



## *Resource Aid Packet*

# ***Students and Psychotropic Medication:***

## ***The School's Role***

(Revised 2016)



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## ***Students and Psychotropic Medication: The School's Role***

### ***Preface***

*Resource Aid Packets* are designed to complement our series of Introductory Packets. These resource aids are a form of *tool kit* related to a fairly circumscribed area of practice. The packets contain materials to guide and assist with staff training and student/family interventions. They include overviews, outlines, checklists, instruments, and other resources that can be reproduced and used as information handouts and aids for training and practice.

This Resource Aid on *Students and Psychotropic Medication: The School's Role* is divided into three sections:

- > Section I provides an overview perspective, guidelines, and tools related to a school's role in administering and monitoring medication, educating school staff about medication, and providing guidance for students on medication.
- > The next section highlights major medications and their side effects, with emphasis on those prescribed for prevalent diagnoses encountered in schools, such as attention deficit-hyperactivity disorders, conduct disorder, anxiety disorders, and so forth.
- > The final section outlines resources for more information and support, including Internet sites, centers, agencies, advocacy groups, and relevant publications.

School professionals encountering students on medication are confronted with a variety of procedures and issues related to medication administration, monitoring, and effects. This resource aid is designed to provide a brief overview and some aids and information related to these matters. For descriptions of problems cited and broad intervention perspectives, see the material from the Center (<http://smhp.psych.ucla.edu>)

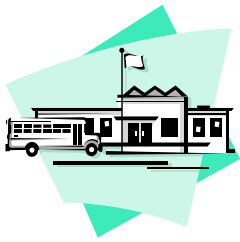


**Please note:**

**The psychotropic medication cited throughout this packet are those most likely to be encountered. Be aware; significant number of psychotropic medications have not been approved by the Federal Drug Enforcement Agency for use with children and adolescents. They are included here for information purposes only. Other less common medications are not cited but can be found in the Physicians Desk Reference.**

Also, see the NIMH publication: *Medication*, which describes medication for mental illness and has a specific section on children and a children's medication chart. See:

<http://www.nimh.nih.gov/health/topics/mental-health-medications/index.shtml>



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## Introduction:



Excerpts from: ***Treatment of Children with Mental Illness***

[http://www.nimh.nih.gov/health/publications/treatment-of-children-with-mental-illness-fact-sheet/NIMH-Treatment-Children-Mental-Illness-FAQ\\_34669.pdf](http://www.nimh.nih.gov/health/publications/treatment-of-children-with-mental-illness-fact-sheet/NIMH-Treatment-Children-Mental-Illness-FAQ_34669.pdf)

<http://www.nimh.nih.gov/ebooks/37451.epub>

En Español -- <http://www.nimh.nih.gov/health/publications/espanol/tratamiento-de-ni-os-con-enfermedades-mentales/index.shtml>

### **Q. What should I do if I am concerned about mental, behavioral, or emotional symptoms in my child?**

**A.** Talk to your child's doctor or health care provider. Ask questions and learn everything you can about the behavior or symptoms that worry you. If your child is in school ask the teacher if your child has been showing worrisome changes in behavior. Share this with your child's doctor or health care provider. Keep in mind that every child is different. Even normal development, such as when children develop language, motor, and social skills, varies from child to child. Ask if your child needs further evaluation by a specialist with experience in child behavioral problems. Specialists may include psychiatrists, psychologists, social workers, psychiatric nurses, and behavioral therapists. Educators may also help evaluate your child.

### **Q. How are mental illnesses diagnosed in young children?**

**A.** Just like adults, children with mental illness are diagnosed after a doctor or mental health specialist carefully observes signs and symptoms. Some primary care physicians can diagnose your child themselves, but many will send you to a specialist who can diagnose and treat children.

Before diagnosing a mental illness, the doctor or specialist tries to rule out other possible causes for your child's behavior. The doctor will:

- Take a history of any important medical problems

- Take a history of the problem - how long you have seen the problem - as well as a history of your child's development

- Take a family history of mental disorders

- Ask if the child has experienced physical or psychological traumas, such as a natural disaster, or situations that may cause stress, such as a death in the family

- Consider reports from parents and other caretakers or teachers.

Very young children often cannot express their thoughts and feelings, so making a diagnosis can be challenging. The signs of a mental illness in a young child may be quite different from those in an older child or adult.

As parents and caregivers know, children are constantly changing and growing. Diagnosis and treatment must be viewed with these changes in mind. While some problems are short-lived and don't need treatment, others are ongoing and may be very serious. In either case, more information will help you understand treatment choices and manage the disorder or problem most effectively.

## **Q. Are there treatment options for children?**

**A.** Yes. Once a diagnosis is made, your child's specialist will recommend a specific treatment. It is important to understand the various treatment choices, which often include psychotherapy or medication. Talk about the options with a health care professional who has experience treating the illness observed in your child. Some treatment choices have been studied experimentally, and other treatments are a part of health care practice. In addition, not every community has every type of service or program.

## **Q. What are psychotropic medications?**

**A.** Psychotropic medications are substances that affect brain chemicals related to mood and behavior. In recent years, research has been conducted to understand the benefits and risks of using psychotropics in children. Still, more needs to be learned about the effects of psychotropics, especially in children under six years of age. While researchers are trying to clarify how early treatment affects a growing body, families and doctors should weigh the benefits and risks of medication. Each child has individual needs, and **each child needs to be monitored closely while taking medications.**

## **Q. Are there treatments other than medications?**

**A.** Yes. Psychosocial therapies can be very effective alone and in combination with medications. Psychosocial therapies are also called "talk therapies" or "behavioral therapy," and they help people with mental illness change behavior. Therapies that teach parents and children coping strategies can also be effective.<sup>2</sup>

Cognitive behavioral therapy (CBT) (<http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>) is a type of psychotherapy that can be used with children. It has been widely studied and is an effective treatment for a number of conditions, such as depression, obsessive-compulsive disorder, and social anxiety. A person in CBT learns to change distorted thinking patterns and unhealthy behavior. Children can receive CBT with or without their parents, as well as in a group setting. CBT can be adapted to fit the needs of each child. It is especially useful when treating anxiety disorders (<http://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>).<sup>3</sup>

Additionally, therapies for ADHD are numerous and include behavioral parent training and behavioral classroom management. Visit the NIMH Web site for more information about therapies for ADHD (<http://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd/index.shtml>).

Some children benefit from a combination of different psychosocial approaches. An example is behavioral parent management training in combination with CBT for the child. In other cases, a combination of medication and psychosocial therapies may be most effective. Psychosocial therapies often take time, effort, and patience. However, sometimes children learn new skills that may have positive long-term benefits.

More information about treatment choices can be found in the psychotherapies (<http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>) and medications sections of the NIMH Web site.

## **Q. When is it a good idea to use psychotropic medications in young children?**

**A.** When the benefits of treatment outweigh the risks, psychotropic medications may be prescribed. Some children need medication to manage severe and difficult problems. Without treatment, these children would suffer serious or dangerous consequences. In addition, psychosocial treatments may not always be effective by themselves. In some instances, however, they can be quite effective when combined with medication.

Ask your doctor questions about the risks of starting and continuing your child on these medications. Learn everything you can about the medications prescribed for your child. Learn about possible side effects, some of which may be harmful. Know what a particular treatment is supposed to do. For example, will it change a specific behavior? If you do not see these changes while your child is taking the medication, talk to his or her doctor. Also, discuss the risks of stopping your child's medication with your doctor.

**Q. Does medication affect young children differently than older children or adults?**

**A.** Yes. Young children handle medications differently than older children and adults. The brains of young children change and develop rapidly. Studies have found that developing brains can be very sensitive to medications. There are also developmental differences in how children metabolize - how their bodies process - medications. Therefore, doctors should carefully consider the dosage or how much medication to give each child. Much more research is needed to determine the effects and benefits of medications in children of all ages. But keep in mind that serious untreated mental disorders themselves can harm brain development.

Also, it is important to avoid drug interactions. If your child takes medicine for asthma or cold symptoms, talk to your doctor or pharmacist. Drug interactions could cause medications to not work as intended or lead to serious side effects.

**Q. How should medication be included in an overall treatment plan?**

**A.** Medication should be used with other treatments. It should not be the only treatment. Consider other services, such as family therapy, family support services, educational classes, and behavior management techniques. If your child's doctor prescribes medication, he or she should evaluate your child regularly to make sure the medication is working. Children need treatment plans tailored to their individual problems and needs.

**Q. What medications are used for which kinds of childhood mental disorders?**

**A.** Psychotropic medications include stimulants, antidepressants, anti-anxiety medications, antipsychotics, and mood stabilizers. Dosages approved by the U.S. Food and Drug Administration (FDA) for use in children depend on body weight and age. NIMH's medications booklet describes the types of psychotropic medications and includes a chart that lists the ages for which each medication is FDA-approved. See the [FDA Web site](#) for the latest information on medication approvals, warnings, and patient information guides.

**Q. What does it mean if a medication is specifically approved for use in children?**

**A.** When the FDA approves a medication, it means the drug manufacturer provided the agency with information showing the medication is safe and effective in a particular group of people. Based on this information, the drug's label lists proper dosage, potential side effects, and approved age. Medications approved for children follow these guidelines.

Many psychotropic medications have not been studied in children, which means they have not been approved by the FDA for use in children. But doctors may prescribe medications as they feel appropriate, even if those uses are not included on the label. This is called "off-label" use. Research shows that off-label use of some medications works well in some children. Other medications need more study in children. In particular, the use of most psychotropic medications has not been adequately studied in preschoolers.

More studies in children are needed before we can fully know the appropriate dosages, how a medication works in children, and what effects a medication might have on learning and development.

**Q. Why haven't many medications been tested in children?**

**A.** In the past, medications were seldom studied in children because mental illness was not recognized in childhood. Also, there were ethical concerns about involving children in research. This led to a lack of knowledge about the best treatments for children. In clinical settings today, children with mental or behavioral disorders are being prescribed medications at increasingly early ages. The FDA has been urging that medications be appropriately studied in children, and Congress passed legislation in 1997 offering incentives to drug manufacturers to carry out such testing. These activities have helped increase research on the effects of medications in children.

There still are ethical concerns about testing medications in children. However, strict rules protect participants in research studies. Each study must go through many types of review before, and after it begins.

### **Q. How do I work with my child's school?**

**A.** If your child is having problems in school, or if a teacher raises concerns, you can work with the school to find a solution. You may ask the school to conduct an evaluation to determine whether your child qualifies for special education services. However, not all children diagnosed with a mental illness qualify for these services.

Start by speaking with your child's teacher, school counselor, school nurse, or the school's parent organization. These professionals can help you get an evaluation started. Also, each state has a Parent Training and Information Center and a Protection and Advocacy Agency that can help you request the evaluation. The evaluation must be conducted by a team of professionals who assess all areas related to the suspected disability using a variety of tools and measures.

### **Q. What resources are available from the school?**

**A.** Once your child has been evaluated, there are several options for him or her, depending on the specific needs. If special education services are needed, and if your child is eligible under the Individuals with Disabilities Education Act (IDEA), the school district must develop an "individualized education program" specifically for your child within 30 days.

If your child is not eligible for special education services, he or she is still entitled to "free appropriate public education," available to all public school children with disabilities under Section 504 of the Rehabilitation Act of 1973. Your child is entitled to this regardless of the nature or severity of his or her disability.

The U.S. Department of Education's Office for Civil Rights enforces Section 504 in programs and activities that receive Federal education funds. Visit [programs for children with disabilities](#) for more information.

### **Q. What special challenges can school present?**

**A.** Each school year brings a new teacher and new schoolwork. This change can be difficult for some children. Inform the teachers that your child has a mental illness when he or she starts school or moves to a new class. Additional support will help your child adjust to the change.

### **Q. What else can I do to help my child?**

**A.** Children with mental illness need guidance and understanding from their parents and teachers. This support can help your child achieve his or her full potential and succeed in school. Before a child is diagnosed, frustration, blame, and anger may have built up within a family. Parents and children may need special help to undo these unhealthy interaction patterns. Mental health professionals can counsel the child and family to help everyone develop new skills, attitudes, and ways of relating to each other.

More information on mental health is at the [NIMH Web site](#). For the latest information on medications, see the [U.S. Food and Drug Administration](#) website.

### **Citations**

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2. Silverman WK, Hinshaw SP. The Second Special Issue on Evidence-Based Psychosocial Treatments for Children and Adolescents: A Ten-Year Update. *J Clin Child Adolesc Psychol*. 2008 Jan-Mar;37(1).
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4. Perlick DA, Rosenheck RA, Clarkin JF, Maciejewski PK, Sirey J, Struening E, Link BG. Impact of family burden and affective response on clinical outcome among patients with bipolar disorder. *Psychiatr Serv*. 2004 Sep;55(9):1029-35.



## Use of Medication Prescribed for Emotional or Behavioral Difficulties Among Children Aged 6–17 Years in the United States, 2011–2012

LaJeana D. Howie, M.P.H., C.H.E.S.; Patricia N. Pastor, Ph.D.; and Susan L. Lukacs, D.O., M.S.P.H.

### Key findings

#### Data from the National Health Interview Survey, 2011–2012

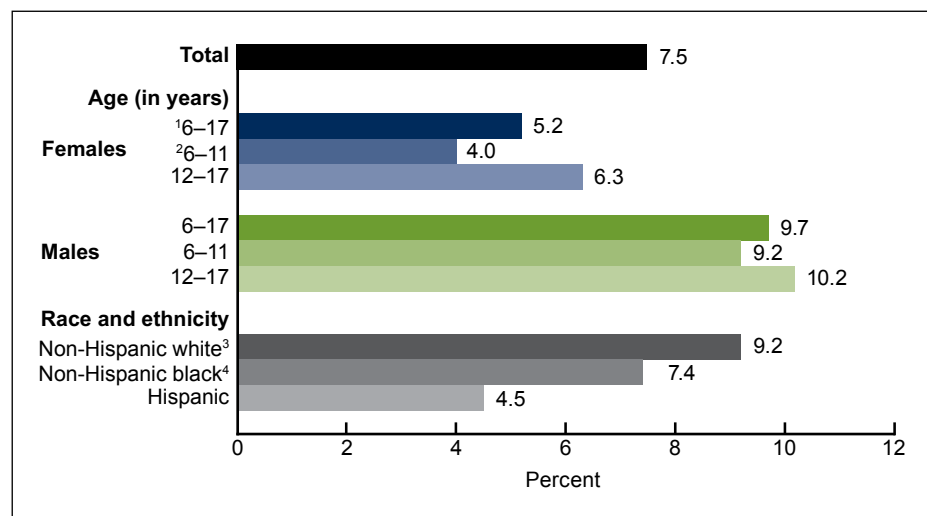
- Seven and one-half percent of children aged 6–17 years used prescribed medication during the past 6 months for emotional or behavioral difficulties.
- A higher percentage of children insured by Medicaid or the Children's Health Insurance Program used prescribed medication for emotional or behavioral difficulties than children with private health insurance or no health insurance.
- A higher percentage of children in families having income below 100% of the poverty level used prescribed medication for emotional or behavioral difficulties than children in families at 100% to less than 200% of the poverty level.
- More than one-half of children who used prescribed medication for emotional or behavioral difficulties had a parent report that this medication helped the child "a lot."

Mental health problems are common chronic conditions in children (1–3). Medication is often prescribed to treat the symptoms of these conditions (4–7). Few population-based studies have examined the use of prescription medication to treat mental health problems among younger as well as older school-aged children (8–10). This report describes the sociodemographic characteristics of children aged 6–17 years prescribed medication or taking medication during the past 6 months for emotional or behavioral difficulties, and describes parental reports of the perceived benefit of this medication.

*Keywords: prescription medication • mental health treatment*

### Use of prescribed medication during the past 6 months for emotional or behavioral difficulties varied by sex, age, and race and Hispanic origin among children aged 6–17 years.

Figure 1. Percentage of children aged 6–17 years prescribed medication during the past 6 months for emotional or behavioral difficulties, by sex and age group, and race and Hispanic origin: United States, 2011–2012



<sup>1</sup>Females aged 6–17 years significantly different from males aged 6–17 years. Females aged 6–11 years significantly different from males aged 6–11 years, and females aged 12–17 years significantly different from males aged 12–17 years.

<sup>2</sup>Females aged 6–11 years significantly different from females aged 12–17 years.

<sup>3</sup>Non-Hispanic white children significantly different from non-Hispanic black and Hispanic children.

<sup>4</sup>Non-Hispanic black children significantly different from Hispanic children.

NOTE: Parents were asked, "During the past 6 months, was the [sample child] prescribed medication or taking prescription medication for difficulties with emotions, concentration, behavior, or being able to get along with others?"

SOURCE: CDC/NCHS, National Health Interview Survey.



u.s. department of health and human services  
centers for disease control and prevention  
national center for health statistics





***Use of Mental Health Services by Children Ages Six to 11  
With Emotional or Behavioral Difficulties.***

**Psychiatr Serv. 2015; 66(9):930-7** (ISSN: 1557-9700)

Simon AE; Pastor PN; Reuben CA; Huang LN; Goldstrom ID

<http://www.medscape.com/medline/abstract/25975889>

**OBJECTIVE:** The authors reported use of mental health services among children in the United States between ages six and 11 who were described by their parents as having emotional or behavioral difficulties (EBDs).

**METHODS:** Using data from the 2010-2012 National Health Interview Survey, the authors estimated the national percentage of children ages six to 11 with serious or minor EBDs (N=2,500) who received treatment for their difficulties, including only mental health services other than medication (psychosocial services), only medication, both psychosocial services and medication, and neither type of service. They calculated the percentage of children who received school-based and non-school-based psychosocial services in 2011-2012 and who had unmet need for psychosocial services in 2010-2012.

**RESULTS:** In 2010-2012, 5.8% of U.S. children ages six to 11 had serious EBDs and 17.3% had minor EBDs. Among children with EBDs, 17.8% were receiving both medication and psychosocial services, 28.8% psychosocial services only, 6.8% medication only, and 46.6% neither medication nor psychosocial services. Among children with EBDs in 2011-2012, 18.6% received school-based psychosocial services only, 11.4% non-school-based psychosocial services only, and 17.3% both school- and non-school-based psychosocial services. In 2010-2012, 8.2% of children with EBDs had unmet need for psychosocial services.

**CONCLUSIONS:** School-age children with EBDs received a range of mental health services, but nearly half received neither medication nor psychosocial services. School-based providers played a role in delivering psychosocial services, but parents reported an unmet need for psychosocial services among some children.

## *Medication Use in US Youth with Mental Disorders*

JAMA Pediatr. 2013 Feb;167(2):141-8. doi: 10.1001/jamapediatrics.2013.431.

Merikangas KR , He JP, Rapoport J, Vitiello B, Olfson M.

<http://www.ncbi.nlm.nih.gov/pubmed/23403911>

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### **Abstract**

**OBJECTIVE:** To evaluate the prevalence, demographic and clinical correlates, and specificity of classes of psychotropic medications indicated for mental disorders.

**DESIGN:** Cross-sectional survey.

**SETTING:** Direct household interviews of combined household and school samples representative of the general population of adolescents in the United States.

**PARTICIPANTS:** Ten thousand one hundred twenty-three adolescents aged 13 to 18 years who participated in the National Comorbidity Survey Adolescent Supplement.

**MAIN EXPOSURES:** Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) (DSM-IV) mental disorders and neurodevelopmental disorders.

**OUTCOME MEASURE:** Psychotropic medication use in the past 12 months.

**RESULTS:** Among youth with any DSM-IV mental disorder, 14.2% reported that they had been treated with a psychotropic medication in the past 12 months. Strong associations emerged between specific disorders and classes of medications with evidence for efficacy. Antidepressants were most frequently used among those with primary mood disorders (14.1%); stimulant use was most common among those with attention-deficit/hyperactivity disorder (20.4%); and antipsychotic use was infrequent and mostly seen among those with serious developmental disorders. Less than 2.5% of adolescents without a 12-month mental disorder had been prescribed psychotropic medications, and most had evidence of psychological distress or impairment reflected in a previous mental disorder, subthreshold condition, or developmental disorder. Appropriate medication use was significantly more frequent among those in treatment in the mental health specialty sector than general medicine or other settings.

**CONCLUSIONS:** These findings challenge recent concerns over widespread overmedication and misuse of psychotropic medications in US youth. In fact, these data highlight the need for greater recognition and appropriate treatment of youth with mental health disorders.



## *Section I*

### *Overview: Guide to a School's Role*

Best Practices in Adminstrating Medication in School

Request for School to Administer Medication (sample form)

Do the Student and Family Understand the Medication?

- Administration and Record Keeping

Educating school staff and getting their feedback on medication effects Supportive guidance and counseling

- Example of Memo for School Staff re: Psychotropic Medication (sample form)
- Feedback Report Related to Student Taking Medication (sample form)

Increasing numbers of students are on regimens of medication to treat a variety of symptoms and conditions. Although use of drugs to treat some conditions is essential, prescribing psychotropic medication for children who manifest common behavioral, emotional, and learning problems is highly controversial.

School staff play two major roles with respect to medication: (1) they often are asked to provide information to assist prescribers in deciding whether to place a student on medication and (2) prescribers want feedback from school personnel as to drug effects.

In the first instance, school staff need to address a variety of factors in the school environment before they suggest that there is something wrong inside the student. That is, in keeping with the principle of using the least intervention needed, significant efforts must be made to improve the student's functioning at school through personalizing the classroom program -- before any conclusion is reached about the locus of the problem. Such personalization encompasses a host of prereferral interventions.

In the second instance, school staff must operate within a set of policies and procedures clarifying the school's role in administering medication, protecting a student's rights, and providing feedback to prescribers. It is these matters that are our focus here.

# I. Overview: Guide to a School's Role



## **Best Practices for Administering Medication in School**

[http://oldsite.cec.sped.org/AM/Template.cfm?Section=Family\\_Involvement&ContentID=11752&template=/CM/ContentDisplay.cfm](http://oldsite.cec.sped.org/AM/Template.cfm?Section=Family_Involvement&ContentID=11752&template=/CM/ContentDisplay.cfm)

Many students with exceptionalities, particularly those with developmental disabilities or emotional or behavior disorders (EBD), take medication to help them function. Drug therapy is generally intended to complement other interventions to improve a child's quality of life.

Use of such medications has grown significantly over the last 20 years; for example, approximately 75 percent of children with EBD now take prescribed medication, making it the most common EBD intervention. There are too many on the market to name, but popular drugs include Ritalin and Strattera for attention deficit and hyperactivity disorder (ADHD); Prozac to treat depression; Anafranil to treat obsessive-compulsive disorder; and Risperdal to treat aggressive behavior associated with autism.

What starts as a family decision becomes a school responsibility when a child needs to take medication regularly at school, which nearly 6 percent of all school-age students do, according to a 2000 study published in the *Journal of School Health*. Some drugs have short half-lives and require administration throughout the day. Under the *Americans with Disabilities Act* (ADA) and the *Individuals with Disabilities Education Act* (IDEA), schools are obligated to accommodate children and youth with disabilities, which includes administering medicine prescribed to manage their conditions.

This job usually falls to the school nurse, but in times of staff shortages, personal absences, or emergencies, special educators may become the second line of defense. It is not uncommon for several schools to share a nurse, who is therefore only present in a given school one or two days a week. In its position statement on medication administration in schools, the National Association of School Nurses confirms that school nurses are increasingly required to delegate these duties to unlicensed assistive personnel, i.e., teachers, administrative assistants, and aides.

It is therefore critical that all teachers, special educators in particular, have sufficient knowledge of their students' medications and the best practices for administering them. Yet, many special educators feel unprepared to handle these responsibilities. Following proper guidelines will help teachers deliver medication with greater confidence and, more importantly, ensure that children with disabilities—and all students—safely receive the treatment they need.

### **Establishing School Policies**

Policies for administering medications in the school setting vary by state and even by district in terms of procedures enforced and the staff training required. According to the Center for Health and Health Care in Schools in Washington, DC, 64 percent of states and 94 percent of school districts have formal requirements. CEC's own professional standards, the sixth edition of which will soon be published, state that special education professionals may administer medication where state/provincial policies do not preclude such action and only when they are qualified and properly trained to do so.

With or with state-level guidance, every school needs to have a clear accountability policy in place that indicates the primary staff member responsible for dispensing medicine onsite; who should serve as back-up in the case of that person's absence; procedures for reporting and managing errors; and procedures for handling medications on field trips and other outings in beyond the regular school day.

## **Staff Training**

Giving a child a pill to swallow may seem simple enough, but delivering medication to students with exceptionalities can be more involved, which is why teachers and support staff should receive proper health training. Some medications are not taken orally; for example, adrenaline pens to treat anaphylactic shock must be injected into the skin.

Training courses can teach non-medical personnel about safe nursing practices, applicable state laws and regulations, how to monitor responses to medication, and more. In best-case scenarios, teachers receive this pharmacological training while obtaining their degree. But there are also professional development seminars available, which can range from a two-hour session covering the basics to more intense weekend-long courses. State requirements may vary based on whether a teacher works with mild, moderate, or severe disabilities.

## **Preparing to Dispense Medication at School**

When a student begins taking medication, either short- or long-term, his or her parent should provide the school with the following:

- A signed parental consent form.
- The medication in its original labeled container.
- The name and contact information of the prescribing health care provider.
- The prescribed dose and administration time(s).
- Which behaviors or symptoms the medicine targets.
- The anticipated results of treatment.
- The potential side effects (these can range from drowsiness to loss of appetite to irritability to stomach aches).
- Instructions for storage (e.g., refrigeration) and proper disposal.
- What to do in case of overdose or other emergency.

Instruct parents and guardians to deliver medicine and documentation in person, rather than send it to school with the student. Recommend that the first dose of the medication be given at home, to see how the child responds.

These actions should be taken even if the medication requires no mid-day dose; the school should be made aware of side effects and drug interactions and should be prepared to step in if the morning dose is missed at home.

The same rules apply when a child is deemed responsible enough to self-administer medication, whether it be over-the-counter or prescribed. Students with asthma or diabetes, for example, may be permitted to carry inhalers or blood sugar testing kits.

Remember to use discretion when asking or reminding students about taking their medication, so as not to embarrass them or discourage them from taking it.

## **Preventing Errors**

In a recent large survey of school nurses, 50 percent of respondents reported at least one medication error in the prior school year. Such errors can include overdoses, skipped doses, and medication given without authorization or to the wrong student. While everybody makes mistakes, they can be avoided. (Ideally, liability coverage is provided to all school staff.)

The best systems are designed to prevent error by reducing a school's reliance on individuals' memory and vigilance and fostering the best possible outcomes for students.

- Provide a secure (locked) cabinet or refrigerator for all children's medication. According to the Center for Health and Health Care in Schools, only three-fourths of schools have a locked medical supply cabinet and only slightly more than half have a refrigerator devoted to health services.
- Restrict the number of staff members allowed to administer to only a few qualified people.
- Maintain a central, preferably electronic, log for recording the details each time medicine is administered.
- Tape a photograph of the child on each prescription bottle to make certain it is never accidentally given to someone else.

In the event a mistake is made, the parents should be contacted immediately, no matter how small the apparent consequence.

## **Communicating with Parents**

As with most aspects of education, communicating with parents is crucial. Because special educators interact with their students for so many hours a day, they are in a unique position to observe and monitor the physical, behavior, and academic effects of prescribed medications that parents are less likely to witness. Teachers may even be called upon to correspond with a prescribing physician. Indeed, parents, physicians, and educators can collaborate on an interdisciplinary and multi-faceted approach to treating disabilities.

If the medication is new, has the child's condition improved? If the dosage has recently been adjusted, has he or she responded as expected? Teachers may even determine optimal times for instruction, based on a child's peak-and-valley reactions to his or her medication. Teachers may also be the first to notice signs that a student has outgrown his or her treatment, as well as when a child is abusing prescribed medicine.

But keep in mind that a teacher's role in these situations is still to be objective: leave medical decisions to physicians, just as they leave educational decisions to you. Even if you have had thorough pharmacological training, resist the urge to provide anything beyond anecdotal information.

## **Resources**

[CEC's Professional Standards](#)

[The American Academy of Pediatrics Policy Statement](#)

[The Center for Health and Health Care in Schools](#)

[The National Association of School Nurses' Position Statement](#)

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I. Overview: Guide to a School's Role (cont.)

***REQUEST FOR MEDICATION TO BE TAKEN DURING SCHOOL HOURS***

**LOS ANGELES UNIFIED SCHOOL DISTRICT  
SCHOOL MENTAL HEALTH SERVICES**

(To be completed by a licensed physician)

\_\_\_\_\_  
Last Name of Student, First Name                      Sex                      Birth Date                      School

\_\_\_\_\_  
Purpose of Medication or Diagnosis                      Name of Medication

\_\_\_\_\_  
Dosage Prescribed                      Time Schedule at School                      Dose from (Tablet/Liquid)                      Color

\_\_\_\_\_  
Date of Prescription                      Length of Time This Medication Will Be Necessary

Physician's Recommendations (Check where applicable):

\_\_\_\_\_ Please notify this office if my patient misses medication at school.

\_\_\_\_\_ Medication may have adverse effects (explain)

\_\_\_\_\_ Special instructions and/or comments \_\_\_\_\_

The Student for whom this medication is prescribed is under my care.

\_\_\_\_\_  
Print Name of Licensed Physician                      Signature of Licensed Physician

\_\_\_\_\_  
Address                      Telephone No.                      Date

---

**REQUEST FOR MEDICATION TO BE TAKEN DURING SCHOOL HOURS**

(To be completed by parent/guardian)

I request that my child, \_\_\_\_\_, be assisted/supervised in taking the above prescribed medication at school. I will comply with the policies and procedures determined by the school district.

\_\_\_\_\_  
Date                      Home Telephone                      Emergency Telephone

\_\_\_\_\_  
Signature of Parent/Guardian/ Student 18 years or older

Form 33.199(Rev. 5/96)



## I. Overview: Guide to a School's Role (cont.)



### ***Do the Student and Family Understand the Medication?***

The school can play a role in ensuring that the student and family understand what has been prescribed and why. In particular, the school can play a role in being certain that explanations are provided children and adolescents in ways they can comprehend.

Most basically, the student and family must understand that psychotropic medication is only one facet of a comprehensive intervention plan. They also need to be cautioned about side effects and the importance of continuous monitoring.

As an aid to families, the American Academy of Child and Adolescent Psychiatry suggests the following set of questions to ask about psychiatric medications for children and adolescents.

1. What is the name of the medication? Is it known by other names?
  2. What is known about its helpfulness with other children who have a similar condition to my child?
  3. How will the medication help my child? How long before I see improvement? When will it work?
  4. What are the side effects which commonly occur with this medication?
  5. What are the rare or serious side effects, if any, which can occur?
  6. Is this medication addictive? Can it be abused?
  7. What is the recommended dosage? How often will the medication be taken?
  8. Are there any laboratory tests (e.g. heart tests, blood test, etc.) which need to be done before my child begins taking the medication? Will any tests need to be done while my child is taking the medication?
  9. Will a child and adolescent psychiatrist be monitoring my child's response to medication and make dosage changes if necessary? How often will progress be checked and by whom?
  10. Are there any other medications or foods which my child should avoid while taking the medication?
  11. Are there any activities that my child should avoid while taking the medication? Are any precautions recommended for other activities?
  12. How long will my child need to take this medication? How will the decision be made to stop this medication?
  13. What do I do if a problem develops (e.g. if my child becomes ill, doses are missed, or side effects develop)?
  14. What is the cost of the medication (generic vs. brand name)?
- Does my child's school nurse need to be informed about this medication?

Providing such information serves several functions. It helps bolster due process and informed consent. It also can help the student and family become partners in the process of dealing with a student's problems and in planning to minimize negative effects and their consequences.

## Administration Record Keeping

Keeping records need not be complicated (see the Sample Form below). The real problem is setting up a system to be certain that entries are made at the time of administration so they are not forgotten.

[illegible]

## I. Overview: Guide to a School's Role (cont.)



### ***Educating School Staff and Getting Feedback on Medication Effects***

If school staff are to play an appropriate role in providing feedback on medication effects, they must be provided with a variety of learning opportunities. A simple first step is to provide them with some written information (see attached example).

Those asked to provide feedback about drug effects, of course, must learn a good deal more about the effects of the specific medication that a student is taking. In particular they must be reasonably informed about the temporal course of the medication. The effects (positive and negative) increase, peak, and usually are expected to wane somewhat between administrations. Prescribers should provide information on when the strongest effects are likely to occur and what "withdrawal" symptoms are likely to be seen in the waning period, especially rebound effects (such as the increased irritability, activity, and inattentiveness seen in some children taking stimulant medication). It is also important to alert staff that in the early stages of the treatment, the dosage may have to be varied until the right amount for the individual is determined. Such information will allow them to make better judgments about whether what they are observing is to be expected or not.

Because school staff already are overburdened with paperwork, it is imperative to use a simple feedback report (see attached example).

Part of providing feedback is to convey observations about the student's feelings about taking the medication. Students may dislike medication because they are embarrassed for others to know they are doing so or because of the way it makes them feel or because it interferes with doing something they want to do. Such psychological reactions can influence the apparent effects of the medication and can even lead to students finding surreptitious ways to avoid digesting pills. (If a youngster is strongly avoidant about taking medication, the prescriber, parents, and youngster need to discuss the matter thoroughly.)

Another concern to watch for and report is parent mismanagement of the prescription. Parents may overdose a youngster in hopes of accelerating the treatment or may withhold medication when symptoms subside. Those with scheduling problems may double the dosage because they won't be around when for the next scheduled administration. Some may fail to get refills. The reasons for all this vary, and school staff often aren't in a position to know the "whys and wherefors." But, information of misuse of prescriptions often arise from discussions with the student or parents.

And, of course, it is imperative to watch for any indications that prescribed medications are being used for substance abuse.

### ***Supportive Guidance and Counseling***

Students on medication often need ongoing information and support to better understand what they are experiencing related to medication effects and the problem for which the medication is prescribed. One approach is to establish a support group for such students at the school or to connect students with such a group in the community.

## Example of Memo for School Staff re: Psychotropic Medication

To: School Staff

From:

Re: Information on Students and Medication

Some students take medication for physical or mental health problems that may effect their classroom behaviors. You may also note changes that are the result of changes in dosage or failure to take medication on a regular basis.

While we all have good and bad days, if you notice students whose behavior changes dramatically (seems lethargic, irritable, jumpy, or complains of stomach aches or headaches), you may want to check with parents to let them know. In some cases, families and students want to keep medication use confidential. In other cases, parents and prescribers will want feedback from the school to decide on effective dosage and time of administration.

Psychotropic medications commonly taken that may effect classroom behavior have been grouped by the American Academy of Child and Adolescent Psychiatry into the following categories:

- > *stimulant medication* (e.g., dextroamphetamine [Dexedrine], methylphenidate hydrochloride [Ritalin], magnesium pemoline [Cylert])
- > *antidepressants* (e.g., tricyclic drugs such as imipramine hydrochloride [Tofranil, ]; other antidepressants such as fluoxetine [Prozac] and sertraline hydrochloride [Zoloft])
- > *Anti psychotic medication* (e.g., major tranquilizers such as haloperidol lactate [Haldol], chlorpromazine [Thorazine], trifluoperazine hydrochloride [Stelazine], clozapine [Clozaril], thioridazine hydrochloride [Mellaril], and benisoxazole [Risperdal])
- > *mood stabilizers and carbamazepine* (e.g., antimanic drugs such as lithium carbonate [Lithium, Lithane], lithium citrate [Cibalith]; anticonvulsants such as carbamazepine [Tegretol, Mazepine, Eptol], and valproic acid [Depakene])
- > *Anti anxiety medications* (e.g., besides anti-depressants and Anti psychotic medication, prescribers use anxiolytics such as chlordiazepoxide [Librium], alprazolam [Xanax] and buspirone hydrochloride [BuSpar], as well as antihistamines such as diphenhydramine [Benadryl] and hydroxyzine hydrochloride [Atarax])
- > *sleep medications* (e.g. SRI anti-depressants, Trazodone [Desyrel], Zolpidem [Ambien], and Diphenhydramine [Benadryl])
- > *miscellaneous medications* (e.g. clonidine [Catapres] may be used to treat the severe impulsiveness in some children with ADHD and guanfacine [Tenex] for “flashbacks” in children with PTSD.)

Other medications taken for asthma and epilepsy may also affect classroom functioning.

If you are interested in more information about medication or have students whose behavior concerns you, please let me know.

The procedures at the school are to dispense medication only with a prescribing physicians instructions and parent consent. If you are asked to dispense, please inform parents of our policy.

## Feedback Report Related to Student Taking Medication

This report of a student's behavior is needed by the prescribing physician to monitor dosage and effectiveness. A parent/student form consenting to your providing this feedback is on file. If you have questions or concerns, you may want to talk with the student's parents. Thanks for your help.

Name of Student \_\_\_\_\_ Birthdate \_\_\_\_\_

Your Name \_\_\_\_\_ Room \_\_\_\_\_

How many hours/day do you spend with this student? \_\_\_\_\_

| Brief description of behavior | Poor  | Average | Good  | In your judgement, is this attributable to the medication? |    |
|-------------------------------|-------|---------|-------|--|----|
| Behavior                      | _____ | _____   | _____ | Yes  | No |
| Attention to task             | _____ | _____   | _____ | Yes  | No |
| Completion of work            | _____ | _____   | _____ | Yes  | No |
| Physical Changes              | _____ | _____   | _____ | Yes  | No |
| Other (specify): _____        | _____ | _____   | _____ | Yes  | No |

If you answered no to any of the above, please explain briefly.

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Briefly note any positive or negative changes in behavior and attitude you have noticed in the past 2 weeks.

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What is the student's attitude about taking the medication? \_\_\_\_positive \_\_\_\_neutral  
\_\_\_\_negative

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Please complete by \_\_\_\_\_ Return to \_\_\_\_\_

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## ***Section II***

### ***Brief Information on Medications and Their Side Effects***

In this section, you will find guides outlining the purposes, negative effects, and some related considerations with respect to major medications used with students.

**Psychiatric Medication for Children and Adolescents: Part I-How Medications are Used**

**Psychotropic Medications: An Update for School Psychologists**

**The Importance of Teacher Involvement in Medication Therapy and Information on Common Types of Psychotropic Medications**

**FDA Warning about Antidepressants**

**Antidepressant Medicines, Depression and other Serious Mental Illnesses, and Suicidal Thoughts or Actions**

**Prescribing Antipsychotics in Children: Proceed With Caution**

### FACTS *for* FAMILIES

## ***Psychiatric Medication For Children And Adolescents Part I-How Medications Are Used***

[http://www.aacap.org/AACAP/Families\\_and\\_Youth/Facts\\_for\\_Families/FFF-Guide/Psychiatric-Medication-For-Children-And-Adolescents-Part-I-How-Medications-Are-Used-021.aspx](http://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Psychiatric-Medication-For-Children-And-Adolescents-Part-I-How-Medications-Are-Used-021.aspx)

No. 21; Updated November 2012

Medication can be an effective part of the treatment for several psychiatric disorders of childhood and adolescence. A doctor's recommendation to use medication often raises many concerns and questions in both the parents and the youngster. The physician who recommends medication should be experienced in treating psychiatric illnesses in children and adolescents. He or she should fully explain the reasons for medication use, what benefits the medication should provide, as well as possible risks, adverse effects and other treatment alternatives.

*Psychiatric medication should not be used alone.* The use of medication should be based on a comprehensive psychiatric evaluation and be one part of a comprehensive treatment plan.

Before recommending any medication, the child and adolescent psychiatrist interviews the youngster and makes a thorough diagnostic evaluation. In some cases, the evaluation may include a physical exam, psychological testing, laboratory tests, other medical tests such as an electrocardiogram (EKG) or electroencephalogram (EEG), and consultation with other medical specialists.

Medications which have beneficial effects may also have side effects, ranging from just annoying to very serious. As each youngster is different and may have individual reactions to medication, close contact with the treating physician is recommended. Do not stop or change a medication without speaking to the doctor. Psychiatric medication should be used as part of a comprehensive plan of treatment, with ongoing medical assessment and, in most cases, individual and/or family psychotherapy. When prescribed appropriately by a psychiatrist (preferably a child and adolescent psychiatrist), and taken as prescribed, medication may reduce or eliminate troubling symptoms and improve the daily functioning of children and adolescents with psychiatric disorders.

Medication may be prescribed for psychiatric symptoms and disorders, including, but not limited to:

1. **Bedwetting**-if it persists regularly after age 5 and causes serious problems in low self-esteem and social interaction.
2. **Anxiety** (school refusal, phobias, separation or social fears, generalized anxiety, or posttraumatic stress disorders)-if it keeps the youngster from normal daily activities.
3. **Attention deficit hyperactivity disorder (ADHD)**-marked by a short attention span, trouble concentrating and restlessness. The child is easily upset and frustrated, often has problems getting along with family and friends, and usually has trouble in school.
4. **Obsessive-compulsive disorder (OCD)**-recurring obsessions (troublesome and intrusive thoughts) and/or compulsions (repetitive behaviors or rituals such as handwashing, counting, or checking to see if doors are locked) which are often seen as senseless but that interfere with a youngster's daily functioning.
5. **Depression**-lasting feelings of sadness, helplessness, hopelessness, unworthiness, guilt, inability to feel pleasure, a decline in school work and changes in sleeping and eating habits.
6. **Eating disorder**-either self-starvation (anorexia nervosa) or binge eating and vomiting (bulimia), or a combination of the two.
7. **Bipolar (manic-depressive) disorder**-periods of depression alternating with manic periods, which may include irritability, "high" or happy mood, excessive energy, behavior problems, staying up late at night, and grand plans.
8. **Psychosis**-symptoms include irrational beliefs, paranoia, hallucinations (seeing things or hearing sounds that don't exist) social withdrawal, clinging, strange behavior, extreme stubbornness, persistent rituals, and deterioration of personal habits. Psychosis may be seen in developmental disorders, severe depression, schizoaffective disorder, schizophrenia, and some forms of substance abuse.
9. **Autism**-(or other pervasive developmental disorder such as Asperger's Syndrome) -characterized by severe deficits in social interactions, language, and/or thinking or ability to learn, and usually diagnosed in early childhood.
10. **Severe aggression**-which may include assaultiveness, excessive property damage, or prolonged self-abuse, such as head-banging or cutting.
11. **Sleep problems**-symptoms can include insomnia, night terrors, sleep walking, fear of separation, or anxiety.



## Section II. Brief Information on Medications and Their Side Effects (cont.)

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### *PSYCHOTROPIC MEDICATIONS: AN UPDATE FOR SCHOOL PSYCHOLOGISTS*

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This article provides an overview of medications used frequently in the treatment of pediatric depression, anxiety, and bipolar disorder. The need for a collaborative relationship between the prescribing physician, school personnel, and the family is outlined. School psychologists can play crucial roles by providing the physician with information at the time of referral, developing school-based psychosocial interventions that augment pharmacological treatment, completing periodic evaluations to assist in symptom monitoring, and alerting the family and physician to any adverse side effects. © 2013 Wiley Periodicals, Inc.

Approximately one in every four to five youths in the United States will meet the diagnostic criteria for a psychiatric disorder during their childhood or adolescence (Merikangas et al., 2010). Prompt identification and treatment of psychiatric illness in childhood is vital. If left untreated, these children are at risk for persistent mental health issues, including school failure, delinquency, family conflict, relationship problems, substance abuse, and accident risk. When psychopharmacological interventions are necessary, school personnel are important members of the teams that care for these children. Crucial roles for school psychologists include: (a) developing school-based psychosocial interventions that augment medication trials; (b) creating a bridge among physicians, parents, and teachers for interdisciplinary collaboration; (c) advocating for appropriate educational services in the least restrictive setting; and (d) alerting the family and prescribing physician if adverse side effects are evident (Abrams, Flood, & Phelps, 2006).

In recent years, the use of psychotropic interventions with youth has increased dramatically (American Academy of Child and Adolescent Psychiatry [AACAP], 2009). The most evident reasons for this expansion are an improved knowledge of the biological bases of mental disorders, a greater evidence base to support the efficacy and safety of psychotropic medications, better advocacy efforts to identify and treat children, and reduced stigma associated with receiving treatment (Phelps, Brown, & Power, 2002). Changes in mental health reimbursement and increased pharmaceutical marketing efforts are also troubling reasons for this trend. There can be a “quick fix” mentality, but it is important to remember that both physicians and mental health clinicians rarely advise medication without concurrent comprehensive therapeutic services. Because pharmacological treatment of attention deficit and hyperactivity disorder (ADHD) has been covered extensively (e.g., Vaughan, Roberts, & Needleman, 2009), this review will focus on medications utilized in the treatment of pediatric depression, anxiety, and bipolar disorder.

#### PSYCHIATRIC EVALUATION PROCESS

The referral and evaluation of a child by a psychiatrist is ideally a collaborative process. We recommend that the evaluation include interviewing the child and parents, obtaining information from the school and other health care providers, and using screening instruments and/or rating scales completed by the child, family, and teachers. These instruments may include Achenbach's Child

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Behavior Checklist (Achenbach, 1991a), Teacher Report Form (Achenbach, 1991b), and Youth Self-Report (Achenbach, 1991c). Scales specific to the reason for referral such as the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), Children's Depression Inventory 2 (Kovacs, 2004), Multidimensional Anxiety Scale for Children (March, 1997), Screen for Child Anxiety Related Disorders (Birmaher, Khetarpal, Brent, & Cully, 1997), and the Youth Mania Rating Scale (Young, Biggs, Ziegler, & Meyer, 1978) are recommended. These types of instruments establish a baseline and help track a child's response to treatment.

Because school personnel have critical information about a child's academic performance, social-emotional functioning, and behavior at school, it is very useful to have a signed release permitting the classroom teacher, school mental health professionals, and child psychiatrist to collaborate. To obtain a signed release, it is usually necessary to explain to the parents the advantages of streamlining the flow of information. Although parents may be initially reluctant to approve such communication, assuring them that they are an active part of the treatment team and that information will be shared with discretion usually resolves their concerns.

#### KEY PRINCIPLES OF PEDIATRIC PSYCHOPHARMACOLOGY

The first tenet of any treatment is to do no harm, and a physician's decision to prescribe a psychotropic medication is not made lightly. Medications are intended to reduce symptoms, improve functioning, and facilitate client utilization of psychosocial interventions. Key considerations in the decision to medicate are the severity of symptoms and the degree of functional impairment. Medication may not have the same effect in all children with the same disorder, and frequent and detailed monitoring of the prescribed medication is needed to evaluate drug efficacy.

Another key principle is related to adverse side effects. Children are often more sensitive to psychotropic medications than adults are, making it essential to monitor not only positive outcomes but also negative consequences. To avoid possible side effects, medication is usually started at a low dose and gradually increased, until reaching a recommended dose that reduces symptoms. In addition, the physician needs to obtain a thorough medical history and record of current medications. Not only does an interaction of medications need to be considered, but also side effects common to medications may compound negative reactions. For example, both antiepileptic and antianxiety medications may result in drowsiness and fatigue, and if taken together, this side effect may be magnified. Some children are prescribed multiple psychotropic medications to treat a combination of presenting problems, such as depression, anxiety, and irritability. It is important for physicians to periodically reevaluate the medications and consider altering the regimen as symptoms change.

The third key principle is that psychopharmacological interventions are only one aspect of the treatment plan. Although cautious use of medications may be lifesaving, most children need additional interventions to stabilize the home, learn emotional regulation skills, improve peer relations, and receive appropriate educational services (Zito et al., 2008). Consideration of behavioral, cognitive-behavioral, group skills training, and/or family support interventions should always have a role in pediatric mental health services (AACAP, 1998, 2002, 2007a, 2007b). For mild to moderate symptoms of any psychiatric condition, evidence-based therapeutic interventions may precede a medication trial. For moderate to severe symptoms, such as depression with suicidal ideation or mania, a combination of psychotropic and psychosocial interventions are best (AACAP, 2009).

#### MAJOR DEPRESSIVE DISORDER

Depression in children may be difficult to detect. Symptoms vary considerably across developmental stages and diverse ethnic groups (AACAP, 1998). Preschoolers often exhibit irritability, apathy, and regression. School-age children may display a sad or irritable mood, crying spells, somatic complaints such as headaches, and lack of pleasure. Depressed adolescents are often intensely

moody, irritable, and sensitive to criticism. For these reasons, pediatric depression is more difficult to diagnose and treat than mood disorders in adults.

The treatment of pediatric depressive disorders needs to always incorporate psychological (e.g., cognitive-behavioral, behavioral, interpersonal) interventions, with medication viewed as a possible augmentation. In support of this combined approach, the Treatment for Adolescents with Depression Study, funded by the National Institute of Mental Health (NIMH), found that the optimal treatment was a combination of medication (e.g., fluoxetine [Prozac]) and cognitive-behavioral therapy (CBT; Glass, 2005). Seventy-one percent of participants responded to this combination compared with 61% for medication alone, 43% for therapy alone, and 35% placebo. Additionally, the combination treatment group had the greatest reduction in suicidal thinking (Glass, 2005), although suicidal thinking decreased with all four treatments, even placebo, highlighting the importance of careful monitoring and attention.

### *Psychotropic Medications to Treat Major Depressive Disorder*

Based on rigorous studies demonstrating safety and efficacy, the Food and Drug Administration (FDA) approves medications for specific disorders. Although FDA approval for drugs used with the pediatric population offers some degree of assurance, many medications in child psychiatry are prescribed “off label” (i.e., no FDA approval for that specific disorder) because of an overall paucity of supporting data. Given that caveat, the first line of pharmacological treatment for pediatric depression is the selective serotonin reuptake inhibitors (SSRIs). The FDA has approved two SSRIs for use with children: escitalopram (Lexapro) and fluoxetine. As a second line of treatment, a selective serotonin-norepinephrine reuptake inhibitor (SNRI), such as desvenlafaxine (Pristiq) or venlafaxine (Effexor), may be used. Finally, bupropion (Wellbutrin) may be considered. For a complete listing of antidepressant medications, their possible side effects, and FDA approval, refer to Table 1.

*Dosage Considerations and Side Effects.* It is important to note that it may take up to 4 weeks before the effects of antidepressant medication are evident. The goal of treatment is remission of symptoms after 12 weeks. Starting at a low dose, the medication is increased gradually until there is evidence of a positive response. If there is minimal or no response after 8 weeks, an alternative medication is considered. If there is a partial response, an augmentation strategy may be tried. This involves adding a second medication in an effort to achieve a full remission, such as adding bupropion to an existing regiment of fluoxetine.

Medication is usually prescribed for 6 to 12 months before the dose is tapered off, ideally during a school recess period. A longer course of treatment may be considered if: (a) there is a family history of depression (i.e., strong genetic loading), (b) there was a suicide attempt, or (c) several medication trials were necessary to achieve an effective response. Youth should be monitored closely following the discontinuation of medication treatment because approximately 40% of children and adolescents are susceptible to relapse between 6 to 12 months after discontinuing medication treatment (AACAP, 2007b).

Common side effects of SSRIs are gastrointestinal distress, headaches, anxiety, agitation, insomnia, and sedation. The SNRIs may prompt nausea, sedation, elevated blood pressure, and weight gain. With bupropion, patients may experience dry mouth, decreased appetite, and a lowered seizure threshold. Nausea can be decreased by taking the medication with food and usually abates after the first week of treatment. Although medications are commonly taken in the morning, the dose can be switched to evening if fatigue is present during the school day. Some research (e.g., Walkup & Labellarte, 2001) has indicated that pediatric patients may experience agitation, anxiety, and insomnia for up to 6 weeks after an antidepressant is started. This reaction is often dose related (i.e., evident with higher doses), appears more frequently in younger patients, and may occur up to

Table 1  
Medications Prescribed for Major Depressive Disorder

| Class of Medication                        | Generic Name (Trade Name)   | Side Effects  |
|--|---|---|
| Norepinephrine/Dopamine Reuptake Inhibitor | Bupropion (Wellbutrin)  | <u>Serious:</u> seizures, confusion, hallucinations, unusual thoughts, fever, rash<br><u>Less serious:</u> headache, dizziness, shaking, insomnia, nausea, vomiting, dry mouth, appetite changes, mild rash, increased sweating<br><u>Contraindications:</u> seizure disorder, eating disorder, substance abuse, certain medical problems         |
| SSRIs                                      | Citalopram (Celexa)<br>Escitalopram (Lexapro)<br>Fluoxetine (Prozac)<br>Sertraline (Zoloft) | <u>Serious:</u> serotonin syndrome, mania, seizures, hyponatremia (low sodium), arrhythmias, abnormal bleeding<br><u>Less serious:</u> nausea, dry mouth, sleep and appetite changes, tremor, diarrhea, flu syndrome, decreased libido, sweating<br><u>Additional serious side effects:</u> vasculitis, glaucoma, growth suppression, hypotension |
| SNRIs                                      | Desvenlafaxine (Pristiq)<br>Venlafaxine (Effexor)   | <u>Serious:</u> hypertension (high blood pressure), arrhythmias, seizures, abnormal bleeding, pancreatitis, growth suppression, skin reactions<br><u>Less serious:</u> nausea, headache, sleep and appetite changes, bowel changes, blurred vision, high cholesterol, tremor, abnormal dreams, paresthesia, tachycardia (increased heart rate)    |

*Note.* SSRIs = selective serotonin reuptake inhibitors; SNRIs = serotonin norepinephrine reuptake inhibitors. Only fluoxetine (8–18 y) and escitalopram (12–17 y) have Food and Drug Administration approval for treatment of major depressive disorder. All have a black box warning to monitor for suicidality and serious neuropsychiatric events.

20% of the time (Leibenluft, 2011). In addition, approximately 10% to 20% of children receiving SSRIs may evidence persistent lability of mood (Martin et al., 2004). Dose reductions or switching to a different antidepressant, even within the same class (i.e., SSRI, SNRI), may be effective for treating the side effects.

**Black Box Warning.** In 2004, the FDA directed manufacturers to add a “black box warning” about the increased risk of suicidality in children and adolescents being treated with an antidepressant (<http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/UCM096273>). This advisory was based on a meta-analysis of 24 placebo-controlled, double-blind clinical trials that evaluated more than 4,000 children and adolescents who had a primary diagnosis of depression. The rate of suicidal ideation, intent, or attempt was 3.8% for those prescribed an SSRI versus 2.1% for those taking a placebo (Hammad, Laughren, & Racoosin, 2006). Following this FDA warning, the number of antidepressant prescriptions written for children and adolescents decreased dramatically (Nemeroff et al., 2007).

Using a meta-analysis of randomized, controlled trials conducted between 1988 and 2006, including seven additional studies that were not available at the time of the FDA report, Bridge et al. (2007) concluded that the benefits of antidepressants likely outweighed the risks to children and adolescents with major depression and anxiety disorders. Although the data indicated that there was a small but increased risk of suicidality in the first 9 days after initiation of treatment, the

pooled random-effects risk differences of suicidal ideation/suicide attempt were less than 1% and not statistically significant. Other researchers have analyzed the risk–benefit relationship following the FDA warning and agreed with Bridge’s conclusion (e.g., Jick, Kaye, & Jick, 2004; Kratochvil et al., 2006). However, careful observation is essential. The FDA has recommended weekly face-to-face follow-ups with the prescribing physician for the first 4 weeks. This should then be followed by monthly visits.

## ANXIETY DISORDERS

Anxiety disorders involve developmentally inappropriate fears that interfere with the child’s daily life. These disorders include generalized anxiety disorder (GAD), phobias, separation anxiety disorder, social phobia, panic disorder, obsessive–compulsive disorder (OCD), acute stress disorder, and post-traumatic stress disorder (PTSD). These disorders may be evidenced in the school setting by the child being unusually fearful, irritable, angry, or distracted; having difficulty completing work; reporting somatic complaints, such as stomachaches and headaches; worrying about getting everything right; and crying frequently. Because children are not likely to identify that what they are feeling is anxiety, the difficulties may go untreated for some time.

There is substantial evidence-based support for behavioral, cognitive–behavioral, and psychosocial interventions for the treatment of childhood anxiety disorders (Weisz et al., 2012). However, when the anxiety level is such that the child or adolescent cannot participate actively in such interventions, medication is warranted as an augmentation. Several studies support such an integrative approach. For example, Walkup and colleagues (2008) completed a randomized study comparing a placebo drug alone, CBT alone, sertraline (Zoloft) alone, and a combination of CBT and sertraline with 128 children aged 6 to 17 years, who were diagnosed with GAD, social phobia, or separation anxiety. There was a significant difference ( $p \leq .001$ ) between the treatment groups, with 81% of the combination medication/CBT group showing notable improvement, compared with 60% for CBT alone, 55% for sertraline alone, and 24% for placebo. An NIMH clinical trial, the Pediatric Obsessive–Compulsive Disorder Treatment Study (POTS), assessed treatment options for OCD with 112 children aged 7 to 17 years. The randomized, placebo-controlled study found that a combination of sertraline and CBT was most effective (54% remission), compared with 39% for CBT alone, and 21% for sertraline alone (POTS Team, 2004).

### *Psychotropic Medications for Anxiety Disorders*

AACAP guidelines (2007a) recommend pharmacological treatment for anxiety disorders if the disorder is moderate to severe, if the child has a comorbid disorder (such as depression), or if there is only a partial response to therapy. As with pediatric depression, the SSRIs are the medications of choice for anxiety disorders. SSRIs that have proven more effective than a placebo in randomized, double-blind studies include fluoxetine (Birmaher et al., 2003), fluvoxamine (Luvox; Walkup et al., 2001), paroxetine (Paxil; Geller et al., 2003), and, as described earlier, sertraline (POTS Team, 2004). When utilizing SSRIs, the side effects and black box warning discussed earlier are to be taken into consideration.

Clomipramine (Anafranil) is a tricyclic antidepressant that has proven efficacy via double-blind studies with pediatric OCD (e.g., Geller et al., 2003). Clomipramine is rarely a first choice because of poor tolerability and the risk of fatal overdose. There is anecdotal evidence for the use of benzodiazepines, but they are used only as short-term adjunct treatments with SSRIs until the SSRIs begin to work. However, there are significant concerns about prescribing benzodiazepines in the pediatric population because of the possibility of dependency, notable sedative side effects, respiratory depression when used with alcohol, and paradoxical disinhibition (i.e., agitation rather

Table 2  
Medications Prescribed for Anxiety Disorders

| Class of Medication         | Generic Name (Trade Name)    | Side Effects  |
|-----------------------------|------------------------------|---|
| Alpha-2 Adrenergic Agonists | Clonidine (Catapres, Kapvay) | <u>Serious:</u> syncope (fainting), bradycardia (slowed heart rate), rebound hypertension (high blood pressure)                                     |
|                             | Guanfacine (Tenex, Intuniv)  | <u>Less serious:</u> dry mouth, drowsiness, fatigue, dizziness, headache, impotence   |
| Benzodiazepines             | Lorazepam (Ativan)           | <u>Serious:</u> dependency/abuse, respiratory depression if combined with other CNS depressants (i.e., alcohol), withdrawal, agitation              |
|                             | Diazepam (Valium)            |   |
|                             | Clonazepam (Klonopin)        | <u>Less serious:</u> sedation, dizziness, hypotension (low blood pressure), amnesia, disinhibition, irritability                                    |
| SSRIs                       | Citalopram (Celexa)          | <u>Serious:</u> serotonin syndrome; mania; seizures;  |
|                             | Escitalopram (Lexapro)       | hypo-natremia (low sodium); arrhythmias; abnormal bleeding  |
|                             | Fluoxetine (Prozac)          |   |
|                             | Fluvoxamine (Luvox)          | <u>Less serious:</u> GI upset, headaches, nausea, dry mouth, sleep and appetite changes, tremor, diarrhea, flu syndrome, decreased libido, sweating |
|                             | Sertraline (Zoloft)          |   |
| Other Antianxiety Agents    | Buspirone (Buspar)           | <u>Serious:</u> serotonin syndrome; movement disorders; depression  |
|                             |                              | <u>Less serious:</u> dizziness, drowsiness, nausea, headache, fatigue, decreased concentration, numbness, weakness, GI upset                        |

*Note.* CNS = central nervous system; SSRIs = selective serotonin reuptake inhibitors. Fluoxetine has Food and Drug Administration (FDA) approval for obsessive-compulsive disorder (OCD) in ages 7–17 y; sertraline has FDA approval for OCD in ages 6–17 y; clomipramine and fluvoxamine have FDA approval for OCD in >6 y.

than sedation; AACAP, 2007a). Finally, the alpha-2 adrenergic agents guanfacine (Tenex) and clonidine (Catapres) are considered alternative medications if the anxiety proves refractory to the SSRIs. Table 2 reviews medications prescribed for anxiety disorders.

#### PEDIATRIC BIPOLAR DISORDER

The public and research communities have engaged in significant debate about the validity of pediatric cases of bipolar disorder (Carlson, 2005; Pavuluri, Birmaher, & Naylor, 2005). Sufficient documentation now exists to indicate that there are youth who present with symptoms similar to those seen in adult cases. The typical presentation in pediatric cases is often depression coupled with hyperactivity. Mania may follow this initial presentation, which is usually manifested as mood lability, severe irritability, reckless behavior, pressured speech, racing thoughts, decreased need for sleep and aggression lasting hours to a few days (AAP, 2007b; Geller et al., 2002; Geller, Tillman, Carney, & Bolhofner, 2004). Children may also show inflated self-esteem, hypersexuality, and/or grandiosity (e.g., taking on numerous impractical tasks, having an unrealistic view of their own talents; Geller et al., 2002). The cyclical illness characterized by *distinct* periods of mania and depression, as seen with adults, is often not evident in youth.

The disorder has a strong genetic component with a four- to six-fold increase in the risk of a child having the disorder if there is a first-degree relative who is affected (Huang et al., 2010; Patel et al., 2010). Current research is focusing on identifying genes specific to bipolar disorder and schizophrenia, which is viewed as having a related genotype (e.g., Ivleva et al., 2010).

### *Diagnostic Issues in Pediatric Bipolar Disorder*

In an effort to address the confusion about the diagnostic presentation of juvenile bipolar disorder versus severe chronic mood lability, researchers have proposed a new *Diagnostic and Statistical Manual of Mental Disorders* (5th edition) category referred to as *disruptive mood dysregulation*. This diagnosis will encompass chronically irritable children between 7 and 17 years of age and require two components: (a) temper outbursts that are developmentally inappropriate, frequent, and extreme; and (b) negatively valenced mood (anger or sadness) that occurs between outbursts. Symptoms must be severe, cause functional impairment in at least one of three contexts (home, school, peers), and be present for at least 1 year (Leibenluft, 2011).

Additional diagnostic concerns arise because there can be a great deal of overlap among the symptoms of mania, ADHD (e.g., motor hyperactivity, impulsivity, and distractibility), and PTSD (e.g., emotional dysregulation, aggression, and irritability; Leibenluft & Rich, 2008). Because a psychiatric diagnosis results frequently in the prescription of a specific type of medication (e.g., antidepressant, antipsychotic, or stimulant), this confusion can have a significant negative impact on treatment (AACAP, 2007b). Clinicians have also raised the concern that although a diagnosis of bipolar disorder results in access to more intensive therapeutic services, it may also lead to children being exposed to medications that may have significant side effects (Thomas, Stansifer, & Findling, 2011).

### *Psychotropic Medications for Pediatric Bipolar Disorder*

Atypical antipsychotics are the standard pharmacological treatment for bipolar disorder (AACAP, 2007b). The atypical antipsychotics include aripiprazole (Abilify), olanzapine (Zyprexa), quetiapine (Seroquel), risperidone (Risperdal), and ziprasidone (Geodon). These medications are very effective as mood stabilizers because they work quickly (Thomas et al., 2011). The most common side effects of atypical antipsychotics include weight gain, sedation, dizziness, and dry mouth. Other possible side effects are an increase in fasting glucose and insulin resistance, elevated triglyceride and cholesterol levels, muscle stiffness, akathisia (restless limbs), extrapyramidal symptoms (emotional blunting, muscle spasms, and abnormal movements), and tardive dyskinesia (irreversible, involuntary, repetitive movements). For these reasons, the prescribing psychiatrist monitors the patient closely for side effects. Regular measurements of weight, blood pressure, pulse rate, fasting glucose, liver functions, and cholesterol are necessary because of the added risk of diabetes and cardiovascular disease. For example, a 2007 study found that the average weight gain after 11 weeks of first-time use of the atypical antipsychotics ranged from 10 to 19 pounds, compared with 0.42 pounds for untreated children (Correll, 2007). It is critical that children who are medicated adopt healthy lifestyle behaviors (i.e., diet and exercise) to help counteract the metabolic side effects. Before prescribing these medications, the psychiatrist shares the risks and benefits to assist the family in making an informed decision.

Lithium carbonate (Lithobid) is another possible medication for the treatment of bipolar disorder, especially for long-term therapy. A mixed salt mood stabilizer that affects several neurotransmitter systems, it has been approved by the FDA for both acute mania and maintenance treatment with the pediatric population. It has additionally been found to have some antidepressant properties and to reduce suicidal behavior (Smarty & Findling, 2007). However, research has indicated that there is considerable variability in response to lithium in children (Findling et al., 2010). To determine long-term efficacy and dosing recommendations with the pediatric population, the Collaborative Lithium Trials (CoLT) are being conducted under the auspices of the National Institute of Child Health and Human Development (Findling et al., 2008).

Lithium side effects may include weight gain, polyuria (frequent urination), polydipsia (excessive thirst), lethargy, tremor, acne, gastrointestinal upset, and cognitive dulling. This medication requires careful dispensing and monitoring because it has a narrow therapeutic index (i.e., small window between therapeutic response and toxic side effects) and can be lethal in overdose. Lithium toxicity is a medical emergency and can present with tremor, nausea, ataxia, confusion, delirium, and seizures. Before starting lithium, a child's blood count, kidney functioning, and thyroid must be evaluated. Blood lithium levels are to be checked with each change in dose. Finally, all laboratory values need to be repeated every 3 to 6 months.

Valproic acid (Depakote) is an anticonvulsant mood stabilizer that has been used by clinicians to treat pediatric bipolar disorder. It does not have FDA approval for the treatment of childhood mania and has not been shown to be an effective maintenance treatment. For example, a double-blind study using 150 10- to 17-year-olds found no significant difference between this medication and the placebo (Wagner et al., 2009). However, it is used to treat severe aggression in adolescent boys diagnosed with bipolar disorder. Because it can cause polycystic ovary syndrome (cysts on the outer edge of each ovary, excess hair growth, infrequent menstrual cycles, acne, and obesity) and is a known teratogenic (i.e., can disturb the development of the embryo), it is not generally prescribed to females. Common side effects of valproic acid include weight gain, sedation, lowered blood counts, and hair loss. This medication also requires that baseline liver function and blood tests be repeated every 6 months, along with a valproic acid blood level with any dose change (Smarty & Findling, 2007).

Lamotrigine (Lamictal) is another anticonvulsant drug that is used to address symptoms in bipolar depression (Thomas et al., 2011). Although lamotrigine does not need monitoring of blood drug levels, it requires a slow titration over 1 to 2 months to attain an effective dose. Possible side effects include nausea, dizziness, headache, and blurred vision. The most feared side effect, Stevens-Johnson syndrome, is a life-threatening rash that is quite rare (incidence of eight per 1,000 in people 16 years of age and older). The risk of this syndrome is higher at times of treatment initiation, dose increase, or if multiple doses are missed and then the typical dose is resumed (Smarty & Findling, 2007).

There is considerable controversy over whether it is advisable to use antidepressants to treat pediatric bipolar depressive episodes (Kowatch & DelBello, 2005; Leibenluft, 2011). Typically, this is done only if the child is at a therapeutic dose on a mood stabilizer or atypical antipsychotic and still has depressive symptoms. Even then, the concern is that the antidepressant could flip the child into an acute manic episode (Kowatch & DelBello, 2005). Clearly, more evidence-based research evaluating medication efficacy for pediatric bipolar disorder is needed. Table 3 lists the medications used to treat bipolar disorders.

### *Other Medication Issues With Pediatric Bipolar Disorder*

When working with children and families affected by bipolar disorder, it is important to discuss the need for continued maintenance treatment. For those who have had repeated episodes of severe depression or mania threatening their safety and requiring hospitalization, long-term medication strategies are essential. For children and adolescents with less severe and chronic symptoms, it is suggested that they remain on maintenance treatment for 12 to 24 months before considering a medication-free trial, with close monitoring (AACAP, 2007b). Relapses of mood episodes can be high, even with effective treatment; however, continuing psychopharmacologic treatment can prevent these episodes from becoming more frequent or severe.

Careful diagnostic clarification is necessary when a child presents with difficulty focusing, hyperactivity, and mood symptoms because ADHD and pediatric bipolar disorder can have



## *Psychotropic Medications: An Update for School Psychologists*

Table 3  
*Medications Prescribed for Pediatric Bipolar Disorder*

| Class of Medication                  | Generic Name (Trade Name)    | Side Effects  |
|--------------------------------------|------------------------------|---|
| Atypical Antipsychotics              | Aripiprazole (Abilify)       | <u>Serious</u> : metabolic disorders (diabetes), movement disorders, tardive dyskinesia, neuroleptic malignant syndrome, seizures, arrhythmias, stroke  |
|                                      | Olanzapine (Zyprexa)         |   |
|                                      | Quetiapine (Seroquel)        | <u>Less serious</u> : increased appetite, fatigue, nausea, dizziness, headache, akathisia, tremor, photosensitivity, increased prolactin  |
|                                      | Risperidone (Risperdal)      |   |
| Lithium Salts                        | Ziprasidone (Geodon)         |   |
|                                      | Lithium (Lithobid)           | <u>Serious</u> : lithium poisoning (vomiting, confusion, lack of coordination), seizures, kidney problems, hypothyroidism<br><u>Less serious</u> : tremor, increased thirst and urination, weight gain, acne, drowsiness, cognitive dulling   |
| Mood Stabilizers/<br>Anticonvulsants | Lamotrigine (Lamictal)       | <u>Serious</u> : Stevens–Johnson syndrome (life-threatening rash), multiple organ failure, blood disorders, liver failure, pancreatitis, worsened depression<br><u>Less serious</u> : nausea, dizziness, tiredness, headache, GI upset, tremor, photosensitivity  |
|                                      | Divalproex sodium (Depakote) | <u>Serious</u> : liver failure, platelet depression, other blood disorders, pancreatitis, Stevens–Johnson, psychosis, encephalopathy, confusion, polycystic ovary syndrome<br><u>Less serious</u> : weight gain, nausea, tremor, GI upset, dizziness, hair loss, depression, blurred vision, photosensitivity |

*Note.* Food and Drug Administration (FDA) approval for schizophrenia for ages 13–17 y: aripiprazole, olanzapine, quetiapine, risperidone. FDA approval for bipolar manic/mixed for ages 10–17 y: aripiprazole, olanzapine, quetiapine, risperidone. FDA approval for bipolar mania ages  $\geq 12$  y: lithium. FDA approval for autistic disorder irritability for ages 5–17 y: aripiprazole, risperidone.

overlapping symptoms or can be comorbid (i.e., both disorders are present and require treatment). The psychiatrist then decides what symptom to address first, which can be challenging. Sometimes, if children are treated for ADHD with a stimulant, their irritability may improve. However, other times a stimulant may make a child's mood symptoms worsen, requiring a mood stabilizer first before a stimulant trial may ensue to address impulsivity and hyperactivity (AACAP, 2007b).

A key differential is to determine whether severe aggression is a presenting symptom of mental illness, a reaction to being threatened, or a maladaptive response (Conner, 2004). Determining whether aggression is a manifestation of bipolar disorder or another illness, such as ADHD, PTSD, anxiety, or OCD, will influence the choice of medication. An assessment of the chronicity, frequency, and severity of the aggressive acts provides a context for this determination. If maladaptive aggression appears in the absence of antecedent social cues (i.e., no specific events are linked to the outbursts), is impulsive, out of proportion in intensity, frequency, duration, or severity, and does not terminate appropriately, then psychopharmacological intervention may be warranted (Bambauer & Connor, 2005).

Treatment of aggressive behavior usually begins with cognitive–behavioral therapy and de-escalation strategies, along with family guidance (AACAP, 2002). If therapy alone is unsuccessful and the symptoms are severe, medication may be used. It is common clinical practice to identify target symptoms in an aggressive child, such as irritability, impulsivity, or affective lability. Because

there are no specific pharmacological agents that target aggression, medication trials focus on these other symptoms. There are some drugs, including the atypical antipsychotics, anticonvulsant mood stabilizers, benzodiazepines, alpha-2 adrenergic agonists, and stimulants, that are used for their capacity to decrease aggression. Because of the possible side effects, antipsychotics are recommended only when other treatments have failed or if the child is at imminent risk for harming someone (AACAP, 2007b). The atypical antipsychotic risperidone has the best evidence-based support for treating maladaptive aggression across a variety of diagnoses (e.g., autism, conduct disorder, bipolar disorder, pervasive developmental disorder), as well as with youngsters who have below-average intelligence (McCracken et al., 2002). Mood stabilizers, such as lithium and valproic acid, are used occasionally for extreme aggression but have not consistently been shown to be effective. Although SSRIs have been found to be helpful in treating aggression in adults, there is little evidence to support their use for aggression in children (Thomas et al., 2011).

### CONCLUSION

School psychologists play crucial roles for children with psychiatric diagnoses, including identifying students who may need a more intensive evaluation by a psychiatrist and encouraging families and school personnel to recognize the significance of behaviors such as irritability, mood lability, and disengagement. The school psychologist can provide the treatment team with critical observations of how the student functions at school and assessment of the efficacy of a medication trial. Finally, the school psychologist may provide psychosocial interventions, assisting the child to develop necessary interpersonal skills.

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## Section II. Brief Information on Medications and Their Side Effects (cont.)

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### ***The Importance of Teacher Involvement in Medication Therapy***

Joseph B. Ryan Antonis  
Katsiyannis

*TEACHING Exceptional Children Plus*, 6(2) Article 1.  
<http://escholarship.bc.edu/education/tecplus/vol6/iss2/art1>

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#### **Abstract**

Over the past several decades, there has been a steady increase in the use of medication therapy to help control student behavior within schools. While psychotropic medications do not “cure” mental illnesses, they have demonstrated efficacy in helping children function better at school and within their home environment. However, it is important educators understand these medications may also pose significant risks for children, with potential side effects ranging from mild discomfort to life threatening complications. In this article, the authors review the major types of psychotropic medications, discuss the therapeutic benefits and potential side effects of medications, and provide recommendations regarding how teachers can assist to ensure the safe use of these medications.

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The Table on the following pages was excerpted from this article.

**Table 1. Common Types of Psychotropic Medication**

| Category                       | Commonly Prescribed Examples<br>Trade Name / (Generic Name)   | Desired Therapeutic Outcome   | Common Behavioral Side Effects   |
|--------------------------------|---|---|--|
| Anticonvulsants                | Depakene or Depakote ( <i>valproate or valproic acid</i> )<br>Klonopin ( <i>clonazepam</i> )<br>Tegretol ( <i>carbamazepine</i> )   | Primarily used to treat epileptic disorders, however sometimes prescribed to manage behavior problems with aggression, anger and severe mood swings.  | Agitation or mania<br>Hallucinations<br>Impulsive behavior<br>Increased aggression<br>Irritability<br>Motor/vocal tics<br>Sleepiness |
| Antidepressants                | <u>Atypical Antidepressants</u><br>Desyrel ( <i>trazodone</i> )<br>Effexor ( <i>venlafaxine</i> )<br>Serzone ( <i>nefazodone</i> )<br>Wellbutrin ( <i>bupropion</i> )<br><u>Tricyclic Antidepressants</u><br>Anafranil ( <i>clomipramine</i> )<br>Pamelor or Aventyl ( <i>nortriptyline</i> )<br>Tofranil ( <i>imipramine</i> ) | Used to treat depression, anxiety, panic, obsessions, compulsions, bed-wetting, night terrors, sleep walking, and symptoms of ADHD.   | Confusion<br>Hallucinations<br>Increased activity (e.g., rapid speech)<br>Irritability<br>Motor tics<br>Severe change in behavior    |
| Adrenergic (Antihypertensives) | Catapres ( <i>clonidine hydrochloride</i> )<br>Inderal ( <i>propranolol hydrochloride</i> )<br>Tenex ( <i>guanfacine hydrochloride</i> )  | Primarily used to treat symptoms of Tourette's, chronic tics, and ADHD. Occasionally prescribed for aggression, post traumatic stress disorder (PTSD), anxiety and bipolar disorders.   | Confusion<br>Depression<br>Sleepiness<br>Worsening of tics   |
| Antipsychotics                 | Clorzaril ( <i>clozapine</i> )<br>Haldol ( <i>haloperidol</i> )<br>Moban ( <i>molindone</i> )<br>Navane ( <i>thiothixene</i> )<br>Risperdal ( <i>risperidone</i> )<br>Thorazine ( <i>chlorpromazine</i> )<br>Zyprexa ( <i>olanzapine</i> )  | Typically used to treat psychotic disorders such as schizophrenia, and psychotic symptoms present with some mood disorders (e.g., delusional thinking or hallucinations). Atypical antipsychotics are frequently used to treat aggression in youth and reduce aggression in complex comorbid disorders. Typical antipsychotics are used as a second line of treatment for aggression in children. | Nervousness<br>Restlessness or inability to sit still<br>Sadness<br>Sleepiness   |
| Anxiolytics                    | Ativan ( <i>lorazepam</i> )<br>Buspar ( <i>buspirone</i> )<br>Klonopin ( <i>clonazepam</i> )<br>Restoril ( <i>temazepam</i> )<br>Valium ( <i>diazepam</i> )<br>Xanax ( <i>alprazolam</i> )  | Sometimes referred to as anti-anxiety medications, and are typically prescribed for short-term treatment of anxiety and sleep problems.   | Aggression<br>Excitement<br>Irritability<br>Memory loss<br>Sleepiness<br>Uncontrolled behavior                                       |

|   |   |  |  |
|---|---|--|--|
| Mood Stabilizers  | Eskalith CR / Lithonate ( <i>lithium</i> )  | Prescribed for bipolar (manic depressive) disorder, certain types of depression, severe mood swings and explosive aggression   | Confusion<br>Sleepiness  |
| Selective Norepinephrine Reuptake Inhibitors (SNRIs) ** | Strattera ( <i>atomoxetine</i> )<br>Edronax ( <i>reboxetine</i> )   | SNRIs are an older form of antidepressant that are more commonly prescribed today for dealing with motivation and concentration issues associated with ADHD.   | Anxiety<br>Agitation<br>Anxiety<br>Apathy<br>Dizziness/nausea  |
| Selective Serotonin Reuptake Inhibitors (SSRIs) **      | Celexa ( <i>citalopram</i> )<br>Luvox ( <i>fluvoxamine</i> )<br>Prozac ( <i>fluoxetine</i> )<br>Zoloft ( <i>sertraline</i> )  | Used to treat depression, obsessive-compulsive and panic disorders, eating disorders, phobias, attention deficit disorders, and chronic anxiety disorders such as obsessive compulsive disorder (OCD), and post traumatic stress disorder (PTSD) | Restlessness<br>Sleepiness   |
| Stimulants  | Adderall ( <i>Mixture of amphetamines</i> )<br>Daytrana or Ritalin ( <i>Methylphenidate</i> )<br>Desoxyn Gradumet tablets ( <i>Methamphetamine</i> )<br>Dexedrine ( <i>Detroamphetamine</i> ) | Prescribed primarily for ADHD to improve attention span, ability to complete tasks, and follow directions, while decreasing distractibility, hyperactivity, and impulsivity.   | Auditory/visual/tactile hallucinations<br>Irritability<br>Motor/vocal tics<br>Nervous habits<br>Rebound<br>Sadness |

Note 1. Table adopted from

Ryan, J. B., Reid, R., Gallagher, K., & Ellis, C. (2008). Prevalence rates of psychotropic medications for students placed in residential care. *Behavioral Disorders*, 33(2), 99-107.

## Section II. Brief Information on Medications and Their Side Effects (cont.)

*Excerpt from U.S. Food and Drug Administration (2007)*

<http://www.fda.gov/bbs/topics/NEWS/2007/NEW01624.html>

### ***FDA Proposes New Warnings About Suicidal Thinking, Behavior in Young Adults Who Take Antidepressant Medications***

The U.S. Food and Drug Administration (FDA) today proposed that makers of all antidepressant medications update the existing black box warning on their products' labeling to include warnings about increased risks of suicidal thinking and behavior, known as suicidality, in young adults ages 18 to 24 during initial treatment (generally the first one to two months).

The proposed labeling changes also include language stating that scientific data did not show this increased risk in adults older than 24, and that adults ages 65 and older taking antidepressants have a decreased risk of suicidality. The proposed warning statements emphasize that depression and certain other serious psychiatric disorders are themselves the most important causes of suicide.



## Section II. Brief Information on Medications and Their Side Effects (cont.)

### Medication Guide Revisions\*

### ***Antidepressant Medicines, Depression and other Serious Mental Illnesses, and Suicidal Thoughts or Actions***

Read the Medication Guide that comes with you or your family member's antidepressant medicine. This Medication Guide is only about the risk of suicidal thoughts and actions with antidepressant medicines. **Talk to your, or your family member's, healthcare provider about:**

- all risks and benefits of treatment with antidepressant medicines
- all treatment choices for depression or other serious mental illness

**What is the most important information I should know about antidepressant medicines, depression and other serious mental illnesses, and suicidal thoughts or actions?**

- 1. Antidepressant medicines may increase suicidal thoughts or actions in some children, teenagers, and young adults when the medicine is first started.**
- 2. Depression and other serious mental illnesses are the most important causes of suicidal thoughts and actions. Some people may have a particularly high risk of having suicidal thoughts or actions.** These include people who have (or have a family history of) bipolar illness (also called manic-depressive illness) or suicidal thoughts or actions.
- 3. How can I watch for and try to prevent suicidal thoughts and actions in myself or a family member?**
  - Pay close attention to any changes, especially sudden changes, in mood, behaviors, thoughts, or feelings. This is very important when an antidepressant medicine is first started or when the dose is changed.
  - Call the healthcare provider right away to report new or sudden changes in mood, behavior, thoughts, or feelings.
  - Keep all follow-up visits with the healthcare provider as scheduled. Call the healthcare provider between visits as needed, especially if you have concerns about symptoms.

**Call a healthcare provider right away if you or your family member has any of the following symptoms, especially if they are new, worse, or worry you:**

- |                                     |   |
|-------------------------------------|---|
| • thoughts about suicide or dying   | • new or worse irritability                           |
| • attempts to commit suicide        | • acting aggressive, being angry, or violent          |
| • new or worse depression           | • acting on dangerous impulses                        |
| • new or worse anxiety              | • an extreme increase in activity and talking (mania) |
| • feeling very agitated or restless | • other unusual changes in behavior or mood           |
| • panic attacks                     |   |
| • trouble sleeping (insomnia)       |   |

*Excerpt from U.S. Food and Drug Administration*

<http://www.fda.gov/downloads/Drugs/DrugSafety/Informationbydrugclass/ucm100211.pdf>

**What else do I need to know about antidepressant medicines?**

- **Never stop an antidepressant medicine without first talking to a healthcare provider.** Stopping an antidepressant medicine suddenly can cause other symptoms.
- **Antidepressants are medicines used to treat depression and other illnesses.** It is important to discuss all the risks of treating depression and also the risks of not treating it. Patients and their families or other caregivers should discuss all treatment choices with the healthcare provider, not just the use of antidepressants.
- **Antidepressant medicines have other side effects.** Talk to the healthcare provider about the side effects of the medicine prescribed for you or your family member.
- **Antidepressant medicines can interact with other medicines.** Know all of the medicines that you or your family member takes. Keep a list of all medicines to show the healthcare provider. Do not start new medicines without first checking with your healthcare provider.
- **Not all antidepressant medicines prescribed for children are FDA approved for use in children.** Talk to your child's healthcare provider for more information.

This Medication Guide has been approved by the U.S. Food and Drug Administration for all antidepressants.

## Section II. Brief Information on Medications and Their Side Effects (cont.)

### *Prescribing Antipsychotics in Children: Proceed With Caution*

**Medscape** MULTISPECIALTY ▾

#### *Antipsychotic Medication Prescribing Trends in Children and Adolescents*

Harrison JN, Cluxton-Keller F, Gross D  
*J Pediatr Health Care.* 2012;26:139-145

<http://www.medscape.com/viewarticle/761411>

#### **Mental Conditions in Children**

As many as 20% of children have a diagnosable mental condition that is associated with poor academic performance, interaction with the juvenile justice system, and long-term illness and unemployment in the adult years. Parents may be overwhelmed and, particularly in the case of children with conduct disorders, at risk from their child's aggressive behavior and impulsivity. It is in this context that parents and providers may turn to medications, including agents approved by the US Food and Drug Administration (FDA) for use in children as well as agents prescribed off-label. The purpose of this article is to review the current trend in antipsychotic use in children and the implications for children's health.

#### **Antipsychotic Medications and Adverse Effects**

Select antipsychotic agents are FDA approved, including both older, first-generation agents and newer agents, called "second generation" and "atypical antipsychotics." Specific indications for these agents include Tourette syndrome, behavioral symptoms associated with autism spectrum disorder, schizophrenia, and bipolar disorder. Both first- and second-generation agents are associated with adverse effects. With first-generation agents, tardive dyskinesia is the most worrisome and potentially debilitating adverse effect. Second-generation agents are associated with weight gain and changes in serum glucose and lipid levels. Although these agents have FDA-approved indications, most pediatric use is off-label. Additionally, use has expanded to very small children, with a large increase in prescriptions reported for children younger than 6 years.

Young children may be at greater risk for adverse events because of their small size and developing physiology. Younger children are also likely to be receiving multiple psychotropic medications. One study found that 80% of preschoolers who had been prescribed antipsychotics were receiving more than 1 agent.<sup>[1]</sup> The American Academy of Child and Adolescent Psychiatry (AACAP) provides a [practice parameter](#) for the use of atypical antipsychotics, which summarizes current data and describes suggested assessment and monitoring of children who are taking these drugs.

## **Factors Affecting Increased Use of Antipsychotics in Children**

A number of factors contribute to the rising trend in antipsychotic use in children.

These include:

- Acceptability of use in children: Increased use may lead to greater acceptability and vice versa, a situation that appears to be unique to the United States.
- Increased awareness: Ongoing research has demonstrated that these agents are effective in selected situations, particularly in reducing aggression and irritability.
- Limited nonpharmacologic options: A lack of both outpatient and inpatient mental health services, particularly for behavioral counseling, may contribute to increased use of pharmacologic therapies.
- Need for rapid treatments: Although evidence indicates that nonpharmacologic treatments (when available) are effective, they may require an extended period of time to demonstrate benefit. Furthermore, they may be unaffordable for many families.
- Inadequate provider reimbursement: Most mental health screening, and a sizeable share of therapy, occurs within primary care settings as a result of many of the previously mentioned factors. Limited time in that setting combined with reimbursement rates for mental health services that are lower than those for acute care visits may lead to consideration of medication as a viable option.
- Limited options for high-risk children(mental health services for incarcerated children, those in the foster care system, and those with public health insurance) have contributed to a much higher rate of psychotropic use in these vulnerable children. Underfunded mental health services may lead to use of antipsychotics to attempt to control aggressive and potentially violent behavior, particularly in juvenile correctional facilities.



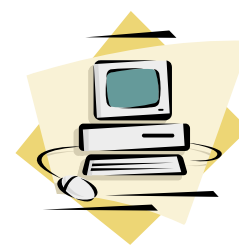
### ***Section III***

#### ***Places to Go for More Information & Support***

- **Centers, Agencies, and Advocacy Groups**
- **Additional Selected References**
- **Materials developed by our Center**
- **Quick Find**

## *Section III*

### *Places to Go for More Information & Support*



### *Centers, Agencies, and Advocacy Groups*

About Our Kids.org [www.aboutourkids.org/articles/guidetopsychmeds.html](http://www.aboutourkids.org/articles/guidetopsychmeds.html)  
American Academy of Child and Adolescent Psychiatry (AACAP) – [www.aacap.org](http://www.aacap.org)  
American Academy of Pediatrics – [www.aap.org](http://www.aap.org)  
American Psychiatric Association – [www.psych.org](http://www.psych.org)  
Center for the Study of Autism (CSA) -- [www.autism.org](http://www.autism.org)  
Children and Adults with Attention Deficit Disorders (CHADD) -- [www.chadd.org](http://www.chadd.org)  
Children and Medication Resources -- [www.vachss.com/help\\_text/children\\_meds.html](http://www.vachss.com/help_text/children_meds.html)  
General Children and Medication Resources –  
[http://www.vachss.com/help\\_text/children\\_meds.html](http://www.vachss.com/help_text/children_meds.html)  
Guide to Psychiatric Medications for Children and Adolescents –  
<http://www.aboutourkids.org/articles/guidetopsychmeds.html>  
Healthfinder – [www.healthfinder.gov/orgs/HR2480.htm](http://www.healthfinder.gov/orgs/HR2480.htm)  
Internet Mental Health – [www.mentalhealth.com](http://www.mentalhealth.com)  
Mental Health: A Report of the Surgeon General –  
<http://www.surgeongeneral.gov/library/mentalhealth/home.html>  
National Depressive and Manic-Depressive Association -- [www.ndmda.org](http://www.ndmda.org)  
National Institute of Health (NIH) -- [www.nih.gov](http://www.nih.gov)  
National Institute of Mental Health (NIMH) -- [www.nimh.nih.gov/publicat/](http://www.nimh.nih.gov/publicat/)  
National Mental Health Association (NMHA) – [www.nmha.org](http://www.nmha.org)  
Neuroscience for Kids - Tourette Syndrome – <http://faculty.washington.edu/chudler/ts.html>  
Psychiatric Medication for Children and Adolescents --  
<http://www.aacap.org/publications/factsfam/>  
Tourette Syndrome Association – [www.tsa-usa.org](http://www.tsa-usa.org)  
Understanding How Psychiatric Medications Are Approved and Used for Children –  
<http://www.aboutourkids.org/articles/understandingmeds.html>  
U.S. Food and Drug Administration/Center for Drug Evaluation and Research –  
<http://www.fda.gov/cder/drug/default.htm>

### III. Places to Go for More Information & Support (cont.)

#### ***Additional Selected References***

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### **III. Places to Go for More Information & Support (cont.)**

#### ***Materials Developed by Our Center***

The following documents can be downloaded at no cost from our website:  
<http://smhp.psych.ucla.edu>

##### **Affect and Mood Problems related to School Aged Youth**

Abstract: This introductory packet provides information on the symptoms and severity of a variety of affect and mood problems, as well as information on interventions - ranging from environmental accommodations to behavior management to medication.

**Anxiety, Fears, Phobias, and Related Problems: Intervention and Resources for School Aged Youth** Abstract: This introductory packet discusses variations in degree of problem; interventions ranging from environmental accommodations to behavioral strategies to medication.

##### **Attention Problems: Intervention and Resources**

Abstract: This intro packet serves as a starting point for increasing awareness of assessment and treatment of attention problems. Included are excerpt from a variety of sources, including government fact sheets and the classification scheme developed by the American Pediatric Association.

##### **Common Psychosocial Problems of School Aged Youth: Developmental Variations, Problems, Disorders and Perspectives for Prevention and Treatment**

Abstract: This sample packet is a guidebook which provides frameworks and strategies to guide schools as they encounter psychosocial problems. Keywords: psychosocial, attention problems, anxiety problems, affect and mood problems, prevention, treatment, developmental variation, youth, schools, resources, frameworks, separation anxiety, best practice, standard based reform.

##### **Conduct and Behavior Problems in School Aged Youth**

Abstract: This introductory packet discusses a range of conduct and behavior problems; interventions - including exploration of environmental accommodations, behavioral strategies, and medication.

##### **Continuing Education Modules on Mental Health in Schools: New Roles for School Nurses**

Abstract: This guidebook consists of three units to assist school nurses in addressing psychosocial and mental health problems seen as barriers to students' learning and performance. A subset of the nursing material will appear in video/manual self-study format produced by National Association of School Nurses with the support of the Robert Wood Johnson Foundation and National Education Association.

##### **Labeling Troubled and Troubling Youth: The Name Game**

Abstract: Underscores bias inherent in current diagnostic classifications for children and adolescents and offers a broad framework for labeling problems on a continuum; implications for addressing the full range of problems are discussed. <http://smhp.psych.ucla.edu/labeling.htm>

##### **Least Intervention Needed: Toward Appropriate Inclusion of Students with Special Needs**

Abstract: Highlights the principle of least intervention needed and its relationship to the concept of least restrictive environment; describes approaches for including students with disabilities in regular programs.



### III. Places to Go for More Information & Sup (cont.)

#### Quick Find On-line Clearinghouse

**TOPIC: Psychotropic Medication** <http://smhp.psych.ucla.edu/qf/Psychotropic.htm>

#### *About Quick Finds*

The Quick Finds section of the Center website (<http://smhp.psych.ucla.edu/>) offers topic areas that are regularly updated with new reports, publications, internet sites, and centers specializing in the topic. Click on Search and Quick Find and use the drop down topical menu to select and click on the topic you want. It should be noted that the Center's Quick Finds contain many more references of relevance and cover a variety of other matters as well.

TOPIC:

## ***APPENDIX***

### **>Medication Administration in the School Building**

### **>Policy Statement—Guidance for the Administration of Medication in School**

### **>Review of State Medication Policies/Guidelines Regarding Psychotropic Medications in Public Schools**

Medication Administration in the School Building

Policy Statement—Guidance for the Administration of Medication in School

Review of State Medication Policies/Guidelines Regarding Psychotropic Medications in Public Schools



Resources for supporting information:

[NASN's Position Statement on Delegation, 2010](#) and [AAP Clinical Guidelines for Medication Administration, 2009](#)  
[Board Statement on Non-Patient Specific Epinephrine in the School Setting, 2011](#)

## ***Medication Administration in the School Setting***

### ***Position Statement***

#### **SUMMARY**

It is the position of the National Association of School Nurses (NASN) that school districts develop written medication administration policies and procedures that focus on safe and efficient medication administration at school by a registered professional school nurse (hereinafter referred to as school nurse). Policies should include prescription and non-prescription medications, and address alternative, emergency, research medication, controlled substances, and medication doses that exceed manufacturer's guidelines. These policies shall be consistent with federal and state laws, nursing practice standards and established safe practices in accordance with evidence based information. The *Individuals with Disabilities Education Act, and Section 504*, mandate schools receiving federal funding to provide "required related service", including medication administration (O'Dell, O'Hara, Kiel, & McCullough, 2007).

#### **HISTORY**

Medication administration to students is one of the most common health-related activities performed in school. Historically, administering medication within the school setting has been a school nurse responsibility. As more chronically ill, medically stable children enter the school system each year, awareness of the factors that can promote and support their academic success increases, including the need for medications that enhance the student's overall health or stabilize their chronic condition.

#### **DESCRIPTION OF ISSUE**

There has been a dramatic increase in the range of medications used in schools, making the medication administration process in school more complex, not less (McCarthy, Kelly, Johnson, Roman, & Zimmerman, 2006). Medication non-adherence at school has been linked to a variety of poor educational, social/emotional and physical outcomes. In addition, non-adherence to medication treatment regimes can lead to an array of educational, behavioral, and academic consequences for a child with chronic health conditions (Clay, Farris, McCarthy, Kelly, & Howard, 2008).

Policies regarding administration or carrying of any medication or product should be applied consistently with all students. The school nurse should assess each request for administration or student self-administration of any medication based on school district medication policies.

The school nurse can administer medication safely and effectively while adhering to the following set of guidelines that include:

- Adherence to school district specific medication handling and administration procedures/policies, national school nurse standards of practice, state nurse practice acts and state laws governing these practices.
- The administration of a specific medication is in accordance with existing State Board of Nursing rules and regulations, school district policies, school nursing protocols or standing orders.
- District policies must address how over-the-counter (OTC) medications are received, stored, and labeled.
- Procedures must be established and periodically reviewed for receiving, storing, administering, clarifying

prescriptive orders, determining the prescribed dosage is within the safe dose range for the child's age and weight and accounting for all medications held or administered in the school setting.

- District policies must require parental consent for exchange of information between the school nurse and prescriber for clarification of administration and report of response to medication and adverse effects.
- Student confidentiality is maintained in all written and verbal communications, in accordance with FERPA regulations.
- Specific issues and procedures are addressed on a district-by-district basis including medication errors, missed doses, transportation concerns and monitoring unlicensed assistive personnel (UAP) administration.

Medication administration policies and procedures should also address the following:

#### **Delegation**

In some states, medication administration can be delegated to licensed practical nurses and UAP. Delegation by nurses is defined by the American Nurses Association (ANA) as "transferring the responsibility of performing a nursing activity to another person while retaining accountability for the outcome" (ANA/NCSBN, 2006; National Association of State School Nurse Consultants [NASSNC], 2010). Nurses remain accountable to:

- State laws, rules, and regulations;
- Employer/agency regulations, and
- Standards of professional school nursing practice, including those pertaining to delegation.

The decision to delegate is a serious responsibility that the school nurse determines on a case-by-case basis based on the needs and condition of the student, stability and acuity of the student's condition, potential for harm, complexity of the task, and predictability of the outcome (ANA, 2005). Prior to medication administration, a student assessment is completed by the school nurse. This assessment will guide the school nurse in determining if the task can be delegated and what level of training and supervision is required for safe delegation for this specific student and assignment (Gursky & Ryser, 2007). In most circumstances, a UAP is an ancillary health office staff member (health assistant/aide) who is trained in basic first aid, selected medical procedures as indicated by the needs of the school and the students served, in addition to the district health office clerical and confidentiality procedures (AAP, 2009). An audit completed by Canham, et al. (2007), highlights the importance of training in medication administration by stating that training is not a once-a-year event, but a process that is needed to ensure and sustain the safe and accurate administration of medication.

#### **Alternative Medication**

The National Center for Complementary and Alternative Medicine (NCCAM) defines Complimentary and Alternative Medicine (CAM) as "group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine." (NCCAM, 2011). Medication administration policies should reflect local and state policies related to the administration of alternative medications and treatments.

#### **Controlled Substances**

Pharmaceutical controlled substances are drugs that have a legitimate medical purpose, coupled with a potential for abuse and psychological and physical dependence. They include opiates, stimulants, depressants, hallucinogens, and anabolic steroids. The safe and effective use of controlled substances by students at school has increased dramatically because of their accepted use in treatment of illness and disability enabling many sick and disabled children to attend school.

#### **Emergency Medication**

Immediate access to emergency medication is a high priority and is crucial to the effectiveness of these life-saving interventions (AAP, 2009). The administration of emergency medications, like all medications, is regulated by state laws and guidelines as well as local school district policies and protocols. Students with medical orders for life-saving medications should have a nursing assessment, and an Emergency Care Plan, developed by the school nurse.

#### **Research Medication**

Medication prescriptions for children that do not fall within the established United States Food and Drug Administration (FDA) guidelines for pediatric use and/or dosing may fall into two categories: off-label medication and experimental medications. Off label medications are those FDA approved medications prescribed for non-approved indications in children. Pediatric experimental or investigational drugs are those medications currently involved in clinical trials. These medications are undergoing formal study to determine the efficacy and safety of pediatric dosing, but they do not have FDA approval.

Medication administration policies should address the specific requirements for administering research medication in school, including providing the school nurse with information regarding the protocol or a study summary from the research organization, signed parental permission, reporting requirements, and any follow-up nursing actions to be taken.

## RATIONALE

School nurses are in a position to influence the development and use of school medication policies. They are a valuable resource and should be utilized in the development of school district policies/procedures and consult on the creation of legislative policies relating to medication administration in the school setting (Canham et al., 2007). The school nurse is often the sole healthcare provider in the school setting, providing an expertise in health related care for students. A school nurse is the professional that has the knowledge and skills required for delivery of medication, the clinical knowledge and understanding of the student's health and the responsibility to protect the health and safety of students (AAP, 2009).

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Alternative Medication in the School Setting (Adopted: June 2001; Revised: June 2006)  
Controlled Substances in the School Setting (Adopted: November 2001)  
Rectal Medication for Seizures, The Role of the School Nurse Caring for Students Requiring (Adopted: November 2003)  
Research Medications in the School Setting (Adopted; June 2001)

## Resources for supporting information:

NASN's Position Statement on Delegation, 2010 and AAP Clinical Guidelines for Medication Administration, 2009  
Non Patient Specific Epinephrine, 2011



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## ***Policy Statement— Guidance for the Administration of Medication in School***

### **Abstract**

Many children who take medications require them during the school day. This policy statement is designed to guide prescribing health care professionals, school physicians, and school health councils on the administration of medications to children at school. All districts and schools need to have policies and plans in place for safe, effective, and efficient administration of medications at school. Having full-time licensed registered nurses administering all routine and emergency medications in schools is the best situation. When a licensed registered nurse is not available, a licensed practical nurse may administer medications. When a nurse cannot administer medication in school, the American Academy of Pediatrics supports appropriate delegation of nursing services in the school setting. Delegation is a tool that may be used by the licensed registered school nurse to allow unlicensed assistive personnel to provide standardized, routine health services under the supervision of the nurse and on the basis of physician guidance and school nursing assessment of the unique needs of the individual child and the suitability of delegation of specific nursing tasks. Any delegation of nursing duties must be consistent with the requirements of state nurse practice acts, state regulations, and guidelines provided by professional nursing organizations. Long-term, emergency, and short-term medications; over-the-counter medications; alternative medications; and experimental drugs that are administered as part of a clinical trial are discussed in this statement. This statement has been endorsed by the American School Health Association.

## *Review of State Medication Policies/Guidelines Regarding Psychotropic Medications in Public Schools*

Joseph B. Ryan · Antonis Katsiyannis ·  
Mickey Losinski · Robert Reid · Cynthia Ellis

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**Abstract** It is currently estimated that up to 6 million children take psychotropic medications for the treatment of mental health problems. The highest prevalence rates (50–76 %) are typically found among students with special needs, especially among those with ADHD and emotional disturbance. The Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973 require medications be administered by schools whenever it is deemed necessary for the child to have access to educational services. However, these requirements do not extend to all students, nor do they provide guidance regarding the safest and most efficacious manner in which psychotropic medications should be administered. The authors reviewed existing state medication policies and guidelines to assess the level of guidance currently provided to school staff. Results showed the vast majority of states (48) provided guidance related to the administration of medications to students, with slightly fewer (44) states discussing required documentation procedures. Surprisingly, only 15 states addressed monitoring students for adverse side effects of medications, and even fewer (11) states specifically discussed psychotropic medication in their policies/guidelines. The vast majority (42) of states

also addressed requirements for the safe and proper storage of medications, while slightly more than half of all states (31) provided any guidance regarding training of unlicensed personnel (e.g., secretaries) who frequently administer medications to students. The authors highlight several model guidelines/policies and review recommendations for best practice.

**Keywords** Medications · School policies · School guidelines

### **Introduction**

Approximately one out of every 5 children has a mental, emotional, or behavioral disorder severe enough to cause some level of impairment, with one of ten children experiencing extreme functional impairment (Center for Health and Healthcare in Schools (CHHS) 2007). As a result, it is estimated that on any given day up to 6 million children take psychotropic medications for the treatment of mental health problems with trends continuing to increase (Cohen et al. 2001). The underlying cause of the increasing reliance upon psychotropic medications to help manage the mental health and behavior problems among our nation's youth has been disputed. While some researchers have attributed increased prevalence rates to advances in the field of pharmacotherapy, others have argued that the recent use of direct to consumer advertising (DTCA) of prescription drugs has lowered the clinical threshold for prescribing medications (Almasi et al. 2006; Center for Health and HealthCare in Schools 2007; Ryan et al. 2008). According to Olfson et al. (2002), children and adolescents were three times more likely to use psychotropic medication in 1996 than in 1987 (use of psychotropic medication

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increased from 1.4 to 3.9 per 100 children and adolescents from 1987 to 1996). While this increase in psychotropic medication rates is dramatic, some of the highest prevalence rates are typically found among children with special needs (Runnheim et al. 1996), which can reach over three quarters among students with ADHD (52–85 %; Olfson et al. 2003;), and emotional disturbance (76 %; Ryan et al. 2008).

Psychotropic medications are a loosely defined grouping of drugs or agents prescribed to stabilize or improve behavior, emotions, cognitive function, and sleep. Essentially they are chemical substances that have the affect of altering brain function, resulting in temporary changes in perception, mood, consciousness, and/or behavior. Although psychotropic medications are typically categorized by classes based on the types of disorders or symptoms they are most commonly prescribed to treat, (e.g., antidepressants), they may also be classified by the chemical grouping of the drug (e.g., barbiturates) or by the action of the drug [e.g., selective serotonin reuptake inhibitors (SSRIs)]. Psychotropic medication includes other medications not typically classified as psychotropic when such medication is prescribed to improve or stabilize mood, mental status or behavior (e.g., an anti-epileptic medication prescribed for affective disorders). The most commonly used classes of psychotropic medications in children and adolescents include (a) antidepressants, including SSRIs (for depression, obsessive–compulsive and panic disorders, eating disorders, other anxiety disorders and ADHD); (b) stimulants (for ADHD and hyperactivity in developmental disorders); (c) antipsychotics (for psychotic disorders, bipolar and mood disorders, behavior disorders with severe agitation and aggression, tics in Tourette Syndrome and irritability in autism); (d) anxiolytics (for anxiety disorders and insomnia); (e) alpha 2 agonists (for ADHD, Tourette Syndrome, and behavior disorders with severe agitation or aggression); (f) mood stabilizers, including lithium and anticonvulsants (for bipolar disorder and behavior problems with aggression, anger and severe mood swings), and (g) selective norepinephrine reuptake inhibitors (SNRIs) (for ADHD; Ryan et al. 2008).

Psychotropic medications do not cure psychological disorders, however, they may assist students by (a) decreasing psychological symptoms, (b) improving functioning within school, home and other environments, and (c) helping increase the effectiveness of behavioral and academic interventions (Ryan and Katsiyannis 2009). Psychotropic medications also offer several other distinct benefits. They are frequently fast acting and can provide a more cost-effective option than traditional behavioral interventions because they are easier and cheaper to implement. The relative speed and cost effectiveness of psychotropic medications in reducing behavioral symptoms has helped them become a common form of treatment

especially for students with emotional and behavioral disorders (EBD) (Forness 2011), and ADHD (Connor et al. 2003). An additional benefit of prescribing psychotropic medication therapy for the treatment of common disorders such as ADHD is a significantly decreased likelihood of students experiencing comorbid disorders such as Oppositional Defiant Disorder (ODD), Conduct Disorder (CD) (Abikoff et al. 2004), and depression (Jacobs et al. 2010). However, because many of the psychotropic medications used in children and adolescents have not been rigorously studied in the age groups or the conditions for which they are commonly used, close monitoring of their efficacy is important to reduce the risk of exposure to ineffective treatments (Seida et al. 2012).

While psychotropic medications are prescribed and taken safely by millions of students each school day, all medications pose a risk for potential adverse effects occurring at any dose. In the case of psychotropic medications, the vast majority of side effects are considered minor (e.g., irritability, rash, fatigue), however, some students may experience more serious reactions such as difficulty breathing or possibly even death (Dulcan 2007). Research has shown that individuals whose bodies have difficulty metabolizing a drug may be more likely to experience adverse side effects when taking a medication (Bray et al. 2008). Side effects are a particular concern for children and adolescents. Because their central nervous systems are still developing, the range of responses to medications may vary considerably (Stahl 2013).

The majority of psychotropic medications prescribed for children are considered off-label (Zito et al. 2008) and, thus, may present an increased risk of side effects. This situation occurs when a medication is prescribed in a (a) different dose, (b) longer duration of time, (c) different medical indication, or (d) different age group than was studied and approved for use by the Food and Drug Administration (FDA; Ryan et al. 2011; Zito et al. 2000). These risks can increase when children are prescribed medications despite not being close to the age, size and weight of the adult population the medication was tested and approved for by the FDA. Further, variances in dosage, age of onset of a disorder, severity and duration of specific behaviors all make predicting the effects of medication tricky, requiring continuous monitoring to ensure student safety. This uncertainty regarding the safety profiles of many psychotropic medications was highlighted in 2004 when the FDA issued a “Black Box Warning”, the most serious type of warning in prescription drug labeling, indicating that antidepressants may increase the risk of suicidal thinking and behavior in some children and adolescents (US Food And Drug Administration 2004).

Potentially complicating matters further is the increasing popularity of prescribing more than one medication (adjunctive therapy) in pediatric populations. The use of



adjunctive therapy has grown in conjunction with the increased levels of comorbid diagnosis (e.g., ADHD and Conduct Disorder) observed among youth. This increased level of diagnostic complexity has resulted in a decreasing reliance upon unimodal forms of medication treatments (McIntyre and Jerrell 2009). While there are some instances in which adjunctive therapy (e.g., psychostimulants + alpha 2 agonists) has effectively reduced medication side effects (Adler et al. 2006), many other combinations have resulted in an increased risk of adverse side effects and drug interactions, obscuring treatment effects, and making adherence to treatment more difficult (Pappadopulos et al. 2003).

### The School's Role in Administering Psychotropic Medications

While physicians are ultimately responsible for monitoring psychotropic medication effectiveness, they cannot monitor the effects on a child's behavior and learning within the classroom, and as a result, must rely on feedback from educators. Indeed, many researchers have called upon schools and educators to take a more active role in participating in a child's medical treatment (Forness et al. 2002). Administration of psychoactive substances to the developing brains of children is a significant intervention that should be undertaken only after careful evaluation, only by a knowledgeable prescriber, and only in the context of a comprehensive treatment approach that includes a dialogue with the child's parents and educators. While this partnership between teachers, parents, and prescribing physician is an informal process, it should be carefully established and maintained. There are however, more formalized processes for medicating students in schools including legal requirements and state medication policies and guidelines.

### Legal Requirements

School personnel are required to administer medications under the related services provision of The Individuals with Disabilities Education Act (IDEA 2004) and accommodations provision under Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. § 701 *et seq.* (1973), whenever medication is deemed necessary for the child to have access to educational services. This responsibility however, does not include paying for the student's medication. In addition, public schools are not obligated to provide medical services (including administration of medication) that require the involvement of physician unless such services are intended for diagnostic and evaluation purposes (Cedar Rapids Community School District v. Garrett F 1999; IDEA 2004; Irving Independent School District v. Tatro 1984). IDEA also expressly prohibits school personnel

from requiring that medication be administered as a precondition for a child's school attendance, receiving an evaluation, or receiving any type of special education or related services on obtaining prescription medication [Section 612 (a) (25) (A)]. School personnel, however, are not prohibited from "consulting or sharing classroom-based observations with parents or guardians regarding a student's academic and functional performance, or behavior in the classroom or school, or regarding the need for evaluation for special education or related services..." related to the effects of prescription medication [Section 612 (a) (25) (B)].

### School Medication Policies/Guidelines

Given that dispensing medication during school hours is a legal requirement, it behooves state education agencies (SEA) to establish a medication policy (mandatory procedures) or guideline (recommended procedures) to ensure that schools administer medications in a safe and efficacious manner. Effective procedures require schools to determine students' need for administration of medication, supervise administration of medication, train designated school personnel to administer medication, and communicate with the health professional who prescribed the medication (Copeland 1995). There are several tasks that educators or other school personnel will be required to attend to when a student begins a course of medication. These include (a) required staff training, (b) documentation requirements, (c) procedures for administering and storing medication, and (d) monitoring students for adverse side effects. Specific recommendations from professional organizations regarding each of these areas are discussed.

### Staff Training

Before medication is dispensed at school, educators should ensure that all staff members involved with dispensing medication are properly trained, all necessary information is on hand, and appropriate procedures for dispensing and accounting for medication are in place. The American Academy of Pediatrics (AAP 2009) recommends that only trained staff members administer medication. Ideally this should be a school nurse. Unfortunately, this is seldom possible because many school nurses now are assigned to two or more schools. Unlicensed assistive personnel (UAP) who have been trained in medication procedures may administer medication under the supervision of a licensed registered nurse. The UAP should be a staff member (e.g., a health assistant/aide) who is conversant with district health procedures and trained in basic first aid. Untrained staff (e.g., a school secretary) should never administer medication to students (AAP 2009).

### *Documentation Procedures*

Before dispensing medication, schools should collect and document the following information, including: (a) written authorization from the health care provider and parents giving permission to administer medication, (b) written authorization from parents to communicate with the health care provider who prescribed the medication, (c) name and contact information of the prescribing health care provider, (d) prescribed dose and administration time(s), (e) what effects to expect from the medication, and any potential side effects (this can be obtained from the medication guidelines that come with the medication), and (f) information on how to properly store and (if necessary) dispose of medication (AAP 2009; Center for Health and Health-care in Schools; Council for Exceptional Children (CEC) 2013).

### *Administering and Storing Medications*

It is critical that medications be safely maintained, the medication regimen must be adhered to, and that all medication be properly accounted for. Recommended practice for dispensing medication should ensure: (a) medications are delivered to the school in its original container by the parent with the insert containing medication guidelines included, (b) medications are stored in a locked cabinet, (c) school nurse or physician reviews medication orders to ensure that the medication is appropriate for the student and dosages are within recommended ranges, (d) there are established procedures to ensure students receive medication as prescribed (e.g., one pill at 8:30), (e) there are established procedures in place to deal with errors (e.g., an accidental overdose, a missed a dose, or if child is given the wrong medication), (f) personnel responsible for administering medication should maintain a log of all medication dispensed, and (g) there are established procedures to notify parents when it is time to renew supplies of medication (AAP 2009; CEC 2013). In addition, students should never be allowed to carry or self-administer psychotropic medications such as stimulants in the school. Diversion of medication is a serious concern to schools, and unsupervised possession or access of a controlled substance can exacerbate the problem (Wilens et al. 2008).

### *Monitoring Student Response to Psychotropic Medication*

While physicians are ultimately responsible for monitoring psychotropic medication effectiveness, they are not able to do so directly within the educational environment, and must rely upon feedback from educators. Schools should actively monitor students' response to psychotropic

medication (Anderson et al. 2009; DuPaul and Carlson 2005; DuPaul and Stoner 2003). This is especially important for students with refractory externalizing behaviors (Molina et al. 2009). Psychotropic medication monitoring regularly occurs in many schools and, because of their training in data-based decision making and intervention with children, school psychologists are frequently called upon to evaluate psychotropic medication interventions (Roberts et al. 2009). Indeed, a national survey of school psychologists found that over half of the respondents reported being involved in monitoring medication effects (Gureasko-Moore et al. 2005). However, far fewer students were monitored than the number of students who could benefit from active monitoring (Gureasko-Moore et al. 2005).

It is recommended that schools collect (1) baseline data on students' behavior when they are not medicated, (2) data on behavior changes after medication begins, and (3) periodic assessment of maintenance (American Academy of Child and Adolescent Psychiatry 2007, 2009). This would typically be done using behavior rating scales which are simple to administer. There are a number of well validated scales that are sensitive to medication effects such as the ADHD Rating Scale-IV (DuPaul et al. 1998) and the SNAP IV (Swanson 1992). Rating scales are already in wide spread use in the schools (Gureasko-Moore et al. 2005) so there would be little additional expense. A version of the 18-item SNAP-IV is also available on line at <http://www.myadhd.com/snap-iv-6160-18sampl.html>. Rating scales also require little teacher time as many can easily be completed in 15 min or less. Schools should also monitor for possible side effects. All teachers who work with a student who receives medication should be provided information on side effects. This should include both the common and relatively minor side effects, as well as the uncommon, but much more serious side effects. Schools should have procedures for teachers to report side effects should they occur. These procedures should provide for communication with parents and health care providers.

As suggested by Roberts et al. (2009) school psychologists are the school personnel best qualified to oversee the monitoring process in the schools. The school psychologist may coordinate the monitoring, ensure that teachers completed rating scales at intervals determined by the physician (or LEA policy), collect relevant information (e.g., completed rating scales, observational data, relevant academic information), interpret results, and synthesize the information to be communicated to the physician into a brief one-to two-paragraph report which are favored by many physicians (HaileMariam et al. 2002). This process however, is a shared responsibility (Ellis et al. 2007). The school should ensure that lines of communication are established with the physician, to enable timely and effective communication of monitoring data. The physician

should communicate the desired frequency of monitoring and nature of information needed.

### Purpose of Study

The need for state education agencies (SEAs) to regulate and provide guidance for the administration and monitoring of medications within schools is clear. The purpose of this study was to determine which states currently have established policies or guidelines concerning medications, and determine whether these policies contained key elements which had been previously identified as important. The authors provide an overview of current state medication policies/guidelines and provide recommendations for states, districts and schools interested in developing their own policies or guidelines.

### Method

A search was performed to identify state policies and guidelines concerning the use, or administration of psychotropic medications in public schools across all fifty states. The websites of each SEA, state legislature and Google were searched for information concerning the administration of medications in schools. Individual keywords searched separately and in various combinations within the sites included: *school medication*, *health*, *nursing*, *guidelines*, *policy*, and *psychotropic*. In the event a state's policy or guideline could not be located, state education agencies were contacted by e-mail/phone and asked to provide copies of their policies and/or guidelines regarding the administration of medications.

Each of the 50 states policies/guidelines were assessed/coded to determine if each provided directions and/or guidance regarding 9 areas. The American Academy of Pediatrics recommends the first 5 components (i.e., administration, documentation, storage, training, and self-administration) should be included in school medication policies (American Academy of Pediatrics 2009), while the remaining components (i.e., psychotropic medications, monitoring and recommending/requiring medications) were reviewed given the increasing importance psychotropic medications have had within schools in recent years.

#### (a) Administration Procedures

Defined as any statement describing methods for administering medications to students by school employees.

#### (b) Documentation

Defined as any statement describing recording procedures to be followed when administering medications to students

(e.g., written medical authorization, a waiver of liability, and a written contract between the school nurse, the student, and the parent or guardian assigning level of responsibility to the parent or guardian, student, and school employees).

#### (c) Storage

Defined as any statement related to how student medications are to be maintained on school property (e.g., stored in a designated locked container, cabinet or closet with limited access by persons authorized to administer medications).

#### (d) Training for UAP

Defined as any statement that defined or listed the training requirements or credentials required for unlicensed assistive personnel (UAP) who would be allowed to dispense medication in the schools (e.g., required skills, hours of training).

#### (e) Self-Administration of Medications

Defined as any statement that permits students to self-medicate with over-the-counter medications and certain prescription medications (e.g., albuterol for asthma, insulin for diabetes).

#### (f) Monitoring

Defined as any statement related to staff members directly observing students for desired therapeutic and/or adverse side effects of medications they were prescribed.

#### (g) Psychotropic Medications

Defined as any portion/section/statement of state policy that directly related to the use psychotropic medications by students.

#### (h) Cannot Recommend Medications

Defined as any statement that school staff are not allowed to recommend that students take medications.

#### (i) Cannot Require Medications

Defined as any statement that school staff are not allowed to require students to be on medications to attend school.

Interobserver agreement (IOA) for coding was assessed by having two coders record data independently on 100 % of the policies/guidelines from the database. An agreement was scored only if both coders agreed that information was

either present or absent. Agreement across all variables was 93 %. Specific IOA for each of the variables was 100 % for administration procedures, 90 % for training requirements, 98 % for documentation requirements, 96 % for storage requirements, 92 % for monitoring side effects, 68 % for psychotropic medications, 96 % for recommending medications, and 100 % for requiring medications. All disagreements were resolved subsequently by discussion between coders utilizing consensus estimates.

## Results

Table 1 below provides a summary of the recommended components that are addressed by each state's medication policy and/or guideline. Results showed the vast majority of states (48) provided guidance related to the administration of medications to students, with slightly fewer (44) states discussing required documentation procedures. More than two-thirds (42) of the states addressed requirements for the safe and proper storage of medications, while slightly more than half of all states (31) provided guidance regarding training of unlicensed assistive personnel (e.g., secretaries) who administer medications to students. The least addressed component of state medication policies/guidelines related to monitoring students for side effects. Only 15 states discussed procedures for monitoring and providing feedback to prescribing physicians regarding potential side effects.

### Findings Specific to Psychotropic Medications

Perhaps one of the more interesting findings when analyzing state medication policies/guidelines was the limited number of states that specifically discussed psychotropic medications. Currently, only 11 states specifically discussed psychotropic medications within their policies/guidelines. Other findings of interest included the number of states that provided specific statements that school staff could neither recommend nor require students take psychotropic medications. In all, only 11 states declared that school staff were not allowed to recommend students take medications, while 11 explicitly stated school staff could not require students be on psychotropic medications to attend school.

## Discussion

### Quality of Medication Policies/Guidelines

While this study found that almost every state provided at least some form of policy or guideline for schools to follow

regarding medications in schools, the quality of the medication policies/guidelines varied significantly between states. While several states such as Alabama, Minnesota and Texas provide well developed medication guidelines that thoroughly address each of the recommended components of a medication policy, others were far less detailed, providing little to no guidance for educators or school districts. A point worth mentioning is approximately half of all states (26) placed the responsibility of developing a policy for medication administration directly upon the school districts themselves. Fortunately, many of these states did still provide some specific guidance as to what provisions should (e.g., storage requirements) or should not (e.g., schools requiring students to be medicated to attend school) be included in each policy. In all, there were a half dozen states that provided little to no guidance for school systems other than information specific to asthma medications.

In the next section, we provide a discussion of each recommended component of a state medication policy, including (a) administration procedures, (b) training of personnel, (c) documentation requirements, (d) storage requirements, (e) monitoring procedures, and (f) psychotropic medications. We also provide examples from specific state policies that would best serve as models for other states and schools to replicate.

### Administration Procedures

Administration procedures provide specifics concerning which personnel (i.e., school nurses, unlicensed assistive personnel) are authorized to assist with the administration of prescription medications to students. The majority of states required a written request or authorization from a parent or legal guardian prior to administering medications. Many states also provided guidance for self-administration of medications, with most specifically addressing asthma and anaphylaxis medications. Colorado, Kansas, Maine, New Mexico, Pennsylvania and Texas all provide excellent practitioner friendly guidelines for schools outlining medication administration procedures. Critical components of these state guidelines include: (a) roles and responsibilities (e.g., parents, nurse, unlicensed personnel), (b) detailed administration procedures for the common forms of medications (e.g., oral, inhalants, liquids), (c) precautions to take while administering the various types of medications (e.g., do not crush capsules), (d) procedures in the event of a medication incident (mistake) in administration (e.g., wrong dosage, medication), (e) off-site (e.g., field trip) administration procedures, (f) dealing with student refusal, and (g) provide a detailed administration checklist that outlines a step by step procedure for administering medications to help reduce the number of incidents within a school.

**Table 1** Components of state medication policies/guidelines

| State | Admin procedures | Documentation requirements | Storage requirements | Training unlicensed personnel | Self-admin | Monitoring side effects | Addresses psych meds | Cannot recommend meds | Cannot require meds |
|-------|------------------|----------------------------|----------------------|-------------------------------|------------|-------------------------|----------------------|-----------------------|---------------------|
| AL    | P/G              | P/G                        | P                    | P/G                           | P          |                         | P                    | P                     | P                   |
| AK    | G                | G                          | G                    | G                             | P/G        |                         |                      | P                     |                     |
| AZ    | P                | P                          |                      |                               | P          |                         |                      |                       |                     |
| AR    |                  |                            |                      |                               | P          |                         |                      |                       |                     |
| CA    | P/G              | P/G                        | P/G                  | P/G                           | P          | P                       |                      |                       | P                   |
| CO    | P/G              | P/G                        | P/G                  | G                             | P/G        | G                       | G                    | P                     | P                   |
| CT    | P                | P                          | P                    | P                             | P          |                         |                      | P                     | P                   |
| DE    | P                | P                          | P                    |                               | P          | P                       |                      |                       |                     |
| FL    | P/G              | P/G                        | P/G                  | G                             |            |                         | P                    |                       | P                   |
| GA    | P                | P                          | P                    | P                             |            |                         |                      |                       |                     |
| HI    | P                | P                          |                      |                               | P          |                         |                      |                       |                     |
| ID    | P                |                            |                      |                               |            |                         |                      |                       |                     |
| IL    | P/G              | P/G                        | P                    | G                             | P          | P                       |                      | P                     | P                   |
| IN    | P                | P                          |                      |                               | P          |                         |                      |                       |                     |
| IA    | P/G              | P/G                        | P/G                  | P/G                           | P          |                         |                      |                       | P                   |
| KS    | P/G              | P/G                        | P/G                  | P/G                           | P          |                         |                      |                       |                     |
| KY    | P/G              | P/G                        | P/G                  | P/G                           | P          |                         |                      |                       |                     |
| LA    | P                | P                          | P                    | P                             | G          |                         |                      | P                     | P                   |
| ME    | P/G              | P/G                        | P/G                  | P/G                           | P          |                         |                      |                       |                     |
| MD    | P/G              | P/G                        | P/G                  | G                             | P          | G                       |                      |                       |                     |
| MA    | P/G              | P/G                        | P/G                  | P                             | P          | P                       | P                    |                       |                     |
| MI    | P/G              | P/G                        | G                    | P                             | P/G        | P/G                     |                      |                       |                     |
| MN    | P/G              | P/G                        | P/G                  | P/G                           | G          | G                       |                      | P                     | P                   |
| MS    | P                |                            |                      |                               |            |                         |                      |                       |                     |
| MO    | P/G              | G                          | G                    | G                             | P/G        | G                       |                      |                       |                     |
| MT    | G                | G                          | G                    |                               | P          |                         |                      |                       |                     |
| NE    | P/G              | P/G                        | P/G                  |                               |            |                         |                      |                       |                     |
| NV    |                  |                            |                      |                               |            |                         |                      |                       |                     |
| NH    | P/G              | P                          | P/G                  |                               |            | P                       | P                    |                       |                     |
| NJ    | P                |                            |                      | P                             | P          |                         |                      |                       |                     |
| NM    | P/G              | P                          | G                    | P/G                           | P          |                         |                      |                       |                     |
| NY    | P/G              | P/G                        | G                    | G                             | G          |                         |                      |                       |                     |
| NC    | P/G              | G                          | G                    | G                             | G          | G                       | P                    |                       |                     |
| ND    | G                |                            | G                    |                               |            | G                       |                      |                       |                     |
| OH    | P                | P                          | P                    | P                             |            |                         |                      |                       |                     |
| OK    | P                | P                          | P                    |                               |            |                         |                      |                       |                     |
| OR    | P/G              | P/G                        | P/G                  | P/G                           |            |                         |                      | P                     |                     |
| PA    | P/G              | P/G                        | P/G                  |                               | G          |                         |                      |                       |                     |
| RI    | P/G              | P/G                        | P/G                  |                               | P          |                         |                      |                       |                     |
| SC    | P/G              | P                          | P/G                  |                               |            |                         |                      |                       |                     |
| SD    | P                | P                          | P                    |                               | P          |                         |                      |                       |                     |
| TN    | P/G              | P/G                        | P/G                  | G                             | P          |                         | P                    |                       |                     |
| TX    | P/G              | P/G                        | G                    | G                             | G          | G                       | P/G                  | P                     | P                   |
| UT    | P                | P                          | P                    | P                             | P          |                         | P                    | P                     | P                   |
| VT    | P/G              | G                          | P                    | G                             |            | P                       |                      |                       |                     |
| VA    | P/G              | P/G                        | P/G                  | P                             | P          | G                       | P                    | P                     |                     |
| WA    | P/G              | P/G                        | P/G                  | G                             |            |                         |                      |                       |                     |
| WV    | P                | P                          | P                    |                               | P          |                         | P                    |                       |                     |
| WI    | P/G              | P/G                        | P/G                  | G                             |            |                         |                      |                       |                     |
| WY    | P                | P                          | P                    |                               |            |                         |                      |                       |                     |

P = state policy

G = additional guidelines

## Training Requirements

Currently, only 31 states provide guidance regarding training for UAP who administer medications to students. This is serious concern given the increasing number of UAPs currently tasked to administer student medications given the reduction in the number of school nurses due to budgetary limitations. The American Academy of Pediatrics (AAP 2009) policy statement on administration of medication in schools recommends that only trained staff members administer medication. Allowing untrained staff to administer medication to students creates risks for students and also exposes the school to possible medical liability. Alabama, Colorado, Maine, Minnesota and Virginia all provide comprehensive guidelines for training unlicensed personnel. For example, Maine's training guidelines encompass: (a) legal and ethical responsibilities (e.g., HIPPA regulations), (b) available resources, (c) basic anatomy and physiology related directly to the administration of medication, (d) scheduling and timing of administration of medications, (e) method of administration, including measurement of dose, and supervising self-administration, (f) recognition of medications, (g) preparation and administration procedures, (h) reading prescriptions (e.g., abbreviations), (i) proper storage, transportation and disposal of medications, and (j) characteristics of children's growth and development. Given the number of newly released medications as well as the updated research concerning the efficacy and side effects of medications, we concur with Tennessee's recommendation that this training be conducted on an annual basis.

## Documentation Requirements

The majority of all states (44) provide guidance regarding documentation procedures required by school staff. Many states provide succinct, yet comprehensive requirements in a checklist manner for school staff to follow. Connecticut provides perhaps the most detailed documentation requirements for all students receiving assistance with medication, including the: (a) name of student, (b) name of the medication, (c) dosage of the medication, (d) route of administration, (e) frequency of administration, (f) name of the authorized prescriber, (g) dates for initiating and terminating the administration of the medication, (h) quantity received which shall be verified by the adult delivering the medication, (i) any student allergies to medicine, (j) date and time of administration or omission including the reason for the omission, (k) dosage of drug administered, (l) full written or electronic legal signature of the nurse or qualified personnel for schools administering the medication. Many states mandate medication records be transcribed in ink, and be maintained for a period of 3 years.

## Storage Requirements

Surprisingly not every state (42) provides explicit requirements for the storage of medications. Many policies/guidelines merely stated that storage of medications must be addressed. Colorado and Connecticut provide in-depth guidance for the care and storage of medications, including procedures for: (a) controlled substances, (b) refrigeration standards (e.g., proper temperatures), (c) disposal of expired medications, and (d) storage of self-administered medications. While all medications should be locked and stored in either a secured drawer, refrigerator, or cabinet that is in an area inaccessible to children, emergency medicines (e.g., epinephrine) must be immediately available to personnel at all times when students are present. The safe and secure storage of medications is particularly important given many medications (e.g., stimulants) are controlled substances subject to possible misuse by students.

## Monitoring Students

The efficacious use of medications, particularly psychotropic medications requires monitoring students for desired behavioral outcomes, as well as potential side effects. Unfortunately, only 15 states currently discuss procedures for monitoring and providing feedback to prescribing physicians regarding side effects. Regrettably, many policies/guidelines from states that did provide guidance were very generic. While no state provided a comprehensive set of guidelines, the combination of guidelines offered by Virginia and Minnesota provide a good starting point. Chief among those recommendations included the development of an individual health plan (IHP) for each student taking prescribed medications at school. The IHP should address methods of communicating with concerned parties (e.g., physicians, pharmacists, school nurse, teachers, parents) and documentation of medication administration including refusal to take medication and possible reactions to medications (e.g., a student's fatigue level due to a change in dosage of Risperidone). Additionally, the IHP would provide an outline for how medication is to be administered including: (a) who administered it, (b) when, (c) the dosage, (d) the effect of the medication, and (e) any side effects or reactions.

Failure to monitor students after administering medications places them at risk given the number of dangerous side effects (e.g., seizures) associated with many psychotropic medications, which may in turn place schools potentially at risk for law suits. If school personnel elect not to become active participants in the medication monitoring process, physicians will likely make decisions regarding a child's behavior that might not accurately



reflect their classroom needs (Oswald 2002). Consequently, the authors believe that not including school staff in the pharmacological process may limit the potential benefits a medication might afford a child, and negatively impact their educational performance.

### Psychotropic Medications

Despite several decades of increased use of psychotropic medications among our nation's youth, only 11 states had a medication policy that directly addressed the use of these medications in school. The vast majority of these merely broached the topic to prevent staff members from either recommending or requiring students take psychotropic medications. Given that some psychotropic medications are controlled substances, and the growing concerns about psychotropic medication misuse and abuse (e.g., students selling medication or using it to "get high"), it would behoove schools to ensure their medication guidelines/policies address psychotropic medications. Texas was the only state that provided guidance on the administration of psychotropic medications in the educational settings by school personnel. While their guidance was limited, they did strongly suggest that administration of these medications be performed by licensed health care professionals (e.g., school nurse). Considering the complexities surrounding the use and administration of psychotropic medications (e.g., off-label clinical-trial of medications) it is imperative that states develop guidelines that would include: (a) development of an IHP; (b) methods for communicating effects and information with relevant stakeholders (e.g., school-nurse, physician, parent, teacher); (c) procedures for the safe storage and administration of psychotropics to address possible misuse by students; (d) procedures for monitoring students, particularly when a change in medication has taken place.

### Staff Recommending Medications

Teachers have traditionally held a pivotal role in the identification and treatment of students who display behavioral deficits and/or excesses such as those with ADHD (Snider et al. 2003). However, we would concur with Reid and Johnson's (2012) position that it is important for educators not to provide recommendations either for or against medication therapy. There are a number of reasons for this recommendation. First and foremost, educators lack the necessary professional training to do so competently. Researchers have consistently shown that teachers have very limited knowledge of medication therapy commonly used to treat students with ADHD (Ryan et al. 2008; Snider et al. 2003). Consequently, the decision to medicate is one that should be the province of the parents and a qualified physician. Second, many parents report conflicting emotions over

whether to medicate, fears about effect of medication, pressure from family and friends to refrain (or to medicate), guilt, and, unfortunately, pressure from educators to medicate their child (Bussing and Gary 2001; Jackson and Peters 2008; Singh 2004). We would argue that educators should not contribute further to the stress parents experience over the decision to medicate. Parents could also misconstrue a well intended recommendation as being something required by the school. We would also note that currently in 11 states recommending medication is prohibited. For example, the Oregon policy strictly prohibits any school employee from recommending to a parent or guardian that a student seek a prescription for a medication that will affect or alter the thought processes, mood, or behavior of student.

### Schools Requiring Medications

Individuals with Disabilities Education Act 2004 states that neither a SEA nor any Local Educational Agency (LEA) personnel can require a child with a disability or one suspected of having a disability to obtain a prescription for a medication covered by the Controlled Substance Act, 21 U.S.C. § 801 *et seq.* (1970) as a condition for (a) attending school, (b) receiving an evaluation, or (c) receiving any type of special education or related services [Section 612 (a) (25) (A)]. However, this condition does not apply to students outside of special education. Hence, policies clearly stating that schools cannot condition attendance tied to taking medication for "any" student is critical. For example, Utah's medication policy prohibits school personnel from requiring any student to take or continue to take a specific medication as a condition for attending school.

### Limitations

In some cases, state medication policies were housed within departments other than education (e.g., public health) and it is possible that some states may have policies within other organizations (e.g., detention centers, hospitals) that are not directly related to the school setting. Our review found the existence of recommended guidelines outnumbered the existence of specific state policies of legislation, meaning that schools and school districts are not bound by them. It is also important to recognize that our efforts to find and analyze these policies/guidelines may have overlooked existing documents. Consequently, our results should be interpreted with some caution, as more guidance may exist than reflected in our analysis. The low inter-observer agreement rate for psychotropic medication being discussed was due to many states policies/guidelines using vague definitions inferring the policies applied to all types of medications.

Another significant limitation is that while many states have established medication guidelines for school systems, research has demonstrated that full compliance with guidelines is traditionally very poor because they are not required and, thus, actual changes in practice may be slow. For example, Epstein and Langberg (2009) reported that while the American Academy of Pediatrics (AAP) has published guidelines on evidence-based recommendations for the assessment and treatment of children with ADHD for over a decade, compliance rates by primary care physicians has been very low. For instance, while AAP guidelines call for the use of standardized parent and teacher rating scales to formally assess/diagnose ADHD and monitor psychotropic medication effectiveness, relatively few physicians do so. The authors found only half (52 %) of primary care physicians used parent or teacher inputs to diagnose ADHD, and very few (9 %) reached out to them to monitor medication efficacy. Furthermore, a comparison of pediatricians' ADHD management practices before and after the dissemination of ADHD Pediatric Practice Guidelines found that, although increasing adherence was noted over time, there were still a large number of practices noncompliant with the guidelines (Wolraich et al. 2010). Similar findings were found when evaluating split model systems of care in which a psychopharmacologist prescribes medication, while different kinds of therapies are provided by clinicians (e.g., psychologist, social worker). Researchers found that relatively few (15 %) of these professionals provided feedback to each other (Avena and Kalman 2010).

Lastly, given an increasing number of medications are becoming available in controlled release formulations either orally (e.g., multiple bead system, osmotic controlled release) or through medication patches (e.g., micropore membrane release) many children may only be administered medications in their homes. Hence, while policies regarding student monitoring will continue be important, there is an increased likelihood school staff will often be unaware of which students are taking medications unless the parents or physicians elect to disclose such information.

## Conclusion

In conclusion, our findings suggest that several critical gaps exist in many state medication policies/guidelines, including a lack of (a) comprehensive medication policies/guidelines (a) required training for UAP administering medications to students, (b) monitoring procedures for potential side effects, and (c) policies that address the use of psychotropic medications. Future research should investigate (a) whether states have any mechanism or oversight to measure the degree to which schools comply with existing medication policies, and (b) the degree to

which schools provide feedback to prescribing physicians regarding the therapeutic benefits and adverse side effects impacting the student's experience.

Medication therapy will continue to be a controversial topic due to the (a) sustained increase in prevalence rates among youth taking psychotropic medication, (b) potential risk of adverse side effects, (c) use of off label (not FDA approved) medications, (d) lack of clear understanding of how psychotropic medications work, and (e) variability within diagnostic criteria. School personnel are also likely to experience a spike regarding requests for covered medical services and medication in particular, in light of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101 *et seq.* (1990) (amended 2008). These amendments require that “the determination of whether an impairment substantially limits a major life activity shall be made without regard to the ameliorative effects of mitigating measures such as medication [42 U.S.C. 12101 § 3 (4) (E)(i)]. Consequently, a child with ADHD whose inattention is managed through psychotropic medication will still be covered under ADA/Section 504 although there is no major life activity affected (Rozalski et al. 2010). Finally, despite the potentially serious adverse effects of medications, particularly psychotropic medications, it is important to recognize that medication therapy has proven to be an efficacious form of treatment to help some children with emotional and behavioral problems manage their symptoms for the past several decades. Optimizing a psychotropic medication's efficacy can be greatly enhanced by staff following recommended best practices which should be readily accessible to all personnel through a comprehensive medication policy or guideline.

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