ADHD—Diagnose, Treat, and Monitor

EQIPP
Helping You Improve Care for Children
Available on PediaLink

Data Collection Tool

Directions: Pull 10 or more charts of patients ages 4 through 18 years with a diagnosis of ADHD made within the past 3 to 18 months. For an enriched measurement, pull charts of patients of varying ages. Specify the patient's age, then answer the following questions based on actual chart documentation.

Patient's age: ☐ 4–5 years ☐ 6–11 years ☐ 12–18 years

1. Was the ADHD diagnosis based on the following? (*Select all that apply.)*
   - ☐ a. Patient met DSM-5 criteria.
   - ☐ b. Results obtained from **Home** using DSM-based ADHD rating scales.
   - ☐ c. Results obtained from **School** and/or other major setting using DSM-based ADHD rating scales.
   - ☐ d. Conditions that mimic or are comorbid with ADHD were assessed.
   - ☐ e. Basis of diagnosis not made on any of the above criteria.

2. Was education regarding ADHD (conversation, print or Web-based materials) offered to the patient/family upon diagnosis?
   - O Yes
   - O No

3. Does the patient have confirmed or suspected conditions that mimic or are comorbid with ADHD?
   - O Yes
   - O No
   - O Unknown

   3a. If Yes, was treatment related to conditions that mimic or are comorbid with ADHD initiated by the primary care clinician (PCC) or a referral made to the appropriate specialist/provider for further evaluation and/or treatment?
   - O Yes
   - O No

4. *Answer questions 4a–4c based on the patient's age.*

   4a. ***For patients 4–5 years of age,*** were treatment recommendations made for evidence-based Parent Training in Behavior Management (PTBM) and/or behavioral classroom interventions as the first line of treatment?
   - O Yes
   - O No

   4b. ***For patients 6–11 years of age,*** were treatment recommendations made for FDA-approved medication for ADHD and optimally both PTBM and behavioral classroom interventions? (*Check all that apply*.)
   - O Yes, FDA-approved medication
   - O Yes, PTBM and/or behavioral classroom interventions
   - O No

   4c. ***For patients 12–18 years of age,*** were recommendations made for FDA-approved medication for ADHD ***with the adolescent's assent*** and optimally evidence-based behavioral and/or training interventions? (*Check all that apply.*)
   - O Yes, FDA-approved medications, ***with the adolescent's assent***
   - O Yes, evidence-based behavioral and/or training interventions
   - O No

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5. Was a written ADHD care plan established for this patient with recommendations based on information obtained from the patient/family and school (for school-aged children)?

   O Yes
   O No

   5a. If yes, was the ADHD care plan reviewed and/or updated at the most recent visit in which ADHD was discussed?

      O Yes
      O No

6. Was ADHD medication initiated for this patient?

   O Yes
   O No

   If yes, answer the following:

   6a. Was an attempt to contact the patient/family made within 1–2 weeks of ADHD medication initiation to assess progress? (**Note**: Standard of care for stimulant medication includes making contact within 1 week. Nonstimulant medications take more time to show maximal benefit.)

      O Yes
      O No

   6b. Was a follow-up visit completed within 30 days of initiating ADHD medication?*

      O Yes
      O No

   6c. Was information from DSM-based ADHD rating scales from 2 or more major settings (eg, home and school) used to maintain/adjust medication dosage?

      O Yes
      O No

   6d. Once the medication dosage and symptoms stabilized, was a minimum of 2 in-person follow-up visits completed within 12 months?*

      O Yes
      O No
      O N/A, 12 months have not elapsed, or medication dosage and symptoms have not stabilized

7. For patients who received recommendations for evidence-based behavioral/training interventions, was progress reassessed and/or adjusted using measurable information obtained from 2 or more major settings (Consider information from DSM-based ADHD rating scales, attendance to therapy appointments, rates of therapist-assigned homework completion, daily report cards, progress reports, and other measurable information provided by parents/teachers/leaders.)

   O Yes
   O No
   O N/A, evidence-based behavioral/training interventions not recommended

*__Note__: Questions based on measures closely related to Healthcare Effectiveness Data and Information Set (HEDIS) core set of health care quality measures.

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Appendix

DSM-5 Criteria

The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition handbook, or DSM-5*, is the authoritative guide to the diagnosis of mental disorders, including ADHD, in the United States and other parts of the world. It defines the following dimensions, or presentations of ADHD:

1. ADHD primarily of the **Inattentive** presentation
2. ADHD primarily of the **Hyperactive-Impulsive** presentation
3. ADHD **Combined** presentation
4. ADHD **Other Specified, and Unspecified** ADHD

The diagnosis of ADHD must establish that 6 or more (5 or more if the adolescent is aged 17 or older) core symptoms are present in either or both the Inattention Dimension and/or the Hyperactivity-Impulsivity Dimension presentations and occur inappropriately often. The core symptoms and dimensions are presented in the table below. Note that symptoms may present differently at different ages.

Table 1. Core Symptoms of ADHD Adapted from the DSM-5

Inattention Dimension	Hyperactivity-Impulsivity Dimension	
	Hyperactivity	**Impulsivity**
• Careless mistakes • Difficulty sustaining attention • Seems not to listen • Fails to finish tasks • Difficulty organizing • Avoids tasks requiring sustained attention • Loses things • Easily distracted • Forgetful	• Fidgeting • Unable to stay seated • Moving excessively (restless) • Difficulty engaging in leisure activities quietly • "On the go" • Talking excessively	• Blurting answers before questions completed • Difficulty awaiting turn • Interrupting/intruding upon others

Source: ADHD PoC Algorithm; Adapted from *DSM-5 Diagnostic and Statistical Manual of Mental Disorders, 5th Edition.*

Following are the DSM-5 criteria by dimension. Behaviors must persist for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities:

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- **ADHD/I:** Having at least 6 of 9 *Inattention* behaviors, and less than 6 *Hyperactive-Impulsive* behaviors.
- **ADHD/HI:** Having at least 6 of 9 *Hyperactive-Impulsive* behaviors, and less than 6 *Inattention* behaviors.
- **ADHD/C:** Having at least 6 of 9 behaviors in both the *Inattention* and *Hyperactive-Impulsive* dimensions.
- **ADHD Other Specified, and Unspecified ADHD:** These categories are meant for children who meet many of the criteria for ADHD but not the full criteria, and who have significant impairment. ADHD Other Specified is used if the PCC specifies those criteria that have not been met; Unspecified ADHD is used if the PCC does not specify these criteria.

Following is a recap of the conditions that must be met:

- Symptoms occur in 2 or more settings, such as home, school, and social situations, and cause some impairment.
- In a child 4 to under 17 years of age, 6 or more symptoms in at least 1 dimension are identified.
- In a child aged 17 years and older, 5 or more symptoms in at least 1 dimension are identified.
- Symptoms significantly impair the child's ability to function in some of the activities of daily life, such as schoolwork, relationships with family, relationships with friends, or the ability to function in groups such as sports teams.
- Symptoms start before the child reaches 12 years of age. However, these may not be recognized as ADHD symptoms until a child is older.
- Symptoms have continued for more than 6 months.

Note: Because symptoms can change over time, the presentation may change over time as well.

**Diagnostic and Statistical Manual of Mental Disorders: DSM-5.* 5th ed. Washington, DC: American Psychiatric Association; 2013. Available at: https://dsm.psychiatryonline.org/doi/10.1176/appi.books.9780890425596.Introduction. Accessed August 29, 2019 (Login and subscription required.)

DSM-based ADHD Rating Scales

DSM-based rating scales are designed to focus on ADHD symptoms (inattentive, hyperactive-impulsive) to help determine the possible presence of core symptoms of ADHD as defined by DSM-5 criteria for ADHD.* The AAP recommends the use of DSM-based ADHD rating scales when evaluating ADHD:

1. For the initial diagnosis of a child with ADHD
2. For the assessment of conditions that mimic or are comorbid with ADHD
3. For monitoring the treatment strategy that has been put in place

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DSM-based rating scales should be completed for 2 or more major settings. The rating scales may be completed by the parent or other family members, teachers, clinicians, or other professional observers who have opportunities to observe the child's behavior to help determine which ADHD symptoms and co-occurring conditions are present in the patient, in which environments (home, school, work, social), and over what time period.

NOTE: Be aware that screening tools and rating scales are not diagnostic; they are instruments used to help clinicians identify the possible presence of a condition. Additional information/tests are required to confirm or rule out a diagnosis.

For purposes of this EQIPP course, some recommended age-specific rating scales/scoring interpretations include, but are not limited to, the following:

Age	Recommended Rating Scales	Scoring Interpretation
Preschool children, ages 4–5	ADHD Rating Scale IV—Preschool Version* **Note**: Currently validated for DSM-4. There are some wording variations to make the DSM criteria more applicable to preschool children, but symptom criteria are the same as on the other rating scales. Also see the Vanderbilt Assessment Scales below, which can be applicable to preschoolers.	Proprietary. Rating Scales and scoring information as described in McGoey KE, DuPaul GJ, Haley E, Shelton TL. Parent and teacher ratings of attention-deficit/hyperactivity disorder in preschool: the ADHD rating scale-IV preschool version. *J Psychopathol Behav Assess.* 2007;29(4):269-276
School-age children and adolescents, ages 6–18	Vanderbilt Assessment Scale: *ADHD Toolkit* Parent-Informant Form Vanderbilt Assessment Scale, Follow-up: *ADHD Toolkit* Parent-Informant Form Vanderbilt Assessment Scale: *ADHD Toolkit* Teacher-Informant Form Vanderbilt Assessment Scale, Follow-up: *ADHD Toolkit* Teacher-Informant Form **Note**: Vanderbilt Scales are updated to DSM-5 but only validated for DSM-4. Originally designed for the 6- to 12-year-old age group, they are applicable to other age groups, including preschoolers and adolescents.	Use the gray boxes to tally positive scores in the right margin at the end of each section. The Vanderbilt Assessment Scales Scoring Instructions provides scoring information for diagnostic purposes and for monitoring symptom and performance improvement. The instructions help correlate totals to DSM-5 criteria.
	ADHD Rating Scale–5, (ADHD RS-5) Home Version ADHD Rating Scale–5, (ADHD RS-5) School Version **Note**: Available in Child Form (ages 5–10) and Adolescent Form (ages 11–17); both updated and validated for DSM-5.	Proprietary. Rating scales and scoring sheets may be purchased from Guilford Press.
	Conners Rating Scales (Conners 3) 6–18 years. Parent and Teacher Scales 8–18 years. Self-Report Scale **Note**: All scales updated to DSM-5 but validated only for DSM-4.	Proprietary. Forms and scoring sheets may be purchased through MHS Assessments.

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*__Note__: The fifth edition of the DSM-5 does not include significant changes to ADHD-related recommendations from the DSM-4 publication. Therefore, rating scales based on DSM-4 criteria are sufficient for purposes of this EQIPP quality improvement activity. Notable changes from DSM-4 to DSM-5 include: 1) Permission now granted to diagnose ADHD and autistic spectrum disorder as coexisting diagnoses; 2) ADHD symptoms must be seen before age 12; and 3) adolescents age 17 may qualify for an ADHD diagnosis if 5 of 9 symptoms of inattention and/or hyperactivity/impulsivity are noted.

Major Settings

The child with ADHD demonstrates inattentive or hyperactive-impulsive symptoms and impairment in 2 or more environments, including but not limited to home, school, childcare, preschool, community, sport teams, and social and group settings.

Conditions That Mimic or are Comorbid With ADHD

A 2007 study by the National Survey of Children's Health (NSCH) found that most children with ADHD (67%) have at least 1 other comorbid condition, and 18% have 3 or more comorbidities such as mental health disorders and/or learning disorders.[1] These comorbidities increase the complexity of the diagnostic and treatment process.

It is important that the PCC determine if symptoms are due to alternative causes before confirming the diagnosis of ADHD. It is also necessary to determine if the patient has an additional condition or conditions. If other conditions are suspected or detected during the diagnostic evaluation, an assessment of the urgency of these conditions and their impact on the ADHD treatment plan should be made.

Examples of conditions that mimic, are comorbid with ADHD, or contribute to the cause of ADHD include but are not limited to the following:

Type	Examples
Medical	Vision/hearing, anemia, medicine side effects, thyroid disorders, seizures, sleep apnea, and restless leg syndrome are examples of medical conditions that should be treated first to see if the treatment addresses the ADHD symptoms. Sequelae of central nervous system hypoxia, prematurity, intrauterine growth restriction (IUGR), and small for gestational age (SGA) syndromes, medical syndromes (Fetal Alcohol Spectrum Disorder [FASD], Fragile X, etc), traumatic brain injury, central nervous system infections, and near-drowning are examples of medical issues that should be treated along with ADHD.
Developmental	Autism, speech/language and specific learning disorders, intellectual deficits, tic disorders, developmental coordination disorders, motor delays, sensory processing disorders
Behavioral/emotional	Anxiety, depression, oppositional defiant disorder, conduct disorder, bipolar disorder, reactive attachment disorder, disruptive mood dysregulation disorder, post-traumatic stress disorder, obsessive-compulsive disorder
Family/environmental	Family separation, divorce, death, adverse events, exposure to violence, physical abuse/neglect, sexual abuse In the school environment: bullying, poor school or teacher fit, giftedness
Substance use	Alcohol, marijuana, and other illicit substances or misuse of prescription medication

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Of Special Importance

- Urgent conditions that put the patient's health at risk (eg, depression with suicidal ideation, high-risk behaviors, and substance use) need to be addressed immediately with providers capable of handling them. Frequent, ongoing assessment is essential, and the impact of such conditions on the ADHD treatment plan should be considered.
- If symptoms arise suddenly without prior history, it is important to consider other conditions, including but not limited to the following: mood or anxiety disorders; substance use; head trauma; physical or sexual abuse; neurodegenerative disorders; sleep disorders (including sleep apnea); or a major psychological stress in the family, community (eg violence), or school (eg bullying).
- The PCC may evaluate and treat the comorbid disorder if it is within the PCC's expertise. If the advice of another subspecialist is required, the PCC should carefully consider when to initiate treatment for ADHD. In some cases, it may be advisable to delay the start of medication until the full care team is established/consulted.
- The evaluation, diagnosis, and treatment of ADHD and its comorbid conditions are a continuous process. PCCs should be aware of the need for reassessment at every visit.

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[1]Larson K, Russ SA, Kahn RS, Halfon H. Patterns of comorbidity, functioning and service use for US children with ADHD, 2007. *Pediatrics.* 2011;127(3): 462-470

Family

Today, the term family is used to describe a unit that may comprise a married nuclear family; cohabiting family; single-parent, blended, or stepfamily; grandparent-headed household; single-gender parents; commuter or long-distance family; foster family; or a larger community family with several individuals who share the caregiving and parenting responsibilities. Each of these family constellations presents unique challenges to child-rearing for parents as well as children.

Reference: Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents.* 4th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017

Evidence-based Behavioral/Training Interventions

Evidence-based behavioral or training interventions can help children and adolescents with ADHD manage their symptoms of hyperactivity, impulsiveness, and inattention by teaching skills to help control symptoms. Strategies can include reward and consequence systems, self-monitoring, modeling/role playing, self-instruction, generation of alternatives, and reinforcement. Strategies may focus on staying organized and focused; other strategies may focus on reducing disruptive behaviors that can get the child into trouble at school, make it difficult to form friendships, or disrupt family life.

Ongoing adherence to psychosocial treatments is a key contributor to its beneficial effects. Some children and adolescents, especially those with severe ADHD symptoms, benefit from medication along with behavioral or training interventions; the decision about using 1 or both types of therapies, however, depends on acceptability and feasibility to the family. It is important to note that different behavioral/training interventions may

be more suitable and effective in some age groups than in others. Also, the presence of comorbid conditions may affect the type of intervention required.

Behavioral therapy can include training for the child, family, or a combination. Teachers can also use behavioral techniques and enlist the help of the school psychologist to provide strategies for reducing problem behaviors in the classroom. Some techniques found to be helpful to parents and teachers include:

- Timeout
- Reward/consequences
- Token economies
- Daily behavior report card
- 1-2-3 Magic Parenting: Positive Parenting

Following is a summary of age-specific treatment recommendations concerning both behavioral/training interventions and medication from the AAP 2019 ADHD Guideline.

Age of Patient	Summary of AAP 2019 ADHD Guideline-based Treatment Recommendation
4–5 years of age	Evidence-based parent training in behavior management (PTBM) and/or behavioral classroom interventions as first-line treatment (FDA-approved medications for ADHD may be indicated in certain circumstances)
6–11 years of age	FDA-approved medications for ADHD and optimally also have both PTBM and behavioral classroom interventions recommended
12–18 years of age	FDA-approved medications for ADHD **with the adolescent's assent** and optimally also have evidence-based training interventions and/or behavioral interventions recommended
Note: For school-aged children and adolescents, educational interventions and individualized instructional supports in the school setting including school environment, class placement, instructional placement, and behavioral supports are a necessary part of the treatment plan and often include an IEP or a 504 plan.	

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FDA-approved Medications

The US Food and Drug Administration (FDA) approves product labeling for prescription drugs for the purpose of ensuring patient care and safety and educating providers. It is important that PCCs:

- Recognize the FDA-approved indications for the use of stimulant and related medications in pediatric patients.
- Follow AAP-approved treatment guidelines for the management of ADHD in pediatric patients.
- Are familiar with benefits and adverse reactions and risks of using stimulant and related medications in pediatric patients and help parents/caregivers/patients (as age appropriate) understand them.

A list of FDA-approved medications for ADHD is available at www.ADHDMedicationGuide.com. Accept the copyright agreement to open the pdf of the ADHD Medication Guide. Shared Decision Making tools to help caregivers understand the pros and cons of psychosocial treatments as well as the various FDA-approved ADHD medication options are available at: https://www.cincinnatichildrens.org/service/j/anderson-center/evidence-based-care/decision-aids.

ADHD Care Plan

A care plan for CYSHCN includes all pertinent current and historical, medical, and social aspects of a child's and family's needs and goals, and identifies all members of the treatment management team involved in the child's care.

For patients with ADHD, the plan outlines the therapeutic goals and actions to help control ADHD symptoms, including evidence-based behavioral/training interventions, medication, school services/classroom interventions, and patient/family education.

Ideally, the plan is an integrated shared plan of care and all members of the care team have access to the same information and can build upon the shared care plan. Continuous collaborative, bidirectional communication with families, teachers, therapists, and other adults involved in the child's life is critical for informing the treatment plan.

An example ADHD care plan with included ADHD action plan is available to view or customize:

- Click to view/print.
- Click to open editable version that can be customized for your practice.