eCOM Title	Statin Therapy for the Prevention and Tre	atment of Cardiovascular Disea	se
eCQM Identifier	347		8.1.000
(Measure Authoring Tool)		eCQM Version Number	
CBE Number	Not Applicable	GUID	5375d6a9-203b-4fff-b851-afa9b68d2ac2
Measurement Period	January 1, 20XX through December 31, 20XX		
Measure Steward Measure Developer	Centers for Medicare & Medicaid Services (CMS) Mathematica		
Endorsed By	None		
Description	Percentage of the following patients - all considered at high risk of cardiovascular events - who were prescribed or were on statin therapy during the measurement period: - All patients who were previously diagnosed with or currently have a diagnosis of clinical atherosclerotic cardiovascular disease (ASCVD), including an ASCVD procedure; OR - Patients aged 20 to 75 years who have ever had a low-density lipoprotein cholesterol (LDL-C) level >= 190 mg/dL or were previously diagnosed with or currently have an active diagnosis of familial hypercholesterolemia; OR - Patients aged 40-75 years with a diagnosis of diabetes; OR - Patients aged 40 to 75 with a 10-year ASCVD risk score of >= 20 percent.		
Copyright	Limited proprietary coding is contained in sets should obtain all necessary licenses fr CPT(R) contained in the Measure specifical copyright 2004-2023 Regenstrief Institute copyright 2004-2023 International Health	om the owners of these code se tions is copyright 2004-2023 Am , Inc. This material contains SN Terminology Standards Develop	rts. nerican Medical Association. LOINC(R) is DMED Clinical Terms(R) (SNOMED CT[R])
Disclaimer	2023 World Health Organization. All Rights These performance measures are not clinic been tested for all potential applications. THE MEASURES AND SPECIFICATIONS ARI Due to technical limitations, registered traindicated by (TM) or [TM].	cal guidelines and do not establi	
Measure Scoring	Proportion		
Measure Type	Process		
Stratification	None		
Risk Adjustment	None This measure is intended to have one repo		
Rate Aggregation	> = 20 percent during the measurement properties for the purposes of this measure, a single Performance Rate = (Numerator 1 + Numerator 1 + Nu	s at the beginning of the measur or were previously diagnosed wi s at the beginning of the measur ing the measurement period. e beginning of the measurement period. performance rate can be calculaterator 2 + Nume + (Denominator 2 - Denominatons 3 - Denominator Exceptions 3	rement period who have ever had a th or currently have an active diagnosis of rement period with an active diagnosis of period with a 10-year ASCVD risk score of ated as follows: Perator 4)/ [(Denominator 1 - Denominator r Exclusions 2 - Denominator Exceptions 2)
Rationale	deaths in the United States in 2015. In 20 and the estimated annual costs for CVD ar (hospital services, physicians and other pr durables) and \$130.5 billion in indirect cos deaths). CVD costs more than any other d Data collected between 2011 and 2014 inc cholesterol levels equal to 200 mg/dL or m al., 2018). Elevated blood cholesterol is a reduced risk of CVD. Numerous randomize reduces the risk of major cardiovascular er adults were published (Grundy et al., 2019 evidence from randomized controlled trials The American College of Cardiology (ACC), recommendations are intended to provide for the primary and secondary prevention that the addition of statin therapy reduces individuals with clinical ASCVD, with LDL-CASCVD as determined via use of an ASCVI 2019). One study surveying U.S. cardiology, primpatients were not on a statin and less thar undertreated patients had significantly hig (Navar et al., 2017). In a follow-up study on the percentage of patients with guideliin high-tertile clinics were more likely to achithis held true when patients were stratified. Research also indicates that certain popula than others. A retrospective study of the N Hispanic race or ethnicity, low income, lacifemale gender are predictors of lower stat women are far less likely than men to be p despite research showing that female patis statin therapy as male patients with cardio	15, stroke caused approximately distroke were \$329.7 billion, in ofessionals, prescribed medicatists from lost future productivity iagnostic group" (Benjamin et a dicates that more than 94.6 millioner, while almost 28.5 million honer, while almost 28.5 million hanjor risk factor for CVD and stight of the state of th	ons, home health care, and other medical (cardiovascular and stroke premature L., 2018). Ion U.S. adults, 20 years or older, had total lad levels 240 mg/dL or more (Benjamin et atin therapy has been associated with a treatment with a statin reduces LDL-C and ent (Ference, 2015). Ice atherosclerotic cardiovascular risk in by an Expert Panel, which synthesized of benefit from cholesterol-lowering therapy. In the statin reduces LDL-C and ent of the treatment of blood cholesterolents of all ages. The document concludes risk individuals, defined as follows: or individuals, defined as follows: or individuals with >= 20 percent risk of e Pooled Cohort Equations (Grundy et al., etices found that 1 in 4 guideline-eligible of statin intensity. Untreated and eliving guideline-directed statin treatment in me clinics were divided into tertiles based or researchers found that patients in the tients at the low- or mid-tertile clinics, and wention (Nanna et al., 2019a). Ive guideline-recommended statin therapy symination Survey found that Black and poor health care access, young age, and in particular, there is extensive evidence that ed statin therapy (Nanna et al., 2019b), derive the same or greater benefit from 14).
	outweigh any potential harm related to the	c drug (sucobson, zor r).	

70/24, 0.007 W	Cualif Thorapy for the Freventien and Treatment of Cardiovascular Biscasc
Statement	medication therapy to lower the risk of ASCVD among at-risk populations. Recommendations for Management of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults -
	Statin Treatment: Secondary Prevention: 1. In patients who are 75 years of age or younger with clinical ASCVD, high-intensity statin therapy should be initiated or continued with the aim of achieving a 50 percent or greater reduction in LDL-C levels (Class I Recommendation), (Grundy et al., 2019).
	2. In patients with clinical ASCVD in whom high-intensity statin therapy is contraindicated or who experience statin-associated side effects, moderate-intensity statin therapy should be initiated or continued with the aim of achieving a 30 to 49 percent reduction in LDL-C levels (Class I Recommendation), (Grundy et al., 2019).
	3. In patients older than 75 years of age with clinical ASCVD, it is reasonable to initiate moderate- or high-intensity statin therapy after evaluation of the potential for ASCVD risk reduction, adverse effects, and drug-drug interactions, as well as patient frailty and patient preferences (Class IIa Recommendation), (Grundy et al., 2019).
	Primary Prevention 1. In patients 20 to 75 years of age with an LDL-C level of 190 mg/dL or higher (>= 4.9 mmol/L), maximally tolerated statin therapy is recommended. (Class I Recommendation), (Grundy et al., 2019).
	2. In adults 40 to 75 years of age with diabetes mellitus, regardless of estimated 10-year ASCVD risk, moderate-intensity statin therapy is indicated (Class I Recommendation), (Grundy et al., 2019).
	3. To facilitate decisions about preventive interventions, it is recommended to screen for traditional ASCVD risk factors and apply the race- and sex-specific Pooled Cohort Equations (PCE) to estimate 10-year ASCVD risk for asymptomatic adults 40 to 75 years of age. The higher the estimated risk, the more likely the patient is to benefit from statin treatment (Grundy et al., 2019).
	The US Preventive Services Task Force (USPSTF) concludes with moderate certainty that statin use for the prevention of CVD events and all-cause mortality in adults aged 40 to 75 years with no history of CVD and who have 1 or more of these CVD risk factors and an estimated 10-year CVD event risk of 7.5 percent to less than 10 percent has at least a small net benefit (USPSTF 2022).
	Statin Safety and Statin-Associated Side Effects A clinician-patient risk discussion is recommended before initiation of statin therapy to review net clinical benefit, weighing the potential for ASCVD risk reduction against the potential for statin-associated side effects, statin-drug interactions, and safety, while emphasizing that side effects can be addressed successfully (Class I Recommendation), (Grundy et al., 2019).
Improvement Notation	Higher score indicates better quality
	Reference Type: CITATION
Reference	Reference Text: 'Benjamin, E. J., Virani, S. S., Callaway, C. W., Chamberlain, A. M., Chang, A. R., Cheng, S.,Munter, P. (2018). Heart disease and stroke statistics—2018 update: A report from the American Heart Association. Circulation, 137(12), e67-e492. doi.10.1161/CIR.000000000000558'
Reference	Reference Type: CITATION Reference Text: 'Ference, B.A. (2015). Statins and the risk of developing new-onset Type 2 diabetes: Expert analysis. Retrieved from https://www.acc.org/latest-in-cardiology/articles/2015/03/10/08/10/statins-and-the-risk-of-developing-new-onset-type-2-diabetes'
	Reference Type: CITATION
Reference	Reference Text: 'Grundy, S. M., Stone, N. J., Bailey, A. L., Beam, C., Birtcher, K. K., Blumenthal, R. S., Braun, L. T., Yeboah, J. (2019) 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol. Journal of the American College of Cardiology, 73(24), e286-e343. doi.10.1016/j.jacc.2018.11.003'
	Reference Type: CITATION
Reference	Reference Text: 'Gu, A., Kamat, S., Argulian, E. (2018). Trends and disparities in statin use and low-density lipoprotein cholesterol levels among US patients with diabetes, 1999–2014. Diabetes Research and Clinical Practice, 139, 1-10. doi:10.1016/j.diabres.2018.02.019'
	Reference Type: CITATION
Reference	Reference Text: 'Jacobson, T. A. (2014). Executive summary: NLA Task Force on Statin Safety—2014 update. Journal of Clinical Lipidology, 8(3 Suppl.), S1-S4. doi:10.1016/jacl.2014.03.002' Reference Type: CITATION
Reference	Reference Text: 'Nanna, M. G., Navar, A. M., Wang, Y. T., Li, S., Virani, S. S., Li, Z., Peterson, E. D. (2019a). Practice-Level Variation in Statin use and Low-Density Lipoprotein Cholesterol Control in the United States: Results from the Patient and Provider Assessment of Lipid Management (PALM) Registry. American Heart Journal, 214, 113–124. doi:10.1016/j.ahj.2019.05.009'
	Reference Type: CITATION
Reference	Reference Text: 'Nanna, M. G., Wang, T. Y., Xiang, Q., Goldberg, A. C., Robinson, J. G., Roger, V. L., Navar, A. M. (2019b). Sex Differences in the use of Statins in Community Practice. Circulation. Cardiovascular Quality & Outcomes, 12(8), e005562. doi:10.1161/CIRCOUTCOMES.118.005562
	Reference Type: CITATION
Reference	Reference Text: 'Navar, M., Wang, T. Y., Li, S.,Robinson, J. G., Goldberg, A. C., Virani, S.,Peterson, E. D. (2017). Lipid management in contemporary community practice: Results from the Provider Assessment of Lipid Management (PALM) Registry. American Heart Journal, 193, 84-92. doi.10.1016/j.ahj.2017.08.005'
D-6	Reference Type: CITATION
Reference	Reference Text: 'Puri, R., Nissen, S. E., Shao, M., Ballantyne, C. M., Barter, P. J., Chapman, M. J., Nicholls, S. J. (2014). Sex-related differences of coronary atherosclerosis regression following maximally intensive statin therapy: insights from SATURN. JACC. Cardiovascular imaging, 7(10), 1013–1022. doi:10.1016/j.jcmg.2014.04.019' Reference Type: CITATION
Deference	
Reference Definition	Reference Text: 'U.S. Preventive Services Task Force (USPSTF) (2022). Statin Use for the Primary Prevention of Cardiovascular Disease in Adults: US Preventive Services Task Force Recommendation Statement. Journal of American Medical Association; 328(8):746-753. doi:10.1001/jama.2022.13044' Clinical atherosclerotic cardiovascular disease (ASCVD) includes:
Demitton	- Acute coronary syndromes - History of myocardial infarction - Stable or unstable angina - Coronary or other arterial revascularization - Stroke or transient ischemic attack (TIA) - Peripheral arterial disease of atherosclerotic origin
	Lipoprotein density cholesterol (LDL-C) result: - A fasting or non-fasting LDL-C laboratory test performed and direct or calculated test result documented in the medical record. When both direct and calculated test results are available on the same day, the direct LDL-C test result should be used.
	Statin therapy: - Administration of one or more of a group of medications that are used to lower plasma lipoprotein levels in the treatment of hyperlipoproteinemia.
	Statin Medication Therapy List (NOTE: List does NOT include dosage):

[Generic name] (Brand or trade name) and (-) Medication type, if applicable: [Generic name] (Brand or trade name) and (-) Medication type, if applicable:
[Atorvastatin] (Lipitor) - Statin
[Fluvastatin] (Lescol XL or Lescol) - Statin
[Lovastatin (Mevinolin)](Mevacor or Altoprev) - Statin
[Pitavastatin] (Livalo or Zypitamag or Nikita) - Statin
[Pravastatin Sodium] (Pravachol) - Statin
[Rosuvastatin Sodium] (Pravachol) - Statin
[Simvastatin] (Zocor) - Statin
[Amlodipine Besylate/Atorvastatin Calcium] (Caduet) - Fixed Dose Combination
[Ezetimibe / Rosuvastatin] (Roszet) - Fixed Dose Combination
[Ezetimibe/Simvastatin] (Vytorin) - Fixed Dose Combination Statin-Associated Muscle Symptoms (SAMS) - The 2018 ACC/AHA/MS Guideline (Grundy et al., 2019) includes the following SAMS: myalgias, myositis, myopathy, or statin-associated autoimmune myopathy. Patients who experience significant or repeated statin-associated muscle symptoms may prefer not to take or continue statin therapy and therefore may be removed from the denominator. Initial Population Guidance The initial population covers four distinct populations. Use the following process to prevent counting patients more than once Initial Population 1: All patients who were previously diagnosed with or currently have a diagnosis of clinical ASCVD, including an ASCVD procedure before the end of the measurement period. - If YES, meets Initial Population 1 risk category. - If NO, screen for next risk category. Initial Population 2: Patients aged 20 to 75 years at the beginning of the measurement period who have ever had a laboratory test result of LDL-C >= 190 mg/dL or were previously diagnosed with or currently have an active diagnosis of familial hypercholesterolemia. If YES, meets Initial Population 2 risk category. - If NO, screen for next risk category. Initial Population 3: Patients aged 40 to 75 years at the beginning of the measurement period with an active diagnosis of Type 1 or Type 2 diabetes at any time during the measurement period. If YES, meets Initial Population 3 risk category. If NO, screen for next risk category. Patients aged 40 to 75 at the beginning of the measurement period with a 10-year ASCVD risk score of >= 20 percent during the measurement period. If YES, meets Initial Population 4 risk category.
 If NO, patient does NOT meet Initial Population criteria and is NOT eligible for measure inclusion. Initial Population Guidance for Encounter: In order for the patient to be included in the Initial Population, the patient must have ONE initial population-eligible visit, defined as follows: outpatient visit, initial or established office visit, face-to-face interaction, preventive care services, or annual wellness visit. LDL-C Laboratory test result options: The measure can be reported for all patients with a documented LDL-C level recorded as follows: To meet Initial Population 1: There is no LDL-C result required To meet Initial Population 2: If a patient has ANY previous laboratory result of LDL-C >= 190 mg/dL, report the highest value >= 190 mg/dL. Guidance To meet Initial Population 3: There is no LDL-C result required. To meet Initial Population 4: There is no LDL-C result required. The 10-year ASCVD risk assessment options:
The 10-year ASCVD risk score is calculated using the Pooled Cohort Equations: 1) the 2013 ACC/AHA ASCVD Risk
Estimator (maps to LOINC Code 79423-0) OR 2) the ACC Risk Estimator Plus (maps to LOINC Code 99055-6). If your
EHR does not have either of these risk calculators, we recommend that you use the on-line versions. The 10-year
ASCVD risk score (quantitative result, i.e., result.value, "%") must be documented in a structured field. The 10-year
ASCVD risk assessment must be performed during the measurement period. Numerator instructions and guidance:
- Current statin therapy use must be documented in the patient's current medication list or ordered during the measurement period. ONLY statin therapy meets the measure Numerator criteria (NOT other cholesterol lowering medications).

- Prescription or order does NOT need to be linked to an encounter or visit; it may be called to the pharmacy.

- Statin medication "samples" provided to patients can be documented as "current statin therapy" if documented in the medication list in health/medical record. - Patients who meet the denominator criteria for inclusion, but are not prescribed or using statin therapy, will NOT meet performance for this measure unless they have an allowable denominator exception. Patients with an allowable denominator exception should be removed from the denominator of the measure and reported as a valid exception. There is only one performance rate calculated for this measure: the weighted average of the four populations Adherence to statin therapy is not calculated in this measure.

It may not be appropriate to prescribe statin therapy for some patients (see exceptions and exclusions for the complete list). Intensity of statin therapy in primary and secondary prevention:
The expert panel of the 2018 ACC/AHA/MS Guidelines (Grundy et al., 2019) defines recommended intensity of statin therapy on the basis of the average expected LDL-C response to specific statin and dose. Although intensity of statin therapy is important in managing cholesterol, this measure assesses prescription of ANY statin therapy, irrespective of intensity. Assessment of appropriate intensity and dosage documentation added too much complexity to allow inclusion of statin therapy intensity in the measure at this time. Lifestyle modification coaching:
A healthy lifestyle is important for the prevention of cardiovascular disease. However, lifestyle modification monitoring and documentation added too much complexity to allow its inclusion in the measure at this time Millimoles per liter (mmol/L) should be converted to milligrams per deciliter (mg/dL) for reporting this measure. This eCQM is a patient-based 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** Population 1: All patients who were previously diagnosed with or currently have a diagnosis of clinical ASCVD, including an ASCVD α **Initial Population** procedure. Patients aged 20 to 75 years at the beginning of the measurement period who have ever had a laboratory result of LDL-C >=190 mg/dL or were previously diagnosed with or currently have an active diagnosis of familial

,	• • • • • • • • • • • • • • • • • • • •
	hypercholesterolemia. Population 3: Patients aged 40 to 75 years at the beginning of the measurement period with Type 1 or Type 2 diabetes. Population 4: Patients aged 40 to 75 at the beginning of the measurement period with a 10-year ASCVD risk score (i.e., 2013 ACC/AHA ASCVD Risk Estimator or the ACC Risk Estimator Plus) of >= 20 percent during the measurement
	period.
Denominator	Equals Initial Population
Denominator Exclusions	Patients who are breastfeeding at any time during the measurement period. Patients who have a diagnosis of rhabdomyolysis at any time during the measurement period.
Numerator	Patients who are actively using or who receive an order (prescription) for statin therapy at any time during the measurement period
Numerator Exclusions	Not Applicable
Denominator Exceptions	Patients with statin-associated muscle symptoms or an allergy to statin medication. Patients who are receiving palliative or hospice care. Patients with active liver disease or hepatic disease or insufficiency. Patients with end-stage renal disease (ESRD). Patients with documentation of a medical reason for not being prescribed statin therapy.
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
- Risk Adjustment Variables

Population Criteria

▲ Population Criteria 1

▲ Initial Population

exists "ASCVD Diagnosis or Procedure before End of Measurement Period" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Denominator

"Initial Population 1"

▲ Denominator Exclusions

```
exists ( ( ["Diagnosis": "Breastfeeding"]
union ["Diagnosis": "Rhabdomyolysis"] ) ExclusionDiagnosis
where ExclusionDiagnosis.prevalencePeriod overlaps day of "Measurement Period"
```

▲ Numerato

exists "Statin Therapy Ordered during Measurement Period" or exists "Medication Active during the Measurement Period"

▲ Numerator Exclusions

None

▲ Denominator Exceptions

```
"Has Allergy to Statin"
or Hospice."Has Hospice Services"
or PalliativeCare."Has Palliative Care in the Measurement Period"
or "Has Hepatitis or Liver Disease Diagnosis"
or "Has Statin Associated Muscle Symptoms"
or "Has ESRD Diagnosis"
or "Has Adverse Reaction to Statin"
or "Has Medical Reason for Not Ordering Statin Therapy"
```

▲ Stratification

▲ Population Criteria 2

▲ Initial Population

"Patients Age 20 to 75 with LDL Cholesterol Result Greater than or Equal to 190 or Hypercholesterolemia without ASCVD" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Denominator

"Initial Population 2"

▲ Denominator Exclusions

```
exists ( ( ["Diagnosis": "Breastfeeding"]
union ["Diagnosis": "Rhabdomyolysis"] ) ExclusionDiagnosis
where ExclusionDiagnosis.prevalencePeriod overlaps day of "Measurement Period"
```

▲ Numerator

exists "Statin Therapy Ordered during Measurement Period" or exists "Medication Active during the Measurement Period"

▲ Numerator Exclusions

None

▲ Denominator Exceptions

```
"Has Allergy to Statin"
or Hospice."Has Hospice Services"
or PalliativeCare."Has Palliative Care in the Measurement Period"
or "Has Hepatitis or Liver Disease Diagnosis"
or "Has Statin Associated Muscle Symptoms"
or "Has ESRD Diagnosis"
or "Has Adverse Reaction to Statin"
or "Has Medical Reason for Not Ordering Statin Therapy"
```

▲ Stratification

None

▲ Population Criteria 3

▲ Initial Population

"Patients Age 40 to 75 Years with Diabetes without ASCVD or LDL Greater than 190 or Hypercholesterolemia" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Denominator

"Initial Population 3"

▲ Denominator Exclusions

```
exists ( ( ["Diagnosis": "Breastfeeding"] union ["Diagnosis": "Rhabdomyolysis"] ) ExclusionDiagnosis where ExclusionDiagnosis.prevalencePeriod overlaps day of "Measurement Period" )
```

▲ Numerator

exists "Statin Therapy Ordered during Measurement Period" or exists "Medication Active during the Measurement Period"

▲ Numerator Exclusions

None

▲ Denominator Exceptions

```
"Has Allergy to Statin"
or Hospice."Has Hospice Services"
or PalliativeCare."Has Palliative Care in the Measurement Period"
or "Has Hepatitis or Liver Disease Diagnosis"
or "Has Statin Associated Muscle Symptoms"
or "Has ESRD Diagnosis"
or "Has Adverse Reaction to Statin"
or "Has Medical Reason for Not Ordering Statin Therapy"
```

▲ Stratification

None

▲ Population Criteria 4

▲ Initial Population

"Patients Age 40 to 75 Years and have a 10 Year CVD Risk of High without ASCVD and High LDL and Diabetes" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Denominator

"Initial Population 4"

▲ Denominator Exclusions

```
exists ( ( ["Diagnosis": "Breastfeeding"] union ["Diagnosis": "Rhabdomyolysis"] ) ExclusionDiagnosis where ExclusionDiagnosis.prevalencePeriod overlaps day of "Measurement Period" )
```

▲ Numerator

exists "Statin Therapy Ordered during Measurement Period" or exists "Medication Active during the Measurement Period"

▲ Numerator Exclusions

None

▲ Denominator Exceptions

```
"Has Allergy to Statin" or Hospice."Has Hospice Services" or PalliativeCare."Has Palliative Care in the Measurement Period" or "Has Hepatitis or Liver Disease Diagnosis" or "Has Statin Associated Muscle Symptoms" or "Has ESRD Diagnosis" or "Has Adverse Reaction to Statin" or "Has Medical Reason for Not Ordering Statin Therapy"
```

▲ Stratification

None

Definitions

▲ ASCVD Diagnosis or Procedure before End of Measurement Period

```
( ( ["Diagnosis": "Myocardial Infarction"]
union ["Diagnosis": "Subsequent non-ST elevation (NSTEMI) myocardial infarction"]
union ["Diagnosis": "Cerebrovascular Disease Stroke or TIA"]
union ["Diagnosis": "Atherosclerosis and Peripheral Arterial Disease"]
union ["Diagnosis": "Ischemic Heart Disease or Related Diagnoses"]
union ["Diagnosis": "Stable and Unstable Angina"] ) ASCVDDiagnosis
where ASCVDDiagnosis.prevalencePeriod starts on or before day of end of "Measurement Period"
```

```
union ( ( ["Procedure, Performed": "PCI"]
union ["Procedure, Performed": "CABG Surgeries"]
union ["Procedure, Performed": "Carotid Intervention"]
union ["Procedure, Performed": "CABG or PCI Procedure"] ) ASCVDProcedure
union ["Procedure, Performed": "CABG or PCI Procedure"] ) ASCVDProcedure
where Global."NormalizeInterval" ( ASCVDProcedure.relevantDatetime, ASCVDProcedure.relevantPeriod ) starts on or before day of end of "Measurement Period"
▲ Denominator 1
           "Initial Population 1"

■ Denominator 2

          "Initial Population 2"
▲ Denominator 3
          "Initial Population 3"

▲ Denominator 4

          "Initial Population 4"

▲ Denominator Exceptions

          "Has Allergy to Statin"
or Hospice."Has Hospice Services"
or PalliativeCare."Has Palliative Care in the Measurement Period"
             or "Has Hepatitis or Liver Disease Diagnosis"
or "Has Statin Associated Muscle Symptoms"
             or "Has ESRD Diagnosis"
             or "Has Adverse Reaction to Statin"
or "Has Medical Reason for Not Ordering Statin Therapy'

▲ Denominator Exclusions

          exists ( ( ["Diagnosis": "Breastfeeding"] union ["Diagnosis": "Rhabdomyolysis"] ) ExclusionDiagnosis where ExclusionDiagnosis.prevalencePeriod overlaps day of "Measurement Period"

▲ Has Adverse Reaction to Statin

          exists ["Adverse Event": "Statin Allergen"] StatinReaction
             where StatinReaction.relevantDatetime during day of "Measurement Period"

▲ Has Allergy to Statin

          exists ["Allergy/Intolerance": "Statin Allergen"] StatinAllergy where StatinAllergy.prevalencePeriod overlaps day of "Measurement Period"

▲ Has Diabetes Diagnosis
          exists ( ["Diagnosis": "Diabetes"] Diabetes
               where Diabetes.prevalencePeriod overlaps day of "Measurement Period"

▲ Has ESRD Diagnosis

          exists ( ["Diagnosis": "End Stage Renal Disease"] ESRD where ESRD.prevalencePeriod overlaps day of "Measurement Period" )

▲ Has Hepatitis or Liver Disease Diagnosis

          exists ( ( ["Diagnosis": "Hepatitis A"]
union ["Diagnosis": "Hepatitis B"]
union ["Diagnosis": "Liver Disease"] ) HepatitisLiverDisease
                where HepatitisLiverDisease.prevalencePeriod overlaps day of "Measurement Period"

▲ Has Medical Reason for Not Ordering Statin Therapy

          exists ( ( ["Medication, Not Ordered": "Low Intensity Statin Therapy"]
union ["Medication, Not Ordered": "Moderate Intensity Statin Therapy"]
union ["Medication, Not Ordered": "High Intensity Statin Therapy"] ) NoStatinTherapyOrdered
with "Qualifying Encounter during Day of Measurement Period" QualifyingEncounter
such that NoStatinTherapyOrdered.authorDatetime during day of QualifyingEncounter.relevantPeriod
where NoStatinTherapyOrdered.negationRationale in "Medical Reason"

▲ Has Statin Associated Muscle Symptoms

           exists ( ["Diagnosis": "Statin Associated Muscle Symptoms"] StatinMuscleSymptom
               where StatinMuscleSymptom.prevalencePeriod overlaps day of "Measurement Period"

▲ Hospice.Has Hospice Services

          exists ( ["Encounter, Performed": "Encounter Inpatient"] InpatientEncounter where ( InpatientEncounter.dischargeDisposition ~ "Discharge to home for hospice care (procedure)" or InpatientEncounter.dischargeDisposition ~ "Discharge to healthcare facility for hospice care (procedure)"
                 and InpatientEncounter.relevantPeriod ends during day of "Measurement Period"
             or exists ( ["Encounter, Performed": "Hospice Encounter"] HospiceEncounter where HospiceEncounter.relevantPeriod overlaps day of "Measurement Period'
             or exists ( ["Assessment, Performed": "Hospice care [Minimum Data Set]"] HospiceAssessment
where HospiceAssessment.result ~ "Yes (qualifier value)"
and Global."NormalizeInterval" ( HospiceAssessment.relevantDatetime, HospiceAssessment.relevantPeriod ) overlaps day of "Measurement Period"
             or exists ( ["Intervention, Order": "Hospice Care Ambulatory"] HospiceOrder where HospiceOrder.authorDatetime during day of "Measurement Period"
             or exists ( ["Intervention, Performed": "Hospice Care Ambulatory"] HospicePerformed
where Global."NormalizeInterval" ( HospicePerformed.relevantDatetime, HospicePerformed.relevantPeriod ) overlaps day of "Measurement Period"
          or exists ( ["Diagnosis": "Hospice Diagnosis"] HospiceCareDiagnosis where HospiceCareDiagnosis.prevalencePeriod overlaps day of "Measurement Period"
```

```
( ["Diagnosis": "Familial Hypercholesterolemia"] Hypercholesterolemia where Hypercholesterolemia.prevalencePeriod starts on or before day of end of "Measurement Period" )
```

▲ Initial Population 1

exists "ASCVD Diagnosis or Procedure before End of Measurement Period" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Initial Population 2

"Patients Age 20 to 75 with LDL Cholesterol Result Greater than or Equal to 190 or Hypercholesterolemia without ASCVD" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Initial Population 3

"Patients Age 40 to 75 Years with Diabetes without ASCVD or LDL Greater than 190 or Hypercholesterolemia" and exists "Qualifying Encounter during Day of Measurement Period"

▲ Initial Population 4

"Patients Age 40 to 75 Years and have a 10 Year CVD Risk of High without ASCVD and High LDL and Diabetes" and exists "Qualifying Encounter during Day of Measurement Period"

▲ LDL Result Greater Than or Equal To 190

```
["Laboratory Test, Performed": "LDL Cholesterol"] LDL190 where LDL190.result >= 190 'mg/dL' and Global."NormalizeInterval" ( LDL190.relevantDatetime, LDL190.relevantPeriod ) starts on or before day of end of "Measurement Period"
```

▲ Medication Active during the Measurement Period

```
( ["Medication, Active": "Low Intensity Statin Therapy"]
union ["Medication, Active": "Moderate Intensity Statin Therapy"]
union ["Medication, Active": "High Intensity Statin Therapy"] ) ActiveStatin
where Global."NormalizeInterval" ( ActiveStatin.relevantDatetime, ActiveStatin.relevantPeriod ) overlaps day of "Measurement Period"
```

▲ Numerator

exists "Statin Therapy Ordered during Measurement Period" or exists "Medication Active during the Measurement Period"

▲ PalliativeCare. Has Palliative Care in the Measurement Period

```
exists ( ["Assessment, Performed": "Functional Assessment of Chronic Illness Therapy - Palliative Care Questionnaire (FACIT-Pal)"] PalliativeAssessment where Global. "NormalizeInterval" ( PalliativeAssessment.relevantDatetime, PalliativeAssessment.relevantPeriod ) overlaps day of "Measurement Period" ) or exists ( ["Diagnosis": "Palliative Care Diagnosis"] PalliativeDiagnosis where PalliativeDiagnosis.prevalencePeriod overlaps day of "Measurement Period" ) or exists ( ["Encounter, Performed": "Palliative Care Encounter"] PalliativeEncounter where PalliativeEncounter.relevantPeriod overlaps day of "Measurement Period" ) or exists ( ["Intervention, Performed": "Palliative Care Intervention"] PalliativeIntervention.relevantPeriod ) overlaps day of "Measurement Period" ) where Global. "NormalizeInterval" ( PalliativeIntervention.relevantDatetime, PalliativeIntervention.relevantPeriod ) overlaps day of "Measurement Period"
```

■ Patients Age 20 to 75 with LDL Cholesterol Result Greater than or Equal to 190 or Hypercholesterolemia without ASCVD

```
"Patients Aged 20 to 75 at Start of Measurement Period"
and exists ( "LDL Result Greater Than or Equal To 190"
union "Hypercholesterolemia Diagnosis"
)
and not exists "ASCVD Diagnosis or Procedure before End of Measurement Period"
```

■ Patients Age 40 to 75 Years and have a 10 Year CVD Risk of High without ASCVD and High LDL and Diabetes

```
AgeInYearsAt(date from start of "Measurement Period") in Interval[40, 75] and "Ten Year CVD Risk is High" and not ( exists "ASCVD Diagnosis or Procedure before End of Measurement Period" or exists "Hypercholesterolemia Diagnosis" or exists "LDL Result Greater Than or Equal To 190" or "Has Diabetes Diagnosis" )
```

■ Patients Age 40 to 75 Years with Diabetes without ASCVD or LDL Greater than 190 or Hypercholesterolemia

```
AgeInYearsAt(date from start of "Measurement Period") in Interval[40, 75] and "Has Diabetes Diagnosis" and (not exists "ASCVD Diagnosis or Procedure before End of Measurement Period" and not exists "LDL Result Greater Than or Equal To 190" and not exists "Hypercholesterolemia Diagnosis"
```

▲ Patients Aged 20 to 75 at Start of Measurement Period

AgeInYearsAt(date from start of "Measurement Period") in Interval[20, 75]

■ Qualifying Encounter during Day of Measurement Period

```
( ["Encounter, Performed": "Annual Wellness Visit"]
union ["Encounter, Performed": "Office Visit"]
union ["Encounter, Performed": "Outpatient Consultation"]
union ["Encounter, Performed": "Outpatient Encounters for Preventive Care"]
union ["Encounter, Performed": "Preventive Care Services Established Office Visit, 18 and Up"]
union ["Encounter, Performed": "Unlisted preventive medicine service"]
union ["Encounter, Performed": "Preventive Care Services Individual Counseling"]
```

▲ 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"]

▲ Statin Therapy Ordered during Measurement Period

```
( ["Medication, Order": "Low Intensity Statin Therapy"]
union ["Medication, Order": "Moderate Intensity Statin Therapy"]
union ["Medication, Order": "High Intensity Statin Therapy"] ) StatinOrdered
where StatinOrdered.authorDatetime during day of "Measurement Period"
```

■ Ten Year CVD Risk is High

```
( exists ( ["Assessment, Performed": "Cardiovascular disease 10Y risk [Likelihood]"] union ["Assessment, Performed": "Cardiovascular disease 10Y risk [Likelihood] ACC-AHA Pooled Cohort by Goff 2013"] ) AtRiskCVD where At
```

Functions

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

```
if\ pointInTime\ is\ not\ null\ then\ Interval[pointInTime,\ pointInTime]
   lse if period is not null then period
 else null as Interval<DateTime>
```

Terminology

```
code "Cardiovascular disease 1DV risk [Likelihood]" ("LOINC Code (99055-6)")
code "Cardiovascular disease 1DV risk [Likelihood]" ("LOINC Code (99055-6)")
code "Obcharge to heathcare facility for hospice care (procedure)" ("SNOMEDCT Code (428371000124100)")
code "Discharge to home for hospice care (procedure)" ("SNOMEDCT Code (428371000124100)")
code "Functional Assessment of Chronic Illiness Therapy - Pallalitus Care Questionnaire (FACIT-Pal)" ("LOINC Code (47575-6)")
code "Hospice care [Minimum Data Set]" ("LOINC Code (43755-6)")
code "Subsequent non-5" deviation (NSTEMIN) myocardial infarction" ("ICDIOCM Code (122.2)")
code "Subsequent non-5" deviation (NSTEMIN) myocardial infarction" ("ICDIOCM Code (122.2)")
code "Subsequent non-5" deviation (NSTEMIN) myocardial infarction" ("ICDIOCM Code (122.2)")
code "Subsequent non-5" deviation ("SNOMEDCT Code (43705-60")
code "Subsequent non-5" deviation ("SNOMEDCT Code (43705-60")")
code "Subsequent non-5" deviation ("SNOMEDCT Code (43705-60")")
code "Subsequent non-5" deviation ("SNOMEDCT Code (43705-60")")
valueset "Annual Wellness Visit" (2.16.840.1.11383.3.563.2.31.240)
valueset "Annual Wellness Visit" (2.16.840.1.11383.3.563.5.31.240)
valueset "Breastfeeding" (2.16.840.1.11383.3.563.5.31.240)
valueset "Code or PCI Procedure" (2.16.840.1.11383.3.565.307)
valueset "Code or PCI Procedure" (2.16.840.1.11383.3.565.307)
valueset "Diabetes" (2.16.840.1.11383.3.464.1003.103.12.1001)
valueset "For Stage Renal Disease" (2.16.840.1.11383.3.566.3.337)
valueset "Finitionity" (2.16.840.1.11383.3.364.1003.103.12.1001)
valueset "Hospice Care Ambulatory" (2.16.840.1.11383.3.566.3.1574)
valueset "Hospice Diagnosis" (2.16.840.1.11383.3.364.1003.1003)
valueset "Hospice Diagnosis" (2.16.840.1.11383.3.366.1003.1003)
valueset "Hospice
```

Data Criteria (QDM Data Elements)

```
"Adverse Event: Statin Allergen" using "Statin Allergen (2.16.840.1.113762.1.4.1110.42)"
"Allergy/Intolerance: Statin Allergen" using "Statin Allergen (2.16.840.1.113762.1.4.1110.42)"
"Assessment, Performed: Cardiovascular disease 10Y risk [Likelihood]" using "Cardiovascular disease 10Y risk [Likelihood] (LOINC Code 99055-
"Assessment, Performed: Cardiovascular disease 10Y risk [Likelihood]" using "Cardiovascular disease 10Y risk [Likelihood] (LOINC Code 99055-6)"
"Assessment, Performed: Cardiovascular disease 10Y risk [Likelihood] ACC-AHA Pooled Cohort by Goff 2013" using "Cardiovascular disease 10Y risk [Likelihood] ACC-AHA Pooled Cohort by Goff 2013 (LOINC Code 79423-0)"
"Assessment, Performed: Functional Assessment of Chronic Illness Therapy - Palliative Care Questionnaire (FACIT-Pal)" using "Functional Assessment, Performed: Functional Assessment of Chronic Illness Therapy - Palliative Care Questionnaire (FACIT-Pal) (LOINC Code 71007-9)"
"Assessment, Performed: Hospice care [Minimum Data Set]" using "Hospice care [Minimum Data Set] (LOINC Code 45755-6)"
"Diagnosis: Atherosclerois and Peripheral Arterial Disease" using "Atherosclerosis and Peripheral Arterial Disease (2.16.840.1.113762.1.4.1047.73)"
"Diagnosis: Breastfeeding" using "Breastfeeding (2.16.840.1.113762.1.4.1047.73)"
"Diagnosis: Cerebrovascular Disease Stroke or TIA" using "Cerebrovascular Disease Stroke or TIA (2.16.840.1.113762.1.4.1047.44)"
"Diagnosis: Diabetes" using "Diabetes (2.16.840.1.113883.3.464.1003.103.12.1001)"
"Diagnosis: Familial Hypercholesterolemia" using "Familial Hypercholesterolemia (2.16.840.1.113762.1.4.1047.100)"
"Diagnosis: Hepatitis A" using "Hepatitis A (2.16.840.1.113883.3.464.1003.110.1.2.1024)"
"Diagnosis: Hospice Diagnosis" using "Thospice Diagnosis (2.16.840.1.11383.3.464.1003.1165)"
"Diagnosis: Ischemic Heart Disease or Related Diagnoses" using "Ischemic Heart Disease or Related Diagnoses (2.16.840.1.113762.1.4.1104.7.42)"
"Diagnosis: Elver Disease" using "Liver Disease (2.16.840.1.113762.1.4.1047.42)"
"Diagnosis: Palliative Care Diagnosis" using "Stable and Unstable Angina (2.16.840.1.113762.1.4.1047.47)"
"Diagnosis: Stable and Unstable Angina" using "Stable and Unstable Angina (2.16.840.1.113762.1.4.1047.47)"
"Diagnosis: Statin Associated Muscle Symptoms" using "Stable and Unstable Angina" using "Stable and Unstable Angina" using 
      "Diagnosis: Subsequent non-SI elevation (NSTEMI) myocardial illiarction using "Encounter, Performed: Annual Wellness Visit (2.16.840.1.113883.3.526.3.1240)"
"Encounter, Performed: Hospice Encounter using "Hospice Encounter (2.16.840.1.113883.3.464.1003.1003)"
"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: Outpatient Encounters for Preventive Care" using "Outpatient Encounters for Preventive Care (2.16.840.1.113883.3.526.3.1576)"
- "Encounter, Performed: Palliative Care Encounter" using "Palliative Care Encounter (2.16.840.1.113883.3.464.1003.101.12.1090)"

 "Encounter, Performed: Preventive Care Encounter" using "Palliative Care Encounter (2.16.840.1.113883.3.464.1003.101.12.1090)"

 "Encounter, Performed: Preventive Care Services Established Office Visit, 18 and Up" using "Preventive Care Services Established Office Visit, 18 and Up (2.16.840.1.113883.3.464.1003.101.12.1025)"
- "Encounter, Performed: Preventive Care Services Individual Counseling" using "Preventive Care Services Individual Counseling (2.16.840.1.113883.3.464.1003.101.12.1026)"

 "Encounter, Performed: Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial
- (2.16.840.1.113883.3.464.1003.101.12.1026)"
 "Encounter, Performed: Preventive Care Services Initial Office Visit, 18 and Up" using "Preventive Care Services Initial Office Visit, 18 and Up" (2.16.840.1.113883.3.464.1003.101.12.1023)"
 "Encounter, Performed: Unlisted preventive medicine service" using "Unlisted preventive medicine service (CPT Code 99429)"
 "Intervention, Order: Hospice Care Ambulatory" using "Hospice Care Ambulatory (2.16.840.1.113883.3.526.3.1584)"
 "Intervention, Performed: Hospice Care Ambulatory" using "Hospice Care Ambulatory (2.16.840.1.113883.3.526.3.1584)"
 "Intervention, Performed: Balliative Care Intervention" using "Palliative Care Intervention (2.16.840.1.113883.3.526.3.1584)"
 "Intervention, Performed: Balliative Care Intervention" using "Palliative Care Intervention (2.16.840.1.113883.3.526.3.1573)"
 "Medication, Performed: LDL Cholesterol" using "LDL Cholesterol (2.16.840.1.113883.3.526.3.1573)"
 "Medication, Active: High Intensity Statin Therapy" using "High Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Active: Moderate Intensity Statin Therapy" using "Moderate Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Not Ordered: High Intensity Statin Therapy" using "High Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Not Ordered: Low Intensity Statin Therapy" using "Moderate Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Order: High Intensity Statin Therapy" using "Moderate Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Order: Low Intensity Statin Therapy" using "Moderate Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Order: Low Intensity Statin Therapy" using "Moderate Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1572)"
 "Medication, Order: Moderate Intensity Statin Therapy" using "Moderate Intensity Statin Therapy (2.16.840.1.113883.3.526.3.1575)"
 "Patient Characteristic Ethnicity: Ethnicity" using "Fethnicity (2.16.840.1.11387)"
 "Patient

Supplemental Data Elements

▲ SDE Ethnicity

["Patient Characteristic Ethnicity": "Ethnicity"]

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

▲ SDE Race

["Patient Characteristic Race": "Race"]

4 SDE Sex

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

Risk Adjustment Variables

Measure Set