Executive Summary
Guideline Overview
This guideline is primarily based upon the 2007 American Academy of Child and Adolescent Psychiatry and 2011 American Academy of Pediatrics (AAP) guidelines.

Key Revisions (2016 Periodic Review)
1. Added information on sleep disorders and Autism Spectrum Disorders.
2. Recommend use of the Vanderbilt rating scale.
3. Added recommendation for 4 and 5 year olds with ADHD and concerns for personal safety.
4. Modified recommendation for medication holidays (not universally recommended, consider individual patient factors).
5. Added section on complimentary and alternative therapies.

Key Practice Recommendations
Practice Recommendations should be copied verbatim from the source document to accurately depict the intention of the recommendations. Depending upon the guideline, include pertinent recommendations only.
1. To make a diagnosis of ADHD, the primary care clinician should determine that Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria have been met (including documentation of impairment in more than 1 major setting); information should be obtained primarily from reports from parents or guardians, teachers, and other school and mental health clinicians involved in the child’s care. The primary care clinician should also rule out any alternative cause.1 (AAP Quality of evidence B, strong recommendation)
2. ADHD is a clinical diagnosis made after consideration of other disorders which can also cause hyperactivity or inattentive behaviors. The primary care clinician should assess for other conditions that might coexist with ADHD, including emotional or behavioral (e.g., anxiety, depressive, oppositional defiant, and conduct disorders), developmental (e.g., learning and language disorders or other neurodevelopmental disorders), and physical (e.g., tics, sleep apnea, absence seizures) conditions.1 (AAP Quality of evidence B, strong recommendation)
3. For both initial and ongoing evaluation of ADHD, the preferred rating scale is the NICHQ Vanderbilt Assessment Scale (long form) for both parent/guardian and teacher informant in patients age 4-5 years (Very low quality, weak/conditional recommendation), 6-12 years (Low quality evidence, strong recommendation), and 13-17 years.1,2 (Very low quality evidence, weak/conditional recommendation)
4. Children (4-5 years): The first line of treatment should be evidence-based parent/guardian and/or teacher-administered behavior therapy.1 (AAP Quality of evidence A, strong recommendation) Providers may prescribe stimulant medication if the behavior interventions do not provide significant improvement and there is moderate-to-severe continuing disturbance in function.1 (AAP Quality of evidence B, recommendation) In severe cases involving concerns for safety or personal harm to the patient or others, stimulant medication may be used as first line therapy with referral to Developmental Pediatrician, Pediatric Psychology, or Pediatric Psychiatry3-5 (Moderate quality evidence, weak/conditional recommendation)
5. Children (6-11 years): Prescription of FDA-approved medications for ADHD1 (AAP Quality of evidence A, strong recommendation) and/or evidence-based parent and/or teacher-administered behavior therapy should be completed for treatment. It is preferred to prescribe both medication and behavioral therapy.1 (AAP Quality of evidence B, strong recommendation)
6. Adolescents (12-18 years): FDA-approved medications for ADHD should be prescribed with the patient assent.1 (AAP Quality of evidence A, strong recommendation) Behavioral therapy may be prescribed, as treatment using both methodologies is preferred.1 (AAP Quality of evidence C, recommendation)
Companion Documents
1. Pediatric ADHD Algorithm
2. Pediatric ADHD Medication Algorithm
3. Pediatric Medication Tables

Scope
Disease/Condition(s): Attention deficit and hyperactivity disorder (ADHD)

Clinical Specialty: Family Medicine, Pediatrics, Neurology, Psychiatry, and Psychology

Intended Users: Primary Care Physicians, Advanced Practice Providers, Psychiatrists, Psychologists, Pharmacists, Nurses

Objective(s): To provide evidence-based recommendations that support clinical decision making during developmental surveillance, diagnosis, and treatment of pediatric patients with ADHD

Target Population: Children (age 4-10 years) and adolescent (age 11-17 years) patients. Consider referral for further evaluation to Behavioral Health or Neurology for children younger than 4 years who present with behavior problems inconsistent with developmental level.

Interventions and Practices Considered:
- Behavioral therapy
- Medication
- Treatment of comorbid conditions

Methodology
Methods Used to Collect/Select the Evidence:
Electronic database searches (e.g., PUBMED) were conducted by the guideline author(s) and workgroup members to collect evidence for review. Expert opinion and clinical experience were also considered during discussions of the evidence.

Methods Used to Formulate the Recommendations:
The workgroup members agreed to adopt recommendations developed by external organizations and/or arrived at a consensus through discussion of the literature and expert experience. All recommendations endorsed or developed by the guideline workgroup were reviewed and approved by other stakeholders or committees (as appropriate).

Methods Used to Assess the Quality of the Evidence/Strength of the Recommendations:
Recommendations developed by external organizations maintained the evidence grade assigned within the original source document and were adopted for use.

Internally developed recommendations, or those adopted from external sources without an assigned evidence grade, were evaluated by the guideline workgroup using an algorithm adapted from the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology (see Figure 1 in Appendix A).
Rating Scheme for the Strength of the Evidence/Recommendations:
See Appendix A for the rating scheme(s) used within this document.

Recognition of Potential Health Care Disparities: Starting in kindergarten, African American children and some Latino children are less likely than Caucasian children to be diagnosed with ADHD. This is despite a similar frequency of ADHD-related behaviors in the classroom. Non-white children continue to be diagnosed with ADHD at lower rates through eighth grade. Of those diagnosed with ADHD, African-American children and adolescents were less likely to receive methylphenidate than Caucasian children.

Introduction
ADHD is a condition which extends across developmental phases and may extend into adulthood. Core symptoms include hyperactivity, impulsivity, and distractibility resulting in academic, occupational, social, and personal underachievement. While the strongest risk factor is genetic predisposition, the presentation and severity of the disorder results from complex interactions among genetic, psychosocial, environmental, and biologic factors. ADHD is a common behavioral diagnosis in primary care with substantial burden in terms of number of visits, cost of medication, behavioral management and additional service costs (i.e. injury costs, etc.). Diagnosis of ADHD requires evaluation of behavior across multiple settings, consideration of alternative causes, and possible comorbidities. A multimodal management plan, involving both the family, healthcare team, and school professionals, is essential. Early recognition, diagnostic accuracy, and optimal management, including family and educational support, contribute to improved short and long term functioning for both the child and his or her family.

This guideline is meant to address the care of children ages 4 – 17 years. Consider referral for further evaluation to Behavioral Health (Pediatric Psychiatry or Psychology), Developmental Pediatrics, and/or Neurology for children younger than 4 years who present with significant behavior problems that are atypical for the child’s developmental level.
**Recommendations**

**Pediatric ADHD Algorithm (ages 4-17 years)**

**Suspect ADHD**
- Hyperactive, can’t sit still and/or
- Lack of attention, poor concentration, daydreams, doesn’t listen and/or
- Acts without thinking/impulsive and/or
- Leading to functional impairment at home and school

**Family and Child Assessment**
1. History of present illness (HPI), including specific behaviors of concern, age of onset, duration, parental expectations, general temperament, degree of functional impairment, settings and previous interventions
2. Past medical history, including prenatal, childhood development, and substance abuse
3. Family history, especially learning disorders, alcohol and other drug issues (ADDA), conduct disorders, ADHD, sudden death and cardiac problems
4. Physical exam with particular attention to vision, hearing, sleep, genetics, and neurologic disorders
5. Consider lead screen, TSH, CBC/serum ferritin if history suggestive
6. Social history, including family organization, living arrangements, significant stressors
7. Educational history, including number of schools, need for special help, evaluations

**Gather Information**
1. Parents and other caregivers complete Vanderbilt rating scale
2. Teachers complete Vanderbilt rating scale
3. School evaluations (including IEP)
4. Report cards to document academic and social impairment and attendance patterns
5. Information from other clinicians (behavioral health, specialists, tutors, etc.)

**Consider Co-morbid and Confounding Disorders**
1. Normal developmental variation or unrealistic parental or school expectations
2. Obsessive compulsive disorder (OCD)
3. Affective disorders (i.e., depression, anxiety)
4. Oppositional defiant/intermittent explosive/conduct disorder
5. Sequela of abuse/truma
6. Developmental disorders, including Autism Spectrum disorders
7. Undiagnosed cognitive or learning disorder
8. Sleep disorders
9. Sensory processing disorders
10. Substance abuse

**Determine Diagnosis**
1. Meet DSM-5 criteria

**Treatment**
1. Family and patient education regarding diagnosis
2. Parenting strategies for behavior management
3. Educational planning and accommodations
4. Refer for family therapy or counseling and management training if needed
5. Medications

**Follow-up**
1. Prior to appointment, ask parents and teachers to complete follow-up Vanderbilt rating scales
2. Review parent and teacher rating scale results, target symptoms, home behavior, and school performance
3. Monitor for drug adverse effects (e.g., sleep, appetite), reinforce importance of drug adherence, and adjust drug therapy if needed
4. Reconsider comorbid and/or confounding disorders as needed
5. Monitor height, weight, pulse and blood pressure at each visit
6. Discuss parent concerns/questions and determine need for resources for parent/guardian depression, ADHD, or other mental health concern

**Consider Referral**
1. Neurological disorder
2. Extreme family or child dysfunction
3. Significant psychiatric disorders
4. Possibility of undiagnosed learning disorder

**See Medication Algorithm and Table(s)**
PRESENTATION AND SCREENING

The primary care clinician should initiate an evaluation for ADHD for any child 4 through 18 years of age who presents with academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity.¹ (*AAP Quality of evidence B, strong recommendation*)

Parents/guardians (or anyone representing the patient such as a non-parent relative, other caregiver, or school nurse) may request evaluation for ADHD because of their own concerns or at the suggestion of a teacher, therapist, or other caregiver. The following behaviors are consistent with ADHD if they are present and inconsistent with developmental level, and result in functional impairment. A child with ADHD might:¹⁷
- daydream a lot
- forget or lose things a lot
- squirm or fidget
- talk too much, interrupt others
- make careless mistakes or take unnecessary risks
- have a hard time resisting temptation
- act without thinking
- have trouble taking turns
- have difficulty getting along with others
- avoid task that require focus

See Appendix B for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria for ADHD.

CLINICAL EVALUATION

To make a diagnosis of ADHD, the primary care clinician should determine that Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition criteria have been met (including documentation of impairment in more than 1 major setting) (see Appendix B); information should be obtained primarily from reports from parents or guardians, teachers, and other school and mental health clinicians involved in the child’s care. The primary care clinician should also rule out any alternative cause.¹ (*AAP Quality of evidence B, strong recommendation*)

Initial evaluations can usually be done in the primary care office, reserving referrals to Pediatric Psychiatry, Developmental Pediatrics, or Behavioral Pediatrics for those situations where the diagnosis is uncertain or family situation is complicated. Evaluation should consist of clinical interviews with the parent/guardian and patient, obtaining information about the patient’s school or daycare functioning, evaluation for comorbid psychiatric disorders, and review of the patient’s medical, social, and family histories. Data collection prior to a clinic visit is typically helpful, and more than one visit may be needed to perform the entire clinical assessment (e.g., parents/guardians may come without their children).

History of Present Illness
- The history of present illness should include a thorough description of the behaviors of concern, including age of onset, duration, and degree of functional impairment.¹⁶ The location and circumstances in which the behaviors occur should be assessed, as well as what interventions have been tried.
- Behaviors should be considered within the context of normal developmental variation, individual temperament, and parental/guardian expectations.
Past Medical History
- Past medical history should include any prenatal, birth, or childhood medical insults (e.g., seizures, head trauma, stroke, encephalitis, maternal smoking, prenatal exposures, chronic ear infections, premature or difficult birth, etc.) which could contribute to the behavioral concerns.
- Information from other clinicians including behavioral health providers, medical specialists, etc. should be reviewed.

Family History
- Children with ADHD often have a positive family history for ADHD and associated concerns, such as learning problems, mood or anxiety disorders, or conduct disorders.18-20
- Substance abuse can represent a consequence of inadequate treatment or undiagnosed ADHD in adults.21,22 Having family members or care givers with alcohol and other drug issues is a risk for diversion of medication. Consider evaluation for drug-seeking behavior with multiple pharmacies or prescribing providers using the Wisconsin Prescription Drug Monitoring Program.
- A family history of sudden death or early cardiac problems should prompt review prior to using stimulant medications. Electrocardiography (ECG) may be considered prior to initiation of stimulant therapy if indicated by risk factors determined by family or individual history or during review of systems.23-27 (Moderate quality evidence, weak/conditional recommendation)

Social History
- It is important to assess current living arrangement and parenting patterns. Chaotic home situations can produce behavior problems similar to ADHD or make treatment of a child with ADHD more difficult.
- Significant stressors, including family disruption, divorce, frequent moves, significant losses, history of abuse or neglect, and parental mental health should be assessed.28-30
- Lifestyle factors, such as sleep patterns, amount of screen time, exercise habits, and structured home life/schedules should also be assessed.31-34

History of Educational Issues
- Clinicians should inquire whether behaviors occur in specific classes or at certain times of the day, in consideration of the likelihood of a learning disorder.
- It is helpful to review results from any school-based evaluations and to consider any special help or classroom accommodations that have been provided.
- Report cards can be used to document performance as well as behavioral concerns.
- Attendance problems should be considered as they can indicate school avoidance due to anxiety, physical problems, or chaotic parenting.

Physical Exam
A physical exam, including review of systems, should be performed as part of the initial evaluation for ADHD if the patient has not had a Well Child Visit within the previous year. (Very low quality evidence, Strong recommendation)

Vision or hearing deficits, sleep inadequacy, migraines, pica, or lead poisoning can all contribute to difficulty in function. Vision and hearing screening or lab work (such as lead screening, complete blood count (CBC), ferritin, TSH) may be considered if indicated. (Moderate quality evidence, weak/conditional recommendation) However, if a patient’s medical history is unremarkable, laboratory testing or neurological testing is not indicated.16 (Very low quality evidence, weak/conditional recommendation)
Comorbid and/or Confounding Disorders
ADHD is a clinical diagnosis made after consideration of other disorders which can also cause hyperactivity or inattentive behaviors. The primary care clinician should assess for other conditions that might coexist with ADHD, including emotional or behavioral (e.g., anxiety, depressive, oppositional defiant, and conduct disorders), developmental (e.g., learning and language disorders or other neurodevelopmental disorders), and physical (e.g., tics, sleep apnea, absence seizures) conditions.¹ (AAP Quality of evidence B, strong recommendation)

Some other comorbid and/or confounding disorders that can cause symptoms of hyperactivity or inattentiveness include the following and are described in greater detail below:
- Normal developmental variation or unrealistic parental/guardian or school expectations
- Obsessive compulsive disorder (OCD)
- Affective disorders (e.g., depression, anxiety)
- Oppositional defiant/intermittent explosive/ conduct disorder
- Sequela of abuse/trauma
- Developmental disorders, including Autism Spectrum Disorders
- Undiagnosed cognitive or learning disorder
- Sleep disorders
- Sensory processing disorders
- Substance abuse

Psychiatric evaluation is indicated for concern regarding any significant psychiatric or mood disorder. For patients undergoing evaluation for other psychologic dysfunctions in addition to ADHD, it may be appropriate to use a different rating scale with broader scope of assessment in lieu of or in addition to the Vanderbilt. (Low quality evidence, weak/conditional recommendation)
Families with histories of or with ongoing abuse, high stress levels or dysfunctional parenting may benefit from referral to Behavioral Health. (Low quality evidence, weak/conditional recommendation)

ADHD symptoms can mask core symptoms of Autism Spectrum Disorders (ASD). Examples of overlapping symptoms include becoming easily distracted, often not seeming to listen when spoken to, avoidance/reluctance to do certain activities (behavioral rigidity), having conversational deficits like interrupting and talking excessively, having trouble waiting his/her turn, often fidgeting (may not be obviously atypical mannerisms), or running and climbing when inappropriate. It is recommended that a team of experts evaluate a child with co-occurring symptoms of ADHD and ASD. A referral to a Psychologist, Developmental Pediatrician, or an Autism treatment center for evaluation is appropriate.³⁵ (Low quality evidence, weak/conditional recommendation)

A referral to a center which specializes in interdisciplinary evaluation (e.g., the Waisman Center in Madison) is appropriate to differentiate complicated cases of behavioral symptoms related to a range of neurodevelopmental disorders and suspected ASD. The Waisman Resource Center serves to provide information about community resources to patients and families. (800-532-3321 or wrc@waisman.wisc.edu)

Learning disorders are frequently a comorbid or alternative diagnosis. Neuropsychological and psychological tests should be performed by a specialist if the patient’s history suggests low general cognitive ability or low achievement in language or mathematics relative to the patient’s intellectual ability.¹⁶ Referral to the school for further evaluation may also be appropriate,
especially if the behaviors are limited to one area of academic functioning, such as math or reading, or there is concern about comprehension. (Very low quality evidence, weak/conditional recommendation) This testing may not be covered by insurance. Patient Relations may be able to provide information on specific testing agencies, including agencies that provide training opportunities to graduate students and provide testing at a reduced rate.

Sleep problems are common in children with ADHD. The causes are likely multifactorial and may include adverse effects of medications used to treat ADHD (See the Medication Treatment Algorithm), factors intrinsic to ADHD, or comorbid conditions such as oppositional disorder or mood disorders. In some cases, sleep disturbances may lead to ADHD-like symptoms. Referral for a sleep consultation is recommended for any child with nightly snoring, frequent sleepwalking or night terrors, significant difficulty falling asleep or staying asleep, restless leg symptoms, or daytime sleepiness in addition to symptoms of hyperactivity and inattention. (Moderate quality evidence, weak/conditional recommendation)

In the subset of patients who have symptoms of ADHD in addition to symptoms of a sensory processing disorder, a referral to Pediatric Occupational Therapy may be considered. (Very low quality evidence, weak/conditional recommendation)

Substance abuse can result in similar symptoms to ADHD or can represent a consequence of inadequate treatment. Consider evaluation for drug-seeking behavior with multiple pharmacies or prescribing providers using the Wisconsin Prescription Drug Monitoring Program.

EVALUATION OF SYMPTOMS

There are many rating scales based on the DSM-5 criteria that can be used for evaluation of ADHD symptoms. The use of ADHD rating scales for diagnosis and follow up purposes is historically low. Barriers to rating scale completion, including both clinic and patient factors such as scale length or evaluator familiarity, may contribute to low usage of rating scales. The ideal rating scale is validated, will reduce barriers to completion, includes items that evaluate for common comorbid conditions (e.g., oppositional defiant disorder, anxiety), and is easy to use and document in the electronic health record. Use of a consistent tool across settings and over time is preferred for tracking changes in patient symptoms.

For both initial and ongoing evaluation of ADHD, the preferred rating scale is the NICHQ Vanderbilt Assessment Scale (long form) for both parent/guardian and teacher informant in patients age 4-5 years (Very low quality, weak/conditional recommendation), 6-12 years (Low quality evidence, strong recommendation), and 13-17 years. (Very low quality evidence, weak/conditional recommendation) While validation studies have been performed on individuals between the ages of 6 and 12 only, these studies were only for the comparison of normative data. The tool has been widely used to collect information required for a DSM-5 diagnosis in children and adolescents within the published medical literature.

If a provider (including a school psychologist) initiated the ADHD evaluation using a rating scale other than the Vanderbilt, the other rating scale (e.g., Connors, SNAP) can still be used in the diagnosis of ADHD. However, it is recommended to transition to the Vanderbilt rating scale for ongoing follow up per above recommendations. (Low quality evidence, weak/conditional recommendation)

When using the NICHQ Vanderbilt Assessment Scale, the teacher informant is ideally a current teacher who has significant contact with the child. If the evaluation is taking place over the summer or at the beginning of the school year, the prior year’s teacher may provide the most
valid ratings. Report cards, IEP evaluations, teacher notes, assessments from school psychologists, and other documentation are valuable data and should also be used in the evaluation of ADHD when available.

Obtaining completed rating scales from high school teachers is notoriously difficult. Although use of both a parent/guardian and teacher informant rating scale is preferred, use of the ADHD Self Assessment Scale may be considered in carefully selected older adolescents in lieu of a teacher informant; a parent/guardian informant is still considered essential.45,46 (Very low quality evidence, weak/conditional recommendation)

PROVIDE TREATMENT

Treatment consists of a variety of approaches including family and parenting support, educational accommodations, behavioral therapy, and medication.

Treatment Recommendations by Age

Children (4-5 years): The first line of treatment should be evidence-based parent/guardian and/or teacher-administered behavior therapy.1 (AAP Quality of evidence A, strong recommendation) Providers may prescribe stimulant medication if the behavior interventions do not provide significant improvement and there is moderate-to-severe continuing disturbance in function.1 (AAP Quality of evidence B, recommendation) In severe cases involving concerns for safety or personal harm to the patient or others, stimulant medication may be used as first line therapy with referral to Developmental Pediatrician, Pediatric Psychology, or Pediatric Psychiatry3-5 (Moderate quality evidence, weak/conditional recommendation)

Children (6-11 years): Prescription of FDA-approved medications for ADHD1 (AAP Quality of evidence A, strong recommendation) and/or evidence-based parent and/or teacher-administered behavior therapy should be completed for treatment. It is preferred to prescribe both medication and behavioral therapy.1 (AAP Quality of evidence B, strong recommendation)

Adolescents (12-18 years): FDA-approved medications for ADHD should be prescribed with patient assent.1 (AAP Quality of evidence A, strong recommendation) Behavioral therapy may be prescribed, as treatment using both methodologies is preferred.1 (AAP Quality of evidence C, recommendation)

Behavioral Therapy

Behavioral therapy includes a broad set of psychosocial interventions, which can occur via family counseling, parent support groups, self-education, and/or clinician visits. Behavioral therapy typically includes training parents in techniques intended to shape the child’s behavior and to improve the child’s ability to regulate his or her own behavior. Examples may include emotion coaching for preschoolers, positive discipline techniques, social skills training, and developing routines (organizational training). Behavioral therapy should be evidence-based and appropriate to the patient’s age, developmental level, and comorbid conditions. Inquiring about the aforementioned interventions to parents during primary care follow-up visits stresses their importance and emphasizes parental roles in the complete treatment plan.47-52

Students with disabilities, including those with ADHD, have legal protections that guarantee a free and appropriate public education. Special services or educational accommodations are not needed by all students with ADHD; however, it is important for all parents and guardians to develop a constructive working relationship with their child’s teachers and school. All parents should be informed of the possibilities for obtaining a school-based evaluation to determine eligibility for services (Section 504 of the Rehabilitation Act of 1974; Individuals with Disabilities
In Wisconsin, if a public school district, administrator, or school psychologist receives a written request for an evaluation they are legally required to meet with the parents/guardians to see if an evaluation is needed. (See the Wisconsin Department of Education’s Accommodations Guide) If a student is eligible for services through their school, parents and guardians should expect to work with the school to develop and monitor an educational plan which maximizes the child’s academic functioning and achievement. Coordination with health care providers is an integral part of successful educational plans. Additional resources and information may be obtained by contacting the school psychologist or nurse.

**Medication Therapy**

Medication therapy is often a very effective tool in treating children with ADHD. Evidence also suggests that medication therapy may ameliorate the structural differences observable in the brains of patients with ADHD.

It can take several attempts to find the most efficacious medication with the least side effects. The medication treatment algorithm (Appendix C) reviews initial treatment choices and management of common side effects. The medication chart (Appendix D) includes product names, usual duration of action, available strengths, usual dosing, and contraindications/precautions.

Medication success is based on reduction of target symptoms without problematic side-effects. When medication therapy is effective, the treatment effect does not persist following discontinuation. “Medication holidays” (discontinuation of medication use during weekends and summer break) are not universally recommended. The decision to continue or discontinue ADHD medication during non-school days should be based on individual patient needs. (GRADE Low quality evidence, weak/conditional recommendation)

Consider the following when forming and evaluating the medication plan (Very low quality evidence, weak/conditional recommendation):

- Perform a baseline assessment before a medication is prescribed of common ADHD medication adverse effects.
- Medication should be periodically re-evaluated in order to assess the recurrence of symptoms with regard to attention and hyperactivity. When evaluating effectiveness of medication, also consider other components of the treatment plan.
  - Assess for adherence to the medication regimen. Missed doses are common both at home and school.
  - Determine if behavior therapy is being implemented.
  - Determine if more educational support is needed.
- In situations where there is a significant risk of substance abuse or diversion by the patient or their family members, non-stimulant preparations or slow-release stimulants are preferred. When crushed, they more closely resemble immediate-release preparations in terms of onset and effect.
- Consider insurance coverage and costs of therapy when prescribing medication. Medication costs can be a significant barrier to treatment for some families. Consider use of generic medications and/or a referral to Patient Resources.
- Medications must be prescribed in accordance with Wisconsin Chapter 961 for controlled substances:
  - Prescription must be written for legitimate medical indication.
  - Sign/date prescription on date of issue with:
    - Patient full name/address.
Drug name, strength, dosage form, quantity, directions for use.
- Up to 3 monthly prescriptions may be given to patients.
- The date of issue (date of prescription is written) must be on all three prescriptions.
- The prescriber writes “fill on or after XX/XX/XXXX” for two prescriptions to be filled at a later date.
- A prescription for a CII controlled substance cannot be dispensed more than 60 days after the date of issue on the prescription order.

Most children will respond to one or more of the stimulant medications; therefore, consider referral to Psychiatry or a provider-to-provider consultation for children who do not respond after several medication trials or who experience severe side effects. (GRADE Very low quality evidence, weak/conditional recommendation)

Complimentary and Alternative Therapies (CAT)
Many families and patients express interest in using complimentary and alternative therapies to treat ADHD. For some, it is because medication and/or behavioral therapies have been ineffective, while others have concerns about the safety of long-term medication use. Behavioral therapies may also be difficult to access for some families. Examples of CAT modalities used to treat ADHD include restricted diets, nutritional supplements, and mind-body therapies such as meditation, massage, acupuncture, neurofeedback, and working memory training.

Robust evidence to support the effectiveness of CAT therapies is lacking. Some studies show modest benefit, however many of these studies are not methodologically strong. Due to the lack of consistent supporting empirical evidence, CAT modalities are not recommended. (Low quality evidence, weak/conditional recommendation) Discussion of CAT modalities with families should include possible harms (e.g., restricted diet), burden on patients and families (e.g., financial risk), and establishing patient and family values and interests. Patients and their families should be encouraged to follow basic healthy lifestyle factors (e.g., structured sleep schedule, exercise, limited screen time, nutritious diet) which are supported by emerging literature.31-34 (GRADE Low quality evidence, weak/conditional recommendation)

COMPLETE FOLLOW-UP CARE
The primary care clinician should recognize ADHD as a chronic condition and, therefore, consider children and adolescents with ADHD as children and youth with special health care needs. Management of children and youth with special health care needs should follow the principles of the chronic care model and the medical home.1 (AAP Quality of evidence B/strong recommendation).

Based on the principles of chronic care management, patients with a new ADHD diagnosis and a newly prescribed ADHD medication should be seen by a provider (MD, PA, or NP) in 2-3 weeks, and have two additional follow up appointments within the next 9 months. (Very low quality evidence, weak/conditional recommendation) Follow-up within this timeframe is a required Healthcare Effectiveness Data and Information Set (HEDIS) measure. For more information, see Appendix E.

At each follow-up visit clinicians should complete the following (Low quality evidence, weak/conditional recommendation):
- Ask parents/guardians and teacher to complete Vanderbilt rating scales and review results.
• Review target symptoms and home behavior.
• Review school performance including success of educational plan.
• Monitor for adverse effects to medications, if applicable, including effects on appetite and sleeping patterns.
• Adjust medication therapy as needed.
• Reinforce the importance of medication adherence. Medication holidays are NOT universally recommended but may be appropriate based on individual patient needs.
• Reconsider comorbid and/or confounding disorders, particularly when treatment goals are not achieved.
• Periodic physical assessment including height, weight, pulse, and blood pressure.\textsuperscript{27,60,61}
• Discuss parent/guardian concerns and questions. Review success of parenting strategies and educational needs.
• Remind parents/guardians that caring for a child with ADHD can be challenging. Determine if a referral to Patient Resources or elsewhere may be needed for the parent/guardian to seek evaluation or treatment for possible depression, adult ADHD, or another mental health concern.

Contrary to general recommendations for Well Child Visits in the Preventive Health Care Guideline, all patients with ADHD should have annual well child checks, including patients who see a psychiatrist or psychologist for ADHD management. (Very low quality evidence, strong recommendation)
Disclaimer
Clinical practice guidelines assist clinicians by providing a framework for the evaluation and treatment of patients. This guideline outlines the preferred approach for most patients. It is not intended to replace a clinician’s judgment or to establish a protocol for all patients. It is understood that some patients will not fit the clinical condition contemplated by a guideline and that a guideline will rarely establish the only appropriate approach to a problem.
References


59. NICE. Attention Deficit Hyperactivity Disorder: Diagnosis and Management of ADHD in Children, Young People and Adults. 2008; NICE Clinical Guideline 72. Available at: www.nice.org.uk/guidance/CG72.


Appendix A. Evidence Grading Scheme(s)

Figure 1. GRADE Methodology

GRADE Ranking of Evidence

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>High</td>
<td>We are confident that the effect in the study reflects the actual effect.</td>
</tr>
<tr>
<td>Moderate</td>
<td>We are quite confident that the effect in the study is close to the true effect, but it is also possible it is substantially different.</td>
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<tr>
<td>Low</td>
<td>The true effect may differ significantly from the estimate.</td>
</tr>
<tr>
<td>Very Low</td>
<td>The true effect is likely to be substantially different from the estimated effect.</td>
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GRADE Ratings for Recommendations For or Against Practice

<table>
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<tr>
<th>Rating</th>
<th>Description</th>
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<tbody>
<tr>
<td>Strong</td>
<td>The net benefit of the treatment is clear, patient values and circumstances are unlikely to affect the decision.</td>
</tr>
<tr>
<td>Weak/conditional</td>
<td>Recommendation may be conditional upon patient values and preferences, the resources available, or the setting in which the intervention will be implemented.</td>
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Figure 2. American Academy of Pediatrics Grading Scheme (2011)
Appendix B. DSM-5 Diagnostic Criteria

A. A persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterized by (1) and/or (2):

1. **Inattention:** Six (or more) of the following symptoms have persisted 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:

   **Note:** The symptoms are not solely a manifestation of oppositional behavior, defiance, hostility, or failure to understand tasks or instructions. **For older adolescents and adults (age 17 and older), at least five symptoms are required.**
   a. Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities (e.g., overlooks or misses details, work is inaccurate).
   b. Often has difficulty sustaining attention in tasks or play activities (e.g., has difficulty remaining focused during lectures, conversations, or lengthy reading).
   c. Often does not seem to listen when spoken to directly (e.g., mind seems elsewhere, even in the absence of any obvious distraction).
   d. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., starts tasks but quickly loses focus and is easily sidetracked).
   e. 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).
   f. 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).
   g. Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
   h. Is often easily distracted by extraneous stimuli (for older adolescents and adults, may include unrelated thoughts).
   i. Is often forgetful in daily activities (e.g., doing chores, running errands; for older adolescents and adults, returning calls, paying bills, keeping appointments).

2. **Hyperactivity and impulsivity:** Six (or more) of the following symptoms have persisted 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:

   **Note:** The symptoms are not solely a manifestation of oppositional behavior, defiance, hostility, or a failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.
   a. Often fidgets with or taps hands or feet or squirms in seat.
   b. Often leaves seat in situations when 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).
c. Often runs about or climbs in situations where it is inappropriate. (Note: In adolescents or adults, may be limited to feeling restless.)
d. Often unable to play or engage in leisure activities quietly.
e. Is often “on the go,” acting 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).
f. Often talks excessively.
g. Often blurts out an answer before a question has been completed (e.g., completes people’s sentences; cannot wait for turn in conversation).
h. Often has difficulty waiting his or her turn (e.g., while waiting in line).
i. Often interrupts or intrudes on others (e.g., butts into conversations, 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).

B. Several inattentive or hyperactive-impulsive symptoms were present prior to age 12 years.
C. Several inattentive or hyperactive-impulsive 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, academic, or occupational functioning.
E. The symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal).

### DSM-5 Diagnosis

**Specify whether:**
- **Combined presentation:** If both Criterion A1 (inattention) and Criterion A2 (hyperactivity-impulsivity) are met for the past 6 months.
- **Predominantly inattentive presentation:** If Criterion A1 (inattention) is met but Criterion A2 (hyperactivity-impulsivity) is not met for the past 6 months.
- **Predominately hyperactive/impulsive presentation:** If Criterion A2 (hyperactivity-impulsivity) is met and Criterion A1 (inattention) is not met for the past 6 months.

**Specify if:**
- **In partial remission:** When full criteria were previously met, fewer than the full criteria have been met for the past 6 months, and the symptoms still result in impairment in social, academic, or occupational functioning.

**Specify current severity:**
- **Mild:** Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.
- **Moderate:** Symptoms or functional impairment between “mild” and “severe” are present.
- **Severe:** Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.
Appendix C

**Pediatric ADHD Medication Algorithm**

**Target Behaviors at Home and School Identified**

### Stimulant Medication

No particular advantage to either Methylphenidate or Amphetamine. Start with low dose. The use of a long-acting stimulant will promote continuous, stable therapy throughout the day. There is no need to start treatment with a short-acting agent first, prior to switching to a long-acting agent. Referral is appropriate for child with unusual responses or whenever a clinician has concerns about further treatment. See medication chart for precautions/contraindications.

### Periodic follow-up to monitor:

- Target behavior outcomes
- Academic progress
- Adverse effects of medication

Consider long acting dose and medication equivalent for maintenance treatment.

---

* Appetite loss – give with meal; snack late in the evening
* Insomnia – behavior problems vs. side effects vs. anxiety; lower dose; give last dose of day earlier
* Sadness – reevaluate diagnosis; reduce dose; switch to long acting (peak of short acting can cause sadness)
* Worsening behavior (rebound) – switch to long acting; overlap short and long acting; add other medication (bupropion)
* Irritability – if soon after dose, could be related to peak - switch to long acting; if late could be rebound – reduce dose

Switch to other stimulant class, if above is not successful, increasing dose until target behaviors and function improved or side effects redevelop

---

**Yes**

- Side effects present?

---

Yes

- Improved target behaviors and function?

---

Yes

- Increase dose until target behaviors and function improved or side effects develop

---

Yes

- Side effects present?

---

Yes

- Improved target behaviors and function?

---

Yes

- Switch to non-stimulant alternative (atomoxetine, bupropion, tricyclic, clonidine, or guanfacine)

---

Yes

- Improved target behaviors and function?

---

Yes

**No**

- Dose maximized?

---

No

- Patient on stimulant?

---

Yes

**Yes**

- Satisfactory response to treatment plan?

---

Yes

- Continue systematic follow-up at least twice yearly. Monitor height, weight, blood pressure and sleep.

---

No

- Reconsider diagnosis of ADHD and assess for missed comorbid conditions. Consider psychiatry referral.
Appendix D

**Medications for Treatment of Attention-Deficit/Hyperactivity Disorder (Pediatric)**

### GENERAL CONSIDERATIONS FOR STIMULANTS
- Despite lack of FDA approval for age <6 years, safety and effectiveness have been demonstrated and off-label use may be appropriate in selected children under 6. Consultation with Pediatric Psychiatry is encouraged.
- Initiate therapy with a long acting stimulant to promote continuous, stable therapy throughout the day.
- Consider duration of formulation with regard to interference with sleep.
- Because of different stimulant combinations (methylphenidate or amphetamine) and kinetic profiles, do not substitute on a mg-per-mg basis.
- Nonabsorbable tablet shell may be seen in stool (Concerta).
- Monitor patient weight and vital signs.
- Swallow tablets whole with liquids. If patient is unable to swallow, consider alternative formulations or capsules may be opened and sprinkled on food. Beads inside capsules should NOT be chewed.
- Consider cardiac risk factors prior to initiating therapy (e.g., cardiac hypertrophy, family history of ventricular arrhythmia, murmur, palpitations, near syncope).
- Use cautiously if history of tics, seizures, anorexia nervosa, anxiety, or history of substance misuse or diversion.
- Most common side effects include appetite suppression, weight loss, insomnia or headache.

### Methylphenidate Products

<table>
<thead>
<tr>
<th>Product Names</th>
<th>Strengths Available</th>
<th>Duration of Action</th>
<th>Usual Dosing Pediatric Titration Dose (titrate every 7 days, unless otherwise indicated)</th>
<th>Maximum Daily Dose</th>
</tr>
</thead>
</table>
| methylphenidate tab^* (Ritalin) | 5, 10, 20 mg tabs | ≤ 4 hours | 5-20 mg given 2-3 times daily | FDA: 60 mg
Off label: 100 mg if over 50 kg |
| methylphenidate tab ^* (Methylin) (equivalent to Ritalin) | 2.5, 5, 10, 20 mg tabs | ≤ 4 hours | 5-20 mg given 2-3 times daily | FDA: 60 mg
Off label: 100 mg if over 50 kg |
| methylphenidate SR tab^* (Ritalin SR) | 20 mg tabs | 4 – 6 hours | 20–60 mg (divided in 1-2 doses/day) (20-40 mg in morning, 20 mg in early afternoon) | FDA: 60 mg
Off label: 100 mg if over 50 kg |
| methylphenidate^* (Methylin ER) (equivalent to Ritalin SR) | 10, 20 mg tabs | 4 – 6 hours | 10-60 mg daily | FDA: 60 mg
Off label: 100 mg if over 50 kg |
| methylphenidate ER tab^* (Metadate ER) | 20 mg tabs | 4 – 6 hours | 20-60 mg daily (divided in 1-2 doses/day) | FDA: 60 mg
Off label: 100 mg if over 50 kg |
| dexmethylphenidate^* (Focalin) tab | 2.5, 5, 10 mg tabs | 4 – 6 hours | 2.5–10 mg given twice daily at least twice daily at 4 hours apart | FDA: 20 mg
Off label: 50 mg |
<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage Form</th>
<th>Duration</th>
<th>Titration</th>
<th>FDA/Off label</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intermediate acting 6-8 hours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methylphenidate* ^ (Metadate CD) cap</td>
<td>10, 20, 30, 40, 50, 60 mg caps</td>
<td>6–8 hours</td>
<td>10-60 mg daily</td>
<td>Titration 10-20 mg</td>
</tr>
<tr>
<td>methylphenidate ER**§ (Ritalin LA) cap</td>
<td>10, 20, 30, 40 mg caps</td>
<td>6–8 hours</td>
<td>20-60 mg daily</td>
<td>FDA: 60 mg Off label: 100 mg if over 50 kg</td>
</tr>
<tr>
<td>methylphenidate § (Aptensio XR) cap</td>
<td>10, 15, 20, 30, 40, 50, 60 mg caps</td>
<td>8 hours</td>
<td>10 mg daily</td>
<td>FDA: 60 mg</td>
</tr>
<tr>
<td>dexamethylphenidate* ^§ (Focalin XR) cap</td>
<td>5, 10, 15, 20, 25, 30, 35, 40 mg caps</td>
<td>10 - 12 hours 5-20 mg once daily</td>
<td>5–40 mg daily</td>
<td>FDA: 30 mg for children, 40 mg adults Off label: 50 mg</td>
</tr>
<tr>
<td>methylphenidate ^ (Daytrana) patch apply to hip for 9 hours</td>
<td>10, 15, 20, 30 mg patch</td>
<td>12 hours (with 2-3 hour delay)</td>
<td>10-30 mg patch daily</td>
<td>Titrate by next highest strength patch</td>
</tr>
<tr>
<td>methylphenidate **§ (Concerta) tabs(bimodal release with 22% rapid onset and 78% delayed release)</td>
<td>18, 27, 36, 54 mg tabs</td>
<td>10 hours</td>
<td>18-54 mg once daily</td>
<td>FDA: 54 mg for children, 72 mg for adolescents and adults Off label: 72 mg (children ≤ 40 kg), 90 mg adolescents (&gt;40 kg)</td>
</tr>
<tr>
<td>methylphenidate chew tabs (Quillichew ER chew tabs)</td>
<td>20, 30, 40 mg chewable tabs</td>
<td>12 hours</td>
<td>20 mg once daily</td>
<td>FDA: 60 mg</td>
</tr>
<tr>
<td>methylphenidate susp (Quillivant XR)</td>
<td>5 mg/mL suspension (fruit flavored)</td>
<td>12 hours</td>
<td>20 mg once daily</td>
<td>FDA: 60 mg</td>
</tr>
<tr>
<td><strong>Long acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methylphenidate§ (Concerta) tabs(bimodal release with 50% rapid onset and 50% delayed release)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methylphenidate chew tabs (Quillichew ER chew tabs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methylphenidate susp (Quillivant XR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^ FDA approved for treatment of ADHD, * Generic product, §Oral long acting methylphenidate products have immediate release and extended release components. Vary by product.

**Medications which can be sprinkled on food**
- methylphenidate (Ritalin LA)
- methylphenidate (Metadate CD)
- methylphenidate (Aptensio XR)
- dexamethylphenidate (Focalin)
- amphetamine (Adderall)
- dextroamphetamine (Dexedrine spansules)
<table>
<thead>
<tr>
<th>Product Names</th>
<th>Strengths Available</th>
<th>Duration of Action</th>
<th>Usual Dosing (titrate every 7 days, Unless otherwise noted)</th>
<th>Maximum Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dextroamphetamine tabs* (Dexedrine)</td>
<td>5, 10 mg tabs 1 mg/mL solution</td>
<td>4-6 hours</td>
<td>2.5 -15 mg two to three times daily. Titration 2.5 mg/week (3-5 years), 5 mg/week (≥ 6 years)</td>
<td>FDA: 40 mg Off label: 60 mg (&gt;50 kg)</td>
</tr>
<tr>
<td>dextroamphetamine tabs (Zenzedi)</td>
<td>2.5, 5, 7.5, 15, 20, 30 mg tabs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>amphetamine sulfate* (Evekeo) tabs</td>
<td>5, 10 mg tabs</td>
<td>4-6 hours</td>
<td>2.5 mg Titrate by 2.5 mg weekly</td>
<td>FDA: 40 mg</td>
</tr>
<tr>
<td><strong>Intermediate acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dextroamphetamine SR caps§ (Dexedrine spansules) bimodal release with immediate and delayed onset</td>
<td>5, 10, 15 mg caps</td>
<td>6-8 hours</td>
<td>5-15 mg 2 times twice daily Titration 5 mg</td>
<td>FDA: 40 mg Off label: 60 mg (&gt;50 kg)</td>
</tr>
<tr>
<td>amphetamine mixed salts tab combo*§ (Adderall) *§</td>
<td>5, 7.5, 10, 12.5, 15, 20 30 mg tabs</td>
<td>5-8 hours</td>
<td>52.5-30 mg 1-2 times once or twice daily Titration 2.5-5 mg once or twice daily</td>
<td>FDA: 40 mg Off label: 40 mg (≤ 50kg), 60 mg (&gt;50 kg)</td>
</tr>
<tr>
<td><strong>Long acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>amphetamine mixed salts caps** combo (Adderall XR)*</td>
<td>5, 10, 15, 20, 25, 30 caps</td>
<td>10 hours</td>
<td>10-30 mg once daily Titration 5-10 mg</td>
<td>FDA: 30 mg Off-label: 30 mg (≤ 50kg), 60 mg (&gt;50 kg)</td>
</tr>
<tr>
<td>lisdexamfetamine (Vyvanse) caps§</td>
<td>20, 30, 40, 50, 60, 70 mg capsule</td>
<td>10-12 hours</td>
<td>20-70 mg once daily Titration 10-20 mg daily</td>
<td>FDA: 70 mg</td>
</tr>
<tr>
<td>dextroamphetamine/amphetamine biphasic tab (Adzenys XR ODT)</td>
<td>3.1, 6.3, 9.4, 12.5, 15.7, 18.8 mg ODT</td>
<td>9-14 hours</td>
<td>Titrate 3.1 mg weekly</td>
<td>FDA: 18.8 mg</td>
</tr>
<tr>
<td>dextroamphetamine/amphetamine XR oral suspension (Dyanavel)</td>
<td>2.5 mg/mL</td>
<td>10-12 hours</td>
<td>2.5-5 mg every am Titrate every 4-7 days</td>
<td>FDA: 20 mg</td>
</tr>
</tbody>
</table>

^ FDA approved for treatment of ADHD, * Generic product, §Oral long acting amphetamine products have immediate release and extended release components. Vary by product
**GENERAL CONSIDERATIONS FOR NON-STIMULANTS**

- Despite lack of FDA approval for age < 6 years, there is potential benefit in a cohort of patients less than age 6; use may be considered in selected populations. Consultation with Pediatric Psychiatry is strongly encouraged for children under 6 years of age.
- Consider initiation with lower doses to improve tolerability
- Medication of choice if concern about abuse or diversion
- Monitor patient weight and vital signs
- Can be used in patients with history of tics or worsening of tics from stimulants

### Non-Stimulant Products

<table>
<thead>
<tr>
<th>Product Names</th>
<th>Strengths Available</th>
<th>Duration of Action</th>
<th>Usual Dosing (titrate every 7 days, until otherwise indicated)</th>
<th>Maximum Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-depressants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bupropion* (Wellbutrin) tabs</td>
<td>75, 100 mg tabs</td>
<td>4-5 hours</td>
<td>3 - 6 mg/kg/day (or 150 mg – 300 mg, whichever is lowest) Divide into 2 or 3 daily doses</td>
<td>6 mg/kg/day (or 300 mg Whichever is lowest) Divide into 2 or 3 daily doses</td>
</tr>
<tr>
<td>bupropion SR* (Wellbutrin SR)</td>
<td>100, 150, 200 mg tabs</td>
<td>12 hours</td>
<td>3 - 6 mg/kg/day (or 150 mg – 300 mg, whichever is lowest) Divide into 2 daily doses.</td>
<td>6 mg/kg/day (or 300 mg, whichever is lowest) Divide into 2 daily doses.</td>
</tr>
<tr>
<td>bupropion XL* (Wellbutrin XL)</td>
<td>150, 300 mg tabs</td>
<td>24 hours</td>
<td>3 - 6 mg/kg/day (or 150 mg – 300 mg, whichever is lowest)</td>
<td>6 mg/kg/day (or 300 mg Whichever is lowest)</td>
</tr>
</tbody>
</table>

**Norepinephrine reuptake inhibitor**

| atomoxetine^ (Strattera) caps | 10, 18, 25, 40, 60, 80, 100 mg caps | At least 10-12 hours | 0.5 mg/kg/day (≤ 70kg) or 40 mg/day (>70 kg) to 1.4 mg/kg/day (≤ 70kg) or 100 mg/day (dose given once or twice daily) Titration: after 3-4 days | FDA: 1.4 mg/kg/d (≤ 70kg), children/adolescents; 100 mg/day (>70kg) |

*Generic product

^ FDA Approved
### Potential Harms: Side Effects of Pharmacotherapy

- **Stimulants**: The most common side effects include appetite decrease, weight loss, insomnia, or headache. Less common side effects include tics and emotional lability/irritability, liver toxicity, hypertension, cardiac arrhythmia and psychosis.
- **Atomoxetine**: Side effects of atomoxetine that occurred more often than those with placebo include gastrointestinal distress, sedation, and decreased appetite.
- **Bupropion**: May cause mild insomnia or loss of appetite. The highest recommended dose of bupropion is 450 mg. Higher doses may increase the risk of seizure.
- **Alpha-agonists**: Side effects of alpha-agonists include sedation, dizziness, and possible hypotension. Abrupt discontinuations of alpha-agonist are to be avoided.
- **Combinations of Medications**: There have been four deaths reported to the FDA of children taking a combination of methylphenidate and clonidine, but there were many atypical aspects of these cases.

### Clonidine ER^* (Kapvay) tabs
- **Dosage**: 0.1 mg ER tabs
- **Route**: At least 10-12 hours
- **Titration**: 0.1 mg/day
- **FDA**: 0.4 mg

### Clonidine* (Catapres) tabs
- **Not FDA approved for ADHD**
- **Consider consult to Pediatric Psychiatry**
- **Dosage**: 0.1, 0.2, 0.3 mg tabs
- **Route**: At least 4-6 hours
- **Titration**: 0.05 mg at bedtime; 01 mg (≥ 45 kg) Titrated by 0.05 mg (<45 kg) or 0.1 mg (≥ 45 kg) increments to twice daily, three times daily, four times daily
- **FDA**: 0.4 mg

### Guanfacine* (Tenex) tabs
- **Not FDA approved for ADHD**
- **Consider consult to Pediatric Psychiatry**
- **Dosage**: 1, 2 mg tabs
- **Route**: 6-8 hours
- **Titration**: 0.5 mg at bedtime (<45 kg), 1 mg at bedtime (≥ 45 kg) Titrated by 0.5 mg (<45 kg) or 1 mg (≥ 45 kg) increments to twice daily, three times daily, four times daily
- **FDA**: 2 mg

### Guanfacine ER^* (Intuniv) tabs
- **Dosage**: 1, 2, 3, 4 mg ER tabs
- **Route**: At least 10-12 hours
- **Titration**: 1-4 mg once daily (or 0.05-0.12 mg daily) Titrated: 1 mg
- **FDA**: 4 mg

---

*Generic product
^ FDA Approved

**ADHD – Pediatric – Ambulatory Guideline**

Appendix E. ADHD HEDIS Measure

Follow-Up Care for Children Prescribed ADHD Medications (ADD)

The percentage of children newly prescribed ADHD medication who had at least 3 follow-up care visits within a 10-month (300 day) period, one of which was within 30 days of when the first ADHD medication was dispensed. Two rates are reported:

- **Initiation Phase** – Percentage of members, 6-12 years of age, who had 1 follow-up visit with a prescribing practitioner within 30 days of starting the medication
- **Continuation and Maintenance (C&M) Phase** – Percentage of members, 6-12 years of age, who remained on the medication for at least 210 days (allowed 90 gap days, so look at 300 days total to find 210 days on Rx) and who had at least 2 additional follow-up visits with a practitioner within 270 days (9 months) after end of Initiation phase. One of these two contacts (during days 31-300) may be by telephone with an MD, PA or NP (not RN or LPN).

Member must not have filled a prescription for an ADHD medication within 120 days (4 months) prior to current prescription.

It is okay to switch between ADHD medications, as long as meets rules for continuous treatment, as noted above.