



Measure Fact Sheet – The AHRQ-CMS CHIPRA Pediatric Quality Measures Program (PQMP)

Measure: Accurate ADHD Diagnosis

Measure Developer: Pediatric Measurement Center of Excellence (PMCoE)

Numerator	Denominator	Exclusions	Data Source(s)
<p>Patients whose diagnosis of ADHD was based on a clinical exam with a physician that includes:</p> <ul style="list-style-type: none"> – Confirmation of functional impairment in two or more settings and – Assessment of core symptoms of ADHD, including inattention, hyperactivity, and impulsivity, either through use of a validated diagnostic tool based on DSM-IV-TR criteria for ADHD or through direct assessment of the patient. 	All patients ages 4 through 18 years with a diagnosis of ADHD.	None.	Medical record (paper or electronic).

Note: Settings include home, school, and community.

Measure Importance

- Approximately 9.5 percent of children aged 4-17 were diagnosed with attention deficit/hyperactivity disorder (ADHD) in 2007, with a higher prevalence among boys, children of racial and ethnic minority groups, multiracial children (14.2 percent), and children covered by Medicaid (13.6 percent).^{1,2}
- ADHD has a multidimensional effect on an individual's daily life functioning and can culminate in significant costs attributable to greater health care needs, more frequent unintentional injury, co-occurring psychiatric conditions, and productivity losses.
- Clinicians may misdiagnose ADHD if they use methods of evaluation other than the validated tools required by this measure. If a clinician misdiagnoses a child that has ADHD as not having the condition, the child could face social and academic struggles. If a clinician misdiagnoses a child who does not have ADHD as having ADHD, the child may miss treatment that would be more appropriate for their condition.



Evidence Base for the Focus of the Measure

Validated tools (those based on DSM-IV criteria)³ have demonstrated effectiveness for diagnosing ADHD and distinguishing ADHD from other conditions that may have some of the same symptomatology.⁴ The 2011 American Academy of Pediatrics ADHD Guidelines included the recommendation based on “B” level evidence to diagnose ADHD when the DSM-IV criteria have been met, stating that this practice leads to more uniform categorization of the condition across professional disciplines, has the best evidence to date for criteria for ADHD, and affords the best method for communication across clinicians.⁵

Advantages of the Measure

- Data for this measure are reliably available in paper medical records.
- Data are available or can be made available with workflow changes, from an electronic medical record.
- The measure is publicly available for noncommercial use.

Levels of Aggregation Applicable to the Measure

The measures are intended for aggregation and comparison at the State, regional, health plan, individual clinician, and provider group levels.⁶

Measure Type

This measure was specified and tested to be collected as an eMeasure or through medical chart review.

Measure Testing

This measure was tested in the Chicago Pediatric Quality and Safety Consortium (CPQSC), which comprises five Chicago-area hospitals representing a free-standing children’s hospital, a public hospital, a private safety net hospital, and two suburban hospitals, all with large pediatric services; and affiliated primary care networks and developmental psychology divisions. Four of the five sites used electronic medical records to document ADHD diagnosis and care. eMeasure feasibility testing was conducted in these four CPQSC sites and involved using a tool to assess the availability and use of necessary measure elements in structured fields that could be queried within the electronic health records. In addition, two nurses conducted manual abstraction from the medical records using a preestablished template to search for evidence of an accurate ADHD diagnosis to determine inter-rater reliability.

Reliability and Validity of the Measure

- Feasibility for the eMeasure was moderate with three of the five testing sites able to electronically implement the measure (one with workflow modifications). Empirical testing of the feasibility of eMeasure implementation determined that it is possible to construct this measure as an eMeasure in some settings. In settings in which all of the elements for constructing the eMeasure were electronically available, valid and reliable construction and reporting of the eMeasure was possible.

- Manual chart abstraction of this measure using either paper or electronic medical records is feasible and reliable. In a sample of 58 medical records, 52 met all of the elements necessary for the assessment. Agreement between the research nurse abstractors on each element varied from 43 percent to 67 percent.
- The measure has content validity, as assessed by 25 stakeholders and subject matter experts.⁷ Additional input on the content validity of draft measures was obtained through a 21-day public comment period convened by the American Medical Association Physician Consortium for Performance Improvement (AMA-PCPI). All comments received were reviewed by the expert workgroup, and the measure was adjusted as needed. Experts further agreed that the measure has face validity.

Selected Results from Tests of the Measure

- Data sources contain data that allow this measure to be stratified by race and ethnicity, socioeconomic status using payer as a proxy, and language preference.
- Data from the measure can be obtained from paper medical records and, with some workflow changes, may be obtainable through some electronic health records.
- Reliability: Reliability was moderate, with approximately 60 percent of reviewers agreeing that there was evidence in the chart that an ADHD diagnostic clinical exam had been performed, 65 percent agreeing that a validated diagnostic tool or direct assessment was used to diagnose the patient, 67 percent agreeing that there was evidence in the chart of impairment in two settings, and 43 percent agreeing that the overall measure was met.
- Validity: This measure was assessed for content validity by looking for agreement among stakeholders and subject matter experts. Input was also received through a 21-day public comment period. There was consensus that both backward and forward assessment of the measure reflected (1) the elements of an accurate diagnosis for ADHD, and (2) that an evidence-based process for accurate diagnosis was reflected in the measure.
- Feasibility: Testing demonstrated that the elements of the accurate diagnosis measure were feasible to be collected to calculate the measure, whether collected as an eMeasure or through manual chart review. For use of the eMeasure, assessment of the existence and use of each of the elements of the measure in structured fields that could be queried in the EHR would be necessary in any setting where the intent was to reliably and validly assess performance using this measure.

Current Measure Use

American Board of Pediatrics Maintenance of Certification, Part 4 Performance Improvement Module on ADHD care.

Caveats

- This measure is not specified for use with administrative claims data because currently, administrative claims data do not contain procedure codes that accurately represent the numerator, as there is no specific code for use of a validated assessment or diagnostic tool.
- Documentation of the ADHD assessment method is not done systematically in electronic health records, for example with a drop-down. It is typically only found in the progress note as free-text, resulting in a less accurate calculation.
- Locations and contexts for documentation of ADHD care in the medical record varied across test sites.

Related Measures

- This measure is an enhancement of the Institute for Clinical Systems Improvement measure (Diagnosis and management of attention deficit hyperactivity disorder [ADHD] in primary care for school age children and adolescents: percentage of patients newly diagnosed with ADHD whose medical record contains documentation of DSM-IV-TR 9 [Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision] or DSM-PC [DSM-Primary Care Version] criteria).⁸ The existing measure was enhanced to 1) include new evidence based validated diagnostic tools, 2) specify elements for equity / disparities assessment, and 3) enable construction of this ADHD measure as an eMeasure.
- This measure is part of an ADHD Diagnosis and Followup measure set. For other measures related to ADHD, see Behavior Therapy as First-Line Treatment for Preschool-Aged Children.⁹

For More Information

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- Coming soon: Link to measures on the AHRQ Web site. www.ahrq.gov/CHIPRA

For more information about the PQMP, visit www.ahrq.gov/CHIPRA.

Notes

¹Centers for Disease Control and Prevention. Increasing prevalence of parent-reported attention deficit/hyperactivity disorder among children; United States, 2003 and 2007. *MMWR Morb Mortal Wkly Rep.* 2010;159(44):1439-43.

²Bloom B, Cohen RA, Freeman G. Summary health statistics for U.S. children: National Health Interview Survey, 2009. *National Center for Health Statistics. Vital Health Stat.* 2010;10(247). Available at http://www.cdc.gov/nchs/data/series/sr_10/sr10_247.pdf. Accessed June 23, 2014.

³Validated diagnostic tool used may include any of the following examples, all of which are based on the DSM-IV criteria for ADHD. Other validated diagnostic tools based on the DSM-IV criteria may be available and would be acceptable for this measure. This list is not intended to be all-inclusive. Conners Rating Scales, Barkley ADHD Rating Scale, Vanderbilt Parent and Teacher Assessment Scales, ADHD Rating Scale-IV (DuPaul).

⁴An evidence base comprises the breadth and rigor of studies demonstrating 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).

⁵American Academy of Pediatrics, Subcommittee on Attention-Deficit/Hyperactivity Disorder, Steering Committee on Quality Improvement and Management. ADHD: Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. *Pediatrics.* 2011;128(5):1007-22.

⁶The Children's Health Insurance Program Reauthorization Act required that measures developed under this program "permit comparison of quality and data at a State, plan, and provider level." The measure developer identified the intended levels of aggregation and comparison as reported here.

⁷This group included representation from relevant medical specialties, social workers, teachers, parents, consumer representatives, and measure methodologists among others.

⁸Diagnosis and Management of ADHD, Ninth Edition. Minneapolis, MN: Institute for Clinical Systems Improvement; March 2012. Available at https://www.icsi.org/_asset/60nzc5/ADHD-Interactive0312.pdf. Accessed June 17, 2014.

⁹Behavior Therapy as First-Line Treatment for Preschool-Aged Children. CHIPRA PQMP Factsheet. AHRQ Publication No. 14-P005-2. Rockville, MD: Agency for Healthcare Research and Quality; 2014. Available at www.ahrq.gov/chipra.

The Children's Health Insurance Program Reauthorization Act (CHIPRA) called for establishment of a Pediatric Quality Measures Program (PQMP) as a followup to identifying the initial core set of children's health care quality measures. This fact sheet was produced by the Agency for Healthcare Research and Quality (AHRQ), with contributions from RTI International, Inc., a contractor to AHRQ and the Centers for Medicare & Medicaid Services (CMS), based on information provided by the AHRQ-CMS Pediatric Measurement Center of Excellence (PMCoE), which was funded by an AHRQ/CMS grant as a PQMP Center of Excellence. A listing of all submitted PQMP Centers of Excellence measures can be found at www.ahrq.gov/CHIPRA. All measures are publicly available for noncommercial use.

