eCQM Title	QPP1 - Diabetes: Hemoglobin A1c (HbA1c) Poor Control (> 9%)		
eCQM Identifier (Measure Authoring Tool)	122	eCQM Version Number	9.3.000
NQF Number	Not Applicable	GUID	f2986519-5a4e-4149-a8f2-af0a1dc7f6bc
Measurement Period	January 1, 2021 through December 31, 2021		
Measure Steward	National Committee for Quality Assurance		
Measure Developer	National Committee for Quality Assurance		
Endorsed By	None		
Description	Percentage of patients 18-75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period		
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Measure Scoring	Proportion		
Measure Type	Intermediate Clinical Outcome		
Stratification	None		
Risk Adjustment	None		
Rate Aggregation	None		
Rationale	As the seventh leading cause of death in the U.S., diabetes kills approximately 79,500 people a year and affects more than 30 million Americans (9.4 percent of the U.S. population) (Centers for Disease Control and Prevention [CDC], 2017a, 2017b). Diabetes is a long-lasting disease marked by high blood glucose levels, resulting from the body's inability to produce or use insulin properly (CDC, 2019). People with diabetes are at increased risk of serious health complications including vision loss, heart disease, stroke, kidney failure, amputation of toes, feet or legs, and premature death (CDC, 2016). In 2017, diabetes cost the U.S. an estimated $327 billion: $237 billion in direct medical costs and $90 billion in reduced productivity. This is a 34 percent increase from the estimated $245 billion spent on diabetes in 2012 (American Diabetes Association, 2018). Controlling A1c blood levels help reduce the risk of microvascular complications (eye, kidney and nerve diseases) (CDC, 2014).		
Clinical Recommendation Statement	American Diabetes Association (2019): - A reasonable A1C goal for many nonpregnant adults is <7%. (Level of evidence: A) - Providers might reasonably suggest more stringent A1C goals (such as <6.5% [48 mmol/mol]) for selected individual patients if this can be achieved without significant hypoglycemia or other adverse effects of treatment (i.e. polypharmacy). Appropriate patients might include those with short duration of diabetes, type 2 diabetes treated with lifestyle or metformin only, long life expectancy, or no significant cardiovascular disease (CVD). (Level of evidence: C) - Less stringent A1C goals (such as <8% [64 mmol/mol]) may be appropriate for patients with a history of severe hypoglycemia, limited life expectancy, advanced microvascular or macrovascular complications, extensive comorbid conditions, or long-standing diabetes in whom the goal is difficult to achieve despite diabetes self-management education, appropriate glucose monitoring, and effective doses of multiple glucose-lowering agents including insulin. (Level of evidence: B)		
Improvement Notation	<mark>Lower score indicates better quality</mark>		
Reference	American Diabetes Association. (2018). Economic costs of diabetes in the U.S. in 2017. Diabetes Care, 41, 917-928. Retrieved from http://care.diabetesjournals.org/content/early/2018/03/20/dci18-0007		
Reference	American Diabetes Association. (2019). 6. Glycemic targets: Standards of medical care in diabetes—2019. Diabetes Care, 42(Suppl. 1), S61-S70. https://doi.org/10.2337/dc19-S006		
Reference	Centers for Disease Control and Prevention. (2014). National diabetes statistics report, 2014. Atlanta, GA: U.S. Department of Health and Human Services, CDC. Retrieved from http://www.thefdha.org/pdf/diabetes.pdf		
Reference	Centers for Disease Control and Prevention. (2016). At a glance 2016: Diabetes—Working to reverse the U.S. epidemic. Atlanta, GA: Author. Retrieved from https://upcap.org/admin/wp-content/uploads/2016/06/Diabetes-at-a-Glance.pdf		
Reference	Centers for Disease Control and Prevention. (2017a). Health, United States, 2016: With chartbook on long-term trends in health. Retrieved from https://www.cdc.gov/nchs/data/hus/hus16.pdf		
	Centers for Disease Control and Prevention. (2017b). National diabetes statistics report, 2017. Atlanta, GA: U.S.		

Reference	Department of Health and Human Services, CDC. Retrieved from https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf
Reference	Centers for Disease Control and Prevention. (2019). About diabetes. Retrieved from https://www.cdc.gov/diabetes/basics/diabetes.html
Definition	None
Guidance	Patient is numerator compliant if most recent HbA1c level >9%, the most recent HbA1c result is missing, or if there are no HbA1c tests performed and results documented during the measurement period. If the HbA1c test result is in the medical record, the test can be used to determine numerator compliance. Only patients with a diagnosis of Type 1 or Type 2 diabetes should be included in the denominator of this measure; patients with a diagnosis of secondary diabetes due to another condition should not be included. This eCQM is a patient-based measure. This version of the eCQM uses QDM version 5.5. Please refer to the eCQI resource center (https://ecqi.healthit.gov/qdm) for more information on the QDM.
Transmission Format	TBD
Initial Population	Patients 18-75 years of age with diabetes with a visit during the measurement period
Denominator	Equals Initial Population
Denominator Exclusions	Exclude patients whose hospice care overlaps the measurement period. Exclude patients 66 and older who are living long term in an institution for more than 90 consecutive days during the measurement period. Exclude patients 66 and older with advanced illness and frailty because it is unlikely that patients will benefit from the services being measured.
Numerator	Patients whose most recent HbA1c level (performed during the measurement period) is >9.0%
Numerator Exclusions	Not Applicable
Denominator Exceptions	None
Supplemental Data Elements	For every patient evaluated by this measure also identify payer, race, ethnicity and sex

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Population Criteria

◢ Initial Population

```
exists ( ["Patient Characteristic Birthdate": "Birth date"] BirthDate
    where Global."CalendarAgeInYearsAt" ( BirthDate.birthDatetime, start of "Measurement Period" ) in Interval[18, 75]
)
  and exists ( AdultOutpatientEncounters."Qualifying Encounters" )
  and exists ( ["Diagnosis": "Diabetes"] Diabetes
      where Diabetes.prevalencePeriod overlaps "Measurement Period"
  )
```

◢ Denominator

```
"Initial Population"
```

◢ Denominator Exclusions

```
Hospice."Has Hospice"
  or FrailtyLTI."Advanced Illness and Frailty Exclusion Not Including Over Age 80"
  or ( exists ["Patient Characteristic Birthdate": "Birth date"] BirthDate
      where ( Global."CalendarAgeInYearsAt" ( BirthDate.birthDatetime, start of "Measurement Period" ) >= 65 )
        and FrailtyLTI."Long Term Care Periods Longer Than 90 Consecutive Days"
  )
```

◢ Numerator

```
"Has Most Recent HbA1c Without Result"
  or "Has Most Recent Elevated HbA1c"
  or "Has No Record Of HbA1c"
```

◢ Numerator Exclusions

None

◢ Denominator Exceptions

Diabetes: Hemoglobin A1c (HbA1c) Poor Control (> 9%) 9.3.000

None

▲ **Stratification**

None

Definitions

▲ **AdultOutpatientEncounters.Qualifying Encounters**

(["Encounter, Performed": "Office Visit"]
    union ["Encounter, Performed": "Annual Wellness Visit"]
    union ["Encounter, Performed": "Preventive Care Services - Established Office Visit, 18 and Up"]
    union ["Encounter, Performed": "Preventive Care Services-Initial Office Visit, 18 and Up"]
    union ["Encounter, Performed": "Home Healthcare Services"]) ValidEncounter
    where ValidEncounter.relevantPeriod during "Measurement Period"

▲ **FrailtyLTI.Advanced Illness and Frailty Exclusion Not Including Over Age 80**

//If the measure does NOT include populations age 80 and older, then use this logic:
exists (["Patient Characteristic Birthdate": "Birth date"] BirthDate
  where Global."CalendarAgeInYearsAt" (BirthDate.birthDatetime, start of "Measurement Period") >= 65
   and "Has Criteria Indicating Frailty"
   and (Count("Outpatient Encounters with Advanced Illness")>= 2
     or exists ("Inpatient Encounter with Advanced Illness")
     or exists "Dementia Medications In Year Before or During Measurement Period"
)
)

▲ **FrailtyLTI.Dementia Medications In Year Before or During Measurement Period**

["Medication, Active": "Dementia Medications"] DementiaMed
    where DementiaMed.relevantPeriod overlaps Interval[(start of "Measurement Period" - 1 year),
    end of "Measurement Period"]

▲ **FrailtyLTI.Has Criteria Indicating Frailty**

exists (["Device, Order": "Frailty Device"] FrailtyDeviceOrder
       where FrailtyDeviceOrder.authorDatetime during "Measurement Period"
)
    or exists (["Device, Applied": "Frailty Device"] FrailtyDeviceApplied
        where FrailtyDeviceApplied.relevantPeriod overlaps "Measurement Period"
)
    or exists (["Diagnosis": "Frailty Diagnosis"] FrailtyDiagnosis
        where FrailtyDiagnosis.prevalencePeriod overlaps "Measurement Period"
)
    or exists (["Encounter, Performed": "Frailty Encounter"] FrailtyEncounter
        where FrailtyEncounter.relevantPeriod overlaps "Measurement Period"
)
    or exists (["Symptom": "Frailty Symptom"] FrailtySymptom
        where FrailtySymptom.prevalencePeriod overlaps "Measurement Period"
)

▲ **FrailtyLTI.Inpatient Encounter with Advanced Illness**

["Encounter, Performed": "Acute Inpatient"] InpatientEncounter
 where exists (InpatientEncounter.diagnoses Diagnosis
   where Diagnosis.code in "Advanced Illness"
)
  and InpatientEncounter.relevantPeriod starts 2 years or less on or before
  end of "Measurement Period"

▲ **FrailtyLTI.Long Term Care Periods During Measurement Period**

(["Encounter, Performed": "Care Services in Long-Term Residential Facility"]
    union ["Encounter, Performed": "Nursing Facility Visit"]) LongTermFacilityEncounter
    where LongTermFacilityEncounter.relevantPeriod overlaps "Measurement Period"
    return LongTermFacilityEncounter.relevantPeriod
       intersect "Measurement Period"

▲ **FrailtyLTI.Long Term Care Periods Longer Than 90 Consecutive Days**

exists ("Long Term Care Periods During Measurement Period" LongTermCareDuringMP
  where duration in days of LongTermCareDuringMP > 90
)

▲ **FrailtyLTI.Outpatient Encounters with Advanced Illness**

(["Encounter, Performed": "Outpatient"]
 union ["Encounter, Performed": "Observation"]
 union ["Encounter, Performed": "ED"]
 union ["Encounter, Performed": "Nonacute Inpatient"]) OutpatientEncounter
 where exists (OutpatientEncounter.diagnoses Diagnosis
   where Diagnosis.code in "Advanced Illness"
)
  and OutpatientEncounter.relevantPeriod starts 2 years or less on or before
  end of "Measurement Period"

▲ **Denominator**

"Initial Population"

◢ Denominator Exclusions

Hospice."Has Hospice"
 or FrailtyLTI."Advanced Illness and Frailty Exclusion Not Including Over Age 80"
 or (exists ["Patient Characteristic Birthdate": "Birth date"] BirthDate
   where (Global."CalendarAgeInYearsAt" (BirthDate.birthDatetime, start of "Measurement Period") >= 65)
     and FrailtyLTI."Long Term Care Periods Longer Than 90 Consecutive Days"
)

◢ Has Most Recent Elevated HbA1c

"Most Recent HbA1c".result > 9 '%'

◢ Has Most Recent HbA1c Without Result

"Most Recent HbA1c" is not null
 and "Most Recent HbA1c".result is null

◢ Has No Record Of HbA1c

not exists (["Laboratory Test, Performed": "HbA1c Laboratory Test"] NoHbA1c
   where NoHbA1c.relevantDatetime during "Measurement Period"
)

◢ Hospice.Has Hospice

exists (["Encounter, Performed": "Encounter Inpatient"] DischargeHospice
   where (DischargeHospice.dischargeDisposition ~ "Discharge to home for hospice care (procedure)"
     or DischargeHospice.dischargeDisposition ~ "Discharge to healthcare facility for hospice care (procedure)"
)
     and DischargeHospice.relevantPeriod ends during "Measurement Period"
)
 or exists (["Intervention, Order": "Hospice care ambulatory"] HospiceOrder
     where HospiceOrder.authorDatetime during "Measurement Period"
)
 or exists (["Intervention, Performed": "Hospice care ambulatory"] HospicePerformed
     where HospicePerformed.relevantPeriod overlaps "Measurement Period"
)

◢ Initial Population

exists (["Patient Characteristic Birthdate": "Birth date"] BirthDate
   where Global."CalendarAgeInYearsAt" (BirthDate.birthDatetime, start of "Measurement Period") in Interval[18, 75)
)
 and exists (AdultOutpatientEncounters."Qualifying Encounters")
 and exists (["Diagnosis": "Diabetes"] Diabetes
     where Diabetes.prevalencePeriod overlaps "Measurement Period"
)

◢ Most Recent HbA1c

Last(["Laboratory Test, Performed": "HbA1c Laboratory Test"] RecentHbA1c
   where RecentHbA1c.relevantDatetime during "Measurement Period"
   sort by relevantDatetime
)

◢ Numerator

"Has Most Recent HbA1c Without Result"
 or "Has Most Recent Elevated HbA1c"
 or "Has No Record Of HbA1c"

◢ SDE Ethnicity

["Patient Characteristic Ethnicity": "Ethnicity"]

◢ SDE Payer

["Patient Characteristic Payer": "Payer"]

◢ SDE Race

["Patient Characteristic Race": "Race"]

◢ SDE Sex

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

Functions

◢ Global.CalendarAgeInYearsAt(BirthDateTime DateTime, AsOf DateTime)

years between ToDate(BirthDateTime)and ToDate(AsOf)

◢ Global.ToDate(Value DateTime)

DateTime(year from Value, month from Value, day from Value, 0, 0, 0, 0, timezoneoffset from Value)

Terminology

- code "Birth date" ("LOINC Code (21112-8)")
- code "Discharge to healthcare facility for hospice care (procedure)" ("SNOMEDCT Code (428371000124100)")
- code "Discharge to home for hospice care (procedure)" ("SNOMEDCT Code (428361000124107)")
- valueset "Acute Inpatient" (2.16.840.1.113883.3.464.1003.101.12.1083)
- valueset "Advanced Illness" (2.16.840.1.113883.3.464.1003.110.12.1082)
- valueset "Annual Wellness Visit" (2.16.840.1.113883.3.526.3.1240)
- valueset "Care Services in Long-Term Residential Facility" (2.16.840.1.113883.3.464.1003.101.12.1014)
- valueset "Dementia Medications" (2.16.840.1.113883.3.464.1003.196.12.1510)
- valueset "Diabetes" (2.16.840.1.113883.3.464.1003.103.12.1001)
- valueset "ED" (2.16.840.1.113883.3.464.1003.101.12.1085)
- valueset "Encounter Inpatient" (2.16.840.1.113883.3.666.5.307)
- valueset "Ethnicity" (2.16.840.1.114222.4.11.837)
- valueset "Frailty Device" (2.16.840.1.113883.3.464.1003.118.12.1300)
- valueset "Frailty Diagnosis" (2.16.840.1.113883.3.464.1003.113.12.1074)
- valueset "Frailty Encounter" (2.16.840.1.113883.3.464.1003.101.12.1088)
- valueset "Frailty Symptom" (2.16.840.1.113883.3.464.1003.113.12.1075)
- valueset "HbA1c Laboratory Test" (2.16.840.1.113883.3.464.1003.198.12.1013)
- valueset "Home Healthcare Services" (2.16.840.1.113883.3.464.1003.101.12.1016)
- valueset "Hospice care ambulatory" (2.16.840.1.113762.1.4.1108.15)
- valueset "Nonacute Inpatient" (2.16.840.1.113883.3.464.1003.101.12.1084)
- valueset "Nursing Facility Visit" (2.16.840.1.113883.3.464.1003.101.12.1012)
- valueset "Observation" (2.16.840.1.113883.3.464.1003.101.12.1086)
- 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" (2.16.840.1.113883.3.464.1003.101.12.1087)
- valueset "Payer" (2.16.840.1.114222.4.11.3591)
- valueset "Preventive Care Services - Established Office Visit, 18 and Up" (2.16.840.1.113883.3.464.1003.101.12.1025)
- valueset "Preventive Care Services-Initial Office Visit, 18 and Up" (2.16.840.1.113883.3.464.1003.101.12.1023)
- valueset "Race" (2.16.840.1.114222.4.11.836)

Data Criteria (QDM Data Elements)

- "Device, Applied: Frailty Device" using "Frailty Device (2.16.840.1.113883.3.464.1003.118.12.1300)"
- "Device, Order: Frailty Device" using "Frailty Device (2.16.840.1.113883.3.464.1003.118.12.1300)"
- "Diagnosis: Diabetes" using "Diabetes (2.16.840.1.113883.3.464.1003.103.12.1001)"
- "Diagnosis: Frailty Diagnosis" using "Frailty Diagnosis (2.16.840.1.113883.3.464.1003.113.12.1074)"
- "Encounter, Performed: Acute Inpatient" using "Acute Inpatient (2.16.840.1.113883.3.464.1003.101.12.1083)"
- "Encounter, Performed: Annual Wellness Visit" using "Annual Wellness Visit (2.16.840.1.113883.3.526.3.1240)"
- "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: ED" using "ED (2.16.840.1.113883.3.464.1003.101.12.1085)"
- "Encounter, Performed: Encounter Inpatient" using "Encounter Inpatient (2.16.840.1.113883.3.666.5.307)"
- "Encounter, Performed: Frailty Encounter" using "Frailty Encounter (2.16.840.1.113883.3.464.1003.101.12.1088)"
- "Encounter, Performed: Home Healthcare Services" using "Home Healthcare Services (2.16.840.1.113883.3.464.1003.101.12.1016)"
- "Encounter, Performed: Nonacute Inpatient" using "Nonacute Inpatient (2.16.840.1.113883.3.464.1003.101.12.1084)"
- "Encounter, Performed: Nursing Facility Visit" using "Nursing Facility Visit (2.16.840.1.113883.3.464.1003.101.12.1012)"
- "Encounter, Performed: Observation" using "Observation (2.16.840.1.113883.3.464.1003.101.12.1086)"
- "Encounter, Performed: Office Visit" using "Office Visit (2.16.840.1.113883.3.464.1003.101.12.1001)"
- "Encounter, Performed: Outpatient" using "Outpatient (2.16.840.1.113883.3.464.1003.101.12.1087)"
- "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-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)"
- "Intervention, Order: Hospice care ambulatory" using "Hospice care ambulatory (2.16.840.1.113762.1.4.1108.15)"
- "Intervention, Performed: Hospice care ambulatory" using "Hospice care ambulatory (2.16.840.1.113762.1.4.1108.15)"
- "Laboratory Test, Performed: HbA1c Laboratory Test" using "HbA1c Laboratory Test (2.16.840.1.113883.3.464.1003.198.12.1013)"
- "Medication, Active: Dementia Medications" using "Dementia Medications (2.16.840.1.113883.3.464.1003.196.12.1510)"
- "Patient Characteristic Birthdate: Birth date" using "Birth date (LOINC Code 21112-8)"
- "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity (2.16.840.1.114222.4.11.837)"
- "Patient Characteristic Payer: Payer" using "Payer (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)"
- "Symptom: Frailty Symptom" using "Frailty Symptom (2.16.840.1.113883.3.464.1003.113.12.1075)"

Supplemental Data Elements

◢ SDE Ethnicity

["Patient Characteristic Ethnicity": "Ethnicity"]

◢ SDE Payer

["Patient Characteristic Payer": "Payer"]

◢ SDE Race

["Patient Characteristic Race": "Race"]

◢ SDE Sex

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

Risk Adjustment Variables

None

Measure Set	None