

**Technical Release Notes:**  
**2015 Annual Update of 2014 Eligible Hospitals and Eligible Professionals Electronic  
Clinical Quality Measures (eCQMs)**

## CMS9v4 -Exclusive Breast Milk Feeding

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Revised timing constraint for 'Physical Exam, Performed: Estimated Gestational Age at Birth' to occur any time during the hospitalization, in the initial population logic.	Logic
The representation of the concept of birth date/time in the Denominator Exclusions logic was revised to use the 'Patient Characteristic, Birthdate' QDM datatype, in order align with other measures.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set
Value set Galactosemia (OID 2.16.840.1.113883.3.117.1.7.1.35): Added 2 ICD10CM (E74.20, E74.29).	Value Set
Value set Parenteral Nutrition (OID 2.16.840.1.113883.3.117.1.7.1.38): Updated value set name from Parenteral Infusion to Parenteral Nutrition and added 3 ICD10PCS codes (3E0336Z, 3E0536Z, 3E0636Z).	Value Set

## CMS26v3 - Home Management Plan of Care (HMPC) Document Given to Patient/Caregiver

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Updated obsolete URLs for several references in the measure header.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Value set Asthma (OID 2.16.840.1.113883.3.117.1.7.1.271): Added 1 ICD10CM code (J45.909).	Value Set

## CMS30v5 - Statin Prescribed at Discharge

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Removed 'Clinical Trial Participant' in the Denominator Exclusions due to the inability to capture clinical trials that are specific to the measure.	Header
Removed the word 'Only' from 'Patients with Measures Comfort Only documented' in the Denominator Exclusions of the header to align with the name of the value set.	Header
Updated Denominator, Denominator Exclusions and Denominator Exceptions to be consistent across hospital measures and align with logic.	Header
Updated Guidance in the header to align with the measure logic.	Header
Updated Initial Population header statement to be consistent across hospital measures and align with logic.	Header
Added logic to include a diagnosis of active AMI that starts during the ED visit to capture the start of the diagnosis.	Logic
Changed Comfort Measures timing, logic, and added a variable, \$InterventionComfortMeasures, to align with measure intent.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Changed timing for allergy and medication order not done: Medical Reason and Patient Refusal to align with measure intent. Removed Occurrence when denoting a specific event was not necessary.	Logic
Consolidated Medication Administered not done: Medication Hold logic.	Logic
Introduced \$InterventionComfortMeasures to consolidate and simplify logic.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurrence on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed 'Clinical Trial Participant' logic due to the inability to capture clinical trials that are specific to the measure.	Logic
Replaced 'ends before start' with 'ends before or concurrent with start of' to align across measures (when appropriate for measure intent).	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Revised Logic permits the removal of AND NOT clauses in the Denominator exception which reduces the complexity of the measure.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Acute Myocardial Infarction (AMI) (OID 2.16.840.1.113883.3.666.5.3011): Added 29 SNOMED codes. Updated name from Hospital Measures - AMI to Acute Myocardial Infarction (AMI).	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set

## CMS30v5 - Statin Prescribed at Discharge

### Technical Release Notes

### Type of TRN

Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.

Value Set

Value set LDL-c Test (OID 2.16.840.1.113883.3.117.1.7.1.799): Replaced by 2.16.840.1.113883.3.117.1.7.1.215 (LOINC) to harmonize EH measures.

Value Set

Value set Medication Hold (OID 2.16.840.1.113883.3.666.5.1145): Updated value set name from Hospital Measures - Hold to Medication Hold.

Value Set

Value set Statin Allergen (OID 2.16.840.1.113883.3.117.1.7.1.42): Deleted 1 RXNORM code (404775).

Value Set

Value set Statin ingredient specific (OID 2.16.840.1.113762.1.4.1021.7): Deleted 3 RXNORM codes (17767, 341248, 593411).

Value Set

## CMS31v4 - Hearing Screening Prior To Hospital Discharge

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Updated criteria in the Denominator Exclusions representing when a patient expires to harmonize across measures.	Header
Updated the Denominator header statement to be consistent across hospital measures.	Header
Updated the Numerator header statement to better align with measure logic.	Header
Added 'during Occurrence A of Encounter, Performed: Encounter Inpatient' for each 'AND:' statement in the Denominator Exclusions to clarify the logic in the left-hand side or right-hand side of a timing clause.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
For consistency across all measures, Discharge Status: Patient Expired is used as the criteria to determine if a patient expired during an encounter.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS32v5 - Median Time from ED Arrival to ED Departure for Discharged ED Patients

Technical Release Notes	Type of TRN
A description for the rate aggregation was added to explain that the length of time the patient was in the Emergency Department, also stated as: the Datetime difference between the Emergency Department facility location departure time and the Emergency Department facility location arrival time. The calculation requires the median across all ED encounter durations.	Header
Clarified that the Initial Population includes Emergency Department encounters discharged during the measurement period.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Measure Population description was refined to more accurately reflect the logic of the measure.	Header
Modified description to align with measure logic.	Header
Reporting stratum modified to include the use of principal diagnoses. Workflow practices regarding the assignment of principal diagnoses may affect the function of this measure.	Header
Stratification 1 in the prior version of the measure was removed because it was redundant with the measure population. Strata have been renumbered to reflect this update.	Header
Added Measure Population Exclusion to address the Patient Expired logic and to establish consistency across the stratum for ED quality measures.	Logic
ED encounter admission and discharge timestamps are used instead of facility location (ED) departure time for timing comparison logic.	Logic
Replaced DateDiff or TimeDiff functions with Datetime difference in the measure observation section, and removed 'AND' operators from the statements underneath the DateTimeDiff function.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Timing operator 'ends before start of' replaced with 'ends before or concurrent with start of' in criteria relating Emergency Department Visit with Inpatient Encounter. This allows for cases in which the ED discharge and inpatient admission occur in the same minute to evaluate to true.	Logic
Psychiatric/Mental Health Patient Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.299): Deleted 21 SNOMED codes and 52 ICD10CM codes, and added 75 SNOMED codes.	Value Set
Value set Acute care hospital (OID 2.16.840.1.113883.3.666.5.684): Updated value set name from Hospital Measures-Acute care hospital to Acute care hospital and deleted 15 SNOMED codes and add 1 SNOMED code.	Value Set
Value set Patient Expired (OID 2.16.840.1.113883.3.117.1.7.1.309): Replaced value set Expired (OID 2.16.840.1.113883.3.666.5.730).	Value Set

## CMS53v4 - Primary PCI Received Within 90 Minutes of Hospital Arrival

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Measure Steward updated.	Header
Updated Guidance in the header to align with the measure logic.	Header
Updated Initial Patient Population, Denominator, Denominator Exclusions and Denominator Exceptions to be consistent across hospital measures and align with logic.	Header
Added a timing constraint to 'Encounter, Performed: Emergency Department Visit' and removed Occurring to constrain the time as intended.	Logic
Added attribute Ordinality: Primary Procedure to PCI Procedure and created Primary Procedure value set to align with measure intent.	Logic
Added logic to include a diagnosis of active AMI that starts during the ED visit to capture the start of the diagnosis.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Condensed and combined the two sections of logic in the Denominator stating: AND NOT: AND: 'Occurrence A of Diagnostic Study, Result: Hospital Measures-ECG (result: 'Hospital Measures-Acute or Evolving MI')' AND: 'Occurrence A of Diagnostic Study, Result: Hospital Measures-ECG (result: 'NSTEMI')'. The new logic reads: AND NOT: 'Occurrence A of Diagnostic Study, Performed: Electrocardiogram (ECG) (result: STEMI Exclusions)'. Note: NSTEMI value set name changed to STEMI Exclusions to better describe its contents.	Logic
Introduced \$ReasonForNoFibrinolyticTherapy and \$AnotherHospitalOrHealthcare Facility to consolidate and simplify logic.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions and/or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed 'Clinical Trial Participant' logic due to the inability to capture clinical trials that are specific to the measure.	Logic
Removed 'Occurrence A of' from negated clauses to simplify logic (if appropriate for measure intent).	Logic
Replaced 'ends before start' with 'ends before or concurrent with start of' to align across measures (when appropriate for measure intent).	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Acute Myocardial Infarction (AMI) (OID 2.16.840.1.113883.3.666.5.3011): Added 29 SNOMED codes. Updated name from Hospital Measures - AMI to Acute Myocardial Infarction (AMI).	Value Set
Value set Acute or Evolving MI (OID 2.16.840.1.113883.3.666.5.3022): Deleted 1 SNOMED code and added 4 ICD10CM and 15 SNOMED codes. Updated value set name from Hospital Measures-Acute or Evolving MI to Acute or Evolving MI.	Value Set
Value set Ambulatory surgical center (OID 2.16.840.1.113883.3.666.5.687): Updated value set name from Hospital Measures-Ambulatory surgical center to Ambulatory surgical center.	Value Set

## CMS53v4 - Primary PCI Received Within 90 Minutes of Hospital Arrival

Technical Release Notes	Type of TRN
Value set Aortic balloon pump insertion (OID 2.16.840.1.113883.3.666.5.1151): Added 4 SNOMED codes (16965008, 175113001, 432375008, 442807006), 2 ICD10PCS codes (5A02110, 5A02210), and 1 ICD9CM code (37.61). Updated value set name from Hospital Measures-Aortic balloon pump insertion to Aortic balloon pump insertion.	Value Set
Value set Cardiopulmonary arrest (OID 2.16.840.1.113883.3.666.5.748): Added 6 ICD10CM, 2 ICD9CM, and 10 SNOMED codes. Updated value set name from Hospital Measures-Cardiopulmonary arrest to Cardiopulmonary arrest.	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set Electrocardiogram (ECG) (OID 2.16.840.1.113883.3.666.5.735): Deleted 1 ICD10CM code (R94.31) and 1 ICD9CM code (794.31) to align with the intent of the measure. Updated value set name from Hospital-Measure -ECG to Electrocardiogram (ECG).	Value Set
Value set Endotracheal Intubation (OID 2.16.840.1.113762.1.4.1045.69): Added 3 ICD10PCS codes (5A1935Z, 5A1945Z, 5A1955Z), 6 SNOMED codes (232675003, 232678001, 232680007, 232682004, 243141005, 418613003), and 4 ICD9CM codes (96.04, 96.70, 96.71, 96.72). Deleted 2 SNOMED codes (225719006, 30963003).	Value Set
Value set Fibrinolytic Therapy (OID 2.16.840.1.113883.3.666.5.736): Deleted 1 RXNORM code (387020). Updated value set name from Hospital Measures-Fibrinolytic Therapy to Fibrinolytic Therapy.	Value Set
Value Set Medical Reason (OID 2.16.840.1.113883.3.117.1.7.1.473): Removed value set from this measure.	Value Set
Value set Patient Refusal (OID 2.16.840.1.113883.3.117.1.7.1.93): Removed value set from this measure.	Value Set
Value set PCI (OID 2.16.840.1.113762.1.4.1045.67): Deleted 4 SNOMED codes (14201006, 446878003, 5431005, 68457009).	Value Set
Value set Primary Procedure (OID 2.16.840.1.113762.1.4.1111.12): Added new value set with 1 SNOMED code (399455000) to this measure.	Value Set
Value set STEMI Exclusions (OID 2.16.840.1.113762.1.4.1045.36): Added 1 ICD9CM code (410.70) and 2 SNOMED codes (703360004, 70422006). Updated value set name from NSTEMI to STEMI Exclusions.	Value Set
Value set Transfer From Emergency Department (ED) Locations (OID 2.16.840.1.113883.3.666.5.3006): Deleted 19 SNOMED codes and added 2 SNOMED codes (225728007, 73770003). Updated value set name from Hospital-Measure (ED) Locations to Transfer From Emergency Department (ED) Locations.	Value Set
Value set Transfer from Inpatient (OID 2.16.840.1.113883.3.666.5.3013): Deleted 12 SNOMED codes and added 2 SNOMED codes (434771000124107, 440654001). Updated value set name from Hospital Measures-Acute care hospital to Transfer From Inpatient.	Value Set
Value set Transfer From Outpatient (OID 2.16.840.1.113883.3.67.1.101.950): Deleted 27 SNOMED codes and added 1 SNOMED codes (440655000). Updated value set name from Hospital Measures-Hospital outpatient department to Transfer From Outpatient.	Value Set
Value set Ventricular Assist Device placement (OID 2.16.840.1.113883.3.666.5.3015): Deleted 7 ICD10PCS codes, 3 ICD9CM codes, and 11 SNOMED codes and added 1 ICD9CM and 2 SNOMED codes. Updated value set name from Hospital Measures-Ventricular Assist Device placement to Ventricular Assist Device placement.	Value Set

## CMS55v4 - Median Time from ED Arrival to ED Departure for Admitted ED Patients

Technical Release Notes	Type of TRN
Clarified that the Initial Population consists of the inpatient encounters ending during the measurement period with length of stay (Discharge DateTime minus Admission DateTime) less than or equal to 120 days.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance was improved to clarify that the duration of the ED Encounter is defined as [Encounter: encounter ED] admission discharge date and time minus [Encounter: encounter ED] ED discharge admission date and time.	Header
Measure Population description was refined to more accurately reflect the logic of the measure.	Header
Reporting stratum modified to include the use of principal diagnoses. Workflow practices regarding the assignment of principal diagnoses may affect the function of this measure.	Header
Stratification 1 in the prior version of the measure was removed because it was redundant with the measure population. Strata have been renumbered to reflect this update.	Header
The rate aggregation description was clarified to explain that measure observation is made on the duration the patient was in the Emergency Department after the decision to admit, also stated as: the Datetime difference between the Emergency Department discharge time and the Decision to Admit time.	Header
Clarified the Measure Population for emergency department visits where an inpatient encounter did not start within 119 minutes of the discharge from the emergency department. Use of <= 1 (hour(s)) operator means the difference between the end of the Emergency Department visit and the beginning of the Inpatient visit needs to be less than or equal 1 hour which spans from 0 to 119 minutes and 59 seconds.	Logic
ED encounter admission and discharge timestamps are used instead of facility location arrival and departure timestamps for timing comparison logic.	Logic
For each population, results should be reported without stratification and then with each stratum applied. For this measure, the number of encounters that fall into the Initial Population are reported without stratification, then reported according to the defined stratification. The number of encounters that fall into the Measure Population are reported without stratification, then reported according to the defined stratification. The computed continuous variable defined by the Measure Observation is reported for the Measure Population also, then reported according to the defined stratification.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions and/or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced DateDiff or TimeDiff functions with Datetime difference in the measure observation section, and removed 'AND' operators from the statements underneath the DateTimeDiff function.	Logic
Psychiatric/Mental Health Patient Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.299): Deleted 21 SNOMED codes and 52 ICD10CM codes, and added 75 SNOMED codes.	Value Set

## CMS60v4 - Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Updated Guidance in the header to align with the measure logic.	Header
Updated Initial Population, Denominator, Denominator Exclusions and Denominator Exceptions to be consistent across hospital measures and align with logic.	Header
Added a timing constraint to 'Encounter, Performed: Emergency Department Visit' and removed Occurring to constrain the time as intended.	Logic
Added logic to include a diagnosis of active AMI that starts during the ED visit to capture the start of the diagnosis.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Condensed and combined the two sections of logic in the Denominator stating: AND NOT: AND: 'Occurrence A of Diagnostic Study, Result: Hospital Measures-ECG (result: 'Hospital Measures-Acute or Evolving MI') AND: 'Occurrence A of Diagnostic Study, Result: Hospital Measures-ECG (result: 'NSTEMI')'. The new logic reads: AND NOT: 'Occurrence A of Diagnostic Study, Performed: Electrocardiogram (ECG) (result: STEMI Exclusions)'. Note: NSTEMI value set name changed to STEMI Exclusions to better describe its contents.	Logic
Introduced \$ReasonForNoFibrinolyticTherapy and \$AnotherHospitalOrHealthcareFacility to consolidate and simplify logic.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Medication, Administered: Fibrinolytic Therapy' changed from hours to minutes to ensure the timing is captured as the measure intends.	Logic
Removed 'Clinical Trial Participant' logic due to the inability to capture clinical trials that are specific to the measure.	Logic
Removed Denominator Exception: Medication, Administered not done: Medical Reason' for 'Fibrinolytic Therapy' and 'Medication, Administered not done: Patient Refusal' for 'Fibrinolytic Therapy' to eliminate redundant logic.	Logic
Replaced 'ends before start' with 'ends before or concurrent with start of' to align across measures (when appropriate for measure intent).	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Acute Myocardial Infarction (AMI) (OID 2.16.840.1.113883.3.666.5.3011): Added 29 SNOMED codes. Updated name from Hospital Measures - AMI to Acute Myocardial Infarction (AMI).	Value Set
Value set Acute or Evolving MI (OID 2.16.840.1.113883.3.666.5.3022): Deleted 1 SNOMED code and added 4 ICD10CM and 15 SNOMED codes. Updated value set name from Hospital Measures-Acute or Evolving MI to Acute or Evolving MI.	Value Set
Value set Ambulatory surgical center (OID 2.16.840.1.113883.3.666.5.687): Updated value set name from Hospital Measures-Ambulatory surgical center to Ambulatory surgical center.	Value Set
Value set Aortic balloon pump insertion (OID 2.16.840.1.113883.3.666.5.1151): Added 4 SNOMED codes (16965008, 175113001, 432375008, 442807006), 2 ICD10PCS codes (5A02110, 5A02210), and 1 ICD9CM code (37.61). Updated value set name from Hospital Measures-Aortic balloon pump insertion to Aortic balloon pump insertion.	Value Set

## CMS60v4 - Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival

Technical Release Notes	Type of TRN
Value set Cardiopulmonary arrest (OID 2.16.840.1.113883.3.666.5.748): Added 6 ICD10CM, 2 ICD9CM, and 10 SNOMED codes. Updated value set name from Hospital Measures-Cardiopulmonary arrest to Cardiopulmonary arrest.	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set Electrocardiogram (ECG) (OID 2.16.840.1.113883.3.666.5.735): Deleted 1 ICD10CM code (R94.31) and 1 ICD9CM code (794.31) to align with the intent of the measure. Updated value set name from Hospital-Measure -ECG to Electrocardiogram (ECG).	Value Set
Value set Endotracheal Intubation (OID 2.16.840.1.113762.1.4.1045.69): Added 3 ICD10PCS codes (5A1935Z, 5A1945Z, 5A1955Z), 6 SNOMED codes (232675003, 232678001, 232680007, 232682004, 243141005, 418613003), and 4 ICD9CM codes (96.04, 96.70, 96.71, 96.72). Deleted 2 SNOMED codes (225719006, 30963003).	Value Set
Value set Fibrinolytic Therapy (OID 2.16.840.1.113883.3.666.5.736): Deleted 1 RXNORM code (387020). Updated value set name from Hospital Measures-Fibrinolytic Therapy to Fibrinolytic Therapy.	Value Set
Value Set Medical Reason (OID 2.16.840.1.113883.3.117.1.7.1.473): Removed value set from this measure.	Value Set
Value set Patient Refusal (OID 2.16.840.1.113883.3.117.1.7.1.93): Removed value set from this measure.	Value Set
Value set PCI (OID 2.16.840.1.113762.1.4.1045.67): Deleted 4 SNOMED codes (14201006, 446878003, 5431005, 68457009).	Value Set
Value set STEMI Exclusions (OID 2.16.840.1.113762.1.4.1045.36): Added 1 ICD9CM code (410.70) and 2 SNOMED codes (703360004, 70422006). Updated value set name from NSTEMI to STEMI Exclusions.	Value Set
Value set Transfer From Emergency Department (ED) Locations (OID 2.16.840.1.113883.3.666.5.3006): Deleted 19 SNOMED codes and added 2 SNOMED codes (225728007, 73770003). Updated value set name from Hospital-Measure (ED) Locations to Transfer From Emergency Department (ED) Locations.	Value Set
Value set Transfer from Inpatient (OID 2.16.840.1.113883.3.666.5.3013): Deleted 12 SNOMED codes and added 2 SNOMED codes (434771000124107, 440654001). Updated value set name from Hospital Measures-Acute care hospital to Transfer From Inpatient.	Value Set
Value set Transfer From Outpatient (OID 2.16.840.1.113883.3.67.1.101.950): Deleted 27 SNOMED codes and added 1 SNOMED codes (440655000). Updated value set name from Hospital Measures-Hospital outpatient department to Transfer From Outpatient.	Value Set
Value set Ventricular Assist Device placement (OID 2.16.840.1.113883.3.666.5.3015): Deleted 7 ICD10PCS codes, 3 ICD9CM codes, and 11 SNOMED codes and added 1 ICD9CM and 2 SNOMED codes. Updated value set name from Hospital Measures-Ventricular Assist Device placement to Ventricular Assist Device placement.	Value Set

## CMS71v5 - Anticoagulation Therapy for Atrial Fibrillation/Flutter

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Updated Guidance.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatientNonElective and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Atrial Ablation (OID 2.16.840.1.113883.3.117.1.7.1.203): Deleted 3 ICD10PCS codes (02B60ZZ, 02B63ZZ, 02B64ZZ) and added 3 ICD10PCS codes (02580ZZ, 02583ZZ, 02584ZZ).	Value Set
Value set Atrial Fibrillation/Flutter (OID 2.16.840.1.113883.3.117.1.7.1.202): Deleted 3 SNOMED codes (312442005, 428076002, 429218009).	Value Set
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set

## CMS72v4 - Antithrombotic Therapy By End of Hospital Day 2

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Removed reference to observation patients from guidance header field, since value set does not include observation encounters.	Header
Corrected Denominator Exception logic to constrain timing for documentation of patient refusal or medical reasons for not administering Antithrombotic Therapy, improving alignment with chart abstracted measure.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatientNonElective and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Antithrombotic ingredient specific (OID 2.16.840.1.113762.1.4.1021.8): Deleted 2 RXNORM codes (42463 and 69646).	Value Set
Value set Antithrombotic Therapy (OID 2.16.840.1.113883.3.117.1.7.1.201): Deleted 7 RXNORM codes (1043067, 1192963, 1245473, 1293047, 1294327, 349621, 825174, 204724) and added 6 RXNORM codes (1536670, 1536675, 1536815, 1536833, 1537021, 259081).	Value Set

## CMS73v4 - Venous Thromboembolism Patients with Anticoagulation Overlap Therapy

Technical Release Notes	Type of TRN
Added guidance statement from CMS regarding the capture of the VTE confirmed concept and its impact on the use of the measure.	Header
Copyright updated.	Header
eMeasure version number incremented.	Header
Removed guidance statement related to date difference function calculations, as this logic was refactored and the date difference function is no longer used in the logic.	Header
Updated references in header.	Header
Added the administration of the oral direct thrombin inhibitor dabigatran to the Numerator logic, as the administration of these medications could justify the absence or discontinuation of overlap therapy.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient, \$DiagnosisVTE, \$InterventionComfortMeasures, \$MedicationReasonForNotAdministeringParenteralAnticoagulantDose, \$MedicationReasonForNoParenteralAnticoagulant, \$MedicationWarfarinParenteralAnticoagulantOverlap, and \$MedicationReasonForNoParenteralAnticoagulantAtDischarge to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed Date Difference function from Numerator logic and replaced it with the expression of logic in the Numerator, -The line of logic 'AND: Difference between dates >= 4 days of:' has been removed and replaced with the timing relationship '>=4 day(s) starts before start of'. The 'First' segment of logic is now the left-hand side of this clause, and the 'Most Recent' segment of logic is now the right-hand side of this clause. -The line of logic 'AND: Difference between dates < 4 days of:' has been removed and replaced with the timing relationship '< 4 day(s) starts before start of'. The 'First' segment of logic is now the left-hand side of this clause, and the 'Most Recent' segment of logic is now the right-hand side of this clause.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Removed unnecessary 'First' from the 'Occurrence A of Diagnostic Study, Performed: VTE Diagnostic Test' in the Denominator logic to reduce complexity and align with other VTE measures.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Revised Numerator logic criteria relating warfarin and parenteral anticoagulant administration on the same day to clarify which medication datetime should be used in determining the 'First' and 'Most Recent' administrations.	Logic
Revised Numerator logic to ensure logic consistency in reference to the most recent parenteral anticoagulant administered during the hospitalization (either in the ED or in the Inpatient Encounter).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS73v4 - Venous Thromboembolism Patients with Anticoagulation Overlap Therapy

### Technical Release Notes

### Type of TRN

Under the overlap therapy duration $\geq 4$ days Numerator logic block, removed unnecessary reference to parenteral administration in the ED as a possibility for the most recent occurrence of the parenteral anticoagulant administration. If a patient is on overlap therapy $\geq 4$ days, it would be impossible for the last parenteral anticoagulant administration to occur in the ED.	Logic
Updated logic for applying 'AND' logical operator in the left-hand side or right-hand side of a timing clause.	Logic
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set
Value set Obstetrics VTE (OID 2.16.840.1.113883.3.117.1.7.1.264): Added 8 ICD10CM codes (O03.35, O07.35, O22.8X1, O22.8X2, O22.8X3, O22.8X9, O87.0, O87.3) and 1 SNOMED code (609497003).	Value Set
Value set Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment (OID 2.16.840.1.113883.3.117.1.7.1.134): Updated value set name from Oral Factor Xa Inhibitor for VTE Prophylaxis to Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment.	Value Set
Value set Parenteral Anticoagulant (OID 2.16.840.1.113883.3.117.1.7.1.266): Deleted 3 RXNORM codes (1037045, 1037179, 1362060) and added 3 RXNORM codes (1361226, 1362831, 308769).	Value Set
Value set Parenteral anticoagulant ingredient specific (OID 2.16.840.1.113762.1.4.1021.4): Deleted 1 RXNORM code (1037042) and added 1 RXNORM code (60819).	Value Set
Value set Venous Thromboembolism (OID 2.16.840.1.113883.3.117.1.7.1.279): Deleted 5 ICD10CM codes (I80.231, I80.232, I80.233, I80.239, I82.210) and 12 SNOMED codes. Added 4 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132251000119107).	Value Set
Value set VTE Confirmed (OID 2.16.840.1.113883.3.117.1.7.1.407): Deleted 37 SNOMED codes; added 5 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132301000119107, 57834008).	Value Set

## CMS91v5 - Thrombolytic Therapy

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Removed reference to observation patients from guidance header field, since value set does not include observation encounters.	Header
Added '<= 120 minute(s) ends before start of 'Occurrence A of Encounter, Performed: Emergency Department Visit' to each 'Physical Exam, Performed: Baseline State' statement in the Numerator and Denominator Exceptions to clarify the logic in the left-hand side or right-hand side of a timing clause.	Logic
Added '<= 120 minute(s) starts before start of 'Occurrence A of Encounter, Performed: Emergency Department Visit' to each 'Physical Exam, Performed: Time of Symptom Onset' statement in the Numerator and Denominator Exceptions to clarify the logic in the left-hand side or right-hand side of a timing clause.	Logic
Added Denominator Exception for Comfort Measure Documented the day of or day after arrival.	
Modified the timing of 'Medication, Administered not done: Medical Reason' and 'Medication, Order not Done: Medical Reason' to the day of or day after arrival in order to align with chart-abstracted measure.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variables \$EncounterInpatientNonElective, \$InterventionComfortMeasures, and \$MedicalReasonForNotInitiatingIVThrombolytic to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Modified the the timing of the documentation of an NIHSS score = 0 to look for a FIRST NIHSS score when NIHSS=0 and is documented in the ED.	Logic
Removed Denominator Exception for NIHSS>22 based on recent clinical guidance.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS100v4 - Aspirin Prescribed at Discharge

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Initial Population, Denominator, Denominator Exclusions, and Denominator Exceptions updated in the header to be consistent across hospital measures and align with logic.	Header
Updated Guidance in the header to align with the measure logic.	Header
Added a timing constraint to 'Encounter, Performed: Emergency Department Visit' and removed Occurring to constrain the time as intended.	Logic
Added logic to include a diagnosis of active AMI that starts during the ED visit to capture the start of the diagnosis.	Logic
Changed timing for Medication allergy and Medication order not done: Medical Reason and Patient Refusal to align with measure intent. Removed Occurring when denoting a specific event was not necessary.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions and/or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed 'Clinical Trial Participant' logic due to the inability to capture clinical trials that are specific to the measure.	Logic
Replaced 'ends before start' with 'ends before or concurrent with start of' to ensure inclusion of cases in which the ED discharge and inpatient admission occur in the same minute (when appropriate for measure intent).	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Acute Myocardial Infarction (AMI) (OID 2.16.840.1.113883.3.666.5.3011): Added 29 SNOMED codes. Updated name from Hospital Measures - AMI to Acute Myocardial Infarction (AMI).	Value Set
Value set Aspirin (OID 2.16.840.1.113883.3.666.5.626): Deleted 22 RXNORM codes and updated value set name from Hospital Measures-Aspirin to Aspirin.	Value Set
Value set Aspirin Allergen (OID 2.16.840.1.113883.3.117.1.7.1.139): Deleted 36 RXNORM codes and added 13 RXNORM codes.	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set
Value set Medication Hold (OID 2.16.840.1.113883.3.666.5.1145): Updated value set name from Hospital Measures - Hold to Medication Hold.	Value Set

## CMS102v4 - Assessed for Rehabilitation

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
eMeasure version number incremented.	Header
Removed reference to observation patients from guidance header field, since value set does not include observation encounters.	Header
Revised Numerator header statement to align with language in chart-abstracted measure.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatientNonElective and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set

## CMS104v4 - Discharged on Antithrombotic Therapy

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Rationale updated to reflect FDA approval of novel oral anticoagulant agents (NOACs) for stroke prevention.	Header
Removed reference to observation patients from guidance header field, since value set does not include observation encounters.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatientNonElective and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Antithrombotic ingredient specific (OID 2.16.840.1.113762.1.4.1021.8): Deleted 2 RXNORM codes (42463 and 69646).	Value Set
Value set Antithrombotic Therapy (OID 2.16.840.1.113883.3.117.1.7.1.201): Deleted 7 RXNORM codes (1043067, 1192963, 1245473, 1293047, 1294327, 349621, 825174, 204724) and added 6 RXNORM codes (1536670, 1536675, 1536815, 1536833, 1537021, 259081).	Value Set
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set

## CMS105v4 - Discharged on Statin Medication

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Rationale updated to reflect FDA approval of novel oral anticoagulant agents (NOACs) for stroke prevention.	Header
Removed reference to observation patients from guidance header field, since value set does not include observation encounters.	Header
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatientNonElective and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set
Value set Lipid-lowering Agent (OID 2.16.840.1.113883.3.117.1.7.1.217): Removed value set from this measure.	Value Set
Value set Statin Allergen (OID 2.16.840.1.113883.3.117.1.7.1.42): Deleted 1 RXNORM code (404775).	Value Set
Value set Statin ingredient specific (OID 2.16.840.1.113762.1.4.1021.7): Deleted 3 RXNORM codes (17767, 341248, 593411).	Value Set

## CMS107v4 - Stroke Education

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Removed reference to observation patients from guidance header field, since value set does not include observation encounters.	Header
Added timing relationship for each individual 'AND' statement in the Numerator logic to clarify the applicability of the timing relationship.	Logic
Corrected 'Communication: From Patient to Provider' datatype to 'Communication: From Provider to Patient' in Numerator criterion representing patient refusal of written materials.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatientNonElective and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS108v4 - Venous Thromboembolism Prophylaxis

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
eMeasure version number incremented.	Header
Revised Initial Population header statement to align with measure logic.	Header
Updated rationale and references in measure header.	Header
Updated the Numerator header statement to better align with measure logic.	Header
Added logic to Numerator to allow for explicitly modeled medical reasons for the non-administration of VTE prophylaxis (e.g. low risk, INR >3.0) to be sourced from ED visit documentation, similarly to the logic for the provision of a medical reason or patient refusal.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient, \$DiagnosisVTE, \$MedicationVTEProphylaxis, \$DeviceVTEProphylaxis, \$NoMedicationVTEProphylaxisMedicalReason, \$NoDeviceVTEProphylaxisMedicalReason, \$NoVTEProphylaxisPatientRefusal and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Reordered Numerator logic to clearly separate appropriate VTE prophylaxis from exceptional scenarios justifying the non-administration of VTE prophylaxis. Added in-line comments to Numerator logic to clearly identify related logic blocks.	Logic
Replaced the timing relationship 'starts after start of' with 'starts after or concurrent with start of' in logic criteria establishing a relationship between \$EncounterInpatient and 'Encounter, Performed: ICU Admission or Transfer', to allow patients who are directly admitted to the ICU to meet the criteria.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
Revised comfort measures logic in Denominator Exclusions to allow for comfort measures starting any time during the ED visit.	Logic
Revised incorrect value set reference in Numerator logic related to Oral Factor Xa inhibitor administration from 'Hip Fracture Surgery' (OID 2.16.840.1.113883.3.117.1.7.1.258) to 'Knee Replacement Surgery' (OID 2.16.840.1.113883.3.117.1.7.1.261).	Logic

## CMS108v4 - Venous Thromboembolism Prophylaxis

Technical Release Notes	Type of TRN
Revised INR result threshold in Numerator logic from '>3' to '>3.0', to convey a more precise threshold aligned with the usual reporting units for this laboratory test.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Atrial Fibrillation/Flutter (OID 2.16.840.1.113883.3.117.1.7.1.202): Deleted 3 SNOMED codes (312442005, 428076002, 429218009).	Value Set
Value set General Surgery (2.16.840.1.113883.3.117.1.7.1.255): Added 138 ICD10PCS codes and 42 SNOMED codes.	Value Set
Value set Gynecological Surgery (2.16.840.1.113883.3.117.1.7.1.257): Added 5 ICD10PCS codes (0U540ZZ,0U840ZZ,0UB40ZZ,0UB47ZZ,0UB48ZZ) and 15 new SNOMED codes.	Value Set
Value set Hip Replacement Surgery (2.16.840.1.113883.3.117.1.7.1.259): Added 57 ICD10PCS codes and 18 SNOMED codes.	Value Set
Value set Intracranial Neurosurgery (2.16.840.1.113883.3.117.1.7.1.260): Added 2 ICD10PCS codes (00560ZZ,009600Z) and deleted 67 ICD10PCS codes and 5 SNOMED codes.	Value Set
Value set Knee Replacement Surgery (2.16.840.1.113883.3.117.1.7.1.261): Added 8 ICD10PCS codes.	Value Set
Value set Low Dose Unfractionated Heparin for VTE Prophylaxis (2.16.840.1.113762.1.4.1045.39): Added 5 RXNORM codes (1361568,1361574,1361577,1362831,1362837).	Value Set
Value set Mental Disorders (2.16.840.1.113883.3.117.1.7.1.262): Added 51 ICD10CM codes and 113 SNOMED codes.	Value Set
Value set Obstetrics (2.16.840.1.113883.3.117.1.7.1.263): Added 1924 ICD10CM codes, 2 ICD9CM codes (648.33,648.34), and 254 SNOMED codes. Deleted 16 SNOMED codes.	Value Set
Value set Obstetrics VTE (OID 2.16.840.1.113883.3.117.1.7.1.264): Added 8 ICD10CM codes (O03.35, O07.35, O22.8X1, O22.8X2, O22.8X3, O22.8X9, O87.0, O87.3) and 1 SNOMED code (609497003).	Value Set
Value set Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment (OID 2.16.840.1.113883.3.117.1.7.1.134): Updated value set name from Oral Factor Xa Inhibitor for VTE Prophylaxis to Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment.	Value Set
Value set Unfractionated Heparin (OID 2.16.840.1.113883.3.117.1.7.1.218): Added 2 RXNORM codes (1361226, 1362831).	Value Set
Value set Unfractionated Heparin for VTE prophylaxis ingredient specific (OID 2.16.840.1.113762.1.4.1021.13): Added 1 RXNORM code (235473) and deleted 1 RXNORM code (314659).	Value Set
Value set Venous Thromboembolism (OID 2.16.840.1.113883.3.117.1.7.1.279): Deleted 5 ICD10CM codes (I80.231, I80.232, I80.233, I80.239, I82.210) and 12 SNOMED codes. Added 4 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132251000119107).	Value Set

**CMS109v4 - Venous Thromboembolism Patients Receiving Unfractionated Heparin with Dosages/Platelet Count Monitoring by Protocol or Nomogram**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Added guidance statement from CMS regarding the capture of the VTE confirmed concept and its impact on the use of the measure.	Header
Copyright updated.	Header
eMeasure version number incremented.	Header
Updated Initial Population header statement to align with logic.	Header
Updated rationale and references in measure header.	Header
Updated the Numerator header statement to better align with measure logic.	Header
Added intravenous administration route attribute to instances of 'Medication, Order: Unfractionated Heparin' in the Numerator logic to ensure consistency in references to Unfractionated Heparin.	Logic
Added logic to Numerator to allow for UFH therapy during the ED visit.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient, \$DiagnosisVTE, and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from the Initial Population.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
Replaced timing relationship 'starts after start' with 'starts after or concurrent with' in Numerator logic relating heparin monitoring protocols with heparin order. This change allows for documentation of monitoring protocols within the heparin order.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set
Value set Obstetrics VTE (OID 2.16.840.1.113883.3.117.1.7.1.264): Added 8 ICD10CM codes (O03.35, O07.35, O22.8X1, O22.8X2, O22.8X3, O22.8X9, O87.0, O87.3) and 1 SNOMED code (609497003).	Value Set
Value set Unfractionated Heparin (OID 2.16.840.1.113883.3.117.1.7.1.218): Added 2 RXNORM codes (1361226, 1362831).	Value Set
Value set Venous Thromboembolism (OID 2.16.840.1.113883.3.117.1.7.1.279): Deleted 5 ICD10CM codes (I80.231, I80.232, I80.233, I80.239, I82.210) and 12 SNOMED codes. Added 4 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132251000119107).	Value Set
Value set VTE Confirmed (OID 2.16.840.1.113883.3.117.1.7.1.407): Deleted 37 SNOMED codes; added 5 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132301000119107, 57834008).	Value Set

## CMS110v4 - Venous Thromboembolism Discharge Instructions

Technical Release Notes	Type of TRN
Added guidance statement from CMS regarding the capture of the VTE confirmed concept and its impact on the use of the measure.	Header
Copyright updated.	Header
eMeasure version number incremented.	Header
Updated references in header.	Header
Updated the Numerator header statement to include patient refusal to better align with measure logic.	Header
Added timing relationship for each individual 'AND' statement in the Numerator logic to clarify the applicability of the timing relationship.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient and \$DiagnosisVTE to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
Value set Obstetrics VTE (OID 2.16.840.1.113883.3.117.1.7.1.264): Added 8 ICD10CM codes (O03.35, O07.35, O22.8X1, O22.8X2, O22.8X3, O22.8X9, O87.0, O87.3) and 1 SNOMED code (609497003).	Value Set
Value set Venous Thromboembolism (OID 2.16.840.1.113883.3.117.1.7.1.279): Deleted 5 ICD10CM codes (I80.231, I80.232, I80.233, I80.239, I82.210) and 12 SNOMED codes. Added 4 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132251000119107).	Value Set
Value set VTE Confirmed (OID 2.16.840.1.113883.3.117.1.7.1.407): Deleted 37 SNOMED codes; added 5 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132301000119107, 57834008).	Value Set

## CMS111v4 - Median Admit Decision Time to ED Departure Time for Admitted Patients

Technical Release Notes	Type of TRN
Clarified that the Initial Population consists of the inpatient encounters ending during the measurement period with length of stay (Discharge DateTime minus Admission DateTime) less than or equal to 120 days.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
For each population, results should be reported without stratification and then with each stratum applied. For this measure, the number of encounters that fall into the Initial Population are reported without stratification, then reported according to the defined stratification. The number of encounters that fall into the Measure Population are reported without stratification, then reported according to the defined stratification. The computed continuous variable defined by the Measure Observation is reported for the Measure Population also, then reported according to the defined stratification.	Header
Reporting stratum modified to include the use of principal diagnoses.	Header
Stratification 1 in the prior version of the measure was removed because it was redundant with the measure population. Strata have been renumbered to reflect this update.	Header
The rate aggregation description was clarified to explain that measure observation is made on the duration the patient was in the Emergency Department after the decision to admit, also stated as: the Datetime difference between the Emergency Department discharge time and the Decision to Admit time.	Header
Updated Measure Population narrative in the header to align with logic.	Header
ED encounter admission and discharge timestamps are used instead of facility location (ED) departure time for timing comparison logic.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions and/or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced DateDiff or TimeDiff functions with Datetime difference in the measure observation section, and removed 'AND' operators from the statements underneath the DateTimeDiff function.	Logic
The Measure Population has been clarified. It includes emergency department visits where an inpatient encounter did not start within 119 minutes of the discharge from the emergency department. Use of <= 1 (hour(s)) operator means the difference between the end of the Emergency Department visit and the beginning of the Inpatient visit needs to be less than or equal 1 hour which spans from 0 to 119 minutes and 59 seconds.	Logic
Decision to Admit to Hospital Inpatient Grouping Value Set (OID 2.16.840.1.113883.3.117.1.7.1.295): Updated value Set concepts and added 1 SNOMED code (76464004).	Value Set
Psychiatric/Mental Health Patient Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.299): Deleted 21 SNOMED codes and 52 ICD10CM codes, and added 75 SNOMED codes.	Value Set
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
The concept for 'Hospital Admission for observation' (76464004) was added to this SNOMED value set. The addition of this concept extends the type of admit decisions considered by the measure, but does not affect the timing requirements in the measure's logic.	Value Set

**CMS111v4 - Median Admit Decision Time to ED Departure Time for Admitted Patients**

**Technical Release Notes**

**Type of TRN**

Timing operator 'ends before start of' replaced with 'ends before or concurrent with start of' in criteria relating Emergency Department Visit with Inpatient Encounter. This allows for cases in which the ED discharge and inpatient admission occur in the same minute to evaluate to true.

Logic

## CMS113v4 - Elective Delivery

Technical Release Notes	Type of TRN
Changed all references to 'Cesarean Section' to 'Cesarean Birth' to reflect preferred obstetric data definition.	Header
Copyright updated.	Header
eMeasure version number incremented.	Header
Updated the Initial Population and Numerator header statements to better align with measure logic.	Header
Added timing constraint of <=24 hours to constrain induction of labor to inductions occurring in relation to the delivery.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator overlaps to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Revised logic to exclude patients with a gestational age at delivery of 39 or 40 weeks.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Revised timing operator to constrain logic to Labor findings occurring immediately prior to the cesarean birth.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Cesarean Birth (OID 2.16.840.1.113883.3.117.1.7.1.282): Updated value set name from Cesarean Section to Cesarean Birth.	Value Set
Value set Classical Cesarean Birth (OID 2.16.840.1.113883.3.117.1.7.1.421): Updated value set name from Classical Cesarean Section to Classical Cesarean Birth.	Value Set
Value set Conditions Possibly Justifying Elective Delivery Prior to 39 Weeks Gestation (OID 2.16.840.1.113883.3.117.1.7.1.286): Added 1 SNOMED code and 83 ICD10CM codes and deleted 4 ICD10CM codes.	Value Set
Value set Delivery Procedures (OID 2.16.840.1.113762.1.4.1045.59): Replaced OID 2.16.840.1.113883.3.117.1.7.1.401 and added 10 ICDPCS codes (10D00Z0, 10D00Z1, 10D00Z2, 10D07Z3, 10D07Z4, 10D07Z5, 10D07Z6, 10D07Z7, 10D07Z8, 10E0XZZ).	Value Set
Value set Medical Induction of Labor (OID 2.16.840.1.113883.3.117.1.7.1.288 ): Added 8 ICDPCS codes (0U7C7DZ, 0U7C7ZZ, 10900ZC, 10903ZC, 10904ZC, 10907ZC, 10908ZC, 3E033VJ).	Value Set

**CMS114v4 - Incidence of Potentially-Preventable Venous Thromboembolism**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Added guidance statement from CMS regarding the capture of the VTE confirmed concept and its impact on the use of the measure.	Header
Copyright updated.	Header
eMeasure version number incremented.	Header
Revised Initial Population and Denominator Exclusions header statements to align with measure logic.	Header
Updated references in header.	Header
Added logic to Denominator Exclusions for the administration of direct thrombin inhibitors and glycoprotein IIb/IIIa inhibitors, as these would be considered reasons for not administering VTE prophylaxis.	Logic
Added logic to Denominator Exclusions to account for patients with a VTE suspicion starting before inpatient admission.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Changed datatype 'Diagnostic Study, Order' to Diagnostic Study, Performed' in Denominator Exclusions logic associated with the 'VTE Diagnostic Test' value set. Removed redundant Denominator Exclusions logic for 'Diagnostic Study, Order' occurring during the ED.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient, \$MedicationVTEProphylaxis, \$DeviceVTEProphylaxis, \$NoMedicationVTEProphylaxisMedicalContraindication, \$NoDeviceVTEProphylaxisMedicalContraindication, \$NoMedicationDeviceVTEProphylaxisPatientRefusal, \$InterventionComfortMeasures and \$DiagnosisVTE to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed administration of IV heparin from Denominator Exclusions, as the administration of this medication at one time during the hospitalization would not necessarily obviate the need to prophylax a patient.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Reordered Denominator Exclusions logic for enhanced readability and clarity. Added in-line comments to denominator exclusions logic to clearly identify distinct groups of exclusions.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic

## CMS114v4 - Incidence of Potentially-Preventable Venous Thromboembolism

### Technical Release Notes

### Type of TRN

Revised Denominator Exclusions 'not done' logic to require that a medical contraindication for both pharmacological VTE prophylaxis and mechanical VTE prophylaxis are provided within the same timeframe (during the ED visit or during the inpatient encounter). This change aligns VTE-6/CMS114 with 'not done' logic in VTE-1/CMS108 and VTE-2/CMS190.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value Set Direct Thrombin Inhibitor (OID 2.16.840.1.113883.3.117.1.7.1.205): Added value set to this measure.	Value Set
Value Set Glycoprotein IIb/IIIa Inhibitors (OID 2.16.840.1.113762.1.4.1045.41): Added value set to this measure.	Value Set
Value set Intravenous route (OID 2.16.840.1.113883.3.117.1.7.1.222): Removed value set from this measure.	Value Set
Value set Low Dose Unfractionated Heparin for VTE Prophylaxis (OID 2.16.840.1.113762.1.4.1045.39): Added 5 RXNORM codes (1361568,1361574,1361577,1362831,1362837).	Value Set
Value Set Low Molecular Weight Heparin for VTE prophylaxis ingredient specific (OID 2.16.840.1.113762.1.4.1021.12): Added value set to this measure.	Value Set
Value set Obstetrics VTE (OID 2.16.840.1.113883.3.117.1.7.1.264): Added 8 ICD10CM codes (O03.35, O07.35, O22.8X1, O22.8X2, O22.8X3, O22.8X9, O87.0, O87.3) and 1 SNOMED code (609497003).	Value Set
Value set Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment (OID 2.16.840.1.113883.3.117.1.7.1.134): Updated value set name from Oral Factor Xa Inhibitor for VTE Prophylaxis to Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment.	Value Set
Value set Unfractionated Heparin (OID 2.16.840.1.113883.3.117.1.7.1.218): Removed value set from this measure.	Value Set
Value set Venous Thromboembolism (OID 2.16.840.1.113883.3.117.1.7.1.279): Deleted 5 ICD10CM codes (I80.231, I80.232, I80.233, I80.239, I82.210) and 12 SNOMED codes. Added 4 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132251000119107).	Value Set
Value set VTE Confirmed (OID 2.16.840.1.113883.3.117.1.7.1.407): Deleted 37 SNOMED codes; added 5 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132301000119107, 57834008).	Value Set
Value set Warfarin-only ingredient specific (OID 2.16.840.1.113762.1.4.1021.10): Added value set to this measure.	Value Set

## CMS171v5 - Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Added 'during Occurrence A of \$EncounterInpatient' to 'Occurrence A of Procedure, Performed: Scope Procedures' in each Numerator. Since the selected surgery 'starts after the end' of the 'scope procedure' it was necessary to time bound it to during the inpatient encounter, otherwise the selected surgery could occur at any time after the surgery and it would not necessarily have to be during this particular encounter.	Logic
Category and header codes were removed from all value sets.	Value Set
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator overlaps to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The attribute 'incision datetime' was removed from all instances of 'Procedure, Performed: General or Neuraxial Anesthesia'. This value set contains concepts related to anesthesia, not the surgery itself. Anesthesia does not have an incision date and time, but a start datetime and end datetime. These are what will be used for timing relationships when 'Procedure, Performed: General or Neuraxial Anesthesia' is the datatype used.	Logic
Removed logic for Clinical Trial Participant from the Denominator Exclusions.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Mapping from ICD9CM to SNOMED was evaluated and additional SNOMED codes were added as necessary.	Value Set
SNOMED codes in value sets used for the data category 'diagnosis' were reviewed and were removed unless the domain was disorder, finding, situation or event.	Value Set
Value set Abdominal hysterectomy (OID 2.16.840.1.113883.3.666.5.710): Updated value set name from Hospital measures-Abdominal hysterectomy to Abdominal Hysterectomy and deleted 1 ICD10PCS (0UTC0ZZ), 1 ICD9CM (68.31) and 3 SNOMED codes (176795006, 387645003, 414575003).	Value Set
Value set Any infection (OID 2.16.840.1.113883.3.666.5.696): Updated value set name from Hospital Measures - Any infection to Any infection, deleted 1 ICD9CM and 62 SNOMED codes and added 245 SNOMED codes.	Value Set
Value set CABG Surgeries (OID 2.16.840.1.113883.3.666.5.694): Updated value set name from Hospital measures-CABG to CABG Surgeries, deleted 1 SNOMED code (440332008), and added 13 SNOMED codes (119564002, 17073005, 175021005, 175022003, 175024002, 175025001, 175026000, 175029007, 405598005, 405599002, 418551006, 61236006, 8876004).	Value Set

## CMS171v5 - Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision

### Technical Release Notes

### Type of TRN

Value set Caesarean Section (OID 2.16.840.1.113883.3.666.5.1921): Updated value set name from Hospital Measures-Caesarean Section to Cesarean Section and added 1 SNOMED code (450484007).	Value Set
Value set Cardiac Surgery Other Than CABG (OID 2.16.840.1.113883.3.666.5.701): Updated value set name from Hospital measures-Other Cardiac Surgery to Cardiac Surgery Other Than CABG and deleted 5 SNOMED Codes (172921000, 232855005, 232856006, 442525005, 67460004) and 1 ICD9CM code (35.98).	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set Colon surgery (OID 2.16.840.1.113883.3.666.5.705): Updated value set name from Hospital measures- Colon surgery to Colon Surgery, deleted 2 ICD9CM and 18 SNOMED codes, and added 1 ICD9CM and 14 SNOMED codes.	Value Set
Value set Hip arthroplasty (OID 2.16.840.1.113883.3.666.5.703): Updated value set name from Hospital measures-Hip arthroplasty to Hip arthroplasty, deleted 14 ICD10PCS and 5 SNOMED codes, and added 15 SNOMED codes.	Value Set
Value set IV Antimicrobial medication (OID 2.16.840.1.113883.3.666.5.765): Deleted 2 RXNORM codes (204931, 240639) and added 1 RXNORM code (1483787).	Value Set
Value set IV Quinolones (OID 2.16.840.1.113883.3.666.5.835): Deleted 2 RXNORM codes (240639, 250095) and added 1 RXNORM code (250095).	Value Set
Value set IV Vancomycin (OID 2.16.840.1.113883.3.666.5.766): Updated value set name from Hospital measures-IV Vancomycin to IV Vancomycin and added 1 RXNORM code (1421612).	Value Set
Value set Knee arthroplasty (OID 2.16.840.1.113883.3.666.5.1816): Updated value set name from Hospital measures-Knee arthroplasty to Knee Arthroplasty Surgery. Deleted 3 SNOMED codes (179406003, 179411001, 179416006) and Added 11 SNOMED codes (179351002, 265170009, 442102003, 442655008, 443543000, 443658004, 443681002, 443682009, 444463001, 450818008, 609588000).	Value Set
Value set SCIP Major Surgical Procedure (OID: 2.16.840.1.113883.3.117.1.7.1.2): Deleted 2 ICD9CM and 451 SNOMED codes and added 1 ICD10PCS and 98 SNOMED codes.	Value Set
Value set Scope Procedures (OID 2.16.840.1.113762.1.4.1045.52): Updated value set name from Laparoscopic Procedures to Scope Procedures.	Value Set
Value set Substance Or Medication Administration Route IV (OID 2.16.840.1.113883.3.666.5.1108): Updated value set name from Hospital measures-Route IV to Substance or Medication Administration Route IV.	Value Set
Value set Vaginal hysterectomy (OID 2.16.840.1.113883.3.666.5.712): Updated value set name from Hospital measures-Vaginal hysterectomy to Vaginal Hysterectomy. Deleted 1 ICD10PCS code (0UT9FZZ) and 1 ICD9CM code (68.71), and added 9 SNOMED codes (112918004, 27185000, 30160001, 413145007, 43791001, 54490004, 63516002, 699789005, 77902002).	Value Set
Value set Vascular surgery (OID 2.16.840.1.113883.3.666.5.713): Updated value set name from Hospital measures-Vascular surgery to Vascular Surgery and added 7 SNOMED codes (14259004, 19606007, 35653006, 405397001, 71198003, 77163008, 77773000).	Value Set
Value set Pocketed Device Implantation Procedures (OID 2.16.840.1.113883.3.666.5.1741): Updated value set name from Hospital measures-Pacemaker or implantable defibrillator insertion procedure to Pocketed Device Implantation Procedures. Deleted 6 ICD10PCS (0JPT0PZ, 0JPT3PZ, 0KXF0ZZ, 0KXG0ZZ, 0PT10ZZ, 0PT20ZZ), 1 SNOMED (384684002), and 2 ICD9CM codes (39.86, 39.88).	Value Set

## CMS172v5 - Prophylactic Antibiotic Selection for Surgical Patients

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Updated Denominator Exclusions in the header to align with the measure logic.	Header
Updated Guidance in the header to align with the measure logic.	Header
Updated Initial Population header statement to align with the measure logic.	Header
A duplicative logic sequence checking to see if a patient had antibiotics within 24 hours before the surgery throughout the rest of the inpatient encounter was removed, leaving only one check for this Denominator exclusion. Phrases removed: AND: AND NOT: 'Medication, Administered: IV, IM, PO Antimicrobial Medications (route: 'Hospital measures-Route IV, oral or IM:')' <= 1440 minute(s) starts before start of 'Occurrence A of Procedure, Performed: General or Neuraxial Anesthesia (incision datetime)' AND NOT: 'Medication, Administered: IV, IM, PO Antimicrobial Medications (route: 'Hospital measures-Route IV, oral or IM:')' starts after start of ('Occurrence A of Procedure, Performed: General or Neuraxial Anesthesia (incision datetime)' during 'Occurrence A of Encounter, Performed: Encounter Inpatient').	Logic
Changed timing relationship from 1 year to 365 days to increase specificity.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator overlaps to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Patient Characteristic Expired is fixed to SNOMED code 419099009 (Dead) and therefore cannot be further qualified with a value set.	Logic
Removed the following logic from the Denominator Exclusions: OR: - AND NOT: 'Medication, Administered: IV, IM, PO Antimicrobial Medications (route: Substance or Medication Administration Route IV, oral or IM)' <= 1440 minute(s) starts before start of 'Occurrence A of Procedure, Performed: General or Neuraxial Anesthesia' - AND NOT: 'Medication, Administered: IV, IM, PO Antimicrobial Medications (route: Substance or Medication Administration Route IV, oral or IM)' starts after start of ('Occurrence A of Procedure, Performed: General or Neuraxial Anesthesia' during Occurrence A of \$EncounterInpatient ) as it was duplicative of other logic present in the Denominator Exclusions.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The attribute 'incision datetime' was removed from all instances of 'Procedure, Performed: General or Neuraxial Anesthesia'. This value set contains concepts related to anesthesia, not the surgery itself. As anesthesia does not have an incision date and time, but a start datetime and end datetime the incision datetime was removed.	Logic
Removed logic for Clinical Trial Participant from the Denominator Exclusions.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS172v5 - Prophylactic Antibiotic Selection for Surgical Patients

### Technical Release Notes

### Type of TRN

Additional SNOMED codes which map to ICD9CM codes were added to this value set SCIP Major Surgical Procedure (OID 2.16.840.1.113883.3.666.5.1250).	Value Set
In the value sets for infection in the denominator exclusions, codes and concepts which represent a history of MRSA have been removed and codes and concepts which represent an active diagnosis of MRSA infection will remain. The new value set with codes and concepts representing a history of MRSA in the past will be used in numerator logic with a new datatype of 'Diagnosis, Resolved' as a reason to give Vancomycin. The OID for this value set is: 2.16.840.1.113762.1.4.1111.8.	Value Set
SNOMED codes in value sets used for the data category 'diagnosis' were reviewed and were removed unless the domain was disorder, finding, situation or event.	Value Set
The value set was removed from Patient Characteristic Expired: Expired as it is now fixed to a single SNOMED code: 419099009 (Dead) and cannot further be qualified with a value set.	Value Set
Value set Abdominal hysterectomy (OID 2.16.840.1.113883.3.666.5.710): Updated value set name from Hospital measures-Abdominal hysterectomy to Abdominal Hysterectomy and deleted 1 ICD10PCS (OUTC0ZZ), 1 ICD9CM (68.31) and 3 SNOMED codes (176795006, 387645003, 414575003).	Value Set
Value set Acute care hospital (OID 2.16.840.1.113883.3.666.5.684): Updated value set name form Hospital Measures-Acute care hospital to Acute care hospital and deleted 15 SNOMED codes and add 1 SNOMED code.	Value Set
Value set Acute care hospital encounter (OID 2.16.840.1.113883.3.666.5.2289): Updated the value set name from Hospital measures-Acute care hospital encounter to Acute care hospital Inpatient Encounter.	Value Set
Value set Antibiotics for Prophylaxis for Hysterectomy Surgeries (OID 2.16.840.1.113883.3.666.5.729): Deleted 1 RXNORM code (204931).	Value Set
Value set Any infection (OID 2.16.840.1.113883.3.666.5.696): Updated value set name from Hospital Measures - Any infection to Any infection, deleted 1 ICD9CM and 62 SNOMED codes and added 245 SNOMED codes.	Value Set
Value set Beta lactams for allergy determination (OID 2.16.840.1.113883.3.666.5.1058): Updated value set name from Hospital Measures-Beta lactams for allergy determination to Beta Lactams for Allergy Determination and added 1 RXNORM code (203117).	Value Set
Value set CABG Surgeries (OID 2.16.840.1.113883.3.666.5.694): Updated value set name from Hospital measures-CABG to CABG Surgeries, deleted 1 SNOMED code (440332008), and added 13 SNOMED codes (119564002, 17073005, 175021005, 175022003, 175024002, 175025001, 175026000, 175029007, 405598005, 405599002, 418551006, 61236006, 8876004).	Value Set
Value set Cardiac Surgery Other Than CABG (OID 2.16.840.1.113883.3.666.5.701): Updated value set name from Hospital measures-Other Cardiac Surgery to Cardiac Surgery Other Than CABG and deleted 5 SNOMED Codes (172921000, 232855005, 232856006, 442525005, 67460004) and 1 ICD9CM code (35.98).	Value Set
Value set Cardiac Valve Surgery (OID 2.16.840.1.113883.3.666.5.2275): Updated value set name from Hospital Measures-Cardiac Valve Surgery to Cardiac Valve Surgery and added 46 SNOMED codes.	Value Set
Value set Chronic Wound Care (OID 2.16.840.1.113883.3.666.5.719): Updated value set name from Hospital Measures-Chronic Wound Care to Chronic Wound Care.	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set Colon surgery (OID 2.16.840.1.113883.3.666.5.705): Updated value set name from Hospital measures- Colon surgery to Colon Surgery, deleted 2 ICD9CM and 18 SNOMED codes, and added 1 ICD9CM and 14 SNOMED codes.	Value Set

## CMS172v5 - Prophylactic Antibiotic Selection for Surgical Patients

Technical Release Notes	Type of TRN
Value set Hemodialysis or peritoneal dialysis (OID 2.16.840.1.113883.3.666.5.2282): Updated the value set name from Hospital measures-Hemodialysis or peritoneal dialysis to Hemodialysis or Peritoneal Dialysis and added 2 SNOMED codes (302497006, 71192002).	Value Set
Value set Hip arthroplasty (OID 2.16.840.1.113883.3.666.5.703): Updated value set name from Hospital measures-Hip arthroplasty to Hip arthroplasty, deleted 14 ICD10PCS and 5 SNOMED codes, and added 15 SNOMED codes.	Value Set
Value set IM or PO Antimicrobial medications (OID 2.16.840.1.113762.1.4.1045.5): Deleted 4 RXNORM codes (197456, 476193, 476299, 854812).	Value Set
Value set IM or PO Antimicrobial Medications (OID 2.16.840.1.113762.1.4.1045.5): Deleted 5 RXNORM codes (204931, 240639, 476193, 476299, 197456).	Value Set
Value set Intramuscular Or PO Route (OID 2.16.840.1.113762.1.4.1045.6): Updated value set name from IM or PO route to Intramuscular or PO route.	Value Set
Value set IV Aminoglycosides (OID 2.16.840.1.113883.3.666.5.727): Updated value set name from Hospital Measures-IV Aminoglycosides to IV Aminoglycosides.	Value Set
Value set IV Antibiotics Used For Prophylaxis For Colon Surgery (OID 2.16.840.1.113883.3.666.5.724): Updated value set name from Hospital Measures-IV Colon-Antibiotics to IV Antibiotics Used For Prophylaxis for Colon Surgery and deleted 1 RXNORM code (204931).	Value Set
Value set IV Antimicrobial medication (OID 2.16.840.1.113883.3.666.5.765): Deleted 2 RXNORM codes (204931, 240639) and added 1 RXNORM code (1483787).	Value Set
Value set IV Aztreonam (OID 2.16.840.1.113883.3.666.5.728): Updated value set name from Hospital Measures-IV Aztreonam to IV Aztreonam.	Value Set
Value set IV Cefazolin (OID 2.16.840.1.113762.1.4.1045.7): Added 1 RXNORM code (1483787).	Value Set
Value set IV Clindamycin (OID 2.16.840.1.113883.3.666.5.893): Updated value set names from Hospital Measures-IV Clindamycin to IV Clindamycin.	Value Set
Value set IV Ertapenem (OID 2.16.840.1.113883.3.666.5.725): Updated value set name from Hospital Measures-IV Ertapenem to IV Ertapenem.	Value Set
Value set IV Metronidazole (OID 2.16.840.1.113883.3.666.5.708): Updated value set name from Hospital Measures-IV Metronidazole to IV Metronidazole.	Value Set
Value set IV Quinolones Used For Prophylaxis For Hysterectomy And Colon Surgery (OID 2.16.840.1.113883.3.666.5.767): Updated value set name from Hospital Measures-IV Hysterectomy and Colon Quinolones to IV Quinolones Used For Prophylaxis for Hysterectomy and Colon Surgery.	Value Set
Value set IV Vancomycin (OID 2.16.840.1.113883.3.666.5.766): Updated value set name from Hospital measures-IV Vancomycin to IV Vancomycin and added 1 RXNORM code (1421612).	Value Set
Value set Knee arthroplasty (OID 2.16.840.1.113883.3.666.5.1816): Updated value set name from Hospital measures-Knee arthroplasty to Knee Arthroplasty Surgery. Deleted 3 SNOMED codes (179406003, 179411001, 179416006) and Added 11 SNOMED codes (179351002, 265170009, 442102003, 442655008, 443543000, 443658004, 443681002, 443682009, 444463001, 450818008, 609588000).	Value Set
Value set MRSA Colonization or Infection (OID 2.16.840.1.113883.3.666.5.2278): Removed value set from this measure.	Value Set
Value set Pocketed Device Implantation Procedures (OID 2.16.840.1.113883.3.666.5.1741): Updated value set name from Hospital measures-Pacemaker or implantable defibrillator insertion procedure to Pocketed Device Implantation Procedures. Deleted 6 ICD10PCS (0JPT0PZ, 0JPT3PZ, 0KXF0ZZ, 0KXG0ZZ, 0PT10ZZ, 0PT20ZZ), 1 SNOMED (384684002), and 2 ICD9CM codes (39.86, 39.88).	Value Set
Value set Request of physician (OID 2.16.840.1.113883.3.666.5.2254): Updated value set name from Hospital measures - Request of physician to Request of physician.	Value Set
Value set SCIP Major Surgical Procedure (OID: 2.16.840.1.113883.3.117.1.7.1.2): Deleted 2 ICD9CM and 451 SNOMED codes and added 1 ICD10PCS and 98 SNOMED codes.	Value Set

## CMS172v5 - Prophylactic Antibiotic Selection for Surgical Patients

### Technical Release Notes

### Type of TRN

Value set Substance Or Medication Administration Route IV (OID 2.16.840.1.113883.3.666.5.1108): Updated value set name from Hospital measures-Route IV to Substance or Medication Administration Route IV.

Value Set

Value set Substance Or Medication Administration Route IV Oral Or IM (OID 2.16.840.1.113883.3.666.5.1111): Updated the value set name from Hospital measures-Route IV, oral or IM to Substance or Medication Administration Route IV, oral or IM and deleted 1 SNOMED code (272394005).

Value Set

Value set Vaginal hysterectomy (OID 2.16.840.1.113883.3.666.5.712): Updated value set name from Hospital measures-Vaginal hysterectomy to Vaginal Hysterectomy. Deleted 1 ICD10PCS code (0UT9FZZ) and 1 ICD9CM code (68.71), and added 9 SNOMED codes (112918004, 27185000, 30160001, 413145007, 43791001, 54490004, 63516002, 699789005, 77902002).

Value Set

Value set Vascular surgery (OID 2.16.840.1.113883.3.666.5.713): Updated value set name from Hospital measures-Vascular surgery to Vascular Surgery and added 7 SNOMED codes (14259004, 19606007, 35653006, 405397001, 71198003, 77163008, 77773000).

Value Set

Value sets were reviewed for category or header codes and these were removed if found in the value sets.

Value Set

**CMS178v5 - Urinary catheter removed on Postoperative Day 1 (POD 1) or Postoperative Day 2 (POD 2) with day of surgery being day zero**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Updated Guidance.	Header
Updated the Denominator Exclusions narrative in the header for the removal of clinical participants and to better align with logic.	Header
Updated the Denominator header statement to better align with measure logic.	Header
Updated the Initial Population header statement to better align with measure logic.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions and/or 'satisfies Any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced 'satisfies any' function to replace previously used operator and to streamline expression (or Denominator Exclusions in this case) logic.	Logic
Introduced the new timing operator overlaps to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity .	Logic
Added logic to the Denominator to ensure patients who present in the ED and have a catheter placed will be counted in the Denominator.	Logic
Changed logic to represent timing from arrival at either the ED or as an inpatient direct admit through the end of the recovery period, which is less than or equal to 6 hours after the end of the anesthesia. This timing was based on encounter and procedure start and stop times rather than value sets to give more precise meaning for extracting data from an EHR.	Logic
Patient Characteristic Expired is fixed to SNOMED code 419099009 (Dead) and therefore cannot be further qualified with a value set.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The >=1 minutes starts before the start of the Encounter, Performed: Inpatient Encounter timing was changed to 'overlaps Occurrence A of \$EncounterInpatient'.	Logic
The attribute of 'ordinality: Principal' was removed from 'Procedure, Performed: Hospital Measures-SCIP Urological/Perineal procedures with potential need of indwelling catheters'. This was done because patients who have a principal urological or perineal procedure which is found in the SCIP Major Surgical value set will be in the IP, and thus in the Denominator. If they have a urological/perineal procedure which is not the principal procedure, they will be excluded from the Denominator.	Logic
Removed logic for Clinical Trial Participant from the Denominator Exclusions.	Logic
The logic for ICU and PACU locations was changed throughout the measure to use the value set 'ICU Admission or Transfer'. The datatype is Encounter, Performed: ICU Admission or Transfer. This Encounter will have a start datetime and end datetime and the timing operators for the medications given in ICU are based on this datatype.	Logic
The value set for “Indwelling Urinary Catheter” was replaced with a value set for “Urethral catheter placement” in the Denominator. This new value set only has codes in it for placement of the urinary catheter. All other codes (codes for removal of catheter, for instance) were removed. This value set was then used in the Denominator logic to represent the placement of the catheter during the Encounter. The indwelling catheter present during admission logic in the Denominator Exclusions was removed as it is now accounted for in the Denominator with logic representing catheter has to be placed during the ED encounter or Inpatient Encounter.	Logic
Additional SNOMED codes which map to ICD9CM codes were added to this value set SCIP Major Surgical Procedure (OID 2.16.840.1.113883.3.666.5.1250).	Value Set

**CMS178v5 - Urinary catheter removed on Postoperative Day 1 (POD 1) or Postoperative Day 2 (POD 2) with day of surgery being day zero**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Separate value sets have been created for urethral catheter placement (OID: 2.16.840.1.113762.1.4.1045.74) and urethral catheter removal (OID: 2.16.840.1.113762.1.4.1111.4). These are now used in logic when required to represent either insertion or removal of the urinary catheter.	Value Set
The value set was removed from Patient Characteristic Expired: Expired as it is now fixed to a single SNOMED code: 419099009 (Dead) and cannot further be qualified with a value set.	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set Diuretics (OID 2.16.840.1.113883.3.666.5.829): Deleted 3 RXNORM code (197393,250376, 250377) and added 3 RXNORM codes (197788, 250376, 250377).	Value Set
Value Set Emergency Department Visit (OID 2.16.840.1.113883.3.117.1.7.1.292): Added value set to this measure.	Value Set
Value set Hospital Measures-PACU (OID 2.16.840.1.113883.3.666.5.248): Removed value set from his measure and replaced with value set ICU Admission or Transfer (OID 2.16.840.1.113883.3.117.1.7.1.305).	Value Set
Value set Indwelling urinary catheter (OID 2.16.840.1.113762.1.4.1045.74): Updated value set name from Indwelling urinary catheter to Urethral catheter placement. Deleted 1 ICD10PCS (0TPDX0Z) code and 4 SNOMED codes (286738000, 429723008, 43748006, 55449009) and added 1 SNOMED code (225088003).	Value Set
Value set Intermittent Catheterization (OID 2.16.840.1.113883.3.666.5.825): Updated value set name from Hospital Measures-Intermittent Catheterization to Intermittent Catheterization.	Value Set
Value Set IV Positive Inotropic and Vasopressor Agents (OID 2.16.840.1.113883.3.666.5.2128): Deleted 1 RXNORM code (310984).	Value Set
Value set Paralytic Agents (OID 2.16.840.1.113883.3.666.5.2129): Deleted 7 RXNORM codes (238176, 238177, 238178, 238179, 260256, 313121, 727652).	Value Set
Value set SCIP Major Surgical Procedure (OID: 2.16.840.1.113883.3.117.1.7.1.2): Deleted 2 ICD9CM and 451 SNOMED codes and added 1 ICD10PCS and 98 SNOMED codes.	Value Set
Value set SCIP urinary diversion (OID 2.16.840.1.113883.3.666.5.822): Removed value set from this measure.	Value Set
Value set SCIP urinary diversion procedures (OID 2.16.840.1.113883.3.666.5.2313): Updated value set name from Hospital Measures-SCIP urinary diversion procedures to SCIP urinary diversion procedures and added 1 SNOMED code (119560006).	Value Set
Value set SCIP Urological/Perineal procedures with potential need of indwelling catheters (OID 2.16.840.1.113883.3.666.5.2310): Updated value set name from Hospital Measures-SCIP Urological/Perineal procedures with potential need of indwelling catheters to SCIP Urological/Perineal procedures with potential need of indwelling catheters. Deleted 319 SNOMED codes and added 283 ICD10PCS and 38 SNOMED codes.	Value Set
Value set Suprapubic catheter (OID 2.16.840.1.113883.3.666.5.827): Updated value set name from Hospital Measures-Suprapubic catheter to Suprapubic catheter.	Value Set

## CMS185v4 - Healthy Term Newborn

<b>Technical Release Notes</b>	<b>Type of TRN</b>
eMeasure version number incremented.	Header
Copyright updated.	Header
Disclaimer updated.	Header
CMS suggests eligible hospitals participating in the Medicare & Medicaid EHR Incentive Programs not select CMS185/NQF0716: Healthy Term Newborn as one of their additional electronic clinical quality measures (eCQMs) for meaningful use. The measure steward is making substantial changes to this measure and is working with NQF on endorsement of the revised measure. CMS will review the changes to this measure and assess its feasibility for future implementation.	Header
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variable \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value Set Birth Trauma or Injuries Group (OID 2.16.840.1.113883.3.666.5.1567): Deleted 1 SNOMED code (302934007) and added 2 SNOMED codes (410730009, 699699005).	Value Set
Value Set Congenital Anomalies Group (OID 2.16.840.1.113883.3.666.5.1570): Deleted 16 SNOMED codes and added 4 SNOMED codes.	Value Set
Value set Congenital or Infantile Cerebral Palsy Group (OID 2.16.840.1.113883.3.666.5.1580): Deleted 8 SNOMED codes (1178005, 192957004, 206187005, 230772000, 275466008, 275467004, 275469001, 371119007) and added 4 SNOMED codes (230773005, 278512001, 48721008, 58193001).	Value Set
Value set Discharge to Acute Care Facility (OID 2.16.840.1.113883.3.117.1.7.1.87): Deleted 1 SNOMED code (306699001) and added 2 SNOMED codes (306703003, 434781000124105). Updated value set name from Discharge to Another Hospital to Discharge to Acute Care Facility.	Value Set
Value set Hyperbilirubinemia Group (OID 2.16.840.1.113883.3.666.5.1593): Deleted 1 ICD10CM code (P55.1), 1 ICD9CM code (773.1), and 2 SNOMED codes (111469006, 32858009). Added 1 ICD10CM code (P59.9), ICD9CM codes (774.30, 774.6), and 7 SNOMED codes (17140000, 276549000, 281610001, 281611002, 281612009, 387712008, 69347004).	Value Set
Value set Hypoxia or Asphyxia Group (OID 2.16.840.1.113883.3.666.5.1577): Deleted 1 SNOMED code (206187005).	Value Set
Value set Infection Group (OID 2.16.840.1.113883.3.666.5.1590): Deleted 3 SNOMED codes (105592009, 211420008, 41229001) and added 2 SNOMED codes (403000003, 91302008).	Value Set
Value set Laryngeal Stenosis Group (OID 2.16.840.1.113883.3.666.5.1576): Added 1 ICD10CM code (J38.6).	Value Set
Value set Shock and Complications Group (OID 2.16.840.1.113883.3.666.5.1581): Deleted 3 SNOMED codes (105592009, 211420008, 41229001) and added 2 SNOMED codes (403000003, 91302008).	Value Set

## CMS185v4 - Healthy Term Newborn

### Technical Release Notes

Value set Social Reasons Group (OID 2.16.840.1.113883.3.666.5.1595): Deleted 1 ICD10CM code (Z75.5), 1 ICD9CM code (V60.5), and 7 SNOMED codes (105387008, 105389006, 183431002, 306206005, 306238000, 306240005, 309630000).

Value sets were updated to remove category codes.

Value sets were updated to remove non-human disorders.

### Type of TRN

Value Set

Value Set

Value Set

## CMS188v5 - Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients

Technical Release Notes	Type of TRN
Added to the header metadata to give more detailed descriptions for the Initial Population, the Denominator, the Denominator Exclusions, the Numerator and the Denominator Exceptions which now matches more closely the logic in the eCQM. A Measure Item Count was added, in this measure it is 'Encounter, performed: Encounter Inpatient'.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Added logic in the Denominator Exclusions to capture patients who may have had either a normal Chest X ray or a normal CT scan in the ED which occurs before the Inpatient Encounter. In addition, logic was added as a check for patient having gotten a 'chest xray' or a 'CT scan which includes the chest' the day before or the day of arrival. Addition of the following logic satisfies both of these checks: <= 1 day(s) starts before start of Occurrence A of \$EncounterInpatient<= 1 day(s) starts before start of ('Encounter, Performed: Emergency Department Visit' <= 1 hour(s) ends before or concurrent with start of Occurrence A of \$EncounterInpatient ).	Logic
Added logic in the Denominator Exclusions to represent a patient with an organ transplant diagnosis any time in the past.	Logic
Added logic to the Denominator Exclusions related to settings from which a patient might be transferred into the inpatient hospital where they then receive treatment for pneumonia to more accurately reflect the paper based specification requirements. The settings added are an Emergency Department and an Outpatient Department.	Logic
Added new logic to account for reason a patient could be admitted to ICU due to pneumonia.	Logic
Added new logic to the Denominator Exceptions to determine if a patient had a Laboratory Test, performed: PCR test for Legionella pneumophila (result: Positive Finding).	Logic
Added new logic to the Denominator Exceptions to determine if a patient had a bacterial culture which has a positive finding for bacteria as a way to determine if a patient has another source of infection. Logic is: Laboratory Test, performed: Bacterial culture (results: Positive Finding).	Logic
Added new logic to the Denominator Exceptions to determine if a patient had the laboratory test Urine antigen test for Legionella pneumophila or Streptococcus pneumoniae as another way to document patient had an infection. Logic added is: Laboratory Test, performed: Urine antigen test for Legionella pneumophila or Streptococcus pneumoniae (results: Positive Finding).	Logic
All Occurrence B instances of Encounter, Performed: Encounter Inpatient will be removed. This is an episode of care measure and the episode of care is the Inpatient Encounter.	Logic
All phrases containing 'Occurrence B of the Encounter, Performed: Inpatient Encounter' were removed from this eCQM. This is an episode of care measure and it only looks at one episode of an inpatient encounter, thus Occurrence B of the Inpatient Encounter is not necessary to add to the logic.	Logic
In the Denominator Exclusions logic about a Diagnostic Study being performed with either a normal Chest X ray or a normal CT scan, additional logic was added to capture patients who may have had one of these diagnostic studies in the ED which occurs before the Inpatient Encounter.	Logic
In these phrases the OR was changed to AND:- OR: 'Diagnosis, Active: Hospital Measures-Pneumonia'-OR: 'Medication, Active: IV, IM, PO Antimicrobial Medications (route: 'Hospital measures-Route IV, oral or IM)') to capture only patients who had both of these conditions.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$InterventionComfortMeasures and \$EncounterInpatient to allow re-use of logical expressions and reduce redundancy/complexity.	Logic

## CMS188v5 - Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients

Technical Release Notes	Type of TRN
Added logic to each logic sequence in the measure where timing is related to arrival at the hospital to also account for the possibility of arrival in the ED (patient is not a direct admit). This is an example of the additional logic: 'starts during ('Encounter, Performed: Emergency Department Visit' <= 1 hour(s) ends before or concurrent with start of Occurrence A of \$EncounterInpatient) '.	Logic
Moved logic for 'Another source of infection but not respiratory infection' documented within 24 hours after arrival at the hospital, or 'Systemic corticosteroid/prednisone therapy' within 90 days before arrival at the hospital from the Denominator Exclusions to the Denominator Exceptions.	Logic
Removed 'Occurrence A of' in relation to ED (if appropriate for measure intent).	Logic
Removed logic for patient seen and diagnosed with pneumonia in the ED which checks for septicemia and respiratory failure. Also removed ordinality of principal from the pneumonia diagnosis made in ED at steward's direction. Without the ordinality of principal for the pneumonia diagnosis, the patient will go straight to the Denominator if diagnosed in the ED with pneumonia.	Logic
Removed the data type of 'Intervention, performed' and replaced with 'Procedure, performed' for the data elements in the Denominator Exclusions which include 'Wound Care', 'Tracheostomy Care', and 'Ventilator Care'. Interventions refer to care given which does not involve physical contact and these actions do require physical contact, which is a procedure.	Logic
Removed the 'FIRST' operator from all the phrases in the Numerator of both populations which use 'Medication, administered' in combination with 'FIRST'. The phrase is 'Medication, administered <=1440 minute(s) starts after start of Encounter, performed: Inpatient Encounter (or ED). This timing satisfies the paper-based specifications that the antibiotic be administered within the first 1440 minute(s) of arrival to the hospital.	Logic
Removed the logic for 'Transfer from Nursing Home or Ext. Facility' was removed from the transfer from logic sequence in the Denominator Exclusions and replaced with logic representing a 'Transfer From an ED location' to reflect the paper based specification requirements.	Logic
Replaced 'ends before start' with 'ends before or concurrent with start of' to align across measures (when appropriate for measure intent).	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
The data element in Denominators 1 and 2: 'Medication, Active: IV, IM, PO Antimicrobial Medications (route: 'Hospital measures-Route IV, oral or IM')' was changed to: 'Medication, Administered: IV, IM, PO Antimicrobial Medications (route: 'Hospital measures-Route IV, oral or IM')' to meet the intent of the paper-based measure specifications which say the patient must have an antibiotic administered within the first 24 hours after arrival.	Logic
The following logic was added to the Denominator Exclusions of both Population 1 and Population 2 to cover if a patient has a normal Chest X ray or normal CT scan in the ED. Union of: '-Diagnostic Study, Result: Hospital Measures-Chest xray SM-CT (result: 'Hospital Measures-Radiological findings normal')' '-Diagnostic Study, Performed: Hospital Measures-CT scan including chest (result: 'Hospital Measures-Radiologic Finding-Normal SM-CT')' starts during 'Union of: '-Encounter, Performed: Emergency Department Visit' <= 1 hour(s) ends before start of Occurrence A of \$EncounterInpatient-Occurrence A of \$EncounterInpatient'.	Logic
The logic for 'Transfer from Nursing Home or Ext. Facility' was removed and replaced with logic representing a Transfer From an ED location.	Logic

## CMS188v5 - Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients

Technical Release Notes	Type of TRN
The logic which checks for systemic corticosteroid and prednisone medication use in patients was removed from the Denominator Exclusions.	Logic
The logic which checks for systemic corticosteroid and prednisone medication use in patients was removed from the Denominator Exclusions. It was left in the Numerator.	Logic
Removed logic for Clinical Trial Participant from the Denominator Exclusions.	Logic
The Medication, Active data element in Denominators of Population 1 and 2 was changed to the Medication, Administered data element.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Replaced value set Emphysema (OID 2.16.840.1.113883.3.666.5.806) with value set Emphysema (OID: 2.16.840.1.113883.3.464.1003.102.12.1004).	Value Set
SNOMED codes in value sets used for the data category 'diagnosis' were reviewed and were removed unless the domain was disorder, finding, situation or event.	Value Set
The value set IV PO AntiPseudomonal Quinolones (OID 2.16.840.1.113883.3.666.5.804): Added value set to this measure.	Value Set
Value set Acute care hospital (OID 2.16.840.1.113883.3.666.5.684): Updated value set name from Hospital Measures-Acute care hospital to Acute care hospital and deleted 15 SNOMED codes and add 1 SNOMED code.	Value Set
Value set Ambulatory surgical center (OID 2.16.840.1.113883.3.666.5.687): Updated value set name from Hospital Measures-Ambulatory surgical center to Ambulatory surgical center.	Value Set
Value set Another Source of Infection (OID: 2.16.840.1.113762.1.4.1111.28): Added value set to this measure.	Value Set
Value set Any infection (OID 2.16.840.1.113883.3.666.5.696): Removed value set and replaced with new value set: Another Source of Infection (OID 2.16.840.1.113762.1.4.1111.28).	Value Set
Value set Bacterial Culture (OID: 2.16.840.1.113762.1.4.1111.22): Added value set to this measure.	Value Set
Value set Beta lactams for allergy determination (OID 2.16.840.1.113883.3.666.5.1058): Updated value set name from Hospital Measures-Beta lactams for allergy determination to Beta Lactams for Allergy Determination and added 1 RXNORM code (203117).	Value Set
Value set Bronchiectasis (OID 2.16.840.1.113883.3.666.5.773): Updated value set name from Hospital Measures-Bronchiectasis to Bronchiectasis and added 1 ICD10CM codes (J47.0).	Value Set
Value set Chest XRay Diagnostic Test (OID 2.16.840.1.113762.1.4.1111.41): Added OID 2.16.840.1.113883.3.666.5.678. Deleted 18 SNOMED codes and added 76 LOINC codes, 2 ICD9CM, and 1 ICD10PCS codes.	Value Set
Value set Chronic bronchitis (OID 2.16.840.1.113883.3.666.5.775): Updated value set name from Hospital Measures-Chronic bronchitis to Chronic bronchitis, deleted 5 SNOMED codes (185086009, 195949008, 233672007, 32544004, 89099002), added 1 ICD9CM (491.0) and 1 SNOMED code(425748003).	Value Set
Value set Clinical Trial Participant (OID 2.16.840.1.113883.3.526.2.643): Removed value set from this measure.	Value Set
Value set COPD (OID 2.16.840.1.113883.3.666.5.776): Updated value set name from Hospital Measures-COPD to COPD. Added 2 ICD10CM (J44.0, J44.1) and 2 ICD9CM codes (491.21, 491.22).	Value Set
Value set CT Scan Including Chest Diagnostic Test (OID: 2.16.840.1.113762.1.4.1111.42): Created a new value set with 45 ICD10PCS codes and 19 LOINC codes and added OID 2.16.840.1.113883.3.666.5.680. Deleted 7 SNOMED codes ( 169069000, 41540006, 241541005, 41542003, 303668008, 443145004, 44323700) and added 1 ICD9CM code (87.41).	Value Set
Value Set Cystic Fibrosis (OID 2.16.840.1.113883.3.464.1003.102.12.1002): Added to the measure to replace value set Value set Hospital Measures-Cystic Fibrosis (OID 2.16.840.1.113883.3.666.5.682).	Value Set

## CMS188v5 - Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients

Technical Release Notes	Type of TRN
Value set Diagnoses As Reasons For Admission To ICU due To Pneumonia (OID 2.16.840.1.113762.1.4.1045.84): Updated value set from Reason For Admission to ICU due to Pneumonia to Diagnoses As Reasons For Admission To ICU due To Pneumonia. Added 18 ICD10CM, 12 ICD9CM, and 20 SNOMED codes, and deleted 15 ICD10PCS, 12 ICD10PCS, and 33 SNOMED codes. Another value set was developed which contains codes for procedures which would be a reason to admit a patient to ICU (OID 2.16.840.1.113762.1.4.1111.26) and which is named Procedures as Reasons for Admission to ICU Due to Pneumonia.	Value Set
Value Set Emergency Department Visit (OID 2.16.840.1.113883.3.117.1.7.1.292): Added value set to this measure.	Value Set
Value set Francisella Tularensis or Yersinia pestis (OID 2.16.840.1.113883.3.666.5.2205): Updated value set from Hospital Measures-Francisella Tularensis or Yersinia pestis to Francisella Tularensis or Yersinia pestis. Deleted 2 ICD10CM (A20.8, A20.9) and 2 SNOMED (36753006, 58750007) codes.	Value Set
Value set Hemodialysis or peritoneal dialysis (OID 2.16.840.1.113883.3.666.5.2282): Updated the value set name from Hospital measures-Hemodialysis or peritoneal dialysis to Hemodialysis or Peritoneal Dialysis and added 2 SNOMED codes (302497006, 71192002).	Value Set
Value set Hospital Measures-Neutrophil count (OID 2.16.840.1.113883.3.666.5.787): Removed value set from this measure.	Value Set
Value set Hospital Measures-Organ transplant (OID 2.16.840.1.113883.3.666.5.801): Removed value set from this measure.	Value Set
Value set Immunocompromised Conditions (OID 2.16.840.1.113883.3.666.5.1940): Updated value set name from Hospital Measures-Immunocompromised Conditions to Immunocompromised Conditions. Deleted 10 ICD10CM, 7 ICD9CM, and 5 SNOMED codes and added 70 ICD10CM and 72 ICD9CM.	Value Set
Value set Immunocompromised Therapies (OID 2.16.840.1.113883.3.666.5.2348): Updated value set name from Hospital Measures-Immunocompromised Therapies to Immunocompromised Therapies.	Value Set
Value set Immunodeficient Conditions (OID 2.16.840.1.113883.3.666.5.1726): Updated value set name from Hospital Measures-Immunodeficient Conditions to Immunodeficient Conditions. Deleted 1 ICD10CM code, 3 ICD9CM codes, 20 SNOMED codes and added 7 ICD10CM codes, 4 ICD9CM codes, and 16 SNOMED codes.	Value Set
Value set Interstitial lung disease (OID 2.16.840.1.113883.3.666.5.777): Updated value set name from Hospital Measures-Interstitial lung disease to Interstitial lung disease and deleted 5 SNOMED codes (28168000, 45157009, 68759006, 74455006, 84234002).	Value Set
Value set IV Aminoglycosides (OID 2.16.840.1.113883.3.666.5.727): Updated value set name from Hospital Measures-IV Aminoglycosides to IV Aminoglycosides.	Value Set
Value set IV Antipneumococcal/antipseudomonal beta lactams (OID 2.16.840.1.113883.3.666.5.759): Updated value set name from Hospital Measures-IV Antipneumococcal/antipseudomonal beta lactams to IV Antipneumococcal/antipseudomonal beta lactams.	Value Set
Value set IV Antipseudomonal quinolones (OID 2.16.840.1.113883.3.666.5.896): Updated value set name from Hospital Measures-IV Antipseudomonal quinolones to IV Antipseudomonal quinolones.	Value Set
Value set IV Beta lactams (OID 2.16.840.1.113883.3.666.5.770): Updated value set name from Hospital Measures-IV Beta lactams to IV Beta lactams.	Value Set
Value set IV Doxycycline (OID 2.16.840.1.113883.3.666.5.2204): Updated value set name from Hospital Measures-IV Tetracycline to IV Doxycycline.	Value Set
Value set IV Macrolides ICU (OID 2.16.840.1.113883.3.666.5.758): Updated value set name from Hospital Measures-IV Macrolides ICU to IV Macrolides ICU and added 1 RXNORM code (686354).	Value Set
Value set IV or IM Aztreonam (OID 2.16.840.1.113883.3.666.5.779): Updated value set name from Hospital Measures-IV or IM Aztreonam to IV or IM Aztreonam.	Value Set

## CMS188v5 - Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients

Technical Release Notes	Type of TRN
Value set IV or IM Beta lactams (OID 2.16.840.1.113883.3.666.5.720): Updated value set name from Hospital Measures-IV or IM Beta lactams to IV or IM Beta lactams and added 2 RXNORM codes (308207,313819).	Value Set
Value set IV Or PO Doxycyclines (OID 2.16.840.1.113883.3.666.5.840): Updated value set name from Hospital Measures-IV or PO Tetracyclines to IV Or PO Doxycyclines and added 1 RXNORM code (1423080).	Value Set
Value set IV or PO Levofloxacin (OID 2.16.840.1.113883.3.666.5.760): Updated value set name from Hospital Measures-IV or PO Levofloxacin to IV or PO Levofloxacin.	Value Set
Value set IV or PO Macrolides Non-ICU (OID 2.16.840.1.113883.3.666.5.772): Updated value set name from Hospital Measures-IV or PO Macrolides Non-ICU to IV or PO Macrolides Non ICU. Added 5 RXNORM codes (597298, 686354, 686383, 997999, 998004) and deleted 1 RXNORM code (597194).	Value Set
Value set IV PO Quinolone Antipneumococcal (OID 2.16.840.1.113883.3.666.5.463): Updated value set name from Hospital Measures-IV PO Quinolone Antipneumococcal to IV PO Quinolone Antipneumococcal and added 1 RXNORM (311787) code.	Value Set
Value set IV Quinolones Antipneumococcal (OID 2.16.840.1.113883.3.666.5.465): Updated value set name from Hospital Measures-IV Quinolones Antipneumococcal to IV Quinolones Antipneumococcal.	Value Set
Value set IV Tigecycline (OID 2.16.840.1.113883.3.666.5.2203): Updated value set name from Hospital Measures-IV Tigecycline to IV Tigecycline.	Value Set
Value set IV, IM, PO Antimicrobial Medications (OID 2.16.840.1.113883.3.666.5.693): Deleted 5 RXNORM codes (204931, 240639, 476193, 476299, 197456).	Value Set
Value set Nursing Home or Ext Fac Transfer (OID 2.16.840.1.113883.3.666.5.2202): Updated value set name from Hospital Measures-Nursing Home or Ext Fac Transfer to Nursing Home or Extended Care Facility. Added 2 SNOMED codes (32074000, 80522000) and deleted 8 SNOMED codes	Value Set
Value set Organ Transplant Recipient (OID: 2.16.840.1.113762.1.4.1111.27): Added value set to this measure.	Value Set
Value Set PCR test for Legionella pneumophila (OID:2.16.840.1.113762.1.4.1111.23): Added value set to this measure.	Value Set
Value set Pneumonia (OID 2.16.840.1.113883.3.666.5.752): Updated value set name from Hospital Measures-Pneumonia to Pneumonia and deleted 5 SNOMED codes (17688001, 18400002, 56415008, 58720004, 65186004).	Value Set
Value Set Positive Finding (OID: 2.16.840.1.113883.3.464.1003.195.11.1008): Added value set to this measure.	Value Set
Value set Prolonged QT Interval (OID 2.16.840.1.113883.3.666.5.2197): Updated value set name from Hospital Measures-Prolonged QT Interval to Prolonged QT Interval.	Value Set
Value set Radiologic Finding-Normal SM-CT (OID 2.16.840.1.113883.3.666.5.2365): Updated value set name from Hospital Measures-Radiologic Finding-Normal SM-CT to Radiologic Finding Normal and deleted 2 SNOMED codes (168733007, 169064005).	Value Set
Value set Respiratory failure acute or chronic (OID 2.16.840.1.113883.3.666.5.2319): Updated value set name from Hospital Measures-Respiratory failure acute or chronic to Respiratory failure acute or chronic. Added 5 ICD10CM codes (J95.821, J95.822, J96.10, J96.11, J96.12) and 4 SNOMED codes (397767007, 39871006, 426896000, 428173007).	Value Set
Value set Respiratory infection (OID 2.16.840.1.113883.3.666.5.2162): Updated value set name from Hospital Measures-Respiratory infection to Respiratory infection. Deleted 1 SNOMED, 12 ICD10CM, and 8 ICD9CM codes.	Value Set
Value set Restrictive lung disease (OID 2.16.840.1.113883.3.666.5.2160): Updated value set name from Hospital Measures-Restrictive lung disease to Restrictive lung disease.	Value Set

## CMS188v5 - Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients

Technical Release Notes	Type of TRN
Value set Route IV or PO (OID 2.16.840.1.113883.3.666.5.1112): Updated value set name from Hospital Measures-Route IV or PO to Route IV or PO.	Value Set
Value set Route IV/IM (OID 2.16.840.1.113883.3.666.5.1109): Updated value set name from Hospital Measures-Route IV/IM to Route IV/IM.	Value Set
Value set Septicemia (OID 2.16.840.1.113883.3.666.5.672): Updated value set name from Hospital Measures-Septicemia to Septicemia. Deleted 100 SNOMED codes and added 5 ICD10CM codes (A26.7, A32.7, A41.01, A41.02, B37.7).	Value Set
Value set Structural lung disease (OID 2.16.840.1.113883.3.666.5.774): Updated value set name from Hospital Measures-Structural lung disease to Structural lung disease.	Value Set
Value set Substance Or Medication Administration Route IV (OID 2.16.840.1.113883.3.666.5.1108): Updated value set name from Hospital measures-Route IV to Substance or Medication Administration Route IV.	Value Set
Value set Substance Or Medication Administration Route IV Oral Or IM (OID 2.16.840.1.113883.3.666.5.1111): Updated the value set name from Hospital measures-Route IV, oral or IM to Substance Or Medication Administration Route IV, oral or IM and deleted 1 SNOMED code (272394005).	Value Set
Value set Systemic corticosteroid/prednisone therapy (OID 2.16.840.1.113883.3.666.5.805): Updated value set name from Hospital Measures-Systemic corticosteroid/prednisone therapy to Systemic corticosteroid/prednisone therapy. Added 1 RXNORM (1244214) and deleted 4 RXNORM codes (1244211, 197585, 309688, 436508).	Value Set
Value set Systemic immunosuppressive therapy (OID 2.16.840.1.113883.3.666.5.803): Updated value set name from Hospital Measures-Systemic immunosuppressive therapy to Systemic immunosuppressive therapy. Deleted 20 RXNORM codes and added 16 RXNORM codes.	Value Set
Value Set Tracheostomy care (OID 2.16.840.1.113762.1.4.1045.77): Deleted 1 ICD10CM code (V55.0) and added 1 ICD10CM code (Z43.0).	Value Set
Value set Transfer From Outpatient (OID 2.16.840.1.113883.3.67.1.101.950): Added value set to this measure.	Value Set
Value set Urine antigen test for Legionella pneumophila or Streptococcus pneumoniae (OID: 2.16.840.1.113762.1.4.1111.20): Added value set to this measure.	Value Set
Value set Ventilator care (OID 2.16.840.1.113883.3.666.5.782): Updated value set name from Hospital Measures-Ventilator care to Ventilator care.	Value Set
Value set Wound Care (OID 2.16.840.1.113883.3.666.5.2192): Updated value set name from Hospital Measures-Wound Care to Wound Care.	Value Set

## CMS190v4 - Intensive Care Unit Venous Thromboembolism Prophylaxis

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
eMeasure version number incremented.	Header
Revised Initial Population header statement for alignment across measures.	Header
Updated rationale and references in measure header.	Header
Updated the Denominator Exceptions header statement to better align with measure logic.	Header
Updated the Numerator header statement to better align with measure logic.	Header
Added logic to Numerator to allow for explicitly modeled medical reasons for the non-administration of VTE prophylaxis (e.g. low risk, INR >3.0), 'generic' medical reasons, and patient refusal for the non-administration of VTE prophylaxis to be sourced from ED visit documentation for patients directly admitted from the ED to the ICU.	Logic
Changed data type of 'Result' or 'Finding' to 'Performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the 'Intersection of' operator to specify the selection of the data sets common to all individual statements underneath the 'Intersection of'.	Logic
Introduced variables \$EncounterInpatient, \$DiagnosisVTE, \$MedicationVTEProphylaxis, \$DeviceVTEProphylaxis, \$NoMedicationVTEProphylaxisMedicalReason, \$NoDeviceVTEProphylaxisMedicalReason, \$NoVTEProphylaxisPatientRefusal, and \$InterventionComfortMeasures to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed occurring and added timing constraint to 'Encounter, Performed: Emergency Department Visit' when this QDM element is used on the right-hand side of a temporal operation, to enforce a constraint that wasn't necessarily achieved through occurring alone.	Logic
Reordered Numerator logic to clearly separate appropriate VTE prophylaxis from exceptional scenarios justifying the non-administration of VTE prophylaxis. Added in-line comments to Numerator logic to clearly identify related logic blocks.	Logic
Reorganized Numerator logic related to Oral Factor Xa administration for alignment with CMS108/VTE-1.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced the timing relationship 'starts after start of' with 'starts after or concurrent with start of' in logic criteria establishing a relationship between \$EncounterInpatient and 'Encounter, Performed: ICU Admission or Transfer', to allow patients who are directly admitted to the ICU to meet the criteria.	Logic
Replaced timing relationship 'during' with 'starts during' where both a start datetime and an end datetime associated with a particular QDM element are not critical to fulfill the measure intent.	Logic
Replaced timing relationship 'ends before start of' with 'ends before or concurrent with start of' in logic criteria relating 'Encounter, Performed: Emergency Department Visit' and \$EncounterInpatient, allowing for the Emergency Department Visit discharge to occur in the same minute as the inpatient admission.	Logic
Replaced timing relationship 'starts before end of' with 'starts before or concurrent with end of' to ensure the inclusion of the end point of the element on the right-hand side of the criterion.	Logic
Revised Denominator Exclusions logic to allow for the exclusion of patients with comfort measures anytime between arrival and the day after ICU admission or transfer.	Logic

## CMS190v4 - Intensive Care Unit Venous Thromboembolism Prophylaxis

Technical Release Notes	Type of TRN
Revised INR result threshold in Numerator logic from '>3' to '>3.0', to convey a more precise threshold aligned with the usual reporting units for this laboratory test.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Atrial Fibrillation/Flutter (OID 2.16.840.1.113883.3.117.1.7.1.202): Deleted 3 SNOMED codes (312442005, 428076002, 429218009).	Value Set
Value set General Surgery (2.16.840.1.113883.3.117.1.7.1.255): Added 138 ICD10PCS codes and 42 SNOMED codes.	Value Set
Value set Gynecological Surgery (2.16.840.1.113883.3.117.1.7.1.257): Added 5 ICD10PCS codes (0U540ZZ,0U840ZZ,0UB40ZZ,0UB47ZZ,0UB48ZZ) and 15 new SNOMED codes.	Value Set
Value set Hip Replacement Surgery (2.16.840.1.113883.3.117.1.7.1.259): Added 57 ICD10PCS codes and 18 SNOMED codes.	Value Set
Value set Knee Replacement Surgery (OID 2.16.840.1.113883.3.117.1.7.1.261): Added 8 ICD10PCS codes.	Value Set
Value set Low Dose Unfractionated Heparin for VTE Prophylaxis (OID 2.16.840.1.113762.1.4.1045.39): Added 5 RXNORM codes (1361568,1361574,1361577,1362831,1362837).	Value Set
Value set Obstetrics (2.16.840.1.113883.3.117.1.7.1.263): Added 1924 ICD10CM codes, 2 ICD9CM codes (648.33,648.34), and 254 SNOMED codes. Deleted 16 SNOMED codes.	Value Set
Value set Obstetrics VTE (OID 2.16.840.1.113883.3.117.1.7.1.264): Added 8 ICD10CM codes (O03.35, O07.35, O22.8X1, O22.8X2, O22.8X3, O22.8X9, O87.0, O87.3) and 1 SNOMED code (609497003).	Value Set
Value set Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment (OID 2.16.840.1.113883.3.117.1.7.1.134): Updated value set name from Oral Factor Xa Inhibitor for VTE Prophylaxis to Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment.	Value Set
Value set Unfractionated Heparin (OID 2.16.840.1.113883.3.117.1.7.1.218): Added 2 RXNORM codes (1361226, 1362831).	Value Set
Value set Unfractionated Heparin for VTE prophylaxis ingredient specific (OID 2.16.840.1.113762.1.4.1021.13): Added 1 RXNORM code (235473) and deleted 1 RXNORM code (314659).	Value Set
Value set Venous Thromboembolism (OID 2.16.840.1.113883.3.117.1.7.1.279): Deleted 5 ICD10CM codes (I80.231, I80.232, I80.233, I80.239, I82.210) and 12 SNOMED codes. Added 4 SNOMED codes (1001000119102, 132251000119101, 132251000119106, 132251000119107).	Value Set

## CMS2v5 - Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Updated Denominator Exclusion logic such that the exclusion criteria is described in relation to 'Occurrence A of Encounter...' rather than 'Occurrence A of Risk Category Assessment...'.	Logic
Updated Numerator logic with the requirement that 'Occurrence A of Risk Category Assessment... (result: 'Depression Screening Result')' starts during 'Occurrence A of Encounter...'.	Logic
Replaced value use Medical reason contraindicated (OID 2.16.840.1.113883.3.600.792) with value set Medical or Other reason not done (OID 2.16.840.1.113883.3.600.1.1502).	Value Set
Value set Additional evaluation for depression - adolescent (OID 2.16.840.1.113883.3.600.1542): Added 1 SNOMED code (428161000124109).	Value Set
Value set Additional evaluation for depression - adult (OID 2.16.840.1.113883.3.600.1545): Added 1 SNOMED code (428151000124107).	Value Set
Value set Depression diagnosis (OID 2.16.840.1.113883.3.600.145): Added 2 ICD9CM codes (296.20, 296.30).	Value Set
Value set Depression Screening Denominator Encounter Codes (OID 2.16.840.1.113883.3.600.1916): Updated value set name from 'Depression Screening Denominator Encounter Codes New' to 'Depression Screening Encounter Codes'; Added 8 CPT codes (99384, 99385, 99386, 99387, 99394, 99395, 99396, 99397).	Value Set

**CMS22v4 - Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented**

Technical Release Notes	Type of TRN
Copyright updated.	Header
Definition updated.	Header
Denominator Exceptions updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Initial Population updated.	Header
Reference updated.	Header
Added Denominator Exception logic to allow for patient refusal of follow-up data elements.	Logic
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Changed the timing logic to use the new temporal operator 'starts after or concurrent with start of' to improve timing precision.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced variable \$HypertensionRecommendations to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent). Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Updated Numerator logic to place focus on most recent encounter where a BP reading is documented (as opposed to most recent encounter). Also specifies most recent reading during encounter.	Logic
Added 6 CPT codes (99385, 99386, 99387, 99395, 99396, 99397) to BP Screening Denominator Encounter Codes Grouped New OID 2.16.840.1.113883.3.600.1920; Changed the name of BP Screening Denominator Encounter Codes Grouped New OID 2.16.840.1.113883.3.600.1920 to BP Screening Encounter Codes.	Value Set
Replaced value set Medical reason (OID 2.16.840.1.113883.3.600.1521) with value set Medical or Other reason not done (OID 2.16.840.1.113883.3.600.1.1502).	Value Set
Value set Anti-Hypertensive Pharmacologic Therapy (OID 2.16.840.1.113883.3.600.1476): Deleted 3 RXNORM codes (197562, 197563, 197564) and added 15 RXNORM codes (308614, 282486, 197417, 197418, 197419, 104222, 197977, 198110, 198111, 198112, 198312, 245284, 198313, 245283, 198319).	Value Set
Value set BP Screening Encounter Codes Grouped (OID 2.16.840.1.113883.3.600.1920): Updated Value Set Name from BP Screening Denominator Encounter Codes Grouped New to BP Screening Encounter Codes Grouped and added 6 CPT codes (99385, 99386, 99387, 99395, 99396, 99397).	Value Set
Value set Diagnosis of hypertension grouped (OID 2.16.840.1.113883.3.600.263) renamed 'Dianosis of hypertension'; Deleted 8 SNOMED codes (160273004, 26174007, 275944005, 276789009, 302192008, 390925005, 401118009, 412779008).	Value Set

## CMS50v4 - Closing the Referral Loop: Receipt of Specialist Report

### Technical Release Notes

### Type of TRN

eMeasure version number incremented.

Header

Copyright updated.

Header

Disclaimer updated.

Header

Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).

Logic

Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.

Logic

Occurrence A of Intervention, Performed: Referral' ends before start of ('Occurrence A of Communication: From Provider to Provider: Consultant Report' during 'Measurement Period') has been replaced with: 'Occurrence A of Communication: From Provider to Provider: Consultant Report' fulfills 'Occurrence A of Intervention, Performed: Referral' during 'Measurement Period' to better meet measure intent. □

Logic

The FULFILLS general operator is used to show that one data element fulfills the other, streamlining the language of the numerator expression.

Logic

Added a FIRST operator to the initial population to indicate which referral to use to look for numerator compliance.

Logic

Added ophthalmology codes to the Initial Population to allow more providers to report the measure.

Logic

Value set Ophthalmological Services (OID 2.16.840.1.113883.3.526.3.1285): Added value set to measure.

Value Set

## CMS52v4 - HIV/AIDS: Pneumocystis Jiroveci Pneumonia (PCP) Prophylaxis

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$InitialHIVvisit, \$FollowupHIVvisit, \$CD4count, \$CD4percentage to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Value set HIV (OID 2.16.840.1.113883.3.464.1003.120.12.1003): Added 2 SNOMED codes (405631006, 91948008).	Value Set

## CMS56v4 - Functional Status Assessment for Hip Replacement

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced 'Intersection' clause to build clause logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$PrimaryTHAProcedure and \$OptConsultorOVorF2FEncounter to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed the end time and added the overlaps operator to the exclusion for lower body fractures to try to more accurately exclude someone with a traumatic hip replacement.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Added postoperative visit codes to the initial population to allow more providers to report the measure.	Value Set
Value set Postoperative Visit (OID 2.16.840.1.113883.3.464.1003.101.12.1070): Created a new value set with 1 CPT code (99024).	Value Set

**CMS61v5 - Preventive Care and Screening: Cholesterol– Fasting Low Density Lipoprotein (LDL-C) Test**  
**Technical Release Notes** **Type of TRN**

Added the following definition to the header: CHD: History of CHD includes:	
<ul style="list-style-type: none"> <li>• Myocardial Infarction</li> <li>• Myocardial Ischemia</li> <li>• Angina (stable, unstable)</li> <li>• Percutaneous Transluminal Coronary Angioplasty</li> <li>• Coronary Artery Bypass Surgery</li> </ul>	
Added Stroke and Framingham 10-yr CHD risk to CHD Risk Equivalent definition.	Header
Copyright updated.	Header
Denominator Exceptions updated.	Header
Denominator Exclusions updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$PalliativeCareorPregnancyExclusion, \$FraminghamCADRiskfactors, \$RecentLowHDLResult, \$RecentHighHDLResult, \$CHDandCHDRiskIndicators to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from Initial Population 1, 2, and 3.	Logic
Removed superfluous 'Occurrence A of' from the 'Risk Category Assessment: Framingham coronary heart disease 10 year risk (result>=10%)' in Denominator 2 and Denominator 3.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Updated Denominator logic to reflect the replacement of CHD or CHD Risk Equivalent 2.16.840.1.113883.3.600.863.	Logic
Changed name of the value set, Current Cigarette Smoker OID 2.16.840.1.113883.3.600.2390 to Current Tobacco Smoker and added the following codes (59978006, 82302008).	Value Set
Retired CHD or CHD Risk Equivalent 2.16.840.1.113883.3.600.863 - Replaced with the following value sets: Acute Myocardial Infarction Grouping Value Set (2.16.840.1.113883.3.464.1003.104.12.1001), Hemorrhagic Stroke Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.212), Ischemic Stroke Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.247), Ischemic Vascular Disease Grouping Value Set (2.16.840.1.113883.3.464.1003.104.12.1003), Coronary Artery Disease No MI 2.16.840.1.113883.3.526.3.369), PCI Grouping Value Set (2.16.840.1.113762.1.4.1045.67), CABG Surgeries Grouping Value Set (2.16.840.1.113883.3.666.5.694), Carotid Intervention Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.204), Diabetes Grouping Value Set (2.16.840.1.113883.3.464.1003.103.12.1001), Abdominal Aortic Aneurysm (2.16.840.1.113762.1.4.1047.17), and Peripheral Arterial Disease (2.16.840.1.113762.1.4.1047.21).	Value Set

**CMS61v5 - Preventive Care and Screening: Cholesterol– Fasting Low Density Lipoprotein (LDL-C) Test**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Value set Acute Myocardial Infarction (OID 2.16.840.1.113883.3.464.1003.104.12.1001): Added 2 SNOMED codes (17531000119105, 23311000119105 ).	Value Set
Value set Anti-Hypertensive Pharmacologic Therapy (OID 2.16.840.1.113883.3.600.1476): Deleted 3 RXNORM codes (197562, 197563, 197564) and added the following 15 RXNORM codes (308614, 282486, 197417, 197418, 197419, 104222, 197977, 198110, 198111, 198112, 198312, 245284, 198313, 245283, 198319).	Value Set
Value set Diagnosis of hypertension grouped (OID 2.16.840.1.113883.3.600.263) name changed to 'Diagnosis of hypertension'; Deleted 8 SNOMED codes (160273004, 26174007, 275944005, 276789009, 302192008, 390925005, 401118009, 412779008).	Value Set
Value set Ischemic Vascular Disease (OID 2.16.840.1.113883.3.464.1003.104.12.1003): Added 1 ICD10CM code (I25.84).	Value Set
Value set Palliative Care (OID 2.16.840.1.113883.3.600.1.1579): Added Comfort Measures value set (OID 1.3.6.1.4.1.33895.1.3.0.45) which included the addition of 4 SNOMED codes (133918004, 182964004, 385736008, 385763009).	Value Set
Value set Pregnancy (OID 2.16.840.1.113883.3.600.1622) has been replaced with Pregnancy Dx (OID 2.16.840.1.113883.3.600.1.1623).	Value Set
Value set Pregnancy Dx (OID 2.16.840.1.113883.3.600.1.1623): Deleted 2 SNOMED codes (289908002, 386322007).	Value Set

## CMS62v4 - HIV/AIDS: Medical Visit

### Technical Release Notes

	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Reference updated	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced variable \$HIVVisit to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Value set HIV (OID 2.16.840.1.113883.3.464.1003.120.12.1003): Added 2 SNOMED codes (405631006, 91948008).	Value Set

**CMS64v5 - Preventive Care and Screening: Risk-Stratified Cholesterol– Fasting Low Density Lipoprotein (LDL-C)**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$FraminghamCADRiskFactors, \$PalliativeCareorPregnancyExclusion, \$RecentLowHDLResult, \$RecentHighHDLResult, \$CHDandCHDRiskIndicators to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from Initial Population 1, 2, and 3.	Logic
Removed superfluous 'Occurrence A of' from the 'Risk Category Assessment: Framingham coronary heart disease 10 year risk (result>20%) in Denominator 1, 'Risk Category Assessment: Framingham coronary heart disease 10 year risk (result>=10%) in Denominator 2 and 'Risk Category Assessment: Framingham coronary heart disease 10 year risk (result<10%) in Denominator 3.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Updated Denominator logic to reflect the replacement of CHD or CHD Risk Equivalent 2.16.840.1.113883.3.600.863.	Logic
Updated logic for applying 'AND' logical operator in the left-hand side or right-hand side of a timing clause.	Logic
Changed name of the value set, Current Cigarette Smoker OID 2.16.840.1.113883.3.600.2390 to Current Tobacco Smoker and added the following codes (59978006, 82302008).	Value Set
Retired CHD or CHD Risk Equivalent 2.16.840.1.113883.3.600.863 - Replaced with the following value sets: Acute Myocardial Infarction Grouping Value Set (2.16.840.1.113883.3.464.1003.104.12.1001), Hemorrhagic Stroke Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.212), Ischemic Stroke Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.247), Ischemic Vascular Disease Grouping Value Set (2.16.840.1.113883.3.464.1003.104.12.1003), Coronary Artery Disease No MI 2.16.840.1.113883.3.526.3.369), PCI Grouping Value Set (2.16.840.1.113762.1.4.1045.67), CABG Surgeries Grouping Value Set (2.16.840.1.113883.3.666.5.694), Carotid Intervention Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.204), Diabetes Grouping Value Set (2.16.840.1.113883.3.464.1003.103.12.1001), Abdominal Aortic Aneurysm (2.16.840.1.113762.1.4.1047.17), and Peripheral Arterial Disease (2.16.840.1.113762.1.4.1047.21).	Value Set
Value set Acute Myocardial Infarction (OID 2.16.840.1.113883.3.464.1003.104.12.1001): Added 2 SNOMED codes (17531000119105, 23311000119105 ).	Value Set

**CMS64v5 - Preventive Care and Screening: Risk-Stratified Cholesterol– Fasting Low Density Lipoprotein (LDL-C)**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Value set Anti-Hypertensive Pharmacologic Therapy (OID 2.16.840.1.113883.3.600.1476): Deleted 3 RXNORM codes (197562, 197563, 197564) and added 15 RXNORM codes (308614, 282486, 197417, 197418, 197419, 104222, 197977, 198110, 198111, 198112, 198312, 245284, 198313, 245283, 198319).	Value Set
Value set Diagnosis of hypertension grouped (OID 2.16.840.1.113883.3.600.263) name changed to 'Diagnosis of hypertension'; Deleted 8 SNOMED codes (160273004, 26174007, 275944005, 276789009, 302192008, 390925005, 401118009, 412779008).	Value Set
Value set Ischemic Vascular Disease (OID 2.16.840.1.113883.3.464.1003.104.12.1003): Added 1 ICD10CM code (I25.84)	Value Set
Value set Palliative Care (OID 2.16.840.1.113883.3.600.1.1579): Added Comfort Measures value set (OID 1.3.6.1.4.1.33895.1.3.0.45) which included the addition of 4 SNOMED codes (133918004, 182964004, 385736008, 385763009).	Value Set
Value set Pregnancy (OID 2.16.840.1.113883.3.600.1622) has been replaced with Pregnancy Dx (OID 2.16.840.1.113883.3.600.1.1623).	Value Set
Value set Pregnancy Dx (OID 2.16.840.1.113883.3.600.1.1623): Deleted 2 SNOMED codes (289908002, 386322007).	Value Set

## CMS65v5 - Hypertension: Improvement in Blood Pressure

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Moved the FIRST operator and added a satisfies all operator to the initial population to capture the first visit that has an out of control blood pressure and a diagnosis of hypertension.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS66v4 - Functional Status Assessment for Knee Replacement

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced 'Intersection' clause to build clause logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$PrimaryTKAprocedure and \$OptConsultorOVorF2FEncounter to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed the end time and added the 'overlaps' operator to the exclusion for lower body fractures to try to more accurately exclude someone with a traumatic hip replacement.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Added postoperative visit codes to the initial population to allow more providers to report the measure.	Value Set
Value set Postoperative Visit (OID 2.16.840.1.113883.3.464.1003.101.12.1070): Created a new value set with 1 CPT code (99024).	Value Set

## CMS68v5 - Documentation of Current Medications in the Medical Record

### Technical Release Notes

	Type of TRN
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Rationale updated.	Header
Reference updated.	Header
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Medical or Other reason not done (OID 2.16.840.1.113883.3.600.1.1502): Added code 428119001.	Value Set
Value set Medications Encounter Code Set (OID 2.16.840.1.113883.3.600.1.1834): Added 6 CPT codes (99385, 99386, 99387, 99395, 99396, 99397) and deleted 2 CPT codes (97110, 97140).	Value Set

## CMS69v4 - Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Remove logic for pregnancy exclusion from >= 65 or older population (IPP 2).	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Updated logic so that palliative care, medical reason not done, and patient reason refused are removed from the IPP and placed in exclusions.	Logic
Value set BMI Encounter Code Set (OID 2.16.840.1.113883.3.600.1.1751): Added 6 CPT codes (99385, 99386, 99387, 99395, 99396, 99397).	Value Set
Value set Medical or Other reason not done (OID 2.16.840.1.113883.3.600.1.1502): Added code Add code 428119001.	Value Set
Value set Palliative Care (OID 2.16.840.1.113883.3.600.1.1579): Added 4 SNOMED codes (133918004, 182964004, 385736008, 385763009).	Value Set
Value set Patient Reason Refused (OID 2.16.840.1.113883.3.600.1.1503): Replaced OID 2.16.840.1.113883.3.600.791 'Patient Reason Refused' in CMS69v4.	Value Set
Value set Pregnancy Dx (OID 2.16.840.1.113883.3.600.1.1623): Deleted 2 SNOMED codes (289908002, 386322007).	Value Set

**CMS74v5 - Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists**

**Technical Release Notes**

**Type of TRN**

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Replaced 'ORs' with 'Union of' operator.

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

## CMS75v4 - Children Who Have Dental Decay or Cavities

### Technical Release Notes

### Type of TRN

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.

Logic

Replaced 'ORs' with 'Union of' operator.

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

Value set Dental Caries (OID 2.16.840.1.113883.3.464.1003.125.12.1004): Added 8 SNOMED codes (699489009, 699490000, 699491001, 699492008, 699494009, 699495005, 700046006, 702402003).

Value Set

## CMS77v4 - HIV/AIDS: RNA Control for Patients with HIV

### Technical Release Notes

	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Value set HIV (OID 2.16.840.1.113883.3.464.1003.120.12.1003): Added 2 SNOMED codes (405631006, 91948008).	Value Set

## CMS82v3 - Maternal Depression Screening

### Technical Release Notes

Copyright updated.

Disclaimer updated.

eMeasure version number incremented.

NQF Number and Endorsed By fields updated to reflect measure no longer endorsed by NQF.

Replaced 'ORs' with 'Union of' operator.

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

### Type of TRN

Header

Header

Header

Header

Logic

Logic

## CMS90v5 - Functional Status Assessment for Complex Chronic Conditions

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variables \$CCInitialEncounter and \$CCFollowupEncounter to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ends before or during' (EBOD) with 'ends before end of' (EBE). As necessary, edited the associated number of (days, months, years) to maintain the same time period to accommodate the new timing operator.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set All Cancer (OID 2.16.840.1.113883.3.464.1003.108.12.1011): Added 350 ICD10CM codes.	Value Set

## CMS117v4 - Childhood Immunization Status

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced variables \$RotavirusVaccineDose2Schedule, \$RotavirusVaccineDose3Schedule, \$RotavirusVaccineAdminDose2Schedule and \$RotavirusVaccineAdminDose3Schedule to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Updated the antigen test value sets for measles, mumps, rubella, and Varicella to reflect the tests and results that are positive. The titer tests must have a titer of 1.10 or higher. The tests for the IgG antibody presence must be positive.	Value Set
Value set Disorders of the Immune System (OID 2.16.840.1.113883.3.464.1003.120.12.1001): Added 1 ICD10CM code (D81.4) and deleted 1 ICD10CM code (M35.9).	Value Set
Value set Encephalopathy (OID 2.16.840.1.113883.3.464.1003.114.12.1007): Deleted 2 ICD10CM codes (G04.01, G04.02).	Value Set
Value set Hepatitis B (OID 2.16.840.1.113883.3.464.1003.110.12.1025): Added 4 ICD10CM codes (B18.0, B18.1, B19.10, B19.11).	Value Set
Value set HIV (OID 2.16.840.1.113883.3.464.1003.120.12.1003): Added 2 SNOMED codes (405631006, 91948008).	Value Set
Value set Influenza Vaccine (OID 2.16.840.1.113883.3.464.1003.196.12.1218): Added 4 CVX codes (135, 153, 155, 161).	Value Set
Value set Influenza Vaccine Administered (OID 2.16.840.1.113883.3.464.1003.110.12.1044): Added 2 CPT codes (90673, 90685).	Value Set
Value set Malignant Neoplasm of Lymphatic and Hematopoietic Tissue (OID 2.16.840.1.113883.3.464.1003.108.12.1009): Added 350 ICD10CM codes and deleted 7 ICD10CM codes.	Value Set
Value set Measles Antibody Test (IgG Antibody Titer) (OID 2.16.840.1.113883.3.464.1003.198.12.1059): Added value set to this measure.	Value Set
Value set Measles Antibody Test (IgG presence) (OID 2.16.840.1.113883.3.464.1003.198.12.1060): Added value set to this measure.	Value Set
Value set Measles, Mumps and Rubella (MMR) Vaccine Administered (OID 2.16.840.1.113883.3.464.1003.110.12.1031): Added 1 SNOMED code (43373003).	Value Set
Value set Mumps Antibody Test (IgG Antibody Titer) (OID 2.16.840.1.113883.3.464.1003.198.12.1061): Added value set to this measure.	Value Set
Value set Mumps Antibody Test (IgG presence) (OID 2.16.840.1.113883.3.464.1003.198.12.1062): Added value set to this measure.	Value Set
Value set Rubella Antibody Test (IgG Antibody presence) (OID 2.16.840.1.113883.3.464.1003.198.12.1064): Added value set to this measure.	Value Set

## CMS117v4 - Childhood Immunization Status

### Technical Release Notes

### Type of TRN

Value set Rubella Antibody Test (IgG Antibody Titer) (OID  
2.16.840.1.113883.3.464.1003.198.12.1063): Added value set to this measure.

Value set Varicella Zoster Antibody Test (IgG Antibody Presence) (OID  
2.16.840.1.113883.3.464.1003.198.12.1067): Added value set to this measure.

Value set Varicella Zoster Antibody Test (IgG Antibody Titer) (OID  
2.16.840.1.113883.3.464.1003.198.12.1066): Added value set to this measure.

Value Set

Value Set

Value Set

## CMS122v4 - Diabetes: Hemoglobin A1c Poor Control

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Removed 'starts after start of 'Occurrence A of Laboratory Test, Performed: HbA1c Laboratory Test' from numerator logic. Change will allow for patients without a lab test result accompanying their lab test to be numerator compliant for this inverse measure.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator	Logic
Value set Diabetes (OID 2.16.840.1.113883.3.464.1003.103.12.1001): Added 54 ICD10CM codes.	Value Set

## CMS123v4 - Diabetes: Foot Exam

### Technical Release Notes

### Type of TRN

Copyright updated.	Header
Denominator Exclusions updated.	Header
eMeasure version number incremented.	Header
Added an exclusion for patients with bilateral knee or higher amputations.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic 'AND/AND NOT' or to enforce when an event or set of events occur to meet the measure intent.	Logic
Removed extraneous AND from Numerator.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Value set Bilateral Amputation of Leg Below or Above Knee (OID 2.16.840.1.113883.3.464.1003.113.12.1056): Added value set to the measure.	Value Set
Value set Diabetes (OID 2.16.840.1.113883.3.464.1003.103.12.1001): Added 54 ICD10CM codes.	Value Set
Value set Left (OID 2.16.840.1.113883.3.464.1003.113.12.1036): Added value set to the measure.	Value Set
Value set Left Unilateral Amputation of Leg Below or Above Knee (OID 2.16.840.1.113883.3.464.1003.113.12.1058): Added value set to the measure.	Value Set
Value set Right (OID 2.16.840.1.113883.3.464.1003.113.12.1035): Added value set to the measure.	Value Set
Value set Right Unilateral Amputation of Leg Below or Above Knee (OID 2.16.840.1.113883.3.464.1003.113.12.1057): Added value set to the measure.	Value Set
Value set Unilateral Amputation of Leg Below or Above Knee (OID 2.16.840.1.113883.3.464.1003.113.12.1059): Added value set to the measure.	Value Set

## CMS124v4 - Cervical Cancer Screening

### Technical Release Notes

	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Replaced 'ends before or during' (EBOD) with 'ends before end of' (EBE). As necessary, edited the associated number of (days, months, years) to maintain the same time period to accommodate the new timing operator.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS125v4 - Breast Cancer Screening

### Technical Release Notes

### Type of TRN

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Changed data type of 'result' or 'finding' to 'performed'.

Logic

Modified 'Diagnostic Study, Performed: Mammogram (result)' <=12 month(s) ends before end of Measurement Period' in numerator logic. Changed logic to read '< 24 months ends before end of Measurement Period' to properly capture all days within the measurement period and the year before the measurement period. Change based on standard duration calculation.

Logic

Removed result attribute from the mammogram data element.

Logic

Replaced 'ends before or during' (EBOD) with 'ends before end of' (EBE). As necessary, edited the associated number of (days, months, years) to maintain the same time period to accommodate the new timing operator.

Logic

Replaced 'ORs' with 'Union of' operator.

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.

Logic

## CMS126v4 - Use of Appropriate Medications for Asthma

### Technical Release Notes

### Type of TRN

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.

Logic

Replaced 'ORs' with 'Union of' operator.

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.

Logic

Value set Emphysema (OID 2.16.840.1.113883.3.464.1003.102.12.1004): Added 1 SNOMED code (16838000).

Value Set

Value set Persistent Asthma (OID 2.16.840.1.113883.3.464.1003.102.12.1023): Added 2 SNOMED codes (427354000, 901000119100).

Value Set

Value set Preferred Asthma Therapy (OID 2.16.840.1.113883.3.464.1003.196.12.1212): Deleted 31 RXNORM codes to remove nasal inhaler and injection codes; added 18 RXNORM codes.

Value Set

## CMS127v4 - Pneumonia Vaccination Status for Older Adults

### Technical Release Notes

Copyright updated.

Disclaimer updated.

eMeasure version number incremented.

Replaced 'ORs' with 'Union of' operator.

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Replaced 'starts before or during (SBOD)' with 'starts before end of (SBE)'.

Value set Pneumococcal Vaccine (OID 2.16.840.1.113883.3.464.1003.110.12.1027): Added 1 CVX code (133).

### Type of TRN

Header

Header

Header

Logic

Logic

Logic

Value Set

## CMS128v4 - Anti-depressant Medication Management

### Technical Release Notes

	Type of TRN
eMeasure version number incremented.	Header
Copyright updated.	Header
Disclaimer updated.	Header
Added the concurrent operator to the initial population to capture patients whose diagnosis starts at the same time as the measurement period.	Header
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Introduced variables \$InitialMajDepressionDiagnosis and \$InitialDepMedication to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Introduced logic to capture Sum $\geq$ 84 day(s) of: 'Medication, Active: Antidepressant Medication' to with attribute cumulative medication duration to calculate cumulative medication duration.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Major Depression (OID 2.16.840.1.113883.3.464.1003.105.12.1007): Added 2 ICD9CM codes (298.0, 311).	Value Set

## CMS129v5 - Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients

### Technical Release Notes

### Type of TRN

Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
References updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$FirstProstateCancerTreatment and \$MostRecentPrCaClinicalStaging to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Prostate Cancer Treatment (OID 2.16.840.1.113883.3.526.3.398): Deleted 1 CPT code (55876), added one CPT code (77435).	Value Set
Value set Prostate Cancer Treatment (OID 2.16.840.1.113883.3.526.3.398): Deleted 2 SNOMED codes (236209003, 236211007).	Value Set
Value set Salvage Therapy (OID 2.16.840.1.113883.3.526.3.399): Deleted 2 CPT codes (55875, 55876).	Value Set

## CMS130v4 - Colorectal Cancer Screening

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Replaced 'ends before or during' (EBOD) with 'ends before end of' (EBE). As necessary, edited the associated number of (days, months, years) to maintain the same time period to accommodate the new timing operator.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value Set Colonoscopy (OID 2.16.840.1.113883.3.464.1003.108.12.1020): Deleted 1 SNOMED code (418714002).	Value Set
Value set Malignant Neoplasm of Colon (OID 2.16.840.1.113883.3.464.1003.108.12.1001): Added 4 ICD-10CM (C21.0, C21.1, C21.2, C21.8) and 2 ICD9CM (154.2, 154.3) codes.	Value Set

## CMS131v4 - Diabetes: Eye Exam

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Added ophthalmology codes to the initial population to allow more providers to report the measure.	Logic
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Value set Diabetes (OID 2.16.840.1.113883.3.464.1003.103.12.1001): Added 54 ICD10CM codes.	Value Set
Value set Ophthalmological Services (OID 2.16.840.1.113883.3.526.3.1285): Added to measure.	Value Set

## CMS132v4 - Cataracts: Complications within 30 Days Following Cataract Surgery Requiring Additional Surgical Procedures

Technical Release Notes	Type of TRN
Added Item Count field. The Item Count identifies the unit of measure for the eCQM. For this episode-of-care measure, the unit of measure is each cataract surgery procedure.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Measure Developer updated.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Anomalies of Pupillary Function (OID 2.16.840.1.113883.3.526.3.1406): Updated value set name from Anomalies of Pupillary Function to Anomalies of Pupillary Function.	Value Set
Value set Open Wound of Eyeball (OID 2.16.840.1.113883.3.526.3.1430): Deleted 1 SNOMED code (95762000).	Value Set
Value set Posterior Lenticonus (OID 2.16.840.1.113883.3.526.3.1433): Added 1 SNOMED code (33521009) and deleted 1 SNOMED code (204132007).	Value Set
Value set Vitreous Procedures (OID 2.16.840.1.113883.3.526.3.1447): Deleted 1 CPT Code (67028).	Value Set

## CMS133v4 - Cataracts: 20/40 or Better Visual Acuity within 90 Days Following Cataract Surgery

Technical Release Notes	Type of TRN
Added Item Count field. The Item Count identifies the unit of measure for the eCQM. For this episode-of-care measure, the unit of measure is each cataract surgery procedure.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Measure Developer updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary, replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Open Wound of Eyeball (OID 2.16.840.1.113883.3.526.3.1430): Deleted 1 SNOMED code (95762000).	Value Set
Value set Visual Acuity 20/40 or Better (OID 2.16.840.1.113883.3.526.3.1483): Added 1 SNOMED code (423364005).	Value Set
Value set Visual Field Defects (OID 2.16.840.1.113883.3.526.3.1446): Deleted 1 SNOMED code (193674006).	Value Set

## CMS134v4 - Diabetes: Urine Protein Screening

### Technical Release Notes

### Type of TRN

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Changed data type of 'result' or 'finding' to 'performed'.

Logic

Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.

Logic

Replaced 'ORs' with 'Union of' operator.

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

Removed the requirement to have a positive finding associated with a urine protein test and changed the name of the value set to more accurately reflect the tests included. Value set now called 'Urine Protein Tests' grouping (OID 2.16.840.1.113883.3.464.1003.109.12.1024).

Value Set

Value set Diabetes (OID 2.16.840.1.113883.3.464.1003.103.12.1001): Added 54 ICD10CM codes.

Value Set

Value set Glomerulonephritis and Nephrotic Syndrome (OID

2.16.840.1.113883.3.464.1003.109.12.1018): Deleted 4 SNOMED codes (28918009, 43738009, 58276006, 8964003).

Value Set

Value set Other Services Related to Dialysis (OID 2.16.840.1.113883.3.464.1003.109.12.1015): Added 2 SNOMED Codes (251000124108, 311000124103).

Value Set

Value set Urine Protein Tests (OID 2.16.840.1.113883.3.464.1003.109.12.1024): Created to replace OID 2.16.840.1.113883.3.464.1003.109.12.1019 and OID 2.16.840.1.113883.3.464.1003.109.12.1005.

Value Set

**CMS135v4 - Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$HFEncounters135 to allow re-use of logical expressions and reduce redundancy/complexity .	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set ACE Inhibitor or ARB Ingredient (OID 2.16.840.1.113883.3.526.3.1489): Deleted 1 RXNORM code (864776).	Value Set
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

**CMS136v5 - ADHD: Follow-Up Care for Children Prescribed Attention-Deficit/Hyperactivity Disorder (ADHD)  
Medication**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced logic to capture 'Medication, Active: ADHD Medications' with attribute cumulative medical duration to calculate cumulative medication duration.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$InitialADHDMedication, \$Encounter, \$InpEnc30DaysAfterFirstMed, \$Encounter30DaysAfterInitialADHDMed, \$InpEnc300DaysAfterFirstMed, \$EncounterAfterInitialMedication to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set ADHD Medications (OID 2.16.840.1.113883.3.464.1003.196.12.1171): Added 27 RXNORM codes.	Value Set
Value set Mental Health Diagnoses (OID 2.16.840.1.113883.3.464.1003.105.12.1004): Deleted 1 ICD9CM and 15 ICD10CM codes and added 213 ICD10CM codes.	Value Set
Value set Substance Abuse (OID 2.16.840.1.113883.3.464.1003.106.12.1004): Deleted 1 ICD9CM and 2 ICD10CM codes and added 5 ICD9CM and 146 ICD10CM.	Value Set

## CMS137v4 - Initiation and Engagement of Alcohol and Other Drug Dependence Treatment

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variables \$FirstAlcoholDrugDependenceDx and \$DrugDependenceTreatmentOrPsychVisit to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Alcohol and Drug Dependence (OID 2.16.840.1.113883.3.464.1003.106.12.1001): Added 7 SNOMED codes (110281001, 125851000119106, 153491000119103, 19303008, 6525002, 91388009, 95918004) and deleted 29 SNOMED codes.	Value Set

## CMS138v4 - Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention

Technical Release Notes	Type of TRN
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Numerator statement updated.	Header
Added timing constraint to each logic clause in numerator.	Logic
Health and Behavioral Assessment, Reassessment data element added to measure.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary, replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism to specify that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Speech and Hearing Evaluation data element added to measure.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Updated exception logic to designate 'Limited Life Expectancy' as a reason for not performing the 'Risk Category Assessment: Tobacco Use Screening'.	Logic
Value set Health and Behavioral Assessment, Reassessment (OID 2.16.840.1.113883.3.526.3.1529): Added value set to measure.	Value Set
Value set Speech and Hearing Evaluation (OID 2.16.840.1.113883.3.526.3.1530): Added value set to measure.	Value Set
Value set Tobacco Use Screening (OID 2.16.840.1.113883.3.526.3.1278): Deleted 1 LOINC code (11366-2), added 2 LOINC codes (72166-2, 39240-7).	Value Set

## CMS139v4 - Falls: Screening for Future Fall Risk

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Added audiology codes to the initial population to allow more providers to report the measure.	Logic
Added ophthalmology codes to the initial population to allow more providers to report the measure.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Value set Audiology Visit (OID 2.16.840.1.113883.3.464.1003.101.12.1066): Created new value set with 4 CPT codes (92540, 92541, 92542, 92548).	Value Set
Value set Falls Screening (OID 2.16.840.1.113883.3.464.1003.118.12.1028): Added 1 LOINC code (52552-7).	Value Set
Value set Ophthalmological Services (OID 2.16.840.1.113883.3.526.3.1285): Created new value set with 4 CPT codes (92002, 92004, 92012, 92014).	Value Set
Value set Patient not ambulatory (OID 2.16.840.1.113883.3.464.1003.118.12.1009): Added 1 SNOMED code (160684002).	Value Set

**CMS140v4 - Breast Cancer: Hormonal Therapy for Stage IC-IIIC Estrogen Receptor/Progesterone Receptor (ER/PR) Positive Breast Cancer**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
References updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced 'Intersection' clause to build clause logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$OVorF2FEncounter to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS141v5 - Colon Cancer: Chemotherapy for AJCC Stage III Colon Cancer Patients

Technical Release Notes	Type of TRN
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced 'Intersection' clause to build clause logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$FirstDxColonCancerMP and \$OVorF2FEncounter to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS142v4 - Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care

Technical Release Notes	Type of TRN
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Measure Developer updated.	Header
Rationale updated.	Header
Reference updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EyeCareEncounters to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from Numerator.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS143v4 - Primary Open Angle Glaucoma (POAG): Optic Nerve Evaluation

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Measure Developer updated.	Header
Added temporal operator 'during' to describe the timing of the 'Diagnostic Study, Performed' in relation to the variable \$EyeCareEncounters.	Logic
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EyeCareEncounters to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from Numerator and Denominator Exceptions.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic

## CMS144v4 - Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Technical Release Notes	Type of TRN
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$HFEncounters144 to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

**CMS145v4 - Coronary Artery Disease (CAD): Beta-Blocker Therapy– Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Definition updated.	Header
Denominator statement updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Rate Aggregation updated.	Header
Reference updated.	Header
Changed data type of 'result' or 'finding' to 'performed'	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$CADEncounters145 to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Logic for Population Criteria 2, Denominator updated to reflect the clinical recommendation statement revision.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS146v4 - Appropriate Testing for Children with Pharyngitis

### Technical Release Notes

### Type of TRN

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Added AND/AND NOT expression for Antibiotic Medications for Pharyngitis to capture patients whose antibiotic use starts more than 30 days prior to the Occurrence A of the diagnosis, but the antibiotic use continues into the 30 days prior to the diagnosis.

Logic

Changed data type of 'result' or 'finding' to 'performed'.

Logic

Changed the timing logic to use the new temporal operator 'ends after or concurrent with end of' to improve timing precision.

Logic

Changed the timing logic to use the new temporal operator 'starts before or concurrent with start of' to improve timing precision.

Logic

Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.

Logic

Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).

Logic

Value set Antibiotic Medications for Pharyngitis (OID 2.16.840.1.113883.3.464.1003.196.12.10):

Deleted 9 RXNORM codes (1113012, 240637, 240639, 312127, 312128, 312130, 476193, 476299, 597194).

Value Set

## CMS147v5 - Preventive Care and Screening: Influenza Immunization

Technical Release Notes	Type of TRN
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Added logical operator 'AND NOT' with timing relationship > 89 day(s) starts after start of 'Measurement Period' to Diagnosis, Active: Allergy to Eggs, Allergy to Influenza Vaccine, and Intolerance to Influenza Vaccine, and to Procedure, Intolerance: Influenza Vaccination, Medication, Intolerance: Influenza Vaccine, Medication, Allergy: Influenza Vaccine to ensure allergies detected after the flu season are not considered for the denominator exception.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
Replaced timing relationship 'starts after start of' with 'starts after or concurrent with start of' in the Denominator, Numerator and Denominator Exceptions to ensure the inclusion of the start point of the measurement period.	Logic
Replaced timing relationship 'starts before start of' with 'starts before or concurrent with start of' in the Denominator, Numerator and Denominator Exceptions to ensure the inclusion of the start point of the measurement period.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Influenza Vaccination (OID 2.16.840.1.113883.3.526.3.402): Added 2 CPT codes (90630, 90673).	Value Set
Value set Influenza Vaccine (OID 2.16.840.1.113883.3.526.3.1254): Deleted 1 CVX code (111); Added 6 CVX codes (153, 155, 158, 161, 166, 88).	Value Set
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS148v4 - Hemoglobin A1c Test for Pediatric Patients

### Technical Release Notes

Copyright updated.

Disclaimer updated.

eMeasure version number incremented.

Changed data type of 'result' or 'finding' to 'performed'.

Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.

Introduced variable \$DiabetesVisit to allow re-use of logical expressions and reduce redundancy/complexity.

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Value set Diabetes (OID 2.16.840.1.113883.3.464.1003.103.12.1001): Added 54 ICD10CM codes.

### Type of TRN

Header

Header

Header

Logic

Logic

Logic

Logic

Value Set

## CMS149v4 - Dementia: Cognitive Assessment

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$DEMEncounters149 to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS153v4 - Chlamydia Screening for Women

### Technical Release Notes

### Type of TRN

Copyright updated.

Header

Disclaimer updated.

Header

eMeasure version number incremented.

Header

Changed data type of 'result' or 'finding' to 'performed'.

Logic

Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.

Logic

Replaced 'ORs' with 'Union of' operator.

Logic

Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.

Logic

The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.

Logic

Value set Complications of Pregnancy, Childbirth and the Puerperium (OID

2.16.840.1.113883.3.464.1003.111.12.1012): Deleted 15 SNOMED codes.

Value Set

Value set Contraceptive Medications (OID 2.16.840.1.113883.3.464.1003.196.12.1080): Deleted 2 RXNORM code (351147, 750253).

Value Set

Value set HIV (OID 2.16.840.1.113883.3.464.1003.120.12.1003): Added 2 SNOMED codes (405631006, 91948008).

Value Set

Value set Inflammatory Diseases of Female Reproductive Organs (OID

2.16.840.1.113883.3.464.1003.112.12.1004): Deleted 3 SNOMED codes (198154001, 266582001, 370497009).

Value Set

Value set Syphilis (OID 2.16.840.1.113883.3.464.1003.112.12.1002): Deleted 3 SNOMED codes (266131008, 66083000, 83492008).

Value Set

## CMS154v4 - Appropriate Treatment for Children with Upper Respiratory Infection (URI)

Technical Release Notes	Type of TRN
eMeasure version number incremented.	Header
Disclaimer updated.	Header
Copyright updated.	Header
Changed the antibiotic medications for pharyngitis before the occurrence A of the encounter from starts before the end of to starts before the start of so as not to exclude patients who receive antibiotics at the URI encounter.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Introduced variable \$URIEncounter to allow re-use of logical expressions and reduce redundancy/complexity .	Logic
Value set Competing Conditions for Respiratory Conditions (OID 2.16.840.1.113883.3.464.1003.102.12.1017): Added 24 SNOMED codes; deleted 11 SNOMED codes.	Value Set
Value set Antibiotic Medications for Pharyngitis (OID 2.16.840.1.113883.3.464.1003.196.12.10): Deleted 9 RXNORM codes (1113012, 240637, 240639, 312127, 312128, 312130, 476193, 476299, 597194).	Value Set

## **CMS155v4 - Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents**

### **Technical Release Notes**

### **Type of TRN**

Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Added 'during Measurement Period' for each AND statement to clarify the logic in the left-hand side or right-hand side of a timing clause.	Logic
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$OutpatientVisits to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from Numerator.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Counseling for Nutrition (OID 2.16.840.1.113883.3.464.1003.195.12.1003): Deleted 1 SNOMED Code (183101003).	Value Set
Value set Counseling for Physical Activity (OID 2.16.840.1.113883.3.464.1003.118.12.1035): Deleted 3 SNOMED codes (183073003, 429778002, 439140001).	Value Set
Value set Weight (OID 2.16.840.1.113883.3.464.1003.121.12.1015): Added 1 LOINC code (8349-3).	Value Set

## CMS156v4 - Use of High-Risk Medications in the Elderly

### Technical Release Notes

	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Introduced logic to capture Sum > 90 day(s) of: 'Medication, Order: High-Risk Medications With Days Supply Criteria' with attribute cumulative medication duration to calculate cumulative medication duration.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Value set High Risk Medications for the Elderly (OID 2.16.840.1.113883.3.464.1003.196.12.1253):	
Added 4 RXNORM codes (1047805, 1190931, 1441392, 603806); Deleted 73 RXNORM codes.	Value Set

## CMS157v4 - Oncology: Medical and Radiation– Pain Intensity Quantified

Technical Release Notes	Type of TRN
Added Item Count field. The Item Count identifies the unit of measure for the eCQM. For this episode-of-care measure, the unit of measure is each visit or encounter.	Header
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$OVorF2FEncounter and \$RadiationTreatmentManagement to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Cancer (OID 2.16.840.1.113883.3.526.3.1010): Deleted 2 SNOMED codes (255070009, 93965008), added 1 SNOMED code (609519004).	Value Set

## CMS158v4 - Pregnant Women that had HBsAg Testing

Technical Release Notes	Type of TRN
eMeasure version number incremented.	Header
Copyright updated.	Header
Disclaimer updated.	Header
Reference updated.	Header
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced variable \$Delivery_Proc_Dx to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Introduced the new timing operator Overlaps to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Value set Delivery - Procedure (OID 2.16.840.1.113762.1.4.1078.5): Added 4 ICD10PCS codes (10D17ZZ, 10D18ZZ, 10D27ZZ, 10D28ZZ) and deleted 2 ICD10PCS codes (10A07ZZ, 10A08ZZ).	Value Set
Value set HBsAg (OID 2.16.840.1.113883.3.67.1.101.1.279): Deleted 7 codes (10674-0, 10675-7, 24313-9, 24363-4, 24364-2, 42191-7, 72061-5).	Value Set
Replaced child OID 2.16.840.1.113883.3.464.1003.111.11.1027 with child OID 2.16.840.1.113883.3.67.1.101.1.275 in grouping OID 2.16.840.1.113883.3.67.1.101.1.278 (Delivery - Diagnosis).	Value Set

## CMS159v4 - Depression Remission at Twelve Months

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Patients who received palliative care services have been added to the Denominator Exclusions.	Header
Reference updated.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variables \$DepressionIndex, \$DepressionF2FSnomed, \$DepressionEncounterBH and \$DepressionEncounter to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The new QDM element 'Patient Characteristic Expired' represents SNOMED code 419099009 (Dead). It replaces the previously used QDM 'Patient Characteristic Expired: Deceased' using 'Deceased Grouping Value Set (2.16.840.1.113883.3.67.1.101.11.721)'.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Major Depression Including Remission (OID 2.16.840.113883.3.67.1.101.3.2444): Added 2 ICD9CM codes (298.0, 311).	Value Set

## CMS160v4 - Depression Utilization of the PHQ-9 Tool

Technical Release Notes	Type of TRN
Added patients who received palliative care services to the Denominator Exclusions.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Reference updated.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ends before or during' (EBOD) with 'ends before end of' (EBE). As necessary, edited the associated number of (days, months, years) to maintain the same time period to accommodate the new timing operator.	Logic
Modified the upper bound timing in Population 2's Initial Population, Denominator Exclusions and Numerator from '> 4 month (s) starts after start of 'Measurement Period' to '>= 4 month(s) start after start of 'Measurement Period' to specify correctly this four-month period.	Logic
Replaced 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
The new QDM element 'Patient Characteristic Expired' represents SNOMED code 419099009 (Dead). It replaces the previously used QDM 'Patient Characteristic Expired: Deceased' using 'Deceased Grouping Value Set (2.16.840.1.113883.3.67.1.101.11.721)'.	Value Set
Value set Major Depression Including Remission (OID 2.16.840.113883.3.67.1.101.3.2444): Added 2 ICD9CM codes (298.0, 311).	Value Set

## CMS161v4 - Adult Major Depressive Disorder (MDD): Suicide Risk Assessment

Technical Release Notes	Type of TRN
Added Item Count field. The Item Count identifies the unit of measure for the eCQM. For this episode-of-care measure, the unit of measure is each visit or encounter that meets the additional measure criteria as detailed in the initial population.	Header
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variable \$MDDEncounters161 to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic

## CMS163v4 - Diabetes: Low Density Lipoprotein (LDL) Management

### Technical Release Notes

	Type of TRN
eMeasure version number incremented.	Header
Copyright updated.	Header
NQF Number and Endorsed By fields updated to reflect measures no longer endorsed by NQF.	Header
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Value set Diabetes (OID 2.16.840.1.113883.3.464.1003.103.12.1001): Added 54 ICD10CM codes.	Value Set
Replaced value set LDL-C Laboratory Test (OID 2.16.840.1.113883.3.526.3.1248) with the value set LDL-c (OID 2.16.840.1.113883.3.117.1.7.1.215) to harmonize the LDL-C value sets across measures.	Value Set

## CMS164v4 - Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
References updated.	Header
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Value set Acute Myocardial Infarction (OID 2.16.840.1.113883.3.464.1003.104.12.1001): Added 2 SNOMED codes (17531000119105, 23311000119105 ).	Value Set
Value set Aspirin and Other Anti-thrombotics (OID 2.16.840.1.113883.3.464.1003.196.12.1211): Added 3 RXNORM codes (1537021, 349516, 646434).	Value Set
Value set Coronary Artery Bypass Graft (OID 2.16.840.1.113883.3.464.1003.104.12.1002): Added 6 SNOMED codes (10190003, 14323007, 29819009, 418824004, 67166004, 90487008).	Value Set
Value set Ischemic Vascular Disease (OID 2.16.840.1.113883.3.464.1003.104.12.1003): Added 1 ICD10CM code (I25.84).	Value Set
Value set Percutaneous Coronary Interventions (OID 2.16.840.1.113883.3.464.1003.104.12.1010): Added 4 SNOMED codes (429809004, 609152003, 609153008, 698740005).	Value Set

## CMS165v4 - Controlling High Blood Pressure

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Removed extraneous AND from Numerator and Denominator Exclusions.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Used the 'satisfies all' and 'overlaps' operators to indicate the most recent visit with a blood pressure should be used to evaluate the blood pressure reading.	Logic
Value set Other Services Related to Dialysis (OID 2.16.840.1.113883.3.464.1003.109.12.1015): Added 2 SNOMED Codes (251000124108, 311000124103).	Value Set

## CMS166v5 - Use of Imaging Studies for Low Back Pain

Technical Release Notes	Type of TRN
Copyright updated.	Header
eMeasure version number incremented.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variable \$LBPEncounter and \$DiagnosisTraumaIVDrugNeuroImpairment to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced 'starts before or during' (SBOD) with 'starts before end of' (SBE).	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Updated Denominator Exclusion for active diagnosis of trauma, IV drug abuse, and neurologic impairment. Original logic stated that these denominator exclusions were valid if any occurred '<=365 day(s) starts before end of 'Measurement Period.' The logic now states that these exclusions are valid if any should occur '<=365 day(s) starts before or concurrent with start of Occurrence A of \$LBPEncounter.'	Logic
Value set All Cancer (OID 2.16.840.1.113883.3.464.1003.108.12.1011): Added 350 ICD10CM codes.	Value Set
Value set IV Drug Abuse (OID 2.16.840.1.113883.3.464.1003.106.12.1003): Added 62 ICD10CM codes.	Value Set
Value set Low Back Pain (OID 2.16.840.1.113883.3.464.1003.113.12.1001): Added 40 ICD10CM codes.	Value Set
Value set Neurologic impairment (OID 2.16.840.1.113883.3.464.1003.114.12.1012): Deleted 2 ICD10CM codes (M54.10, M79.2), added 5 ICD10CM codes (M54.16, M54.17, M54.18, M99.03, M99.04).	Value Set
Value set Trauma (OID 2.16.840.1.113883.3.464.1003.113.12.1036): Deleted 2057 ICD10CM codes, added 117 ICD10CM codes, added 3 ICD9CM codes (808.44, 808.54, 952.02), deleted 1 SNOMED code (208268000).	Value Set

**CMS167v4 - Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy**

<b>Technical Release Notes</b>	<b>Type of TRN</b>
Clinical Recommendation Statement updated.	Header
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Measure Developer updated.	Header
Rationale updated.	Header
References updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions and 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$EyeCareEncounters to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed extraneous AND from Numerator and Denominator Exceptions.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
The top level logical operator for the Numerator Exclusions, Denominator Exclusions, Denominator Exceptions, and Measure Population Exclusions defaults to 'OR'.	Logic
Value set Patient Reason (OID 2.16.840.1.113883.3.526.3.1008): Deleted 1 SNOMED code (30164005).	Value Set

## CMS169v4 - Bipolar Disorder and Major Depression: Appraisal for Alcohol or Chemical Substance Use

Technical Release Notes	Type of TRN
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Narrowed the criteria for the 'Initial Population' to equal the 'Denominator' to ease calculation burden.	Header
NQF Number and Endorsed By fields updated to reflect measure no longer endorsed by NQF.	Header
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced occurring on variables to enforce that the same instance of a clinical event is used throughout the measure when the logic within the variable does not limit the event to a single instance, e.g., FIRST or MOST RECENT.	Logic
Introduced variables \$BHEncounter and \$Treatments to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed the 'Occurrence A' from 'Medication, order: BH Antidepressant medication' throughout the measure to enable the creation of a variable. The removal of this occurrence has no effect on the intent of the measure.	Logic
Replaced 'Measurement Start Date' and 'Measurement End Date' with 'Measurement Period' and as necessary replaced existing timing operator (e.g., replacing 'starts before start of' with 'starts before end of').	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic

## CMS177v4 - Child and Adolescent Major Depressive Disorder: Suicide Risk Assessment

Technical Release Notes	Type of TRN
Added Item Count field. The Item Count identifies the unit of measure for the eCQM. For this episode-of-care measure, the unit of measure is each visit or encounter.	Header
Copyright updated.	Header
Definition updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Guidance updated.	Header
Reference updated.	Header
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Introduced variable \$MDDEncounters177 to allow re-use of logical expressions and reduce redundancy/complexity.	Logic
Removed 'Count >= 2' requirement from Initial Population based on clinical input.	Logic
Removed data element Patient Provider Interaction from measure.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Value set Patient Provider Interaction (OID 2.16.840.1.113883.3.526.3.1012): Removed value set from this measure.	Value Set

## CMS179v4 - ADE Prevention and Monitoring: Warfarin Time in Therapeutic Range

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced logic to capture Sum $\geq$ 180 days(s) of: 'Medication, Active: Warfarin' with attribute cumulative medication duration to calculate cumulative medication duration.	Logic
Introduced 'satisfies all' clause to replace previously used AND and AND NOT logical operators and to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Removed extraneous AND from Initial Population.	Logic
Replaced 'ORs' with 'Union of' operator to provide a mechanism for specifying that qualifying event(s) must be a member of at least one of the data elements being unioned (if appropriate for measure intent).	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic

## CMS182v5 - Ischemic Vascular Disease (IVD): Complete Lipid Panel and LDL Control

Technical Release Notes	Type of TRN
Copyright updated.	Header
Disclaimer updated.	Header
eMeasure version number incremented.	Header
NQF Number and Endorsed By fields updated to reflect measure no longer endorsed by NQF.	Header
Reference punctuation updated.	Header
Changed data type of 'result' or 'finding' to 'performed'.	Logic
Introduced function 'satisfies all' to specify that qualifying events must meet all conditions from a set of conditions or 'satisfies any' to specify that qualifying events must meet at least one condition from a set of conditions to streamline expression logic.	Logic
Introduced the new timing operator 'overlaps' to replace two lines of logic (AND/AND NOT) or to enforce when an event or set of events occur to meet the measure intent.	Logic
Replaced 'ORs' with 'Union of' operator.	Logic
Replaced 'Patient Characteristic Birthdate' with 'Age at' operator.	Logic
Replaced value set LDL-C Laboratory Test (OID 2.16.840.1.113883.3.526.3.1248) with the value set LDL-c (OID 2.16.840.1.113883.3.117.1.7.1.215) to harmonize the LDL-C value sets across measures.	Value Set
Value set Acute Myocardial Infarction (OID 2.16.840.1.113883.3.464.1003.104.12.1001): Added 2 SNOMED codes (17531000119105, 23311000119105).	Value Set
Value set Coronary Artery Bypass Graft (OID 2.16.840.1.113883.3.464.1003.104.12.1002): Added 6 SNOMED codes (10190003, 14323007, 29819009, 418824004, 67166004, 90487008).	Value Set
Value set HDL-C Laboratory Test (OID 2.16.840.1.113883.3.464.1003.104.12.1012): Added 2 LOINC codes (18263-4, 49130-8).	Value Set
Value set Ischemic Vascular Disease (OID 2.16.840.1.113883.3.464.1003.104.12.1003): Added 1 ICD10CM code (I25.84).	Value Set
Value set Percutaneous Coronary Interventions (OID 2.16.840.1.113883.3.464.1003.104.12.1010): Added 4 SNOMED codes (429809004, 609152003, 609153008, 698740005).	Value Set
Value set Total Cholesterol Laboratory Test (OID 2.16.840.1.113883.3.464.1003.104.12.1013): Added 1 LOINC code (48620-9).	Value Set