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Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)
   eCQM Title
   eCQM Identifier (Measure
                                                                                                                                                                                   13.2.000
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                                                                                                                                eCQM Version Number
   Authoring Tool)
                                                                                                                                GUID
   CBE Number
                                                     0083e
                                                                                                                                                                                   8439f671-2932-4d4c-88ca-ea5faeacc89a
   Measurement Period
                                                     January 1, 20XX through December 31, 20XX
   Measure Steward
                                                     American Heart Association
                                                     American Medical Association (AMA)
   Measure Developer
   Measure Developer
                                                     PCPI(R) Foundation (PCPI[R])
   Measure Developer
                                                     American Heart Association
   Endorsed By
                                                     CMS Consensus Based Entity
                                                     Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) with a current or prior left ventricular ejection
   Description
                                                     fraction (LVEF) <= 40% who were prescribed or already taking beta-blocker therapy during the measurement period
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  Measure Scoring
                                                     Proportion
   Measure Type
                                                     Process
   Stratification
                                                     None
   Risk Adjustment
                                                     None
   Rate Aggregation
                                                     None
                                                     Beta blockers improve survival and reduce hospitalization for patients with stable heart failure with reduced ejection fraction (HFrEF).
                                                     Treatment should be initiated as soon as a patient is diagnosed with reduced LVEF and does not have prohibitively low systemic blood
   Rationale
                                                     pressure, fluid overload, or recent treatment with an intravenous positive inotropic agent. Beta blockers have also been shown to lessen
                                                     the symptoms of heart failure, improve the clinical status of patients, and reduce future clinical deterioration. Despite these benefits, use
                                                     of beta blockers in eligible patients remains suboptimal.
                                                     In patients with HFrEF, with current or previous symptoms, use of 1 of the 3 beta blockers proven to reduce mortality (e.g., bisoprolol,
                                                     carvedilol, sustained-release metoprolol succinate) is recommended to reduce mortality and hospitalizations (Class I, Level of Evidence
                                                     A) (Heidenreich, 2022).
                                                     Drugs Commonly Used for Stage C HFrEF (abbreviated to align with focus of measure to include only Beta-blocker therapy)
                                                                                  Initial Daily Dose(s)
                                                                                                              Target Dose(s)
                                                                                                                                       Mean Doses Achieved in Clinical Trials
   Clinical Recommendation
                                                     Beta Blockers
   Statement
                                                     Bisoprolol
                                                                                    1.25 mg once
                                                                                                                10 mg once
                                                                                                                                             8.6 mg/d
                                                     Carvedilol
                                                                                    3.125 mg twice
                                                                                                                25-50 mg twice
                                                                                                                                            37 mg/d
                                                     Carvedilol CR
                                                                                                                80 mg once
                                                                                                                                             N/A
                                                                                    10 mg once
                                                     Metoprolol succinate
                                                                                    12.5 to 25 mg once 200 mg once
                                                                                                                                             159 mg/d
                                                     extended release
                                                     (metoprolol CR/XL)
   Improvement Notation
                                                     Higher score indicates better quality
                                                     Reference Type: CITATION
   Reference
                                                     Reference Text: 'Heidenreich, P.A., Bozkurt, B, Aguilar, D., ... Allen, L. A. (2022). 2022 AHA/ACC/HFSA Guideline for the Management
                                                     of Heart Failure A report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice
                                                     Guidelines. Circulation, 145(18), e895-e1032. doi: 10.1161/CIR.000000000001063'
                                                     LVEF <=40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction (LVSD). The LVSD may be
                                                     determined by quantitative or qualitative assessment, which may be current or historical. Examples of a quantitative or qualitative
  Definition
                                                     assessment may include an echocardiogram:
                                                     1) that provides a numerical value of LVSD or 2) that uses descriptive terms such as moderately or severely depressed left ventricular
                                                     systolic function. Any current or prior ejection fraction study documenting LVSD can be used to identify patients
                                                     This eCQM is to be reported as patient-based. To satisfy this measure, it must be reported for all heart failure patients at least once
                                                     during the measurement period.
                                                     A range value should satisfy the logic requirement for 'Ejection Fraction' as long as the ranged observation value clearly meets the less
                                                     than or equal to 40% threshold noted in the denominator logic. A range that is greater than 40% would not meet the measure
                                                     In order for the Ejection Fraction result pathway to be recognized as below 40%, the result must be reported as a number with unit of
                                                     %. A text string of "below 40%" or "ejection fraction between 35 and 40%" will not be recognized through electronic data capture.
                                                     Although, this criteria can also be met using the Diagnosis pathway if specified as "Moderate or Severe.
  Guidance
                                                     Beta-blocker therapy:
                                                     -For patients with prior LVEF <= 40%, beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol
                                                     succinate.
                                                     The requirement of two or more visits is to establish that the eligible clinician has an existing relationship with the patient.
                                                     This version of the eCQM uses QDM version 5.6. Please refer to the eCQI resource center (https://ecqi.healthit.gov/qdm) for more
                                                     information on the QDM.
   Transmission Format
                                                     TBD
                                                     All patients aged 18 years and older with two qualifying encounters during the measurement period and a diagnosis of heart failure on
   Initial Population
                                                     or before at least one qualifying encounter
                                                     Equals Initial Population with a current or prior LVEF <= 40%
   Denominator
                                                     Patients with a history of heart transplant or with a Left Ventricular Assist Device (LVAD) prior to the end of the outpatient encounter with
   Denominator Exclusions
                                                     Moderate or Severe LVSD
   Numerator
                                                     Patients who were prescribed or already taking beta-blocker therapy during the measurement period
   Numerator Exclusions
                                                     Not Applicable
                                                     Documentation of medical reason(s) for not prescribing beta-blocker therapy (e.g., arrhythmia, asthma, bradycardia, hypotension,
                                                     patients with atrioventricular block without cardiac pacer, observation of consecutive heart rates <50, allergy, intolerance, other medical
   Denominator Exceptions
                                                     reasons)
                                                     Documentation of patient reason(s) for not prescribing beta-blocker therapy (e.g., patient declined, other patient reasons).
  Supplemental Data Elements
                                                     For every patient evaluated by this measure also identify payer, race, ethnicity and sex
Table of Contents
                Population Criteria
                Definitions
                Functions
                Terminology
                Data Criteria (QDM Data Elements)
                Supplemental Data Elements
Population Criteria

▲ Initial Population

                               HeartFailure."Is Adults With Two Qualifying Outpatient Encounters and One Heart Failure Outpatient Encounter During the Measurement Period"
                Denominator
                                and exists HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD"

▲ Denominator Exclusions

                               HeartFailure."Has Heart Transplant"
                                or HeartFailure."Has Heart Transplant Complications"
                                or HeartFailure."Has Left Ventricular Assist Device"
                                or HeartFailure."Has Left Ventricular Assist Device Complications"
                ▲ Numerator
                               "Has Beta Blocker Therapy for LVSD Ordered"
                                or "Is Currently Taking Beta Blocker Therapy for LVSD"

▲ Numerator Exclusions

                               None
                ▲ Denominator Exceptions
                               "Has Consecutive Heart Rates Less than 50"
                                or "Has Medical or Patient Reason for Not Ordering Beta Blocker for LVSD"
                                or "Has Arrhythmia Diagnosis"
                                or "Has Hypotension Diagnosis"
                                or "Has Asthma Diagnosis'
                                or "Has Diagnosis of Allergy or Intolerance to Beta Blocker Therapy"
                                or "Has Bradycardia Diagnosis"
                                or "Has Allergy or Intolerance to Beta Blocker Therapy Ingredient"
                                or "Atrioventricular Block without Cardiac Pacer"

▲ Stratification

                               None
Definitions

▲ Atrioventricular Block without Cardiac Pacer

                   "Has Atrioventricular Block Diagnosis"
                    and not "Has Diagnosis of Cardiac Pacer in Situ"
                    and not "Has Cardiac Pacer Device Implanted"

▲ Denominator

                    "Initial Population"
                    and exists HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD"
          ▲ Denominator Exceptions
                   "Has Consecutive Heart Rates Less than 50"
                    or "Has Medical or Patient Reason for Not Ordering Beta Blocker for LVSD"
                    or "Has Arrhythmia Diagnosis"
                    or "Has Hypotension Diagnosis"
                    or "Has Asthma Diagnosis"
                    or "Has Diagnosis of Allergy or Intolerance to Beta Blocker Therapy"
                    or "Has Bradycardia Diagnosis"
                    or "Has Allergy or Intolerance to Beta Blocker Therapy Ingredient"
                    or "Atrioventricular Block without Cardiac Pacer"

▲ Denominator Exclusions

                   HeartFailure."Has Heart Transplant"
                    or HeartFailure."Has Heart Transplant Complications"
                    or HeartFailure."Has Left Ventricular Assist Device"
                    or HeartFailure."Has Left Ventricular Assist Device Complications"

▲ Has Allergy or Intolerance to Beta Blocker Therapy Ingredient

                   exists ( ["Allergy/Intolerance": "Beta Blocker Therapy Ingredient"]
union ["Allergy/Intolerance": "Substance with beta adrenergic receptor antagonist mechanism of action (substance)"] ) BetaBlockerAllergyIntolerance
with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate Or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter.

**The Provided Several Pr
                      such that BetaBlockerAllergyIntolerance.prevalencePeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Arrhythmia Diagnosis

                   exists ["Diagnosis": "Arrhythmia"] Arrhythmia
                    with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that Arrhythmia prevalencePeriod overlaps day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Asthma Diagnosis

                   exists ["Diagnosis": "Asthma"] Asthma
                     with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that Asthma prevalencePeriod overlaps day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Atrioventricular Block Diagnosis

                   exists ["Diagnosis": "Atrioventricular Block"] AtrioventricularBlock
                    with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that AtrioventricularBlock.prevalencePeriod overlaps day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Beta Blocker Therapy for LVSD Ordered

                   exists ["Medication, Order": "Beta Blocker Therapy for LVSD"] BetaBlockerOrdered with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that BetaBlockerOrdered.authorDatetime during day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Bradycardia Diagnosis

                   exists ["Diagnosis": "Bradycardia"] Bradycardia
                    with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that Bradycardia.prevalencePeriod overlaps day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Cardiac Pacer Device Implanted

                    exists ["Procedure, Performed": "Cardiac Pacer"] ImplantedCardiacPacer
                     with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that ( Global."NormalizeInterval" ( ImplantedCardiacPacer.relevantDatetime, ImplantedCardiacPacer.relevantPeriod ) ) starts before end of
                   ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Consecutive Heart Rates Less than 50

                   exists from
                    ["Physical Exam, Performed": "Heart Rate"] HeartRate,
                     HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                     let PriorHeartRate: Last(["Physical Exam, Performed": "Heart Rate"] MostRecentPriorHeartRate
                        where(Global."NormalizeInterval"(MostRecentPriorHeartRate.relevantDatetime, MostRecentPriorHeartRate.relevantPeriod)) during
                   Moderate Or Severe LVSDHFOut patient Encounter. relevant Period\\
                         and(Global."NormalizeInterval"(MostRecentPriorHeartRate.relevantDatetime, MostRecentPriorHeartRate.relevantPeriod)) before Global."NormalizeInterval"(HeartRate.relevantDatetime, MostRecentPriorHeartRate.relevantPeriod))
                   HeartRate.relevantPeriod)
                        sort by start of Global. "NormalizeInterval" (relevantDatetime, relevantPeriod)
                    where Global."NormalizeInterval" (HeartRate.relevantDatetime, HeartRate.relevantPeriod) during ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
                      and HeartRate.result < 50 '{beats}/min'
                      and PriorHeartRate.result < 50 '{beats}/min'

▲ Has Diagnosis of Allergy or Intolerance to Beta Blocker Therapy

                   exists ( ["Diagnosis": "Allergy to Beta Blocker Therapy"]
union ["Diagnosis": "Intolerance to Beta Blocker Therapy"] ) BetaBlockerAllergyOrIntoleranceDiagnosis
with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
such that BetaBlockerAllergyOrIntoleranceDiagnosis.prevalencePeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Diagnosis of Cardiac Pacer in Situ

                   exists ["Diagnosis": "Cardiac Pacer in Situ"] CardiacPacerDiagnosis
                     with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that CardiacPacerDiagnosis.prevalencePeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Hypotension Diagnosis

                    exists ["Diagnosis": "Hypotension"] Hypotension
                     with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that Hypotension prevalencePeriod overlaps day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ Has Medical or Patient Reason for Not Ordering Beta Blocker for LVSD

                   exists ["Medication, Not Ordered": "Beta Blocker Therapy for LVSD"] NoBetaBlockerOrdered
                    with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that NoBetaBlockerOrdered.authorDatetime during day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
                    where (NoBetaBlockerOrdered.negationRationale in "Medical Reason"
                        or NoBetaBlockerOrdered.negationRationale in "Patient Reason"

▲ HeartFailure.Has Heart Transplant

                   exists ["Procedure, Performed": "Heart Transplant"] HeartTransplant with "Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that ( Global."NormalizeInterval" ( HeartTransplant.relevantDatetime, HeartTransplant.relevantPeriod ) ) starts before
                      end of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ HeartFailure.Has Heart Transplant Complications

                   exists ["Diagnosis": "Heart Transplant Complications"] HeartTransplantComplications
                    with "Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that ( Global."NormalizeInterval" ( HeartTransplantComplications.authorDatetime, HeartTransplantComplications.prevalencePeriod ) ) starts before
                      end of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ HeartFailure.Has Left Ventricular Assist Device

                   exists ["Procedure, Performed": "Left Ventricular Assist Device Placement"] LVADOutpatient
                     with "Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that ( Global."NormalizeInterval" ( LVADOutpatient.relevantDatetime, LVADOutpatient.relevantPeriod ) ) starts before
                      end of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ HeartFailure.Has Left Ventricular Assist Device Complications

                   exists ["Diagnosis": "Left Ventricular Assist Device Complications"] LVADComplications
                    with "Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that ( Global."NormalizeInterval" ( LVADComplications.authorDatetime, LVADComplications.prevalencePeriod ) ) starts before
                      end of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod

▲ HeartFailure.Heart Failure Outpatient Encounter

                   ( ["Encounter, Performed": "Care Services in Long Term Residential Facility"] union ["Encounter, Performed": "Home Healthcare Services"] union ["Encounter, Performed": "Nursing Facility Visit"] union ["Encounter, Performed": "Office Visit"]
                    union ["Encounter, Performed": "Outpatient Consultation"] ) QualifyingEncounter with ["Diagnosis": "Heart Failure"] HeartFailure
                      such that HeartFailure.prevalencePeriod overlaps QualifyingEncounter.relevantPeriod
                    where QualifyingEncounter.relevantPeriod during day of "Measurement Period"
          ▲ HeartFailure.Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD
                    "Heart Failure Outpatient Encounter" HFOutpatientEncounter
                    with "Moderate or Severe LVSD Findings" LVSDFindings
                      such that Coalesce(LVSDFindings.prevalencePeriod, Global."NormalizeInterval"(LVSDFindings.relevantDatetime, LVSDFindings.relevantPeriod)) starts before end of
                   HFOutpatientEncounter.relevantPeriod
          ▲ HeartFailure.Is Adults With Two Qualifying Outpatient Encounters and One Heart Failure Outpatient Encounter During the Measurement Period
                    AgeInYearsAt(date from start of "Measurement Period") >= 18
                     and exists ( "Qualifying Outpatient Encounter During Measurement Period" Encounter1
                        with "Qualifying Outpatient Encounter During Measurement Period" Encounter2
                         such that Encounter2.id!~ Encounter1.id
                     and exists "Heart Failure Outpatient Encounter"

▲ HeartFailure.Moderate or Severe LVSD Findings

                   (["Diagnostic Study, Performed": "Ejection Fraction"] EjectionFraction
                       where EjectionFraction.result <= 40 '%'
                    union ["Diagnosis": "Moderate or Severe LVSD"]
                    union (["Diagnosis": "Left ventricular systolic dysfunction (disorder)"] LVSD
                       where LVSD.severity in "Moderate or Severe"
          ▲ HeartFailure.Qualifying Outpatient Encounter During Measurement Period
                  ( ["Encounter, Performed": "Office Visit"] union ["Encounter, Performed": "Outpatient Consultation"] union ["Encounter, Performed": "Nursing Facility Visit"] union ["Encounter, Performed": "Care Services in Long Term Residential Facility"] union ["Encounter, Performed": "Home Healthcare Services"] union ["Encounter, Performed": "Patient Provider Interaction"] ) ValidEncounter where ValidEncounter.relevantPeriod during day of "Measurement Period"

▲ Initial Population

                   HeartFailure."Is Adults With Two Qualifying Outpatient Encounters and One Heart Failure Outpatient Encounter During the Measurement Period"

▲ Is Currently Taking Beta Blocker Therapy for LVSD

                   exists ["Medication, Active": "Beta Blocker Therapy for LVSD"] ActiveBetaBlocker
                     with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
                      such that ActiveBetaBlocker.relevantPeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
          Numerator
                   "Has Beta Blocker Therapy for LVSD Ordered"
                    or "Is Currently Taking Beta Blocker Therapy for LVSD"

■ SDE Ethnicity

                   ["Patient Characteristic Ethnicity": "Ethnicity"]
          ▲ SDE Payer
                   ["Patient Characteristic Payer": "Payer Type"]

▲ SDE Race

                   ["Patient Characteristic Race": "Race"]

▲ SDE Sex

                   ["Patient Characteristic Sex": "ONC Administrative Sex"]
Functions

▲ Global.NormalizeInterval(pointInTime DateTime, period Interval<DateTime>)

                   if pointInTime is not null then Interval[pointInTime, pointInTime]
                    else if period is not null then period
                    else null as Interval<DateTime>
Terminology
                code "Left ventricular systolic dysfunction (disorder)" ("SNOMEDCT Code (134401001)")
                code "Substance with beta adrenergic receptor antagonist mechanism of action (substance)" ("SNOMEDCT Code (373254001)")
               valueset "Alrioventricular Blocker Therapy" (2.16.840.1.113883.3.526.3.1177) valueset "Arrivythmia" (2.16.840.1.113883.3.526.3.366) valueset "Asthma" (2.16.840.1.113883.3.526.3.362) valueset "Atrioventricular Block" (2.16.840.1.113883.3.526.3.367) valueset "Beta Blocker Therapy for LVSD" (2.16.840.1.113883.3.526.3.1184) valueset "Bradycardia" (2.16.840.1.113883.3.526.3.1493) valueset "Bradycardia" (2.16.840.1.113883.3.526.3.412) valueset "Cardiac Pacer" (2.16.840.1.113762.1.4.1178.53)
                valueset "Cardiac Pacer" (2.16.840.1.113762.1.4.1178.53)
                valueset "Cardiac Pacer in Situ" (2.16.840.1.113883.3.526.3.368)
                valueset "Care Services in Long Term Residential Facility" (2.16.840.1.113883.3.464.1003.101.12.1014) valueset "Ejection Fraction" (2.16.840.1.113883.3.526.3.1134) valueset "Ethnicity" (2.16.840.1.114222.4.11.837)
                valueset "Heart Failure" (2.16.840.1.113883.3.526.3.376) valueset "Heart Rate" (2.16.840.1.113883.3.526.3.1176)
                valueset "Heart Transplant" (2.16.840.1.113762.1.4.1178.33)
                valueset "Heart Transplant Complications" (2.16.840.1.113762.1.4.1178.56)
                valueset "Home Healthcare Services" (2.16.840.1.113883.3.464.1003.101.12.1016) valueset "Hypotension" (2.16.840.1.113883.3.526.3.370)
                valueset "Intolerance to Beta Blocker Therapy" (2.16.840.1.113883.3.526.3.1178)
                valueset "Left Ventricular Assist Device Complications" (2.16.840.1.113762.1.4.1178.58)
                valueset "Left Ventricular Assist Device Placement" (2.16.840.1.113762.1.4.1178.61)
                valueset "Medical Reason" (2.16.840.1.113883.3.526.3.1007)
                valueset "Moderate or Severe" (2.16.840.1.113883.3.526.3.1092)
                valueset "Moderate or Severe LVSD" (2.16.840.1.113883.3.526.3.1090)
                valueset "Nursing Facility Visit" (2.16.840.1.113883.3.464.1003.101.12.1012)
                valueset "Office Visit" (2.16.840.1.113883.3.464.1003.101.12.1001)
                valueset "ONC Administrative Sex" (2.16.840.1.113762.1.4.1)
                valueset "Outpatient Consultation" (2.16.840.1.113883.3.464.1003.101.12.1008)
                valueset "Patient Provider Interaction" (2.16.840.1.113883.3.526.3.1012)
                valueset "Patient Reason" (2.16.840.1.113883.3.526.3.1008)
                valueset "Payer Type" (2.16.840.1.114222.4.11.3591)
                valueset "Race" (2.16.840.1.114222.4.11.836)
Data Criteria (QDM Data Elements)
                "Allergy/Intolerance: Beta Blocker Therapy Ingredient" using "Beta Blocker Therapy Ingredient (2.16.840.1.113883.3.526.3.1493)"
                "Allergy/Intolerance: Substance with beta adrenergic receptor antagonist mechanism of action (substance)" using "Substance with beta adrenergic receptor antagonist mechanism of action
                (substance) (SNOMEDCT Code 373254001)"
                "Diagnosis: Allergy to Beta Blocker Therapy" using "Allergy to Beta Blocker Therapy (2.16.840.1.113883.3.526.3.1177)" "Diagnosis: Arrhythmia" using "Arrhythmia (2.16.840.1.113883.3.526.3.366)"
                "Diagnosis: Asthma" using "Asthma (2.16.840.1.113883.3.526.3.362)"
                "Diagnosis: Atrioventricular Block" using "Atrioventricular Block (2.16.840.1.113883.3.526.3.367)"
                "Diagnosis: Bradycardia" using "Bradycardia (2.16.840.1.113883.3.526.3.412)"
"Diagnosis: Cardiac Pacer in Situ" using "Cardiac Pacer in Situ (2.16.840.1.113883.3.526.3.368)"
"Diagnosis: Heart Failure" using "Heart Failure (2.16.840.1.113883.3.526.3.376)"
"Diagnosis: Heart Transplant Complications" using "Heart Transplant Complications (2.16.840.1.113762.1.4.1178.56)"
               "Diagnosis: Heart Transplant Complications" using "Heart Transplant Complications (2.16.840.1.113762.1.4.1178.56)"

"Diagnosis: Hypotension" using "Hypotension (2.16.840.1.113883.3.526.3.370)"

"Diagnosis: Intolerance to Beta Blocker Therapy" using "Intolerance to Beta Blocker Therapy (2.16.840.1.113883.3.526.3.1178)"

"Diagnosis: Left Ventricular Assist Device Complications" using "Left Ventricular Assist Device Complications (2.16.840.1.113762.1.4.1178.58)"

"Diagnosis: Left ventricular systolic dysfunction (disorder)" using "Left ventricular systolic dysfunction (disorder) (SNOMEDCT Code 134401001)"

"Diagnosis: Moderate or Severe LVSD" using "Moderate or Severe LVSD (2.16.840.1.113883.3.526.3.1090)"

"Diagnostic Study, Performed: Ejection Fraction" using "Ejection Fraction (2.16.840.1.113883.3.526.3.1134)"

"Encounter, Performed: Care Services in Long Term Residential Facility" using "Care Services in Long Term Residential Facility (2.16.840.1.113883.3.464.1003.101.12.1014)"

"Encounter, Performed: Nursing Facility Visit" using "Home Healthcare Services (2.16.840.1.113883.3.464.1003.101.12.1012)"

"Encounter, Performed: Office Visit" using "Office Visit (2.16.840.1.113883.3.464.1003.101.12.1001)"

"Encounter, Performed: Outpatient Consultation" using "Outpatient Consultation (2.16.840.1.113883.3.464.1003.101.12.1008)"
               "Encounter, Performed: Office Visit" using "Office Visit (2.16.840.1.113883.3.464.1003.101.12.1001)"
"Encounter, Performed: Outpatient Consultation" using "Outpatient Consultation (2.16.840.1.113883.3.464.1003.101.12.1008)"
"Encounter, Performed: Patient Provider Interaction" using "Patient Provider Interaction (2.16.840.1.113883.3.526.3.1012)"
"Medication, Active: Beta Blocker Therapy for LVSD" using "Beta Blocker Therapy for LVSD (2.16.840.1.113883.3.526.3.1184)"
"Medication, Not Ordered: Beta Blocker Therapy for LVSD" using "Beta Blocker Therapy for LVSD (2.16.840.1.113883.3.526.3.1184)"
"Medication, Order: Beta Blocker Therapy for LVSD" using "Beta Blocker Therapy for LVSD (2.16.840.1.113883.3.526.3.1184)"
"Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity (2.16.840.1.114222.4.11.837)"
"Patient Characteristic Payer: Payer Type" using "Payer Type (2.16.840.1.114222.4.11.3591)"
"Patient Characteristic Race: Race" using "Race (2.16.840.1.114222.4.11.836)"
"Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex (2.16.840.1.113762.1.4.1)"
                "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex (2.16.840.1.113762.1.4.1)"
"Physical Exam, Performed: Heart Rate" using "Heart Rate (2.16.840.1.113883.3.526.3.1176)"
                "Procedure, Performed: Cardiac Pacer" using "Cardiac Pacer (2.16.840.1.113762.1.4.1178.53)"
"Procedure, Performed: Heart Transplant" using "Heart Transplant (2.16.840.1.113762.1.4.1178.33)"
                "Procedure, Performed: Left Ventricular Assist Device Placement" using "Left Ventricular Assist Device Placement (2.16.840.1.113762.1.4.1178.61)"
Supplemental Data Elements
         ▲ SDE Ethnicity
                   ["Patient Characteristic Ethnicity": "Ethnicity"]

▲ SDE Payer

                   ["Patient Characteristic Payer": "Payer Type"]
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