibilities
- Understanding the Approach: HCI3 Overview
- Chronic Heart Episodes – Definition
- Chronic Heart Episodes – Impressions of Data Available for Value Based Contracting

## Meeting 2

- Chronic Heart Episodes Definition Recap
- Chronic Heart Episodes Quality Measures - I

## Meeting 3

- Chronic Heart Episode Quality Measures – II
- Diabetes Quality Measures

## Part I

# Short Review and Questions from Previous CAG Meeting

# Are there Any Questions, Comments or Suggestions Based on the Content of the First Meeting?

## Content of Chronic Heart CAG Meeting 1

- Introduction to Value Based Payment
- Clinical Advisory Group Roles and Responsibilities
- Understanding the HCI3 Grouper and Development of Care Episodes
- Chronic Heart Episodes – Definition
  - Arrhythmia, Heart Block, Conduction Disorders
  - Coronary Artery Disease
  - Congestive Heart Failure
  - Hypertension

## Part II

### A. Introduction to Quality Measures

And their role in Value-Based Payments

## How Are the Quality Measures Going to be Used?



### NY State / MCO relationship

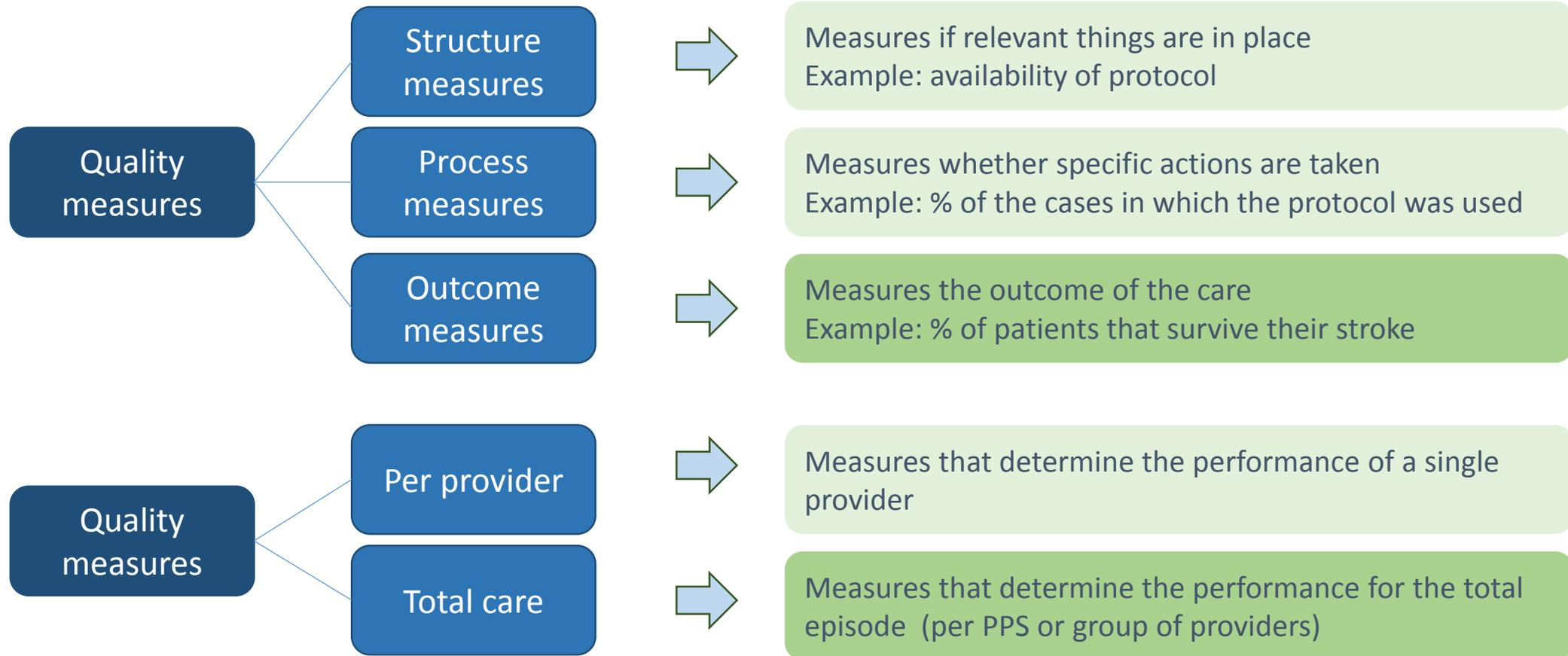
- MCO's will be held accountable for the quality measures, and will get upward or downward adjustments based on the value of the care their network.
- The State will make the outcomes of the recommended measures transparent to all stakeholders. The quality measures set by the CAG and accepted by the State will be mandatory for the VBP arrangement involved.



### MCO / Provider relationship

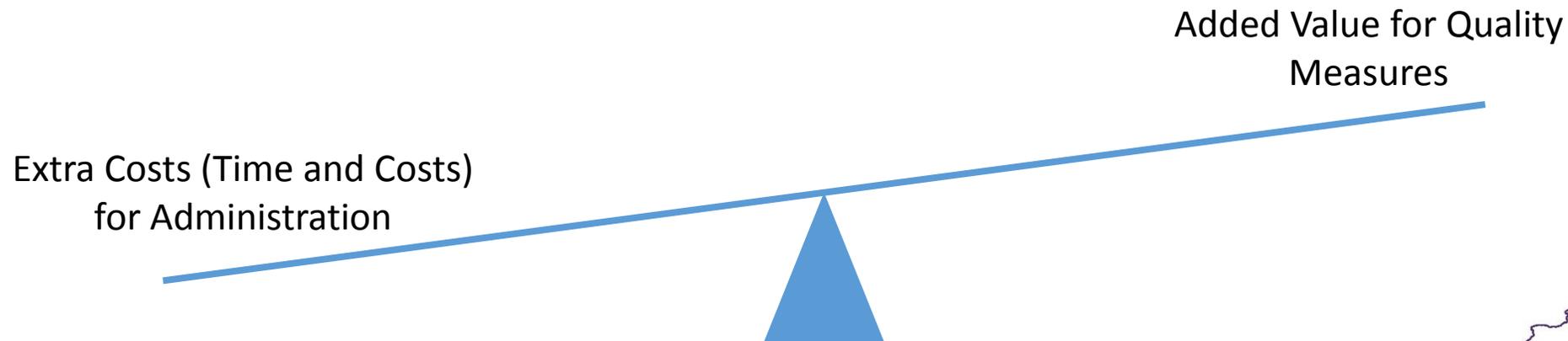
- How the providers and MCO's translate the quality measures into financial consequences, and which measure(s) they want to focus on primarily, is left to these stakeholders.
- Improvement of quality measures could affect payment in different ways:
  - A higher or lower score leading to a higher or lower percentage of savings respectively available for the providers
  - A higher or lower score leading to a higher or lower negotiated rate respectively

# To Assess Value, a Small Key Set of Quality Measures is Needed. Focus Should Be on the *Performance* of the Overall Episode.



# The Effort of Collecting Additional Data for Quality Measurement Must Be Weighed Against the Added Value

- For care for patients with chronic heart conditions, most widely used quality measures can be derived from claims data.
- Other data sources for quality measures including patient surveys, medical records and assessments. Incorporating this data will require standardized collection efforts and can be costly, unless currently existing clinical registries or available data collection mechanisms are used. Identification of key measures is important.
  - *The extra costs (in time and money) of collecting the additional data has to be weighed against the added value that the measure brings.*



## Suggested Process for Fine Tuning Quality Measures

### Pilot 2016 & Data Analyses

**Pilot 2016.** In 2016 a pilot project will be started on the Chronic Bundle, which encompasses the Chronic Heart episodes, with use of quality measures

**Data Analyses.** 2016 will be used to do additional data analyses (if necessary) within pilot sites:

- Explore addition of clinical data elements

### Evaluation of Quality Measures

**Evaluation Quality Measures.** At the end of the pilot period the projects will be evaluated and quality measures for the Chronic Heart episodes can be refined.

The CAG will be re-assembled yearly during the first years to discuss results of quality measures and suggestions for improvement. First-year review will result in recommended modifications for the quality measures set.

# Process to Walk Through Measures in this Meeting

First step: Walk through measures by measure initiative

- Existing NYS measures:
  - DSRIP
  - QARR
- CMS Medicaid Core Set
- NQF endorsed measures

Second step: Decide on measures through re-walk by theme

- Prevention / monitoring
- Admission
- Treatment
- Medication

# For Categorizing and Prioritization of Measures We Use Three Categories (or ‘Buckets’)



## **CATEGORY 1**

Approved quality measures that are felt to be both clinically relevant, reliable and valid, and feasible.



## **CATEGORY 2**

Measures that are clinically relevant, valid and probably reliable, but where the feasibility could be problematic. These measures should be investigated during the 2016 or 2017 pilot.



## **CATEGORY 3**

Measures that are insufficiently relevant, valid, reliable and/or feasible.

# Criteria for Selecting Quality Measures

## CLINICAL RELEVANCE

- **Focused on key outcomes of integrated care process**

*I.e. outcome measures are preferred over process measures; outcomes of the total care process are preferred over outcomes of a single component of the care process (i.e. the quality of one type of professional's care).*

- **For process measures: crucial evidence-based steps in integrated care process that may not be reflected in the patient outcome measures**
- **Existing variability in performance and/or possibility for improvement**

## RELIABILITY AND VALIDITY

- **Measure is well established by reputable organization**

*By focusing on established measures (owned by e.g. NYS Office of Quality and Patient Safety (OQPS), endorsed by the National Quality Forum (NQF), HEDIS measures and/or measures owned by organizations such as the Joint Commission, the validity and reliability of measures can be assumed to be acceptable.*

- **Outcome measures are adequately risk-adjusted**  
*Measures without adequate risk adjustment make it impossible to compare outcomes between providers.*

# Criteria for Selecting Quality Measures

## FEASIBILITY

- **Claims-based measures are preferred over non-claims based measures (clinical data, surveys)**
- **When clinical data or surveys are required, existing sources must be available**

*I.e. the link between the Medicaid claims data and this clinical registry is already established.*

- **Preferably, data sources be patient-level data**

*This allows drill-down to patient level and/or adequate risk-adjustment. The exception here is measures using samples from a patient panel or records. When such a measure is deemed crucial, and the infrastructure exists to gather the data, these measures could be accepted.*

- **Data sources must be available without significant delay**

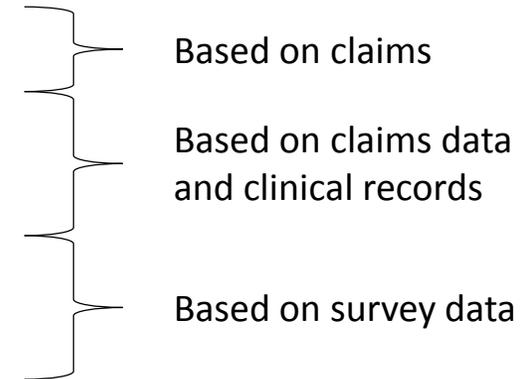
*I.e. data sources should not have a lag longer than the claims-based measures (which have a lag of six months).*

# Step 1: Which Quality Measures Are Already Available?

## QARR and DSRIP

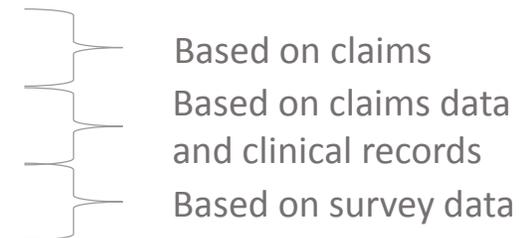
### **QARR – HEDIS measures<sup>1</sup>:**

- Angina without procedure admission rate (PQI #13)
- Cholesterol management for patients with cardiovascular conditions
- Controlling high blood pressure
- Aspirin discussion and use (% of patients who are currently taking aspirin on a daily or bi-daily basis)
- Medical assistance with smoking cessation



### **DSRIP:**

- Angina without procedure admission rate (PQI #13)
- Controlling high blood pressure
- Medical assistance with smoking cessation



<sup>1</sup> [http://www.health.ny.gov/health\\_care/managed\\_care/qarrfull/qarr\\_2015/docs/qarr\\_specifications\\_manual.pdf](http://www.health.ny.gov/health_care/managed_care/qarrfull/qarr_2015/docs/qarr_specifications_manual.pdf)

# Step 1: Which Quality Measures Are Already Available?

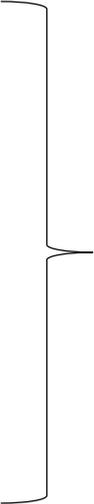
## PQI and IQI measures

### Prevention Quality Indicators

- Hypertension admission rate (PQI 07)
- Heart failure admission rate (PQI 08)
- Angina without procedure admission rate (PQI 13)

### Inpatient Quality Indicators

- In hospital heart failure mortality rate (IQI 16)
- Bilateral cardiac catheterization rate (IQI 25)



Based on  
claims data

# Step 1: Which Quality Measures Are Already Available?

## 2015 Core Set for Medicaid and CHIP

The Affordable Care Act (Public Law 111-148) required the Secretary of Health and Human Services (HHS) to identify and publish a core set of health care quality measures for Medicaid-enrolled adults (Adult Core Set). The relevant measures for chronic heart care are:

### Measures from 2015 Core Set

- Heart failure admission rate (PQI 08)  Based on claims data
- Controlling high blood pressure (CBP-AD)  Based on claims data and clinical records

# Step 1: Which Quality Measures Are Already Available? NQF Endorsed Measures

Based  
on  
claims  
data

- In hospital heart failure admission rate (PQI 8)
- Heart failure mortality rate (IQI 16)
- Bilateral cardiac catheterization rate (IQI 25)
- Hospital 30-day, all-cause, Risk-Standardized Mortality Rate (RSMR) following heart failure hospitalization for patients 18 and older.
- Hospital 30-day, all-cause, Risk-Standardized Readmission Rate (RSRR) following heart failure hospitalization
- Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year.
- Proportion of Days Covered (PDC): 3 rates by therapeutic category (% of patients who met the Proportion of Days Covered (PDC) threshold of 80% during the measurement year for RAS antagonists, diabetes medication or statins)

- Controlling high blood pressure
- CAD: Angiotensin-Converting Enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy - diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
- Chronic Stable CAD: antiplatelet therapy (aspirin)
- Chronic stable CAD: lipid control
- CAD: beta-blocker therapy—prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)
- Ischemic Vascular Disease (IVD): use of aspirin or another antithrombotic
- Ischemic Vascular Disease (IVD): blood pressure control
- Heart failure: left ventricular ejection fraction assessment (Outpatient Setting)
- Heart Failure: beta-blocker therapy for Left Ventricular Systolic Dysfunction (LVSD)

Based  
on  
claims  
data  
and  
clinical  
records

# Step 1: Which Quality Measures Are Already Available? NQF Endorsed Measures

Based  
on  
claims  
data  
and  
clinical  
records

- Heart failure: left ventricular ejection fraction assessment (Outpatient Setting)
- Heart failure: Angiotensin-Converting Enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy for Left Ventricular Systolic Dysfunction (LVSD)
- Post-discharge appointment for heart failure patients
- Post-discharge evaluation for heart failure patients
- Heart failure: symptom and activity assessment
- Assessment of thromboembolic risk factors (CHADS2)
- Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients
- Cardiac Rehabilitation Patient Referral From an Outpatient Setting
- Cardiac Rehabilitation Patient Referral From an Inpatient Setting

- Optimal vascular care (% patients who have ischemic vascular disease with optimally managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use))

Based  
on  
survey  
data

## Step 2: Selection of Measures Prevention / Monitoring

#	Quality Measure	Type of Measure	QARR / HEDIS	DSRIP	PQI / IQI	CMS	NQF	Availability		CAG categorization
								Medicaid Claims Data	Clinical Data	
1	Cholesterol management for patients with cardiovascular conditions	Process	YES	-	-	-	-	NO	YES	
2	Chronic stable CAD: lipid control	Process	-	-	-	-	0074	NO	YES	
3	Heart failure: left ventricular ejection fraction assessment (Outpatient Setting)	Process	-	-	-	-	0079	NO	YES	
4	Heart failure: symptom and activity assessment	Process	-	-	-	-	2450	NO	YES	
5	Ischemic Vascular Disease (IVD): blood pressure control	Process	-	-	-	-	0073	NO	YES	
6	Controlling high blood pressure	Process	YES	YES	-	YES	0018	NO	YES	
7	Assessment of thromboembolic risk factors (CHADS2)	Process	-	-	-	-	1524	NO	YES	
8	Optimal vascular care (% patients who have ischemic vascular disease with optimally managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use))	Process	-	-	-	-	0076	NO	NO	
9	Medical assistance with smoking cessation	Process	YES	YES	-	-	-	NO	NO	

## Step 2: Selection of Measures Admission

#	Quality Measure	Type of Measure	QARR / HEDIS	DSRIP	PQI / IQI	CMS	NQF	Availability		CAG categorization
								Medicaid Claims Data	Clinical Data	
10	Heart failure admission rate	Process	-	-	PQI 08	YES	0505	YES	YES	
11	Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure hospitalization	Outcome	-	-	-	-	0330	YES	YES	
12	Angina without procedure admission rate	Process	YES	YES	PQI 13	-	-	YES	YES	
13	Hypertension admission rate	Process	-	-	PQI 07	-	-	YES	YES	

## Step 2: Selection of Measures Treatment

#	Quality Measure	Type of Measure	QARR / HEDIS	DSRIP	PQI / IQI	CMS	NQF	Availability		CAG categorization
								Medicaid Claims Data	Clinical Data	
14	Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year.	Outcome	-	-	-	-	0709	YES	YES	
15	Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older.	Outcome	-	-	-	-	0229	YES	YES	
16	In hospital heart failure mortality rate	Outcome	-	-	IQI 16	-	0358	YES	YES	
17	Post-discharge appointment for heart failure patients	Process	-	-	-	-	2439	NO	YES	
18	Post-discharge evaluation for heart failure patients	Process	-	-	-	-	2443	NO	YES	
19	Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients	Process	-	-	-	-	0672	NO	YES	
20	Cardiac Rehabilitation Patient Referral From an Inpatient Setting	Process	-	-	-	-	0642	NO	YES	
21	Cardiac Rehabilitation Patient Referral From an Outpatient Setting	Process	-	-	-	-	0643	NO	YES	
22	Bilateral cardiac catheterization rate	Process	-	-	IQI 25	-	0355	YES	YES	

## Step 2: Selection of Measures Medication

#	Quality Measure	Type of Measure	QARR / HEDIS	DSRIP	PQI / IQI	CMS	NQF	Availability		CAG categorization
								Medicaid Claims Data	Clinical Data	
23	Aspirin discussion and use (% of patients who are currently taking aspirin on a daily or bi-daily basis)	Process	YES	-	-	-	-	NO	NO	
24	Ischemic Vascular Disease (IVD): use of aspirin or another antithrombotic	Process	-	-	-	-	0068	NO	YES	
25	Heart failure: Angiotensin-Converting Enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy for Left Ventricular Systolic Dysfunction (LVSD)	Process	-	-	-	-	0081	NO	YES	
26	Heart Failure: beta-blocker therapy for Left Ventricular Systolic Dysfunction (LVSD)	Process	-	-	-	-	0083	NO	YES	
27	CAD: Angiotensin-Converting Enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy - diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)	Process	-	-	-	-	0066	NO	YES	
28	Chronic Stable CAD: antiplatelet therapy (aspirin)	Process	-	-	-	-	0067	NO	YES	
29	CAD: beta-blocker therapy—prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)	Process	-	-	-	-	0070	NO	YES	
30	Proportion of Days Covered (PDC): 3 rates by therapeutic category (% of patients who met the Proportion of Days Covered (PDC) threshold of 80% during the measurement year for RAS antagonists, diabetes medication or statins)	Process	-	-	-	-	0541	YES	YES	

## Weighting the Different Measures

- To create a single composite measure to establish 'value' of chronic heart care
- Not all measures may be equally important. By allocating different 'weights' to the measures we can take relative importance into account.
- How would we weight the individual measures?

### Example

Part of Care	Measure	Weight
Prevention / Monitoring	Measure 1	10
	Measure 2	15
Admission	Measure 3	5
	Measure 4	20
Treatment	Measure 5	10
Medication	Measure 6	5
	Measure 7	15
Mortality Outcomes	Measure 8	5
	Measure 9	5
	Measure 10	10
Total		100

To be determined in a later stage

# The 3<sup>rd</sup> CAG Meeting will be on October 20, 2015 in New York

## Meeting 3

- Chronic Heart Episode Quality Measures – II
- Diabetes Quality Measures





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# Appendix

## Definitions Measures: Prevention / Monitoring (1/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
1	Cholesterol management for patients with cardiovascular conditions		Claims Data and Clinical Records	The percentage of members 18–75 years of age who were discharged alive for AMI, coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) from January 1–November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had each of the following during the measurement year: LDL-C screening. LDL-C control (<100 mg/dL).	The number of members 18–75 years of age who were discharged alive for AMI, coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) from January 1–November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had each of the following during the measurement year: LDL-C screening. LDL-C control (<100 mg/dL).	The eligible population
2	Chronic stable CAD: lipid control	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who have a LDL-C result <100 mg/dL OR patients who have a LDL-C result $\geq$ 100 mg/dL and have a documented plan of care to achieve LDL-C <100mg/dL, including at a minimum the prescription of a statin.	Patients who have a LDL-C result <100 mg/dL OR Patients who have a LDL-C result $\geq$ 100 mg/dL and have a documented plan of care <sup>1</sup> to achieve LDL-C <100 mg/dL, including at a minimum the prescription of a statin within a 12 month period.	All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period.

## Definitions Measures: Prevention / Monitoring (2/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
3	Heart failure: left ventricular ejection fraction assessment (Outpatient Setting)	American College of Cardiology	Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of heart failure for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented within a 12 month period.	Patients for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented within a 12 month period.	All patients aged 18 years and older with a diagnosis of heart failure.
4	Heart failure: symptom and activity assessment	American College of Cardiology	Clinical Records	Percentage of patient visits for those patients aged 18 years and older with a diagnosis of heart failure with quantitative results of an evaluation of both current level of activity and clinical symptoms documented.	Patient visits with quantitative results of an evaluation of both current level of activity and clinical symptoms documented.	All patient visits for those patients aged 18 years and older with a diagnosis of heart failure.
5	Ischemic Vascular Disease (IVD): blood pressure control	National Committee for Quality Assurance	Claims Data and Clinical Records	The percentage of patients 18 to 75 years of age who were discharged alive with acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had the following during the measurement year: Blood pressure control (BP): reported as under control <140/90 mm Hg.	Patients whose most recent blood pressure is adequately controlled during the measurement year. For a patient's BP to be adequately controlled, both the systolic and the diastolic BP must meet the desired threshold of <140/90 mm Hg.	Patients 18 to 75 years of age by the end of the measurement year who were discharged alive for AMI, CABG or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

## Definitions Measures: Prevention / Monitoring (3/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
6	Controlling high blood pressure	NCQA / HEDIS	Claims and Clinical Records	Percentage of Medicaid enrollees ages 18 to 85 who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled during the measurement year based on the following criteria: 1) Enrollees ages 18 to 59 whose BP was <140/90 mm Hg 2) Enrollees ages 60 to 85 with a diagnosis of diabetes whose BP was <140/90 mm Hg 3) Enrollees ages 60 to 85 without a diagnosis of diabetes whose BP was <150/90 mm Hg. A single rate is reported and is the sum of all three groups.	Number of Medicaid enrollees ages 18 to 85 who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled during the measurement year based on the following criteria: 1) Enrollees ages 18 to 59 whose BP was <140/90 mm Hg 2) Enrollees ages 60 to 85 with a diagnosis of diabetes whose BP was <140/90 mm Hg 3) Enrollees ages 60 to 85 without a diagnosis of diabetes whose BP was <150/90 mm Hg. A single rate is reported and is the sum of all three groups.	The eligible population
7	Assessment of thromboembolic risk factors (CHADS2)	American College of Cardiology	Clinical Records	Patients with nonvalvular atrial fibrillation or atrial flutter in whom assessment of thromboembolic risk factors using the CHADS2 risk criteria has been documented.	Patients with nonvalvular atrial fibrillation or atrial flutter in whom assessment of all of the specified thromboembolic risk factors is documented.	All patients 18 years of age or older with nonvalvular atrial fibrillation or atrial flutter other than those specifically excluded.
8	Optimal vascular care (% patients who have ischemic vascular disease with optimally managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use))	MN Community Measurement	Claims Data, Clinical Records and Survey Data	Percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use).	Patients ages 18 to 75 with ischemic vascular disease (IVD) who meet all of the following targets from the most recent visit during the measurement period: Blood Pressure less than 140/90, Tobacco-Free Status, Daily Aspirin Use.	Patients ages 18 to 75 with ischemic vascular disease who have at least two visits for this condition over the last two measurement periods and at least one visit in the last measurement period.

## Definitions Measures: Prevention / Monitoring (4/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
9	Medical assistance with smoking cessation		Survey Data	The following components of this measure assess different facets of providing medical assistance with smoking and tobacco use cessation: 1) Advising smokers and tobacco users to quit (A rolling average represents the percentage of members 18 years of age and older who were current smokers or tobacco users and who received advice to quit during the measurement year.) 2) Discussing cessation medication (A rolling average represents the percentage of members 18 years of age and older Cessation who were current smokers or tobacco users and who discussed or were Medications recommended cessation medications during the measurement year.) 3) Discussing cessation strategies (A rolling average represents the percentage of members 18 years of age and older Cessation Strategies who were current smokers or tobacco users and who discussed or were provided cessation methods or strategies during the measurement year.)		

## Definitions Measures: Admission (1/2)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
10	Heart failure admission rate		Claims Data	Admissions with a principal diagnosis of heart failure per 100,000 population, ages 18 years and older. Excludes cardiac procedure admissions, obstetric admissions, and transfers from other institutions	Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for heart failure.	Population ages 18 years and older in metropolitan area or county. Discharges in the numerator are assigned to the denominator based on the metropolitan area or county of the patient residence, not the metropolitan area or county of the hospital where the discharge occurred.
11	Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure hospitalization	Centers for Medicare & Medicaid Services	Claims Data	The measure estimates a hospital-level risk-standardized readmission rate (RSRR) for patients discharged from the hospital with a principal diagnosis of heart failure (HF). The outcome is defined as unplanned readmission for any cause within 30 days of the discharge date for the index admission. The target population is patients 18 and over.	The outcome for this measure is 30-day readmission. We define readmission as an inpatient admission for any cause, with the exception of certain planned readmissions, within 30 days from the date of discharge from the index HF admission. If a patient has more than one unplanned admission within 30 days of discharge from the index admission, only the first one is counted as a readmission.	The target population for this measure is patients aged 18 years and older discharged from the hospital with a principal diagnosis of HF with a complete claims history for the 12 months prior to admission.
12	Angina without procedure admission rate		Claims Data	Admissions with a principal diagnosis of angina without a cardiac procedure per 100,000 population, ages 18 years and older. Excludes cardiac procedure admissions, obstetric admissions, and transfers from other institutions.	Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for angina.	Population ages 18 years and older in metropolitan area† or county. Discharges in the numerator are assigned to the denominator based on the metropolitan area or county of the patient residence, not the metropolitan area or county of the hospital where the discharge occurred.

## Definitions Measures: Admission (2/2)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
13	Hypertension admission rate		Claims Data	Admissions with a principal diagnosis of hypertension per 100,000 population, ages 18 years and older. Excludes kidney disease combined with dialysis access procedure admissions, cardiac procedure admissions, obstetric admissions, and transfers from other institutions.	Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for hypertension.	Population ages 18 years and older in metropolitan area† or county. Discharges in the numerator are assigned to the denominator based on the metropolitan area or county of the patient residence, not the metropolitan area or county of the hospital where the discharge occurred.

# Definitions Measures: Treatment (1/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
14	Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year.	Bridges To Excellence	Claims Data	Percent of adult population aged 18 – 65 years who were identified as having at least one of the following six chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, were followed for one-year, and had one or more potentially avoidable complications (PACs).	Outcome: Potentially avoidable complications (PACs) in patients having one of six chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma, during the episode time window of one calendar year (or 12 consecutive months).	Adult patients aged 18 – 65 years who had a trigger code for one of the six chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma (with no exclusions), and were followed for one year from the trigger code.
15	Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older.	Centers for Medicare & Medicaid Services	Claims Data	The measure estimates a hospital 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission of the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of heart failure (HF). CMS annually reports the measure for patients who are 65 years or older and are either enrolled in fee-for-service (FFS) Medicare and hospitalized in non-federal hospitals or are hospitalized in Veterans Health Administration (VA) facilities.	The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of HF.	This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. The cohorts include admissions for patients discharged from the hospital with a principal diagnosis of HF and with a complete claims history for the 12 months prior to admission.

## Definitions Measures: Treatment (2/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
16	In hospital heart failure mortality rate	Agency for Healthcare Research and Quality	Claims Data	In-hospital deaths per 1,000 hospital discharges with heart failure as a principal diagnosis for patients ages 18 years and older. Excludes obstetric discharges and transfers to another hospital.	Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.	Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for heart failure.
17	Post-discharge appointment for heart failure patients	The Joint Commission	Clinical Records	Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.	Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.	All heart failure patients discharged from a hospital inpatient setting to home or home care.
18	Post-discharge evaluation for heart failure patients	The Joint Commission	Clinical Records	Patients who receive a re-evaluation for symptoms worsening and treatment compliance by a program team member within 72 hours after inpatient discharge.	Patients who have a documented re-evaluation conducted via phone call or home visit within 72 hours after discharge.	All heart failure patients discharged from a hospital inpatient setting to home or home care AND patients leaving against medical advice (AMA).
19	Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients	American College of Cardiology	Claims Data and Clinical Records	Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation.	Number of stress SPECT MPI, stress echo, CCTA, or CMR performed in patients undergoing low risk surgery as a part of the preoperative evaluation.	Number of stress SPECT MPI, stress echo, CCTA, or CMR primarily performed for asymptomatic, low CHD risk patients for initial detection and risk assessment.

## Definitions Measures: Treatment (3/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
20	Cardiac Rehabilitation Patient Referral From an Inpatient Setting	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients admitted to a hospital with a primary diagnosis of an acute myocardial infarction or chronic stable angina or who during hospitalization have undergone coronary artery bypass (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery (CVS), or cardiac transplantation who are referred to an early outpatient cardiac rehabilitation/secondary prevention program.	Number of eligible patients with a qualifying event/diagnosis who have been referred to an outpatient Cardiac Rehabilitation/Secondary Prevention (CR/SP) program prior to hospital discharge or have a documented medical or patient-centered reason why such a referral was not made.	Number of hospitalized patients in the reporting period hospitalized with a qualifying cardiovascular disease event/diagnosis who do not meet any of the criteria listed in the denominator exclusion section below.
21	Cardiac Rehabilitation Patient Referral From an Outpatient Setting	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients evaluated in an outpatient setting who in the previous 12 months have experienced an acute myocardial infarction or chronic stable angina or who have undergone coronary artery bypass (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery (CVS), or cardiac transplantation, who have not already participated in an early outpatient cardiac rehabilitation/secondary prevention program for the qualifying event, and who are referred to an outpatient cardiac rehabilitation/secondary prevention program.	Number of patients in an outpatient clinical practice who have had a qualifying event/diagnosis during the previous 12 months, who have been referred to an outpatient Cardiac Rehabilitation/Secondary Prevention (CR/SP) program.	Number of patients in an outpatient clinical practice who have had a qualifying cardiovascular event in the previous 12 months and who do not meet any of the criteria listed in the denominator exclusion section below, and who have not participated in an outpatient cardiac rehabilitation program since the qualifying event/diagnosis.

## Definitions Measures: Treatment (4/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
22	Bilateral cardiac catheterization rate	Agency for Healthcare Research and Quality	Claims Data	Bilateral cardiac catheterization discharges per 1,000 heart catheterizations discharges for coronary artery disease for patients ages 18 years and older. Excludes valid indications for right-side catheterization discharges and obstetric discharges.	Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any-listed ICD-9-CM procedure codes for right and left heart catheterization without any-listed ICD-9-CM diagnosis codes for indications for right-sided catheterization.	Discharges, for patients ages 18 years and older, with any-listed ICD-9-CM procedure codes for heart catheterization and any-listed ICD-9-CM diagnosis codes for coronary artery disease.

## Definitions Measures: Medication (1/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
23	Aspirin discussion and use (% of patients who are currently taking aspirin on a daily or bi-daily basis)		Claims Data and Survey Data	The percentage of members who are currently taking aspirin, including women 56 to 79 years of age with at least two risk factors for cardiovascular disease (CVD); men 46 to 65 years of age with at least one risk factor for CVD; and men 66 to 79 years of age, regardless of risk factors.	The number of members in the denominator who indicated that they currently take aspirin daily or every other day.	The number of eligible members who responded to the survey and indicated that they did not have a health problem or take medication that makes taking aspirin unsafe, did not have an exclusion and who are: 1) Women age 56 to 79 with at least two risk factors for cardiovascular disease (CVD) 2) Men age 46 to 65 with at least one risk factor for CVD 3) Men age 66 to 79 regardless of the number of CVD risk factors.
24	Ischemic Vascular Disease (IVD): use of aspirin or another antithrombotic	National Committee for Quality Assurance	Clinical Data	The percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had the following during the measurement year: Use of aspirin or another antithrombotic	Patients who had documentation of use of aspirin or another antithrombotic during the measurement year.	Patients 18 years or older by the end of the measurement year discharged alive for AMI, CABG or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

## Definitions Measures: Medication (2/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
25	Heart failure: Angiotensin-Converting Enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy for Left Ventricular Systolic Dysfunction (LVSD)	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) with a current or prior left ventricular ejection fraction (LVEF) < 40% who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting OR at each hospital discharge.	Patients who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting OR at each hospital discharge.	All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%.
26	Heart Failure: beta-blocker therapy for Left Ventricular Systolic Dysfunction (LVSD)	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) with a current or prior left ventricular ejection fraction (LVEF) < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting OR at each hospital discharge.	Patients who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting OR at each hospital discharge.	All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%.

## Definitions Measures: Medication (3/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
27	CAD: Angiotensin-Converting Enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy - diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes OR a current or prior Left Ventricular Ejection Fraction (LVEF) < 40% who were prescribed ACE inhibitor or ARB therapy.	Patients who were prescribed ACE inhibitor or ARB therapy.	All patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) seen within a 12 month period who also have diabetes or a current or prior LVEF <40%.
28	Chronic Stable CAD: antiplatelet therapy (aspirin)	American College of Cardiology	Claims Data and Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel.	Patients who were prescribed aspirin or clopidogrel within a 12 month period.	All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period.
29	CAD: beta-blocker therapy—prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)	AMA-convened Physician Consortium for Performance Improvement	Claims Data and Clinical Records	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have a prior MI or a current or prior LVEF <40% who were prescribed beta-blocker therapy.	Patients who were prescribed beta-blocker therapy.	All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have prior MI or a current or prior LVEF <40%.

## Definitions Measures: Medication (4/4)

#	Measure	Measure Steward	Data Source	Description	Numerator	Denominator
30	Proportion of Days Covered (PDC): 3 rates by therapeutic category (% of patients who met the Proportion of Days Covered (PDC) threshold of 80% during the measurement year for RAS antagonists, diabetes medication or statins)	Pharmacy Quality Alliance (PQA, Inc.)	Claims Data	The percentage of patients 18 years and older who met the proportion of days covered (PDC) threshold of 80% during the measurement year. A performance rate is calculated separately for the following medication categories: Renin Angiotensin System (RAS) Antagonists, Diabetes Medications, Statins.	The number of patients who met the PDC threshold during the measurement year for each therapeutic category separately. Follow the steps below for each patient to determine whether the patient meets the PDC threshold.	Patients age 18 years and older who were dispensed at least two prescriptions in a specific therapeutic category on two unique dates of service during the measurement year. For the Diabetes rate only: Exclude any patient with one or more prescriptions for insulin in the measurement period.