

eCQM Title	Depression Utilization of the PHQ-9 Tool		
eCQM Identifier (Measure Authoring Tool)	160	eCQM Version number	7.3.000
NQF Number	0712	GUID	a4b9763c-847e-4e02-bb7e-acc596e90e2c
Measurement Period	January 1, 20XX through December 31, 20XX		
Measure Steward	MN Community Measurement		
Measure Developer	MN Community Measurement		
Endorsed By	National Quality Forum		
Description	The percentage of adolescent patients 12 to 17 years of age and adult patients age 18 and older with the diagnosis of major depression or dysthymia who have a completed PHQ-9 during each applicable 4 month period in which there was a qualifying depression encounter		
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Disclaimer	This measure is "re-tooled" from the existing NQF # 712 measure. eMeasure development was a collaboration between MN Community Measurement and Telligen with technical assistance provided by Telligen.		
Measure Scoring	Proportion		
Measure Type	Process		
Stratification	Ages 12 to 17 Ages 18 and older		
Risk Adjustment	None		
Rate Aggregation	None		
Rationale	<p><b>Adults:</b> Depression is a common and treatable mental disorder. The Centers for Disease Control and Prevention states that an estimated 6.6% of the U.S. adult population (14.8 million people) experiences a major depressive disorder during any given 12-month period. Additionally, dysthymia accounts for an additional 3.3 million Americans. In 2006 and 2008, an estimated 9.1% of U.S. adults reported symptoms for current depression (Centers for Disease Control and Prevention, 2010).</p> <p>Persons with a current diagnosis of depression and a lifetime diagnosis of depression or anxiety were significantly more likely than persons without these conditions to have cardiovascular disease, diabetes, asthma and obesity and to be a current smoker, to be physically inactive and to drink heavily (Strine, 2008).</p> <p>People who suffer from depression have lower incomes, lower educational attainment and fewer days working each year, leading to seven fewer weeks of work per year, a loss of 20% in potential income and a lifetime loss for each family who has a depressed family member of \$300,000 (Smith, 2010).</p> <p>The cost of depression (lost productivity and increased medical expense) in the United States is \$83 billion each year (Greenberg, 2003).</p> <p><b>Adolescents and Adults:</b> The Centers for Disease Control and Prevention states that during 2009-2012 an estimated 7.6% of the U.S. population aged 12 and over had depression, including 3% of Americans with severe depressive symptoms. Almost 43% of persons with severe depressive symptoms reported serious difficulties in work, home and social activities, yet only 35% reported having contact with a mental health professional in the past year. Depression is associated with higher mortality rates in all age groups. People who are depressed are 30 times more likely to take their own lives than people who are not depressed and five times more likely to abuse drugs. Depression is the leading cause of medical disability for people aged 14 - 44. Depressed people lose 5.6 hours of productive work every week when they are depressed, fifty percent of which is due to absenteeism and short-term disability.</p> <p><b>Adolescents:</b> In 2014, an estimated 2.8 million adolescents age 12 to 17 in the United States had at least one major depressive episode in the past year. This represented 11.4% of the U.S. population. The same survey found that only 41.2 percent of those who had a Major Depressive Episode received treatment in the past year. The 2013 Youth Risk Behavior Survey of students grades 9 to 12 indicated that during the past 12 months 39.1% (F) and 20.8% (M) indicated feeling sad or hopeless almost every day for at least 2 weeks, planned suicide attempt 16.9% (F) and 10.3% (M), with attempted suicide 10.6% (F) and 5.4% (M). Adolescent-onset depression is associated with chronic depression in adulthood. Many mental health conditions (anxiety, bipolar, depression, eating disorders, and substance abuse) are evident by age 14. The 12-month prevalence of MDEs increased from 8.7% in 2005 to 11.3% in 2014 in adolescents and from 8.8% to 9.6% in young adults (both P &lt; .001). The increase was larger and statistically significant only in the age range of 12 to 20 years. The trends remained significant after adjustment for substance use disorders and sociodemographic factors. Mental health care contacts overall did not change over time; however, the use of specialty mental health providers increased in adolescents and young adults, and the use of prescription medications and inpatient hospitalizations increased in adolescents. In 2015, 9.7% of adolescents in MN who were screened for depression or other mental health conditions, screened positively.</p> <p>Please note that this process measure for administration of the PHQ-9 or PHQ-9M depression tool, a PROM that is validated for both the assessment and diagnosis of depression as well as for monitoring ongoing outcomes of treatment, is a PAIRED process measure with RELATED measures of depression remission (PHQ-9/PHQ-9M &lt; 5) and depression response (PHQ-9/PHQ-9M is improved by &gt; 50%) at six and twelve months. To quote a NQF Behavioral Steering Committee member as these measures were initially endorsed "the best way to avoid being measured is to never give the PHQ-9". This process measure allows an understanding of the use of the tool in the target population, promotes frequent and follow-up contact with patients whose score indicates a need for treatment and serves as a catalyst in a collaborative care model for patients with major depression or dysthymia. It is estimated that up to 90% of patients diagnosed with depression and anxiety are treated solely in primary care (National Institute for Health and Care Excellence, 2011).</p>		
Clinical Recommendation Statement	<p><b>Adults:</b> Source: Institute for Clinical Systems Improvement (ICSI) Health Care Guideline for Adult Depression in Primary Care (Trangle, 2016)</p> <p>Major depression is a treatable cause of pain, suffering, disability and death, yet primary care clinicians detect major depression in only one-third to one-half of their patients with major depression (Williams Jr, 2002; Schonfeld, 1997).</p> <p>Usual care for depression in the primary care setting has resulted in only about half of depressed adults getting treated (Kessler, 2005) and only 20-40% showing substantial improvement over 12 months (Unutzer, 2002; Katon, 1999).</p> <p>Recommendations and algorithm notations supporting depression assessment and monitoring of depression outcomes according to ICSI's Health Care Guideline:</p> <p>Recommendation: Clinicians should establish and maintain follow-up with patients. Appropriate, reliable follow-up is highly correlated with improved response and remission scores. It is also correlated with the improved safety and efficacy of medications and helps prevent relapse.</p> <p>Proactive follow-up contacts (in person, telephone) based on the collaborative care model have been shown to significantly lower depression severity (Unutzer, 2002). In the available clinical effectiveness trials conducted in real clinical practice settings, even the addition of a care manager leads to modest remission rates (Trivedi, 2006; Unutzer, 2002). Interventions are critical to educating the patient regarding the importance of preventing relapse, safety and efficacy of medications, and management of potential side effects. Establish and maintain initial follow-up contact intervals (office, phone, other) (Hunkeler, 2000; Simon, 2000).</p> <p>PHQ-9 as monitor and management tool. The PHQ-9 is an effective management tool, as well, and should be used routinely for subsequent visits to monitor treatment outcomes and severity. It can also help the clinician decide if/how to modify the treatment plan (Duffy, 2008; Lowe, 2004). Using a measurement-based approach to depression care, PHQ-9 results and side effect evaluation should be combined with treatment algorithms to drive patients toward remission. A five-point drop in PHQ-9 score is considered the minimal clinically significant difference (Trivedi, 2009).</p> <p>Every time that the PHQ-9 is assessed, suicidality is assessed, as well. If the suicidality was indeed of high risk, urgent referral to crisis specialty health care is advised. In case of low suicide risk, the patient can proceed with treatment in the primary care practice (Huibregts, 2013).</p> <p>Adult Depression in Primary Care - Guideline Aims</p> <ul style="list-style-type: none"> <li>- Increase the percentage of patients with major depression or persistent depressive disorder who have improvement in outcomes from treatment for major depression or persistent depressive disorder.</li> <li>- Increase the percentage of patients with major depression or persistent depressive disorder who have follow-up to assess for outcomes from treatment.</li> </ul>		

	<p>- Improve communication between the primary care physician and the mental health care clinician (if patient is co-managed).</p> <p>Adolescents: Source: American Academy of Child and Adolescent Psychiatry Practice Parameter for the Assessment and Treatment of Children and Adolescents with Depressive Disorders (2007) <a href="http://www.jaacap.com/article/S0890-8567(09)62053-0/pdf">http://www.jaacap.com/article/S0890-8567(09)62053-0/pdf</a></p> <p>Recommendations: Recommendations supporting depression outcomes and duration of treatment according to AACAP guideline: - Treatment of depressive disorders should always include an acute and continuation phase; some children may also require maintenance treatment. The main goal of the acute phase is to achieve response and ultimately full symptomatic remission (definitions below). - Each phase of treatment should include psychoeducation, supportive management, and family and school involvement - Education, support, and case management appear to be sufficient treatment for the management of depressed children and adolescents with an uncomplicated or brief depression or with mild psychosocial impairment - For children and adolescents who do not respond to supportive psychotherapy or who have more complicated depressions, a trial with specific types of psychotherapy and/or antidepressants is indicated</p> <p>Definitions: Response: No symptoms or a significant reduction in depressive symptoms for at least 2 weeks Remission: A period of at least 2 weeks and &lt;2months with no or few depressive symptoms Recovery: Absence of significant symptoms of depression (eg, no more than 1 to 2 symptoms) for greater than 2 months Relapse: A DSM episode of depression during the period of remission Recurrence: The emergence of symptoms of depression during the period of recovery (a new episode)</p> <p>Sources: Guidelines for Adolescent Depression in Primary Care (GLAD-PC) (2018) <a href="http://pediatrics.aappublications.org/content/141/3/e20174081">http://pediatrics.aappublications.org/content/141/3/e20174081</a> Guidelines for adolescent depression in primary care (GLAD-PC): II. Treatment and ongoing management <a href="http://pediatrics.aappublications.org/content/141/3/e20174082">http://pediatrics.aappublications.org/content/141/3/e20174082</a></p> <p>Recommendations supporting depression outcomes and duration of treatment according to GLAD-PC: Recommendations for Ongoing Management of Depression: - Mild depression: consider a period of active support and monitoring before starting other evidence based treatment - Moderate or severe major clinical depression or complicating factors: -- consultation with mental health specialist with agreed upon roles -- evidence based treatment (CBT or IPT and/or antidepressant SSRI) - Monitor for adverse effects during antidepressant therapy -- clinical worsening, suicidality, unusual changes in behavior - Systematic and regular tracking of goals and outcomes -- improvement in functioning status and resolution of depressive symptoms Regardless of the length of treatment, all patients should be monitored on a monthly basis for 6 to 12 months after the full resolution of symptoms</p>
<b>Improvement Notation</b>	Higher scores indicate better quality
<b>Reference</b>	Trangle M, Gursky J, Haight R, Hardwig J, Hinnenkamp T, Kessler D, Mack N, Myszkowski M. Institute for Clinical Systems Improvement. Adult Depression in Primary Care. Updated March 2016. <a href="https://www.icsi.org/guidelines_more/catalog_guidelines_and_more/catalog_guidelines/catalog_behavioral_health_guidelines/depression/">https://www.icsi.org/guidelines_more/catalog_guidelines_and_more/catalog_guidelines/catalog_behavioral_health_guidelines/depression/</a>
<b>Reference</b>	Gonzalez O, Berry JT, McKnight-Eily LR, et al. Centers for Disease Control and Prevention. Current Depression Among Adults United States, 2006 and 2008. MMWR 2010;59(38):1229-1235. <a href="https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5938a2.htm">https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5938a2.htm</a>
<b>Reference</b>	Strine TW, Mokdad AH, Balluz LS, et al. Depression and anxiety in the United States: findings from the 2006 Behavioral Risk Factor Surveillance System. Psychiatr Serv 2008;59:1383-90. <a href="http://ps.psychiatryonline.org/doi/abs/10.1176/ps.2008.59.12.1383">http://ps.psychiatryonline.org/doi/abs/10.1176/ps.2008.59.12.1383</a>
<b>Reference</b>	Smith JP, Smith GC. Long-term economic costs of psychological problems during childhood. Soc Sci Med 2010;71:110-115. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2887689/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2887689/</a>
<b>Reference</b>	Greenberg PE, Kessler RC, Birmbaum HG, et al. The economic burden of depression in the United States: how did it change between 1990 and 2000? J Clin Psychiatry 2003;64(10):1465-1475.
<b>Reference</b>	Kendrick T, Pilling S, et al. National Institute for Health and Care Excellence. Clinical guideline CG123. Common mental health problems; identification and pathways to care. May 2011. <a href="https://www.nice.org.uk/guidance/CG123/chapter/introduction">https://www.nice.org.uk/guidance/CG123/chapter/introduction</a>
<b>Reference</b>	Williams Jr JW, Noel PH, Cordes JA, et al. Is this patient clinically depressed? JAMA 2002;287:1160-70.
<b>Reference</b>	Schonfeld WH, Verboncoeur CJ, Fifer SK, et al. The functioning and well-being of patients with unrecognized anxiety disorders and major depressive disorder. J Affect Disord 1997;43:105-19.
<b>Reference</b>	Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. Arch Gen Psychiatry 2005;62:617-27.
<b>Reference</b>	Unutzer J, Katon W, Callahan CM, et al. Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. JAMA 2002;288:2836-45.
<b>Reference</b>	Katon W, Von Korff M, Lin E, et al. Stepped collaborative care for primary care patients with persistent symptoms of depression: a randomized trial. Arch Gen Psychiatry 1999;56:1109-15.
<b>Reference</b>	Trivedi MH, Rush AJ, Wisniewski SR, et al. Evaluation of outcomes with citalopram for depression using measurement-based care in STAR*D: implications for clinical practice. Am J Psychiatry 2006;163:28-40.
<b>Reference</b>	Hunkeler EM, Meresman JF, Hargreaves WA, et al. Efficacy of nurse telehealth care and peer support in augmenting treatment of depression in primary care. Arch Fam Med 2000;9:700-08.
<b>Reference</b>	Simon GE, Van Korff M, Rutter C, Wagner E. Randomised trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care. BMJ 2000;320:550-54.
<b>Reference</b>	Duffy FF, Chung H, Trivedi M, et al. Systematic use of patient-rated depression severity monitoring: is it helpful and feasible in clinical psychiatry? Psychiatric Serv 2008;59:1148-54.
<b>Reference</b>	Lowe B, Unutzer J, Callahan CM, et al. Monitoring depression treatment outcomes with the patient health questionnaire-9. Med Care 2004;42:1194-1201.
<b>Reference</b>	Trivedi MH. Tools and strategies for ongoing assessment of depression: a measurement-based approach to remission. J Clin Psychiatry 2009;70:26-31.
<b>Reference</b>	Huijbregts KML, de Jong FJ, van Marwijk HWJ, et al. A target-driven collaborative care model for major depressive disorder is effective in primary care in the Netherlands: a randomized clinical trial from the depression initiative. J Affect Dis 2013;146:328-37.
<b>Reference</b>	Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med 2001;16:606-13. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1495268/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1495268/</a>
<b>Reference</b>	Birmaher B, Brent D. Practice parameter for the assessment and treatment of children and adolescents with depressive disorders. J Am Acad Child Adolesc Psychiatry 2007;46(11):1503-1526. <a href="http://www.jaacap.com/article/S0890-8567(09)62053-0/pdf">http://www.jaacap.com/article/S0890-8567(09)62053-0/pdf</a>
<b>Reference</b>	Zuckerbrot RA, Cheung A, Jensen PS, et al. Guidelines for adolescent depression in primary care (GLAD-PC): Part I. Practice preparation, identification, assessment, and initial management. Pediatrics March 2018, Volume 141 / Issue 3. <a href="http://pediatrics.aappublications.org/content/141/3/e20174081">http://pediatrics.aappublications.org/content/141/3/e20174081</a>
<b>Reference</b>	Cheung AH, Zuckerbrot RA, Jensen PS, et al. Guidelines for adolescent depression in primary care (GLAD-PC): Part II. Treatment and ongoing management. Pediatrics March 2018, Volume 141 / Issue 3. <a href="http://pediatrics.aappublications.org/content/141/3/e20174082">http://pediatrics.aappublications.org/content/141/3/e20174082</a>
<b>Reference</b>	Pratt LA, Brody DJ. Depression in the U.S. household population, 2009-2012. NCHS data brief, no 172. Hyattsville, MD: National Center for Health Statistics. 2014.
<b>Reference</b>	Joiner T. Myths about suicide. Cambridge: Harvard University Press; 2010.
<b>Reference</b>	Stewart WF, Ricci JA, Chee E, Hahn SR, Morganstein D. Cost of lost productive work time among US workers with depression. JAMA 2003;289:3135-44.
<b>Reference</b>	National Institute of Mental Health. Prevalence of major depressive episode among adolescents. 2014. <a href="https://www.nimh.nih.gov/health/statistics/prevalence/major-depression-among-adolescents.shtml">https://www.nimh.nih.gov/health/statistics/prevalence/major-depression-among-adolescents.shtml</a>
<b>Reference</b>	Shain B. Suicide and suicide attempts in adolescents. Pediatrics 2016;138(1):e1-11. <a href="http://pediatrics.aappublications.org/content/138/1/e20161420">http://pediatrics.aappublications.org/content/138/1/e20161420</a>
<b>Reference</b>	Lewinsohn PM, Rohde P, Klein DN, Seeley JR. Natural course of adolescent major depressive disorder: I. Continuity into young adulthood. J Am Acad Child Adolesc Psychiatry 1999;38(1):56-63.
<b>Reference</b>	Giedd JN, Keshavan M, Paus T. Why do many psychiatric disorders emerge during adolescence? Nat Rev Neurosci 2008;9(12):947-

	57. <a href="http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2762785/">http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2762785/</a>
Reference	Ramin M, Olsson M, Han B. National trends in the prevalence and treatment of depression in adolescents and young adults. <i>Pediatrics</i> 2016;138(6):e20161878. <a href="http://pediatrics.aappublications.org/content/early/2016/11/10/peds.2016-1878">http://pediatrics.aappublications.org/content/early/2016/11/10/peds.2016-1878</a>
Reference	Minnesota Community Measurement. New measures evaluate rates of obesity counseling for kids, depression screening for teens. Oct 2015. <a href="http://www.mncom.org/new-measures-evaluate-rates-of-obesity-counseling-for-kids-depression-screening-for-teens/">http://www.mncom.org/new-measures-evaluate-rates-of-obesity-counseling-for-kids-depression-screening-for-teens/</a>
Definition	Completed PHQ-9 or PHQ-9M - The patient must answer ALL nine questions for the score to be valid
Guidance	If a patient has a qualifying diagnosis and encounter in more than one of the 4 month periods within the measurement year, the patient must be counted (denominator and numerator) in each qualifying 4 month period. For example, a patient could be counted in the first and third 4 month periods.
Transmission Format	TBD
Initial Population	Adolescent patients 12 to 17 years of age and adult patients 18 years of age and older with an office visit and the diagnosis of major depression or dysthymia during the four month period
Denominator	Equals Initial Population
Denominator Exclusions	1: Patients who died 2: Patients who received hospice or palliative care services 3: Patients who were permanent nursing home residents 4: Patients with a diagnosis of bipolar disorder 5: Patients with a diagnosis of personality disorder 6: Patients with a diagnosis of schizophrenia or psychotic disorder 7: Patients with a diagnosis of pervasive developmental disorder
Numerator	Adolescent patients 12 to 17 years of age and adult patients 18 years of age and older who have a PHQ-9 or PHQ-9M tool administered at least once during the four-month period
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

### Population Criteria 1

#### Initial Population

exists ( "Depression Encounter in September through December" )

#### Denominator

"Initial Population 1"

#### Denominator Exclusions

exists ( "Palliative Care Order Before End of December" )  
or exists ( "Encounter Palliative Care Overlaps September through December" )  
or exists ( "Long Term Care Overlaps September through December" )  
or exists ( "Expired in September through December" )  
or exists ( "Disorder Diagnoses Overlaps Depression Encounter in September through December" )

#### Numerator

exists ( ["Assessment, Performed": "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"] DepressionAssessment  
where DepressionAssessment.result is not null  
and DepressionAssessment.authorDatetime in "September through December of Measurement Period"  
)

#### Numerator Exclusions

None

#### Denominator Exceptions

None

#### Stratification 1

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in September through December" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
and Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)< 18

#### Stratification 2

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in September through December" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 18

### Population Criteria 2

#### Initial Population

exists ( "Depression Encounter in May through August" )

#### Denominator

"Initial Population 2"

#### Denominator Exclusions

exists ( "Palliative Care Order Before End of August" )  
or exists ( "Encounter Palliative Care Overlaps May through August" )  
or exists ( "Long Term Care Overlaps May through August" )  
or exists ( "Expired in May through August" )  
or exists ( "Disorder Diagnoses Overlaps Depression Encounter in May through August" )

#### Numerator

exists ( ["Assessment, Performed": "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"] DepressionAssessment  
where DepressionAssessment.result is not null  
and DepressionAssessment.authorDatetime in "May through August of Measurement Period"  
)

**▲ Numerator Exclusions**

None

**▲ Denominator Exceptions**

None

**▲ Stratification 1**

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in May through August" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
and Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)< 18

**▲ Stratification 2**

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in May through August" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 18

**▲ Population Criteria 3****▲ Initial Population**

exists ( "Depression Encounter in January through April" )

**▲ Denominator**

"Initial Population 3"

**▲ Denominator Exclusions**

exists ( "Palliative Care Order Before End of April" )  
or exists ( "Encounter Palliative Care Overlaps January through April" )  
or exists ( "Long Term Care Overlaps January through April" )  
or exists ( "Expired in January through April" )  
or exists ( "Disorder Diagnoses Overlaps Depression Encounter in January through April" )

**▲ Numerator**

exists ( ["Assessment, Performed": "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"] DepressionAssessment  
where DepressionAssessment.result is not null  
and DepressionAssessment.authorDatetime in "January through April of Measurement Period"  
)

**▲ Numerator Exclusions**

None

**▲ Denominator Exceptions**

None

**▲ Stratification 1**

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in January through April" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
and Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)< 18

**▲ Stratification 2**

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in January through April" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 18

**Definitions****▲ Denominator 1**

"Initial Population 1"

**▲ Denominator 2**

"Initial Population 2"

**▲ Denominator 3**

"Initial Population 3"

**▲ Denominator Exclusion 1**

exists ( "Palliative Care Order Before End of December" )  
or exists ( "Encounter Palliative Care Overlaps September through December" )  
or exists ( "Long Term Care Overlaps September through December" )  
or exists ( "Expired in September through December" )  
or exists ( "Disorder Diagnoses Overlaps Depression Encounter in September through December" )

**▲ Denominator Exclusion 2**

exists ( "Palliative Care Order Before End of August" )  
or exists ( "Encounter Palliative Care Overlaps May through August" )  
or exists ( "Long Term Care Overlaps May through August" )  
or exists ( "Expired in May through August" )  
or exists ( "Disorder Diagnoses Overlaps Depression Encounter in May through August" )

**▲ Denominator Exclusion 3**

exists ( "Palliative Care Order Before End of April" )  
or exists ( "Encounter Palliative Care Overlaps January through April" )  
or exists ( "Long Term Care Overlaps January through April" )  
or exists ( "Expired in January through April" )  
or exists ( "Disorder Diagnoses Overlaps Depression Encounter in January through April" )

**▲ Depression Diagnoses**

["Diagnosis": "Major Depression Including Remission"]  
union ["Diagnosis": "Dysthymia"]

**▲ Depression Encounter in January through April**

["Encounter, Performed": "Contact or Office Visit"] DepressionEncounter  
with "Depression Diagnoses" Depression  
such that DepressionEncounter.relevantPeriod overlaps Depression.prevalencePeriod  
with ["Patient Characteristic Birthdate"] BirthDate  
such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12

where DepressionEncounter.relevantPeriod ends during "Measurement Period"  
and end of DepressionEncounter.relevantPeriod in "January through April of Measurement Period"

#### ▲ Depression Encounter in May through August

["Encounter, Performed": "Contact or Office Visit"] DepressionEncounter  
with "Depression Diagnoses" Depression  
such that DepressionEncounter.relevantPeriod overlaps Depression.prevalencePeriod  
with ["Patient Characteristic Birthdate"] BirthDate  
such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
where DepressionEncounter.relevantPeriod ends during "Measurement Period"  
and end of DepressionEncounter.relevantPeriod in "May through August of Measurement Period"

#### ▲ Depression Encounter in September through December

["Encounter, Performed": "Contact or Office Visit"] DepressionEncounter  
with "Depression Diagnoses" Depression  
such that DepressionEncounter.relevantPeriod overlaps Depression.prevalencePeriod  
with ["Patient Characteristic Birthdate"] BirthDate  
such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
where DepressionEncounter.relevantPeriod ends during "Measurement Period"  
and end of DepressionEncounter.relevantPeriod in "September through December of Measurement Period"

#### ▲ Disorder Diagnoses Overlaps Depression Encounter in January through April

( ["Diagnosis": "Bipolar Disorder"]  
union ["Diagnosis": "Personality Disorder"]  
union ["Diagnosis": "Schizophrenia or Psychotic Disorder"]  
union ["Diagnosis": "Pervasive Developmental Disorder"] ) DisorderDiagnoses  
with "Depression Encounter in January through April" DepressionEncounter  
such that DisorderDiagnoses.prevalencePeriod overlaps DepressionEncounter.relevantPeriod

#### ▲ Disorder Diagnoses Overlaps Depression Encounter in May through August

( ["Diagnosis": "Bipolar Disorder"]  
union ["Diagnosis": "Personality Disorder"]  
union ["Diagnosis": "Schizophrenia or Psychotic Disorder"]  
union ["Diagnosis": "Pervasive Developmental Disorder"] ) DisorderDiagnoses  
with "Depression Encounter in May through August" DepressionEncounter  
such that DisorderDiagnoses.prevalencePeriod overlaps DepressionEncounter.relevantPeriod

#### ▲ Disorder Diagnoses Overlaps Depression Encounter in September through December

( ["Diagnosis": "Bipolar Disorder"]  
union ["Diagnosis": "Personality Disorder"]  
union ["Diagnosis": "Schizophrenia or Psychotic Disorder"]  
union ["Diagnosis": "Pervasive Developmental Disorder"] ) DisorderDiagnoses  
with "Depression Encounter in September through December" DepressionEncounter  
such that DisorderDiagnoses.prevalencePeriod overlaps DepressionEncounter.relevantPeriod

#### ▲ Encounter Palliative Care Overlaps January through April

["Encounter, Performed": "Palliative care encounter"] PalliativeCareEncounter  
where PalliativeCareEncounter.relevantPeriod overlaps "January through April of Measurement Period"

#### ▲ Encounter Palliative Care Overlaps May through August

["Encounter, Performed": "Palliative care encounter"] PalliativeCareEncounter  
where PalliativeCareEncounter.relevantPeriod overlaps "May through August of Measurement Period"

#### ▲ Encounter Palliative Care Overlaps September through December

["Encounter, Performed": "Palliative care encounter"] PalliativeCareEncounter  
where PalliativeCareEncounter.relevantPeriod overlaps "September through December of Measurement Period"

#### ▲ Expired in January through April

["Patient Characteristic Expired"] Deceased  
where Deceased.expiredDatetime in "January through April of Measurement Period"

#### ▲ Expired in May through August

["Patient Characteristic Expired"] Deceased  
where Deceased.expiredDatetime in "May through August of Measurement Period"

#### ▲ Expired in September through December

["Patient Characteristic Expired"] Deceased  
where Deceased.expiredDatetime in "September through December of Measurement Period"

#### ▲ Initial Population 1

exists ( "Depression Encounter in September through December" )

#### ▲ Initial Population 2

exists ( "Depression Encounter in May through August" )

#### ▲ Initial Population 3

exists ( "Depression Encounter in January through April" )

#### ▲ January through April of Measurement Period

Interval[start of "Measurement Period", start of "Measurement Period" + 4 months )

#### ▲ Long Term Care Overlaps January through April

["Encounter, Performed": "Care Services in Long-Term Residential Facility"] EncounterLongTermCare  
where EncounterLongTermCare.relevantPeriod overlaps "January through April of Measurement Period"

#### ▲ Long Term Care Overlaps May through August

["Encounter, Performed": "Care Services in Long-Term Residential Facility"] EncounterLongTermCare  
where EncounterLongTermCare.relevantPeriod overlaps "May through August of Measurement Period"

#### ▲ Long Term Care Overlaps September through December

["Encounter, Performed": "Care Services in Long-Term Residential Facility"] EncounterLongTermCare  
where EncounterLongTermCare.relevantPeriod overlaps "September through December of Measurement Period"

#### ▲ May through August of Measurement Period

Interval[start of "Measurement Period" + 4 months, start of "Measurement Period" + 8 months )

#### ▲ Numerator 1

exists ( ["Assessment, Performed": "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"] DepressionAssessment  
where DepressionAssessment.result is not null

and DepressionAssessment.authorDatetime in "September through December of Measurement Period"

)

#### ▲ Numerator 2

exists ( ["Assessment, Performed": "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"] DepressionAssessment  
where DepressionAssessment.result is not null  
and DepressionAssessment.authorDatetime in "May through August of Measurement Period"

)

#### ▲ Numerator 3

exists ( ["Assessment, Performed": "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]"] DepressionAssessment  
where DepressionAssessment.result is not null  
and DepressionAssessment.authorDatetime in "January through April of Measurement Period"

)

#### ▲ Palliative Care Order Before End of April

["Intervention, Order": "Palliative Care"] OrderedPalliativeCare  
where OrderedPalliativeCare.authorDatetime before end of "January through April of Measurement Period"

#### ▲ Palliative Care Order Before End of August

["Intervention, Order": "Palliative Care"] OrderedPalliativeCare  
where OrderedPalliativeCare.authorDatetime before end of "May through August of Measurement Period"

#### ▲ Palliative Care Order Before End of December

["Intervention, Order": "Palliative Care"] OrderedPalliativeCare  
where OrderedPalliativeCare.authorDatetime before end of "September through December of Measurement Period"

#### ▲ 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"]

#### ▲ September through December of Measurement Period

Interval[start of "Measurement Period" + 8 months, end of "Measurement Period"]

#### ▲ Stratification 1\_1

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in September through December" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
and Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)< 18

#### ▲ Stratification 1\_2

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in September through December" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 18

#### ▲ Stratification 2\_1

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in May through August" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
and Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)< 18

#### ▲ Stratification 2\_2

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in May through August" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 18

#### ▲ Stratification 3\_1

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in January through April" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 12  
and Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)< 18

#### ▲ Stratification 3\_2

["Patient Characteristic Birthdate"] Birthdate  
with "Depression Encounter in January through April" DepressionEncounter  
such that Global."CalendarAgeInYearsAt"(Birthdate.birthDatetime, start of DepressionEncounter.relevantPeriod)>= 18

## 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, timezone from Value)

## Terminology

- codesystem "LOINC" using "2.16.840.1.113883.6.1 version 2.63"
- code "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]" using "LOINC version 2.63 Code (44261-6)"
- valueset "Bipolar Disorder" using "2.16.840.1.113883.3.67.1.101.1.128"
- valueset "Care Services in Long-Term Residential Facility" using "2.16.840.1.113883.3.464.1003.101.12.1014"
- valueset "Contact or Office Visit" using "2.16.840.1.113762.1.4.1080.5"
- valueset "Dysthymia" using "2.16.840.1.113883.3.67.1.101.1.254"
- valueset "Ethnicity" using "2.16.840.1.114222.4.11.837"
- valueset "Major Depression Including Remission" using "2.16.840.113883.3.67.1.101.3.2444"
- valueset "ONC Administrative Sex" using "2.16.840.1.113762.1.4.1"
- valueset "Palliative care encounter" using "2.16.840.1.113883.3.600.1.1575"
- valueset "Palliative Care" using "2.16.840.1.113883.3.600.1.1579"
- valueset "Payer" using "2.16.840.1.114222.4.11.3591"
- valueset "Personality Disorder" using "2.16.840.1.113883.3.67.1.101.1.246"
- valueset "Pervasive Developmental Disorder" using "2.16.840.1.113883.3.464.1003.105.12.1152"

- valueset "Race" using "2.16.840.1.114222.4.11.836"
- valueset "Schizophrenia or Psychotic Disorder" using "2.16.840.1.113883.3.464.1003.105.12.1104"

**Data Criteria (QDM Data Elements)**

- "Diagnosis: Bipolar Disorder" using "Bipolar Disorder (2.16.840.1.113883.3.67.1.101.1.128)"
- "Diagnosis: Dysthymia" using "Dysthymia (2.16.840.1.113883.3.67.1.101.1.254)"
- "Diagnosis: Major Depression Including Remission" using "Major Depression Including Remission (2.16.840.113883.3.67.1.101.3.2444)"
- "Diagnosis: Personality Disorder" using "Personality Disorder (2.16.840.1.113883.3.67.1.101.1.246)"
- "Diagnosis: Pervasive Developmental Disorder" using "Pervasive Developmental Disorder (2.16.840.1.113883.3.464.1003.105.12.1152)"
- "Diagnosis: Schizophrenia or Psychotic Disorder" using "Schizophrenia or Psychotic Disorder (2.16.840.1.113883.3.464.1003.105.12.1104)"
- "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: Contact or Office Visit" using "Contact or Office Visit (2.16.840.1.113762.1.4.1080.5)"
- "Encounter, Performed: Palliative care encounter" using "Palliative care encounter (2.16.840.1.113883.3.600.1.1575)"
- "Intervention, Order: Palliative Care" using "Palliative Care (2.16.840.1.113883.3.600.1.1579)"
- "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)"
- "Assessment, Performed: Patient Health Questionnaire 9 item (PHQ-9) total score [Reported]" using "Patient Health Questionnaire 9 item (PHQ-9) total score [Reported] (LOINC version 2.63 Code 44261-6)"

**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
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