



TEXAS
Health and Human
Services

Psychotropic Medication Utilization Parameters for Children and Youth in Texas Public Behavioral Health (6th Version)

Developed by:

The Parameters Workgroup of the Psychiatric Executive Formulary Committee, Health and
Specialty Care Division, Texas Health and Human Services Commission

Review and Input Provided by:

The University of Texas at Austin College of Pharmacy
The UT System Medical Schools
Texas A&M Health Science Center
Texas Tech University Health Sciences Center

June 2019

Table of Contents

Table of Contents	2
Introduction and General Principles	5
Role of Primary Care Providers	7
General Principles	7
Use of Psychotropic Medication in Preschool Age Children.....	9
Treatment of Opioid Use Disorders in Adolescents.....	10
Levels of Warnings Associated with Medication Adverse Effects.....	11
Criteria Indicating Need for Further Review of a Child’s Clinical Status	12
Usual Recommended Doses.....	13
Stimulants for Treatment of ADHD	14
Amphetamine mixed salts	14
Amphetamine sulfate	14
Amphetamine base	14
Dextroamphetamine.....	15
Lisdexamfetamine.....	15
Methylphenidate	15
Other ADHD Treatments	19
Atomoxetine.....	19
Clonidine	19
Guanfacine.....	20
Bupropion	21
Imipramine	21
Tricyclic Antidepressant	22
Antidepressants – SSRIs.....	22
Citalopram	22
Escitalopram	22
Fluoxetine.....	23
Paroxetine	23
Fluvoxamine.....	23
Sertraline.....	23
Vilazodone SSRI and 5-HT1A receptor partial agonist	24
Antidepressants – SNRIs.....	24
Venlafaxine	24
Duloxetine	25
Desvenlafaxine	25
Levomilnacipran	25
Clomipramine.....	25
Antidepressants – Other Mechanisms	26
Mirtazapine	26
Vortioxetine	26
Selegiline.....	26

Monoamine oxidase inhibitors (MAOIs) oral formulations	27
St. John's Wort.....	27
Antipsychotics: Second Generation (Atypical)	28
Aripiprazole	28
Quetiapine	28
Olanzapine.....	28
Risperidone	29
Clozapine	29
Asenapine	29
Iloperidone.....	29
Paliperidone	29
Ziprasidone	30
Lurasidone	30
Brexipiprazole	30
Cariprazine	30
Combination Antipsychotic-Antidepressant Formulation(s)	31
Olanzapine/ Fluoxetine	31
Antipsychotics: First Generation (Typical)	33
Chlorpromazine	33
Haloperidol	33
Perphenazine	33
Pimozide.....	34
Mood Stabilizers	35
Carbamazepine.....	35
Divalproex Sodium.....	36
Lithium.....	38
Lamotrigine.....	39
Oxcarbazepine.....	41
Lamotrigine Dosing	41
Lamotrigine Dose Titration for Adolescents 10-12 years of age.	41
Lamotrigine Dose Titration for Adolescents 13-17 years of age.	42
Sedatives/Hypnotics.....	43
Diphenhydramine	43
Trazodone.....	44
Eszopiclone	45
Melatonin.....	45
Ramelteon	45
Hydroxyzine	46
Suvorexant	46
Zolpidem	46
Benzodiazepines	47
Special Considerations.....	47
Titration of Antidepressant Medications.....	47
Taper of Antidepressant Medications	48
Titration of Antipsychotic Medications	49
Taper of Antipsychotic Medications.....	50

Levels of Evidence for Efficacy in Child & Adolescent Psychopharmacology	51
Glossary	52
References	54
Web Link References	62
Members of the Workgroup	63
Chairs	63
Members.....	63
Committee Members Disclosures.....	64
Disclaimer	64
Acknowledgements	65

Introduction and General Principles

The Psychotropic Medication Utilization Parameters were initially developed in 2004 to provide evidence-informed guidance on the use of psychotropic medication with children and youth and suggest parameters for utilization review. While the most recent versions have focused primarily on children within the Texas foster care system, this sixth iteration of the Psychotropic Medication Utilization Parameters has been refocused to address the treatment of all children and adolescents served by the public behavioral health system in Texas. It has long been recognized that the Parameters are based upon sound psychiatric principles and scientific evidence that apply to all children and adolescents who are treated with these medications. Additionally, the development of the Parameters has returned to the public behavioral health section that sponsored the first edition in 2004. Currently the professionals responsible for the sixth version constitute a Workgroup of the Psychiatric Executive Formulary Committee (PEFC) of the Health and Specialty Division of the Texas Health and Human Services Commission. The PEFC addresses the formulary and prescribing parameters that are used in the Texas state mental hospitals, state supported living centers, local mental health authorities, local intellectual disability health authorities, and their contractors.

The use of psychotropic medications in children and adolescents is an issue confronting parents, other caregivers, and health care professionals across the United States. This population has multiple and complex care needs relating to rapid developmental changes, incomplete brain maturation, diagnostic uncertainty, incomplete long-term evidence base for most medication classes, impact of ecological systems such as family and school, and issues of self-determination. Additionally, children and youth, especially those in foster care for whom the Parameters were originally developed, may have treatment complexity related to emotional or psychological stress. They may have experienced abusive, neglectful, serial or chaotic caretaking environments. Birth family history may not be available. These traumatized children often present with a fluidity of different symptoms over time reflective of past traumatic events that may mimic or underlie many psychiatric disorders and result in difficulties with attachment, mood regulation, behavioral control, and other areas of functioning. In view of these considerations, the American Academy of Child and Adolescent Psychiatry (AACAP) emphasizes the importance of holistic and collaborative mental health treatment, recommending prescribers of psychotropic medication in child-serving systems utilize a biopsychosocial perspective guided by trauma-informed and system of care principles. A trauma-informed approach involves understanding the prevalence and impact of trauma, recognizing trauma signs and symptoms, responding with trauma-sensitive procedures and practices, and endeavoring to minimize re-traumatization. The system of care framework includes providing effective services that are family-driven and youth-guided, home and community-based, strengths-based and individualized and culturally and linguistically appropriate.

Additionally, it is important that a comprehensive evaluation be performed before beginning treatment for a mental or behavioral disorder. Except in the case of an emergency, a child should receive a thorough health history, psychosocial assessment, mental status exam, and physical exam before prescribing a psychotropic medication. The physical assessment should be

performed by a physician or another healthcare professional qualified to perform such an assessment. It is recognized that in some emergency situations, it may be in the best interest of the child to prescribe psychotropic medications before a physical exam can be performed. In these situations, a thorough health history should be performed to assess for significant medical disorders and past response to medications, and a physical evaluation should be performed as soon as possible. A thorough psychosocial assessment should be performed by an appropriately qualified mental health clinician (licensed masters or doctoral level), a psychiatrist/ child psychiatrist, or a primary care physician with experience in providing mental health care to children and youth. The child's symptoms and functioning should be assessed across multiple domains and multiple informants when possible, and the assessment should be developmentally age appropriate. It is very important that information about the child's history, including history of trauma and current functioning be made available to the treating physician in a timely manner, either through an adult who is well-informed about the child or through a comprehensive medical record. It is critical to meet the individual needs of patients and their families in a culturally competent manner. This requirement indicates a need to address communication issues as well as differences in perspectives on issues such as behavior and mental functioning. Interpretation of clinical symptoms and decisions concerning treatment should, whenever possible, be informed by the child's current level of biopsychosocial developmental as well as history of trauma, neglect or abuse and the timing of these stressors. In general, optimal outcomes are achieved with well-coordinated team-based care with members of different professions (e.g., child psychiatrist, child psychologist, social worker, primary care physician, etc.) each contributing their particular expertise to the treatment plan and follow-up. **Note well: At present there are no biomarkers to assist with the diagnosis of mental disorders, and imaging (e.g., MRI) and other tests (e.g., EEG) are not generally helpful in making a clinical diagnosis of a mental disorder. Consequently, the diagnosis is based on a comprehensive clinical assessment.**

Prescribers should be mindful of the important role of nonpharmacological, psychosocial treatments in remediating behavioral and emotional disturbances among youth. In many instances, especially with milder presentations, it is prudent to undertake psychotherapy or environmental changes before beginning pharmacotherapy. In other situations, pharmacotherapy may help attenuate symptoms and distress so that psychosocial treatment may be successfully implemented. For instance, youth with more severe anxieties may benefit from anxiolytic medications to enable their participation in evidence-based treatments that involve exposure and skills development. Similarly, children with highly disruptive or aggressive conduct with comorbid ADHD may first need pharmacotherapy that reduces ADHD-related impulsivity before behavioral therapies can gain traction. Therefore, whenever possible and appropriate, psychotherapy should generally begin before or concurrent with prescription of a psychotropic medication. Equally important, the role of the health care provider and the health care environment's potential to exacerbate a child's symptoms, given their respective trauma history, should be considered and minimized through trauma-informed approaches to care. Patient and caregiver education should be provided about the condition to be treated, treatment options (non- pharmacological and pharmacological), treatment

expectations, and potential side effects that may occur during the prescription of psychotropic medications.

It is recognized that many psychotropic medications do not have Food and Drug Administration (FDA) approved labeling for use in children. The FDA has a statutory mandate to ensure that approved product labeling accurately reflects pharmaceutical company sponsored research on safety and efficacy for the indications listed. that. The FDA does not regulate physician and other health provider practice. In fact, the FDA has stated that it does “not limit the way a practitioner may prescribe an approved drug.” Studies and expert clinical experience often support the use of a medication for an “off-label” use. This practice is particularly relevant in child psychiatry as there is a dearth of FDA-registration trials in youth. Physicians therefore must use the available evidence, expert opinion, their own clinical experience, and exercise their clinical judgment in prescribing what is best for each individual patient. To that end, clear documentation of the physician’s rationale in the medical record facilitates continuity of care and minimizes misinterpretation.

Role of Primary Care Providers

Primary care providers play a valuable role in the care of youth with mental disorders. Not only are they the clinicians most likely to initially interact with children who are in distress due to an emotional or psychiatric disorder, but also an inadequate number of child psychiatrists are available to meet children’s mental health needs. Primary care clinicians are in an excellent position to perform screenings of children for potential mental disorders, and they can diagnose and treat relatively straightforward situations such as uncomplicated ADHD, anxiety, or depression. Primary care providers should provide advice to youth, including those in foster care, and their caregivers about handling feelings and behaviors, recognizing the need for help, making decisions regarding healthy life styles, and the available treatments for childhood mental disorders. As always, consideration should be given regarding the need for referral for counseling, psychotherapy, or behavioral therapy. Primary care providers vary in their training, clinical experience, and confidence to address mental disorders in children. Short courses and intensive skills-oriented seminars may be beneficial in assisting primary care clinicians in caring for children with mental disorders. Active liaisons with child psychiatrists who are available for phone consultation or referral can be beneficial in assisting primary care clinicians to meet the mental health needs of children. For children and youth in foster care, the American Academy of Pediatrics has provided a policy statement (“Health Care Issues for Children and Adolescents in Foster Care and Kinship Care”) which can be found at:

<http://pediatrics.aappublications.org/content/136/4/e1131>

General Principles

A DSM-5 psychiatric diagnosis should be made whenever possible before the prescribing of psychotropic medications. If a diagnosis cannot be reached, rational pharmacology based on specific symptom management may be necessary while additional clinical information is gathered.

Clearly defined target symptoms and treatment goals for the use of psychotropic medications should be identified and documented in the medical record at the time of or before beginning treatment. These target symptoms and treatment goals should be assessed at each clinic visit with the child and caregiver in a culturally and

linguistically appropriate manner. Whenever possible, standardized clinical rating scales (clinician, patient, primary caregiver, teachers, and other care providers) or other measures should be used to quantify the response of the child's target symptoms to treatment and the progress made toward treatment goals.

In deciding whether to prescribe a psychotropic medication in a specific child, the clinician should carefully consider potential side effects, including those that are uncommon but potentially severe, and evaluate the overall benefit to risk ratio of pharmacotherapy. Except in the case of an emergency, informed consent should be obtained from the appropriate party(s) and assent from the child or adolescent before beginning psychotropic medication. Informed consent to treatment with psychotropic medication entails diagnosis, expected benefits and risks of treatment, including common side effects, discussion of laboratory findings, and uncommon but potentially severe adverse events. Alternative treatments, the risks associated with no treatment, and the overall potential benefit to risk ratio of treatment should be discussed.

Medication management should be collaborative. Youth, as well as caregivers, should be involved in decision-making about treatment, in accordance with their developmental level. Parents providing informed consent should be engaged, and where applicable, other caregivers, family, and child related agencies should be involved. Whenever possible, trauma-informed, evidence-based psychotherapy, should begin before or concurrent with the prescription of psychotropic medication. Before starting psychopharmacological treatment in preschool-aged children even more emphasis should be placed on treatment with non-psychopharmacological interventions, as this age group has few FDA-approved psychiatric treatments and even less of a clinical research base than older youth. Assessment of parent functioning and mental health needs, in addition to training parents in evidence-based behavior management can also reduce the need for the use of medication. During the prescription of psychotropic medication, the presence or absence of medication side effects should be documented in the child's medical record at each visit. Appropriate monitoring of indices such as height, weight, blood pressure, or laboratory findings should be documented.

Monotherapy regimens for a given disorder or specific target symptoms should usually be tried before polypharmacy regimens. While the goal is to use as few psychotropic medications as can be used to appropriately address the child's clinical status, it is recognized that the presence of psychiatric comorbidities may affect the number of psychotropic medications that are prescribed. When polypharmacy regimens are needed, addition of medications should occur in a systematic orderly process, accompanied by on-going monitoring, evaluation, and documentation. The goal remains to minimize polypharmacy while maximizing therapeutic outcomes. Medications should be initiated at the lower end of the recommended dose range and titrated carefully as needed. Only one medication should be changed at a time, unless a clinically appropriate reason to do otherwise is documented in the medical record. (Note: starting a new medication and beginning the dose taper of a current medication is considered one medication change).

The use of "prn" or as needed prescriptions is discouraged. If they are used, the situation indicating need for the administration of a prn medication should be clearly indicated as well as the maximum dosage in a 24-hour period and in a week. The

frequency of administration should be monitored to assure that these do not become regularly scheduled medications unless clinically indicated. The frequency of clinician follow-up should be appropriate for the severity of the child's condition and adequate to monitor response to treatment, including: symptoms, behavior, function, and potential medication side effects. At a minimum, a child receiving psychotropic medication should be seen by the clinician at least once every ninety days. The potential for emergent suicidality should be carefully evaluated and monitored, particularly in depressed children and adolescents as well as those beginning antidepressant treatment, those having a history of suicidal behavior or deliberate self-harm, and those with a history of anxiety or substance abuse disorders. Youth at risk of suicide should have a written, collaborative safety plan that is regularly monitored. If the prescribing clinician is not a child psychiatrist, referral to or consultation with a child psychiatrist, or a general psychiatrist with significant experience in treating children, should occur if the child's clinical status has not shown meaningful improvement within a timeframe that is appropriate for the child's diagnosis and the medication regimen being used.

Before adding additional psychotropic medications to a regimen, the child should be assessed for adequate medication adherence, appropriateness of medication daily dosage, accuracy of the diagnosis, the occurrence of comorbid disorders (including substance abuse and general medical disorders), and the influence of psychosocial stressors. If a medication has not resulted in improvement in a child's target symptoms (or rating scale score), discontinue that medication rather than adding a second medication to it.

If a medication is being used in a child for a primary target symptom of aggression associated with a DSM-5 non-psychotic diagnosis (e.g., conduct disorder, oppositional defiant disorder, intermittent explosive disorder), and the behavior disturbance has been in remission for six months, then serious consideration should be given to slow tapering and discontinuation of the medication. If the medication is continued in this situation, the necessity for continued treatment should be evaluated and documented in the medical record at a minimum of every six months. The clinician should clearly document care provided in the child's medical record, including history, mental status assessment, physical findings (when relevant), impressions, rationale for medications prescribed, adequate laboratory monitoring specific to the drug(s) prescribed at intervals required specific to the prescribed drug and potential known risks, medication response, presence or absence of side effects, treatment plan, and intended use of prescribed medications.

Use of Psychotropic Medication in Preschool Age Children

The use of psychotropic medication in young children of preschool ages is a practice that is limited by the lack of evidence available for use of these agents in this age group. The Preschool Psychopharmacology Working Group (PPWG) published guidelines (Gleason 2007) summarizing available evidence for use of psychotropic medications in this age group. The PPWG was established in response to the clinical needs of preschoolers being treated with psychopharmacological agents and the absence of systematic practice guidelines for this age group, with its central purpose to attempt to promote an evidence-based, informed, and clinically sound approach when considering medications in preschool-aged children.

The PPWG guidelines emphasize consideration of multiple different factors when deciding on whether to prescribe psychotropic medications to preschool-aged children. Such factors include the assessment and diagnostic methods utilized in evaluating the child for psychiatric symptoms/illness, the current state of knowledge regarding the impact of psychotropic medication use on childhood neurodevelopmental processes, the regulatory and ethical contexts of use of psychotropic medications in small children (including available safety information and FDA status), and the existing evidence base for use of psychotropic medication in preschool aged children. It should be noted here that although the FDA many decades ago approved marketing of chlorpromazine for use in children down to the age of 6 months, this approval was based on clinical practice and not on a rigorous demonstration of efficacy and safety that would be required for approval today. Essentially this use was “grandfathered” in and current prescription for children and adolescents is limited, the evidence base is not current and very thin despite the long history of use in the past.

Very limited information is available regarding the use of antipsychotics in the preschool age population, and no information is available regarding the use of long-acting injectable (LAI) antipsychotics in this population. Not having information to describe the effects of antipsychotics on growth and development in preschoolers is of concern. Many antipsychotics produce significant weight gain in children, and this should be of concern in the preschool population. Akathisia may also be an issue in the preschool population. The use of antipsychotics in preschoolers should be limited to the most severe situations, and the goal should be for it to be of short duration. For these reasons, antipsychotic LAIs are not recommended in the preschool population. The publication includes specific guidelines and algorithm schematics developed by the PPWG to help guide treatment decisions for several psychiatric disorders that may present in preschool-aged children, including Attention-Deficit Hyperactivity Disorder, Disruptive Behavioral Disorders, Major Depressive Disorder, Bipolar Disorder, Anxiety Disorders, Post-Traumatic Stress Disorder, Obsessive-Compulsive Disorder, Pervasive Developmental Disorders, and Primary Sleep Disorders. The working group’s key points and guidelines are like the general principles regarding the use of psychotropic medication in children already detailed in this paper. However, the working group’s algorithms put more emphasis on treating preschool-aged children with non-psycho-pharmacological interventions (for up to 12 weeks) before starting psychopharmacological treatment, to be very cautious in introducing psychopharmacological interventions to rapidly developing preschoolers.

The working group also emphasizes the need to assess parent functioning and mental health needs, in addition to training parents in evidence-based behavior management, since parent behavior and functioning can have a large impact on behavior and symptoms in preschool-aged children.

Treatment of Opioid Use Disorders in Adolescents

Unfortunately, the opioid crisis in the US extends into the adolescent population and physicians are being confronted with the need to make recommendations and treatment decisions in this area. Although extensive discussion is beyond the scope of this document, there are 3 available options for Medication Assisted Treatment (MAT) in adolescents: buprenorphine, naltrexone and methadone. A good overview can be found in The ASAM National Practice Guideline for the Use of Medications in the

Treatment of Addiction Involving Opioid Use (2015). This guideline makes the following recommendations which have not changed in the face of more recent albeit scant literature:

1. Clinicians should consider treating adolescents who have opioid use disorder using the full range of treatment options, including pharmacotherapy that are available for adults. N.B: Prescription of buprenorphine and/or methadone requires special provider qualifications. Further information may be found at <https://www.samhsa.gov/medication-assisted-treatment/treatment>.
2. Opioid agonists (methadone and buprenorphine) and antagonists (naltrexone) may be considered for treatment of opioid use disorder in adolescents. Age is a consideration in treatment, and Federal laws and US FDA approvals need to be considered for patients under age 18. See 42 CFR 8.12 (e) (2): "Maintenance treatment for persons under age 18. A person under 18 years of age is required to have had two documented unsuccessful attempts at short-term detoxification or drug-free treatment within a 12-month period to be eligible for maintenance treatment. No person under 18 years of age may be admitted to maintenance treatment unless a parent, legal guardian, or responsible adult designated by the relevant State authority consents in writing to such treatment."
3. Psychosocial treatment is recommended in the treatment of adolescents with opioid use disorder and required under federal law for those receiving methadone.
4. Concurrent practices to reduce infection (e.g., sexual risk reduction interventions) are recommended as components of comprehensive treatment for the prevention of sexually transmitted infections and blood-borne viruses.
5. Adolescents may benefit from treatment in hospitals or other specialized treatment facilities that provide multidimensional services.

Levels of Warnings Associated with Medication Adverse Effects

Psychotropic medications have the potential for adverse effects. Some adverse effects are time-limited and remit with continued treatment; others require intervention for effective management, and in some situations compel discontinuation of the medication that causes them. Some adverse effects are detected prior to marketing and are included in the FDA approved product labeling provided by the manufacturers. When looking at product labeling, these adverse effects will be listed in the "Warnings and Precautions" section. As well, the "Adverse Reactions" section of the product labeling will outline those adverse effects reported during clinical trials, as well as those discovered during post-marketing evaluation. Many tertiary drug information resources also list common adverse effects and precautions for use with psychotropic medications.

At times, post-marketing evaluation may detect critical adverse effects associated with significant morbidity and mortality. The Food and Drug Administration (FDA) may require manufacturers to revise product labeling to indicate these critical adverse effects. If found to be particularly significant, these effects are demarcated by a box outlining the information at the very beginning of the product labeling, and have, in turn, been named boxed warnings. Boxed warnings are the strongest warning required by the FDA. It is important for clinicians to be familiar with all medication adverse effects, including boxed warnings, to appropriately monitor patients and

minimize the risk of their occurrence. The medication tables include boxed warnings as well as other potential adverse effects. The list of potential adverse effects in the tables should not be considered exhaustive, and the clinician should consult the FDA approved product labeling and other reliable sources for information regarding medication adverse effects.

The FDA has in recent years taken additional measures to try to help patients avoid serious adverse events. New guides called Medication Guides have been developed and are specific to medication and medication classes. Medication Guides advise patients and caregivers regarding possible adverse effects associated with classes of medications and include pre- cautions that they or healthcare providers may take while taking/prescribing certain classes of medications. The FDA requires that Medication Guides be issued with certain prescribed medications and biological products when the Agency determines that certain information is necessary to prevent serious adverse effects, that patient decision- making should be informed by information about a known serious side effect with a product, or when patient adherence to directions for the use of a product are essential to its effectiveness. During the drug distribution process, if a Medication Guide has been developed for a certain class of medications, then one must be provided with every new prescription and refill of that medication.

Copies of the Medication Guides for psychotropic medications can be accessed on the FDA website at: <http://www.fda.gov/Drugs/DrugSafety/ucm085729.htm>.

Criteria Indicating Need for Further Review of a Child's Clinical Status

The following situations indicate a need for review of a patient's clinical care. These parameters do not necessarily indicate that treatment is inappropriate, but they do indicate a need for further review. For a child being prescribed a psychotropic medication, any of the following suggests the need for additional review of a patient's clinical status:

- Absence of a thorough assessment for the DSM-5 diagnosis(es) in the child's medical record.
- Four (4) or more psychotropic medications prescribed concomitantly (side effect medications are not included in this count).
- Prescribing of:
 - ▶ Two (2) or more concomitant stimulants*
 - ▶ Two (2) or more concomitant alpha agonists*
 - ▶ Two (2) or more concomitant antidepressants
 - ▶ Two (2) or more concomitant antipsychotics
 - ▶ Three (3) or more concomitant mood stabilizers

*The prescription of a long-acting and an immediate-release stimulant or alpha agonist of the same chemical entity does not constitute concomitant prescribing.

- Note: When switching psychotropic medications, overlaps and cross taper should occur in a timely fashion, generally within 4 weeks.
- The prescribed psychotropic medication is not consistent with appropriate care for the patient's diagnosed mental disorder or with documented target

symptoms usually associated with a therapeutic response to the medication prescribed.

- Psychotropic polypharmacy (2 or more medications) for a given mental disorder is prescribed before utilizing psychotropic monotherapy.
- The psychotropic medication dose exceeds usual recommended doses (literature based maximum dosages in the following tables).
- Psychotropic medications are prescribed for children of very young age, including children receiving the following medications with an age of:
 - Stimulants: Less than three (3) years of age
 - Alpha Agonists: Less than four (4) years of age
 - Antidepressants: Less than four (4) years of age
 - Mood Stabilizers: Less than four (4) years of age
 - Antipsychotics: Less than five (5) years of age
- Prescribing by a primary care provider who has not documented previous specialty training for a diagnosis other than the following (unless recommended by a psychiatrist consultant):
 - Attention Deficit Hyperactive Disorder (ADHD)
 - Uncomplicated anxiety disorders
 - Uncomplicated depression
 - Antipsychotic medication(s) prescribed continuously without appropriate monitoring of glucose and lipids at least every 6 months.

Usual Recommended Doses

The attached medication charts are intended to reflect usual doses and brief medication information for commonly used psychotropic medications. The tables contain two columns for maximum recommended doses in children and adolescents – the maximum recommended in the FDA approved product labeling, and the maximum recommended in medical and pharmacological literature sources. The preferred drug list of medications potentially prescribed for foster children is the same as for all other Texas Medicaid recipients.

The tables are intended to serve as a resource for clinicians. The tables are not intended to serve as comprehensive drug information references or a substitute for sound clinical judgment in the care of individual patients. Circumstances may dictate the need for the use of higher doses in specific patients. In these cases, careful documentation of the rationale for the higher dose should occur, and careful monitoring and documentation of response to treatment should be performed. If the use of higher medication doses does not result in improvement in the patient's clinical status within a reasonable time period (e.g., 2-4 weeks), then the dosage should be decreased, and other treatment options considered.

Not all medications prescribed by clinicians for psychiatric diagnoses in children and adolescents are included in the following tables. However, in general, medications not listed do not have adequate efficacy and safety information available to support a usual maximum dose recommendation.

See glossary for acronyms and abbreviations used in this document and within the tables; * next to a brand drug name in a table indicate that a generic product is available.

Stimulants for Treatment of ADHD

Amphetamine mixed salts

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Adderall®* (IR tablet)	<ul style="list-style-type: none"> Age 3-5 years: 2.5 mg/day Age ≥ 6 years: 5 mg once or twice daily 	<ul style="list-style-type: none"> Age 3-5 years: 30 mg/day Age ≥ 6 years and ≤50 kg: 40 mg/day Age ≥ 6 years and >50 kg: 60 mg/day 	Approved for age ≥ 3 years: 40 mg/day	One to three times daily
Adderall® XR* (capsule with 50% IR: 50% ER beads)	<ul style="list-style-type: none"> Age 6-12 years: 5-10 mg/day Age ≥ 13 years: 10 mg/day 	<ul style="list-style-type: none"> Age ≥ 6 years and ≤50 kg: 30 mg/day Age ≥ 6 years and >50 kg: 60 mg/day 	Approved for age ≥ 6 years: 30 mg/day	Once daily
Mydayis® ER (capsule with triple-release beads; 16-hour duration)	Age 13-17 years: 12.5 mg/day	Age ≥ 13 years: 25 mg/day	Approved for age ≥ 13 years: 25 mg/day	Once daily

Amphetamine sulfate

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Evekeo® (IR tablet)	<ul style="list-style-type: none"> Age 3-5 years: 2.5 mg once or twice daily Age ≥ 6 years: 5 mg once or twice daily 	Age ≥ 3 years: 40 mg/day	Approved for age ≥ 3 years: 40 mg/day	1-3 times daily

Amphetamine base

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
<ul style="list-style-type: none"> Adzenys® XR-ODT (50% IR: 50% ER; orange flavor) Must be fully dissolved on tongue before swallowing Adzenys® ER (oral suspension; 50% IR: 50% ER; orange flavor) 	Age ≥ 6 years: 6.3 mg/day (3.1 mg = 5 mg Adderall® XR)	<ul style="list-style-type: none"> Age 6-12 years: 18.8 mg/day Age 13-17 years: 12.5 mg/day 	Approved for age ≥ 6 years <ul style="list-style-type: none"> Age 6-12 years: 18.8 mg/day (= to 30 mg Adderall®XR) Age 13-17 years: 12.5 mg/day (= to 20 mg Adderall® XR); no evidence that higher doses conferred additional benefit in this age group 	Once daily
Dyanavel® XR (oral suspension; bubblegum flavor)	Age ≥ 6 years: 2.5-5 mg/day (2.5 mg = 4 mg Adderall® XR)	Age ≥ 6 years: 20 mg/day	Approved for age ≥ 6: 20 mg/day	Once daily

Dextroamphetamine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Dextroamphetamine IR tablet* (Dexedrine brand name not available) ▪ Zenzedi® (IR tablet) ▪ Procentra® (IR oral suspension; bubblegum flavor) 	<ul style="list-style-type: none"> ▪ Age 3-5 years: 2.5 mg/day ▪ Age ≥ 6 years: 5 mg once or twice daily 	<ul style="list-style-type: none"> ▪ Age 3-5 years: 30 mg/day ▪ Age ≥ 6 years and ≤ 50 kg: 40 mg/day ▪ Age ≥ 6 years and > 50 kg: 60 mg/day 	Approved for age ≥ 3 years: 40 mg/day	Once or twice daily
Dexedrine Spansule®* (capsule with 50% IR: 50% ER beads)	<ul style="list-style-type: none"> ▪ Age 3-5 years: not recommended ▪ Age ≥ 6 years: 5 mg/day 	<ul style="list-style-type: none"> ▪ Age ≥ 6 years and ≤ 50 kg: 40 mg/day ▪ Age ≥ 6 years and > 50 kg: 60 mg/day 	Approved for age ≥ 6 years: 40 mg/day	Once or twice daily

Lisdexamfetamine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Vyvanse® (long-lasting prodrug capsule) ▪ Vyvanse® (long-lasting chewable tablets; strawberry flavor) Chewable tabs must be chewed completely before swallowing 	<ul style="list-style-type: none"> ▪ Age 3-5 years: No data ▪ Age ≥ 6 years: 30 mg/day 	<ul style="list-style-type: none"> ▪ Age 3-5 years: No data ▪ Age ≥ 6 years: 70 mg/day 	Approved for age ≥ 6 years: 70 mg/day	Once daily

Methylphenidate

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Methylphenidate Ritalin®* (IR tablet) ▪ Methylin®* (IR chewable tab; grape flavor) ▪ Methylin®* (IR oral solution; grape flavor) 	<ul style="list-style-type: none"> ▪ Age 3-5 years: 2.5 mg twice daily ▪ Age ≥ 6 years: 5 mg twice daily 	<ul style="list-style-type: none"> ▪ Age 3-5 years: 22.5 mg/day ▪ Age ≥ 6 years: <ul style="list-style-type: none"> ○ ≤ 50 kg: 60 mg/day ○ > 50 kg: 100 mg/day <p>Any dose of methylphenidate exceeding 60 mg/day should be used with caution, and with attentive monitoring</p>	Approved for age ≥ 6 years: 60 mg/day	One to three times daily

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Ritalin® SR* (intermediate-release tablet) ▪ Methylin® ER* (intermediate-release tablet) ▪ Metadate® ER* (intermediate-release tablet) 	Age ≥ 3 years: 10 mg/day	<ul style="list-style-type: none"> ▪ Age 3-5 years: 22.5 mg/day ▪ Age ≥ 6 years: <ul style="list-style-type: none"> ○ ≤ 50 kg: 60 mg/day ○ > 50 kg: 100 mg/day <p>Any dose of methylphenidate exceeding 60 mg/day should be used with caution, and with attentive monitoring</p>	Approved for age ≥ 6 years: 60 mg/day	Once daily
Ritalin® LA* (ER capsule; 50% IR: 50% ER)	Age ≥ 6 years: 10-20 mg/day	<ul style="list-style-type: none"> ▪ Age 3-5 years: 22.5 mg/day ▪ Age ≥ 6 years: <ul style="list-style-type: none"> ○ ≤ 50 kg: 60 mg/day ○ > 50 kg: 100 mg/day <p>Any dose of methylphenidate exceeding 60 mg/day should be used with caution, and with attentive monitoring</p>	Approved for age ≥ 6 years: 60 mg/day	Once daily
<ul style="list-style-type: none"> ▪ Metadate® CD* (ER capsule; 30% IR: 70% ER) ▪ QuilliChew® ER (chewable ER tablet; 30% IR: 70% ER; cherry flavor) 	Age ≥ 6 years: 20 mg/day	<ul style="list-style-type: none"> ▪ Age 3-5 years: 22.5 mg/day ▪ Age ≥ 6 years: <ul style="list-style-type: none"> ○ ≤ 50 kg: 60 mg/day ○ > 50 kg: 100 mg/day <p>Any dose of methylphenidate exceeding 60 mg/day should be used with caution, and with attentive monitoring</p>	Approved for age ≥ 6 years: 60 mg/day	Once daily
Quillivant® XR (ER oral suspension; 20% IR: 80% ER; banana flavor)	Age ≥ 6 years: 20 mg/day	<ul style="list-style-type: none"> ▪ Age 3-5 years: 22.5 mg/day ▪ Age ≥ 6 years: <ul style="list-style-type: none"> ○ ≤ 50 kg: 60 mg/day ○ > 50 kg: 100 mg/day <p>Any dose of methylphenidate exceeding 60 mg/day should be used with caution, and with attentive monitoring</p>	Approved for age ≥ 6 years: 60 mg/day	Once daily - Shake vigorously for at least 10 seconds for accurate dosing

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Aptensio® XR (ER capsule; 40% IR: 60% ER)	Age ≥ 6 years: 10 mg/day	<ul style="list-style-type: none"> Age 3-5 years: 22.5 mg/day Age ≥ 6 years: <ul style="list-style-type: none"> ≤ 50 kg: 60 mg/day > 50 kg: 100 mg/day Any dose of methylphenidate exceeding 60 mg/day should be used with caution, and with attentive monitoring	Approved for age ≥ 6 years: 60 mg/day	Once daily
Cotempla XR-ODT (25% IR: 75% ER; grape flavor)	Age ≥ 6 years: 17.3 mg/day	Age 6-17 years: 51.8 mg/day	Approved for age ≥ 6 years: 51.8 mg/day	Once daily
Concerta®* (ER osmotic release oral tablet; 22% IR: 78% ER)	Age ≥ 6 years: 18 mg/day	<ul style="list-style-type: none"> Age 3-5 years: 36 mg Age ≥ 6 years: 72 mg/day 	Approved for age ≥ 6 years <ul style="list-style-type: none"> Age 6-12 years: 54 mg/day Age 13-17 years: 72 mg/day or 2 mg/kg/day, whichever is less 	Once daily
Daytrana® TD patch (ER)	Age ≥ 6 years: 10 mg/day	<ul style="list-style-type: none"> Age 3-5 years: 20 mg/day Age ≥ 6 years: 30 mg/day 	Approved for age ≥ 6 years	Once daily Note: Patch is designed to be worn for 9 hrs. Removing the patch early leads to a clinical effect, ending 2-3 hours after the patch is removed
Jornay PM (ER capsule containing beads with delayed-release coating and extended-release coating)	Age ≥ 6 years: 20 mg once a day given in the EVENING	Age ≥ 6 years: 100 mg once a day given in the EVENING	Approved for age ≥ 6 years: 100 mg/day	Once daily in the EVENING Note: This is the ONLY stimulant formulation designed to be administered IN THE EVENING. Recommended time of administration is 8:00 pm (range: 6:30pm-9:30pm). Time of onset is approximately 10 hours following administration
Focalin®* (IR tablet)	Age ≥ 6 years: 2.5 mg twice daily	Age ≥ 6 years: 50 mg/day	Approved for age ≥ 6 years: 20 mg/day	Twice daily
Focalin® XR* (ER capsule; 50% IR: 50% ER)	Age ≥ 6 years: 5-10 mg/day	Age ≥ 6 years: 50 mg/day	Approved for age ≥ 6 years: 30 mg/day	Once daily

Stimulants tables notes:

- **Many extended-release stimulants have been found to have higher plasma exposure for patients ≤ 12 years at the same dose as adolescents, and higher rates of adverse effects.**
- **Clinicians may choose whichever stimulant formulation (IR/SR/ER, etc.) they deem appropriate. Monitor more closely for dose titrations in younger patients and consider reducing dose of medications should adverse events arise.**
- **It is generally recommended to adjust stimulant doses in weekly increments, until desired clinical effect is achieved.**
- **If switching between stimulant formulations/products, it is recommended to discontinue the previous treatment, and then initiate and titrate using recommended titration schedule for the new agent; increase stimulant dose in weekly increments.**
- **Beaded formulations enclosed in capsules may be helpful for children with difficulty swallowing tablets or capsules, as the capsules may be opened and sprinkled on cold or room temperature applesauce or other soft foods. Contents of the entire capsule should be consumed immediately, not stored. Beads should be swallowed whole, and not chewed.**
- **In rare instances, it may be necessary to exceed the FDA-based maximum dose of stimulant medication to achieve optimal clinical efficacy; however, this should be done on a case-by-case basis with careful monitoring for treatment-emergent adverse effects.**

Patient Monitoring Parameters - Stimulants

- Baseline: Assessment using a targeted cardiac history of the child and the family, and a physical examination of the child with an EKG and/ or a pediatric cardiology consult as indicated.
- Baseline and ongoing: height, weight, heart rate, and blood pressure.

Boxed Warning - Stimulants

- Abuse potential
- Sudden death and serious cardiovascular events (boxed warning for amphetamine products and dextroamphetamine)

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - Stimulants

- Risk of sudden death in those with pre- existing structural cardiac abnormalities or other serious heart problems
- Hypertension
- Potential for psychiatric adverse events (hallucinations, delusional thinking, mania, aggression, etc.)
- Tics
- Decreased appetite and weight
- Sleep disturbance
- Serotonin Syndrome: Increased risk when co-administered with serotonergic agents (e.g., SSRIs, SNRIs, triptans)
- Peripheral vasculopathy, including Raynaud's phenomenon, and associated signs and symptoms. Instruct patients to report any numbness, pain, or color change in fingers or toes

- Daytrana® TD patch: Post marketing reports of acquired skin depigmentation or hypopigmentation of the skin

Current evidence is unclear regarding a definitive answer as to whether extended use of stimulants leads to a permanent reduction in ultimate adult height; however, a small statistically significant reduction is possible. If mild growth suppression occurs, it is likely reversible upon discontinuation of stimulant.

Other ADHD Treatments

Atomoxetine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Strattera®*	<ul style="list-style-type: none"> ▪ Age ≥ 6 years and weight ≤ 70 kg: 0.5 mg/kg/day ▪ Age ≥ 6 years and weight >70 kg: 40 mg/day 	Age ≥ 6 years: 1.8 mg/kg/day or 100 mg/day, whichever is less	Approved for treatment of ADHD (age 6-17 years): 1.4 mg/kg/day or 100 mg/ day, whichever is less	Once or twice daily

Patient Monitoring Parameters - Atomoxetine

Baseline and ongoing: height, weight, heart rate, and blood pressure. Onset of therapeutic effect typically delayed 3 weeks.

Boxed Warning - Atomoxetine

- Suicidal ideation in children and adolescents being treated for ADHD. See FDA-approved product labeling for complete boxed warnings.

Warnings & Precautions - Atomoxetine

- Severe liver injury
- Contraindicated to use within 14 days of an MAOI
- Increased blood pressure and heart rate
- Psychiatric adverse events
- Priapism (rare)

Clonidine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Catapres®* (IR)	<ul style="list-style-type: none"> ▪ Age ≥ 6 years AND Weight < 45 kg: 0.05 mg/day ▪ Age ≥ 6 years AND Weight > 45 kg: 0.1 mg/day 	Age ≥ 6 years AND <ul style="list-style-type: none"> ▪ Weight 27-40.5 kg: 0.2 mg/day ▪ Weight 40.5-45 kg: 0.3 mg/day ▪ Weight > 45 kg: 0.4 mg/day 	Not approved for treatment of ADHD in children and adolescents	One to four times daily

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Kapvay® (ER)	Age ≥ 6 years: 0.1 mg/day	Age ≥ 6: 0.4 mg/day	Approved for monotherapy and adjunctive therapy to stimulants for treatment of ADHD (age 6-17 years): 0.4 mg/day	Once or twice daily

Guanfacine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Tenex® (IR)	<ul style="list-style-type: none"> Age ≥ 6 years AND weight < 45 kg: 0.5 mg/day Age ≥ 6 years AND weight > 45 kg: 1 mg/day 	Age ≥ 6 years AND <ul style="list-style-type: none"> Weight 27-40.5 kg: 2 mg/day Weight 40.5-45 kg: 3 mg/day Weight >45 kg: 4 mg/day 	Not approved for children and adolescents	One to four times daily
Intuniv® (ER)	Age ≥ 6 years: 1 mg/day	<ul style="list-style-type: none"> Age 6-12 years: 4 mg/day Age 13-17 years: 7 mg/day 	Approved for monotherapy and adjunctive therapy to stimulants for treatment of ADHD <ul style="list-style-type: none"> Age 6-12 years: 4 mg/day Age 13-17 years: 7 mg/day Doses > 4mg/day have not been studied in adjunctive trials.	Once daily Do not administer with high fat meals.

Patient Monitoring Parameters – Clonidine, Guanfacine

Baseline and ongoing: heart rate and blood pressure. Personal and family cardiovascular history.

Boxed Warning – Clonidine, Guanfacine

None

Warnings & Precautions – Clonidine, Guanfacine

- Hypotension
- Bradycardia
- Syncope
- Sedation/Somnolence
- When tapering, total daily dose should be reduced in decrements of no more than 0.1 mg for clonidine and 1 mg for guanfacine every 3-7 days to avoid rebound hypertension
- See product labeling for Kapvay® and Intuniv® for information about clinically significant drug interactions
- Swallow ER tablets whole. Do not chew or break.

- Guanfacine: CAUTION IF USED WITH ANTIPSYCHOTICS (↓BP)

Bupropion

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Wellbutrin®*	Age ≥ 6 years: 3 mg/kg/day or 150 mg/day, whichever is less	Age ≥ 6 years: 6 mg/kg/day or 300 mg/day with no single dose > 150 mg, whichever is less	Not approved for children and adolescents	One to three times daily
Wellbutrin® SR*	Age ≥ 6 years: 3 mg/kg/day or 150 mg/day, whichever is less	400 mg/day	Not approved for children and adolescents	Once or twice daily
Wellbutrin® XL*	Age ≥ 6 years: 3 mg/kg/day or 150 mg/day, whichever is less	450 mg/day	Not approved for children and adolescents	Once daily

Patient Monitoring Parameters - Bupropion

- Blood pressure and pulse.
- Mental status exam and suicide assessment

Boxed Warning - Bupropion

- Increased risk of suicidal thinking and behavior (suicidality) in short-term studies in children and adolescents with major depressive disorder (MDD) and other psychiatric disorders.

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - Bupropion

- Lowers seizure threshold (use caution with other agents that may lower seizure threshold-e.g. antipsychotics, TCA's, excessive alcohol)
- Discontinuation syndrome
- Activation of mania/ hypomania
- Suicidal ideation potential
- Contraindicated for use within 14 days of an MAOI.

Imipramine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Tofranil®*	Reviewed but not included/recommended			

Tricyclic Antidepressant

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children and Adolescents	Schedule
Multiple Individual medications	Reviewed but not included/recommended			

Boxed Warnings – Imipramine, TCAs

- Increased risk of suicidal thinking and behavior (suicidality) in short-term studies in children and adolescents with major depressive disorder (MDD) and other psychiatric disorders.

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions – Imipramine, TCAs

- Caution with cardiac disease
- Cardiac conduction abnormalities
- Orthostatic hypotension
- Activation of mania/ hypomania
- Anticholinergic and cognitive adverse effects
- Lowers seizure threshold
- Discontinuation syndrome
- Suicidal ideation potential
- Use caution in those with history of suicide attempts; may be cardiotoxic in overdose
- Contraindicated for use within 14 days of an MAOI

Antidepressants – SSRIs

Citalopram

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> Celexa® oral tablet Citalopram oral solution* (mint flavor) 	<ul style="list-style-type: none"> Age 6-11 years: 10 mg/day Age ≥ 12 years: 20 mg/day 	Age ≥ 6 years: 40 mg/day	Not approved for children and adolescents	Once daily

Escitalopram

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> Lexapro® oral tablet Escitalopram oral solution* (mint flavor) 	<ul style="list-style-type: none"> Age 6-11 years: 5 mg/day Age ≥ 12 years (MDD): 10 mg/day 	<ul style="list-style-type: none"> Age 6-11 years: 20 mg/day Age ≥ 12 years: 30 mg/day 	Not approved for children Approved for treatment of MDD in adolescents (age 12-17 years): 20 mg/day	Once daily

Fluoxetine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> Prozac®* oral capsule Fluoxetine oral solution* (mint flavor) 	<ul style="list-style-type: none"> Age 6-11 years: 5-10 mg/day Age ≥ 12 years: 10 mg/day 	Age ≥ 6 years: 60 mg/day	<ul style="list-style-type: none"> Approved for treatment of MDD (age 8-18 years): 20 mg/day Approved for treatment of OCD (age 7-17 years): 60 mg/day 	Once daily

Paroxetine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> Paxil®* oral tablet Paxil®* oral suspension Paxil®* CR 	Reviewed but not included/recommended – evidence of possible harm			Once daily

Fluvoxamine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Luvox®* Brand name unavailable	Age ≥ 8 years: 25 mg/day	<ul style="list-style-type: none"> Age 8-11 years: 200 mg/day Age 12-17 years: 300 mg/day 	Approved for treatment of OCD (age 8-17 years): <ul style="list-style-type: none"> Age 8-11 years: 200 mg/day Age 12-17 years: 300 mg/day 	Daily doses >50 mg should be divided
Luvox® CR*	Lowest available dose (100 mg) may not be an appropriate initial dose for pediatric patients	<ul style="list-style-type: none"> Age 8-11 years: 200 mg/day Age 12-17 years: 300 mg/day 	Approved for treatment of OCD (age 8-17 years): <ul style="list-style-type: none"> Age 8-11 years: 200 mg/day Age 12-17 years: 300 mg/day 	Once daily

Sertraline

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> Zoloft® oral tablet* Zoloft® oral solution (menthol flavor)* solution must be diluted before use 	<ul style="list-style-type: none"> Age 6-12 years: 12.5-25 mg/day Age 13-17 years: 25-50 mg/day 	Age ≥ 6 years: 200 mg/day	Approved for treatment of OCD (age 6-17 years): 200 mg/day	Once daily

Vilazodone SSRI and 5-HT_{1A} receptor partial agonist

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Viibryd®	Age 12-17 years: 5 mg/day on days 1-3, then 10 mg/day on days 4-7	Age 12-17 years: 30 mg/day	Not approved for children and adolescents	Once daily

Patient Monitoring Parameters - SSRIs

- Pregnancy test as clinically indicated
- Monitor for emergence of suicidal ideation or behavior
- Monitor weight and growth
- Obtain serum sodium if symptoms of hyponatremia occur (e.g. headaches, confusion, etc.)

Boxed Warnings - SSRIs

- Increased risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders.

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - SSRIs

- Suicidal ideation
- Activation of mania/hypomania
- QTc prolongation potential (citalopram, escitalopram, sertraline, fluoxetine)
- Discontinuation syndrome
- Abnormal bleeding
- Contraindicated to use within 14 days of an MAOI; Do not start MAOI for 5 weeks after fluoxetine discontinuation
- Serotonin Syndrome
- Hyponatremia risk

Antidepressants – SNRIs

Venlafaxine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Effexor®* ▪ Effexor® XR* 	Reviewed but not included/recommended – evidence of possible harm			

Duloxetine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Cymbalta®*	Age 7-17 years: 30 mg/day	Age 7-17 years: 120 mg/day	Approved for treatment of GAD (age 7-17 years): 120 mg/day Target dose 30-60 mg/day	Once or twice daily

Desvenlafaxine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Pristiq®*	Age 7-17 years ▪ 20 - <35 kg: 25 mg ▪ 35 - <70 kg: 35 mg ▪ ≥70 kg: 50 mg	Age 7-17 years: 50 mg/day	Not approved for children and adolescents	Once daily

Levomilnacipran

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Fetzima®	Reviewed but not included/recommended - insufficient evidence			

Clomipramine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Anafranil®*	Age 10-17 years: 25 mg/day	Age 10-17 years: 3 mg/kg/day or 200 mg/day, whichever is less	Approved for treatment of OCD (age 10-17 years): 3 mg/kg/day or 200 mg/day, whichever is less	Once daily

Patient Monitoring Parameters - SNRIs

- Pregnancy test as clinically indicated
- Monitor for emergence of suicidal ideation or behavior
- Blood pressure during dosage titration and as clinically indicated
- Monitor weight and growth
- Hepatic function testing baseline and as clinically indicated
- CBC and EKG at baseline and as clinically indicated for clomipramine

Boxed Warnings - SNRIs

- Increased risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders.

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - SNRIs

- Suicidal ideation
- Abnormal bleeding
- Severe skin reactions
- Discontinuation syndrome
- Activation of mania/ hypomania
- Hepatotoxicity
- Elevated blood pressure and pulse
- Serotonin Syndrome
- Seizures
- Hyponatremia
- Contraindicated for use within 14 days of an MAOI
- Rare cases of drug rash with eosinophilia and systemic symptoms (DRESS).

Antidepressants – Other Mechanisms

Mirtazapine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
▪ Remeron®* ▪ Remeron® Soltab ODT* (orange flavor)	Age 7-17 years: 7.5 mg/day	Age ≥ 3 years: 45 mg/day	Not approved for children & adolescents	Once daily

Vortioxetine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Trintellix®	Reviewed but not included/recommended - insufficient evidence			

Selegiline

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Emsam® (TD)	Age ≥ 12 years: 6 mg per 24 hours	Age ≥ 12 years: 12 mg per 24 hours	Approved for treatment of MDD (age ≥ 12 years): maximum dose of 12 mg per 24 hours	One patch daily

Patient Monitoring Parameters – Other Antidepressants

- Pregnancy test – as clinically indicated
- Monitor for emergence of suicidal ideation or behavior
- Blood pressure during dosage titration and as clinically indicated
- Monitor weight and height
- Serum cholesterol levels
- CBC baseline and periodically
- Activation of Mania/Hypomania
- Selegiline: Monitor for tyramine induced hypertensive crisis.

Boxed Warning – Other Antidepressants

- Increased risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short term studies of major depressive disorder (MDD) and other psychiatric disorders.
- EMSAM is contraindicated in patients less than 12 years of age (due to potential for hypertensive crisis).

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions – Other Antidepressants

- Suicidal ideation
- Abnormal bleeding
- Weight gain
- Discontinuation syndrome
- Activation of mania/ hypomania
- Orthostatic hypotension and syncope
- Serotonin Syndrome
- Hyponatremia
- Contraindicated for use within 14 days of an MAOI
- Mirtazapine: Rare cases of hepatotoxicity, seizures, and neutropenia
- Selegiline TD: tyramine rich foods and beverages should be avoided with doses of selegiline patch ≥ 9 mg per 24 hours or greater.

Monoamine oxidase inhibitors (MAOIs) oral formulations

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Reviewed but not included/recommended – increased risk of adverse events possible; risk of safety issues in youth given drug-food interactions, drug-drug interactions, etc.				

St. John's Wort

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Reviewed but not included/recommended - insufficient evidence				

Antidepressant tables notes:

- From Boxed Warning in FDA approved labeling for Antidepressants (SSRIs, SNRIs and Other Mechanisms): Patients of all ages who are started on antidepressant therapy should be monitored appropriately and observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. Both patients and families should be encouraged to contact the clinician if depression worsens, the patient demonstrates suicidal behavior or verbalizations, or if medication side effects occur. The appropriate utilization of non-physician clinical personnel who are knowledgeable of the patient population can aid in increasing the frequency of contact between the clinic and the patient/parent.
- Unless there are concerns regarding specific issues, such as drug interactions, etc., fluoxetine has the most efficacy and safety data in the pediatric depression literature. Fluoxetine should be tried as the first-line option in children and adolescents aged 8 and older to treat moderate-to-severe

major depressive disorder for which psychological therapy is insufficient to relieve symptoms after a reasonable trial (4-6 sessions).

Antipsychotics: Second Generation (Atypical)

Aripiprazole

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Abilify® oral tablet* ▪ Abilify Discmelt®* (ODT; vanilla flavor) ▪ Abilify® oral solution* (orange flavor) 	Age ≥ 4 years: 2 mg/day	<ul style="list-style-type: none"> ▪ Age 4-11 years: 15 mg/day ▪ Age ≥12 years: 30 mg/day 	<ul style="list-style-type: none"> ▪ Approved for treatment of Bipolar Mania or Mixed Episodes (age 10-17 years) and Schizophrenia (13-17 years): 30 mg/day ▪ Approved for treatment of irritability associated with Autistic Disorder (age 6-17 years): 15 mg/day ▪ Approved for Tourette's Disorder (6-18 years): <ul style="list-style-type: none"> ○ weight < 50 kg 10 mg/day ○ weight ≥ 50 kg 20 mg/day 	Once daily

Quetiapine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Seroquel®* ▪ Seroquel® XR* 	<ul style="list-style-type: none"> ▪ Age 5- 9 years: 12.5-25 mg/day ▪ Age 10-17 years: 25 mg twice day 	<ul style="list-style-type: none"> ▪ Age 5- 9 years: 400 mg/day ▪ Age 10-17 years: 800 mg/day 	<ul style="list-style-type: none"> ▪ Approved for treatment of Bipolar Mania (age 10-17 years): 600 mg/day ▪ Approved for treatment of Schizophrenia (13-17 years): 800 mg/day 	<ul style="list-style-type: none"> ▪ IR: One to three times daily ▪ XR: Once daily

Olanzapine

Not recommended to try as a first-line treatment option due to risk of significant weight gain

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Zyprexa®* ▪ Zyprexa Zydis®* (ODT; unflavored, sweetened) 	<ul style="list-style-type: none"> ▪ Age 4-5 years: 1.25 mg/day ▪ Age 6-12 years: 2.5 mg/day ▪ Age ≥ 13 years: 2.5-5 mg/day 	<ul style="list-style-type: none"> ▪ Age 4-5 years: 12.5 mg/day ▪ Age 6-17 years: 20 mg/ day 	<ul style="list-style-type: none"> ▪ Approved for treatment of Bipolar Mania or Mixed Episodes ▪ Schizophrenia (age 13-17 years): 20 mg/day ▪ Approved for treatment of depressive episodes associated with Bipolar I Disorders (age 10-17 years): 12 mg/day in combination with 50 mg/day fluoxetine 	Once daily

Risperidone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Risperdal®* ▪ Risperdal M-Tab®*(ODT; peppermint flavor) ▪ Risperdal® (oral solution; unflavored)* 	<ul style="list-style-type: none"> ▪ Age 4-5 years: <ul style="list-style-type: none"> ○ < 20 kg: 0.25 mg/day ○ > 20 kg: 0.5 mg/day ▪ Age ≥6 years:0.5 mg/day 	<ul style="list-style-type: none"> ▪ Age 4-11 years: 3 mg/day ▪ Age ≥12 years:6 mg/day 	<ul style="list-style-type: none"> ▪ Approved for treatment of Schizophrenia (age 13-17 years) and Bipolar Mania or Mixed Episodes (age 10-17 years): 6mg/day ▪ Approved for treatment of irritability associated with autistic disorder (age 5-16 years): 3 mg/day 	Once or twice daily

Clozapine

Reserved for treatment-resistant psychosis, following two failed trials of antipsychotic medications with adequate dose/duration

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Clozaril®* ▪ FazaClo®* (ODT; mint flavor) ▪ Versacloz® oral suspension (unflavored, sweetened) 	<ul style="list-style-type: none"> ▪ Age 8-11 years: 6.25-12.5 mg/ day ▪ Age ≥ 12 years: 6.25-25 mg/day 	<ul style="list-style-type: none"> ▪ Age 8-11 years: 150-300 mg/day ▪ Age ≥ 12 years: 600 mg/day <p>Target serum clozapine level of 350 ng/mL for optimal efficacy</p>	Not approved for children and adolescents	Once or twice daily

Asenapine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Saphris® (SL tablet; black cherry flavor)	Age ≥ 10 years: 2.5 mg twice daily	Age ≥ 10 years: 10 mg twice daily	Approved for acute treatment of Bipolar Mania and Mixed Episodes (age 10-17 years): 10 mg twice daily	Twice daily Avoid eating or drinking for 10 minutes after sublingual administration

Iloperidone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Fanapt®	Reviewed but not included/recommended - insufficient evidence			Once or twice daily

Paliperidone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Invega®*	<ul style="list-style-type: none"> ▪ Children: Insufficient Evidence ▪ Adolescent: (age ≥ 12 years): 3 mg/day 	<ul style="list-style-type: none"> ▪ Children: Insufficient Evidence 	Approved for treatment of Schizophrenia (age 12-17 years):	Once daily

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
		<ul style="list-style-type: none"> Adolescents (age \geq 12 years), schizophrenia: <ul style="list-style-type: none"> Weight < 51 kg: 6 mg/day Weight \geq 51 kg: 12 mg/day 	<ul style="list-style-type: none"> Weight < 51 kg: 6 mg/day Weight \geq 51 kg: 12 mg/day 	

Ziprasidone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Geodon®*	Bipolar Disorder (age 10-17 years): 20 mg/day	Bipolar Disorder (age 10-17 years) <ul style="list-style-type: none"> Weight \leq 45 kg: 80 mg/day Weight > 45 kg: 160 mg/day 	Not approved for children and adolescents	Twice daily; take with \geq 500 calorie meal

Lurasidone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Latuda®	<ul style="list-style-type: none"> Schizophrenia (age 13-17 years): 40 mg/day Bipolar I Depression monotherapy (age 10-17 years): 20 mg/day 	<ul style="list-style-type: none"> Schizophrenia (age 13-17 years): 80 mg/day Bipolar I Depression (age 10-17 years): 80 mg/day 	<ul style="list-style-type: none"> Approved for treatment of Schizophrenia (age 13-17 years) Approved for treatment of Bipolar I Disorder, depressed phase, as monotherapy: 80 mg/day 	Insufficient Evidence Once daily taken with > 350 calorie meal

Brexpiprazole

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Rexulti®	<ul style="list-style-type: none"> Reviewed but not included/recommended - insufficient evidence Not approved for children and adolescents 			

Cariprazine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Vraylar®	<ul style="list-style-type: none"> Reviewed but not included/recommended - insufficient evidence Not approved for children and adolescents 			

Combination Antipsychotic-Antidepressant Formulation(s)

Olanzapine/ Fluoxetine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Symbyax®	Age 10-17 years: 3 mg olanzapine/25 mg fluoxetine once daily	Age 10-17 years: 12 mg olanzapine/50 mg fluoxetine once daily	Acute Depressive Episodes Associated with Bipolar I Disorder for age 10-17 years: 12 mg olanzapine/50 mg fluoxetine	Once Daily

Antipsychotics: Second Generation (Atypical) tables notes:

- While iloperidone alone can cause QTc prolongation, concomitant administration with a CYP2D6 inhibitor (e.g., paroxetine) or a CYP3A4 inhibitor (e.g., ketoconazole) can double QTc prolongation compared with administering iloperidone alone.
- No long-acting injectable antipsychotic formulations are FDA-approved for use in children and adolescents.
- A cohort study found an increase of an additional 5.9 deaths/10,000-person years (7.7 – 1.8 deaths/10,000 person years) in children and youth receiving antipsychotics as compared with the control group. Their sample size was not adequate to compare potential risk of different antipsychotics (Ray 2019).

Patient Monitoring Parameters – Second Generation (Atypical)

- Fasting plasma glucose level or HbA1c – at baseline, at 12 weeks, then annually.
- Lipid screening - at baseline, at 12 weeks, and as clinically indicated
- Blood pressure, pulse – at baseline, 12 weeks, and annually
- Weight (BMI) – at baseline, at 4 weeks, at 8 weeks, 12 weeks, and annually. BMI should be compared against growth charts www.cdc.gov/growthcharts Weight gain exceeding 90th percentile for age or a change of 5 BMI units for youths obese at treatment initiation should have weight management intervention and increased frequency of glucose and lipid monitoring
- CBC as clinically indicated.
- Pregnancy test – as clinically indicated
- EPS evaluation (examination for rigidity, tremor, akathisia) – before initiation of any antipsychotic medication, then weekly for the first 2 weeks after initiating treatment with a new antipsychotic or until the dose has been stabilized and weekly for 2 weeks after a dose increase
- Tardive Dyskinesia evaluation (AIMS or NRS) at regular intervals throughout treatment (at least every 3 months)
- Sexual function– inquire for evidence of galactorrhea/ gynecomastia, menstrual disturbance, libido disturbance or erectile/ ejaculatory disturbances in males (priapism has been reported with SGAs); This inquiry should be done at each visit for the first 12 months and every 6 months thereafter.
- Vision questionnaire – ask whether the patient has experienced a change in vision and should specifically ask about distance vision and blurry vision-yearly

- Cardiovascular – obtain family history at baseline. In patients with family history of cardiac abnormalities or sudden death, personal history of syncope, palpitations, or cardiovascular abnormalities, baseline EKG and subsequent monitoring is recommended
- For patients with resting HR > 130 bpm, PR interval > 200 msec, QRS > 120 msec, or QTc > 460 msec, consider alternate therapy (AACAP Practice Parameter for the use of atypical antipsychotic medications in children and adolescents 2011)

Clozapine monitoring parameters: clozapine is associated with severe neutropenia (absolute neutrophil count (ANC) less than 500/ μ L). The requirements to prescribe, dispense, and receive clozapine are incorporated into a single, shared program called the Clozapine Risk Evaluation and Mitigation Strategy (REMS). Must follow specific requirements for CBC monitoring as per product labeling and clozapine REMS website. Prescribers and pharmacies must certify the use of clozapine at www.clozapinerems.com

Boxed warnings – Second Generation (Atypical)

- Increased risk of suicidal thoughts and behavior in short-term studies in children, adolescents, and young adults with major depressive disorder and other psychiatric disorders: aripiprazole, quetiapine, olanzapine, lurasidone, olanzapine/fluoxetine.
- None related to youth: risperidone, asenapine, iloperidone, paliperidone, ziprasidone, brexpiprazole, cariprazine.
- Severe neutropenia, seizures, orthostasis, bradycardia, syncope, myocarditis, cardiomyopathy, mitral valve incompetence: clozapine.

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions – Second Generation (Atypical)

- Extrapyramidal side effects
- Neuroleptic Malignant Syndrome
- Tardive Dyskinesia
- Hyperglycemia and Diabetes Mellitus
- Prolactinemia and gynecomastia (most common with risperidone and paliperidone)
- Weight gain
- Dyslipidemia
- Orthostatic Hypotension
- Leukopenia, neutropenia, and agranulocytosis
- Lowers seizure threshold
- Cognitive and motor impairment potential
- Hyperthermia
- Dysphagia
- Rare cases of DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) Presence of a fever with a rash and swollen lymph glands, or swelling to the face. Requires immediate medical attention.

- Possible increase in the risk of unexplained sudden death. However, this is still rare, and causality has not been established.

Antipsychotics: First Generation (Typical)

Chlorpromazine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Thorazine®* (Brand name discontinued)	<ul style="list-style-type: none"> Age > 6 months: 0.25 mg/lb. every 4-6 hours, as needed Adolescents: 10-25 mg/dose every 4-6 hours 	<ul style="list-style-type: none"> Age < 5 years: 40 mg/day Age 5-12 years: 75 mg/day Age > 12 years: 800 mg/day 	<ul style="list-style-type: none"> Approved for treatment of severe behavioral problems (age 6 months-12 years) Outpatient Children: 0.55 mg/kg every 4-6 hours, as needed Approved for the management of manifestations of psychotic disorders (age > 12 years): 1000 mg/day 	1-6 times daily

Haloperidol

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Haldol®* (Brand name discontinued)	<ul style="list-style-type: none"> Age 3-12 years: <ul style="list-style-type: none"> Weight 15-40 kg: 0.025-0.05 mg/kg/day Weight ≥ 40 kg: 1 mg/day Age > 12 years: 1 mg/day 	<ul style="list-style-type: none"> Age 3-12 years: 0.15 mg/kg/day or 6 mg/day, whichever is less Age > 12 years: <ul style="list-style-type: none"> Acute agitation: 10 mg/dose Psychosis: 15 mg/day Tourette's Disorder: 15 mg/day 	<ul style="list-style-type: none"> Approved for treatment of psychotic disorders, Tourette's Disorder, and severe behavioral problems (age ≥ 3 years). Psychosis: 0.15 mg/kg/day Tourette's Disorder and severe behavioral problems: 0.075 mg/kg/day Severely disturbed children: 6 mg/day 	One to three times daily

Perphenazine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Trilafon®* (Brand name discontinued)	<ul style="list-style-type: none"> Age 6-12 years: Insufficient Evidence Age > 12 years: 4-16 mg two to four times daily 	<ul style="list-style-type: none"> Age 6-12 years: Insufficient Evidence Age > 12 years: 64 mg/day 	<ul style="list-style-type: none"> Approved for treatment of psychotic disorders (age ≥ 12 years): <ul style="list-style-type: none"> Outpatient: 24 mg/day Inpatient: 64 mg/day 	Two to four times daily

Pimozide

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Orap®*	Age ≥ 7 years: 0.05 mg/kg once a day At doses > 0.05 mg/kg/day CYP2D6 genotyping should be performed. In poor 2D6 metabolizers, dose should not exceed 0.5 mg/kg/day	<ul style="list-style-type: none"> Age 7-12 years: 6 mg/day or 0.2 mg/kg/day, whichever is less Age ≥ 12 years: 10 mg/day or 0.2 mg/kg/day, whichever is less 	Approved for treatment of Tourette's Disorder (age ≥ 12 years): 10 mg/day or 0.2 mg/kg/ day, whichever is less	Once or twice daily

Patient Monitoring Parameters – First Generation (Typical)

- Fasting plasma glucose level or HbA1c – at baseline, at 12 weeks, then annually.
- Lipid screening - at baseline, at 12 weeks, and as clinically indicated.
- Blood pressure, pulse – at baseline, 12 weeks, and annually.
- Weight (BMI) – at baseline, at 4 weeks, at 8 weeks, 12 weeks, and annually. BMI should be compared against growth charts www.cdc.gov/growthcharts. Weight gain exceeding 90th percentile for age or a change of 5 BMI units for youths obese at treatment initiation should have weight management intervention and increased frequency of glucose and lipid monitoring.
- CBC as clinically indicated.
- Pregnancy test – as clinically indicated.
- EPS evaluation (examination for rigidity, tremor, akathisia) – before initiation of any antipsychotic medication, then weekly for the first 2 weeks after initiating treatment with a new antipsychotic or until the dose has been stabilized and weekly for 2 weeks after a dose increase.
- Tardive Dyskinesia evaluation (AIMS or NRS) at regular intervals throughout treatment (at least every 3 months).
- Sexual function– inquire for evidence of galactorrhea/ gynecomastia, menstrual disturbance, libido disturbance or erectile/ ejaculatory disturbances in males (priapism has been reported with SGAs); This inquiry should be done at each visit for the first 12 months and every 6 months thereafter.
- Vision questionnaire – ask whether the patient has experienced a change in vision and should specifically ask about distance vision and blurry vision-yearly.
- Cardiovascular – obtain family history at baseline. In patients with family history of cardiac abnormalities or sudden death, personal history of syncope, palpitations, or cardiovascular abnormalities, baseline EKG and subsequent monitoring is recommended.
- For patients with resting HR > 130 bpm, PR interval > 200 msec, QRS > 120 msec, or QTc > 460 msec, consider alternate therapy (AACAP Practice Parameter for the use of atypical antipsychotic medications in children and adolescents 2011).
- EKG required at baseline and as clinically indicated for pimozide (use with other medications with QTc prolongation potential is contraindicated e.g., escitalopram, citalopram, macrolides, etc.)

Boxed Warning – First Generation (Typical)

- None: pimozide
- None related to youth: chlorpromazine, haloperidol, perphenazine

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions – First Generation (Typical)

- Tardive Dyskinesia
- Neuroleptic Malignant Syndrome
- Leukopenia, neutropenia, and agranulocytosis
- Drowsiness
- Orthostatic hypotension
- EKG changes
- EEG changes and seizures possible
- Extrapyrimal symptoms
- Ocular changes
- Hyperprolactinemia
- Anticholinergic effects (constipation, dry mouth, blurred vision, urinary retention)
- Risk of prolonged QTc interval and torsades de pointes (particularly with pimozide)

Mood Stabilizers

Carbamazepine

Drug (brand)	Initial Dosage	Target Dosage Range	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none">▪ Epitol®* tablet▪ Tegretol®* tablet▪ Tegretol®* (oral suspension; citrus vanilla flavor)▪ Tegretol®* (chewable tab, cherry flavor some generic formulations)▪ Tegretol® XR* tablet▪ Carbatrol®* (ER capsule)▪ Equetro® (ER capsule)	<ul style="list-style-type: none">▪ Age 4-5 years: 10-20 mg/kg/day in 2-3 divided doses▪ Age 6-12 years: 100 mg twice daily▪ Age ≥ 13 years: 200 mg twice daily	<ul style="list-style-type: none">▪ Age 4-5 years: 35 mg/kg/day▪ Age 6-12 years: 400-800 mg/day▪ Age ≥ 13 years: 800- 1200 mg/day	<ul style="list-style-type: none">▪ Age 4-5 years: 35 mg/kg/day▪ Age 6-12 years: 800 mg/day▪ Age 13-15 years: 1000 mg/day▪ Age >15 years: 1200 mg/day	Approved for treatment of seizure disorders in all ages <ul style="list-style-type: none">▪ Age < 6 years: 35 mg/kg/day▪ Age 6-12 years: 1000 mg/day▪ Age >15 years: 1200 mg/day The safety and effectiveness of EQUETRO in pediatric and adolescent patients have not been established.	Two to four times daily: Epitol, Tegretol tablet Tegretol oral suspension, Tegretol chewable tab Twice Daily: Tegretol XR, Carbatrol, Equetro ER

Patient Monitoring Parameters – Carbamazepine

- CBC with differential - baseline and 1 to 2 weeks after each dose increase, annually, and as clinically indicated

- Electrolytes - baseline and 1 to 2 weeks after each dose increase, annually, and as clinically indicated
- Hepatic function - baseline, monthly for first three months, annually and as clinically indicated.
- Pregnancy Test --- baseline as appropriate, and as clinically indicated
- Carbamazepine levels ---obtain 1 week after initiation and 3-4 weeks after dose adjustment, then as clinically indicated
- For patients with Asian descent, genetic test for HLA-B*1502 at baseline (prior to the initiation of carbamazepine). May use results of previously completed testing. Patients testing positive for the allele should not use carbamazepine unless benefit outweighs the risk
- Consider HLA-A*3101 genetic testing at baseline for those to be considered at high risk (most common in Asian, Native American, European, and Latin American descents)
- Monitor for the emergence of suicidal ideation or behavior
- Usual therapeutic trough level is between 4-12 mcg/ml

Boxed Warning – Carbamazepine

- Serious dermatological reactions and HLA-B*1502 allele
- Aplastic anemia and agranulocytosis

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions – Carbamazepine

- Stevens-Johnson Syndrome
- Aplastic anemia
- Suicidality
- Teratogenicity
- Neutropenia and agranulocytosis
- Hyponatremia
- Induces metabolism of itself and many other drugs (strong CYP 3A4 inducer)
- Decreased efficacy of oral contraceptives
- Withdrawal seizures
- Contraindicated to use within 14 days of an MAOI

Divalproex Sodium

Drug (brand)	Initial Dosage	Target Dosage Range	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Depakote® delayed-release tablets* ▪ Depakote® ER extended-release tablets* ▪ Depakote® sprinkle capsules* 	Age ≥ 6 years: 10-15 mg/kg/d	Age ≥ 6 years: 30-60 mg/kg/day	Age ≥ 6 years: Serum level: 125 µg/mL, or 60 mg/kg/day	Approved for treatment of seizure disorders (age ≥ 10 years) Maximum dose based upon serum level: 50-100 µg/mL, or 60 mg/kg/day	One to three times daily

Patient Monitoring Parameters - Divalproex

- CBC - with differential and platelet count - baseline then 1 to 2 weeks after each dosage increase, every 3 months for the first year of treatment, then annually and as clinically indicated
- Comprehensive Metabolic Panel (hepatic function, serum creatinine, BUN and electrolytes) – baseline, every 3 months for the first year of treatment, then annually and as clinically indicated.
- Pregnancy Test – baseline as appropriate, and as clinically indicated
- Trough valproic acid level – 1-2 weeks after initiation and dosage change, then as clinically indicated.
- Weight – baseline, quarterly for the first year of treatment, then annually and as clinically indicated
- Monitor for the emergence of suicidal ideation or behavior
- Usual therapeutic trough levels:
 - Bipolar disorder: 50- 125 mcg/ml for valproic acid and Divalproex delayed release (Depakote®).
 - Acute mania: 85-125 mcg/ml for divalproex extended release (Depakote ER®). A lower therapeutic trough level may be needed with divalproex extended release for maintenance treatment.
- For extended release products, a trough level is 18 to 24 hours after the last dose.

Boxed Warning - Divalproex

- Hepatotoxicity (increased risk with young children)
- Pediatric patients (i.e., between 3 months and 10 years) have 50% higher clearances (i.e., mL/min/kg) than do adults. Over the age of 10 years, children have pharmacokinetic parameters that approximate those of adults.
- Teratogenicity
- Pancreatitis

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - Divalproex

- Hepatotoxicity
- Pancreatitis
- Urea cycle disorders
- Teratogenicity
- Suicidal ideation
- Neutropenia and leukopenia (significant increased risk with quetiapine co-administration)
- Thrombocytopenia
- Hyperammonemia
- Multi-organ hypersensitivity reaction
- Withdrawal seizures
- Polycystic ovarian syndrome
- Weight gain potential
- Alopecia

Lithium

Drug (brand)	Initial Dosage	Target Dosage Range	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Lithium carbonate capsules* ▪ Eskalith® CR (450 mg) ER tablet)* ▪ Lithobid® ER (300 mg ER tablet)* ▪ Lithium citrate (oral solution, 300 mg/ 5mL, raspberry flavor)* 	<ul style="list-style-type: none"> ▪ Age 6-11 years: 150 mg twice per day ▪ Age ≥ 12 years: 300 mg twice per day 	Dose adjustment based upon serum level; increase in weekly increments 12-hour post dose serum level: 0.6-1.2 mEq/L	Age ≥ 12 years: serum level 1.2 mEq/L, or 1800 mg	Approved for treatment of manic episodes and maintenance of Bipolar Disorder (age ≥ 7 years) Maximum dose: <ul style="list-style-type: none"> ○ 20-30 kg: acute: 1500 mg maintenance: 1200 mg; ○ 30 kg: 1800 mg 12-hour post dose serum level: <ul style="list-style-type: none"> ▪ acute: 0.8-1.2 mEq/L ▪ maintenance: 0.8-1 mEq/L 	One to four times daily

Patient Monitoring Parameters - Lithium

- EKG – baseline, yearly
- CBC – baseline, yearly
- Thyroid studies – baseline; then TSH every 6 months
- Comprehensive Metabolic Panel, baseline, 3 months, annually. Caution: BUN: serum creatinine ratio >20 may be an indication of dehydration.
- UA - baseline
- Pregnancy Test
- Trough Lithium Levels – one week (i.e., 5-7 days) after initiation or dosage change, 3 months after initiation; for maintenance treatment every 6 months
- Weight – baseline, every 6 months
- Usual trough therapeutic level: 0.6-1.2 meq/L (12 hrs. post dose)

Boxed Warning - Lithium

- Toxicity above therapeutic serum levels

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - Lithium

- Toxicity above therapeutic serum levels; narrow therapeutic index
- Chronic renal function impairment
- Increased risk of toxicity possible for patients with significant renal disease, dehydration, sodium depletion, concomitant drug interactions (ACEI, ARBS, NSAIDs, COXII inhibitors, diuretics, etc.)
- Polyuria
- Tremor
- Diarrhea
- Nausea
- Hypothyroidism
- Teratogenicity

Lamotrigine

Drug (brand)	Initial Dosage	Target Dosage Range	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Lamictal®* ▪ Lamictal® CD* (chewable dispersible tablets) * ▪ Lamictal® ODT; blackcurrant flavor) * 	<ul style="list-style-type: none"> ▪ Age 6-11: years: 2-5 mg/ day ▪ Age ≥ 12 years: 25 mg/day (increase by 25 mg every 2 weeks) 	<p>Epilepsy dosing</p> <p>Age 6-11 years:</p> <ul style="list-style-type: none"> ▪ Monotherapy: 4.5-7.5 mg/kg/day ▪ With valproate: 1-3 mg/kg/day ▪ With valproate and EIAEDs: 1-5 mg/kg/day ▪ With EIAEDs: 5-15 mg/kg/day <p>Age ≥ 12 years:</p> <ul style="list-style-type: none"> ▪ Monotherapy: 225-375 mg/day ▪ With valproate: 100-200 mg/day ▪ With valproate and EIAEDs: 100-400 mg/day ▪ With EIAEDs: 300-500 mg/day <p>See product labeling for detailed charts for alternate dosing in the presence of drug interactions i.e., divalproex/valproic acid OR EIAEDs (carbamazepine, phenytoin, phenobarbital, primidone)</p>	<p>See dosing tables below main table for recommended lamotrigine titration for 10-12-year-old and 13-17 year olds for pediatric bipolar disorder.</p> <p>Dosing is from a randomized, placebo-controlled study conducted by Findling and colleagues for youth with bipolar disorder</p>	<p>Approved for adjunctive therapy for Seizure Disorders:</p> <ul style="list-style-type: none"> ▪ Age 2-12: 400 mg/ day ▪ Age > 12: 500 mg/day <p>Use of doses > 200 mg/day in adults with bipolar depression has not conferred additional efficacy. Not FDA-approved for treatment of Bipolar Disorder in patients younger than 18 years</p>	Once or twice daily

Lamotrigine

Drug (brand)	Initial Dosage	Target Dosage Range	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Lamictal XR® (ER tablet) *	Age ≥ 13 years: 25 mg/day	Age ≥ 13 years (without concomitant drug interactions): 25 mg once daily for 2 weeks, then 50 mg once daily for 2 weeks, then 100 mg once daily for 1 week, then 150 mg once daily for 1 week, then 200 mg once daily for 1 week, then increase to maintenance dose of 300-400 mg/day thereafter. (Use of doses > 200 mg/day in adults with bipolar depression has not conferred additional efficacy) See product labeling for detailed charts for alternate dosing in the presence of drug interactions i.e., divalproex/valproic acid OR EIAEDs (carbamazepine, phenytoin, phenobarbital, primidone)	Lamictal XR® has no published data for mood stabilization in pediatrics	Approved for adjunctive therapy for Seizure Disorder 13 years or older Maximum dose depends on presence of concomitant drug interactions, see product labeling Not FDA-approved for treatment of Bipolar Disorder in patients younger than 18 years	Once daily

Patient Monitoring Parameters- Lamotrigine

- Renal Function - baseline and as clinically indicated
- Hepatic Function - baseline and as clinically indicated
- Pregnancy Test - baseline and as clinically indicated
- CBC – baseline and as clinically indicated
- Monitor for the emergence of suicidal ideation or behavior
- Monitor for rash, especially during the first two months of therapy

Boxed Warning-Lamotrigine

- Serious rashes including Stevens- Johnson syndrome

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions-Lamotrigine

- Dermatological reactions
- Potential Stevens- Johnson Syndrome; risk increased with too-rapid titration
- Drug reaction with eosinophilia and systemic symptoms (DRESS) reactions have occurred

- Suicidal ideation
- Aseptic meningitis
- Concomitant use with divalproex increases serum lamotrigine levels significantly (increased risk of rash/SJS without lamotrigine dose adjustment)
- Concomitant use with enzyme inducing AEDs (carbamazepine, phenytoin, phenobarbital, primidone) reduces serum lamotrigine levels significantly (reduced lamotrigine efficacy possible without lamotrigine dose adjustment)
- Concomitant use with oral contraceptives increases lamotrigine clearance
- Withdrawal seizure potential

Oxcarbazepine

Drug (brand)	Initial Dosage	Target Dosage Range	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none"> ▪ Trileptal® (film coated tablet) * ▪ Trileptal® oral suspension* (plum-lemon flavor) ▪ Oxtellar XR® ER tablet* 	Reviewed but not included/recommended - insufficient evidence				

Boxed Warning - Oxcarbazepine

- None related to youth

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Lamotrigine Dosing

Lamotrigine Dose Titration for Adolescents 10-12 years of age.

Study Week	For Patients Taking Valproate ^a (mg/kg/day)	For Patients not Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate ^b (mg/kg/day)	For Patients Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate ^b (mg/kg/day)
Weeks 1 and 2	0.15	0.3 ^a	0.6
Weeks 3 and 4	0.3	0.6	1.2
Week 5	0.6	1.2	2.4
Week 6	0.9	1.8	3.6

Study Week	For Patients Taking Valproate^a (mg/kg/day)	For Patients not Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate^b (mg/kg/day)	For Patients Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate^b (mg/kg/day)
Week 7	1.2	2.4	4.8
Week 8	1.5	3.0	6.0
Week 9	1.8	3.6	7.2
Week 10	2.1	4.2	8.4
Week 11	2.4	4.8	9.6
Week 12	2.7	5.4	10.8
Week 13 - 18	3.0	6.0	12.0
Maximum Dose	3 mg/kg/day or 100 mg/day ^a whichever occurred first	6 mg/kg/day or 200 mg/day ^b whichever occurred first	12 mg/kg/day or 300 mg/day ^b whichever occurred first

^a In 1 or 2 divided doses.

^b In 2 divided doses (unless noted otherwise).

Lamotrigine Dose Titration for Adolescents 13-17 years of age.

Study Week	For Patients Taking Valproate	For Patients not Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate	For Patients Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate
Weeks 1 and 2	25 mg every other day	25 mg/day	50 mg/day
Weeks 3 and 4	25 mg/day	50 mg/day	100 mg/day ^a
Week 5	50 mg/day (minimum dose)	100 mg/day (minimum dose)	150 mg/day ^a

Study Week	For Patients Taking Valproate	For Patients not Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate	For Patients Taking Carbamazepine (or Other Enzyme-Inducing Drugs) and not Taking Valproate
Week 6	75 mg/day	150 mg/day	200 mg/day ^a (minimum dose)
Week 7	100 mg/day (target dose)	200 mg/day (target dose)	250 mg/day ^a
Week 8	125 mg/day	250 mg/day ^a	300 mg/day ^a (target dose)
Week 9	150 mg/day (maximum dose)	300 mg/day ^a (maximum dose)	350 mg/day ^a
Week 10 - 18	150 mg/day	300 mg/day ^a	400 mg/day ^a (maximum dose)

^a In 2 divided doses.

Reference and Copyright Information for Lamotrigine Dose Titration tables above:

Reprinted from the Journal of the American Academy of Child and Adolescent Psychiatry, Volume 52 (Edition 12), Findling RL, Chang K, Robb A, et al. Adjunctive Maintenance Lamotrigine for Pediatric Bipolar I Disorder: A Placebo-Controlled, Randomized Withdrawal Study, pages 1020-1031.e3, Copyright (2015), with permission from Elsevier. <https://www.sciencedirect.com/journal/journal-of-the-american-academy-of-child-and-adolescent-psychiatry> <http://www.elsevier.com>

Sedatives/Hypnotics

Diphenhydramine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Benadryl®	<ul style="list-style-type: none"> Age 3-5 years: 6.25-12.5 mg (1 mg/kg max) Age 5-11 years: 12.5-25 mg Age ≥ 12 years: 25-50 mg 	<ul style="list-style-type: none"> 25-37 lbs: 12.5 mg 38-49 lbs: 19 mg 50-99 lbs: 25 mg ≥ 100 lbs: 50 mg <p>Evidence suggests that tolerance develops to the hypnotic effects of diphenhydramine within 5-7 nights of continuous use.</p>	Approved for treatment of insomnia (age ≥ 12 years): 50 mg at bedtime	Once at bedtime

Boxed Warning - Diphenhydramine

None

Warnings & Precautions - Diphenhydramine

- Drowsiness
- Dizziness
- Dry mouth
- Nausea
- Nervousness
- Blurred vision
- Diminished mental alertness
- Paradoxical excitation
- Respiratory disease
- Hypersensitivity reactions
- May lower seizure threshold (avoid in epilepsy)

Trazodone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Desyrel®*	<ul style="list-style-type: none">▪ Children: Insufficient Evidence▪ Adolescents: 25 mg	<ul style="list-style-type: none">▪ Children: Insufficient Evidence▪ Adolescents: 100 mg/day	Not approved for use as a hypnotic	Once at bedtime

Boxed Warning - Trazodone

- Increased risk compared to placebo of suicidal thinking and behavior (Suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders

See FDA-approved product labeling for complete boxed warnings.

Warnings & Precautions - Trazodone

- Serotonin Syndrome
- Use contraindicated within 14 days of an MAOI
- Suicidal ideation
- Activation of mania/hypomania
- Discontinuation syndrome
- Abnormal bleeding
- QT prolongation and risk of sudden cardiac death
- Orthostatic hypotension and syncope
- Abnormal bleeding
- Priapism
- Hyponatremia
- Cognitive and motor impairment

Eszopiclone

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Lunesta®*	Reviewed but not included/recommended - insufficient evidence/increased rate of adverse events in pediatric patients			

Boxed Warning - Eszopiclone

None

Warnings & Precautions - Eszopiclone

- Complex sleep behaviors possible
- Abnormal thinking and behavior changes
- Withdrawal effects
- Drug abuse and dependence
- Tolerance

Melatonin

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
No brand name	<ul style="list-style-type: none"> ▪ Age 3-5 years: 0.5 mg ▪ Age ≥ 6 years: 1 mg 	<ul style="list-style-type: none"> ▪ Age 3-5 years: 0.15 mg/kg or 3 mg, whichever is less ▪ Age ≥ 6 years: 0.15 mg/kg or 6 mg, whichever is less 	Regulated by FDA as a dietary supplement and not as a medication (no FDA approved indications)	Once at bedtime or alternatively, give 5-6 hrs. before Dim Light Melatonin Onset (DLMO)

Boxed Warning - Melatonin

None

Warnings & Precautions - Melatonin

- Sedation
- Should be given directly before onset of sleep is desired due to short half-life

Ramelteon

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Rozerem®	Reviewed but not included/recommended - insufficient evidence			

Boxed Warning - Ramelteon

None

Warnings & Precautions - Ramelteon

- Hypersensitivity reactions
- Need to evaluate for comorbid diagnoses
- Abnormal thinking and behavioral changes
- CNS depression
- Decreased testosterone possible

- Hyperprolactinemia possible

Hydroxyzine

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Vistaril®*	<ul style="list-style-type: none"> Age 3-5 years: 25 mg Age ≥ 6 years: 50 mg 	<ul style="list-style-type: none"> Age 3-5 years: 25 mg Age 6-11 years: 50 mg Age 12 years and older: 100 mg 	Approved for treatment of anxiety and tension: <ul style="list-style-type: none"> Age <6 years: 50 mg/day in divided doses Age ≥ 6 years: 50-100 mg/day in divided doses Approved as a sedative when used as a premedication and following general anesthesia: 0.6 mg/kg	Once at bedtime

Boxed Warning - Hydroxyzine

None

Warnings & Precautions - Hydroxyzine

- Drowsiness
- Dry mouth
- Involuntary motor activity
- Blurred vision, dizziness, diminished mental alertness
- Paradoxical excitation associated with a small but definite risk of QT interval prolongation and torsades de pointes

Suvorexant

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Belsomra®	Reviewed but not included/recommended - insufficient evidence			

Boxed Warning - Suvorexant

- None related to youth

See FDA-approved product labeling for complete boxed warnings.

Warnings & Precautions- Suvorexant

- Sleep paralysis
- Somnolence

Zolpidem

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
Ambien®	Reviewed but not included/recommended – evidence of possible harm			

Boxed Warning - Zolpidem

- None related to youth

See FDA-approved product labeling for complete boxed warnings.

Warnings & Precautions - Zolpidem

- Hallucinations in children 6-17 have been reported
- Complex sleep behaviors possible
- Abnormal thinking and behavior changes
- Withdrawal effects
- Drug abuse and dependence
- Tolerance

Benzodiazepines

Drug (brand)	Initial Dosage	Literature Based Maximum Dosage	FDA Approved Maximum Dosage for Children & Adolescents	Schedule
<ul style="list-style-type: none">▪ Alprazolam/ Xanax®*▪ Clonazepam/ Klonopin®*▪ Diazepam/ Valium®*▪ Lorazepam/ Ativan®*▪ Oxazepam/ Serax®* (brand name unavailable)	Reviewed but not included/recommended – evidence of possible harm/increased incidence of adverse effects and potential for abuse and/or addiction			
<ul style="list-style-type: none">▪ Temazepam/ Restoril®*				

Boxed Warning - Benzodiazepines

- Risks from concomitant use with opioids

See FDA-approved product labeling for each individual medication for complete boxed warnings.

Warnings & Precautions - Benzodiazepines

- Withdrawal effects
- Drug abuse and dependence
- Tolerance
- Sedation potential

Special Considerations

It is best to optimize the dose of psychotropic medication and allow an adequate trial (usually 4-8 weeks, depending on medication class) before a switch in psychotropic medication is performed, unless adverse effects prohibit or limit the current treatment.

Titration of Antidepressant Medications

For most antidepressant medications, start at the recommended initial dose and wait approximately one week in between dose increases (as tolerated) until the target dose is achieved. It is recommended to start low and go slow to reduce treatment-emergent anxiety and potential activation. Guidelines suggest weekly contact with the young patient and their parent/caregiver for the first 4 weeks of treatment and bi-weekly thereafter. (NICE 2005; AACAP 2007; FDA) As with other medications treatments for Major Depressive Disorder and anxiety disorders, symptom improvement/response may be delayed until 4 weeks of treatment or longer.

Taper of Antidepressant Medications

For antidepressant treatment duration >4-6 weeks, taper is recommended to avoid withdrawal symptoms (flu-like symptoms, anxiety, irritability, nausea, 'electric shock' sensation, etc.) and to reduce potential for symptom worsening and relapse. The taper schedule should be tailored depending on patient diagnosis and individual characteristics.

Abrupt discontinuation of antidepressant medications is generally NOT recommended.

For significant or severe adverse effects, abrupt discontinuation may be advised; however, withdrawal adverse effects and relapse/symptom exacerbation are possible. A number of strategies for switching or discontinuing antidepressant medications have been studied in adults. A paucity of evidence exists to guide best practice for antidepressant tapering and discontinuation in youth. The following is based on review of available data, clinical experience, and expert consensus.

Tapering to discontinue: Antidepressant taper should occur slowly over at least 4 weeks [Example taper schedule: 10-20-25% dose reduction (from initial dose) each week until discontinuation is complete].

For patients achieving remission on antidepressant medications for a significant duration of time OR if significant withdrawal symptoms/symptom recurrence occur(s) during taper, a longer and slower taper can be considered (up to 12 weeks).

Switching between antidepressant classes: Cross-taper should occur over no longer than 4 weeks. Use caution using two antidepressant medications in higher doses to reduce the risk of serotonin syndrome (symptoms include: hyperthermia, hyperreflexia, agitation, tremor, sweating, altered mental status, tachycardia, etc.). An example taper schedule is: 25-50% dose reduction each week of previous antidepressant with titration of new antidepressant starting at 25% of target dose, then increasing over 2-4 weeks to target dose.

Switching between SSRIs: In cases of switching between SSRI medications, a direct switch can be performed (i.e., take the last dose of one SSRI medication one day, and then start an equivalent/therapeutic dose of a different SSRI the next day and discontinue previous SSRI). Taper is also possible, with a taper duration not to exceed approximately 2 weeks.

Individual medication considerations for tapering:

Fluoxetine: Due to the long half-life of fluoxetine (and active metabolite norfluoxetine), if dose is less than 40 mg/day, you may consider taper and discontinuation over 7-14 days [e.g., reduce to 20 mg for 7 days, then 10 mg for 7 days, then stop] depending on individual clinical factors. A longer taper is recommended if withdrawal symptoms occur or if clinical presentation worsens during taper.

Paroxetine: Due to the short half-life of paroxetine, a longer and slower taper may be necessary with a goal of discontinuation to prevent withdrawal and symptom exacerbation.

Titration of Antipsychotic Medications

Medication	Indication	Initial Dose	Titration Increments	Target Dose	Effective Daily Dose Range
Risperidone Usual dosing is once daily, but can change to twice daily for persistent somnolence	Schizophrenia adolescents	0.5 mg/day	0.5-1 mg; no more often than daily*	3 mg	1-6 mg
	Bipolar mania children and adolescents	0.5 mg/day	0.5-1 mg; no more often than daily*	1-2.5 mg	1-6 mg
	Irritability in autistic disorder <u>body weight < 20 kg</u>	0.25 mg/day	Can ↑ to 0.5 mg on Day 4; then ↑ by 0.25 mg every 2+ weeks	0.5 mg	0.5-3 mg
	Irritability in autistic disorder <u>body weight ≥ 20 kg</u>	0.5 mg/day	Can ↑ to 1 mg on Day 4; then ↑ by 0.5 mg every 2+ weeks	1 mg	0.5-3 mg
Aripiprazole Once daily dosing is recommended	Schizophrenia adolescents	2 mg/day	2 mg x2 days; then 5 mg x2 days; then 10 mg target; can ↑ in 5 mg increments thereafter every 2+ weeks	10 mg	30 mg
	Bipolar mania children and adolescents	2 mg/day	2 mg x2 days; then 5 mg x2 days; then 10 mg target; can ↑ in 5 mg increments thereafter every 2+ weeks	10 mg	30 mg
	Irritability in autistic disorder <u>body weight < 20 kg</u>	2 mg/day	2 mg x2 days; then 5 mg; can ↑ in 5 mg increments gradually at intervals of no less than 1 week	5-10 mg	15 mg
	Tourette's <u>body weight < 50 kg</u>	2 mg/day	2 mg x2 days; then 5 mg; can ↑ in 5 mg increments gradually at intervals of no less than 1 week	5 mg	10 mg
	Tourette's <u>body weight ≥ 50 kg</u>	2 mg/day	2 mg x2 days; then 5 mg x5 days, with a target dose of 10 mg/d on Day 8; can ↑ in 5 mg increments gradually at intervals of no less than 1 week	10 mg	20 mg
Quetiapine Usual dosing is twice daily, but can change to three times daily dosing for tolerability (sedation/somnolence);	Schizophrenia adolescents	25 mg twice daily	Day 1: 50 mg total dose, divided twice daily Day 2: 100 mg total dose, divided twice daily Day 3: 200 mg total dose, divided twice daily Thereafter, can gradually ↑ in increments of no more than 100 mg/day; not to exceed the max recommended daily dose	400-800 mg/day	800 mg
	Bipolar mania children and adolescents	25 mg twice daily	Same titration as above	400-600 mg/day	600 mg
Olanzapine Once daily dosing in the evening is recommended	Schizophrenia adolescents	2.5-5 mg/day	Titration increments of 2.5-5 mg are recommended	12.5 mg	10-20 mg
	Bipolar mania children and adolescents	2.5-5 mg/day	Titration increments of 2.5-5 mg are recommended	10 mg	10-20 mg

Medication	Indication	Initial Dose	Titration Increments	Target Dose	Effective Daily Dose Range
Asenapine Twice daily dosing is recommended Sublingual (SL) administration only; fully dissolve tablet under tongue, then wait 10 minutes to eat or drink	Bipolar mania in 10-17 year- olds	2.5 mg SL twice daily	2.5 mg SL twice daily x3 days, then 5 mg SL twice daily x3 days. Thereafter can ↑ to 10 mg SL twice daily if desired after no more than 3 days. Note: Faster titration may increase risk of dystonia.	2.5 – 10 mg SL twice daily (5 mg – 20 mg total daily dose)	10 mg SL twice daily
Paliperidone Once daily dosing is recommended	Schizophrenia adolescents <u>body weight < 51 kg</u>	3 mg/day	Initial dose titration is not required. Dose adjustments can be made in increments of 3 mg, at intervals of 5+ days.	3-6 mg	6 mg
	Schizophrenia adolescents <u>body weight ≥ 51 kg</u>	3 mg/day	Initial dose titration is not required. Dose adjustments can be made in increments of 3 mg, at intervals of 5+ days.	3-12 mg	12 mg
Lurasidone Once daily dosing is recommended Take with food ~ at least 350 calories	Schizophrenia adolescents	40 mg/day	Initial dose titration is not required	40-80 mg	80 mg
	Depressive episode in Bipolar I disorder in children and adolescents	20 mg/day	Initial dose titration is not required. The dose may be ↑ after 1 week based on response & tolerability.	20-40 mg	80 mg
Olanzapine (O) /fluoxetine (F) combination Once daily dosing in the evening is recommended	Depressive episode in Bipolar I disorder in children and adolescents	2.5 mg (O) +20 mg (F) once a day	Titration increments of 2.5-5 mg (O) are recommended; Titration increments of 10-20 mg (F) are recommended	2.5-10 (O)/ 20-50 (F)	12 mg (O)/50 mg (F)

Recommended titration for antipsychotic medications with FDA-approved indications in children and adolescents (based on individual product labeling/package inserts).

↑ = Increase(d)

***Slower titration may be advisable for some patients, particularly those with a history of adverse events or EPS with antipsychotic medications.**

Taper of Antipsychotic Medications

Several strategies for switching or discontinuing antipsychotic medications have been studied in adults. A paucity of evidence exists to guide best practice for antipsychotic tapering and discontinuation in youth. The following is based on review of available data, clinical experience, and expert consensus.

In patients with antipsychotic use > 4 weeks, psychotic disorders, patients with a history of repeated relapse, or treatment resistant symptoms, abrupt antipsychotic discontinuation is generally not advised. Withdrawal adverse effects and relapse/symptom exacerbation are possible. For dangerous or severe adverse effects, abrupt discontinuation may be necessary to reduce the risk of potential harm to the

patient. Neuroleptic malignant syndrome (NMS) is a life-threatening reaction to antipsychotic medications, which typically presents with high fever, muscle rigidity, confusion, autonomic instability, etc. In the case of neuroleptic malignant syndrome, abrupt discontinuation of the antipsychotic is required, as well as emergency management to reduce body temperature and blood pressure. For patients experiencing less-severe treatment-emergent adverse effects for which discontinuation is desired, a faster taper may also be possible, depending on clinician discretion/judgment.

For antipsychotic treatment duration >4 weeks, taper is recommended to avoid withdrawal symptoms (withdrawal dyskinesia, etc.) and to reduce potential for symptom worsening and destabilization. The taper schedule should be tailored depending on patient diagnosis and individual characteristics, as well as, the goal of medication switch vs. discontinuation. A faster taper may be possible under close monitoring during inpatient hospitalization.

Tapering to discontinue: Antipsychotic taper should occur in increments over at least 3-4 weeks [example taper schedule: 25%-50% dose reduction initially (from initial dose), then reduce by 25% bi-weekly or once a week]. A longer taper is recommended if withdrawal symptoms occur or if clinical presentation worsens during taper, or if the goal of taper is to discontinue after remission of symptoms has occurred for an adequate period depending on the condition being treated.

Switching between antipsychotics: If switching antipsychotics, it is generally advisable to cross-taper/titrate agents concurrently over approximately 2 weeks. Judicious dosing of the newly started agent is advised to reduce the potential for extrapyramidal adverse effects. Direct switch between antipsychotics has been studied in adult patients with mixed results. If direct antipsychotic switch is utilized in youth, close monitoring is recommended. Gradual discontinuation/cross-taper may be most appropriate for the majority of patients. In all cases, the period of overlapping antipsychotic administration should be minimized to no longer than 4 weeks.

Antipsychotic polypharmacy taper: In patients taking two antipsychotics concurrently for maintenance treatment, you may consider slowly tapering one antipsychotic agent over 6-8 weeks, with the goal of maintenance treatment with only one antipsychotic medication. Maintenance treatment with two antipsychotic medications (i.e., antipsychotic polypharmacy) is not advised due to a lack of evidence for efficacy as replicated in numerous studies, and evidence of significantly increased adverse effects.

In patients with neurodevelopmental disorders, slower antipsychotic taper (12-14 weeks) may be advised due to reported rebound symptomatology and agitation with more rapid taper (Baumeister, 1998; Kuijper, 2014).

Levels of Evidence for Efficacy in Child & Adolescent Psychopharmacology

This tool provides summary information for health care providers in determining levels of evidence for psychopharmacological treatment. Information summarized here is not reviewed at a level of detail to allow detailed inferences about specific medications within medication classes. For example, although there might be support for one medication within a class (e.g., SSRIs), there might be minimal or no support for others within that same class. For more specific information, please seek detailed reviews of specific medications and their use. FDA approved medications for a given indication are marked with an asterisk*

PROBLEM AREA	MEDICATION	SHORT-TERM EFFICACY	LONG-TERM EFFICACY
Anxiety Disorders	SSRIs	A	B
	Benzodiazepines	C	C
OCD	SSRIs*	A	C
ADHD	Stimulants*	A	A

PROBLEM AREA	MEDICATION	SHORT-TERM EFFICACY	LONG-TERM EFFICACY
	Atomoxetine* & TCAs	A	B
	Central Adrenergic Agonists*	A	C
Autism (for irritability and aggression)	Atypical antipsychotics *	A	B
Aggressive Conduct Problems with or without ADHD	Lithium	B	C
	Valproate	A	C
	Carbamazepine	C	C
	Atypical antipsychotics	A	B
Bipolar Disorder	Lithium*	A	C
	Valproate	C	C
	Carbamazepine	C	C
	Atypicals*	A	C
Depression	SSRIs*	A	C
	TCAs	C	C
Treatment Resistant MDD	Switching: SSRIs = Venlafaxine	B	C
Schizophrenia (psychotic disorders)	Antipsychotics*	A	B
Tourette's	Antipsychotics*	A	C
	Central Adrenergic Agonists	B	C

A = Adequate data to inform prescribing practices. For efficacy and safety: 2 ≥ randomized controlled trials (RCTs) in youth; long-term efficacy and safety are defined based on studies lasting 12 months or longer. Please note, for safety, "A" doesn't mean "safe", it merely indicates that the risks have been characterized in 2 or more carefully executed studies.

B = For short- and long-term efficacy and short-term safety: 1 RCT in youth or mixed results from ≥ 2 RCTs. For long-term safety, only 1 careful prospective study lasting 12 months or more, or mixed results from ≥ 2 longitudinal studies.

C = No controlled evidence or negative studies; case reports and FDA reports of adverse events only.

#=Safety category designations refer to whether sufficient data are available to determine the risks vs. benefits of treatment vis-à-vis the risks relatively common side effects. Very rare side effects cannot be anticipated and can sometimes be severe, so it cannot be assumed that the treatment benefits for a given child outweigh possible rare risks or side effects experienced by that child.

This table is provided for informational use, only by licensed health care providers, by The REACH Institute, www.TheReachInstitute.org. The table is not intended for use as a stand-alone guide but should only be used in conjunction with evidence- and consensus-based guidelines for specific disorders.

Adapted and used with permission from The Reach Institute Table last updated: December 20, 2018 -- Peter S. Jensen & M. Lynn Crismon

Glossary

Acronym/Abbreviation	Definition
AACAP	American Academy of Child and Adolescent Psychiatry
ACEI	Ace inhibitor. Antihypertensive medication.
AIMS	Abnormal involuntary movement scale
ANC	Absolute neutrophil count
ARB	Angiotensin receptor blocker. Antihypertensive medication.
BID	Twice daily dosing (usually morning and evening, 10-12 hours apart)
BMI	Body mass index. A measure of body fat based upon height and weight
BP	Blood pressure

Acronym/ Abbreviation	Definition
BUN	Blood urea nitrogen
CBC	Complete blood count. Lab test used to monitor for abnormalities in blood cells, e.g., for anemia
CD	Controlled delivery
COX II inhibitors	Cyclooxygenase II inhibitor pain medication
Cp	Plasma concentration
CR	Controlled-release
CYP	Cytochrome P450
EEG	Electroencephalogram
EIAED	Enzyme Inducing Anti-Epileptic Drugs (e.g. carbamazepine, phenobarbital, phenytoin, primidone)
EKG	Electrocardiogram
EPS	Extrapyramidal side effects. These are adverse effects upon movement, including stiffness, tremor, and severe muscle spasm
ER	Extended-release
FDA	U.S. Food and Drug Administration
GAD	Generalized anxiety disorder
HbA1c	Hemoglobin A1c is a laboratory measurement of the amount of glucose in the hemoglobin of the red blood cells. Provides a measure of average glucose over the previous 3 months
HR	Heart rate
IR	Immediate-release
Kg	Kilograms (1 kg is equivalent to 2.2 pounds)
LA	Long-acting
LFTs	Liver function tests
MAOI	Monoamine oxidase inhibitor
MDD	Major depressive disorder
MRI	Magnetic resonance imaging
Msec	Millisecond
NRS	Neurological rating scale
NSAID	Non-steroidal anti-inflammatory drug
OCD	Obsessive-compulsive disorder
ODT	Orally disintegrating tablet
PRN	As needed
Prolactin	A hormone produced by the pituitary gland
QD	Once daily dosing
Serum creatinine	A lab test used to calculate an estimate of kidney function
SL	Sublingual

Acronym/ Abbreviation	Definition
SR	Sustained-release
SSRI	Selective serotonin reuptake inhibitor
TCA	Tricyclic antidepressant
TD	Transdermal
TFT	Thyroid function test
TID	Three times daily dosing (usually 6-8 hours apart)
UA	Urine analysis
XL	Extended-length
XR	Extended-release

References

- Abikoff HB, Vitiello B, Riddle MA, et al. Methylphenidate Effects on Functional Outcomes in the Preschoolers with Attention-Deficit/Hyperactivity Disorder Treatment Study (PATs). *Journal of Child and Adolescent Psychopharmacology*. 2007;17(5):581-592.
- Aman MG, Bukstein OG, Gadow KD, et al. What does risperidone add to parent training and stimulant for severe aggression in child attention-deficit/hyperactivity disorder? *Journal of the American Academy of Child & Adolescent Psychiatry*. 2014;53(1):47-60.
- American Academy of Child and Adolescent Psychiatry. Recommendations about the Use of Psychotropic Medications for Children and Adolescents Involved in Child-Serving Systems.
https://www.aacap.org/App_Themes/AACAP/docs/clinical_practice_center/systems_of_care/AACAP_Psychotropic_Medication_Recommendations_2015_FINAL.pdf. 2015. Accessed 2019.
- American Academy of Pediatrics Committee on Substance Use and Prevention. Medication-Assisted Treatment of Adolescents with Opioid Use Disorders. *Pediatrics*. 2016;138(3): e20161893.
- American Diabetes Association, American Psychiatric Association, American Association of Clinical Endocrinologists, North American Association for the Study of Obesity. Consensus development conference on antipsychotic drugs and obesity and diabetes. *Diabetes Care*. 2004;27(2):596-601.
- American Diabetes Association Screening Guidelines for Patients on Second-Generation Antipsychotics. <http://www.mainearepdl.org/sites/default/files/ghs-files/psychiatric-work-group/2009-04-15/antipsychoticmonitoringghs.pdf>. 2009. Accessed 2019.
- American Psychiatric Association. Practice Guideline for the Treatment of Patients with Major Depressive Disorder, Third Edition.
https://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/mdd.pdf. 2010. Accessed 2019.
- American Society of Addiction Medicine. The ASAM National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use.
<https://www.asam.org/docs/default-source/practice-support/guidelines-and->

consensus-docs/asam-national-practice-guideline-supplement.pdf. 2015. Accessed 2019.

Atkinson S, Lubaczewski S, Ramaker S, et al. Desvenlafaxine Versus Placebo in the Treatment of Children and Adolescents with Major Depressive Disorder. *Journal of Child and Adolescent Psychopharmacology*. 2018;28(1):55-65.

Baldessarini RJ, Tondo L, Ghiani C, Lepri B. Illness Risk Following Rapid vs. Gradual Discontinuation of Antidepressants. *American Journal of Psychiatry*. 2010;167(8):934-941.

Baldwin DS, Anderson IM, Nutt DJ, et al. Evidence-based guidelines for the pharmacological treatment of anxiety disorders: Recommendations from the British Association for Psychopharmacology. *Journal of Psychopharmacology*. 2005;19(6):567-596.

Biederman J, Gagan J, Mike, E, et al. A prospective open-label trial of lamotrigine monotherapy in children and adolescents with bipolar disorder. *CNS Neuroscience & Therapeutics*. 2010;16(2):91-102.

Birmaher B, Brent D, AACAP Work Group on Quality Issues, et al. Practice Parameter for the Assessment and Treatment of Children and Adolescents with Depressive Disorders. *Journal of The American Academy of Child and Adolescent Psychiatry*. 2007; 46(11):1503Y1526.

Blader JC, Pliszka SR, Kafantaris V, et al. Prevalence and treatment outcomes of persistent negative mood among children with attention-deficit/hyperactivity disorder and aggressive behavior. *Journal of Child and Adolescent Psychopharmacology*. 2016;26(2):164-173.

Blumer J, Findling R, Shih WJ, Soubrane C, Reed M. Controlled clinical trial of zolpidem for the treatment of insomnia associated with attention-deficit/ hyperactivity disorder in children 6 to 17 years of age. *Pediatrics*. 2009; 123(5): e770-e776.

Bobo WV, Cooper WO, Stein CM, et al. Antipsychotics and the risk of type 2 diabetes mellitus in children and youth. *JAMA Psychiatry*. 2013;70(10):1067-1075.

Bridge JA, Iyengar S, Salary CB, et al. Clinical response and risk for reported suicidal ideal and suicide attempts in pediatric antidepressant treatment. *JAMA*. 2007;297(15):1683-1696.

Buckley PF, Correll CU. Strategies for Dosing and Switching Antipsychotics for Optimal Clinical Management. *Journal of Clinical Psychiatry*. 2008;69(Supplement 1):4-17.

Casey DE, Carson WH, Saha AR, et al. Switching Patients to Aripiprazole from other Antipsychotic Agents: a multicenter randomized study. *Psychopharmacology*. 2003;166(4):391-399.

Chang DC, Klimas J, Wood E, Fairbairn N. Medication-assisted treatment for youth with opioid use disorder: Current dilemmas and remaining questions. *The American Journal of Drug and Alcohol Abuse*. 2018;44(2):143-146.

Cipriani A, Zhou X, Giovane C, et al. Comparative efficacy and tolerability of antidepressants for major depressive disorder in children and adolescents: a network meta-analysis. *The Lancet*. 2016;388(10047):881-90.

Cleare A, Pariante, CM, Young AH, et al. Evidence-based guidelines for treating depressive disorders with antidepressants: A revision of the 2008 British Association for Psychopharmacology guidelines. *Journal of Psychopharmacology*. 2015;29(5):459-525.

Correll, CU. Monitoring and management of antipsychotic-related metabolic and endocrine adverse events in pediatric patients. *International Review of Psychiatry*. 2008;20(2):195-201.

Correll CU, Kratochvil CJ, March JS. Developments in pediatric psychopharmacology: focus on stimulants, antidepressants, and antipsychotics. *Journal of Clinical Psychiatry*. 2011;72(16):655-670.

Cooper WO, Habel LA, Sox CM, et al. ADHD drugs and serious cardiovascular events in children and young adults. *The New England Journal of Medicine*. 2011; 365:1896-1904.

Crismon ML, Argo T. The Use of Psychotropic Medication for Children in Foster Care. *Child Welfare*. 2009;88(1):71-100.

Cutler AJ, Brams M, Bukstein O, et al. Response/remission with guanfacine extended-release and psychostimulants in children and adolescents with attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2014;53(10):1092-1101.

Daughton JM, Kratochvil CJ. Review of ADHD Pharmacotherapies: Advantages, Disadvantages, and Clinical Pearls. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2009;48(3): 240-248.

De Hert M, Dobbelaere M, Sheridan EM, et al. Metabolic and endocrine adverse effects of second-generation antipsychotics in children and adolescents: A systematic review of randomized, placebo-controlled trials and guidelines for clinical practice. *European Psychiatry*. 2011;26(3):144-158.

De Kuyper G, Evenhuis H, Hoekstra PJ. Effects of Controlled Discontinuation of Long-Term Used Antipsychotics for Behavioral Symptoms in Individuals with Intellectual Disability. *Journal of Intellectual Disability Research*. 2012;58(1):71-83.

DelBello M, Hochadel T, Emslie G, et al. A double-blind, placebo-controlled study of selegiline transdermal system in depressed adolescents. *Journal of Child and Adolescent Psychopharmacology*. 2014;24(6):311-317.

Detke HC, DelBello MP, Landry J, Usher RW. Olanzapine/fluoxetine combination in children and adolescents with bipolar I depression: a randomized, double-blind, placebo-controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2015;54(3):217-224.

Dopheide JA, Pliszka SR. Attention-Deficit-Hyperactivity Disorder: An Update. *Pharmacotherapy*. 2009;29(6):656-679.

Durgam S, Chen C, Migliore R, Prakash C, Edwards J, Findling R. A Phase 3, Double-Blind, Randomized, Placebo-Controlled Study of Vilazodone in Adolescents with Major Depressive Disorder. *Pediatric Drugs*. 2018; 20(4):353-363.

Emslie G, Findling R, Yeung P, Kunz N, Li Y. Venlafaxine ER for the treatment of pediatric subjects with depression: results of two placebo-controlled trials. *Journal of The American Academy of Child and Adolescent Psychiatry*. April 2007;46(4):479-488.

Emslie GJ, Ventura, D, et al. Escalopram in the treatment of adolescent depression: a randomized placebo-controlled multisite trial. *Journal of the American Child & Adolescent Psychiatry*. 2006;48(7):721-9.

Etminan M, Carleton B, and Brophy JM. Risperidone and Risk of Gynecomastia in Young Men. *Journal of Child and Adolescent Psychopharmacology*. 2015;25(9):671-673.

Fanton J, Gleason M. Psychopharmacology and preschoolers: a critical review of current conditions. *Child & Adolescent Psychiatry Clinics*. 2009;18(3):753-771.

Findling RL, Cavis I, et al. Efficacy, long-term safety, and tolerability of ziprasidone in children and adolescents with bipolar disorder. *Journal of Child and Adolescent Psychopharmacology*. 2013;23(8):545-557.

Findling R, Chang K, DelBello M, et al. Adjunctive Maintenance Lamotrigine for Pediatric Bipolar I Disorder: A Placebo-Controlled, Randomized Withdrawal Study. *Journal of The American Academy of Child & Adolescent Psychiatry*. December 2015;54(12):1020-1031.

Findling RL, Johnson JL, McClellan J, et al. Double-blind maintenance safety and effectiveness findings from the treatment of early-onset schizophrenia spectrum (TEOSS) study. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2010;49(6):583-94.

Findling RL, Drury SS, Jensen PS, Rapoport JL, AACAP Committee on Quality Issues, et al. AACAP Practice Parameter for the use of Atypical Antipsychotics in Children and Adolescents.
https://www.aacap.org/App_Themes/AACAP/docs/practice_parameters/Atypical_Antipsychotic_Medications_Web.pdf. 2011. Accessed 2019.

Findling RL, Reed MD, O'Riordan MA, et al. Effectiveness, safety, and pharmacokinetics of que-tiapine in aggressive children with conduct disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2006;45(7):792-800.

Findling R, Robb A, DelBello MP, et al. A 6-Month Open-Label Extension Study of Vortioxetine in Pediatric Patients with Depressive or Anxiety Disorders. *Journal of Child and Adolescent Psychopharmacology*. 2018;28(1):47-54.

Findling RL, Robb A, McNamara NK, et al. Lithium in the acute treatment of bipolar I disorder: a double-blind placebo-controlled study. *Pediatrics*. 2015;136(5):885-894.

Gadow KD, Arnold LG, Molina BSG, et al. Risperidone added to parent training and stimulant medication: effects on attention deficit/hyperactivity disorder, conduct disorder, and peer aggression. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2014;53(9):948-959.

Galling B, Roldán A, Nielsen RE, et al. Type 2 Diabetes Mellitus in Youth Exposed to Antipsychotics: A Systematic Review and Meta-analysis. *JAMA Psychiatry*. 2016;773(3):247-259.

Gandelman K, Alderman JA, Glue P, et al. The impact of calories and fat content of meals on oral ziprasidone absorption: A randomized, open-label, crossover trial. *The Journal of Clinical Psychiatry*. 2008;70(1):58-62.

Ganguli R, Brar JS, Mahmoud R, Berry SA, Pandina GJ. Assessment of strategies for switching patients from olanzapine to risperidone: A randomized, open-label, rater-blinded study. *BMC Medicine*. 2008;6(17): doi:10.1186/1741-7015-6-17.

Geller B, Luby JL, Joshi P, et al. A randomized controlled trial of risperidone, lithium, or divalproex sodium for initial treatment of bipolar I disorder, manic or mixed phase, in children and adolescents. *Archives of General Psychiatry*. 2012;69(5):515-528.

Ghanizadeh A, Sahraeizadeh, A, et al. A head-to-head comparison of aripiprazole and risperidone for safety and treating autistic disorders. *Child Psychiatry & Human Development*. 2014;45(2):185-192.

Gibbons RD, Brown H, Hur K, et al. Suicidal thoughts and behavior with antidepressant treatment: Reanalysis of the randomized placebo-controlled studies of fluoxetine and venlafaxine. *Archives of General Psychiatry*. 2012;69(6):580-587.

Gleason MM, Egger HL, Emslie GJ, et al. Psychopharmacological treatment for very young children: contexts and guidelines. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2007;46(12):1532-1572.

Goldman R, Loebel A, Cucchiaro J, et al. Efficacy and Safety of Lurasidone in Adolescents with Schizophrenia: A 6-Week, Randomized Placebo-Controlled Study. *Journal of Adolescent Psychopharmacology*. 2017;27(6):516-525.

Greenhill L, Kollins S, Abikoff H, et al. Efficacy and safety of immediate-release methylphenidate treatment for preschoolers with ADHD. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2006;45(11):1284-1293.

Groenman AP, Oosterlaan NN, et al. Stimulant therapy for attention-deficit hyperactivity disorder and risk of developing substance abuse disorder. *The British Journal of Psychiatry*. 2013;203(2):112-119.

Haapasalo-Pesu K, Vuola T, Lahelma L, Marttunen M. Mirtazapine in the treatment of adolescents with major depression: an open-label, multicenter pilot study. *Journal of Child and Adolescent Psychopharmacology*. 2004;14(2):175-184.

Hammond TA, Laughren T, Racoosin J. Suicidality in pediatric patients treated with antidepressant drugs. *Archives of General Psychiatry*. 2006;63(3):332-339.

Hasnain MD, Howland RH, et al. Escitalopram and QTc prolongation. *Journal of Psychiatry & Neuroscience*. 2013;38(4): E11.

Hastard EB, Weaver AL, et al. ADHD, stimulant treatment, and growth: a longitudinal study. *Pediatrics*. 2014;134(4):935-944.

Hay W, Levin M, Deterding R, et al. *Current diagnosis and treatment pediatrics*. 20th ed. McGraw-Hill Professional Publishers; 2010.

Hazell P, O'Connell D, Heathcote D, Henry D. Tricyclic drugs for depression in children and adolescents. *Cochrane Database System Review*. 2006.

Hetrick SE, McKenzie JE, Cox GR, Simmons MB, Merry SN. Newer generation antidepressants for depressive disorders in children and adolescents. *Cochrane Database of Systematic Reviews*. 2012; 14(11): doi: 10.1002/14651858.CD004851.pub3.

Hirota T, Schwartz S, Correll CU. Alpha-2 agonists for attention-deficit/hyperactivity disorder in youth: systematic review and meta-analysis of monotherapy and add-on trials to stimulant therapy. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2014;53(2):153-173.

Hirsch GS. Dosing and Monitoring: Children and Adolescents. *Psychopharmacology Bulletin*. 2018;48(2):34-92.

Jensen KG, Juul K, Fink-Jensen A, et al. Corrected QT changes during antipsychotic treatment of children and adolescents: a systematic review and meta-analysis of clinical trials. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2015;54(1):25-36.

Kennard BD, Emslie GJ, Mayes TL, et al. Sequential treatment with fluoxetine and relapse-prevention CBT to improve outcomes in pediatric depression. *American Journal of Psychiatry*. 2014;171(10):1083-1090.

Keller MB, Ryan ND, et al. Efficacy of paroxetine in the treatment of adolescent major depression: a randomized, controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2001;40(7):762-772.

Kinon BJ, Basson BR, Gilmore JA, Malcolm S, Stauffer VL. Strategies for switching from conventional antipsychotic drugs or risperidone to olanzapine. *The Journal of Clinical Psychiatry*. 2000;61(11):833-840.

Kliegman RM, Stanton B, Geme J, et al. *Nelson textbook of pediatrics*. 19th ed. Philadelphia, PA: Saunders Publishers; 2011.

Knapp P, Chait A, et al. Treatment of maladaptive aggression in youth: CERT Guidelines I. Engagement, assessment, and management. *Pediatrics*. 2012;129(6):1562-1576.

Kowatch RA, Scheffer RE, Monroe E, et al. Placebo-controlled trial of valproic acid versus risperidone in children 3-7 years of age with bipolar I disorder. *Journal of Adolescent Psychopharmacology*. 2015;25 (4):306-313.

Le Noury J, Nardo JM, Healy D, et al. Restoring Study 329: Efficacy and harms of paroxetine and imipramine in treatment of major depression in adolescence. *The BMJ*. 2015;351:h4320.

Lelayo R, Yuen K. Pediatric sleep pharmacology. *Child & Adolescent Psychiatry Clinics*. 2012;21(4):861-883.

March JS. The preschool ADHD treatment Study (PATs) as the culmination of twenty years of clinical trials in pediatric psychopharmacology. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2011;50(5):427-430.

McClellan J, Stock S, American Academy of Child and Adolescent Psychiatry Committee on Quality Issues. Practice Parameter for the Assessment and Treatment of Children and Adolescents with Schizophrenia. *Journal of The American Academy of Child and Adolescent Psychiatry*. 2013;52(9): 976-990.

McVoy M, Findling RL. *Clinical manual of child and adolescent psychopharmacology*. 2nd ed. Washington, DC: American Psychiatric Publishing; 2013.

Miller M, Swanson SA, Azrael D, et al. Antidepressant dose, age, and the risk of deliberate self-harm. *JAMA Internal Medicine*. 2014;174(6):899-909.

Nagy P, Hage A, et al. Functional outcomes from a head-to-head trial of lisdexamfetamine dimesylate and atomoxetine in children and adolescents with attention-deficit/hyperactivity disorder and an inadequate response to methylphenidate. 2016; 25:141-149.

National Health Service (NHS) Guidance on the Use of Antidepressants in Children and Adolescents. Version 2.
http://www.sussexpartnership.nhs.uk/sites/default/files/documents/camhs_ad_guidance_v2_final_-_01140.pdf. 2014. Accessed 2019.

Ojero-Senard A, Benevent J, Bondon-Guitton E, et al. A comparative study of QT prolongation with serotonin reuptake inhibitors. *Psychopharmacology*. 2017;234(20):1-7.

Pappadopulos E, Macintyre LI JC, Crismon ML, et al. Treatment Recommendations for the Use of Antipsychotic Medications for Aggressive Youth (TRAAY). Part II. *Journal of The American Academy of Child and Adolescent Psychiatry*. 2003;42(2):145-161.

Perrin JM, Friedman RA, Knilans TK, et al. Cardiovascular monitoring and stimulant drugs for Attention-Deficit/Hyperactivity Disorder. *Pediatrics*. 2008;122(2):451-453.

Peukens J, Pani L, et al. The effects of novel and newly approved antipsychotics on serum prolactin levels: a comprehensive review. *CNS Drugs*. 2014;28(5):421-453.

Pliszka SR, AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2007;46(7):894-921.

Posey DJ, Guenin KD, Kohn AE, Swiezy, NB, McDougle, CJ. A naturalistic open-label study of mirtazapine in autistic and other pervasive developmental disorders. *Journal of Child and Adolescent Psychopharmacology*. 2004;11(3):267-277.

Poulton AS, Melzer E, Tait PR, et al. Growth and pubertal development in adolescent boys on stimulant medications for attention deficit hyperactivity disorder. *The Medical Journal of Australia*. 2013;198(1):29-32.

Rahman A, Mican L, et al. Evaluating the incidence of leukopenia and neutropenic with valproate, quetiapine, or the combination in children and adolescents. *Annals of Pharmacotherapy*. 2009;43(5):822-30.

Ray W, Stein, MC, Murray KT, et al. Association of antipsychotic treatment with risk of unexpected death among children and youths. *JAMA Psychiatry*. 2018; doi:10.1001/jamapsychiatry.2018.3421.

Reiss S, Aman MG. *Psychotropic Mediations and Developmental Disabilities: The International Consensus Handbook*. Columbus, OH: Ohio State University Nisonger Center; 1998.

Repo-Tiihonen E, Hallikainen T, Kivisto P, Tiihonen J. Antipsychotic Polypharmacy in Clozapine-Resistant Schizophrenia: A Randomized Controlled Trial of Tapering Antipsychotic Co-Treatment. *Mental Illness*. 2012;4(1): e1.

Rosato NS, Correll CU, Pappadopulos, E, et al. Treatment of maladaptive aggression in youth: CERT guidelines II. Treatments and ongoing management. *Pediatrics*. 2012;129(6): e1577-e1586.

Sangal R, Blumer J, Lankford D, Grinnell T, Huang H. Eszopiclone for insomnia associated with attention-deficit/hyperactivity disorder. *Pediatrics*. 2014;134(4): e1095-e1103.

Scahill L, Oesterheld, JR, Martin A. Pediatric psychopharmacology II. General principles, specific drug treatments, and clinical practice. In: Lewis M, ed. *Child and adolescent psychiatry: A comprehensive textbook*. Philadelphia, PA: Lippincott Williams & Wilkins;2007:754-788.

Scheeringa MS, Weems CF, Cohen JA, Amaya-Jackson, L, Guthrie, D. Trauma-focused cognitive-behavioral therapy for posttraumatic stress disorder in three through six-year-old children: a randomized clinical trial. *Journal of Child Psychology and Psychiatry*. 2011;52(8):853-860.

Schelleman H, Bilker WB, Strom BL, et al. Cardiovascular events and death in children exposed and unexposed to ADHD agents. *Pediatrics*. 2011;127(6):1102-1110.

Seida JC, Schouten JR, Boylan K, et al. Antipsychotics for children and young adults: a comparative effectiveness review. *Pediatrics*. 2012;129(3): e771-e784.

Sikich L, Frazier JA, McClellan J, et al. Double-Blind Comparison of First- and Second-Generation Antipsychotics in Early-Onset Schizophrenia and Schizoaffective Disorder: Findings from the Treatment of Early-Onset Schizophrenia Spectrum Disorders (TEOSS) Study. *American Journal of Psychiatry*. 2008;165(11):1420-1431.

Southammakosane C, Schmitz, K. Pediatric Psychopharmacology for Treatment of ADHD, Depression, and Anxiety. *Pediatrics*. 2015;136(2):351-59.

Sporn AL, Vermani A, Greenstein, DK, et al. Clozapine treatment of childhood-onset schizophrenia: evaluation of effectiveness, adverse effects, and long-term outcome. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2007;46(10):1349-1356.

Stigler KA, Mullett JE, Erickson CA, Posey DJ, McDougle CJ, et al. Paliperidone for irritability in adolescents and young adults with autistic disorder. *Psychopharmacology (Berl)*. 2012;223(2):237-245.

Subcommittee on Attention-Deficit Hyperactivity Disorder, Steering Committee on Quality Improvement and Management, Wolraich M, et al. ADHD: Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. *Pediatrics*. 2011;128(5):1007-1022.

Swanson JM, Arnold LE, Molina BSG, et al. Young adult outcomes in the follow-up of the multimodal treatment study of attention-deficit/hyperactivity disorder: symptom persistence, source discrepancy, and height suppression. *Journal of Child Psychology and Psychiatry*. 2017;58(6):663-678.

Takeuchi H, Suzuki T, Uchida H, et al. A Randomized, Open-Label Comparison of 2 Switching Strategies to Aripiprazole Treatment in Patients with Schizophrenia. Add-On, Wait, and Tapering of Previous Antipsychotics Versus Add-On and Simultaneous Tapering. *Journal of Clinical Psychopharmacology*. 2008;28(5):540-543.

Texas Department of State Health Services. Medication Audit Criteria and Guidelines. <https://dshs.texas.gov/mhprograms/MedAudCriteria.shtm>. 2015. Accessed 2019.

Tschudy M, Arcara K. *The Johns Hopkins Hospital - Harriet Lane Handbook: A Manual for Pediatric House Officers*. 19th ed. Philadelphia, PA: Mosby Elsevier; 2012.

van Geijlswijk IM, van der Heijden KB, Egberts ACG, Korzilius, HPLM, Smits MG. Dose finding of melatonin for chronic idiopathic childhood sleep onset insomnia: an RCT. *Psychopharmacology (Berl)*. 2010;212(3):379-391.

Varigonada AL, Jakubovski E, Taylor MJ, Freemantle N, Coughlin C, Block MH. Systematic review and meta-analysis: early treatment responses of selective serotonin reuptake inhibitors in pediatric major depressive disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015;54(7):557-564.

Vaughan B, Kratochvil CJ. Pharmacotherapy of pediatric attention-deficit/hyperactivity disorder. *Child & Adolescent Psychiatric Clinics*. 2012;21(4):941-955.

Vetter VL, Elia J, Erickson C, et al. Cardiovascular monitoring of children and adolescents receiving medications for ADHD: A Scientific Statement from the American Heart Association Council on Cardiovascular Disease in the Young Congenital Cardiac Defects Committee and the Council on Cardiovascular Nursing. *Circulation*. 2008;117(18):2407-2423.

Wagner KD, Jonas J, Findling R, Ventura D, Saikali K. A double blind, randomized placebo-controlled trial of escitalopram in the treatment of pediatric depression. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2006;45(3):280-288.

Wagner KD, Pliszka SR. Treatment of child and adolescent disorders. In: Schatzberg AF, Nemeroff CB, eds. *Textbook of Psychopharmacology*. 4th. Ed. Washington, DC: American Psychiatric Publishing;2009:1309-1371.

Walker D, DelBello M, Landry J, D'Souza D, Detke H. Quality of life in children and adolescents with bipolar I depression treated with olanzapine/fluoxetine combination. *Child and Adolescent Psychiatry and Mental Health*. 2017;11(1):1-11.

Walkup J, Bernet W, Work Group on Quality Issues, et al. Practice parameter on the use of psychotropic medication in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2009;48(9):961-973.

Weihs K, Murphy W, Abbas R, et al. Desvenlafaxine Versus Placebo in a Fluoxetine-Referenced Study of Children and Adolescents with Major Depressive Disorder. *Journal of Child and Adolescent Psychopharmacology*. 2018;28(1):36-46.

Wilens TE, Robertson B, Sikirca V, et al. A randomized, placebo-controlled trial of guanfacine extended release in adolescents with attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015;54(11):916-925.

Wozniak J, Mick E, Waxmonsky J, Kotarski M, Hantsoo L, Biederman J, et al. Comparison of Open-Label, 8-Week Trials of Olanzapine Monotherapy and Topiramate Augmentation of Olanzapine for the Treatment of Pediatric Bipolar Disorder. *Journal of Child & Adolescent Psychopharmacology*. 2009;19(5):539-545.

Zolaly MA. Histamine H1 antagonists and clinical characteristics of febrile seizures. *International Journal of General Medicine*. 2012; 5:277-281.

Zuddas A, Zanni R, Usala T. Second generation antipsychotics (SGAs) for non-psychotic disorders in children and adolescents: a review of the randomized controlled studies. *European Neuropsychopharmacology*. 2011;21(8):600-620.

Web Link References

21 CFR Part 201. Specific Requirements on Content and Format of Labeling for Human Prescription Drugs: Revision of "Pediatric Use" Subsection in the Labeling; Final Rule, Federal Register Volume 59, Number 238, December 13, 1994.

<http://www.gpo.gov/fdsys/pkg/FR-1994-12-13/html/94-30238.htm>

Advisory Committee on Psychotropic Medications. The use of psychotropic medications for children and youth in the Texas foster care system. Texas Department of Family and Protective Services, September 1, 2004. Archived at:

http://www.dfps.state.tx.us/Child_Protection/Medical_Services/guide-psychotropic.asp

Children and Adolescents' Psychoactive Medication Workgroup. Psychoactive medication for children and adolescents: Orientation for Parents, Guardians, and Others. Massachusetts Department of Mental Health, Boston, July 2007.

<http://www.mass.gov/eohhs/docs/dmh/publications/psychoactive-booklet.pdf>

Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment (Review Number 89). Goldman FJ, Lloyd SW, et al., April 15, 2013.

<http://effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productid=1463>

Child Welfare Trauma Training Toolkit (2013). The National Child Traumatic Stress Network. <http://learn.nctsn.org/login/index.php>

Facts and Comparisons Drug Information. Clin-eGuide [database online]. St. Louis, MO: Wolters Kluwer Health, Inc., 2012. <http://cline-guide.ovid.com.ezproxy.lib.utexas.edu/>

FDA Drug Safety Communication: Revised recommendations for Celexa (citalopram hydrobromide) related to a potential risk of abnormal heart rhythms with high doses, August 24, 2011. <http://www.fda.gov/Drugs/DrugSafety/ucm297391.htm>

Health Care Issues for Children and Adolescents in Foster Care and Kinship Care. American Academy of Pediatrics Policy Statement, October 2015. <http://pediatrics.aappublications.org/content/136/4/e1131>

Making Healthy Choices: A Guide on Psychotropic Medication for Youth in Foster Care. Administration on Children, Youth and Families Children's Bureau, U.S. Department of Health and Human Services, 2012. <https://www.childwelfare.gov/pubs/makinghealthy-choices/>

Natural Medicines Comprehensive Database [database online]. Stockton, CA: Therapeutic Research Faculty, 2011. <http://naturaldatabase.therapeuticresearch.com>

Pediatric and Neonatal Lexi-Drugs. Lexi-Comp OnlineTM [database online]. Hudson, OH: Lexi-Comp, Inc., 2012. <http://online.lexi.com.ezproxy.lib.utexas.edu>

Recommendations about the Use of Psychotropic Medications for Children and Adolescents Involved in Child-Serving Systems. System of Care Resource from the American Academy of Child and Adolescent Psychiatry 2015. http://www.aacap.org/App_Themes/AACAP/docs/clinical_practice_center/systems_of_care/AACAP_Psychotropic_Medication_Recommendations_2015_FINAL.pdf

When to seek referral or consultation with a child or adolescent psychiatrist. American Academy of Child and Adolescent Psychiatry, 2003. http://www.aacap.org/AACAP/Member_Resources/Practice_Information/When_to_Seek_Referral_or_Consultation_with_a_CAP.asp

Members of the Workgroup

Chairs

- Nina Jo Muse, MD: Child Psychiatrist, Chief Medical Officer, State Hospital System, Texas Health and Human Services Commission, Austin, TX.
- M. Lynn Crismon, PharmD: Psychopharmacologist, Dean, James T. Doluisio Regents Chair & Behrens Centennial Professor, College of Pharmacy, Professor of Psychiatry, Dell Medical School, The University of Texas at Austin, Austin, TX.

Members

- Joseph Blader, PhD: Clinical Psychologist, Meadows Foundation & Semp Russ Professor of Child Psychiatry Research, Departments of Psychiatry and Pediatrics, The University of Texas Health Science Center at San Antonio, San Antonio, TX.

- Angela Hughes Campbell, PharmD: Psychopharmacologist, Adjunct Assistant Professor, College of Pharmacy, The University of Texas at Austin, Nacogdoches, TX.
- Caron E. Farrell, MD: Child Psychiatrist, Assistant Professor, Dell Medical School, The University of Texas at Austin, Austin, TX.
- Megan J. Gray, MD: Assistant Professor of Pediatrics, Dell Pediatric Research Center, The University of Texas at Austin, Austin, TX.
- Mark Janes, MD: Child Psychiatrist, Medical Director, Bluebonnet Trails Community Services, Round Rock, TX.
- Molly Lopez, PhD: Clinical Psychologist, Research Associate Professor, School of Social Work, The University of Texas at Austin, Austin, TX.
- Octavio N. Martinez, Jr., MD: Psychiatrist, Executive Director-Hogg Foundation for Mental Health, The University of Texas at Austin, Austin, TX.
- Sylvia Muzquiz-Drummond, MD: Child Psychiatrist, Medical Director MHMRA of Harris County, Houston, TX.
- Steven Pliszka, MD: Child Psychiatrist, Dielmann Distinguished Professor and Chair, Department of Psychiatry, The University of Texas Health Science Center, San Antonio, TX.
- Roberto Rodriguez, MD: Pediatrician, Medical Director, Texas Department of Family and Protective Services, Austin, TX
- James A. Rogers, MD: Child Psychiatrist, Retired, Previous Medical Director, Texas Department of Family and Protective Services, Austin, TX.
- Rishi Shawhney, MD: Psychiatrist, Medical Director of Behavioral Health, Medical and Social Services Division, Texas Health and Human Services Commission, Austin, TX.

Committee Members Disclosures

Since January 1, 2013, the authors below disclose the following financial relationships:

- Dr. Blader has received funding as a consultant/researcher from Supernus Pharmaceuticals and research funding through his employer institution from Supernus.
- Dr. Crismon has nothing to declare.
- Dr. Lopez holds stock in Lilly, Merck, Proctor & Gamble, and Pfizer Pharmaceuticals.
- Dr. Pliszka has received funding as a consultant for Ironshore and Shire Pharmaceuticals. Through his employer institution he has served as an expert witness for Eli Lilly and Janssen Pharmaceuticals. He has received research grants through his employer institution from Ironshore, Purdue and Shire.
- The other members of the working group do not have any financial relationships to disclose.

Disclaimer

The authors of this document have worked to ensure that all information in the parameters is accurate at the time of publication and consistent with general psychiatric and medical standards and consistent with FDA labeling and information in the biomedical literature. However, as medical research and practice continue to advance, therapeutic standards may change, and the clinician is encouraged to keep up with the current literature in psychiatry and clinical psychopharmacology. In addition, not all potential adverse drug reactions or complications are listed in the

tables, and the clinician should consult the official FDA labeling and other authoritative reference sources for complete information. These parameters are not a substitute for clinical judgment, and specific situations may require a specific therapeutic intervention not included in these parameters.

Acknowledgements

Laura Roccograndi (Pharm.D. Candidate, The University of Texas at Austin) assisted with the literature search and updating of the medication tables.

Brad Fitzwater, MD (Maternal & Child Health Medical Director, Texas Department of State Health Services) assisted with narrative regarding Medication Assisted Treatment.