<table>
<thead>
<tr>
<th>Measure title</th>
<th>Depression Screening and Follow-Up for Adolescents and Adults*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure ID</td>
<td>DSF-E</td>
</tr>
<tr>
<td>Description</td>
<td>The percentage of members 12 years of age and older who were screened for clinical depression using a standardized instrument and, if screened positive, received follow-up care.</td>
</tr>
<tr>
<td></td>
<td>• <em>Depression Screening.</em> The percentage of members who were screened for clinical depression using a standardized instrument.</td>
</tr>
<tr>
<td></td>
<td>• <em>Follow-Up on Positive Screen.</em> The percentage of members who received follow-up care within 30 days of a positive depression screen finding.</td>
</tr>
<tr>
<td>Measurement period</td>
<td>January 1 - December 31.</td>
</tr>
<tr>
<td>Copyright and disclaimer notice</td>
<td>*Adapted with financial support from the Centers for Medicare &amp; Medicaid Services (CMS).</td>
</tr>
</tbody>
</table>

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NCQA Website: www.ncqa.org

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<table>
<thead>
<tr>
<th>Clinical recommendation statement</th>
<th>The U.S. Preventive Services Task Force (USPSTF) recommends screening for depression among adolescents 12–18 years and the general adult population, including pregnant and postpartum women. (B recommendation) The USPSTF also recommends that screening be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment and appropriate follow-up. (B recommendation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citations</td>
<td>U.S. Preventive Services Task Force. 2016. “Screening for Depression in Children and</td>
</tr>
</tbody>
</table>
### Adolescents: U.S. Preventive Services Task Force Recommendation Statement.


<table>
<thead>
<tr>
<th>Characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scoring</strong></td>
<td>Proportion.</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Process.</td>
</tr>
</tbody>
</table>
| **Stratification** | 1. Commercial 12–17 years.  
2. Commercial 18–64 years.  
3. Commercial 65 years and older.  
4. Medicaid 12–17 years  
5. Medicaid 18–64 years.  
6. Medicaid 65 years and older.  
7. Medicare 18–64 years.  
8. Medicare 65 years and older. |
| **Risk adjustment** | None |
| **Improvement notation** | A higher rate indicates better performance. |
| **Guidance** |  |
| **Allocation:** | The member was enrolled with a medical benefit throughout the Participation Period. |
| **Requirements:** |  |
| · This measure requires the use of an age-appropriate screening instrument. The member’s age is used to select the appropriate depression screening instrument. |  |
| · Depression screening captured in health risk assessments or other types of health assessments are allowed if the questions align with a specific instrument that is validated for depression screening. For example, if a health risk assessment includes questions from the PHQ-2, it counts as screening if the member answered the questions and a total score is calculated. |  |
| **Reporting:** | The total is the sum of the age stratifications. |
| Age and product line stratifications are not included in the measure calculation logic and need to be programmed manually. |  |

### Definitions

<table>
<thead>
<tr>
<th>Participation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The identifiers and descriptors for each organization’s coverage used to define members’ eligibility for measure reporting. Allocation for HEDIS reporting is based on eligibility during the Participation Period.</strong></td>
<td></td>
</tr>
</tbody>
</table>
The Measurement Period.

A standard assessment instrument that has been normalized and validated for the appropriate patient population. Eligible screening instruments with thresholds for positive findings include:

<table>
<thead>
<tr>
<th>Instruments for Adolescents (≤17 years)</th>
<th>Positive Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Health Questionnaire (PHQ-9)®</td>
<td>Total Score ≥10</td>
</tr>
<tr>
<td>Patient Health Questionnaire Modified for Teens (PHQ-9M)®</td>
<td>Total Score ≥10</td>
</tr>
<tr>
<td>Patient Health Questionnaire-2 (PHQ-2)®¹</td>
<td>Total Score ≥3</td>
</tr>
<tr>
<td>Beck Depression Inventory-Fast Screen (BDI-FS)®¹,²</td>
<td>Total Score ≥8</td>
</tr>
<tr>
<td>Center for Epidemiologic Studies Depression Scale-Revised (CESD-R)</td>
<td>Total Score ≥17</td>
</tr>
<tr>
<td>Edinburgh Postnatal Depression Scale (EPDS)</td>
<td>Total Score ≥10</td>
</tr>
<tr>
<td>PROMIS Depression</td>
<td>Total Score (T Score) ≥60</td>
</tr>
</tbody>
</table>

¹Brief screening instrument. All other instruments are full-length.
²Proprietary; may be cost or licensing requirement associated with use.

<table>
<thead>
<tr>
<th>Instruments for Adults (18+ years)</th>
<th>Positive Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Health Questionnaire (PHQ-9)®</td>
<td>Total Score ≥10</td>
</tr>
<tr>
<td>Patient Health Questionnaire-2 (PHQ-2)®¹</td>
<td>Total Score ≥3</td>
</tr>
<tr>
<td>Beck Depression Inventory-Fast Screen (BDI-FS)®¹,²</td>
<td>Total Score ≥8</td>
</tr>
<tr>
<td>Beck Depression Inventory (BDI-II)</td>
<td>Total Score ≥20</td>
</tr>
<tr>
<td>Center for Epidemiologic Studies Depression Scale-Revised (CESD-R)</td>
<td>Total Score ≥17</td>
</tr>
<tr>
<td>Duke Anxiety-Depression Scale (DUKE-AD)®²</td>
<td>Total Score ≥30</td>
</tr>
<tr>
<td>Geriatric Depression Scale Short Form (GDS)¹</td>
<td>Total Score ≥5</td>
</tr>
<tr>
<td>Geriatric Depression Scale Long Form (GDS)</td>
<td>Total Score ≥10</td>
</tr>
<tr>
<td>Edinburgh Postnatal Depression Scale (EPDS)</td>
<td>Total Score ≥10</td>
</tr>
<tr>
<td>My Mood Monitor (M-3)®</td>
<td>Total Score ≥5</td>
</tr>
<tr>
<td>PROMIS Depression</td>
<td>Total Score (T Score) ≥60</td>
</tr>
<tr>
<td>Clinically Useful Depression Outcome Scale (CUDOS)</td>
<td>Total Score ≥31</td>
</tr>
</tbody>
</table>

¹Brief screening instrument. All other instruments are full-length.
²Proprietary; may be cost or licensing requirement associated with use.

Initial Population

Members 12 years of age and older at the start of the Measurement Period who also meet criteria for Participation.

Exclusions

- Members with bipolar disorder that starts during the year prior to the Measurement Period.
- Members with depression that starts during the year prior to the Measurement Period.
- Members in hospice or using hospice services any time during the Measurement Period.

### Denominator

**Denominator 1**  
The Initial Population, minus Exclusions.

**Denominator 2**  
All members from Numerator 1 with a positive depression screen finding between January 1 and December 1 of the Measurement Period.

### Numerator

**Numerator 1—Depression Screening**  
Members with a documented result for depression screening, using an age-appropriate standardized instrument, performed between January 1 and December 1 of the Measurement Period.

**Numerator 2—Follow-Up on Positive Screen**  
Members who received follow-up care on or up to 30 days after the date of the first positive screen (31 total days).

Any of the following on or up to 30 days after the first positive screen:

- An outpatient, telephone, e-visit or virtual check-in follow-up visit with a diagnosis of depression or other behavioral health condition.
- A depression case management encounter that documents assessment for symptoms of depression or a diagnosis of depression or other behavioral health condition.
- A behavioral health encounter, including assessment, therapy, collaborative care or medication management.
- A dispensed antidepressant medication.

**OR**

- Documentation of additional depression screening on a full-length instrument indicating either no depression or no symptoms that require follow-up (i.e., a negative screen) on the same day as a positive screen on a brief screening instrument.

**Note:** For example, if there is a positive screen resulting from a PHQ-2 score, documentation of a negative finding from a PHQ-9 performed on the same day qualifies as evidence of follow-up.

### Data criteria (element level)

#### Value Sets:

- DSFE_HEDIS_MY2022-1.0.0
  - Antidepressant Medications  
- Behavioral Health Encounter (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1383)
- Bipolar Disorder (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1044)
- Depression (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1390)
- Depression Case Management Encounter (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1389)
- Depression or Other Behavioral Health Condition (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1501)
- Follow Up Visit (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1385)
- Other Bipolar Disorder (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1399)
- NCQA_Hospice-1.0.0
  - Hospice Encounter (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1761)
  - Hospice Intervention (https://www.ncqa.org/fhir/valueset/2.16.840.1.113883.3.464.1004.1762)

Direct Reference Codes and Codesystems:

- DSFE_HEDIS_MY2022-1.0.0
  - codesystem "ICD-10": 'http://hl7.org/fhir/sid/icd-10-cm'
  - codesystem "LOINC": 'http://loinc.org'
  - codesystem "SNOMEDCT": 'http://snomed.info/sct'
  - code "Beck Depression Inventory Fast Screen total score [BDI]": '89208-3' from "LOINC" display 'Beck Depression Inventory Fast Screen total score [BDI]'
  - code "Beck Depression Inventory II total score [BDI]": '89209-1' from "LOINC" display 'Beck Depression Inventory II total score [BDI]'
  - code "Center for Epidemiologic Studies Depression Scale-Revised total score [CESD-R]": '89205-9' from "LOINC" display 'Center for Epidemiologic Studies Depression Scale-Revised total score [CESD-R]'
  - code "Edinburgh Postnatal Depression Scale [EPDS]": '71354-5' from "LOINC" display 'Edinburgh Postnatal Depression Scale [EPDS]'
  - code "Exercise counseling": 'Z71.82' from "ICD-10" display 'Exercise counseling'
  - code "Final score [DUKE-AD]": '90853-3' from "LOINC" display 'Final score [DUKE-AD]'
  - code "Geriatric depression scale (GDS) short version total": '48545-8' from "LOINC" display 'Geriatric depression scale (GDS) short version total'
  - code "Geriatric depression scale (GDS) total": '48544-1' from "LOINC" display 'Geriatric depression scale (GDS) total'
  - code "Patient Health Questionnaire 2 item (PHQ-2) total score [Reported]": '55758-7' from "LOINC" display 'Patient Health Questionnaire 2 item (PHQ-2) total score [Reported]'
  - code "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]": '44261-6' from "LOINC" display 'Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]'
  - code "Patient Health Questionnaire-9: Modified for Teens total score [Reported.PHQ.Teen]": '89204-2' from "LOINC" display 'Patient Health Questionnaire-9: Modified for Teens total score [Reported.PHQ.Teen]'
  - code "PROMIS-29 Depression score T-score": '71965-8' from "LOINC" display 'PROMIS-29 Depression score T-score'
  - code "Symptoms of depression (finding)": '394924000' from "SNOMEDCT" display 'Symptoms of depression (finding)'
  - code "Total score [CUDOS]": '90221-3' from "LOINC" display 'Total score [CUDOS]'
  - code "Total score [M3]": '71777-7' from "LOINC" display 'Total score [M3]'

- NCQA_Terminology-1.0.0
  - codesystem "ConditionClinicalStatusCodes": 'http://terminology.hl7.org/CodeSystem/condition-clinical'
  - code "active": 'active' from "ConditionClinicalStatusCodes"
  - code "managed care policy": 'MCPOL' from "ActEncounterCodes"
  - code "retiree health program": 'RETIRE' from "ActEncounterCodes"
  - code "subsidized health program": 'SUBSIDIZ' from "ActEncounterCodes"
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1. Population Criteria 1
2. Population Criteria 2
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Population Criteria 1

- Initial Population 1
  
  define "Initial Population 1":
  AgeInYearsAt(date from start of "Measurement Period")>= 12
  and "Enrolled During Participation Period"

- Denominator 1
  
  define "Denominator 1":
  "Initial Population 1"

- Exclusions 1
  
  define "Exclusions 1":
  Hospice."Hospice Intervention or Encounter"
  or exists "Bipolar Disorder Starting during Year Prior to Measurement Period"
  or exists "Depression Starting during Year Prior to Measurement Period"

- Numerator 1
  
  define "Numerator 1":
  "Adolescent Depression Screening with Documented Result between January 1 and December 1"
  or "Adult Depression Screening with Documented Result between January 1 and December 1"

Population Criteria 2

- Initial Population 2
  
  define "Initial Population 2":
  "Initial Population 1"

- Denominator 2
  
  define "Denominator 2":
  "Adolescent Depression Screening with Positive Result between January 1 and December 1"
  or "Adult Depression Screening with Positive Result between January 1 and December 1"

- Exclusions 2
  
  define "Exclusions 2":
  "Exclusions 1"

- Numerator 2
  
  define "Numerator 2":
  exists "Follow Up Care on or 30 Days after First Positive Screen"
  or "Has Positive Brief Screen Same Day as Negative Full Length Screen"

Definitions
define "Adolescent Brief Screen with Documented Result":
  ( "Depression Screening with Documented Result"("Patient Health Questionnaire 2 item (PHQ-2) total score [Reported]"
    union "Depression Screening with Documented Result"("Beck Depression Inventory Fast Screen total score [BDI]")) AdolescentBrief
    where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"(AdolescentBrief.effective)) <= 17

define "Adolescent Brief Screen with Positive Result":
  ( "Depression Screening with Positive Result"("Patient Health Questionnaire 2 item (PHQ-2) total score [Reported]"), 3
    union "Depression Screening with Positive Result"("Beck Depression Inventory Fast Screen total score [BDI]"), 8)) AdolescentBriefPositive
  where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"(AdolescentBriefPositive.effective)) <= 17
  and start of FHIRBase."Normalize Interval" (AdolescentBriefPositive.effective) during Interval[start of "Measurement Period", "December 1 of Measurement Period"]

define "Adolescent Depression Screening with Documented Result between January 1 and December 1":
  "Has Depression Screening during Period"("Adolescent Full Length Depression Screen with Documented Result" union "Adolescent Brief Screen with Documented Result", Interval[start of "Measurement Period", "December 1 of Measurement Period"]
)

define "Adolescent Depression Screening with Positive Result between January 1 and December 1":
  "Has Depression Screening during Period"("Adolescent Full Length Depression Screen with Positive Result" union "Adolescent Brief Screen with Positive Result", Interval[start of "Measurement Period", "December 1 of Measurement Period"]
)

define "Adolescent Full Length Depression Screen with Documented Result":
  ( "Depression Screening with Documented Result"("Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"
    union "Depression Screening with Documented Result"("Patient Health Questionnaire-9: Modified for Teens total score [Reported.PHQ.Teen]"
    union "Depression Screening with Documented Result"("Center for Epidemiologic Studies Depression Scale-Revised total score [CESD-R]"
    union "Depression Screening with Documented Result"("Edinburgh Postnatal Depression Scale [EPDS]"
    union "Depression Screening with Documented Result"("PROMIS-29 Depression score T-score")
  AdolescentDepressionScreen
    where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"(AdolescentDepressionScreen.effective)) <= 17

define "Adolescent Full Length Depression Screen with Positive Result":
  ( "Depression Screening with Positive Result"("Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"), 10
    union "Depression Screening with Positive Result"("Patient Health Questionnaire-9: Modified for Teens total score [Reported.PHQ.Teen]"), 10
    union "Depression Screening with Positive Result"("Center for Epidemiologic Studies Depression Scale-Revised total score [CESD-R]"), 17)
union "Depression Screening with Positive Result"("Edinburgh Postnatal Depression Scale [EPDS]", 10)
union "Depression Screening with Positive Result"("PROMIS-29 Depression score T-score", 60)
AdolescentPositiveDepressionScreen
where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"
(AdolescentPositiveDepressionScreen.effective))<= 17
and start of FHIRBase."Normalize Interval" ( AdolescentPositiveDepressionScreen.effective ) during Interval[start of "Measurement Period", "December 1 of Measurement Period"]

### DSFE_HEDIS_MY2022-1.0.0."Adult Brief Screen with Documented Result"

```fhir
define "Adult Brief Screen with Documented Result":
  ( "Depression Screening with Documented Result"("Patient Health Questionnaire 2 item (PHQ-2) total score [Reported]"), 0
union "Depression Screening with Documented Result"("Geriatric depression scale (GDS) short version total"
union "Depression Screening with Documented Result"("Beck Depression Inventory Fast Screen total score [BDI]")) AdultBrief
where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"(AdultBrief.effective))>= 18
```

### DSFE_HEDIS_MY2022-1.0.0."Adult Brief Screen with Positive Result"

```fhir
define "Adult Brief Screen with Positive Result":
  ( "Depression Screening with Positive Result"("Patient Health Questionnaire 2 item (PHQ-2) total score [Reported]", 3
union "Depression Screening with Positive Result"("Beck Depression Inventory Fast Screen total score [BDI]", 8)
union "Depression Screening with Positive Result"("Geriatric depression scale (GDS) short version total", 5)) AdultBriefPositive
where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"(AdultBriefPositive.effective))>= 18
and start of FHIRBase."Normalize Interval" ( AdultBriefPositive.effective ) during Interval[start of "Measurement Period", "December 1 of Measurement Period"]
```

### DSFE_HEDIS_MY2022-1.0.0."Adult Depression Screening with Documented Result between January 1 and December 1"

```fhir
define "Adult Depression Screening with Documented Result between January 1 and December 1":
  "Has Depression Screening during Period"("Adult Full Length Depression Screen with Documented Result" union "Adult Brief Screen with Documented Result", Interval[start of "Measurement Period", "December 1 of Measurement Period"])
```

### DSFE_HEDIS_MY2022-1.0.0."Adult Depression Screening with Positive Result between January 1 and December 1"

```fhir
define "Adult Depression Screening with Positive Result between January 1 and December 1":
  "Has Depression Screening during Period"("Adult Full Length Depression Screen with Positive Result" union "Adult Brief Screen with Positive Result", Interval[start of "Measurement Period", "December 1 of Measurement Period"])
```

### DSFE_HEDIS_MY2022-1.0.0."Adult Full Length Depression Screen with Documented Result"

```fhir
define "Adult Full Length Depression Screen with Documented Result":
  ( "Depression Screening with Documented Result"("Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"))
union "Depression Screening with Documented Result"("Beck Depression Inventory II total score [BDI]"
union "Depression Screening with Documented Result"("Center for Epidemiologic Studies Depression Scale-Revised total score [CESD-R]"
union "Depression Screening with Documented Result"("Final score [DUKE-AD]"
union "Depression Screening with Documented Result"("Geriatric depression scale (GDS) total"
union "Depression Screening with Documented Result"("Edinburgh Postnatal Depression Scale [EPDS]"
union "Depression Screening with Documented Result"("Total score [M3]"
union "Depression Screening with Documented Result"("Total score [CUDOS]"
union "Depression Screening with Documented Result"("PROMIS-29 Depression score T-score"))
```
AdultDepressionScreenResult
where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"
(AdultDepressionScreenResult.effective))>= 18

- **DSFE_HEDIS_MY2022-1.0.0."Adult Full Length Depression Screen with Positive Result"

  define "Adult Full Length Depression Screen with Positive Result":
  ( "Depression Screening with Positive Result"("Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]", 10)
  union "Depression Screening with Positive Result"("Beck Depression Inventory II total score [BDI]", 20)
  union "Depression Screening with Positive Result"("Center for Epidemiologic Studies Depression Scale-Revised total score [CESD-R]", 17)
  union "Depression Screening with Positive Result"("Final score [DUKE-AD]", 30)
  union "Depression Screening with Positive Result"("Geriatric depression scale (GDS) total", 10)
  union "Depression Screening with Positive Result"("Edinburgh Postnatal Depression Scale [EPDS]", 10)
  union "Depression Screening with Positive Result"("Total score [M3]", 5)
  union "Depression Screening with Positive Result"("Total score [CUDOS]", 31)
  union "Depression Screening with Positive Result"("PROMIS-29 Depression score T-score", 60))

  AdultPositiveDepressionScreen
  where AgeInYearsAt(date from start of FHIRBase."Normalize Interval"
  (AdultPositiveDepressionScreen.effective))>= 18
  and start of FHIRBase."Normalize Interval" ( AdultPositiveDepressionScreen.effective ) during Interval[start of "Measurement Period", "December 1 of Measurement Period"]

- **DSFE_HEDIS_MY2022-1.0.0."Bipolar Disorder Starting during Year Prior to Measurement Period"

  define "Bipolar Disorder Starting during Year Prior to Measurement Period":
  ( Status."Active Condition" ( [Condition: "Bipolar Disorder"] )
  union Status."Active Condition" ( [Condition: "Other Bipolar Disorder"] ) ) BipolarExclusion
  where FHIRBase."Prevalence Period" ( BipolarExclusion ) starts during Interval["January 1 of Year Prior to Measurement Period", start of "Measurement Period" ]

- **DSFE_HEDIS_MY2022-1.0.0."December 1 of Measurement Period"

  define "December 1 of Measurement Period":
  DateTime((year from start of "Measurement Period"), 12, 1, 23, 59, 59, 0, 0)

- **DSFE_HEDIS_MY2022-1.0.0."Denominator 1"

  define "Denominator 1":
  "Initial Population 1"

- **DSFE_HEDIS_MY2022-1.0.0."Denominator 2"

  define "Denominator 2":
  "Adolescent Depression Screening with Positive Result between January 1 and December 1" or "Adult Depression Screening with Positive Result between January 1 and December 1"

- **DSFE_HEDIS_MY2022-1.0.0."Depression Starting during Year Prior to Measurement Period"

  define "Depression Starting during Year Prior to Measurement Period":
  ( Status."Active Condition" ( [Condition: "Depression"] ) ) DepressionDiagnosis
  where FHIRBase."Prevalence Period" ( DepressionDiagnosis ) starts during Interval["January 1 of Year Prior to Measurement Period", start of "Measurement Period" ]

- **DSFE_HEDIS_MY2022-1.0.0."Enrolled During Participation Period"

  define "Enrolled During Participation Period":
  Enrollment."Health Plan Enrollment Criteria" ( "Member Coverage", date from end of "Measurement Period", Interval[date from start of "Measurement Period", date from end of "Measurement Period"], 45 )
**DSFE_HEDIS_MY2022-1.0.0."Exclusions 1"**

define "Exclusions 1":
  Hospice."Hospice Intervention or Encounter"
  or exists "Bipolar Disorder Starting during Year Prior to Measurement Period"
  or exists "Depression Starting during Year Prior to Measurement Period"

**DSFE_HEDIS_MY2022-1.0.0."Exclusions 2"**

define "Exclusions 2":
  "Exclusions 1"

**DSFE_HEDIS_MY2022-1.0.0."First Positive Adolescent Depression Screen between January 1 and December 1"**

define "First Positive Adolescent Depression Screen between January 1 and December 1":
  { First("Adolescent Full Length Depression Screen with Positive Result"
         union "Adolescent Brief Screen with Positive Result")PositiveScreen
       sort by start of FHIRBase."Normalize Interval"(effective)asc }

**DSFE_HEDIS_MY2022-1.0.0."First Positive Adolescent Screen is Brief Screen"**

define "First Positive Adolescent Screen is Brief Screen":
  "First Positive Adolescent Depression Screen between January 1 and December 1" PositiveScreen
  without "Adolescent Full Length Depression Screen with Positive Result" FLScreen
  such that start of FHIRBase."Normalize Interval"(PositiveScreen.effective) same day as start of FHIRBase."Normalize Interval"(FLScreen.effective)

**DSFE_HEDIS_MY2022-1.0.0."First Positive Adult Depression Screen between January 1 and December 1"**

define "First Positive Adult Depression Screen between January 1 and December 1":
  { First("Adult Full Length Depression Screen with Positive Result"
         union "Adult Brief Screen with Positive Result")PositiveScreen
       sort by start of FHIRBase."Normalize Interval"(effective)asc }

**DSFE_HEDIS_MY2022-1.0.0."First Positive Adult Screen is Brief Screen"**

define "First Positive Adult Screen is Brief Screen":
  "First Positive Adult Depression Screen between January 1 and December 1" PositiveScreen
  without "Adult Full Length Depression Screen with Positive Result" FLScreen
  such that start of FHIRBase."Normalize Interval"(PositiveScreen.effective) same day as start of FHIRBase."Normalize Interval"(FLScreen.effective)

**DSFE_HEDIS_MY2022-1.0.0."Follow Up Care on or 30 Days after First Positive Screen"**

define "Follow Up Care on or 30 Days after First Positive Screen":
  ( ( "First Positive Adolescent Depression Screen between January 1 and December 1"
       union "First Positive Adult Depression Screen between January 1 and December 1"
       Screening
       return ( Tuple { hasFollowUpVisit: exists ( Status."Finished Encounter" ( [Encounter: "Follow Up Visit"] )
                       FollowUpVisit
                       where Encounters."Encounter Has Diagnosis" ( FollowUpVisit, [Condition: "Depression or Other Behavioral Health Condition"] )
                       and date from start of FHIRBase."Normalize Interval"(FollowUpVisit.period) 30 days or less on or after date from start of FHIRBase."Normalize Interval"(Screening.effective),
                       hasDepressionCaseManagementEncounterWithDx: exists ( ( Status."Finished Encounter" ( [Encounter: "Depression Case Management Encounter"] )
                       dcmEnc
                       where date from start of FHIRBase."Normalize Interval"(dcmEnc.period) 30 days or less on or after date from start of FHIRBase."Normalize Interval"(Screening.effective))
                       CaseManagementEncounterWithDx
                       where Encounters."Encounter Has Diagnosis" ( CaseManagementEncounterWithDx, [Condition:}
"Depression or Other Behavioral Health Condition"),
  hasDepressionCaseManagementEncounterWithSymptom: exists ( Status."Finished Encounter" ( [Encounter: "Depression Case Management Encounter"] ) ) dcmEnc
    where date from start of FHIRBase."Normalize Interval" ( dcmEnc.period ) 30 days or less on or after date from start of FHIRBase."Normalize Interval" ( Screening.effective )
  CaseManagementEncounterWithSymptom
    where exists [Observation: "Symptoms of depression (finding)"] DepressionSymptoms
    where date from start of FHIRBase."Normalize Interval" ( DepressionSymptoms.effective ) ~ date from start of FHIRBase."Normalize Interval" ( CaseManagementEncounterWithSymptom.period ),
  hasBehavioralHealthEncounter: exists ( Status."Finished Encounter" ( [Encounter: "Behavioral Health Encounter"] ) ) BHEnc
    where date from start of FHIRBase."Normalize Interval" ( BHEnc.period ) 30 days or less on or after date from start of FHIRBase."Normalize Interval" ( Screening.effective )
  or ( exists ( Status."Active Condition" ( [Condition: "Exercise counseling"] ) ) )
  ExerciseDiagnosis
    where date from start of FHIRBase."Prevalence Period" ( ExerciseDiagnosis ) 30 days or less on or after date from start of FHIRBase."Normalize Interval" ( Screening.effective )
  hasAntidepressantMedication: exists ( Status."Dispensed Medication" ( [MedicationDispense: "Antidepressant Medications"] ) ) ADMeds
    where date from ADMeds.whenHandedOver 30 days or less on or after date from start of FHIRBase."Normalize Interval" ( Screening.effective )
  ) FollowUpCare
  return if AnyTrue({ FollowUpCare.hasFollowUpVisit,
    FollowUpCare.hasDepressionCaseManagementEncounterWithDx,
    FollowUpCare.hasDepressionCaseManagementEncounterWithSymptom, FollowUpCare.hasBehavioralHealthEncounter,
    FollowUpCare.hasAntidepressantMedication }) then Screening
  else null ) screeningWithFollowUpCare
  where screeningWithFollowUpCare is not null

- **DSFE_HEDIS_MY2022-1.0.0."Has Positive Brief Screen Same Day as Negative Full Length Screen"**

  define "Has Positive Brief Screen Same Day as Negative Full Length Screen":
    exists ( "First Positive Adult Screen is Brief Screen" PositiveScreen
      with ( "Adult Full Length Depression Screen with Documented Result"
        except "Adult Full Length Depression Screen with Positive Result" ) NegativeScreen
      such that start of FHIRBase."Normalize Interval" ( PositiveScreen.effective ) same day as start of FHIRBase."Normalize Interval" ( NegativeScreen.effective )
    )
  or exists ( "First Positive Adolescent Screen is Brief Screen" PositiveScreen
    with ( "Adolescent Full Length Depression Screen with Documented Result"
      except "Adolescent Full Length Depression Screen with Positive Result" ) NegativeScreen
    such that start of FHIRBase."Normalize Interval" ( PositiveScreen.effective ) same day as start of FHIRBase."Normalize Interval" ( NegativeScreen.effective )
  )

- **DSFE_HEDIS_MY2022-1.0.0."Initial Population 1"**

  define "Initial Population 1":
    AgeInYearsAt(date from start of "Measurement Period")>= 12
    and "Enrolled During Participation Period"

- **DSFE_HEDIS_MY2022-1.0.0."Initial Population 2"**

  define "Initial Population 2":
    "Initial Population 1"

- **DSFE_HEDIS_MY2022-1.0.0."January 1 of Year Prior to Measurement Period"**

  define "January 1 of Year Prior to Measurement Period":
    DateTime(((year from start of "Measurement Period")- 1), 1, 1, 0, 0, 0, 0, 0)

- **DSFE_HEDIS_MY2022-1.0.0."Member Coverage"**
define "Member Coverage":
[Coverage] C
where FHIRBase."Normalize Interval"(C.period) overlaps "Measurement Period"

- **DSFE_HEDIS_MY2022-1.0.0."Numerator 1"

define "Numerator 1":
"Adolescent Depression Screening with Documented Result between January 1 and December 1"
or "Adult Depression Screening with Documented Result between January 1 and December 1"

- **DSFE_HEDIS_MY2022-1.0.0."Numerator 2"

define "Numerator 2":
exists "Follow Up Care on or 30 Days after First Positive Screen"
or "Has Positive Brief Screen Same Day as Negative Full Length Screen"

- **NCQA_Hospice-1.0.0."Hospice Intervention or Encounter"

define "Hospice Intervention or Encounter":
exists ((Status."Completed or Ongoing Procedure"([Procedure:"Hospice Intervention"])) HospiceInt
where NCQAFHIRBase."Normalize Interval"(HospiceInt.performed) overlaps "Measurement Period"
)
or exists ((Status."Finished Encounter"("Encounter": "Hospice Encounter"))) HospiceEnc
where NCQAFHIRBase."Normalize Interval"(HospiceEnc.period) overlaps "Measurement Period"

**Functions**

- **DSFE_HEDIS_MY2022-1.0.0."Depression Screening with Documented Result"

define function "Depression Screening with Documented Result"(assessmentDRC System.Code):
[Observation: assessmentDRC] Obs
where Obs.value is not null

- **DSFE_HEDIS_MY2022-1.0.0."Depression Screening with Positive Result"

define function "Depression Screening with Positive Result"(assessmentDRC System.Code,
positiveScoreThreshold Integer):
[Observation: assessmentDRC] Obs
where Obs.value >= positiveScoreThreshold

- **DSFE_HEDIS_MY2022-1.0.0."Has Depression Screening during Period"

define function "Has Depression Screening during Period"(Assessment List<Observation>, period
Interval<DateTime>):
exists Assessment A
where (date from start of FHIRBase."Normalize Interval"(A.effective)) during Interval[date from
start of period, date from
end of period]

- **FHIRHelpers-4.0.1."ToCalendarUnit"

define function ToCalendarUnit(unit System.String):
case unit
when 'ms' then 'millisecond'
when 's' then 'second'
when 'min' then 'minute'
when 'h' then 'hour'
when 'd' then 'day'
when 'wk' then 'week'
when 'mo' then 'month'
when 'a' then 'year'
- FHIRHelpers-4.0.1."ToCode"

```
define function ToCode(coding FHIR.Coding):
    if coding is null then
        null
    else
        System.Code {
            code: coding.code.value,
            system: coding.system.value,
            version: coding.version.value,
            display: coding.display.value
        }
```

- FHIRHelpers-4.0.1."ToConcept"

```
define function ToConcept(concept FHIR.CodeableConcept):
    if concept is null then
        null
    else
        System.Concept {
            codes: concept.coding C return ToCode(C),
            display: concept.text.value
        }
```

- FHIRHelpers-4.0.1."ToDate"

```
define function ToDate(value date): value.value
```

- FHIRHelpers-4.0.1."ToDateTime"

```
define function ToDateTime(value dateTime): value.value
```

- FHIRHelpers-4.0.1."ToInteger"

```
define function ToInteger(value integer): value.value
```

- FHIRHelpers-4.0.1."ToQuantity"

```
define function ToQuantity(quantity FHIR.Quantity):
    case
        when quantity is null then null
        when quantity.value is null then null
        when quantity.comparator is not null then
            Message(null, true, 'FHIRHelpers.ToQuantity.ComparatorQuantityNotSupported', 'Error', 'FHIR Quantity value has a comparator and cannot be converted to a System.Quantity value.'
            when quantity.system is null or quantity.system.value = 'http://unitsofmeasure.org'
                or quantity.system.value = 'http://hl7.org/fhirpath/CodeSystem/calendar-units' then
                    System.Quantity { value: quantity.value.value, unit:
                        ToCalendarUnit(Coalesce(quantity.code.value, quantity.unit.value, '1')) }
            else
                Message(null, true, 'FHIRHelpers.ToQuantity.InvalidFHIRQuantity', 'Error', 'Invalid FHIR Quantity code: ' & quantity.unit.value & ' (' & quantity.system.value & '|' & quantity.code.value & ')')
        end
```

- FHIRHelpers-4.0.1."ToString"
define function ToString(value EncounterStatus): value.value

- **FHIRHelpers-4.0.1."ToString"

define function ToString(value MedicationDispenseStatus): value.value

- **FHIRHelpers-4.0.1."ToString"

define function ToString(value ProcedureStatus): value.value

- **FHIRHelpers-4.0.1."ToString"

define function ToString(value string): value.value

- **NCQA_CQLBase-1.0.0."Collapse Date Interval Workaround"

define function "Collapse Date Interval Workaround"(intervals List<Interval<Date>>):
    if intervals is null then { } as List<Interval<Date>>
    else if Count(intervals)= 0 then { } as List<Interval<Date>>
    else collapse ( intervals I where not AnyTrue( intervals J return I properly included in J ) ) per day

- **NCQA_CQLBase-1.0.0."Collapsed Date Interval Stats"

define function "Collapsed Date Interval Stats"(collapsedIntervals List<Interval<Date>>):
    Tuple {
        "Intervals": collapsedIntervals,
        "Interval Count": Count(collapsedIntervals),
        "Total Days In Intervals": if Count(collapsedIntervals)= 0 then 0
        else Sum(collapsedIntervals I return Max({ duration in days of I + 1, 0 })),
        "Longest Interval": if Count(collapsedIntervals)= 0 then null as Interval<Date>
        else First(collapsedIntervals I return Tuple {
            "interval": I,
            "days": Max({ duration in days of I + 1, 0 })
        } sort by "days" desc).interval,
        "Total Days In Longest Interval": if Count(collapsedIntervals)= 0 then 0
        else Max({ duration in days of First(collapsedIntervals I return Tuple {
            "interval": I,
            "days": Max({ duration in days of I + 1, 0 })
        } sort by "days" desc).interval + 1, 0 })
    }

- **NCQA_CQLBase-1.0.0."Date Interval Covering Relative to Base Interval"

define function "Date Interval Covering Relative to Base Interval"(baseInterval Interval<Date>,
    coveringIntervals List<Interval<Date>>):
    "Collapse Date Interval Workaround"("Sort Date Intervals"(coveringIntervals)) sortedInterval
    return baseInterval intersect sortedInterval

- **NCQA_CQLBase-1.0.0."Date Interval Gaps Relative to Base Interval"

define function "Date Interval Gaps Relative to Base Interval"(baseInterval Interval<Date>,
    coveringIntervals List<Interval<Date>>):
    ( Tuple {
        sortedCoverings: "Date Interval Covering Relative to Base Interval"(baseInterval, coveringIntervals)
    } ) variableDeclarations
    return ( Tuple {
        frontgaps: if Count(variableDeclarations.sortedCoverings)= 0 then { baseInterval }
        else ( variableDeclarations.sortedCoverings sortedCovering
return if IndexOf(variableDeclarations.sortedCoverings,
sortedCovering) = 0
    then ( Interval[start of baseInterval, start of sortedCovering]
    intersect baseInterval) except sortedCovering
else Interval( start of
variableDeclarations.sortedCoverings[IndexOf(variableDeclarations.sortedCoverings, sortedCovering)- 1],
end of sortedCovering )
    except
variableDeclarations.sortedCoverings[IndexOf(variableDeclarations.sortedCoverings, sortedCovering)- 1]
endgap: if Count(variableDeclarations.sortedCoverings)= 0 then { } as List<Interval<Date>>
else { { Interval( start of Last(variableDeclarations.sortedCoverings), end of
baseInterval]
    except Last(variableDeclarations.sortedCoverings)) intersect baseInterval
    ) } calculations
return "Collapse Date Interval Workaround"( calculations.frontgaps union calculations.endgap )

**NCQA_CQLBase-1.0.0."Date Interval Gaps Relative to Base Interval Stats"**

define function "Date Interval Gaps Relative to Base Interval Stats"(baseInterval Interval<Date>,
coveringIntervals List<Interval<Date>>):
( Tuple {
    "Gap Intervals": "Date Interval Gaps Relative to Base Interval"(baseInterval, coveringIntervals)
} ) variableDeclarations
return ( "Collapsed Date Interval Stats"(variableDeclarations."Gap Intervals"))

**NCQA_CQLBase-1.0.0."Sort Date Intervals"**

define function "Sort Date Intervals"(intervals List<Interval<Date>>):
    if intervals is null then { } as List<Interval<Date>>
else if Count(intervals)= 0 then { } as List<Interval<Date>>
else ( ( intervals I
        return Tuple {
            interval: I,
            startOfInterval: if start of I is null then minimum Date else start of I
        } sort by startOfInterval asc
    ) sortedIntervals
    return sortedIntervals.interval
)

**NCQA_Encounter-1.0.0."Encounter Has Diagnosis"**

define function "Encounter Has Diagnosis"(Encounter FHIR.Encounter, Conditions List<FHIR.Condition>):
AnyTrue((Encounter.diagnosis D
    return D.condition.reference)CRef
return exists(Conditions C
    where C.id = FHIRBase."GetId"(CRef)
)
)

**NCQA_FHIRBase-1.0.0."GetId"**

define function "GetId"(uri String):
    if ( PositionOf('/', uri)> 0 ) then Last(Split(uri, '/'))
else uri

**NCQA_FHIRBase-1.0.0."Normalize Abatement"**

define function "Normalize Abatement"(abatement Choice<FHIR.dateTime, FHIR.Age, FHIR.Period, FHIR.Range,
FHIR.string>):
    if abatement is FHIR.dateTime then Interval[FHIRHelpers.ToDateTime ( abatement as FHIR.dateTime ),
FHIRHelpers.ToDateTime ( abatement as FHIR.dateTime )]
else if abatement is FHIR.Period then Interval[abatement.start.value, abatement.
end.value]
else if abatement is FHIR.string then Message(null as Interval<DateTime>, true, '1', 'Error', 'Cannot
compute an interval from a String value')
    else if abatement is FHIR.Age then Interval[FHIRHelpers.ToDateTime ( Patient.birthDate ),
    FHIRHelpers.ToDateTime ( Patient.birthDate ) + 1 year]
    else if abatement is FHIR.Range then Interval[FHIRHelpers.ToDateTime ( Patient.birthDate ) +
    FHIRHelpers.ToDateTime ( ( abatement as FHIR.Range ).low ), FHIRHelpers.ToDateTime ( Patient.birthDate ) +
    FHIRHelpers.ToDateTime ( ( abatement as FHIR.Range ).high ) + 1 year]
    else null

• NCQA_FHIRBase-1.0.0."Normalize Interval"

define function "Normalize Interval"(choice Choice<FHIR.dateTime, FHIR.date, FHIR.Period, FHIR.Timing, FHIR.instant, FHIR.string, FHIR.Age, FHIR.Range>):
    case
    when choice is FHIR.dateTime then Interval[FHIRHelpers.ToDateTime ( choice as FHIR.dateTime ),
    FHIRHelpers.ToDateTime ( choice as FHIR.dateTime )]
    when choice is FHIR.date then Interval[ToDateTime(choice as FHIR.date), ToDateTime(choice as FHIR.date)]
    when choice is FHIR.Period then Interval[( choice as FHIR.Period ).start.value, ( choice as FHIR.Period ).end.value]
    when choice is FHIR.instant then Interval[FHIRHelpers.ToDateTime ( choice as FHIR.instant ),
    FHIRHelpers.ToDateTime ( choice as FHIR.instant )]
    when choice is FHIR.Age then Interval[FHIRHelpers.ToDateTime ( Patient.birthDate ),
    FHIRHelpers.ToDateTime ( Patient.birthDate ) + 1 year]
    when choice is FHIR.Range then Interval[FHIRHelpers.ToDateTime ( Patient.birthDate ) +
    FHIRHelpers.ToDateTime ( ( choice as FHIR.Range ).low ), FHIRHelpers.ToDateTime ( Patient.birthDate ) +
    FHIRHelpers.ToDateTime ( ( choice as FHIR.Range ).high ) + 1 year]
    when choice is FHIR.Timing then Message(null as Interval<DateTime>, true, '1', 'Error', 'Cannot compute a single interval from a Timing type')
    when choice is FHIR.string then Message(null as Interval<DateTime>, true, '1', 'Error', 'Cannot compute an interval from a String value')
    else null as Interval<DateTime>
end

• NCQA_FHIRBase-1.0.0."Normalize Onset"

define function "Normalize Onset"(onset Choice<FHIR.dateTime, FHIR.Age, FHIR.Period, FHIR.Range, FHIR.string>):
    if onset is FHIR.dateTime then Interval[FHIRHelpers.ToDateTime ( onset as FHIR.dateTime ),
    FHIRHelpers.ToDateTime ( onset as FHIR.dateTime )]
    else if onset is FHIR.Period then Interval[onset.start.value, onset.end.value]
    else if onset is FHIR.string then Message(null as Interval<DateTime>, true, '1', 'Error', 'Cannot compute an interval from a String value')
    else if onset is FHIR.Age then Interval[FHIRHelpers.ToDateTime ( Patient.birthDate ),
    FHIRHelpers.ToDateTime ( Patient.birthDate ) + 1 year]
    else if onset is FHIR.Range then Interval[FHIRHelpers.ToDateTime ( Patient.birthDate ) +
    FHIRHelpers.ToDateTime ( ( onset as FHIR.Range ).low ), FHIRHelpers.ToDateTime ( Patient.birthDate ) +
    FHIRHelpers.ToDateTime ( ( onset as FHIR.Range ).high ) + 1 year]
    else null

• NCQA_FHIRBase-1.0.0."Prevalence Period"

define function "Prevalence Period"(condition Condition):
    Interval[start of "Normalize Onset"(condition.onset),
    end of "Normalize Abatement"(condition.abatement)]

• NCQA_HealthPlanEnrollment-1.0.0."All Coverage Info"

define function "All Coverage Info"(Coverage List<FHIR.Coverage>, participationPeriod Interval<Date>):
    Coverage C
    let IntervalInfo: "CoverageIntervals"(Coverage, participationPeriod),
    Collapsed: "Collapsed Coverage Intervals"(IntervalInfo),
    Adjacent: "Collapsed Coverage Adjacent Intervals"(Collapsed),
define function "Collapsed Coverage Adjacent Intervals"(Intervals List<Interval<Date>>):
  from
  Intervals Coverage1,
  Intervals Coverage2
  where
  end of Coverage1 within 1 day of start of Coverage2
  return Interval[start of Coverage1,
  end of Coverage2]

define function "Collapsed Coverage Intervals"(Intervals List<Interval<Date>>):
  CQLBase."Collapse Date Interval Workaround" ( Intervals )

define function "Collapsed Final Coverage Intervals"(collapsedI List<Interval<Date>>, adjacentI List<Interval<Date>>):
  CQLBase."Collapse Date Interval Workaround" ( "Collapsed Coverage Intervals"(collapsedI)
  union "Collapsed Coverage Adjacent Intervals"(adjacentI))

define function "CoverageIntervals"(Coverage List<FHIR.Coverage>, participationPeriod Interval<Date>):
  Coverage C
  return Interval[date from start of FHIRBase."Normalize Interval" ( C.period ), date from
  end of FHIRBase."Normalize Interval" ( C.period )]
  intersect Interval[start of participationPeriod,
  end of participationPeriod]

define function "Health Plan Anchor Date Criteria"(Coverage List<FHIR.Coverage>, AnchorDate Date,
  participationPeriod Interval<Date>):
  if AnchorDate during participationPeriod then exists ( ( "All Coverage Info"("Health Plan Coverage
  Resources"(Coverage), participationPeriod).CollapsedFinal ) FinalInterval
  where AnchorDate in FinalInterval
  )
  else if not ( AnchorDate during participationPeriod ) then exists ( ( "Health Plan Coverage
  Resources"(Coverage).period ) Cperiod
  where AnchorDate during Interval[date from start of FHIRBase."Normalize Interval" ( Cperiod ), date
  from
  end of FHIRBase."Normalize Interval" ( Cperiod )]
  )
  else if AnchorDate is null then true
  else false

define function "Health Plan Coverage Resources"(Coverage List<FHIR.Coverage>):
  ( Coverage C
  where exists C.type.coding cTypeCoding
  where ( FHIRHelpers.ToCode ( cTypeCoding ) ~ Terminology."managed care policy"
  or FHIRHelpers.ToCode ( cTypeCoding ) ~ Terminology."retiree health program"
  or FHIRHelpers.ToCode ( cTypeCoding ) ~ Terminology."subsidized health program"
• **NCQA_HealthPlanEnrollment-1.0.0."Health Plan Enrollment Criteria"**

```cql
define function "Health Plan Enrollment Criteria"(Coverage List<FHIR.Coverage>, AnchorDate Date, participationPeriod Interval<Date>, AllowedGapDays Integer):
  ( CQLBase."Date Interval Gaps Relative to Base Interval Stats" ( participationPeriod, "All Coverage Info"("Health Plan Coverage Resources"(Coverage), participationPeriod).CollapsedFinal ) )
GapsInEnrollment
  return ( GapsInEnrollment."Interval Count" <= 1
           and GapsInEnrollment."Total Days In Longest Interval" <= AllowedGapDays
           and "Health Plan Anchor Date Criteria"(Coverage, AnchorDate, participationPeriod) )
```

• **NCQA_Status-1.0.0."Active Condition"**

```cql
define function "Active Condition"(Condition List<FHIR.Condition>):
  Condition C
  where C.clinicalStatus = Terminology."active"
```

• **NCQA_Status-1.0.0."Completed or Ongoing Procedure"**

```cql
define function "Completed or Ongoing Procedure"(Proc List<FHIR.Procedure>):
  Proc P
  where P.status in { 'completed', 'in-progress' }
```

• **NCQA_Status-1.0.0."Dispensed Medication"**

```cql
define function "Dispensed Medication"(Med List<FHIR.MedicationDispense>):
  Med M
  where M.status = 'completed'
```

• **NCQA_Status-1.0.0."Finished Encounter"**

```cql
define function "Finished Encounter"(Enc List<FHIR.Encounter>):
  Enc E
  where E.status = 'finished'
```