eCQM Title	**Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) or Angiotensin Receptor-Neprilysin Inhibitor (ARNI) Therapy for Left Ventricular Systolic Dysfunction (LVSD)**		
eCQM Identifier (Measure Authoring Tool)	135	**eCQM Version Number**	13.4.000
CBE Number	0081e	**GUID**	430ffc53-4122-4421-88cc-2edd8117bb3c
Measurement Period	January 1, 20XX through December 31, 20XX		
Measure Steward	American Heart Association		
Measure Developer	American Medical Association (AMA)		
Measure Developer	PCPI(R) Foundation (PCPI[R])		
Measure Developer	American Heart Association		
Endorsed By	CMS Consensus Based Entity		
Description	Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) with a current or prior left ventricular ejection fraction (LVEF) <=40% who were prescribed or already taking ACE inhibitor or ARB or ARNI therapy during the measurement period		
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Measure Scoring	Proportion		
Measure Type	Process		
Stratification	None		
Risk Adjustment	None		
Rate Aggregation	None		
Rationale	Use of ACE inhibitor, ARB, or ARNI therapy has been associated with improved outcomes in patients with reduced LVEF. Long-term therapy with ARBs have also been shown to reduce morbidity and mortality, especially in ACE inhibitor–intolerant patients. More recently, ARNI therapy has also been shown to more significantly improve outcomes, such that the newest guidelines recommend replacement of ACE inhibitors or ARBs with ARNI therapy in eligible patients. However, despite the benefits of these drugs, use of ACE inhibitor, ARB, or ARNI remains suboptimal.		
Clinical Recommendation Statement	In patients with Heart Failure with Reduced Ejection Fraction (HFrEF) and New York Heart Association (NYHA) class II to III symptoms, the use of ARNI is recommended to reduce morbidity and mortality (Class I, Level of Evidence A) (Heidenreich et al., 2022). In patients with previous or current symptoms of chronic HFrEF, the use of angiotension-converting enzyme inhibitors (ACEi) is beneficial to reduce morbidity and mortality when the use of ARNI is not feasible (Class I, Level of Evidence A) (Heidenreich et al., 2022). In patients with previous or current symptoms of chronic HFrEF who are intolerant to ACEi because of cough or angioedema and when the use of ARNI is not feasible, the use of ARB is recommended to reduce morbidity and mortality. (Class I, Level of Evidence A) (Heidenreich et al., 2022). In patients with chronic symptomatic HFrEF NYHA class II or III who tolerate an ACEi or ARB, replacement by an ARNI is recommended to further reduce morbidity and mortality (Class I, Level of Evidence B-R) (Heidenreich et al., 2022). ARNI should not be administered concomitantly with ACEi or within 36 hours of the last dose of an ACEi (Class II: Harm, Level of Evidence B-R) (Heidenreich et al., 2022). ARNI should not be administered to patients with any history of angioedema (Class III: Harm, Level of Evidence C-LD) (Heidenreich et al., 2022). ACEi should not be administered to patients with any history of angioedema (Class III: Harm, Level of Evidence C-LD) (Heidenreich et al., 2022). Drugs Commonly Used for Stage C HFrEF (abbreviated to align with focus of measure to include only ACE inhibitors, ARB and ARNI therapy) Drug / Initial Daily Dose(s) / Target Dose(s) / Mean Doses Achieved in Clinical Trials ACEi Captopril / 6.25 mg 3 times / 50 mg 3 times / 122.7 mg total daily Enalapril / 2.5 mg twice / 10 to 20 mg twice / 16.6 mg total daily Fosinopril / 5 to 10 mg once / 40 mg once / N/A Lisinopril / 2.5 to 5 mg once / 20 to 40 mg once / 32.5 to 35.0 mg total daily Perindopril / 2 mg once / 8 to 16 mg once / N/A Quinapril / 5 mg twice / 20 mg twice / N/A Ramipril / 1.25 to 2.5 mg once / 10 mg once / N/A Trandolapril / 1 mg once / 4 mg once / N/A ARB Candesartan / 4 to 8 mg once / 32 mg once / 24 mg total daily Losartan / 25 to 50 mg once / 50 to 150 mg once / 129 mg total daily Valsartan / 20 to 40 mg twice / 160 mg twice / 254 mg total daily ARNI Sacubitril-valsartan / 49/51 mg twice (sacubitril/valsartan) (therapy may be initiated at 24/26 mg twice) / 97/103 mg twice (sacubitril/valsartan) / 182/193 mg (sacubitril/valsartan) total daily		
Improvement Notation	Higher score indicates better quality		
Reference	Reference Type: CITATION 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.0000000000001063'		
Definition	Prescribed - prescription given to the patient for ACE inhibitor or ARB or ARNI therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB or ARNI therapy as documented in current medication list. 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 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.		
Guidance	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. The requirement of two or more visits is used to establish that the eligible clinician has an existing relationship with the patient. 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 requirement. 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." Eligible clinicians who have given a prescription for or whose patient is already taking an Angiotensin-Converting Enzyme Inhibitor (ACEI) or Angiotensin Receptor Blocker (ARB) would meet performance for this measure. Other combination therapies that consist of an ACEI plus diuretic, ARB + neprilysin inhibitor (ARNI), ARB plus diuretic, ACEI plus calcium channel blocker, ARB plus calcium channel blocker, or ARB plus calcium channel blocker plus diuretic would also meet performance for this measure. 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		
Initial Population	All patients aged 18 years and older with two qualifying encounters during the measurement period and a diagnosis of heart failure on or before at least one qualifying encounter		
Denominator	Equals Initial Population with a current or prior LVEF <= 40%		
Denominator Exclusions	Patients with a history of heart transplant or with a Left Ventricular Assist Device (LVAD) prior to the end of the outpatient encounter with Moderate or Severe LVSD		
Numerator	Patients who were prescribed or already taking ACE inhibitor or ARB or ARNI therapy during the measurement period		
Numerator Exclusions	Not Applicable		
Denominator Exceptions	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB or ARNI therapy (e.g., pregnancy, renal failure due to ACEI, allergy, intolerance, other medical reasons). Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB or ARNI 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

Initial Population

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

Denominator

```
"Initial Population"
  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 ACEI or ARB or ARNI Ordered"
  or "Is Currently Taking ACEI or ARB or ARNI"
```

Numerator Exclusions

None

Denominator Exceptions

```
"Has Medical or Patient Reason for Not Ordering ACEI or ARB or ARNI"
  or "Has Allergy or Intolerance to ACEI or ARB or ARNI Ingredient"
  or "Has Diagnosis of Allergy or Intolerance to ACEI or ARB"
  or "Has Diagnosis of Pregnancy"
  or "Has Diagnosis of Renal Failure Due to ACEI"
```

Stratification

None

Definitions

Denominator

```
"Initial Population"
  and exists HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD"
```

Denominator Exceptions

```
"Has Medical or Patient Reason for Not Ordering ACEI or ARB or ARNI"
  or "Has Allergy or Intolerance to ACEI or ARB or ARNI Ingredient"
  or "Has Diagnosis of Allergy or Intolerance to ACEI or ARB"
  or "Has Diagnosis of Pregnancy"
  or "Has Diagnosis of Renal Failure Due to ACEI"
```

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 ACEI or ARB or ARNI Ordered

```
exists ["Medication, Order": "ACE Inhibitor or ARB or ARNI"] ACEIOrARBOrARNIOrdered
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that ACEIOrARBOrARNIOrdered.authorDatetime during day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
```

Has Allergy or Intolerance to ACEI or ARB or ARNI Ingredient

```
exists ( ["Allergy/Intolerance": "ACE Inhibitor or ARB or ARNI Ingredient"]
  union ["Allergy/Intolerance": "Substance with angiotensin-converting enzyme inhibitor mechanism of action (substance)"]
  union ["Allergy/Intolerance": "Substance with angiotensin II receptor antagonist mechanism of action (substance)"]
  union ["Allergy/Intolerance": "Substance with neprilysin inhibitor mechanism of action (substance)"] ) ACEIOrARBOrARNIAllergyIntolerance
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that ACEIOrARBOrARNIAllergyIntolerance.prevalencePeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
```

Has Diagnosis of Allergy or Intolerance to ACEI or ARB

```
exists ( ["Diagnosis": "Allergy to ACE Inhibitor or ARB"]
  union ["Diagnosis": "Intolerance to ACE Inhibitor or ARB"] ) ACEIOrARBAllergyOrIntoleranceDiagnosis
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that ACEIOrARBAllergyOrIntoleranceDiagnosis.prevalencePeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
```

Has Diagnosis of Pregnancy

```
exists ["Diagnosis": "Pregnancy"] Pregnancy
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that Pregnancy.prevalencePeriod starts 9 months or less before or on start ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
```

Has Diagnosis of Renal Failure Due to ACEI

```
exists ["Diagnosis": "Acute renal failure caused by angiotensin-converting-enzyme inhibitor (disorder)"] RenalFailureDueToACEI
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that RenalFailureDueToACEI.prevalencePeriod overlaps day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
```

Has Medical or Patient Reason for Not Ordering ACEI or ARB or ARNI

```
exists ["Medication, Not Ordered": "ACE Inhibitor or ARB or ARNI"] NoACEIOrARBOrARNIOrdered
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that NoACEIOrARBOrARNIOrdered.authorDatetime during day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
  where ( NoACEIOrARBOrARNIOrdered.negationRationale in "Medical Reason"
      or NoACEIOrARBOrARNIOrdered.negationRationale in "Patient Reason"
      or NoACEIOrARBOrARNIOrdered.negationRationale in "Patient Reason for ACE Inhibitor or ARB Decline"
  )
```

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 ACEI or ARB or ARNI

```
exists ["Medication, Active": "ACE Inhibitor or ARB or ARNI"] ActiveACEIOrARBOrARNI
  with HeartFailure."Heart Failure Outpatient Encounter with History of Moderate or Severe LVSD" ModerateOrSevereLVSDHFOutpatientEncounter
    such that ActiveACEIOrARBOrARNI.relevantPeriod overlaps after day of ModerateOrSevereLVSDHFOutpatientEncounter.relevantPeriod
```

Numerator

```
"Has ACEI or ARB or ARNI Ordered"
  or "Is Currently Taking ACEI or ARB or ARNI"
```

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 "Acute renal failure caused by angiotensin-converting-enzyme inhibitor (disorder)" ("SNOMEDCT Code (422593004)")
- code "Left ventricular systolic dysfunction (disorder)" ("SNOMEDCT Code (134401001)")
- code "Substance with angiotensin II receptor antagonist mechanism of action (substance)" ("SNOMEDCT Code (372913009)")
- code "Substance with angiotensin-converting enzyme inhibitor mechanism of action (substance)" ("SNOMEDCT Code (372733002)")
- code "Substance with neprilysin inhibitor mechanism of action (substance)" ("SNOMEDCT Code (786886009)")
- valueset "ACE Inhibitor or ARB or ARNI" (2.16.840.1.113883.3.526.3.1139)
- valueset "ACE Inhibitor or ARB or ARNI Ingredient" (2.16.840.1.113883.3.526.3.1489)
- valueset "Allergy to ACE Inhibitor or ARB" (2.16.840.1.113883.3.526.3.1211)
- 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 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 "Intolerance to ACE Inhibitor or ARB" (2.16.840.1.113883.3.526.3.1212)
- 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 "Patient Reason for ACE Inhibitor or ARB Decline" (2.16.840.1.113883.3.526.3.1140)
- valueset "Payer Type" (2.16.840.1.114222.4.11.3591)
- valueset "Pregnancy" (2.16.840.1.113883.3.526.3.378)
- valueset "Race" (2.16.840.1.114222.4.11.836)

Data Criteria (QDM Data Elements)

- "Allergy/Intolerance: ACE Inhibitor or ARB or ARNI Ingredient" using "ACE Inhibitor or ARB or ARNI Ingredient (2.16.840.1.113883.3.526.3.1489)"
- "Allergy/Intolerance: Substance with angiotensin II receptor antagonist mechanism of action (substance)" using "Substance with angiotensin II receptor antagonist mechanism of action (substance) (SNOMEDCT Code 372913009)"
- "Allergy/Intolerance: Substance with angiotensin-converting enzyme inhibitor mechanism of action (substance)" using "Substance with angiotensin-converting enzyme inhibitor mechanism of action (substance) (SNOMEDCT Code 372733002)"
- "Allergy/Intolerance: Substance with neprilysin inhibitor mechanism of action (substance)" using "Substance with neprilysin inhibitor mechanism of action (substance) (SNOMEDCT Code 786886009)"
- "Diagnosis: Acute renal failure caused by angiotensin-converting-enzyme inhibitor (disorder)" using "Acute renal failure caused by angiotensin-converting-enzyme inhibitor (disorder) (SNOMEDCT Code 422593004)"
- "Diagnosis: Allergy to ACE Inhibitor or ARB" using "Allergy to ACE Inhibitor or ARB (2.16.840.1.113883.3.526.3.1211)"
- "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: Intolerance to ACE Inhibitor or ARB" using "Intolerance to ACE Inhibitor or ARB (2.16.840.1.113883.3.526.3.1212)"
- "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)"
- "Diagnosis: Pregnancy" using "Pregnancy (2.16.840.1.113883.3.526.3.378)"
- "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: Home Healthcare Services" using "Home Healthcare Services (2.16.840.1.113883.3.464.1003.101.12.1016)"
- "Encounter, Performed: Nursing Facility Visit" using "Nursing Facility Visit (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: Patient Provider Interaction" using "Patient Provider Interaction (2.16.840.1.113883.3.526.3.1012)"
- "Medication, Active: ACE Inhibitor or ARB or ARNI" using "ACE Inhibitor or ARB or ARNI (2.16.840.1.113883.3.526.3.1139)"
- "Medication, Not Ordered: ACE Inhibitor or ARB or ARNI" using "ACE Inhibitor or ARB or ARNI (2.16.840.1.113883.3.526.3.1139)"
- "Medication, Order: ACE Inhibitor or ARB or ARNI" using "ACE Inhibitor or ARB or ARNI (2.16.840.1.113883.3.526.3.1139)"
- "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)"
- "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"]
```

SDE Race

```
["Patient Characteristic Race": "Race"]
```

SDE Sex

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

Risk Adjustment Variables

None

Measure Set	None