

# Chapter 7

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## TREATMENTS AND CARE PLANS

Special Education: Children With Special Health Care Needs

Children with Disabilities

Children Requiring Special Health Care Procedures

Learning Disabilities

Chronic Illness Protocols



## **Special Education: Children With Special Health Care Needs**

Children with special health care needs comprise a wide range of disability, including HIV, chronic kidney disease, developmental delays, spina bifida, and cerebral palsy. Increased medical technology, more tolerant social attitudes towards disability, and greater efforts towards federal and local legislation have all combined in recent years to allow a greater number of children with special needs to attend school. These children may require special services from their school, including medication administration, assistance with activities of daily living, individual and emergency health care plans, and coordinated interventions from school personnel, health care providers, and the student's family.<sup>1</sup>

This section will address the general issues related to educating children with special health care needs. Resources for the school nurse and personnel are included both within the text and at the end of this section.

### **The Law**

#### **Individuals with Disabilities Education Act**

The Individuals with Disabilities Education Act (IDEA; see Appendix A of this manual) protects school-aged children from discrimination because of their disability.<sup>2</sup> To receive special education under IDEA, a child must have one or more disabilities listed by the law and the child must require special education and related services because of the disability. IDEA defines the term “child with a disability” as a child

With mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance, orthopedic impairments, autism, traumatic brain injury, other health impairments, specific learning disabilities, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.<sup>3</sup>

“Related services” are defined as follows: transportation, and such developmental, corrective, and other supportive services—including speech language pathology and audiology, psychological services, physical and occupational therapy, recreation

(including therapeutic recreation and social work services), and medical and counseling services (including rehabilitation counseling), except that such medical services shall be for diagnostic and evaluation purposes only—that may be required to assist a child with a disability to benefit from special education.<sup>4</sup> The term also includes school health services, social work services in the schools, and parent counseling and training.<sup>5</sup>

States and local educational agencies have the discretion to expand on this definition for children ages 3 to 9 years. The 1997 amendments to IDEA emphasize the importance of including children with disabilities in regular classrooms. Regular classroom teachers should also be involved in the Individualized Education Program (IEP). The IEP, which is developed in conjunction with the school district's Admission, Review and Dismissal (ARD) Committee, should include program modifications and supports that will help the child succeed in a classroom. Parents/guardians must be involved in the development of their child's IEP. An IEP that complies with IDEA requirements simultaneously fulfills the requirements of Section 504 of the Rehabilitation Act<sup>6</sup> (see below). Information that should be contained in the IEP is described in detail in 19 Texas Administrative Code § 89.1055, which is included in Appendix A of this manual.<sup>7</sup>

For a student to receive “related services” under IDEA, the student must first be evaluated by a physician. This assessment should be reviewed by the school nurse, and any additional relevant information from the school health record should be included in the written report. The nurse should then review this evaluation and make recommendations about the services or program modifications the student will need based on the health assessment.

The United States Supreme Court has articulated criteria to be used to determine if services needed by a student are “related services.” These criteria include **only** those necessary to aid a handicapped child to benefit from special education, and those provided only if they can be performed by a nurse or other qualified person, not if they must be performed by a physician.<sup>8</sup>

Subsequent decisions by lesser courts have further refined these criteria. These court decisions concluded that the intensive nature of the services some students need are beyond the scope of the “related services” all schools are required to provide. Each court held that there must be reasonable limitations on the nursing and supportive services

required under IDEA, and that the determination is not based simply on whether the service is provided by a nurse or a physician.<sup>9</sup>

### **Section 504**

Some children with disabilities may not meet the strict criteria of IDEA, but may still qualify for services at school. (See Exhibit 2 for a comparison of IDEA and Section 504.) Section 504 of the Rehabilitation Act of 1973 (see Appendix A) is a civil rights provision, which prohibits discrimination on the basis of handicap by recipients of federal funds. The law states that

... no otherwise qualified individual with handicaps in the United States ... shall solely by reason of her or his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.<sup>10</sup>

Schools that receive federal funding must comply with this Act by providing whatever services are necessary to allow disabled students to participate fully in the educational services offered.

Section 504 identifies an individual with a disability as any person who:

Has a physical or mental impairment which substantially limits participation in one or more major life activities such as caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working and has a record of such an impairment or is regarded as having such an impairment.<sup>11</sup>

A “physical or mental impairment” is defined as any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological; musculoskeletal; special sense organs; respiratory, including speech organs; cardiovascular; reproductive; digestive; genito-urinary; hematic and lymphatic; skin; and endocrine or any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities.<sup>12</sup>

Diabetes, seizure disorders, and asthma or chronic allergies are just a few examples of physiological disorders that can place affected students at risk for severe health problems and/or emergencies. Blood sugar fluctuations, asthma or allergy attacks, and seizures are events that impact “major life activities” as described above. Reasonable accommodations can, and should be, planned and documented in a “504” plan by the designated “504” case manager in each school district. The written “504” plan provides for clearly understood and accepted interventions that support the child and school personnel. Under Section 504, this plan must exist in writing and reflect that a group of persons knowledgeable about the student convened and specified planned services, although it does not have to be a formal individualized health care plan (IHP). Personnel involved in the education of the student with a chronic illness or disability should be educated about the student’s needs.<sup>13</sup> (See Exhibits 3 and 4.)

### **Americans with Disabilities Act**

The Americans with Disabilities Act of 1990 (ADA) specifies that public entities and public accommodations must ensure that individuals with disabilities have full access to and equal enjoyment of all facilities, programs, goods, and services. In short, the ADA extends the rights of Section 504 to public accommodations such as restaurants, museums, etc. An important inclusion in this extension is private schools. Specifically, Title III of the ADA “prohibits discrimination on the basis of disability in public accommodations, such as schools operated by private entities . . .”<sup>14</sup> (See Appendix A for the text of the ADA, as well as for pertinent laws regarding private schools.)

### **The Role of the School: The Individualized Health Care Plan (IHP)**

School districts need to know the prevalence in their schools of children and adolescents with special health care needs. The school system should conduct a health needs assessment to evaluate the number and type of students with special health care needs in the school population each year. Appropriate services can be planned and implemented with this information. This school assessment should include all children with special health care needs and not be limited solely to those requiring special education services and/or Individualized Education Plans (IEPs) through IDEA. The student health needs assessment forms the basis for development of the health service program, and serves to identify students in need of individualized care planning. When a student has a health-related condition, a health assessment should be conducted by a healthcare provider and reviewed by the school nurse. Based on this assessment, the school nurse identifies those

health issues that are relevant to the student's educational progress and recommends services or program modifications that the student requires. School systems have a responsibility to educate staff, students, and parents and to provide planning and services for children with special health care needs. Thoughtful planning promotes quality care for students with special health care needs in the school and minimizes any potential for liability, which may be a concern of many school personnel.<sup>15</sup>

The school district is obligated to develop IHP policies and procedures in compliance with federal, state, and local health laws, state and federal education laws, state and federal confidentiality laws, and standards of practice for nursing and medicine.<sup>16</sup>

The inclusion of students with special health care needs in the school setting benefits both students with special needs and their peers. For children and adolescents with special needs, it means opportunities to share the spontaneous experiences from which children learn, grow, and develop social skills. For all children and adolescents, it means opportunities to learn about and experience inclusion. The children's peers, teachers, and other school personnel need to be aware of and understand the needs of children with disabilities and recognize the impact they may have on the child's performance.<sup>17</sup>

Different children have different special health care needs. School districts have a responsibility to provide training regarding specific health conditions. And, although there is no single training program that can familiarize school nurses and other health care personnel with all the health needs they may encounter, there are a wide variety of training materials available, some of which are included in the resources section at the end of this chapter (see Exhibit 1).

### **Role of the School Nurse**

The **IHP** is a collaborative process that includes the student's parent or guardian, the student (when appropriate), the school nurse, the school physician, other school staff, community health providers, and medical specialists. The school nurse should be identified as the student's case manager, and resources in the community should be identified as needed. The school nurse is responsible for coordinating and/or developing the IHP. The nurse, along with other school health personnel, is the link between the student/parents and other school personnel, and between school personnel and community health care providers in primary and tertiary care settings. Schools and districts may develop their own policies regarding which students, in addition to those

with legal mandates, will have an IHP. The school nurse should participate in these decisions.

IHPs are individualized to each student's medical, nursing, and educational needs. The IHP is reviewed and revised on a yearly basis, or more frequently if necessary. The plan is designed to identify health services the child will need during the school day and develop ways to meet those needs. It should support the child's participation in school activities both inside and outside of the classroom. The plan should provide for the performance of health care procedures with minimal disruption of the student's school day. The IHP should also contain an Emergency Care Plan (ECP) for each student.

**Planning.** The planning process of the IHP should begin with a comprehensive assessment of the student's needs, including a physical exam, identification of psychosocial strengths and barriers, family resources, available community resources, medical equipment or technology needed for the student, and a review of the current orders for treatment by the health care provider. The assessment often will include a home visit by the school nurse. Schools may need to provide interpretive services if the family's primary language is not English. The assessment itself should always be performed by either a physician or a school nurse; it cannot be delegated to unlicensed health care personnel (UHP).<sup>18</sup> When the IHP is complete, it should be: (1) signed by the school nurse who wrote the plan, the student's parents or guardian, and the student's primary health care provider; and (2) attached to the student's IEP or school health record. (See Exhibit 9 at the end of this section for a sample IHP.)

Any training that will be needed for the nurse or other school personnel should also be identified at this meeting.<sup>19</sup> Training should be completed for staff who will be involved with the student, including teachers, lunchroom staff, bus drivers, etc. Some elements of training may be specific to a particular student and require one-on-one training (i.e., by a family member); others are more generic to students with special health care needs in general and can be conducted in a group setting (i.e., seizure management). The school nurse is often responsible for this training, but it may occasionally be conducted by the child's family, the primary health care provider, or other members of the community, including emergency personnel or consultants.<sup>20</sup>

School nurses who have a comprehensive and family-based view of the stressors of caring for a child with special needs can assess for risk for poor coping in



these families as needed. Assessing for evidence of some of these problems is well within the scope of the school nurse's practice. Many of these issues can be anticipated and resolved through education and counseling. Nurses can help by providing well-coordinated care and effective communication with the multiple providers involved with these students.<sup>21</sup>

## **Children with Disabilities**

Students are termed "disabled" because they have real, persistent, and substantial individual differences and educational needs that regular education has been unable to accommodate. These individual differences vary widely, from medical conditions such as cerebral palsy, to dyslexia, to pervasive and chronic maladaptive patterns of behavior. Many of these students will not be considered disabled once they leave school. Nonetheless, their specialized learning needs are intense and legitimate. Schools receiving federal funds face major challenges in addressing these needs effectively.<sup>22</sup>

### **Eligibility**

Federal legislation, with IDEA, has mandated since 1975 that all states provide free, appropriate public education to all students with disabilities.<sup>23</sup> Today, special education for students with disabilities is the largest special program in public schools. The number of elementary and secondary students receiving special education has increased from 3.7 to 4.6 million nationally.<sup>24</sup> Students with disabilities are an extremely heterogeneous group, varying by type and severity of disability, as well as by the many variables found in the population at large, such as income, family characteristics, temperament, and intelligence. This heterogeneity means that some students have highly specialized educational needs, such as sign language interpretation or occupational therapy. In general, students in special education will require greater than normal consistency and intensity of instruction, greater individualization of both academic content and pacing, and greater emphasis on behavior management.

Students who have a disability are typically identified and referred for evaluation by their classroom teachers, or by parents or healthcare providers. Early and prompt identification and referral of these students is crucial, and is mandated in 19 Texas Administrative Code § 89.1011, which states:

referral of students for possible special education services shall be a part of the district's overall, regular education referral or screening system. Prior to referral, students experiencing difficulty in the regular classroom should be considered for all support services available to all students, such as tutorial, remedial, compensatory, and other services. This referral for assessment may be initiated by school personnel, the student's parents or legal guardian, or another person involved in the education or care of the student.<sup>25</sup>

Once referred, students are entitled to a multidisciplinary evaluation provided by specialists competent in each area of suspected disability. If the Admission, Review and Dismissal (ARD) Committee finds that that the student has a disability, and needs special services, then he or she is entitled to receive services under IDEA.<sup>26</sup> (Legal eligibility criteria for the types of disabilities covered under IDEA can be found in 19 Texas Administrative Code § 89.1040, included in Appendix A of this manual).<sup>27</sup> Once eligibility is determined, the school develops an individualized education plan (IEP) laying out goals for the student, proposed placement, and services to be provided by the school district. Parental consent is required before a student can be evaluated, services provided, or the student's placement changed.<sup>28</sup>

### **Types of Disabilities**

The majority of students (51%) served under IDEA have a learning disability as their primary disability; 22% have speech or language impairments; 11% have mental retardation as their primary disability; 9% have serious emotional disturbances; and 7% have hearing or visual impairments, orthopedic impairments, autism, traumatic brain injury, or multiple disabilities.<sup>29</sup> The legal definitions of disabilities covered within the above listed categories are described in 34 Code of Federal Regulations § 300.7, and are included in Appendix A of this manual.<sup>30</sup> The topic of learning disabilities will be covered extensively later in this chapter.

**Speech and Language Disorders.** Approximately half of the students in this category have a speech disorder, usually involving difficulties with articulation. Disorders of articulation can generally be improved or resolved with speech therapy, though doing so

may take months or years. Language impairments, on the other hand, often result in substantial learning problems. Students with language impairments will have difficulty with language comprehension, expression, word-finding, and speech discrimination. Language impairments are often first noticed because of the student's significantly delayed speech. Delayed speech may be associated with early hearing loss, which also correlates strongly with delayed or inadequate vocabulary development, reading, and general academic development.<sup>31</sup>

The major causes of language impairments are mental retardation, hearing impairment, central nervous system dysfunctions (generally in the form of learning disabilities), and environmental factors such as lack of stimulation. Determining causes with precision in individual cases is often not possible. In fact, classifications based on causation have not proven useful for remediation, and so professionals are generally advised to base interventions on an assessment of the individual student's language abilities. Treatment by a language therapist generally leads to improvement in functional communication skills, although the treatment cannot usually be expected to eradicate the problem.<sup>32</sup>

**Mental Retardation (MR).** The severity of mental retardation is classified as mild (generally defined as an IQ between 50-55 and 70, accompanied by deficits in adaptive behavior), moderate (IQ of 35-40 to 50-55), severe (IQ of 20-25 to 35-40), or profound (IQ below 20-25). Roughly 75-85% of those with mental retardation fall in the category of mild mental retardation (MMR).<sup>33</sup> Using a cutoff of 50 IQ points to divide students into different classifications is arbitrary, since students may show either mild or severe mental retardation as a result of the same diagnosis, such as Down's syndrome. As a group, however, students with moderate-severe mental retardation are more likely to show signs of serious conditions with neurological complications, such as Down's syndrome, cerebral palsy, epilepsy, hearing impairment, visual impairment, and other structural, chromosomal, or metabolic birth defects affecting the central nervous system.

Nationally, African-American students are more than twice as likely as whites to be diagnosed as having MMR. Researchers have only a limited understanding of the reasons for this disproportionate representation. Causes most commonly proposed are poverty and cultural bias. Recent important research concludes that poverty is a major cause of disproportionate African-American representation within the MMR category,

but that poverty does not explain the differences at the mildest levels of mental retardation. Children with the mildest level of mental retardation, who are identified at a later age, appear to be most disproportionately African American, and the difference is strong even after controlling for poverty. The cause of this disproportionate identification, however, is unclear.<sup>34</sup>

Students with MMR can usually be expected, by their late teens, to develop academic skills to approximately the sixth-grade level. During their adult years, they are often able to hold jobs and live on their own with some supportive supervision, or in group homes. Students with severe MR can be expected to need more extensive supervision.

**Serious Emotional Disturbance (SED).** Students with SED account for 9% of students served under IDEA. These students may have: an inability to build or maintain relationships; inappropriate behaviors or feelings under normal circumstances; a pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associated with personal or school problems. These problems are severe, pervasive, and chronic, not minor, situational, or transitory.<sup>35</sup>

Most students with serious emotional disturbance have been removed from the regular classroom because of their consistently disruptive behavior. Research consistently finds that general education teachers will not tolerate disruptive, aggressive, defiant, or dangerous behaviors. Elementary and secondary teachers are concerned that students follow classroom rules, listen to and comply with teacher directives—in short, behave in an orderly fashion. By definition, students with serious emotional disturbance have significant difficulty in these areas. They are more likely to first experience disability-related problems in adolescence, although their parents report that the majority of these students began to display their emotional problems in their grade school years.

Placement decisions for these students must be made on an individual basis. In a 1995 study, it was shown that higher functioning students with SED, when returned to regular classrooms, benefited socially and held constant in academic achievement. However, lower functioning students (those with more course failures and less social integration) were more likely to drop out of school altogether if moved to regular classrooms.<sup>36</sup>

Programs that advocate returning students with serious emotional disturbance to the regular classroom require extensive time on the part of both special education and regular education teachers. To enable one or two students to make this transition, teachers may have to work several hours per week for several weeks. Such staff intensive programming requires appropriate budgeting.

**Physical or Sensory Disabilities.** Seven percent of IDEA-eligible students have multiple disabilities, hearing or visual impairments, orthopedic impairments, autism, or traumatic brain injury. These students are likely to require both special educational services and related services. Related services include transportation and such developmental, corrective, and other supportive services as required to assist a student to benefit from special education. Related services may also include physical therapy, occupational therapy, speech therapy, psychological services, school health services, social work services, and parent counseling and training. Schools may provide specialized equipment needed by students.<sup>37</sup>

Because social integration is a major goal for many students with severe disabilities, social-skills training and recreation programs can be an important component of services. Students with disabilities who have strong recreational interests that can be shared with others are more likely to be integrated in a meaningful way in social settings.

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

IDEA stipulates that schools provide eligible children with “special education and related services.”<sup>38</sup> In March 1999 the Supreme Court ruled that complex nursing services (i.e., ventilator care) are a related service. The difference between educationally related services and rehabilitation services is unclear. Court rulings have generally mandated that therapies recommended in the IEP be reimbursed by the educational system. However, this has not precluded the application of Medicaid or other public funding to support medical service provisions for children with disabilities. Although private insurance carriers have generally declined reimbursement for therapies provided in the schools, in specific situations they may be responsible for payment of school-based services and frequently pay for community-based services. Parents, however, may decide not to make claims against their insurance because it would create a threat of financial

loss, such as lowering the child's available lifetime medical benefits. Generally, school systems are not responsible for acute rehabilitation services.<sup>39</sup>

In communities in which the school systems have borne the responsibility for implementing the IEP and funded most of the therapy, the educational authorities are concerned about the responsibility of overseeing the provision of complex nursing care for children with disabilities. School systems are also concerned about managed care systems shifting funding responsibilities for rehabilitation and medical diagnostic services from health care to the school system. The assumption of these responsibilities by school systems has the potential to:

- Increase conflicts with local physicians and other agencies responsible for health care provision;
- Contribute to the disjointed nature of health care for children; and
- Result in unnecessary treatment at increased cost, depleting educational resources for children.<sup>40</sup>

The school nurse, along with the student's primary health care provider, should be involved in the medical management, supervision, program planning, and case management of these children. IDEA does not mandate that these additional roles should be paid for by the public school. Parents often need an advocate for the child based on an objective appraisal of the child's special needs and realistic expectations. Input from the school nurse can assist with placing services in a developmental context in which changes in needs are to be expected over time.

A multidisciplinary approach is required in the initial evaluation of children to determine their eligibility for services within the educational system. It is also necessary to maintain a comprehensive multidisciplinary approach in the provision of services, which must be coordinated with the child's primary healthcare provider. The developmental, educational, and medical needs of the child or adolescent should be determined first. Who should provide the appropriate service, and how payments are to be made, must be resolved in the context of maintaining the child in the appropriate educational environment.<sup>41</sup>

Implementation of related services in schools is difficult because of the variation and complications of the children involved. These problems include:

- Lack of clarity about which circumstances should result in a child's exclusion from school for medical reasons;
- Uncertainty about the responsibility for and administration of complex nursing treatment or therapy in school;
- Inconsistencies in state and local guidelines and interpretations about which health care professionals should prescribe the type and amount of physical, occupational, and speech therapies;
- Uncertainty about medical liability for therapies administered in school;
- Conflicting opinions about the propriety of some therapies used for children;
- Concern about the rising cost of special education services and whether all treatment required in Individual Education Plans (IEPs) is warranted; and
- The frequent lack of provision of related services for children who may not qualify for special education but who have chronic diseases and disabling conditions that impair their ability and readiness to attend or participate in school.<sup>42</sup>

School nurses and administrators must work proactively with districts and school boards to address any and all of these concerns as needed. Nurses can familiarize themselves with local and state school system policies for Section 504 and IDEA-eligible children by working directly with administrators. This knowledge will enable nurses to serve as effective providers, resources, and advocates for children and adolescents with disabilities and their families. Additional advocacy may be provided by disabilities law centers or parent advocates (see Exhibit 1: Helpful Resources).<sup>43</sup>

### **The Educational Environment: Inclusion**

There is increasing pressure to serve more students in regular classrooms, a movement known as inclusion. "Inclusion," as used by educators, involves more changes to regular education than the earlier concept of "mainstreaming." Mainstreamed students spent part

of the day in the regular classroom, but were often “pulled out” to separate settings for special services. Under inclusion, regular education is expected to change in significant ways so that all or most of the individual student’s special needs are met in the context of the regular classroom.<sup>44</sup>

Regular education, if appropriately modified, could provide education for students with disabilities. Many students with learning disabilities, mild mental retardation, or orthopedic impairments, for example, might be good candidates for inclusion. Still, decisions should be made on the basis of individual student needs, not on disability category. Good reasons to consider shifting more responsibility to regular education are to cut down on disruptive pull-out programs, to increase social interaction between regular education and special education students, and to provide benefits for the whole classroom, such as smaller class size.

It cannot be overstated that regular education has great difficulty accommodating students with special learning needs. The majority of students served under IDEA were referred to special education because their regular classroom teachers were not able to deal with their chronic academic and/or behavioral problems. Typical instructional practice in regular classrooms is substantially different from the practices that show the greatest success for students with disabilities. Research does not make a compelling case either for or against inclusion. At best, several models of inclusive programs have shown modest positive effects and have required considerable resources in the form of training and assistance for teachers, planning time, access to additional supportive services, and administrative support.<sup>45</sup>

### **Children Requiring Special Health Care Procedures**

Children with special health care needs may need adaptations for daily functioning, prolonged or periodic hospitalizations, and/or special services in the educational setting; all need school health services, such as administration of medications, emergency plans, and coordination among teachers and community providers.

School personnel will encounter children with a wide variety of special needs. It is impossible for one training program to encompass appropriate care guidelines for



children with all possible conditions. It is therefore important that appropriate references and resources be available. Collaboration between school personnel, parents of special needs children, and community health care providers should also take place. Services once rare and/or thought to be clearly outside the responsibility of schools are legally mandated by state and federal statutes for all children who need them. These include providing catheterization, managing complex medical regimens, administering medications, and providing physical, occupational, speech, and language therapy, in order to meet an individual child's physical health-related needs. New technologies support basic life functions and may include devices for mechanical ventilation, tracheostomy, gastrostomy, equipment for delivery of intravenous medications, and kidney dialysis. New devices are relatively portable, making home care and mobility possible for children who once would have been hospital-or institution-bound.<sup>46</sup>

### **Procedures Performed in School Settings**

Children with special health care needs may need nursing procedures or treatments performed during the school day. These procedures should only be undertaken by a person who is trained and experienced in performing these procedures on children. When a parent requests that school health services provide nursing procedures for their child it is necessary to formalize the request as part of the child's IHP. A nursing care plan must also be devised. The following procedures and treatments are the most commonly performed in the school setting:

- Administering enteral feedings via gastrostomy tube
- Aerosol therapy
- Applying a dry dressing
- Applying a wet dressing
- Applying a wet to dry dressing
- Performing wound irrigation
- Suctioning a tracheostomy
- Urinary catheter insertion (sterile)
- Urinary catheter insertion (clean)

"The Nursing Practice Management Section" of The Journal of School Nursing has published Individualized Healthcare Plans with case studies to assist the school nurse in designing an appropriate plan of care for students in the school setting. "The Nursing

Practice Management: Compendium of Individualized Healthcare Plans” is a culmination of individualized healthcare plans that have been published in The Journal of School Nursing<sup>47</sup>.

The National Association of School Nurses also publishes a comprehensive manual, which is a reference for school nurses and includes 47 chronic and acute health issues, 14 protocols for professional issues such as confidentiality, individualized education plans, definitions inclusive of special education terms, nursing interventions from the Nursing Intervention Classification System, physical assessment criteria, 34 templates for health management plans, and 76 procedures such as suctioning, responding to autonomic dysreflexia, and blood glucose testing<sup>48</sup>. Other resources include any recent edition of a Fundamentals of Nursing text, or Child Health Nursing textbook. When parents request that the school nurse perform a procedure or treatment on their child during school hours, there are several steps that should be followed before complying with the request:

1. Obtain a written request from the parents, including a medical release.
2. Assess the student’s current need for the procedure.
3. Obtain necessary medical information from the health care provider.
4. Communicate with the health care provider to discuss special circumstances related to performing the procedure at school.
5. Formulate a nursing care plan (create an IHP).
6. Refresh clinical skills (if necessary).
7. Train school staff (if relevant, or as back up).
8. Assess competency of trained staff to perform procedure.
9. Communicate plan of care to staff involved with student.
10. Schedule regular parent conferences/communication.
11. Schedule regular communication with health care provider.
12. Document student’s responses to interventions.
13. Periodically reassess student’s continuing need for procedure.

**Steps for Procedures Performed in Schools:**

1. Gather equipment
2. Provide privacy and maintain strict confidentiality.
3. Wash hands.
4. Raise bed or position child at appropriate working height.
5. Facing child, stand on left side of bed if right-handed (on right side if left-handed). Clear bedside table and arrange equipment.
6. Place waterproof pad under child if needed.
7. Apply sterile gloves if necessary for procedure.
8. Organize supplies on sterile field. Open packets of materials or lubricants that will be used to perform procedures.
9. Perform procedure.
10. Remove gloves and dispose of equipment, drapes.
11. Wash hands.<sup>49</sup>

**Learning Disabilities**

A learning disability is a generic term for a heterogeneous group of disorders that affect how individuals receive, encode, store, and retrieve information. Learning disabilities are found in individuals with average or above average intelligence but who, because of presumed central nervous system dysfunction, have significant difficulties in any of a variety of achievement areas such as reading, mathematics, spelling, written expression, and oral language. Often students with learning disabilities have difficulty with organization, time management, and/or attention. Learning disabilities may occur concomitantly with other disabilities (such as sensory impairments or psychological disabilities) or environmental influences (such as cultural differences or insufficient instruction), but learning disabilities are not the direct result of those influences.<sup>50</sup>

Possible characteristics of learning disabilities include:

- Below grade level achievement in one or more subjects;
- Slow language development;
- Short attention span;
- Poor memory;
- Hyperactivity;

- Poor impulse control; and
- Aggressiveness, immaturity, disorganization.

Persons with learning disabilities are said to have a "hidden handicap" because they appear deceptively "normal." They look the same as everyone else, but they do not learn in the same manner.<sup>51</sup> Learning disabilities can be lifelong conditions that, in some cases, affect many parts of a person's life: school or work, daily routines, family life, and sometimes even friendships and play.<sup>52</sup>

The criteria and characteristics for diagnosing learning disabilities appear in the Diagnostic and Statistical Manual of Mental Disorders IV (DSM). The DSM diagnosis is commonly used when applying for health insurance coverage of diagnostic and treatment services.

Learning disabilities can be divided into three broad categories:

- Developmental speech and language disorders
- Academic skills disorders
- "Other," a catch-all that includes certain coordination disorders and learning handicaps not covered by the other terms

### **Developmental Speech and Language Disorders**

Speech and language problems are often the earliest indicators of a learning disability. People with developmental speech and language disorders have difficulty producing speech sounds, using spoken language to communicate, or understanding what other people say. Depending on the problem, the specific diagnosis may be:

- Developmental articulation disorder;
- Developmental expressive language disorder; or
- Developmental receptive language disorder

**Developmental Articulation Disorder.** Children with this disorder may have trouble controlling their rate of speech, or they may lag behind playmates in learning to make speech sounds. Developmental articulation disorders appear in at least 10 % of children younger than age 8. Fortunately, articulation disorders can often be outgrown or successfully treated with speech therapy.

**Developmental Expressive Language Disorder.** Some children with language impairments have problems expressing themselves in speech. This disorder is known as developmental expressive language disorder. An expressive language disorder can take other forms: a 4-year-old who speaks only in two-word phrases and a 6-year-old who can't answer simple questions may also have an expressive language disability.

**Developmental Receptive Language Disorder.** Some people have trouble understanding certain aspects of speech. Their hearing is fine, but they can't understand certain sounds, words, or sentences they hear. They may even seem inattentive. This is known as a receptive language disorder. Using and understanding speech are strongly related, and many people with receptive language disorders also have an expressive language disability.

### **Academic Skills Disorders**

Students with academic skills disorders are often years behind their classmates in developing reading, writing, or arithmetic skills. The diagnoses in this category include:

- Developmental reading disorder
- Developmental writing disorder
- Developmental arithmetic disorder

**Developmental Reading Disorder.** This type of disorder, also known as dyslexia, is quite widespread. In fact, reading disabilities affect 2 to 8 percent of elementary school children. Reading involves the following processes:

- Focusing attention on the printed marks and controlling eye movements across the page;
- Recognizing the sounds associated with letters;
- Understanding words and grammar;
- Building ideas and images;
- Comparing new ideas to what you already know; and
- Storing ideas in memory.

A person can have problems in any of the tasks involved in reading. A significant number of people with dyslexia share an inability to distinguish or separate the sounds in spoken words. Some people with dyslexia may not be able to identify words by sounding out the individual letters. Others may have trouble with rhyming games, such as rhyming "cat" with "bat." Fortunately, remedial reading specialists have developed techniques that can help many children with dyslexia acquire these skills. See Chapter 3 of this manual for a further discussion of dyslexia, and for referral resources.

There is more to reading than recognizing words. If the brain is unable to form images or relate new ideas to those stored in memory, the reader can't understand or remember the new concepts. Other types of reading disabilities can appear in the upper grades when the focus of reading shifts from word identification to comprehension.

**Developmental Writing Disorder.** Writing involves several brain areas and functions. The brain networks for vocabulary, grammar, hand movement, and memory must all work together. A developmental writing disorder may result from problems in any of these areas. A child with a writing disability, particularly an expressive language disorder, might be unable to compose complete, grammatical sentences.

**Developmental Arithmetic Disorder.** Arithmetic involves recognizing numbers and symbols, memorizing facts such as the multiplication table, aligning numbers, and understanding abstract concepts like place value and fractions. These may be difficult for children with developmental arithmetic disorders. Problems with numbers or basic concepts are likely to show up early in life. Disabilities that appear in the later grades are more often tied to problems in reasoning.

Many aspects of speaking, listening, reading, writing, and arithmetic overlap and build on the same brain capabilities. Children can be diagnosed as having more than one learning disability. For example, the ability to understand language underlies learning speech. Therefore, any disorder that hinders the ability to understand language will also interfere with the development of speech, which, in turn, hinders learning to read and write. A single gap in the brain's operation can disrupt many types of activity.

**"Other" Learning Disabilities**

The DSM also lists additional categories, such as "motor skills disorders" and "specific developmental disorders not otherwise specified." These diagnoses include delays in acquiring language and academic and motor skills that can affect the ability to learn, but do not meet the criteria for a specific learning disability. Also included are coordination disorders that can lead to poor penmanship and certain spelling and memory disorders.

**Attention Disorders**

Nearly 4 million school-aged children have learning disabilities. Of these, at least 20 percent have a type of disorder that leaves them unable to focus their attention. Some children and adults who have attention disorders appear to daydream excessively and are often easily distracted. If they are quiet and don't cause problems, their problems may go unnoticed. They may be passed along from grade to grade without getting the special assistance they need. In a large proportion of affected children the attention deficit disorder is accompanied by hyperactivity, known as Attention Deficit Hyperactivity Disorder or ADHD.

ADHD seems to affect boys more frequently than girls, while girls are more likely to have Attention Deficit Disorder without hyperactivity.

Children with ADHD are hyperactive, impulsive, and easily distracted. They act impulsively, running into traffic or toppling desks. They blurt out answers and interrupt. In games, they can't wait their turn. These children's problems are usually hard to miss. Because of their constant motion and explosive energy, hyperactive children often get into trouble with parents, teachers, and peers.

By adolescence, physical hyperactivity usually subsides into fidgeting and restlessness. But the problems with attention, impulsivity, and concentration often continue into adulthood. At work, adults with ADHD often have trouble organizing tasks or completing their work. They don't seem to listen to or follow directions. Their work may be messy and appear careless.

Attention disorders, with or without hyperactivity, are not considered learning disabilities in themselves. However, because attention problems can seriously interfere with school performance, they often accompany academic skills disorders. Specific diagnostic criteria for ADHD are contained in this section as Exhibit 5.

### **Role of the School and the Nurse in the Assessment of Learning Disabilities**

Section 38.003, Education Code, entitled "Screening and Treatment for Dyslexia and Related Disorders," states the following:

- (a) Students enrolling in public schools in [Texas] shall be tested for dyslexia and related disorders at appropriate times in accordance with a program approved by the State Board of Education.
- (b) In accordance with the program approved by the State Board of Education, the board of trustees of each school district shall provide for the treatment of any student determined to have dyslexia or a related disorder.
- (c) The State Board of Education shall adopt any rules and standards necessary to administer this section.
- (d) In this section:
  - (1) "Dyslexia" means a disorder of constitutional origin manifested by a difficulty in learning to read, write, or spell, despite conventional instruction, adequate intelligence, and sociocultural opportunity.
  - (2) "Related disorders" includes disorders similar to or related to dyslexia, such as developmental auditory imperception, dysphasia, specific developmental dyslexia, developmental dysgraphia, and developmental spelling disability.

**Identification of learning disabilities.** Since learning disabilities are not of medical nature, but are of educational concern, the first to identify a learning disability is usually not a nurse, but someone on the educational staff, such as a teacher or a counselor. A school nurse might notice that a child who is frequently visiting the nurse for various



vague complaints or missing school days for undocumented illnesses may be avoiding school. Frequently, children who are having difficulty in school will think of ways to avoid being embarrassed in the classroom, and that coping mechanism is often described as “not feeling well” by the child. The nurse should inquire about difficulty learning when she or he is conducting a health assessment with these children. If the child describes difficulty with learning, then the school nurse can relay this information to the parent, teacher, or counselor.

The school nurse often sees children with learning disabilities when they need medication or screening for vision or hearing. The nurse should be aware of behavior changes in children who are receiving medication for ADHD for the first time, or when their medication has been changed. Some of the side effects of these medications include depression, anxiety, agitation, and aggression (see Chapter 5, *Medication Administration*, for more information about these medications).

Parents are usually the first to notice obvious delays in their child reaching early milestones. But the classroom teacher may be the first to notice the child's persistent difficulties in reading, writing, or arithmetic. As school tasks become more complex, a child with a learning disability may have problems mentally juggling more information.<sup>53</sup> The learning problems of children who are quiet and polite in school may go unnoticed. Children with above average intelligence, who manage to maintain passing grades despite their disability, are even less likely to be identified.

**Diagnosis of learning disabilities.** By law, learning disabilities (LD) are defined as a significant gap between a person's intelligence and the skills the person has achieved at each age. (See 34 Code of Federal Regulations § 300.7 for the legal definition of a learning disability; included in Appendix A of this manual). This means that a severely retarded 10-year-old who speaks like a 6-year-old probably doesn't have a language or speech disability. He has mastered language up to the limits of his intelligence. On the other hand, a fifth grader with an IQ of 100 who can't write a simple sentence probably does have a learning disability. Learning disorders may be informally flagged by observing significant delays in the child's skill development. A 2-year delay in the primary grades is usually considered significant. For older students, such a delay is not as debilitating, so learning disabilities aren't usually suspected unless there is more than a 2-year delay. Actual diagnosis of learning disabilities, however, is made using

standardized tests that compare the child's level of ability to what is considered normal development for a person of that age and intelligence.

Test outcomes depend not only on the child's actual abilities, but also on the reliability of the test and the child's ability to pay attention and understand the questions. Children with poor attention or hyperactivity may score several points below their true level of ability. Testing a child in an isolated room can sometimes help the child concentrate and score higher. Each type of learning disability is diagnosed in slightly different ways. To diagnose speech and language disorders, a speech therapist tests the child's pronunciation, vocabulary, and grammar and compares them to the developmental abilities seen in most children that age. A psychologist tests the child's intelligence. A primary health care provider checks for ear infections, and an audiologist may be consulted to rule out auditory problems. In the case of academic skills disorders, academic development in reading, writing, and math is evaluated using standardized tests. In addition, vision and hearing are tested to be sure the student can see words clearly and hear adequately. The specialist also checks if the child has missed much school. It is important to rule out these possible factors.

ADHD is diagnosed by checking for the long-term presence of specific behaviors, such as considerable fidgeting, losing things, interrupting, and talking excessively. Other signs include an inability to remain seated, stay on task, or take turns. A diagnosis of ADHD is made only if the child shows such behaviors substantially more than other children of the same age. Specific diagnostic criteria for ADHD are included in this section as Exhibit 5.

If the school fails to notice a learning delay, parents can request an outside evaluation. Parents also need to know that they may appeal the school's decision if they disagree with the findings of the diagnostic team. Parents always have the option of getting a second opinion. Some parents feel alone and confused when talking to learning specialists. Such parents may find it helpful to ask someone they like and trust to go with them to school meetings. The person may be the child's clinician or caseworker, or even a neighbor. It can help to have someone along who knows the child and can help understand the child's test scores or learning problems.

**Education for children with learning disabilities.** Although obtaining a diagnosis is important, even more important is creating a plan for getting the right help. Because LD

can affect the child and family in so many ways, help may be needed on a variety of fronts: educational, medical, emotional, and practical. In most ways, children with learning disabilities are not different from children without these disabilities. At school, they eat together and engage in sports, games, and after-school activities together. But since children with learning disabilities do have specific learning needs, most public schools provide special programs.

Schools typically provide special education programs either in a separate all-day classroom or as a special education class that the student attends for several hours each week. Some parents hire trained tutors to work with their child after school. If the problems are severe, some parents choose to place their child in a special school for the learning disabled. If parents choose to get help outside the public schools, they should select a learning specialist carefully. The specialist should be able to explain things in terms that the parents can understand. Whenever possible, the specialist should have professional certification and experience with the learner's specific age group and type of disability. Some of the support groups listed at the end of this section (Exhibit 1) can provide references to qualified special education programs.

Planning a special education program begins with systematically identifying what the student can and cannot do. The specialist looks for patterns in the child's gaps. For example, if the child fails to hear the separate sounds in words, are there other sound discrimination problems? If there's a problem with handwriting, are there other motor delays? Are there any consistent problems with memory? Exhibit 6 of this section provides schools with a student history form, as well as an assistance request form, for teachers and schools to use as they perform learning disabilities assessments and treatment plans.

Special education teachers also identify the types of tasks the child can do and the senses that function well. By using the senses that are intact and bypassing the disabilities, many children can develop needed skills. These strengths offer alternative ways the child can learn. After assessing the child's strengths and weaknesses, the special education teacher designs an Individualized Educational Program (IEP). The IEP outlines the specific skills the child needs to develop as well as appropriate learning activities that build on the child's strengths. Many effective learning activities engage several skills and senses. For example, in learning to spell and recognize words, a student may be asked to see, say, write, and spell each new word. The student may also write the words in sand, which

engages the sense of touch. Many experts believe that the more senses children use in learning a skill, the more likely they are to retain it.

An individualized, skill-based approach—like the approach used by speech and language therapists—often succeeds where regular classroom instruction fails. Therapy for speech and language disorders focuses on providing a stimulating but structured environment for practicing language patterns. For example, the therapist may help a child who has an articulation disorder to produce specific speech sounds. During an engaging activity, the therapist may talk about the toys and then encourage the child to use the same sounds or words. In addition, the child may watch the therapist make the sound, feel the vibration in the therapist's throat, and then practice making the sounds before a mirror.

**Medication.** For nearly six decades, many children with attention disorders have benefited from being treated with medication. Three drugs, Ritalin (methylphenidate), Dexedrine (dextroamphetamine), and Cylert (pemoline), have been used successfully. Although these drugs are stimulants in the same category as "speed" and "diet pills," they seldom make children "high" or more jittery. Rather, they temporarily improve children's attention and ability to focus. They also help children control their impulsiveness and other hyperactive behaviors.

The effects of medication are most dramatic in children with ADHD. Shortly after taking the medication, they become better able to focus their attention. They become more ready to learn. Studies by the National Institutes of Mental Health (NIMH), and other researchers, have shown that at least 90 percent of hyperactive children can be helped by either Ritalin or Dexedrine. If one medication does not help a hyperactive child to calm down and pay attention in school, another medication might. See Chapter 5, *Medication Administration*, for a further discussion of medication use.

The drugs are effective for 3 to 4 hours and move out of the body within 12 hours. The child's health care provider or a psychiatrist works closely with the family and child to carefully adjust the dosage and medication schedule for the best effect. In trying to do everything possible to help their children, many parents have been quick to try new treatments. Following are types of therapy that have not proven effective in treating the majority of children with learning disabilities or attention disorders:

- Megavitamins
- Special diets
- Sugar-free diets
- Body stimulation or manipulation

**Counseling and children with learning disabilities.** Children with learning disabilities and attention disorders may have trouble making friends with peers. For children with ADHD, this may be due to their impulsive, hostile, or withdrawn behavior. Some children with delays may be more comfortable with younger children who play at their level. Social problems may also be a product of their disability. Some people with LD seem unable to interpret tone of voice or facial expressions. Misunderstanding the situation, they act inappropriately, turning people away.

Without professional help, the situation can spiral out of control. The more that children or teenagers fail, the more they may act out their frustration and damage their self-esteem. The more they act out, the more trouble and punishment it brings, further lowering their self-esteem. Counseling can be very helpful to children with LD and their families. Counseling can help affected children, teenagers, and adults develop greater self-control and a more positive attitude toward their own abilities. Talking with a counselor or psychologist also allows family members to air their feelings as well as get support and reassurance.

Parents and teachers can help by structuring tasks and environments for the child in ways that allow the child to succeed. They can find ways to help children build on their strengths and work around their disabilities. This may mean deliberately making eye contact before speaking to a child with an attention disorder. For a teenager with a language problem, it may mean providing pictures and diagrams before performing a task. A counselor can help identify practical solutions that make it easier for the child and family to cope day by day. Every child needs to grow up feeling competent and loved. When children have learning disabilities, parents may need to work harder at developing their children's self-esteem and relationship-building skills.

**Learning disability and the law.** As of 1981, people with learning disabilities come under the protection of laws originally designed to protect the rights of people with

mobility handicaps. More recent federal laws specifically guarantee equal opportunity and extend services for people with disabilities. Once a learning disability is identified, children are guaranteed a free public education specifically designed around their individual needs. Adolescents with disabilities can receive practical assistance and extra training to help make the transition to jobs and independent living. Adults have access to job training and technology that open new doors of opportunity. See Appendix A for laws pertaining to LD in schools.

**Increased Services, Equal Opportunity.** The Individuals with Disabilities Education Act (IDEA) assures a public education to school-aged children with diagnosed learning disabilities. Under this act, public schools are required to design and implement an Individualized Educational Program (IEP) tailored to each child's specific needs. The 1991 Individuals with Disabilities Education Act extended services to developmentally delayed children as young as age 5. This law makes it possible for young children to receive help even before they begin school.

Another law, the Americans with Disabilities Act (ADA), guarantees equal employment opportunity for people with learning disabilities and protects disabled workers against job discrimination. Employers may not consider the learning disability when selecting among job applicants. Employers must also make "reasonable accommodations" to help workers who have handicaps do their job. Such accommodations may include shifting job responsibilities, modifying equipment, or adjusting work schedules.

By law, publicly funded colleges and universities must also remove barriers that keep out disabled students. As a result, many colleges now recruit and work with students with learning disabilities to make it possible for them to attend. Depending on the student's areas of difficulty, this help may include providing recorded books and lectures, providing an isolated area to take tests, or allowing a student to tape record rather than write reports. Students with learning disabilities can arrange to take college entrance exams orally or in isolated rooms free from distraction. Many colleges are creating special programs to specifically accommodate these students.

**Public Agency Support.** Effective service agencies are also in place to assist people of all ages. The Texas Education Agency (TEA) can help parents identify the requirements

and the process for getting special education services for their child. Other agencies serve disabled infants and preschool children. Still others offer mental health and counseling services. The National Information Center for Children and Youth can provide additional referrals to appropriate local resources. See Exhibit 1 of this section for referral resources.

Counselors at each state department of vocational rehabilitation serve the employment needs of adolescents and adults with learning disabilities. They can refer adults to free or subsidized health care, counseling, and high school equivalence (GED) programs. They can assist in arranging for job training that sidesteps the disability. State departments of vocational rehabilitation can also assist in finding special equipment that can make it possible for disabled individuals to receive training, retain a job, or live on their own.

State-run protection and advocacy agencies and client assistance programs are designed to assist people with disabilities. As experts on the laws, they offer legal assistance, as well as information about local health, housing, and social services.

## Chronic Illness Protocols

### Allergies

An allergy is defined as a “harmful, increased susceptibility to a specific substance,” also known as *hypersensitivity*. *Immunity* is characterized as a “protective, enhanced resistance” to a foreign substance.<sup>54</sup> The immune system acts in the body as a defense mechanism against foreign materials. It operates through the action of cells (*cell-mediated immunity*) and through proteins in the blood known as antibodies (*humoral immunity*). An antigen is a substance that stimulates an immune reaction; an antigen producing an allergic reaction is called an *allergen*.

Allergens cause the immune system, specifically white blood cells, to produce IgE antibodies that attach themselves to mast cells or basophils. Mast cells are usually found in the respiratory and gastrointestinal tracts, as well as the skin; basophils are found in the blood. As many as 500,000 of these IgE molecules may collect on a single cell. When the allergen and the IgE antibody combine, they release potent chemicals such as histamines, which produce many of the familiar allergic symptoms such as runny nose, watery eyes, itching, and sneezing. Asthma, a far more serious disease, results in wheezing and shortness of breath due to a narrowing of the bronchial tubes. Asthma is caused by a sensitivity to certain allergens like pollen, mold spores, or house dust mites, and is typically aggravated by respiratory tract infections, i.e. colds and flu. Emotional stress can also exacerbate an attack. Stress, however, is typically a secondary factor of a disease that is primarily allergic in nature. Asthma is discussed in further detail below.<sup>55</sup>

Allergic reactions can result in allergic rhinitis or sinusitis, with the usual accompanying discomfort caused by inhaling allergens in the form of weed, tree, and grass pollen, mold spores, house dust, and animal dander. *Rhinitis* is defined as an inflammation of the mucous membranes of the nose, and can be allergic or non-allergic. Allergic rhinitis is caused by allergens—either indoor or outdoor. When it is caused by outdoor allergens, it is often referred to as “hay fever” or “seasonal allergies.” Allergic rhinitis can also be caused by indoor allergens, such as animal dander, indoor mold, cockroaches, or house dust mites. When this is the case, these allergies are called perennial allergies, because the symptoms last all year.<sup>56</sup>



Symptoms of allergic rhinitis can include sneezing, congestion, a runny nose, and itchiness in the nose, roof of the mouth, throat, eyes, and ears. These symptoms can mimic a viral respiratory infection, such as a cold or flu. Allergic symptoms, however, will typically not resolve quickly or without intervention and will usually begin very quickly upon exposure to the allergen. In fact, allergy symptoms will last as long as a person is exposed to the offending allergen—and beyond—until the reaction triggered by the allergen ends. If the allergen is present year-round, symptoms may be chronic. It is very important that school personnel are aware of the types of allergens to which their students are exposed—many students may develop problems from allergens to which they are only exposed at school.<sup>57</sup> Common allergens found in the school environment include chalk dust, mold (e.g., from window air conditioning units and/or potted plants), animals (mammals and reptiles), pesticides, and cleaning agents.

Students with allergy symptoms should be under the care of a health care provider, who can help to determine if an evaluation by an allergist is needed. An allergist can take a thorough history and use allergy skin testing to determine if the symptoms are caused by allergens. This diagnostic workup can help to determine what the student's allergy triggers are, which will help to guide and focus treatment. Treatment will generally consist of medications or injection immunotherapy, combined with some environment and/or behavior modification.

### **Some Allergy Statistics**

- Allergic diseases affect more than 20% of the population.
- Estimates from a skin test survey suggest that allergies affect as many as 40 to 50 million people in the U.S.
- Immunotherapy is ultimately successful in up to 90% of patients with seasonal allergic rhinitis and in 70% to 80% of patients with perennial allergic rhinitis.
- There is an association between sinusitis and asthma. The incidence of sinusitis in asthmatic patients ranges from 40% to 75%.
- Over eight million visits to office-based physicians each year are attributed to allergic rhinitis.<sup>58</sup>

## Medications

Antihistamines are used to prevent or relieve the symptoms of allergic rhinitis and other allergens, and they work by preventing the release of histamine. Antihistamines are available in various oral forms—capsule, tablet or liquid—as well as by injection; they are available over the counter (OTC) or by prescription. Side effects can include drowsiness, but newer antihistamines rarely cause this. Other side effects include dry mouth, difficult urination, constipation, and confusion. Some children may experience nightmares, restlessness, or irritability. It is important that the school nurse and other relevant personnel are aware of these possible side effects as they may affect school performance. The nurse can communicate with the child’s allergist or other health care provider as needed.<sup>59</sup>

Decongestants are used to treat nasal congestion and other allergy-associated symptoms. They work by narrowing blood vessels, leading to the clearing of nasal congestion. Decongestants are available by prescription or OTC and are commonly prepared as liquids or tablets. OTC nasal sprays or drops may be used for acute situations (i.e., while a prescription medication is building in the bloodstream), but must be used with caution as they can cause “rebound rhinitis” if used for prolonged periods. School nurses may need to discuss use of such OTC sprays with parents/guardians if asked to administer for longer than 3 or 4 days for a child with symptoms of rhinitis. Decongestants can cause nervousness, sleeplessness, or elevation in blood pressure. Again, the school nurse and other staff need to be aware of whether any of these side effects are present, and if so, if they are interfering with the child’s school performance.

*Immunotherapy*, or “allergy shots,” is a vaccination program that can increase a child’s immunity to the substances that act as allergy triggers. Allergen immunotherapy involves administering gradually increasing amounts of an allergen to a patient over several months. The injections work like a vaccine. Through the body’s exposure to small amounts of a particular allergen—in gradually increasing doses—the body builds up immunity to the allergens, which means when the allergens are encountered in the future, the immune system does not respond hypersensitively (allergically).<sup>60</sup>

The injections are first given on a weekly or bi-weekly basis and eventually on a monthly basis once the maintenance level has been reached. This process reduces symptoms that are otherwise triggered by allergen exposure. Immunotherapy treatment is the closest

thing to a “cure” for allergic symptoms because symptoms are typically greatly reduced once the course of treatment is finished. It is not without risk of side effects, however. The diluted allergens, even in small and diluted amounts, or the injection itself, can cause an allergic reaction. Swelling at the site or, more rarely, a systemic anaphylactic reaction can occur. For this reason, allergy immunotherapy injections should be administered by the allergist or student’s health care provider in the clinic or office and not at school, so that the child can be monitored properly. Patients receiving allergy shots should be monitored for at least 20 minutes following an injection in order to most appropriately monitor for any problems.

## **Asthma**

Asthma is the most common chronic disease in children, and it is the leading cause of school absences—approximately three times the average of children without asthma. Approximately 5 million children have been diagnosed with asthma in the U.S.<sup>61</sup> Asthma is a chronic lung disease characterized by episodes or attacks of coughing, wheezing, chest tightness, and/or shortness of breath. These symptoms are caused by an inflammation of the airways responding to a variety of stimuli or “triggers.” Often the inflammation itself becomes a “trigger” leading to a persistent level of cell damage and an ongoing repair process. There may be permanent abnormalities in the airway from untreated or under-treated asthma.<sup>62</sup> The triggers that cause an asthma episode vary with individuals. Some of the more common triggers are:

- Allergens, which can include seasonal irritants (e.g. pollen), animal dander, dust mites, molds, or foods
- Irritants, which can include cold air or environmental pollutants (chemicals, chalk dust, smoke, fumes)
- Upper respiratory infections, including regular colds, flu, or other viruses
- Physiological changes, including physical exercise, laughing or crying<sup>63,64</sup>
- Climactic, including very cold or windy weather, or extreme heat

Students diagnosed with asthma should be under the care of a health care provider, and most will be managed with a prescription medication. Many students will have identified triggers and may need environmental modifications at school in order to avoid them. Some of these students will require an Individualized Health Care Plan (IHP). The school nurse will need to strategize with the student’s family and health care team about

the management of the child's asthma at school. This may include some combination of: a medication administration plan (either by the student or school staff, depending on developmental level), diet modification, physical activity plan, environmental assessment (and restructuring as needed), and monitoring of the student's overall health status.

### **Medication**

Asthma medications fall into one of two general categories: long-term control and quick-relief. Long-term control medicines include inhaled and systemically administered corticosteroids and Beta2-agonists that work to reduce the chronic inflammation that is associated with airway hyperresponsiveness. Quick-relief medicines, such as short acting inhaled Beta2-agonists and anticholinergics, function primarily as bronchodilators to improve airflow in an acute episode or when a known trigger cannot be avoided. Many students with asthma will use a combination of these two types of medication. A complete list of asthma medications, their indications, and potential adverse effects is included at the end of this section as Exhibit 8.

Principles of asthma management are:

- Controlling symptoms;
- Preventing acute asthma episodes;
- Reducing persistent airway inflammation.<sup>65</sup>

### **Controlling symptoms**

Although recent evidence suggests that it may be possible to prevent the onset of asthma (i.e., by reducing the amount of exposure to environmental irritants such as tobacco smoke and/or by introducing immune-enhancing properties to infants through breastfeeding<sup>66</sup>), the control of asthma is primarily attained through early and aggressive detection and management. Controlling symptoms involves both reducing exposure to triggers and pharmacologically managing the persistent airway inflammation. Students or their families must provide the school nurse with information about their particular triggers and disease pattern. This information can then be included in the student's IHP, and environmental modification at school can proceed as needed. Since a wide variety of stimuli can act as triggers, the school should be prepared to take the necessary time to develop as comprehensive a list as possible. "Asthma at School: Controlling the Environment," an online publication from the Canadian Lung Association, provides interested schools with a comprehensive and easy to follow guide towards modifying

asthmatic students' exposure to triggers.<sup>67</sup> It is available online at <http://www.lung.ca/asthma/school/control.html>, and is referenced in Exhibit 1 of this chapter.

Skin testing to determine the variety of indoor and outdoor allergens to which children are exposed is recommended as another preventive tactic. Once allergens are identified, children can be considered candidates for allergen immunotherapy.<sup>68</sup> The school nurse should alert the student's health care provider to allergens that the student is exposed to at school.

Peak flow meters play a significant role in controlling symptoms, since regular use by the affected student can help to predict when and where symptoms and/or an episode are most likely to occur. The peak flow meter measures the asthma patient's bronchial airflow (quality and quantity) and can alert a possibly asymptomatic student to an impending episode. School nurses can work with asthmatic students to encourage regular use of their peak flow meters, and can ask for regular return demonstrations to check for accurate usage.<sup>69</sup> The nurse is in an excellent position to counsel these students about how to use the peak flow meter, which can play a significant role in minimizing the severity of the student's disease. The information gained by using a peak flow meter can guide students toward both trigger avoidance and proper medication use. Parents of children with asthma, who do not have a peak flow meter, should be encouraged to request one from their child's health care provider

Early use of appropriate medication, in both diagnosis and an individual asthma episode, plays a critical role in reducing the amount of airway inflammation and long-term damage that can occur with this disease. The earlier a child is diagnosed with asthma, the sooner anti-inflammatory medication can be introduced; evidence suggests that this early and aggressive therapy can lessen the overall severity of the disease.<sup>70</sup> School health staff will encounter very young children on regular anti-inflammatory medication and will need to know how to administer it in its various forms.

### **Acute Asthma Episodes**

The management triad aimed at preventing acute episodes includes:

- Avoidance of triggers

- Monitoring of airflow and disease severity
- Pharmacotherapy

The student's IHP should address how these three interventions will be implemented in the school setting. Identifying triggers that can cause acute symptoms, such as exercise-induced bronchospasm (EIB) or the seasonal presence of environmental allergens, may necessitate changes in the student's physical activity plans or field trip modifications. For example, children who have EIB can benefit greatly from using quick relief medication before they participate in activities known to aggravate their asthma. When the peak flow meter demonstrates poor airflow and known triggers cannot be avoided, quick-relief medication needs to be available to the student in order that they can minimize airway inflammation. Section 38.013, Education Code, allows students diagnosed with asthma, if they are developmentally capable of doing so, and have written permission from their parents and physician, to carry and self-administer their own quick-relief asthma medication while on school property or at a school-related event. (The full text of this legislation is contained in Appendix A.) School districts should develop policies and procedures to address this change. This self-administration should be included in the student's IHP. Exhibit 7 of this section provides three sample forms for schools to use to identify students that have parental and provider authorization to self-administer asthma medication.

### **Reducing persistent airway inflammation**

This goal can also be met through a combination of the three basic interventions already discussed and the use of long-term anti-inflammatory medications. The school nurse and health care staff must be familiar with long-term asthma medications and check that they are administered properly. This may require coordination with other school staff (i.e., teachers and cafeteria workers), who may be able to assist the health care staff in reminding students about the presence of known triggers that may necessitate quick-relief medications.

### **Recognizing and Managing Acute Episodes**

When an unavoidable trigger, disease severity, or less than optimal medication results in an acute asthma episode, the school needs to be prepared to intervene appropriately. Signs of an acute episode may include: coughing (frequent, persistent, and/or paroxysmal), restlessness/irritability, persistent rubbing of nose or throat, increased respirations, exercise intolerance, grunting, anxiety or a "wide-eyed" appearance, or

decreased ability to speak (e.g., the child can only utter short phrases before becoming breathless). The school nurse may also notice a barrel-shaped chest (due to increased amounts of trapped air), a change in the student's color (bluish/gray), nasal flaring, or the use of accessory muscles to breathe, and the student may assume a "tripod" position (bent forward with hands on knees) in order to facilitate breathing. The most crucial observation for all school staff to be aware of, however, is whether the student with asthma is exhibiting changes in behavior, which may indicate an acute episode.<sup>71,72</sup> The school nurse should be aware of any students with asthma that require frequent quick-relief medications at school, as this may indicate that the child is not receiving long-term pharmacotherapy. A consultation with the parents may be necessary to ensure that the child is receiving appropriate medication.

### **Asthma First Aid**

An emergency care plan (ECP) or an IHP should be developed and available to all school staff that may come into contact with an asthmatic student. Schools may wish to develop policies that include training of school staff about how to respond in this type of emergency. (A sample allergy/asthma ECP is contained as Exhibit 7 in Chapter 9 of this manual). When a child has an acute asthma attack that includes increased breathing difficulty, the following procedures should be followed:

- Have the child **STOP ALL ACTIVITY**.
- Help the child assume an upright position. Sitting with legs crossed and elbows on the knees (tripod) will help relax the shoulders and may help them to breathe more easily.
- Speak reassuringly and calmly to the student.
- Encourage (and assist) the student to use the appropriate medication. This medication should be with the student or in an easily accessible, unlocked area.
- Notify the proper person(s), which may include the nurse, parent/guardian, principal, and/or primary care provider.<sup>73</sup>

Schools without a nurse may need to call **EMS** if an acute episode does not respond to medication administration within 5 minutes, or when worsening symptoms occur despite the use of medicine (e.g., a cyanotic appearance, altered level of consciousness). School nurses are educated to recognize such emergency signs; in the case where a nurse is not

available, schools should train other healthcare personnel to recognize an emergency asthma episode.

**For further information:**

The following two documents, both publications of the National Heart, Lung and Blood Institute (of the National Institutes of Health), are comprehensive reviews of asthma physiology and management. Both are available online, as well as in hardcopy through the NIH.

National Asthma Education and Prevention Program (NAEPP). (2000). *Report of the Second Expert Panel on the Guidelines for the Diagnosis and Management of Asthma*. Bethesda: National Heart, Lung and Blood Institute.

<http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm>

National Heart, Lung, and Blood Institute (NHLBI)/National Institutes of Health (NIH). (1995). *Nurses: Partners in Asthma Care*.

[http://www.nhlbi.nih.gov/health/prof/lung/asthma/nurs\\_gde.htm](http://www.nhlbi.nih.gov/health/prof/lung/asthma/nurs_gde.htm)

A third useful document can be found through the American Academy of Allergy, Asthma and Immunology, and includes a section specifically for schools:

*Pediatric Asthma: Promoting Best Practice*. Available online at:

<http://www.aaaai.org/professional/initiatives/pediatricasthma.stm>, or call (404) 272-6071.

## Diabetes

Diabetes mellitus (DM) is a chronic metabolic disorder, which is caused by the inability of the body to use or produce insulin. The cause of diabetes is unknown, but appears to be a combination of genetic and environmental factors. There are two types of DM: Type 1 and Type 2.

Type 1 diabetes, previously called juvenile diabetes or insulin dependent diabetes mellitus (IDDM), is an autoimmune disease in which the insulin-producing cells of the pancreas are destroyed by the body. Because the body does not produce insulin, it must be replaced on a daily basis. Insulin is necessary for blood glucose (also called “blood sugar”) to be maintained at normal levels.<sup>74</sup> Chronic hyperglycemia occurs when there is



insufficient insulin to lower the blood sugar level. Complications from diabetes occur because of chronic hyperglycemia and include kidney failure, blindness, neuropathy, and cardiovascular disease.<sup>75</sup>

Type 2 diabetes, previously called adult onset diabetes or non-insulin dependent diabetes mellitus (NIDDM), occurs less frequently in children, though its incidence appears to be increasing among children and adolescents. This type of diabetes occurs when the body becomes resistant to the insulin produced by the pancreas. It is different from Type 1 because insulin is still produced, but the diabetics become resistant to their own insulin.<sup>76</sup> This resistance appears to be a genetic abnormality, but is also related to obesity.

At the present time, there is no cure for diabetes. The treatment plan is directed at managing or controlling the course of the disease. This is achieved by balancing insulin, food, and exercise, and it is critical for the child, family, and school personnel to understand how to work with these three factors to achieve good glycemc (sugar) control. For example, low blood sugar, or *hypoglycemia*, may be caused by too little food, too much insulin, or more exercise than usual. The reverse is true for too much food, too little insulin, or less than adequate amounts of exercise. Any or all of these may result in hyperglycemia, or a blood sugar level that is too high. A student's school performance suffers when their blood sugar level is too high or too low. Without treatment, both high and low blood sugar levels can affect the child's ability to concentrate on schoolwork and participate in school-related activities.<sup>77</sup> A school nurse may need to remind a student newly diagnosed with diabetes about the need to check their blood sugar during school hours, as this will help them to better learn to detect hypo- or hyperglycemic episodes early.

### **Individualized Health Care Plan (IHP)**

Children with diabetes attending schools in Texas should have an IHP, which includes an Emergency Care Plan (ECP). Schools without a nurse should involve nurse consultants and/or medical advisors.<sup>78,79, 80</sup> The school nurse should be involved in the development of the IHP. The school nurse will become the case manager for the child and establish school treatment and emergency plans, coordinate school health care, and educate other school personnel about the monitoring and treatment of symptoms. The nurse is also responsible for involving the student's parents and primary health care provider to develop a safe and therapeutic environment in the school setting.

The following information should be contained in an IHP for a student with diabetes of either type:

- Definition of hypoglycemia for the student and the recommended treatment;
- Definition of hyperglycemia for the student and the recommended treatment;
- Recommended frequency for blood glucose testing;
- Written orders from the student's health care provider outlining the dosage and indications for insulin administration and/or the administration of glucagon, if needed;
- Student may perform blood glucose testing fingersticks in the classroom if they are developmentally capable of doing so (optional);
- Times of meals and snacks and indications for additional snacks for exercise;
- Authorization for full participation in exercise and sports OR any contraindications to exercise or accommodations that must be made for that student;
- Accommodations for school trips, after school activities, and other recreational activities (e.g., class parties);
- Education of all school personnel who may come in contact with the student about diabetes, how to recognize and treat hypoglycemia and hyperglycemia, and how and when to call for assistance;
- Medical and/or treatment issues that may affect the educational progress of the student with diabetes;
- How to maintain communication with the student, the parents, the child's health care team, the school nurse, and the educational staff.<sup>81</sup>

In addition to these components, the IHP must contain the names of those people who might become involved in the student's diabetes care. This list should include everyone from the school nurse and teacher to the bus driver on the student's route. All of these people should understand diabetes, the types of symptoms associated with both hyper- and hypoglycemia, and how to respond when treatment is needed. This will involve training by the school nurse on how to find help when needed, how to identify hypo- or hyperglycemia, and may also include how to administer medication.

Several states have published guidelines on the management of diabetes within the school setting. These documents include:

Brown, P. and Kent, M. (2000). Guidelines for the Care of Students with Diabetes in the School Setting. Trenton: New Jersey Department of Education.

<http://www.state.nj.us/njded/edsupport/diabetes/>

Crawford, E. (1999). Recommendations for Management of Diabetes for Children in School. Burlington: Vermont Department of Health.

<http://www.state.vt.us/health/schooldiabetesmanual.pdf>

New York State Department of Health. (2000). Children with Diabetes: A Resource Guide for Schools.

<http://www.health.state.ny.us/nysdoh/consumer/diabetes/resource/schools.htm>

## **Seizure Disorder**

Seizure disorders occur when clusters of nerve cells, or neurons, in the brain signal abnormally. In epilepsy, the normal pattern of neuronal activity becomes disturbed, causing strange sensations, emotions, and behavior or sometimes convulsions, muscle spasms, and loss of consciousness. Epilepsy may be caused by a variety of disorders. Anything that disturbs the normal pattern of neuron activity—from illness to brain damage to abnormal brain development—can lead to seizures. Epilepsy may develop because of an abnormality in brain wiring, an imbalance of nerve signaling chemicals called neurotransmitters, or some combination of these factors. Two or more seizures are necessary for the diagnosis of epilepsy. Electroencephalograms (EEGs) and brain scans are common diagnostic tests for epilepsy.<sup>82</sup> There is currently no cure for epilepsy, but the majority of those diagnosed (about 80%) gain excellent control of their seizures with antiepileptic medications.

Sometimes a seizure disorder can result from another physiological condition, such as meningitis, in which case patients are not diagnosed with epilepsy. These students may have more complicated medical care because they must manage both the seizures and the underlying problem. But the management of their seizures at school will be similar to a student with epilepsy.

Children with seizure disorders face unique challenges at school. Children with epilepsy may develop behavioral and/or emotional problems from the stress and frustration of managing their seizure disorder. They may develop school avoidance because having a seizure at school embarrasses them, or they become the target of teasing and bullying by other children. The seizures, or the medication that prevents them, may also affect learning, attention, and memory.

Having a seizure at school can be socially damaging and, unless handled well by staff, can permanently mark a child as an outcast. When the school community is well informed and supportive, an entirely different outcome is possible. Children with seizure disorders are at risk for two life-threatening conditions: status epilepticus and sudden unexplained death. School staff, under the guidance of the school nurse, must take part in intervention for these students, both psychosocial and physiological. School Alert is a program developed by the Epilepsy Foundation to help teachers and other staff to recognize seizures, take appropriate action during a seizure, and help other children in the school community better accept and understand the child with seizures. The School Alert program offers pamphlets, videos, and a new, in-depth first aid training curriculum.

Most local epilepsy foundations sponsor a special presentation by the Kids on the Block puppet troupe for elementary grades. These colorful, full-size puppets demonstrate common child reactions to seizures and proper first aid, and present the child with epilepsy in a positive, accepting way.<sup>83</sup> Contact information for the Epilepsy Foundation can be found in Exhibit 1 of this chapter.

### **Treatment**

Most students with a seizure disorder will be managed by either one or a combination of antiepileptic medications. Since these medications may be prescribed as many as four times a day, the child will likely need to take this medication at school. More than twenty medications are available to treat epilepsy or recurrent seizures. If medicines are not successful in preventing seizures, other methods may be tried, including surgery or a special diet. The goal of all epilepsy treatment is to prevent further seizures, avoid side effects, and provide as much normalcy to the student's life as possible. Most epilepsy medications are taken orally in the form of tablets, capsules, sprinkles, or syrup. The following are some of the more common drugs that the school nurse or personnel might encounter:

- Carbamazepine (Tegretol, Carbatrol), clonazepam (Klonopin), ethosuximide (Zarontin), phenobarbital, phenytoin (Dilantin), primidone (Mysoline), valproic acid (Depakene), and divalproex (Depakote). Some newer drugs include: felbamate (Felbatol), gabapentin (Neurontin), lamotrigine (Lamictal), levetiracetam (Keppra), oxcarbazepine (Trileptal), tiagabine (Gabitril), topiramate (Topamax), and zonisamide (Zonagran).
- A rectal gel form of diazepam (Diastat) may be prescribed for a parent or caregiver to administer to the child to stop cluster seizures or prolonged seizures. Some physicians may prescribe oral diazepam (Valium), lorazepam (Ativan), or clonazepam (Klonopin) for the same purpose.
- A steroid called ACTH may be given by injection to treat children with a type of epilepsy called infantile spasms or for severe seizures that can't be controlled with other drugs. The health care provider usually gives this medication during an office visit, but the school nurse will need to be aware of its use and possible side effects.<sup>84</sup>

**Side Effects.** Side effects from antiepileptic medications are generally minimal but they can differ significantly from medication to medication.<sup>85</sup> They can affect school performance, however, as the side effects include drowsiness, fatigue, nausea, vision changes, and clumsiness. Occasionally changes in emotional state, memory, or activity level (e.g., hyperactivity) can occur. The school nurse and relevant staff (particularly teachers) need to monitor these side effects carefully, and should report any of the following to the student's health care provider and family: **unusual fatigue or clumsiness, lethargy, severe nausea, or other signs of ill health.**<sup>86</sup>

Reducing the dose or substituting another medication can often manage side effects. It can take time to establish the right treatment regimen for a child with a seizure disorder, and school personnel may encounter a variety of symptoms—physical, mental, and emotional—during this time. Occasionally, however, the treatment of the seizure problem can cause other undesirable behavioral or cognitive problems, and the student's health care provider may want to carefully weigh the benefits against the risks of various

kinds of treatment. The school nurse can gather information from teachers and other school staff (about behavior, etc.) and use it to provide accurate and complete clinical information to the student's physician and family. The nurse can make a significant difference in how quickly and easily a student with a seizure disorder finds the treatment regimen that is most effective.

**Diet.** For some students, the side effects from antiepileptic medications are too dangerous. These students may be candidates for surgery or other kinds of treatment, but occasionally a special diet will be implemented to try to control the seizures (this may also be used as therapy for students whose seizures cannot be controlled by medications). This diet, called a ketogenic diet, attempts to “trick” the body into burning fat, instead of glucose, for energy, leaving the brain less vulnerable to disorganization and seizure. The school nurse or staff may encounter this diet and must understand that it is crucial that the diet be maintained carefully. For this diet, fats are gradually increased while carbohydrates and proteins are decreased. A registered dietician or nutritionist should plan the diet. The student receiving this treatment will be hospitalized for the first few days, but will continue the diet for several months at a time. Side effects from this diet include vitamin deficiencies and elevated blood cholesterol. The most common side effects include constipation and lethargy as the body adjusts to its new energy source.<sup>87</sup>

### **Managing Seizures at School**

Any member of the school staff could be present while a student is having a seizure. The school nurse should provide training to all school personnel about the nature of epilepsy and seizure disorder, the various types of seizures a student might have, how to recognize them, and what to do in the event that one occurs. All staff should understand that they should call the school nurse as soon as possible in order to evaluate the student after the seizure has subsided and to determine if any further medical attention is needed. The following includes types of seizures and appropriate interventions:

- **Absence** – Previously called petit mal seizures, these typically produce momentary loss of awareness, sometimes accompanied by movements of the face, blinking, or arm movements. They may be frequent, as many as 60 a day. These seizures may be difficult to distinguish from the child who is daydreaming. The child with absence seizures may stop talking in the middle of a sentence, and a few seconds later continue with their

conversation. The child immediately returns to full awareness after one of these episodes.

- Management – Make sure the child did not miss any key parts of the lesson.
  
- **Simple partial seizures** – These are limited to one area of the brain. Consciousness is not lost, though the child may not be able to control body movements. Senses may be distorted during the seizure so that the child sees, hear, smells, or experiences feelings that are not real.
  - Management – If the child seems confused or frightened, comfort and reassure.
  
- **Complex partial seizures** – Sometimes called psychomotor or temporal lobe epilepsy, these seizures produce a variety of automatic behavior in which consciousness is clouded. The child may get up and walk around, be unresponsive to spoken direction (or respond inappropriately), may fling off restraints, may mutter, or tap a desk in an aimless, undirected way. He or she may appear to be sleepwalking or drugged. Some children experience fear as part of the seizure and may try to leave the room. This type of seizure usually lasts only a minute or two, but feelings of confusion afterwards may be prolonged. The child will not remember what he or she did during the seizure. Their actions during the seizure are not under their control.
  - Management – If a child has an episode of this type and appears dazed and oblivious to their surroundings, the teacher can take their arm gently, speak to them calmly, and guide them back to their seat. Do not grab or hold the child or speak loudly. If the child resists, make sure that they are safe. If the child is seated, ignore the automatic behavior but have them stay in the classroom until full awareness returns. This may necessitate closing the classroom door to prevent wandering and/or possible injury. Help reorient the child if they seem confused afterwards.
  
- **Generalized tonic clonic** – Previously called grand mal, these seizures are convulsions in which the body stiffens and/or jerks. The student may cry out, fall unconscious, and then continue massive jerking movements.

Bladder and bowel control may be lost. Seizures usually last a minute or two. Breathing is shallow or even stops briefly and will renew as jerking movements subside. The child may be confused, weary, or belligerent as consciousness returns.

- Management – First aid for a generalized seizure is focused on protecting the child from injury while the seizure runs its course. There are no first aid steps that can alter the course of the seizure. When this type of seizure happens, the teacher should:
  - Keep calm. Reassure other children that the student will be okay.
  - Time the length of the seizure and try to notice how it started and changed.
  - Ease the child gently to the floor and clear the area around him or her of anything that could hurt them.
  - Put something flat and soft (like a folded jacket) under the student's head so it will not bang against the floor as their body seizes.
  - Turn the student gently on his or her side. This will keep the airway clear and allow any fluid in their mouth to drain harmlessly away.
  - DON'T try to force open the mouth.
  - DON'T try to hold on to the student's tongue.
  - DON'T put anything in the mouth.
  - DON'T restrain movements.
  - When the jerking movements stop, let the student rest until full consciousness returns.

Breathing may have been shallow during the seizure and may have stopped briefly. This can give the child's lips or skin a bluish tinge, which corrects naturally as the seizure ends. In the unlikely event that breathing does not begin again, check the airway for any obstruction. It is rarely necessary to give artificial respiration.

Some children recover quickly after this type of seizure; others need more time. A short period of rest depending on the child's alertness following the seizure is advised. If possible the child should remain in the classroom



after recovery from the seizure. Staying in the classroom (or returning to it as soon as possible) allows for continued participation in classroom activity and is psychologically less difficult for the student. It is not unusual to lose bowel and/or bladder control during a seizure. A change of clothes kept in the health room or the principal's office will reduce embarrassment when this happens.

If a child has frequent seizures, handling them can become routine once teacher and classmates learn what to expect. One or two of the other students may be assigned to help while the others get on with their work.

- Other generalized seizures--including akinetic, atonic, and myoclonic--can produce sudden changes in muscle tone that may cause the student to fall abruptly or jerk the whole body. A child with this kind of seizure may have to wear a helmet to protect their head. These seizures are more difficult to control than some of the others and, in some cases, may be accompanied by developmental delay.
  - Management – The student should be helped to sit up, examined for injury from the force of the fall, reassured, and allowed to sit quietly until fully recovered.<sup>88</sup>

### **Emergency Management of Seizures**

Emergency management of seizures should follow the school district emergency protocol and involve the school nurse and personnel who are trained to perform cardiopulmonary resuscitation (CPR) and other emergency procedures. In addition, it may be very useful to print the above instructions, both general management and emergency warning signs involving seizures, for all classrooms, cafeterias, etc. School staff can refer to them as needed for guidance in the event of a seizure in a student under their supervision.

The average seizure in a child who has epilepsy is not a medical emergency. It usually resolves without problems. It does not require immediate medical attention unless:

- A child has a seizure and there is no known history of seizures or epilepsy. Some other medical problem might be causing the seizure and emergency treatment of that problem might be required.

- Consciousness does not return after the seizure ends.
- A second seizure begins shortly after the first one without regaining consciousness between seizures.
- The seizure shows no signs of stopping after 5 minutes.
- If a student hits his or her head with force, either during the seizure or just before it began, and has one or more of the following signs, call for immediate medical attention:
  - Difficulty rousing after twenty minutes
  - Vomiting
  - Complaints of difficulty with vision
  - Persistent headache after a short rest period
  - Unconsciousness with failure to respond
  - Dilation of the pupils of the eye, or if the pupils are unequal in size

If a seizure occurs while swimming and there is any possibility that the child has ingested large amounts of water, he or she should be checked by a health care provider as soon as possible, even if the child seems to be fully recovered.<sup>89</sup>

**For further information.** The Epilepsy Foundation has an excellent website for teachers that includes written material about management of seizures in the classroom, prevention and recognition of seizures, help for children to understand epilepsy, school performance and behavior issues, and communication with health care providers and families. The Epilepsy Foundation of America (EFA), a national organization, also has local chapters, which can assist school districts in developing policies and procedures. A particularly useful tool provided by EFA is an outline of how IDEA, ADA, and Section 504 apply to children with seizure disorder. EFA can be located online at [www.efa.org](http://www.efa.org). Mailing and phone contact information is included in Exhibit 1: Helpful Resources.

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