Adolescent Depression Remission/Response

Section 1. Basic Measure Information

1.A. Measure Name

Adolescent Depression Remission/Response (Provider)

1.B. Measure Number

0247

1.C. Measure Description

Please provide a non-technical description of the measure that conveys what it measures to a broad audience.

The Adolescent Depression Remission/Response measure assesses the percentage of patients12 to 17 years of age with a diagnosis of major depression or dysthymia and an initial PHQ-9 or PHQ-9 Modified for Teens score greater than 9 who achieved remission or response within 4 to 8 months.

1.D. Measure Owner

The measure owner is the National Committee for Quality Assurance (NCQA). The measure was developed through the National Collaborative for Innovation in Quality Measurement (NCINQ). The measure was adapted from the Depression Remission at Six Months and Depression Response at Six Months – Progress Towards Remission measures developed by Minnesota Community Measurement (MNCM) with financial support from the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Medicare & Medicaid Services (CMS).

1.E. National Quality Forum (NQF) ID (if applicable)

This measure was adapted from NQF #0711 and #1884, with permission from MNCM.

1.F. Measure Hierarchy

Please note here if the measure is part of a measure hierarchy or is part of a measure group or composite measure. The following definitions are used by AHRQ:

1. **Please identify the name of the collection of measures to which the measure belongs (if applicable). A collection is the highest possible level of the measure hierarchy. A collection may contain one or more sets, subsets, composites, and/or individual measures.**

   Not applicable.

2. **Please identify the name of the measure set to which the measure belongs (if applicable). A set is the second level of the hierarchy. A set may include one or more subsets, composites, and/or individual measures.**

   Adolescent depression management.

3. **Please identify the name of the subset to which the measure belongs (if applicable). A subset is the third level of the hierarchy. A subset may include one or more composites, and/or individual measures.**

   Not applicable.

4. **Please identify the name of the composite measure to which the measure belongs (if applicable). A composite is a measure with a score that is an aggregate of scores from other measures. A composite may include one or more other composites and/or individual measures. Composites may comprise component measures that can or cannot be used on their own.**

   Not applicable.

1.G. Numerator Statement

Numerator 1 includes patients who achieved remission (defined as a PHQ-9 score less than 5) within 4 to 8 months after the initial elevated PHQ-9 score. Numerator 2 includes patients who achieved response (defined as a decrease in PHQ-9 score of 50 percent or more) within 4 to 8 months after the initial elevated PHQ-9 score.

1.H. Numerator Exclusions

Not applicable.

1.I. Denominator Statement

Patients 12 to 17 years of age with a diagnosis of major depression or dysthymia and an initial PHQ-9 score greater than 9 during the intake period (April 1 of the year prior to the measurement period through March 31 of the measurement period).

1.J. Denominator Exclusions

The denominator excludes patients with any of the following at any time from the start of the intake period through the end of the measurement period:

- Bipolar disorder.
- Personality disorder.
- Psychotic disorder.
- Autism spectrum disorder.

1.K. Data Sources

Check all the data sources for which the measure is specified and tested.

Electronic health records (EHRs).

If other, please list all other data sources in the field below.

Not applicable.

Section 2: Detailed Measure Specifications

Provide sufficient detail to describe how a measure would be calculated from the recommended data sources, uploading a separate document (+ Upload attachment) or a link to a URL. Examples of detailed measure specifications can be found in the CHIPRA Initial Core Set Technical Specifications Manual 2011 published by the Centers for Medicare & Medicaid Services. Although submission of formal programming code or algorithms that demonstrate how a measure would be calculated from a query of an appropriate electronic data source are not requested at this time, the availability of these resources may be a factor in determining whether a measure can be recommended for use.

Technical specifications are available; see Supporting Documents.

Section 3. Importance of the Measure

In the following sections, provide brief descriptions of how the measure meets one or more of the following criteria for measure importance (general importance, importance to Medicaid and/or CHIP, complements or enhances an existing measure). Include references related to specific points made in your narrative (not a free-form listing of citations).

3.A. Evidence for General Importance of the Measure

Provide evidence for all applicable aspects of general importance:

- **Addresses a known or suspected quality gap and/or disparity in quality (e.g., addresses a socioeconomic disparity, a racial/ethnic disparity, a disparity for Children with Special Health Care Needs (CSHCN), a disparity for limited English proficient (LEP) populations).**
- **Potential for quality improvement (i.e., there are effective approaches to reducing the quality gap or disparity in quality).**
- **Prevalence of condition among children under age 21 and/or among pregnant women.**
- **Severity of condition and burden of condition on children, family, and society (unrelated to cost).**

- **Fiscal burden of measure focus (e.g., clinical condition) on patients, families, public and private payers, or society more generally, currently and over the life span of the child.**
- **Association of measure topic with children's future health – for example, a measure addressing childhood obesity may have implications for the subsequent development of cardiovascular diseases.**
- **The extent to which the measure is applicable to changes across developmental stages (e.g., infancy, early childhood, middle childhood, adolescence, young adulthood).**

The purpose of this measure is to improve monitoring of symptoms and treatment progress for adolescents with Major Depressive Disorder or Dysthymia. Major depressive disorder (MDD) is a disabling condition that is associated with many long-term complications and may lead to suicide (Williams, O'Connor, Eder, et al., 2009). Dysthymia is a mild but long-term (chronic) form of depression, and it often responds to the same treatments given for major depression.

Data from the 2010-2011 National Survey on Drug Use and Health and the National Health and Nutrition Examination Survey indicate that the prevalence of depression among adolescents aged 12 to 17 years was 12.8 percent over the lifetime and 8.1 percent over the past year (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014).

Adolescent-onset depression increases the risk of attempted suicide five-fold in comparison to non-depressed adolescents (Williams, et al., 2009). Most adolescents who committed suicide, which is the third leading cause of death among those ages 15 to 24 years, had a previous history of depression (U.S. Preventive Services Task Force [USPSTF], 2009; Williams, et al., 2009). Depressive symptoms can be both prolonged and episodic, recurring over weeks and months (National Research Council [NRC], Institute of Medicine [IOM], 2009). The Centers for Disease Control and Prevention (CDC) noted that if an individual experiences just one episode of depression, he or she is at a 50 percent higher risk of experiencing further episodes (CDC, 2011). If such symptoms and/or episodes persist in a manner that significantly impacts day-to-day life, a single episode of depression can develop into MDD (NRC, IOM, 2009).

Prevalence

Depressive disorders are common mental disorders that occur in people of all ages. MDD is the second leading cause of disability worldwide, affecting an estimated 120 million people (Murray Lopez, 2013). The lifelong prevalence is estimated to range from 10-15 percent (Lépine, Briley, 2011). In the United States, 15.7 percent of people report that at some point in their lifetime they were told by a healthcare professional that they had depression (CDC, 2009).

Youth and adolescents. A nationally representative survey by SAMHSA found that 11.4 percent of adolescents (12-17 years) had at least one major depressive episode in 2014, and 8.2 percent had an episode with severe impairment (SAMHSA, 2015). The same survey found that only 41.2 percent of those who had a major depressive episode received treatment in the past year. The prevalence of depression among adolescents and young adults in the United States

increased between 2005 and 2014, with little change observed in mental health treatments, ultimately leading to a growing number of youths with untreated or undertreated depression (Mojtabai, Olfson, Han, 2016).

Lifetime prevalence of depression and dysthymia increases from 8.4 percent, for ages 13-14, to 15 percent for ages 17-18 (Merikangas, He, Burstein, 2010). Female adolescents are more likely to be diagnosed with depression than males (NRC, IOM, 2009). One study found that female adolescents are also more likely than males to experience recurrence of depression (57.6 percent vs. 32.9 percent, respectively) (Curry, Silva, Rohde, et al., 2011). Depression during adolescence has a strong correlation to chronic and recurring depression in adulthood (Garber, Clarke, Weersing, et al., 2009).

Health Importance

Depression—an overwhelming feeling of sadness and hopelessness that can last for months or years—can make people feel that life is no longer worth living. People affected by depression lose interest in activities they used to enjoy and can also be affected by physical symptoms that interfere with their ability to participate in normal daily activities. For adolescents, depression can also have a major impact, disrupting daily life at home, at school, or in the community.

Depression can complicate and exacerbate other chronic medical conditions and lead to increased morbidity and mortality. The mortality risk for suicide in depressed patients is more than 20-fold as great as in the general population (Bostwick, Pankratz, 2000). In terms of other chronic conditions, depression is associated with a 60 percent increased risk of type 2 diabetes (Mezuk, Eaton, Albrecht, et al., 2008), and has been identified as a risk factor for development of cardiovascular disease (Van der Kooy, van Hout, Marwijk, et al., 2007). In addition, depression adversely affects the course, complications, and management of other chronic medical illnesses (Katon, 2011). In adolescents, depression can also result in serious long-term morbidities, such as generalized anxiety disorder and panic disorder, or lead to engagement in risky behaviors such as substance use (Foley, Carlton, Howell, 1996; Friedman, Katz-Levey, Manderscheid, et al., 1996; NRC-IOM, 2009; Taylor, Chadwick, Heptinstall, et al., 1996). Adolescent-onset depression increases the risk of attempted suicide five-fold in comparison with non-depressed adolescents (Garber, 2009). Most adolescents who commit suicide—the third leading cause of death among 15-24-year-olds—have a history of depression (NRC, IOM, 2009; Williams et al., 2009).

Depression has long been recognized as a major contributor to disease burden (Murray, Lopez, 1997; Üstün, Ayuso-Mateos, Chatterji, et al., 2004). The Global Burden of Disease study of 2010 identified depression as a leading cause of disease burden in the world. Depressive disorders were the second largest contributor to years lived with disability, an indicator of the impact of disease burden (Ferrari, Charlson, Norman, et al., 2013). This accounts for an estimated 10 percent of years lived with disability worldwide, which is three times the impact of diabetes, eight times the impact of heart disease, and 40 times the impact of cancer (Murray, Vos, Lozano, et al., 2013). These findings underscore the need for attention to depressive disorders and the implementation of effective interventions to reduce their disease burden.

Financial Importance and Cost-Effectiveness

Depression has a large effect on healthcare costs and on productivity. Adolescents with MDD have higher medical expenditures, including those related to general and mental healthcare, than children without an MDD diagnosis (USPSTF, 2009).

Even minor levels of depression symptoms are associated with decreases in work function (Beck, Crain, Solberg, et al., 2011). In a survey study, Birnbaum and colleagues found that MDD severity is significantly associated with increased treatment usage and costs, unemployment, disability, and reduced work performance. When the results of the study were projected to the U.S. workforce, it was estimated that monthly depression-related worker productivity losses had human capital costs of nearly $2 billion (Birnbaum, Kessler, Kelley, et al., 2010).

The Patient Protection and Affordable Care Act (ACA) includes a provision that essential health benefits, which cover behavioral health treatment and prevention among others, are required to be provided without any cost-sharing by the patients. Specifically, prevention services that "are recommended with a grade of A or B by the United States Preventive Services Task Force for any indication or population, the amount paid shall be 100 percent of the lesser of the actual charge for the services or the amount determined under the fee schedule that applies to such services under this part'' (U.S. Congress, 2010). This enables individuals to access the essential healthcare services they need without increased cost to themselves.

Gaps in Care

In a recent study comparing the effects of a collaborative care model (intervention) versus usual care (control) among adolescents with depression in primary care settings, results indicated that the intervention group showed higher rates of response and remission compared to those in the control group. The collaborative care model included monitoring of symptoms and adjusting care based on PHQ-9 results; usual care was considered depression screening only, and adolescents sought care on their own. The overall rate of depression remission at 12 months was 50.4 percent for the intervention group compared with 20.7 percent for the control group. Overall, 86 percent of patients in the intervention group received either psychotherapy or medications that met study quality standards, compared with 27 percent of the control group. Intervention adolescents were significantly more likely than control adolescents to receive four or more psychotherapy sessions in the first 6 months of the study (Williams, et al., 2009).

In a survey asking primary care pediatricians about their roles and perceived responsibilities for depression care, pediatricians cited several factors as impeding their ability to diagnose mental health problems, including lack of time during the visit to provide mental health counseling or collect a patient history and lack of knowledge in the causes, signs, symptoms, and management of pediatric mental illness (SAMHSA, 2014; Williams, et al., 2009). Patient, parent, and caregiver knowledge and cooperation due to stigma or comfort can also contribute to the lack of early detection in primary care. Adolescent patients might have issues with discussing the topic in-person, with research noting that adolescents prefer a non-human interface to reveal personal information (USPSTF, 2009).

A survey of pediatricians found that only 25 percent believe it is their responsibility to treat depression in adolescents. Those surveyed also had concerns about treatment options, with 86 percent of those surveyed expressing concern with prescribing medications and 90 percent expressing concern with counseling (Williams, et al., 2009). Some estimates suggest that only 25 percent of adolescents diagnosed with depression receive treatment; among those who go undetected, 20 percent develop recurrent or chronic depression (Foley, et al., 1996; Taylor, et al., 1996).

Health Disparities

Studies suggest gender disparities exist. Female adolescents are more likely to be diagnosed with depression than males (Friedman, et al., 1996; NRC, IOM, 2009). One study also found that female adolescents are also more likely to experience recurrence than males (57.6 versus 32.9 percent, respectively) (NRC, IOM, 2009).

Disparities in care also exist for minority racial/ethnic groups. Algeria and colleagues discovered that among people with a diagnosed depressive disorder, 63.7 percent of Latinos and 58.8 percent of African Americans did not access any mental health treatment in the preceding year, compared with 40.2 percent of non-Latino whites (Algeria, Chatterji, Wells, et al., 2008). Hispanic and uninsured children have especially high rates of unmet need for mental health services, relative to other children (Kataoka, Zhang, Wells, 2002). Additionally, minority adolescents may present depressive symptoms differently than non-Latino whites, which can be challenging for providers who are trained to only recognize certain symptoms when screening for depression (Algeria, et al., 2008).

Minority children and adolescents are 50 to 60 percent less likely than their white counterparts to receive mental health services, despite a similar overall prevalence of disease. Hispanic youth are the least likely to receive treatment, and a smaller, similar disparity has been found for Asian/Pacific Islander and African American youth. Moreover, of those who do receive care, these minority groups are less likely to complete services and are more likely to receive treatment that is inappropriate, fragmented, or inadequate (Child Mind Institute, 2011).

3.B. Evidence for Importance of the Measure to Medicaid and/or CHIP

Comment on any specific features of this measure important to Medicaid and/or CHIP that are in addition to the evidence of importance described above, including the following:

- **The extent to which the measure is understood to be sensitive to changes in Medicaid or CHIP (e.g., policy changes, quality improvement strategies).**
- **Relevance to the Early and Periodic Screening, Diagnostic and Treatment benefit in Medicaid (EPSDT).**
- **Any other specific relevance to Medicaid/CHIP (please specify).**

This measure addresses patient-reported outcomes for adolescents identified with depression, which is relevant to receiving treatment for depression, covered under the EPSDT benefit.

3.C. Relationship to Other Measures (if any)

Describe, if known, how this measure complements or improves on an existing measure in this topic area for the child or adult population, or if it is intended to fill a specific gap in an existing measure category or topic. For example, the proposed measure may enhance an existing measure in the initial core set, it may lower the age range for an existing adult-focused measure, or it may fill a gap in measurement (e.g., for asthma care quality, inpatient care measures).

The Adolescent Depression Remission/Response measure was adapted from and complements the MNCM adult depression remission and depression response measures, which have been endorsed by the National Quality Forum (NQF): measures #0711, #0710, #1884, and #1885. These outcome measures assess remission and response (progress towards remission) at 6-month and 12-month time points after an initial PHQ-9 score of >9.

Section 4. Measure Categories

CHIPRA legislation requires that measures in the initial and improved core set, taken together, cover all settings, services, and topics of health care relevant to children. Moreover, the legislation requires the core set to address the needs of children across all ages, including services to promote healthy birth. Regardless of the eventual use of the measure, we are interested in knowing all settings, services, measure topics, and populations that this measure addresses. These categories are not exclusive of one another, so please indicate "Yes" to all that apply.

Does the measure address this category?

a. **Care Setting – ambulatory:** Yes.
b. **Care Setting – inpatient:** No.
c. **Care Setting – other – please specify:** Not applicable.
d. **Service – preventive health, including services to promote healthy birth:** No.
e. **Service – care for acute conditions:** No.
f. **Service – care for children with special health care needs/chronic conditions:** No.
g. **Service – other (please specify):** Not applicable.
h. **Measure Topic – duration of enrollment:** No.
i. **Measure Topic – clinical quality:** Yes.
j. **Measure Topic – patient safety:** No.
k. **Measure Topic – family experience with care:** No.
l. **Measure Topic – care in the most integrated setting:** No.
m. **Measure Topic other (please specify):** Not applicable.
n. **Population – pregnant women:** No.
o. **Population – neonates (28 days after birth) (specify age range):** No.
p. **Population – infants (29 days to 1 year) (specify age range):** No.
q. **Population – pre-school age children (1 year through 5 years) (specify age range):** No.

r. **Population – school-aged children (6 years through 10 years) (specify age range):** No.
s. **Population – adolescents (11 years through 20 years) (specify age range):** Yes; age 12-17 years.
t. **Population – other (specify age range):** Not applicable.
u. **Other category (please specify):** Not applicable.

Section 5. Evidence or Other Justification for the Focus of the Measure

The evidence base for the focus of the measures will be made explicit and transparent as part of the public release of CHIPRA deliberations; thus, it is critical for submitters to specify the scientific evidence or other basis for the focus of the measure in the following sections.

5.A. Research Evidence

Research evidence should include a brief description of the evidence base for valid relationship(s) among the structure, process, and/or outcome of health care that is the focus of the measure. For example, evidence exists for the relationship between immunizing a child or adolescent (process of care) and improved outcomes for the child and the public. If sufficient evidence existed for the use of immunization registries in practice or at the State level and the provision of immunizations to children and adolescents, such evidence would support the focus of a measure on immunization registries (a structural measure).

Describe the nature of the evidence, including study design, and provide relevant citations for Statements made. Evidence may include rigorous systematic reviews of research literature and high-quality research studies.

The use of standardized tools is essential for tracking depressive symptoms and monitoring patient response to treatment. Standardized instruments are useful in identifying meaningful change in clinical outcomes over time. Guidelines recommend that providers establish and maintain regular follow-up with patients diagnosed with depression and use a standardized tool to track symptoms (Mitchell, Trangle, Degnan, et al., 2013).

Meta-analyses of studies in adults indicate that formally monitoring patient progress improves patient outcomes (Knaup, Koesters, Schoefer, et al., 2009; Lambert, Whipple, Hawkins, et al., 2003; Shimokawa, Lambert, Smart, 2010). For adolescents, the Guideline for Adolescent Depression in Primary Care (GLAD-PC) recommends systematic and regular tracking of treatment goals and outcomes, including assessing depressive symptoms and function, monitoring for adverse events during antidepressant treatment, and reassessing diagnosis and treatment if no improvement is noted after 6-8 weeks. One study found that youths with a range of symptoms improve more quickly when clinicians receive feedback from assessments every other week instead of every 3 months (Bickman, Kelley, Breda, et al., 2011).

Adolescents with depression should be monitored until symptom remission is achieved and sustained. The American Academy of Child and Adolescent Psychiatry (AACAP) specifies remission as the explicit goal of treatment, as do all adult depression guidelines (Birmaher, Brent, AACAP Workgroup on Quality Issues, 2007). Many depressed adolescents in medication trials do not reach symptom remission (Emslie, Heiligenstein, Wagner, et al., 2002; Emslie, Rush, Weinberg, et al., 1997; Nierenberg, Wright, 1999; Wagner, Berard, Stein, et al., 2004). In studies of the effects of cognitive behavioral therapy among adolescents, remission rates of 48 to 87 percent have been reported (Brent, Holder, Kolko, et al., 1997; Clarke, Rohde, Lewinsohn, et al., 1999; Compton, March, Brent, et al., 2004; Clarke, Hornbrook, Lynch, et al., 2002; Lewinsohn, Clarke, Hops, et al., 1990; Vostanis Feehan, Grattan, et al., 1996; Wood, Harrington, Moore, 1996). While there is limited evidence on the impact of non-remission in adolescents, adults studies show that patients who do not reach remission are more likely have recurrent or chronic depression, suicidal ideation or behavior, and continuing impairment in work, relationships, and overall quality of life (Claxton, Li, McKendrick, 2000; Cornwall, Scott, 1997; Judd, Paulus, Schettler, et al., 2000, Keller, 2003; Paykel, 1998; Paykel, Ramana, Cooper, et al., 1995; Melfi, Chawla, Croghan, et al., 1998; Pintor, Torres, Navarro, et al., 2004; Sood, Treglia, Obenchain, et al., 2000).

5.B. Clinical or Other Rationale Supporting the Focus of the Measure (optional)

Provide documentation of the clinical or other rationale for the focus of this measure, including citations as appropriate and available.

Measuring and tracking depressive symptoms are important to improve patient outcomes (Knaup, et al., 2009; Lambert, et al., 2003; Shimokawa, et al., 2010). As discussed in the research evidence, the Guideline for Adolescent Depression in Primary Care (GLAD-PC) recommends systematic assessment of symptoms and function, monitoring for adverse events during antidepressant treatment, and reassessing diagnosis and treatment if no improvement is noted after 6-8 weeks. Regular tracking and monitoring of symptoms can help clinicians better understand the effectiveness of current treatment and modify their recommendations according to the prevalence and severity of symptoms.

The proposed measure encompasses adolescents aged 12-17 years for whom clinical guidelines also recommend a stepped-care approach to depression treatment, beginning with the least-intrusive intervention and stepping up to more intensive care if the patient does not respond to or benefit from the first intervention (Mitchell, et al., 2013; National Collaborating Centre for Mental Health, 2009; Trangle, Gursky, Haight, et al., 2013). For mild and moderate depression, psychotherapy alone may be the preferred initial treatment, to be followed by the use of medication if symptoms persist (American Psychiatric Association [APA], 2010). This stepped-care approach includes providing assessment, support, psychoeducation, and monitoring of symptoms as a first step, followed by psychosocial, psychological, and pharmacologic interventions, and then combined treatments for those with inadequate response.

Section 6. Scientific Soundness of the Measure

Explain the methods used to determine the scientific soundness of the measure itself. Include results of all tests of validity and reliability, including description(s) of the study sample(s) and methods used to arrive at the results. Note how characteristics of other data systems, data sources, or eligible populations may affect reliability and validity.

The field testing of this measure included an alpha phase, to assess the feasibility and reliability of collecting key data elements for the adolescent population, and beta testing, focused on documenting performance results for adolescents along with the reliability and validity of the measure specifications at the provider level.

6.A. Reliability

Reliability of the measure is the extent to which the measure results are reproducible when conditions remain the same. The method for establishing the reliability of a measure will depend on the type of measure, data source, and other factors.

Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., the Kappa statistic). Provide appropriate citations to justify methods.

Testing was completed at two integrated delivery systems and one network of community health centers that met the following participation criteria: had established clinical workflows for using the PHQ-9 or PHQ-9 Modified for teens, used searchable coded fields for documenting PHQ results in electronic medical records, and had at least 500 adolescents who had a diagnosis of depression in 2012. The sites were from different geographic regions in the United States and served both urban and rural populations.

Across the three testing sites, 3,361 adolescent patients were included. Patients met the following inclusion criteria: (1) age 12 to 17 years as of June 30, 2013; (2) at least one face-to-face visit during the study intake period (January 1, 2012 through June 30, 2013); and (3) a diagnosis of depression during the study intake period. Adolescents with bipolar, psychotic, autism spectrum, and personality disorders were excluded. No sampling was used: all patients who met the inclusion criteria were included in the testing.

To test reliability of data elements, we obtained manually abstracted data of the electronic record for a sample of 46 charts from two sites. With data from two sites we calculated inter-rater reliability to assess consistency of information obtained on critical data elements used to calculate the measure between manual abstractors. With data from one site, we used parallel-forms reliability testing to evaluate the extent to which performance on the quality measure generated automatically by an EHR system was concordant with the performance calculated through manual review of the medical record performed by trained abstractors. Agreement was measured using the kappa statistic (a measure of agreement adjusted for agreement that can occur by chance).

Comparison of the electronic extract with manual review for the data elements demonstrated high agreement across sites (Kappa of 1.00) for the “Had follow-up PHQ-9” data element. Percent agreement was 98 percent across the two sites for the “Had initial PHQ-9” and “Had score >9” despite the Kappa of 0.0. This occurred in a few places where one source showed all patients with one value, and then the other source showed one patient with a second value so that one discordant pair resulted in a Kappa of 0.0, despite 98 percent agreement. A high level of agreement (92 percent) was also seen for the exclusion diagnosis data element.

Comparing results based on electronic extract to full data from the electronic extract plus manual review, we found that sensitivity was at or near 100 percent for all data elements, showing the electronic extract captures nearly all the information in the manual review. Specificity was 100 percent for all data elements.

Inter-rater reliability was assessed to determine if key measure components could be reliably abstracted by reviewers from an EHR. Inter-rater agreement among abstractors across the two sites was high, with a Kappa of 0.85 or higher for all data elements except for the exclusion data elements. While the overall Kappa for "any exclusion" was 0.38 (interpreted as fair), agreement between abstractors was 92 percent or higher for all exclusion data elements and "any exclusion." The low Kappa statistic is in part due to the low prevalence of exclusions.

6.B. Validity

Validity of the measure is the extent to which the measure meaningfully represents the concept being evaluated. The method for establishing the validity of a measure will depend on the type of measure, data source, and other factors.

Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., R2 for concurrent validity).

Face validity refers to whether the measure plausibly represents the concept being evaluated in the judgment of likely users of the measure. Throughout the measure development process, multi-stakeholder panels provided input on the importance, face validity, and usefulness of the measure for State use in programs such as the Core Set of Children’s Health Care Quality Measures for Medicaid and CHIP, as well as in the context of health plan-level reporting. These panels consisted of representatives from States, health plans, pediatricians, behavioral health clinicians, and consumers. Additionally, we posted the measure for Public Comment, a 30-day period of review that allowed interested parties to offer feedback about the measure. NCQA panels considered all comments and advised NCQA staff on appropriate recommendations. This process ensures measures are reasonable and important to those using them. Our advisory panels concluded this measure is a valid way to assess patient-reported outcomes for adolescents with depression.

Results

Step 1: This measure was adapted for the adolescent population from the existing MNCM measure. NCQA and numerous expert panels worked together in 2013 and 2014 to identify the most appropriate method for assessing depression outcome among the adolescent patient

population. Across the multiple expert panels that reviewed the measure, all panels concluded this measure was specified appropriately for adolescents.
Step 2: The measure was field-tested for the adolescent population in 2013 and 2014. It was first posted for a public comment period in October 2014. After reviewing these initial public comment results along with field test results, the health-plan level version of the measure was posted to the HEDIS® public comment period in February 2016. This measure was rated a high priority by many commenters. NCQA's Committee on Performance Measurement recommended moving this measure to first year data collection by a majority vote in May 2016.
Step 3: The measure was introduced in HEDIS® 2017 (representing measurement year 2016). Organizations voluntarily report this measure each year in June, and the results are analyzed.

Section 7. Identification of Disparities

CHIPRA requires that quality measures be able to identify disparities by race, ethnicity, socioeconomic status, and special health care needs. Thus, we strongly encourage nominators to have tested measures in diverse populations. Such testing provides evidence for assessing measure's performance for disparities identification. In the sections below, describe the results of efforts to demonstrate the capacity of this measure to produce results that can be stratified by the characteristics noted and retain the scientific soundness (reliability and validity) within and across the relevant subgroups.

7.A. Race/Ethnicity

Not available.

7.B. Special Health Care Needs

Not available.

7.C. Socioeconomic Status

Not available.

7.D. Rurality/Urbanicity

Not available.

7.E. Limited English Proficiency (LEP) Populations

Not available.

Section 8. Feasibility

Feasibility is the extent to which the data required for the measure are readily available, retrievable without undue burden, and can be implemented for performance measurement.

Using the following sections, explain the methods used to determine the feasibility of implementing the measure.

8.A. Data Availability

1. What is the availability of data in existing data systems? How readily are the data available?

Testing demonstrated that all key data elements needed for calculating the measure were available in the EHR. Comparing results based on electronic extract from structured data fields to what could be captured from a manual review of the full record, we found that sensitivity was at or near 100 percent for all data elements showing the electronic extract captures nearly all the information in the manual review. Specificity was 100 percent for all data elements.

2. If data are not available in existing data systems or would be better collected from future data systems, what is the potential for modifying current data systems or creating new data systems to enhance the feasibility of the measure and facilitate implementation?

Not applicable.

8.B. Lessons from Use of the Measure

1. Describe the extent to which the measure has been used or is in use, including the types of settings in which it has been used, and purposes for which it has been used.

This measure of adolescent depression remission and response has been incorporated into MNCM's measure as of 2019, which was previously focused on only the adult population (Depression Remission at 12 Months, NQF #0710, see https://ecqi.healthit.gov/ecqm/ep/2019/cms159v7). Measure #0710 is used in CMS's Quality Payment Program and Minnesota HealthScores (a consumer facing public reporting website at www.mnhealthscores.org)

2. If the measure has been used or is in use, what methods, if any, have already been used to collect data for this measure?

CMS Quality Payment Program: Data from structured fields in EHR systems are used to report the measure.

Minnesota HealthScores: Data are submitted through a secure online tool called the MNCM Data Portal (https://mncm.org/submitting-data/training-and-guidance/#the-data-portal-&-registration).

3. What lessons are available from the current or prior use of the measure?

None.

Section 9. Levels of Aggregation

CHIPRA States that data used in quality measures must be collected and reported in a standard format that permits comparison (at minimum) at State, health plan, and provider levels. Use the following table to provide information about this measure's use for reporting at the levels of aggregation in the table.

For the purpose of this section, please refer to the definitions for provider, practice site, medical group, and network in the Glossary of Terms.

If there is no information about whether the measure could be meaningfully reported at a specific level of aggregation, please write "Not available" in the text field before progressing to the next section.

Level of aggregation (Unit) for reporting on the quality of care for children covered by Medicaid/ CHIP†:

State level* Can compare States

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
Yes.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available.

In Use: **Have measure results been reported at this level previously?**
Not available.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
Not available.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not available.

Other geographic level: Can compare other geographic regions (e.g., MSA, HRR)

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**

No.

Data Sources: **Are data sources available to support reporting at this level?**
Not applicable.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not applicable.

In Use: **Have measure results been reported at this level previously?**
Not applicable.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
Not applicable.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not applicable.

Medicaid or CHIP Payment model: Can compare payment models (e.g., managed care, primary care case management, FFS, and other models)

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
Yes.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available.

In Use: **Have measure results been reported at this level previously?**
Not available.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
Not available.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not available.

Health plan*: Can compare quality of care among health plans.

***Intended use:* Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes; see Depression Remission or Response for Adolescents and Adults at https://www.ahrq.gov/pqmp/measures/management-of-chronic-conditions.html.

***Data Sources:* Are data sources available to support reporting at this level?**
Yes; see Depression Remission or Response for Adolescents and Adults at https://www.ahrq.gov/pqmp/measures/management-of-chronic-conditions.html.

***Sample Size:* What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
See Depression Remission or Response for Adolescents and Adults at https://www.ahrq.gov/pqmp/measures/management-of-chronic-conditions.html.

***In Use:* Have measure results been reported at this level previously?**
See Depression Remission or Response for Adolescents and Adults at https://www.ahrq.gov/pqmp/measures/management-of-chronic-conditions.html.

***Reliability & Validity:* Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
See Depression Remission or Response for Adolescents and Adults at https://www.ahrq.gov/pqmp/measures/management-of-chronic-conditions.html.

***Unintended consequences:* What are the potential unintended consequences of reporting at this level of aggregation?**
See Depression Remission or Response for Adolescents and Adults at https://www.ahrq.gov/pqmp/measures/management-of-chronic-conditions.html.

Provider Level
Individual practitioner: Can compare individual health care professionals

***Intended use:* Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

***Data Sources:* Are data sources available to support reporting at this level?**
Yes.

***Sample Size:* What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available.

In Use: **Have measure results been reported at this level previously?**
Yes.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
Yes.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not available.

Provider Level
Hospital: Can compare hospitals

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
No.

Data Sources: **Are data sources available to support reporting at this level?**
Not applicable.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not applicable.

In Use: **Have measure results been reported at this level previously?**
Not applicable.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
Not applicable.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not applicable.

Provider Level
Practice, group, or facility:** Can compare: (i) practice sites; (ii) medical or other professional groups; or (iii) integrated or other delivery networks

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
Yes.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Across the three sites in which this measure was tested, the average denominator (adolescents with a depression diagnosis and PHQ-9 score >9) was 228.

In Use: **Have measure results been reported at this level previously?**
Yes.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
Yes.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not available.

Section 10. Understandability

CHIPRA States that the core set should allow purchasers, families, and health care providers to understand the quality of care for children. Please describe the usefulness of this measure toward achieving this goal. Describe efforts to assess the understandability of this measure (e.g., focus group testing with stakeholders).

This measure was prioritized as an important measure, both through public comment and by NCQA advisory panels. Stakeholders noted the measure topic is of importance for the adolescent population and addresses a known quality issue. This process measure supports our ability to measure important patient outcomes. Without routine symptom monitoring using a standardized tool, we are unable to assess if patients with depression are responding to treatment and getting better over time. Final measure specifications were informed by commenters' and advisory panel feedback. Stakeholders expressed that the measure as specified is an understandable and sensible approach to assessing adolescent outcomes for depression care.

Section 11. Health Information Technology

Please respond to the following questions in terms of any health information technology (health IT) that has been or could be incorporated into the measure calculation.

11.A. Health IT Enhancement

Please describe how health IT may enhance the use of this measure.

Symptom monitoring using the PHQ-9 tool can be built into provider workflow, and the results can be captured in EHRs, case management systems, and clinical registries. These systems can then be used for population health monitoring for those with depression. Research has

demonstrated the importance of routinely monitoring symptoms for depression and making adjustments to treatment to help get patients to remission. Electronic caseload tracking tools (e.g., https://aims.uw.edu/resource-library/aims-caseload-tracker), EHRs, and registry systems can provide clinicians with the information needed to manage their patients and assess for improvement in PHQ-9 scores over time. These systems can also be leveraged for the key data elements needed to calculate the quality measure.

11.B. Health IT Testing

Has the measure been tested as part of an electronic health record (EHR) or other health IT system?

Yes.

If so, in what health IT system was it tested and what were the results of testing?

It was tested in EHR systems at three sites; see Section 6 of this report for results.

11.C. Health IT Workflow

Please describe how the information needed to calculate the measure may be captured as part of routine clinical or administrative workflow.

Results from the PHQ-9 tool can be collected electronically outside of office visits through patient portals connected with the EHR or through collection during a visit—e.g., by filling out the tool on a tablet. Additionally, a provider at the visit can verbally ask the patient the questions following prompts in the EHR and document the results in the system. Once results are calculated, the score should be saved in a structured field in the EHR that can be easily queried and tracked over time in the system. The measure can then be easily calculated based on querying patients with a depression diagnosis, their visits for depression, and PHQ-9 results.

11.D. Health IT Standards

Are the data elements in this measure supported explicitly by the Office of the National Coordinator for Health IT Standards and Certification (ONC) criteria (see healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__standards_ifr/1195)?

Yes.

If yes, please describe.

Both Stage 2 of Meaningful Use and the 2014 edition of ONC Certification of EHR Technology (ONC, 2010) require the electronic capture of patient demographics, diagnosis and visit information data in ambulatory settings that are necessary to calculate this measure. The data elements used in this measure (diagnoses, encounters, results of the PHQ-9 tool) are all supported by existing health IT standards and available coding systems such as ICD-10, CPT, and LOINC.

11.E. Health IT Calculation

Please assess the likelihood that missing or ambiguous information will lead to calculation errors.

Low likelihood. Results of the PHQ-9 tool are expressed as a number value from 1 to 27. There is a potential for documentation of the interpretation of the score (i.e., whether the individual is showing 'mild' or 'moderate' symptoms, for example); however, a PHQ-9 score is needed to make this interpretation and should be available in the underlying data.

11.F. Health IT Other Functions

If the measure is implemented in an EHR or other health IT system, how might implementation of other health IT functions (e.g., computerized decision support systems in an EHR) enhance performance characteristics on the measure?

Decision support systems could easily be built to enhance performance on this measure. For example, EHR systems can flag patients with a depression diagnosis and initial elevated PHQ-9 scores as needing follow-up and treatment. Systems can then track PHQ-9 scores over time and flag patients who are not improving so clinicians can reassess treatment options in order to help get them to remission or at least to have a significant reduction in their depressive symptoms.

Section 12. Limitations of the Measure

Describe any limitations of the measure related to the attributes included in this CPCF (i.e., availability of measure specifications, importance of the measure, evidence for the focus of the measure, scientific soundness of the measure, identification of disparities, feasibility, levels of aggregation, understandability, health information technology).

None identified.

Section 13. Summary Statement

Provide a summary rationale for why the measure should be selected for use, taking into account a balance among desirable attributes and limitations of the measure. Highlight specific advantages that this measure has over alternative measures on the same topic that were considered by the measure developer or specific advantages that this measure has over existing measures. If there is any information about this measure that is important for the review process but has not been addressed above, include it here.

This measure assesses whether adolescents with depression have follow-up assessment and whether they have improvement in their symptoms of depression. Depression is a prevalent condition which has impacts on mood, wellbeing, function, and participation in school or work activities, as well as management of other chronic medical conditions. There are effective treatments and models of care to manage and improve depression. Routine monitoring of symptoms during treatment is essential to assess patients' response to treatment and improvement over time. This measure assesses important patient-reported outcomes for depression. Testing results suggest there is much room for improvement in depression follow-up

and symptom management; extensive feedback from multiple and varied stakeholders found this measure to be understandable, meaningful, and important.

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Section 14: Identifying Information for the Measure Submitter

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The CHIPRA Pediatric Quality Measures Program (PQMP) Candidate Measure Submission Form (CPCF) was approved by the Office of Management and Budget (OMB) in accordance with the Paperwork Reduction Act.

The OMB Control Number is 0935-0205 and the Expiration Date is December 31, 2015.

Public Disclosure Requirements

Each submission must include a written Statement agreeing that, should U.S. Department of Health and Human Services accept the measure for the 2014 and/or 2015 Improved Core Measure Sets, full measure specifications for the accepted measure will be subject to public disclosure (e.g., on the Agency for Healthcare Research and Quality [AHRQ] and/or Centers for Medicare & Medicaid Services [CMS] websites), except that potential measure users will not be permitted to use the measure for commercial use. In addition, AHRQ expects that measures and full measure specifications will be made reasonably available to all interested parties. "Full measure specifications" is defined as all information that any potential measure implementer will need to use and analyze the measure, including use and analysis within an electronic health record or other health information technology. As used herein, "commercial use" refers to any sale, license or distribution of a measure for commercial gain, or incorporation of a measure into any product or service that is sold, licensed or distributed for commercial gain, even if there is no actual charge for inclusion of the measure. This Statement must be signed by an individual authorized to act for any holder of copyright on each submitted measure or instrument. The authority of the signatory to provide such authorization should be described in the letter.

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