ADHD in Children and Adolescents

Purpose

To aid primary care physicians with the diagnosis and management of children and adolescents with attention deficit/hyperactivity disorder (ADHD).

Key Points

- In a child between 4 and 18 years who presents with inattention, hyperactivity, impulsivity, academic underachievement, or behavior problems, clinicians should initiate an evaluation for ADHD.
- The diagnosis of ADHD requires that a child meet DSM-5 criteria.
- It is important to obtain information not only from the child/adolescent but also from individuals the child/adolescent spends a significant amount of time with including the parents, caregivers, day care teachers and school professionals.
- Coordination between child, parent, school and health care professionals is essential to achieve the best outcomes for the child.
- Clinicians should be sensitive to patient medication costs, especially with high-deductible health plans and/or higher tier drug copays.

ADHD in Children and Adolescents

Screen for ADHD
- Can't sit still /hyperactive
- Lack of attention/does not listen
- Impulsive: acts without thinking
- Behavior problem
- Academic problem

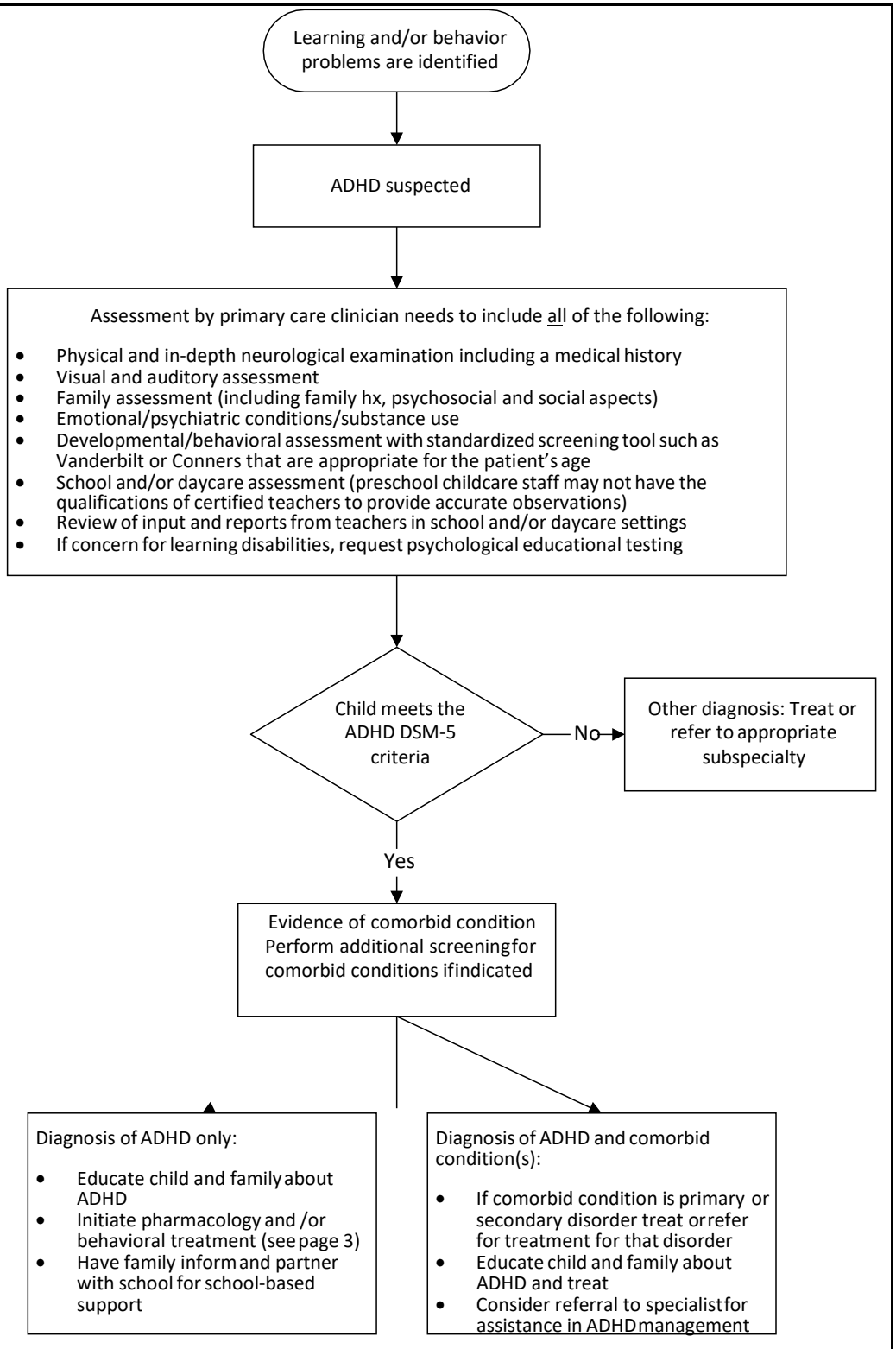
Required for ADHD

Behavioral Symptoms:
- Onset before age 12
- Duration of at least 6 months
- Typically occurs in more than one setting (i.e. home/day care/school); on occasion may cause more severe impairment in only one setting
- Results in functional impairment (school/social)

Conditions That May Be Confused With ADHD or Are Comorbid Condition(s)
- Anxiety Disorders
- Bipolar Disorder
- Learning/Language Disorders
- Fetal Alcohol Syndrome
- Major Depressive Disorder
- Oppositional Defiant Disorder
- Post-traumatic Stress Disorder (PTSD)
- Reactive Attachment Disorder (RAD)
- Autism Spectrum Disorder/Sleep Disorder
- Tic Disorder
- Substance Use Disorder

Family Assessment
- Chaotic, unstructured home environment
- Family hx of ADHD or psychiatric/psychological problems
- Family stress (i.e. financial/divorce/ death of loved one); consider ACEs
- Parenting Style (inappropriate, punitive, inconsistent)
- Life transitions (i.e. moving/change schools, death or loss)
- Caregiver Disruption
- Cultural factors
- History substance abuse/mental illness
- Abuse/neglect

When to Consider Specialist Referral
- Treatment is not successful
- Multiple or significant comorbid conditions
- Primary care clinician not comfortable with diagnosing and management



Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

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Parent/Family Strategies
(improvement of family functioning)

- Support groups for ADHD
- Parental skill training, first line intervention for preschool children
- Advocacy groups

Child (behavioral interventions)

- Training for social skills
- Strategies for effective problem solving
- Training in study skills and organizational management
- Referral to specialist if needed to assist with comorbid conditions

School (academic interventions)

- Behavior modification
- Classroom modifications
- Structured learning environment
- Additional support as needed (tutor, resource room, equipment)
- Possible need for 504 Plan or IEP to optimize and facilitate school's response

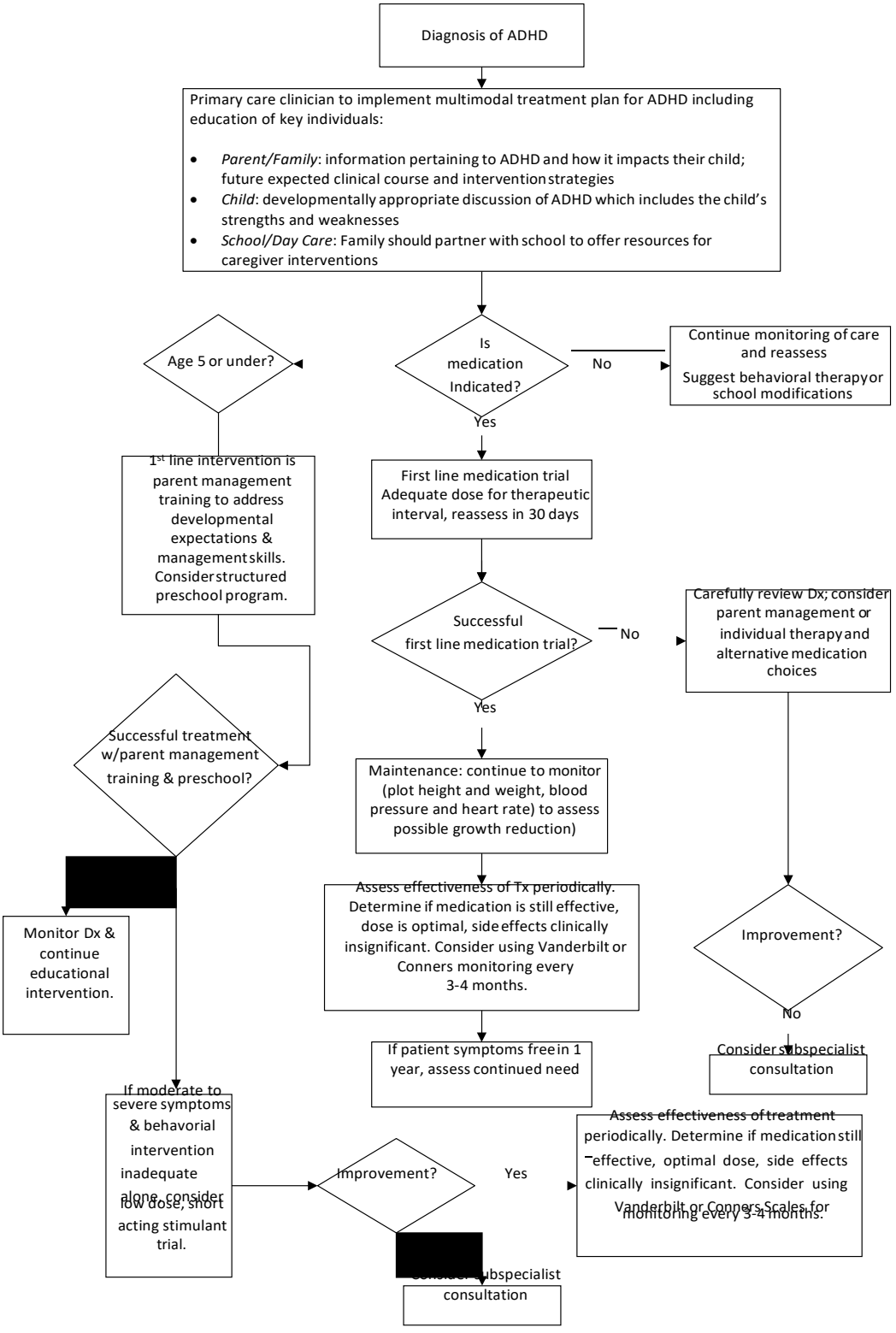
First Line Medication

- Stimulants are first line of treatment and have proven to benefit most people
- Contraindications: psychosis, certain cardiovascular conditions
- Safe and effective in managing ADHD in presence of tic disorders
- Preschool children (ages 4-5 years) should be given a lower dose and increased in smaller increments since they may have more side effects.

Second Line Therapy/Alternate Medication Trial(s)

- Consider when stimulant trial is unsuccessful or if associated comorbidity
- Second line therapy commonly includes atomoxetine, short and long acting guanfacine, clonidine, bupropion
- In some cases, guanfacine or clonidine can be considered as adjunctive treatment along with stimulant medication and atomoxetine

Treatment



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DSM 5 Criteria

A. Either (I) or (II):

(I) Six or more symptoms of **inattention** for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of inattention have been present for at least 6 months, and they are inappropriate for developmental level.

Inattention:

1. Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities (e.g., overlooks or misses details, work is inaccurate)
2. Often has difficulty sustaining attention in tasks or play activities (e.g., has difficulty remaining focused during lectures, conversations, or lengthy reading)
3. Often does not seem to listen when addressed directly (e.g., mind seems elsewhere, even in the absence of any obvious distraction)
4. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions.) (e.g., starts tasks but quickly loses focus and is easily sidetracked)
5. Often has difficulty organizing tasks and activities (e.g., difficulty managing sequential tasks; difficulty keeping materials and belongings in order; messy, disorganized work; has poor time management; fails to meet deadlines)
6. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (e.g., schoolwork or homework; for older adolescents and adults, preparing reports, completing forms, reviewing lengthy papers)
7. Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, or tools, wallets, keys, paperwork, eyeglasses and mobile telephones)
8. Is often easily distracted by extraneous stimuli (e.g., for older adolescents and adults may include unrelated thoughts)
9. Is often forgetful in daily activities (e.g., doing chores, running errands; for older adolescents and adults, returning calls, paying bills, keeping appointments)

(II) Six or more symptoms of **hyperactivity-impulsivity** for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for the person's developmental level.

Hyperactivity: (excessive movement and restlessness)

1. Often fidgets with hands or feet or squirms in seat
2. Often leaves seat in classroom or in other situations in which remaining seated is expected (e.g., leaves his or her place in the classroom, in the office or other workplace, or in other situations that require remaining in place)
3. Often runs about or climbs excessively in situations in which it is inappropriate (e.g., in adolescents or adults, may be limited to subjective feelings of restlessness)
4. Often has difficulty playing or engaging in leisure activities quietly
5. Is often "on the go" or often acts as if "driven by a motor" (e.g., is unable to be or uncomfortable being still for extended time, as in restaurants, meetings; may be experienced by others as being restless or difficult to keep up with)
6. Often talks excessively

Impulsivity: (acting without thinking)

1. Often blurts out answers before questions have been completed (e.g., completes people's sentences; cannot wait for turn in conversation)
2. Often has difficulty awaiting turn (e.g., while waiting in line)
3. Often interrupts or intrudes on others (e.g., butts into conversations or games, or activities; may start using other people's things without asking or receiving permission; for adolescents and adults, may intrude into or take over what others are doing)

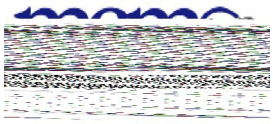
In addition, the following conditions must be met:

B. Several hyperactive impulsive or inattentive symptoms were present before age 12 years.

C. Several symptoms are present in two or more settings, (e.g., at home, school or work; with friends or relatives; in other activities).

D. There is clear evidence that the symptoms interfere with, or reduce the quality of social, school, or work functioning.

E. The symptoms do not occur exclusively during the course of schizophrenia or other psychotic disorder and are not better accounted for by another mental disorder (e.g. mood disorder, anxiety disorder, dissociative disorder, or a personality disorder.



Resources for Physicians

ADHD Medication Guide (from Cohen Children's Medical Center, Northwell Health)
http://www.adhdmedicationguide.com/

National Initiative for Children's Healthcare Quality (NICHQ)
Caring for Children with ADHD: A Resource Toolkit for Clinicians: ADHD toolkit for providers developed by the American Academy of Pediatrics and National Initiative for Children's Healthcare Quality. Summary of Contents: Initial Evaluation Forms, Vanderbilt Assessment Scale (Initial Parent/Teacher and Follow-up Parent/Teacher), Scoring Instructions, ADHD Management Plans, Daily Home Report Card, Parent Informational Resources

- 1st edition of the toolkit - available for downloading in English only
- 2nd edition of the toolkit - can be purchased from the AAP Bookstore

American Academy of Pediatrics

Centers for Disease Control and Prevention
https://www.cdc.gov/ncbddd/adhd/

Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD)
Provides education, advocacy and support for individuals with ADHD.

Conners 3rd Edition Rating Scales
http://www.pearsonclinical.com/psychology/products/100000523/conners-3rd-edition-conners-3.html?origsearchtext=100000523

Learning Disabilities Association of America (LDA)
Provides professionals, parents and teachers with information on learning disabilities, practical solutions, and a network of resources.

NASP
National Association of School Psychologists

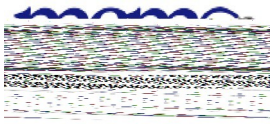
National Institute of Mental Health (NIMH)

NYS Office of Mental Health

Project Teach
https://projectteachny.org/

US Food and Drug Administration (FDA)
Medication guides.

Vanderbilt Assessment
http://www.nichq.org/childrens-health/adhd/resources/vanderbilt-assessment-scales



Resources for Patients

Centers for Disease Control and Prevention
Learn the Signs, Act Early - Print form in English and Spanish

Learning Disabilities Association of America (LDA)
Provides professionals, parents, and teachers with information on learning disabilities, practical solutions, and a network of resources.

ParentsMedGuide.org
ADHD medication guide for parents. Resources developed by the American Psychiatric Association and the American Academy of Child and Adolescent Psychiatry.

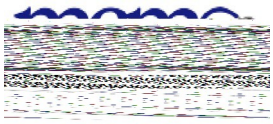
Vanderbilt Diagnostic Teacher Rating Scale
A rating scale with two components: symptom assessment and impairment of performance in school, to screen for symptoms of ADHD.

Wolraich, M. L., Hagan, J. F., Allan, C., Chan, E., Davison, D., Earls, M., ... & Holbrook, J. R. (2019). Clinical practice guideline for the diagnosis, evaluation, and treatment of attention-deficit/hyperactivity disorder in children and adolescents. *Pediatrics*, *144*(4), e20192528.

Measures Commonly Used by National Organizations (for purpose for maintenance treatment)
• ADHD Initiation Phase: percentage of members 6 to 12 years of age with an ambulatory prescription dispensed for ADHD medication who had one follow-up visit with a practitioner with prescribing authority during the 30-day initiation phase. *(HEDIS)*
• ADHD Continuation and Maintenance Phase: percentage of members 6 to 12 years of age with an ambulatory prescription dispensed for ADHD medication who remained on the medication for at least 210 days and who, in addition to the visit in the initiation phase, had at least two follow-up visits with a practitioner within 270 days (9 months) after the initiation phase ended. *(HEDIS)*

High Risk Populations/Disparities
• All practitioners need to be aware that there are racial and ethnic disparities in the diagnosis and treatment of ADHD, even though prevalence likely does not differ (e.g. Children from racial and ethnic minorities may be less likely to be diagnosed and treated for ADHD).
• In a national survey, reported rates of identified ADHD and the use of any prescription medication were lower in Hispanic and African American children, compared to white children. In another study, prevalence did not differ in different groups, but medication use was lower in non-Whites. “Attitudes and perceptions about mental health care, language barriers, parental knowledge about ADHD, and accessto and cost of treatment are among the cultural disparities that result in a considerable level of unmet need.” 1

1. Oatis, Melvin, MD, Cultural Disparities in the Diagnosis and Treatment of Childhood ADHD. ADHA Update. American Professional Society of ADHD and Related Disorders. Feb. 2010.



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Barbaresi, W. J., Campbell, L., Diekroger, E. A., Froehlich, T. E., Liu, Y. H., O'Malley, E., ... & Chan, E. (2020). Society for Developmental and Behavioral Pediatrics clinical practice guideline for the assessment and treatment of children and adolescents with complex attention-deficit/hyperactivity disorder. *Journal of Developmental & Behavioral Pediatrics*, *41*, S35-S57.PMID:3199657

Center for Disease Control and Prevention. Attention-Deficit Hyperactivity Disorder. Retrieved from https://www.cdc.gov/ncbddd/adhd/index.html accessed 3/16/2020

Healthcare Effectiveness Data and Information Set (HEDIS). (tool used by more than 90% of American health plans to measure performance on important dimensions of care and service.) Retrieved from https://www.ncqa.org/hedis/measures/follow-up-care-for-children-prescribed-adhd-medication/