

Includes  
Software that  
Automatically  
Creates IHPs

# Individualized Healthcare Plans for the School Nurse

*Concepts, Framework, Issues, and  
Applications for School Nursing Practice*

Editors

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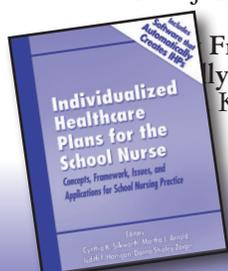
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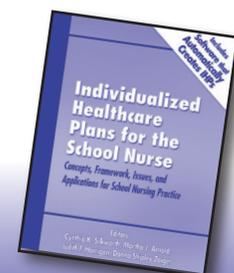
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# Individualized Healthcare Plans

Denise A. Herrmann

## Introduction

The year 2002 marked the 100th anniversary of school nursing in America. In 1902, Lillian Wald, founder of the Henry Street Settlement, assigned Lina Rogers to be the first school nurse in New York City. Lina Rogers' task was to make a difference in the school absentee rate in 1 month. Her success was astonishing, and thus began the specialty practice of school nursing. Throughout the following years, school nurses and the practice of school nursing evolved to meet the changing needs of students, families, communities, and society.

The National Association of School Nurses (NASN) has defined school nursing as a specialized practice of professional nursing that advances the well-being, academic success, and lifelong achievement of students. To that end, school nurses facilitate positive student responses to normal development; promote health and safety; intervene in actual and potential health problems; provide case management services; and actively collaborate with others to build student and family capacity for adaptation, self-management, self-advocacy, and learning (NASN, 1999).

Individualized healthcare plans (IHPs) are a tool that school nurses use to facilitate the well-being and the academic success of all learners. The purpose of this book is to help school nurses develop IHPs that meet the needs of students and clearly document school nursing practice.

## Why Should School Nurses Use IHPs?

The nursing process emerged in the 1970s as the scientific approach to the identification and solution of problems in nursing practice. As the cornerstone of nursing practice, the nursing process provides a systematic, yet dynamic, method for the delivery and evaluation of nursing care. As such, the nursing process forms the foundation of the scope and standards of professional school nursing practice (NASN & American Nurses Association [ANA], 2001). The nursing process includes assessment, diagnosis, outcome identification, planning, implementation, and evaluation. The nursing process takes the guesswork out of providing care, relying on evidence base to make decisions about the delivery of care (Denehy, 2004). It is applicable to all areas of nursing, including school nursing. Utilization of

the nursing process in schools results in the development of IHPs for students who have health-related issues.

When students at school need ongoing nursing management, a documented plan of care is essential (Hootman, 1996a). An IHP documents the information from the assessment phase, a nursing diagnosis, the student goals and outcomes to be achieved, the nursing interventions to be utilized, and ways in which the plan's effectiveness will be measured.

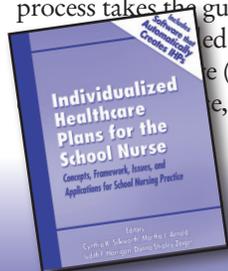
Documentation promotes sound planning, coordination, continuity, and evaluation of care (Schwab, Panettieri, & Bergren, 1998). A review of the literature outlines the many purposes of care planning and IHP development for students. Carpenito (1997) stated that care plans have two professional purposes—administrative and clinical. These categories can be applied to IHPs as follows.

Administrative purposes of IHPs:

- To define the focus of nursing, validating the nurse's position in the school
- To facilitate the management of health conditions to optimize learning
- To differentiate the accountability of the school nurse from others in the school (i.e., paraprofessionals, teachers)
- To provide criteria for reviewing and evaluating care-quality assurance
- To provide data for statistical reports, research, third-party reimbursement, and legal evidence
- To create a safer process for delegation of nursing care in the school setting

Clinical purposes of IHPs:

- To clarify and consolidate health information that is meaningful for students, families, and staff
- To establish the priority set of nursing diagnoses for a student
- To provide a method of communication to direct the nursing care needed by a particular student
- To build the foundation for documentation
- To ensure consistency and continuity of care as students move within and outside of school districts
- To direct specific interventions for the student, family, and other school staff to implement
- To provide a means to review and evaluate nursing goals and outcome criteria



## IHPs: Prioritizing Your Student Population

School nurses often have high to unreasonable student ratios, and in some cases school nurses may be in a particular school only 1 day a week. School nurses can feel overwhelmed by the volume of students, the health needs of students, or both. Every student who has special healthcare needs will require an IHP. Nurses working in the school setting may need to set limits as to which of a student's multiple health issues they can manage within the constraints of the assigned student population (Hootman, 1996b).

School nurses should prioritize students and their needs. Begin by first identifying those students whose health needs overwhelmingly affect their daily functioning or impact their education or educational environment. Consider the following in setting priorities:

- Students who may be medically fragile with multiple health needs
- Students who require extended nursing care or multiple contacts with the nurse/delegatee during the school day
- Students who must have health needs addressed as part of the individualized education program (IEP) or 504 process
- Students with health needs that are addressed on a daily basis

School nurses are also encouraged to consult with other school nurses within the school district, community, or state. Remember that an IHP does not have to address every health issue of the student. Later in this chapter, prioritization of health needs of individual students will be addressed.

## Components of the IHP

The IHP provides a format for assessment (summarizing key information); nursing diagnosis (synthesizing a problem statement); developing goals, interventions, and outcomes to meet the health needs of students; and evaluation.

## Assessment

The assessment provides the foundation for development of an IHP. An accurate assessment is needed for a meaningful IHP. This is the phase where the school nurse collects data that describe the student's health status, risks, concerns, and strengths. There are five main areas to include in the assessment: (1) health history, (2) current health status/management, (3) self-care skills/needs, (4) psychosocial status, and (5) health issues related to learning.

Most nurses utilize a combination of several methods to complete a comprehensive assessment. These include:

- Interview of student and/or family
- Review of past medical, nursing, and educational records, such as hospital or outpatient reports, IHPs, emergency care plans (ECPs), IEPs, and 504 plans
- Review of current medical records
- Consultation with other community providers, physician and primary healthcare providers, hospital staff, home care agency, or counseling services
- Physical assessment/measures of pertinent body systems (i.e., sensory functioning, vision and hearing)

- Interview of other school staff who interact with student
- Observation of student in the classroom

## Nursing Diagnosis

Individual pieces of data by themselves have no meaning. It is the method of organizing the data about a particular student and drawing a conclusion that separates professional school nurses from paraprofessionals, teachers, and other school staff. Nursing diagnoses define what school nurses distinctly identify and contribute as autonomous practitioners in the school setting, rather than as subordinates to another professional (Hootman, 1996a).

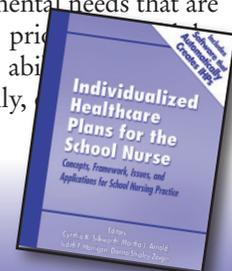
The nursing diagnosis gives direction to outcome identification, the selection of nursing interventions, and the evaluation of the interventions implemented (Denehy, 2004). There are three types of nursing diagnoses: actual, risk, and wellness (NANDA International, 2003, p. 263). Each nursing diagnosis has its own definition and may also have defining characteristics, related factors, or risk factors. In deciding upon the most appropriate nursing diagnosis, the school nurse uses clinical judgment to compare the information from the assessment to the definition, defining characteristics, and related/risk factors associated with a specific diagnosis.

NANDA developed definitions and a diagnostic classification system to uniformly and precisely identify the health issues for which nurses are accountable. NANDA defines a nursing diagnosis as "a clinical judgment about an individual, family or a community response to actual and potential health problems or life process. A nursing diagnosis provides the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable" (NANDA, 2003, p. 263). In 2001, the NASN declared in a position paper that it would support the use of NANDA diagnosis in the school health setting.

## Prioritizing Nursing Diagnoses

The number of nursing diagnoses that may be appropriate for any given student can inundate nurses. Just as school nurses must determine for which students an IHP will be developed, they must determine which health issues can be managed within the limitations of the school environment. When school nurses determine the priority of nursing diagnoses, they then can best direct the resources toward goal achievement. Carpenito (1997) described priority diagnoses as those nursing diagnoses that, if not managed now, will deter progress to the achievement of outcomes or will negatively affect the client's functional status.

School nurses must be realistic and knowledgeable of resources available when prioritizing nursing diagnoses. Resources including the time required and skill of the school nurse and any delegates must be considered. In setting priorities, school nurses should focus first on the health issues that affect safety (physical and environmental needs that are potentially life-threatening). The next priority are those diagnoses that affect the student's ability to succeed in the educational setting. Finally,



ation should be given to those diagnoses that the student, family, and/or teacher might perceive as priorities.

### Goals

Once the nursing diagnoses have been determined and prioritized, goals are developed. A goal is a hoped-for outcome, a statement of what is desired. It should be realistic in terms of student potential and the nurse’s abilities. Goals should be worded in a clear and concise manner that can be understood by all team members. Often it is appropriate for the student and/or family to help in the planning of goals. Goals can be short-term or long-term, but in either case they must be measurable. Student goals should describe a measurable behavior of the student that is evident after nursing interventions have been completed. Measurable behaviors include resolution of a problem or evidence of progress toward an improved health status or continued maintenance of good functioning.

Bulechek and McCloskey (1985) define outcomes as the guideposts to the selection of nursing interventions. There should exist readily identifiable and logical links between the diagnosis and plan of care. The activities prescribed should assist or enable the client to meet the identified expected outcome. During evaluation, student goals are used to determine the success or appropriateness of the IHP. If goals are not achieved or progress is not evident, the school nurse should revise the IHP.

### Nursing Interventions

A nursing diagnosis requires that the nurse prescribe the definitive treatment for the situation. A nursing intervention is defined as any treatment, based upon clinical judgment and knowledge, that a nurse performs to enhance patient/client outcomes (Dochterman & Bulechek, 2004). The Nursing Interventions Classification (NIC) provides a standardized language for what nurses do and lists specific activities that nurses can select in implementing the intervention (Denehy, 2004, p. 14). The NIC defines five types of nursing interventions: direct care, indirect care, community interventions, nurse-initiated treatments, and physician-initiated treatments. The school nurse uses clinical judgment in selecting

the nursing intervention(s) that will achieve the desired goal.

In the school setting it is important to remember that appropriate interventions may vary across settings, and that some interventions may be delegated to other staff. Additionally, some interventions may be shared with other school staff without necessitating delegation. An example of this is shown in **Figure 1**.

### Expected Student Outcomes

An outcome is what the student is expected to do, experience, or learn. To be measurable, it is paired with a modifier that is the *when*, *where*, and *how*. The essential characteristics of outcome criteria are that they must be

- long-term or short-term,
- in measurable behaviors,
- specific in content and time, and
- realistic and achievable.

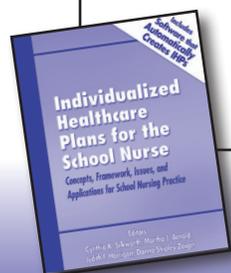
Measurable verbs are verbs that describe the exact action or behavior of the client that the nurse can validate by seeing or hearing it or less frequently, by touch, taste, or smell. For example, instead of stating, “The student will *experience* less depression,” it is better to state, “The student will *report* less depression.” School nurses should not choose outcomes that cannot be achieved utilizing the interventions that were selected, in the time frame chosen, or in the context of the school setting.

The use of student outcome language closely mirrors the use of student learning objectives, which educators are familiar with and use when developing an IEP. This similarity can promote understanding and collaboration as school nurses work with the educational team to meet the health needs of students.

School nurses may also find the Nursing Outcomes Classification (NOC) system, which was developed in 1991 after the development of NIC, to be helpful in completing the nursing process. The NOC provides a standardized, concrete method to measure outcomes. A nursing outcome is defined as an individual, family, or community state, behavior, or perception that is measured along a continuum in response to a nursing intervention(s) (Moorhead, Johnson, & Maas, 2004). An outcome has five components:

**Figure 1**

Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
Alteration in communication due to tracheostomy	Student has increased independent communication skills.	<p>In-service training and encouraging staff to utilize methods that promote effective communication</p> <p>Staff should stand in front of student, use eye contact and good volume.</p>	Student will increase communication by one verbal or nonverbal cue weekly.



label, definition, code number, indicators, and scales. The third edition of *Nursing Outcomes Classification (NOC)* has added a new outcome designed for school nurses. It is defined as “physical, cognitive/emotion and social status of school-aged children that contribute to school attendance, participation in school activities, and ability to learn” (Moorhead et al., pp. 522-523). Increasingly, it will be important to measure student outcomes that can be linked to student achievement, student attendance, student readiness, and/or student success, all of which can help demonstrate the importance of the role of school nursing.

For the purposes of this book, the chapter authors were directed to use NANDA classification and nursing diagnoses. The NIC is a system of standardized language for nursing interventions. The NOC is a standardized language of nurse-sensitive outcomes. Although the authors were not instructed to specifically use NIC and NOC for the IHPs listed, readers are encouraged to move toward using a systematic standardized nursing language as a mechanism for providing meaningful IHPs (Pavelka, McCarthy, & Denehy, 1999). The use of NANDA, NIC, and NOC by school nurses will promote quality nursing care for our clients, validate school nursing effects on our clients, and promote research endeavors (NASN, 2001).

Figure 1 provides a template for an IHP with abbreviated definitions and explanations.

## Evaluation

An IHP is the written plan of care for a student with health needs in the school setting. The IHP is not a one-time event but is dynamic through the process of evaluation. The evaluation process includes (a) reviewing the desired student goals and outcomes, (b) collecting data to determine the outcomes, (c) comparing the actual outcomes to the desired outcomes, (d) documenting the outcomes on the IHP, (e) relating the appropriateness and effectiveness of the selected interventions to the outcome, and (f) reviewing and modifying the plan of care as necessary (Denehy & Poulton, 1999).

Evaluation allows the school nurse to make judgments about the student’s progress toward identified goals. Some questions that should be considered by the school nurse include the following: Is the outcome still appropriate? Does any intervention need to be added or changed to continue progress toward the goal? Is the timeline still appropriate? Can goal achievement be related to the nursing interventions given? Are there any barriers to meeting and achieving student outcomes? Were there unexpected beneficial student out-

comes? Are the nursing diagnoses still pertinent for the student’s health condition?

Usually it is not necessary to rewrite the IHP. Revising the plan, making additions or deletions as appropriate, and documenting changes by dating and initialing changes to the IHP may be all that is needed. You may need to write an additional progress note to document your assessment, or subjective or objective data, which was collected or observed and prompted the revision.

IHP evaluations should be completed when any significant change occurs in the student’s health status or physician-prescribed medication or treatment. If the student has a relatively stable health status, the school nurse may wish to consider establishing a periodic review so the evaluation is not forgotten.

## Summary

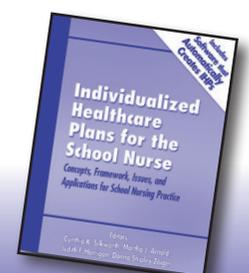
The role of the nurse in the school setting is to assess the health needs of children and to coordinate with staff, families, healthcare providers, and community agencies to provide a comprehensive school health program that facilitates the maximum educational opportunity for students. School nurses are stepping to the forefront of pediatric healthcare, health promotion, and education by developing and adopting standardized language and tools that measure the quality and outcomes of school nursing services (Stock, Larter, Kieckhefer, Thronson & Maire, 2002). The IHP can assist school nurses in many areas (NASN, 2003):

Professional school nurses utilize IHPs to communicate nursing care needs to administrators, staff, students, and parents.

The IHP will create a safer process for delegation of nursing care, supporting the continuity of care.

Planning and delivering care based on standardized IHPs and the use of standardized nursing language will help advance professional school nurses by affording evidence-based practice.

The position of the NASN on IHPs is very clear: “It is the position of the National Association of School Nurses that students whose health needs affect their daily functioning have an IHP. It is also the position of NASN that the professional school nurse should be responsible for the writing of the IHP in collaboration with the student, family, and healthcare providers and for seeing that the IHP is implemented, with periodic evaluation for evidence of desired student outcomes” (NASN, 2003, p.2).

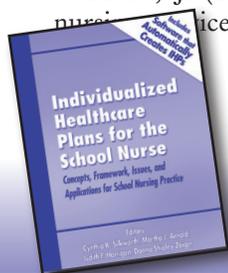


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# Chronic Health Conditions: Indicators of Need

Brenda Kay Lenz

## Introduction

Chronic health conditions can have tremendous impact on children and their families. Chronic health conditions disrupt the normal child developmental pattern and result in multiple burdens to the family. These burdens may include hospitalizations, school absences, surgery, medications, medical treatments, managing chronic pain, and activity restrictions due to the illness or fatigue. In turn, the burdens may produce for the family and/or child anxiety, loss of control, coping difficulties, role and responsibility changes, fear, grief, and impaired socialization and, for the child, developmental lags.

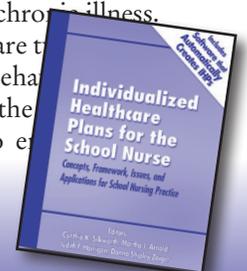
The exact number of children with a chronic condition is unknown, but the National Health Interview Survey on Child Health conducted in 1988 estimated 31% of children less than 18 years of age had one or more chronic conditions, not including mental health conditions (Newacheck, McManus, & Fox, 1991). Estimates of children with chronic conditions depend on the definition and method used to identify them (Allen & Vessey, 2004). Jackson and Vessey (2000) defined chronic illness or condition as one that is long term and is either not curable or has residual characteristics that limit activities of daily living and require adaptation or some special assistance. Chronic disease is the foremost set of healthcare problems in the United States today, as one in five Americans report a chronic condition (Kinne, Patrick, & Doyle, 2004). The increase in prevalence of chronic illness stems from improvements in infectious disease control, advances in medical technology, pharmacotherapeutics, improved diagnosis and case finding, and increased birth and injury survival rates (Allen & Vessey). The overall incidence of childhood chronic conditions has not changed in the past 20 years, but improved life expectancy has increased the prevalence of chronic conditions. New categories of childhood chronic conditions are emerging, including extreme prematurity and the increased prevalence in type 2 diabetes resulting from the dramatic rise in childhood obesity (Allen & Vessey). Examples of childhood chronic conditions include diabetes mellitus, cystic fibrosis, cerebral palsy, asthma, inflammatory bowel syndrome, bleeding disorders, cancer, cystic fibrosis, Down syndrome, epilepsy, HIV/AIDS, arthritis, sickle cell disease, neural tube defects, and mental health concerns.

Children with chronic conditions have unique needs compared with adults. Chronic conditions in children are frequently not stable, and children may experience acute exacerbations and remissions that are superimposed on their growth and development (Allen & Vessey, 2004). Nurses must consider the developmental needs for children living with a chronic condition. Developmental needs include cognitive, fine and gross motor, social, personal, communication, and emotional. Variables that contribute to severity of developmental alterations include the natural history of the condition, personal characteristics of the child, and the larger social network (Jackson & Vessey, 2000).

Children's understanding of and response to chronic illness are influenced by their age at the onset of the disorder as well as growth and development throughout the course of the illness (James, Ashwill, & Droske, 2002). As children mature, their view of illness evolves (Leifer & Hartston, 2004). According to these authors, preschoolers experience illness as magical, whereas young school-aged children have concrete and rigid ideas and show little comprehension of the illness, although they can list symptoms. Older school-aged children show greater understanding of the cause of the illness, and adolescents understand abstract principles and concepts involved in illness.

The adolescence period is crucial in regard to adaptation to chronic conditions. Adolescents are already under stress due to developmental changes related to identity, independence, and role changes (Lubkin & Larsen, 2002). Woodgate (1998) conducted an exploratory, qualitative study with teens to elicit detailed descriptions of adolescents' chronic illness experiences. "It's hard" was found as an overall theme regarding the difficulties and hardships that come from having a chronic illness for these adolescents. Most adolescents in the Woodgate study felt that life was not easy because of their chronic illness. Additional themes include the experience required additional energy or extra effort; it meant that the adolescents experienced limitations or restrictions; they experienced distress, suffering, or pain; and in addition to worry about school, friends, and family, these adolescents worried about their health and consequences that come with having a chronic illness.

Children with chronic conditions are taught to be different from other children to have emotional or behavioral problems (Allen & Vessey, 2004). Regardless of the child's age and development, concerns related to emotional and behavioral



justment in the areas of self-esteem, self-reliance, and autonomy are prevalent among children (James et al, 2002). They are at significant risk for behavioral difficulties, role performance changes such as the sick or impaired role, and poor resolution of developmental tasks including regression (Lubken & Larsen, 2002). Some children will experience altered body awareness and body image resulting from the physical changes related to the illness or treatment. School absences are a concern for some children. Socialization may be limited as a result of frequent hospitalization as well as side effects of treatment. Altered communication or lack of communication may occur as related to psychological and emotional needs. The condition may contribute to developmental lags compared to unaffected peers, although chronic conditions do not necessarily connote the presence of developmental disturbances (Jackson & Vessey, 2000).

Unlike adults with chronic conditions, children depend on adults for care and it is critical for nurses to keep in mind the context of the family and caregivers. Family health, ethnicity, culture, socioeconomic status, education, and source of health insurance all affect the child's access to services, use of services, and adherence to treatment plans (Allen & Vessey, 2004). Clawson (1996), analyzed the concept of family adaptation to a child with a chronic illness. The author described that initially, upon diagnosis, the family system often reacts with shock and disbelief. Attributes of family adaptation to chronic illness include accepting the child's condition and giving meaning to the condition as a coping strategy. Another adaptive task is to manage the child's condition on a day-to-day basis. Additional tasks described by Clawson include meeting the child's developmental needs, coping with ongoing stress and periodic crisis, assisting family members to manage their feelings, educating others about the condition, and establishing a support system. Chronic illness can strain sibling relationships and take a toll on economic resources of the family (Leifer & Hartston, 2004)

Some families are more able to adapt than others (Diamond, 1994). Studies have shown that some families reorganize and actually become stronger in response to a situational crisis. These families are considered resilient. Traits of a resilient family include balancing the illness with other family needs, attributing positive meaning to the experience, engaging in effective coping efforts, maintaining flexibility, communicating effectively, and collaborating with professionals (James et al., 2002). Unfortunately, some families with a child with disabilities may view the child as a source of stress and maladaptation (Olsen et al., 1999).

Socioeconomic status and ethnicity play important roles in incidence and severity of the conditions (Allen & Vessey, 2004). Poor children have a significantly higher incidence rate and severity level of disability. Additionally, the family's socioeconomic status has a major impact on the family's financial resources. For families include increased healthcare

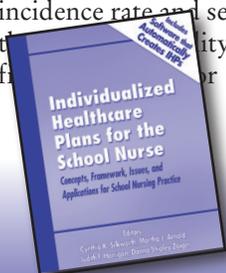
expenditures, such as special diets, pharmaceuticals, treatments, cosmetics or clothes to hide or accommodate effects of disease or treatment, counseling and mental health services, respite services, transportation expenses; also there may be a decreased ability of parents to work as a result of the child's needs and babysitting costs for siblings while the child receives treatment.

A final critical issue for nurses is the medical management plan for the treatment of the chronic condition. Adherence by children to the medical management of the condition is related to the beliefs the children and their families hold about the condition. Those children who are more likely to be compromised are those who perceive their illness as more negative and restricting their function (Jackson & Vessey, 2000). Moreover, poor medical management creates a downward spiral that results in more chronic illness symptoms, increased school absences, and further psychosocial adjustment issues. For example, Sherman and Hendeles (2000) reported that many patients with poorly controlled asthma are actually poorly compliant. Children who take their treatments as prescribed have an opportunity to live more normal lives.

Behavioral problems may be related to adherence to the treatment plan. For example, the parents, out of fear for the child's future well-being, may focus their attention on strict compliance to the treatment regimen. This attention may lead to a power struggle between parent and child, as developmentally the child strives for independence or autonomy from parental supervision. In contrast, permissive parents may allow the child to take care of the treatment on his or her own. This permissiveness does not take in account the child's developmental needs for guidance, consistency, and structure.

School nurses are in pivotal positions to help children with chronic conditions and their families to succeed. Working with these children requires knowledge of the condition, the medical treatment plan, potential complications, and side effects of treatment. Nurses hold this knowledge. However, nurses need to recognize the psychosocial and developmental problems associated with chronic conditions and provide nursing interventions specifically for these problems.

Primary psychosocial nursing interventions include care for the child through counseling and ongoing support, health promotion, and, lastly, anticipatory guidance through periods of developmental transition. Secondary nursing intervention may include teaching related to knowledge deficits. However, a knowledge deficit may not be the primary reason for psychosocial issues, and health education should not be substituted for primary psychosocial nursing interventions. If health education is needed, it should be an ongoing process, must be adapted to the child's developmental level, and must be adapted to the family's knowledge base (Diamond, 1994). Lastly, parental support may be necessary to reinforce normal family life and consistent discipline.



School nurses must advocate for the child and the family in the school environment. School nurses have the unique role of facilitating school accommodations and fostering psychosocial support throughout the school setting. Children thrive in schools that support their needs. As described by Lowe and Miller (1998), school nursing services are an essential component to the health and well-being of children and youth with chronic health problems.

## Management

The goal for any child with chronic illness is to achieve and maintain the highest level of health and function possible (James et al., 2002). This includes the child's physical, psychosocial, and emotional health. The attempt is to maintain a normal pattern of living, or normalization, for the child and the family.

"The school nurse has an important leadership role in the provision of school health services for children with chronic conditions" (Allen & Vessey, 2004, p. 81). The most common and familiar nursing role is assessment of student needs, development of an individualized healthcare plan (IHP) to address the needs, either direct nursing

service or delegation and supervision of nursing care, and evaluation of care. This includes nursing care of acute, chronic, episodic, and emergency needs.

The second role is one of care or care coordinator. The school nurse is in an ideal position to serve in the role of coordinator of care with the primary care provider, specialists, and local public health and social service agencies (Allen & Vessey, 2004). The nurse has the opportunity to see the child daily and can identify changes in health status, the effectiveness of prescribed treatments and medications, the effectiveness of the individualized education plan (IEP) and assistive technologic devices in meeting the educational goals for the child, and potential problems and changes in the child's condition.

Last, the school nurse, with formal education in pediatrics, child growth and development, mental health, family health, and health promotion, has a unique knowledge base in which to foster the psychosocial adjustment of children with chronic conditions. Nurses need to take an active and leadership role in the promotion of psychosocial and emotional health for children with chronic conditions.

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## Individualized Healthcare Plan

### Assessment

Nurses must gather data from many sources, including observations, interviews, physical examinations, and interactions with the child and family. Current health information regarding the child and the chronic illness is essential. References for the section include the fifth edition of *Chronic Illness Impact and Interventions* (Lubken & Larsen, 2002) and the article "Assessment of Stressors in Families With a Child Who Has a Chronic Condition" (Burke, Kauffmann, Harrison, & Wiskin, 1999).

Following are listed the areas for assessment.

#### *Social isolation*

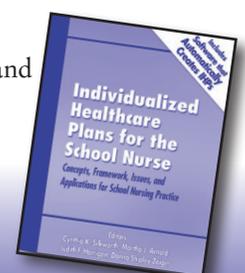
- Assess for student's feelings; may include marginality or exclusion, alienation, isolation, loneliness, and aloneness (*Example:* Student with brain tumor needs to wear baseball cap due to loss of hair in school where caps are against policy. He feels ridiculed and singled out.)
- Observation assessment by teachers, nurse, or family yields declining quality and number of friends
- Attendance changes that include missed school due to hospitalizations or absences

#### *Medical Treatment Nonadherence*

- Assess knowledge level, beliefs, and attitudes of student and family.
- Assess for student and family's perception of illness threat.
- Assess student's feelings, which may include hostility, depression, emotional distress, anxiety. (*Example:* Adolescent with cystic fibrosis refuses to eat additional calories and family provides additional calories through nasogastric tube feeding at night.)
- Assess for social support, cultural factors, language barriers, motivation, and personal control. (*Example:* Immigrant student with tuberculosis doesn't understand the need for or the cost of taking antibiotics for 6 months).
- Assess family economic factors related to cost of medical management, including insurance and copay costs, government programs, transportation costs, employment of parents, and out-of-pocket money for sibling babysitting, supplies, and special expenditures above what insurance will pay.

#### *Body Image*

- Assessment includes observation and interview of student. Assess student's experience and change, perception of experience, knowledge of illness and effects.



- Learn how much value is placed on appearance to determine impact. (*Example:* Young adolescent who values thin appearance avoids insulin injections in order to lose weight.)
- Assess for self-esteem and support systems.
- Use standardized screening tool if necessary.

### *Self-reliance and Autonomy*

- Identify student strengths.
- Identify self-care skills student uses.
- Identify self-care skills student doesn't use but would be able to if given the autonomy to do so by provider, family, or others.
- Identify fears or anxiety issues related to chronic illness that prevents autonomy.

### *Family Processes*

- Assess for impact on family life stage
- Assess family for distribution of tasks/responsibility among family members.
- Assess for stress associated with providing care. Stress is associated with intensity of care, type of care, caregiver obligations, and support from family for care.
- Assess for burden or strain of care or the infringement of the caregiving role upon the individual's space.
- Assess for exhaustion or burnout.
- Assess for neglect, abuse, and excessive caregiving. (*Example:* Mother is present every day at school to ensure proper care of son with cerebral palsy while teenage daughter suffers from lack of parental supervision and seeks attention from older men.)
- Assess financial impact of caregiving and direct costs for care of child.
- Assess sibling issues.
- Assess for social support and relationships that support family including extended family, community, friends, and parents with similar children.

### *Coping*

- Assess past coping mechanisms used by student during stress and illness crisis.
- Assess effectiveness of coping mechanisms used by student and consequences of use.
- Assess for ineffective or inappropriate coping mechanisms used by student. (*Example:* Student uses anger and lashes out at caregivers when blood glucose needs to be checked.)
- Assess changes in coping mechanisms used over course of chronic illness.

### *Self-esteem*

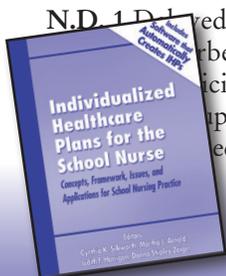
- Assess for signs of depression, mood disorders; may need to use depression screening tool.
- Assess for motivation. (*Example:* "I don't feel like taking care of myself.")
- Assess for feelings related to self. (*Example:* "I hate myself.")
- Assess for feelings related to self-efficacy or the ability to care for self.
- Assess for thoughts about suicide and suicide plan.

### *Role Performance*

- Assess student for the ability to carry out medical regimen.
- Assess student ability to plan ahead related to illness needs and symptoms, modify his or her environment, and plan activities when symptom-free.
- Assess student's ability to manage and prevent crisis. (*Example:* Has student experienced hypoglycemic episode and can she identify early symptoms?)
- Assess student's ability to adjust to changes in the course of the disease.
- Assess student's ability to adjust schedule to cope with managements of health regimens.
- Assess student's ability to hide illness, manage symptoms, and find ways to be treated as normal.

## **Nursing Diagnoses (N.D.) (NANDA 2003)**

- **N.D. 1.D.1** Delayed growth and development (00111) related to chronic condition or disability
- **N.D. 1.D.2** Disturbed body image (00118) related to actual or perceived differences, feelings of being different, inability to participate in specific activities.
- **N.D. 1.D.3** Disrupted family processes (00060) related to situational crisis (child with chronic condition)
- **N.D. 1.D.4** Impaired social interaction (00052) related to frequent hospitalizations, frequent school absences, and the



- inability to initiate or maintain social relationships
- N.D. 5 Ineffective role performance (00055) or impaired role (sick role) performance related to chronic illness or disability (includes risk for school role failure)
- N.D. 6 Low self-esteem (00120) related to effects of chronic condition
- N.D. 7 Impaired adjustment (00070) or ineffective coping (00069) related to chronic condition
- N.D. 8 Self-care deficit (00109; 00108; 00102; 00110), inappropriate dependence, low self-reliance related to chronic condition

## Student Goals

- The student will attain maximum expected growth and development. (N.D. 1)
- The student will express feelings and concerns and/or will cope with actual or perceived changes caused by illness. (N.D. 2)
- The student will have needs met pertaining to family unit and/or will exhibit positive adaptation to child's condition. (N.D. 3)
- The student will experience positive interpersonal relationships. (N.D. 4)
- The student will exhibit positive adaptation to chronic condition. (N.D. 5)
- The student will exhibit improved self-esteem and self-concept. (N.D. 6)
- The student will cope with limitations positively. (N.D. 7)
- The student will engage in self-care activities; will achieve sense of competence and mastery. (N.D. 8)
- The student will experience reduction in fear and anxiety. (N.D. 3, 5, 6, 7, 8)
- The student will demonstrate understanding of chronic condition. (N.D. 1–8)

## Nursing Interventions

Planning and implementation of nursing care are based on several factors. First, the child's condition must be considered, because each illness will include specific implications. Second, the child's growth and development must be considered. Last, the needs, coping mechanisms, and available resources of the child and family are considered as influencing factors. Nursing care includes assisting the child and family to accept, understand, and incorporate the illness into each stage of growth and development.

### *School-wide interventions:*

- Create an empathetic school community by sharing implications of chronic conditions through education of school staff and peers. (N.D. 1–8)
- Balance confidentiality (as requested by family and child) with meeting school health and safety needs. (N.D. 1–8)
- Monitor the results of interventions and document. (N.D. 1–8)

### *Individualized Healthcare Plan (IHP):*

- Initiate an IHP and coordinate care for child between teacher, school support services (school social worker, counselors, and psychologist), auxiliary staff (cafeteria, playground), family, and community services and primary provider as appropriate. (N.D. 1–8)
- IHP accommodations related to school performance and attendance should be made on an individualized basis. (N.D. 4, 5)

### *Interventions for medical management:*

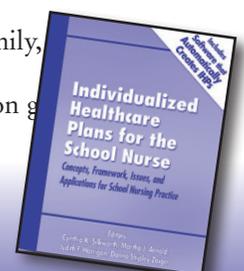
- Monitor adherence and response to the medical management plan. Evaluate the child's response to the plan. (N.D. 1–8)
- Share information with the health care provider or primary physician while complying with confidentiality and privacy guidelines (HIPAA). (N.D. 1–8)

### *Interventions for the family:*

- Be available to child and family. Communicate honestly with child and parents. Build an ongoing trusting relationship with family and child. Return phone calls promptly. (N.D. 1–8)
- Assist family to identify support systems. This may include community camps, extended family, other community services or programs. (N.D. 3)
- Help family understand chronic condition, therapies, and implications. Reinforce information given by other professionals. Clarify misconceptions. Provide accurate information. (N.D. 1–8)

## **Individualized Healthcare Plans for the School Nurse**

[www.schoolhealth.com/ihp](http://www.schoolhealth.com/ihp)



- Provide anticipatory guidance to family and child related to impending developmental needs (*Example:* the transition from high school to college and the needs of the young adult with inflammatory bowel syndrome). (N.D. 1)
- Support families to find meaning in the condition. (N.D. 3)

**Community-based interventions:**

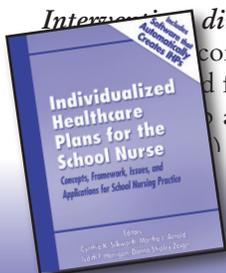
- Advocate for community services for children’s mental health needs, family and sibling needs, and respite care at the local, state, and national level. (N.D. 1–8)

**Student interventions:**

- Facilitate a school-based support group for children with a chronic condition. Findings from research suggest that children may lack essential information about their illness and have misunderstandings about themselves and their family and friends regarding their illness (Berg, Tichacek, & Theodorakis, 2004). Groups allow children to share the emotional impact of the illness. Studies have found that asthma education programs to students resulted in an increase in students’ self-management behaviors (Gregory, 2000). (N.D. 2–7)
- If unable to provide support group, introduce child to others who have adjusted well to this or similar condition. (N.D. 2, 4, 5, 6, 7)
- Facilitate adult-child mentoring. Encourage local adults with similar needs or experiences to support students (Example: adult athlete with asthma talks about asthma with student athlete). (N.D. 4–7)
- Encourage students to acknowledge experiences and feelings through active listening and supportive comments. (N.D. 2–7)
- Develop and facilitate social-skills and/or coping training programs. Network with teachers and school support services (school counselor, school social worker, and school psychologist) to provide program (Example: the use of theater performers to model appropriate responses to social cues). (N.D. 4–7)
- Provide one-on-one counseling. Counseling can assist child to give meaning to condition and to release negative emotions. Counseling can identify positive coping behaviors, extinguish negative behaviors, and set realistic goals. Nurses have the skills and knowledge to provide health counseling. Counseling is supportive and allows children to find their own answer from within themselves rather than being told what to do by authority figures. (N.D. 2, 4–7)
- Monitor and assess students with chronic conditions for maladaptive behaviors, ineffective coping mechanisms, and signs of depression as described in assessment section. (N.D. 1–8)
- Refer students with maladaptive behaviors, early signs of depression, or ineffective coping mechanisms to a professional community-based mental health provider who specializes in chronic conditions. Community-based counseling may be necessary or even supportive to the child’s adaptation to the illness. (N.D. 1–8)
- Encourage normal life events. Maximize involvement of the child in school activities. Plan and support the child’s attendance on field trips. Advocate and support the child’s attendance in extracurricular activities. (Example: Work with family of cystic fibrosis child to pack pulmonary equipment for field trip and ensure that nurse attending field trip is trained regarding the use of the equipment.) (N.D. 2, 4, 5, 6, 7)
- Encourage adequate rest, nutrition, physical activity, and activities of daily living. (N.D. 1)
- Teach self-care on an individual basis to children with chronic conditions. Encourage child to assist in own care as age and capabilities permit. Refer to occupational therapist or physical therapist for equipment adaptation needs. (N.D. 8)
- Conduct classroom education related to hygiene and nutrition. By supporting a healthy school, nurses can assist children with chronic illnesses to develop their full potential. (Example: Good hand washing decreases the infection rate and keeps students with suppressed immune systems [leukemia] in school versus the hospital.) (N.D. 4, 5)
- Ensure safety. Provide for environmental safety needs. Clarify school policy on infection control and environmental hazards (Example: chemistry class and asthma triggers, or animal visitation and asthma triggers). (N.D. 4, 5)
- Help child understand chronic condition, therapies, and implications through health education. Reinforce information given by others. Clarify misconceptions. Provide accurate information. (N.D. 1–8)

**Interventions directed at the school nurse:**

- Pursue continuing nursing education programs to increase nursing knowledge base regarding chronic condition and family care. (N.D. 1–8)
- Develop and practice counseling skills. Attend continuing education programs to increase counseling (not just assessment) skills. (N.D. 1–8)



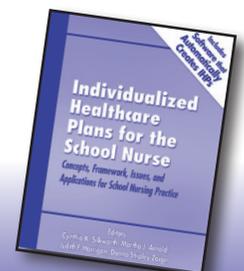
## Expected Student Outcomes

The student will:

- Experience minimal disturbance of normal growth and development as evidenced by minimal delays. (N.D. 1)
- Experience minimal disturbance of normal growth and development as evidenced by ability to interact in age-appropriate manner socially, physically, cognitively, to the degree allowed by the disability or illness. (N.D. 1–8)
- Exhibit minimal body image disturbance and will adapt to physical changes caused by illness or disability as evidenced by acceptance of change or loss and ability to adjust to changes. (N.D. 2, 7–8)
- (In conjunction with family) experience normal patterns of functioning as evidenced by maintaining family routines, and meeting family needs. The student and family will experience normal patterns of functioning as evidenced by expressing feelings or coping effectively and using support systems. (N.D. 3–5)
- Develop positive relationships with peers. (N.D. 4–7)
- Develop positive role performance as evidenced by positive comments or behaviors. (N.D. 5)
- Develop positive self-esteem or self-regard as evidenced by positive comments or behaviors. (N.D. 6)
- Display effective coping mechanisms as evidenced by open communication, use of supportive services and resources, acceptance or adaptation to illness. (N.D. 7)
- Succeed in school as evidenced by attendance, grades, and other school achievements. (N.D. 4–7)
- Develop healthy interdependence as evidenced by appropriate self-care. (N.D. 8)

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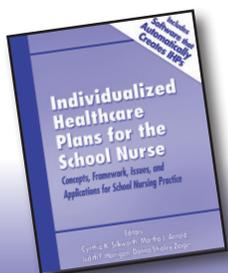


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## Resources

- Many community resources are available to help children and families succeed. The nurse, as a liaison between the school and the family, can assist the family by providing referrals to current resources.
- Local resources include county health and human services agencies. Frequently, these agencies have compiled a listing of local community resources, and this list is available to school nurses simply by calling and inquiring. Community resources include respite care providers, crisis nurseries, domestic abuse shelters, food shelves, used clothing and household furnishing sites, toy-lending libraries, and other public assistance services.
- Another resource may be the area's regional hospital. Frequently, regional hospitals (as opposed to local/rural hospitals) have staff that specialize in chronic illness and provide classes and support groups for various chronic illnesses, and families may be willing to drive to obtain that support (example: inflammatory bowel syndrome monthly support group).
- Many chronic illnesses and disabilities have national and/or state organizations dedicated to supporting children and their families. A partial list of examples, along with mailing addresses and phone numbers, is included below. Another quick method for identifying resources is to use a search engine to check the Web. The Web page for these organizations will have the most current information, including workshops, support groups, and available print material. If you are unfamiliar with searching the Web, check with the community or school library for assistance. Many libraries and schools, even in rural areas, have access to the Web and search engines.



## **Cancer**

American Cancer Society  
1599 Clifton Road, NE  
Atlanta, GA 30329  
1-800-ACS-2345  
<http://www.cancer.org>

Corporate Angel Network  
Westchester County Airport  
1 Loop Road  
West Plains, NY 10604  
914-328-1313  
<http://www.corpangelnetwork.org>

National Childhood Cancer Foundation  
440 East Huntington Drive  
PO Box 60012  
Arcadia, CA 91066  
1-800-458-NCCF  
<http://www.curesearch.org>

## **Diabetes**

American Diabetes Association  
1701 North Beauregard  
Alexandria, VA 22311  
1-800-DIABETES  
<http://www.diabetes.org>  
International Diabetes Center  
3800 Park Nicollet Boulevard  
Minneapolis, MN 55416  
1-888-825-6315  
<http://www.parknicollet.com/diabetes/>

## **Gastrointestinal Disorders**

American Celiac Society/Dietary Support Coalition  
59 Crystal Avenue  
West Orange, NJ 07052  
973-325-8837

Celiac-Sprue Association USA  
PO Box 31700  
Omaha, NE 68131  
402-558-0600  
<http://www.csaceliacs.org>

Crohn's and Colitis Foundation of America  
386 Park Avenue South  
17th Floor  
New York, NY 10016  
1-800-932-2423  
<http://www.cffa.org>

## **Mental Retardation**

American Association of Mental Retardation  
444 North Capitol Street, NW  
Suite 846  
Washington, DC 20001  
1-800-424-3688  
<http://www.aamr.org>

National Down Syndrome Society  
666 Broadway  
8th Floor  
New York, NY 10012  
1-800-221-4602  
<http://www.ndss.org>

## **Musculoskeletal Disorders**

Arthritis Foundation  
PO Box 7669  
Atlanta, GA 30357  
1-800-282-7800  
<http://www.arthritis.org>

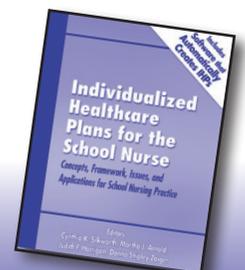
Muscular Dystrophy Association of American, Inc.  
3300 E Sunrise Drive  
Tucson, AZ 86718  
1-800-572-1717  
<http://www.mdaua.org>

Osteogenesis Imperfecta Foundation, Inc  
804 West Diamond Avenue  
Suite 210  
Gaithersburg, MD 20878  
1-800-981-2663  
<http://www.oif.org>

Neurologic Disorders  
Epilepsy Foundation  
4351 Garden City Drive  
Landover, MD 20785  
1-800-EFA-1000  
<http://www.epilepsyfoundation.org>

Spina Bifida Association  
4590 MacArthur Blvd, NW  
Suite 250  
Washington, DC 20007  
1-800-621-3141  
<http://www.sbma.org>

United Cerebral Palsy  
1660 L Street, NW  
Suite 700  
Washington, DC 20036  
1-800-872-5827  
<http://www.ucp.org>



## Respiratory Disorders

American Lung Association  
1740 Broadway  
New York, NY 10019  
1-800-LUNG-USA  
<http://www.lungusa.org>

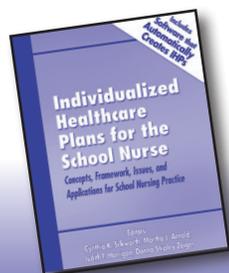
Asthma and Allergy Foundation of America  
1233 20th Street, NW  
Suite 402  
Washington, DC 20036  
1-800-7-ASTHMA  
<http://www.aafa.org>

Terminal Illness  
Children's Hospice International  
901 North Pitt Street  
Suite 230  
Alexandria, VA 22314  
1-800-242-4453  
<http://www.chionline.org>

Make-A-Wish Foundation of America  
3550 North Central Avenue  
Suite 300  
Phoenix, AZ 85012  
1-800-722-WISH  
<http://www.wish.org>

## Other Disorders

National Organization for Rare Disorders (NORD)  
55 Kenosia Avenue  
PO Box 1968  
Danbury, CT 06813  
203-744-0100  
1-800-999-6673  
<http://www.rarediseases.org>



# Brain Injury, Traumatic

MaryAnn Tapper Strawhacker

## Introduction

Traumatic brain injury (TBI) is the most likely cause of death or permanent disability in children and adolescents. Each year among children 14 years of age and younger, TBI claims 3,000 deaths, 29,000 hospitalizations, and 400,000 emergency department visits. Young people between the ages of 15 and 24 years and those over age 75 are the two age groups at greatest risk for TBI. By gender, males are two times more likely to sustain a TBI than females (National Center for Injury Prevention and Control, 2003).

In public schools, approximately 13,000 children receive services each year related to TBI (Youse, Le, Cannizzaro, & Coelho, 2002). Many of these children require special education. TBI is defined in the Individuals with Disabilities Education Act as "...an acquired injury to the brain caused by an external physical force resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance..." Excluded from this definition are brain injuries that are congenital, degenerative, or resulting from birth trauma (National Information Center for Children and Youth With Disabilities, 2002).

## Pathophysiology

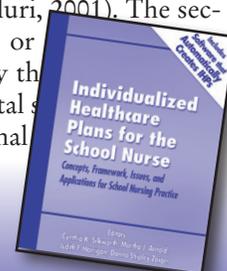
TBI is commonly divided into two major types of primary injury: open and closed. Open TBI means an opening has been created from the outside, through the skull and dura. Damage from this type of injury tends to be localized to the region of the brain penetrated. Closed head injury is the most common type of injury, and although the dura has not been penetrated, injury tends to be diffuse owing to a variety of mechanisms. Secondary damage resulting from sources such as infection, lack of oxygen, edema, and increased intracranial pressure may compound the effects of both types of primary TBI (Youse et al., 2002).

Four common types of brain injury that can be detected through medical testing are skull fracture, contusion, diffuse axonal injury, and hematoma. Skull fracture is a break or crack in the skull and can be depressed when fragments of the bone press into brain tissue. Skull fracture may also cause contusions and areas of bleeding, resulting from bruising of brain tissue. Cells may be dam-

aged to the point of death, resulting in permanent function loss, or may be partially damaged and capable of repair. In coup-countercoup injuries, there are actually two contusions. The force of the impact is so great that a contusion results both at the point of impact and 180 degrees away on the opposite side of the brain. Contusions with severe TBIs tend to occur in the frontal and temporal lobes and in the brainstem. This occurs when the head is in motion and then suddenly stops, causing the brain to smash against the skull. Injury occurs when the brain contacts rough areas on the skull's inner surface. Injuries to the axons (nerve cells) are called diffuse axonal injury and are the result of shearing force. Twisting movements during injury can cause the axon to stretch to the point of pulling apart, resulting in cell death (Christensen, 2001; Brain Injury Association of America (BIA), 2003). Finally, hematomas are the result of damage to a major blood vessel within the brain and cause bleeding in or around the brain. Bleeding between the skull and dura results in an epidural hematoma, whereas bleeding between the dura and the arachnoid membrane results in a subdural hematoma. Within the brain, bleeding results in an intracerebral hematoma. Surgery may be required in about half of those with severe brain injuries to remove hematomas and contusions or repair damage (National Institute of Neurological Disorders and Stroke [NINDS], 2002).

## Severity of TBI

The severity of TBI is determined by a combination of clinical measures, including use of the Glasgow Coma Scale (GCS), length of unconsciousness, and length of amnesia after the event. The GCS was developed by neurosurgeons as an objective way to detect improvement or deterioration in intensive-care patients with TBI. The GCS measures the best response on a series of three subtests for eye, verbal, and motor responses. Scores range from a perfect 15 to a score of 3, denoting no response (Christensen, 2001). Research has demonstrated initial Glasgow score, in combination with other measures, is a significant prognostic factor for outcome in children with TBI (Pillai, Praharaj, Mohanty, & Kolluri, 2001). The second measure is loss of consciousness or coma. The end of a coma is marked by the child's ability to respond to environmental stimuli. This definition varies by setting. The final



severity is post-traumatic amnesia (PTA). This is defined as the period of amnesia or memory impairment after the initial injury and may be marked by confusion, disorientation, and agitation (Christensen). Using these three clinical measures, brain injury is divided into three levels: mild, moderate, and severe (BIA, 2003).

Almost 75% of all traumatic brain injuries fit the definition of **mild**, meaning loss of consciousness was less than 1 hour (Semrud-Clikeman, 2001). There may be no loss of consciousness, however, and the child just appears dazed or confused. Also, PTA must be less than 1 hour and GCS score must be 13 to 15 for an injury to be defined as mild (Christensen, 2001). Common symptoms for at least 1 week after mild injury include headache, dizziness, and fatigue (Ponsford et al., 1999). Other symptoms may include sleep disturbance; irritability; sensitivity to noise or light; balance problems; decreased concentration, attention span, and speed of thinking; memory problems; nausea; depression; anxiety; and emotional mood swing. Tests or scans of the brain appear normal (BIA, 2003). By 3 months after injury, symptoms have usually resolved with no significant cognitive impairments (Ponsford et al., 1999). For up to 15% of children, symptoms may persist even beyond 1 year and are called postconcussion syndrome (Bazarian, Wong, Harris, Leahey, Mookerjee, & Dombovy, 1999).

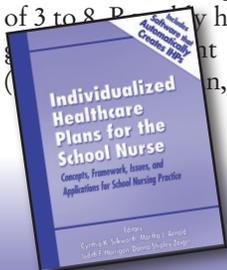
Mild brain injury occurring during athletics is a primary concern for school-aged children. The Standardized Assessment of Concussion was developed to detect and track mild brain injury in athletes. The instrument is easy to use, requires little training, and yields a reliable score to guide coaches and trainers in deciding when a player can safely return to play (McCrea, Kelly, & Randolph, 1997).

**Moderate** traumatic brain injury requires loss of consciousness for a time not greater than 24 hours, GCS score of 9 to 12, and PTA of 1 to 24 hours. Symptoms are similar to those with mild traumatic brain injury; however, they are more likely to persist for several months (Semrud-Clikeman, 2001). Students with a moderate TBI may have a headache that persists or gets worse, ongoing nausea and vomiting, seizures, difficulty arousing, dilation of one or both pupils, abnormal speech, loss of coordination, and/or behavioral changes (NINDS, 2002). Students with moderate TBI tend to more closely resemble those with mild and not severe TBI (Semrud-Clikeman). Recovery may require treatment but generally is satisfactory, or compensatory strategies can be learned to balance deficits (BIA, 2003). Signs of moderate to severe brain injury require immediate medical attention. Brain scans may show abnormal findings such as hematomas or contusions (Semrud-Clikeman).

**Severe** brain injury is defined by either loss of consciousness or PTA greater than 24 hours and a GCS score of 3 to 8. About half of all children brought to the emergency department with severe brain injuries will die (Christensen, 2001). Of those who survive, poor

outcomes are associated with initial GCS score of 3 to 5, absent verbal response, and presence of subarachnoid hemorrhage, among other measures (Pillai et al., 2001). Post-traumatic epilepsy occurs in 5% to 7% of closed brain injury and up to 11% with severe TBI. The risk for seizures after penetrating TBI is much greater (Christensen, 2001). Parents of children with severe TBI report lower health-related quality of life (HRQL) measures relative to behavior, mental health, general health, and family impact. Also, communication skills, daily living skills, and general adaptive functioning were rated lower for severely brain-injured adolescents. Risk factors for poor HRQL include family social disadvantage and prior existence of problems in areas such as behavior or academic achievement. In one study, 67% of families with a severely brain-injured child used mental health counseling sometime after injury (Stancin et al., 2002).

Students with severe TBI demonstrate selective long-term deficits in social problem-solving skills, which may account for poor social and academic outcomes (Janusz, Kirkwood, Yeates, & Taylor, 2002). At 6 and 12 months after injury, comparing children with mild to those with severe TBI, greater deficits were seen for the severely injured group on memory tasks (Catroppa & Anderson, 2002). Children with prior learning problems who sustain a TBI display worse memory abilities, suggesting less cognitive reserve (Farmer et al., 2002). Two years after injury, children with severe TBI demonstrated a significant difference on tasks requiring sustained attention, especially on complex tasks requiring speed, accuracy, and decision making, when compared with children who sustained a mild TBI (Catroppa & Anderson, 2003). Long-term follow-up of students with severe TBI demonstrates significantly lower reading recognition, spelling, and arithmetic scores than those with less severe injury. Also, a large majority of severely injured students had either received special education assistance or failed a grade (Ewing-Cobbs, Fletcher, Levin, Iovino, & Miner, 1998). In addition, the younger the child was at the time of injury, the greater the likelihood of receiving special education services (Hux, Marquardt, Skinner, & Bond, 1999). A number of studies have demonstrated that brain damage early in life is associated with long-term deficits and intellectual impairments (Stein & Hoffman, 2003). Not only is the injury a disruption to normal growth and development but it also may cause regression to an earlier stage of development. Although students with severe brain injury can improve, physical, cognitive, or behavioral impairments are often permanent (BIA, 2003). Postinjury progress can be influenced by family environment. In particular, social disadvantage is a predictor of more adverse behavioral consequences and less favorable changes in some outcome measures (Taylor et al., 2002). Despite the fact that the vast majority of recovery occurs in the first 12 to 18 months, recovery in children may continue for up to 6 years after injury (Semrud-Clikeman, 2001).



### Location of Injury

Unfortunately, the general public and healthcare professionals without expertise in brain injury commonly have inaccurate and inadequate knowledge. One misconception is that a complete recovery is possible after severe TBI. Other areas where lack of understanding is common include daily variability in task performance, behavioral sequelae, and cognitive sequelae. Injuries seldom follow discrete boundaries. However, the location of permanent injury within the brain determines whether resultant disabilities will be visible or hidden, physical or psychological, or a combination (Swift & Wilson, 2001).

The **frontal** lobes are responsible for complex thinking; anticipating, planning and initiating action; executing behavioral sequences; personality; and self-regulation (Uomoto, 2000). Frontal lobes also assist with coordinated fine movements, motor aspects of speech, and social skills (Christensen, 2001). Because of integration functions, the frontal lobes have many connections to other brain parts. This is the part of the brain thought to be responsible for self-awareness and regulation of behavior (Uomoto). In severe TBI with contusions, damage often occurs in the frontal lobe, temporal lobe, and brainstem (Christensen).

Major functions associated primarily with short-term memory and motor function occur in the **temporal** lobe. The left temporal lobe is believed to process verbal information and the right, visual information. Together with the limbic system, the temporal lobe is thought to be responsible for working memory, the ability that facilitates completion of many everyday tasks (Uomoto, 2000).

**Occipital lobes**, located at the rear of the brain, are responsible for visual perception, interpretation, and recognizing visual input. However, visual-spatial organizational ability is interpreted in the **parietal lobes**. Usually the right lobe is more responsible for analyzing and organizing spatial information, whereas the left lobe is important for executing arithmetic problems, comprehending speech, reading, and writing. (Uomoto, 2000). The parietal lobes are also responsible for goal-directed voluntary movements, integration of senses, and manipulation of objects (Centre for Neuro Skills, 2004).

Beneath the cortex are the limbic system, brainstem, and cerebellum. The **limbic system** is essential to regulate emotion, manipulate and store information, and distribute information to recent memory. Working together with higher-level brain structures, it accomplishes complex actions and reactions. Damage to the limbic system may occur directly to one of the structures involved, or the system may malfunction on account of lost connections. Located at the brain's base is the **brainstem**. Its importance is in regulation of basic body functions such as heart rate, breathing, and sleep-wake cycles (Uomoto, 2000). It also helps regulate balance and movement. The **cerebellum** is located at the base of the skull and is responsible for coordination of fine movements, balance and equilibrium, and memory for motor reflex acts (Centre for Neuro Skills, 2004).

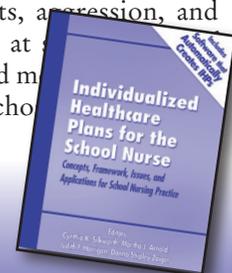
### Management

Even with mild brain injuries, it is crucial to prevent additional injury. Second-impact syndrome occurs when the student suffers a second traumatic brain injury before symptoms from the first injury have fully resolved. The second injury has a greater likelihood of causing widespread damage and edema. Emergency medical treatment is needed immediately for second-impact syndrome because death can occur rapidly (BIA, 2003). Unfortunately, mild brain injuries may be unreported to school staff, making it important to carefully assess history of previous injuries and follow up with students suspected of a mild brain injury.

Students with moderate to lower-end severe injuries are likely to be hospitalized for a short term but may not receive any rehabilitation assessment or services. Subtle deficits may not be recognized until a student returns to school and demonstrates difficulties with attention, memory, concentration, organization, or planning. Educational modifications may be needed on a long-term or short-term basis to help these students succeed academically and vocationally (Savage, Pearson, McDonald, Potoczny-Gray, & Marchese, 2001). Referrals may also be needed to assist families to locate necessary services to manage lingering symptoms and facilitate adaptation to permanent disabilities.

Permanent disabilities are most likely to result from severe brain injuries. Rehabilitation has proven to reduce the level of disability, required supervision, and occupational/educational impairment (Ashley & Persel, 1999). It is important to note that many long-term outcomes of rehabilitation services are stable over time (Ashley, Persel, & Krych, 1997). Rehabilitation is vital to attain maximal age-appropriate community functioning and may require a variety of specialists, including physical therapists, occupational therapists, rehabilitation nurses, psychologists, speech and language pathologists, and social workers. An individualized rehabilitation program is designed, usually during hospitalization, and may continue on an outpatient basis until therapy goals are reached. Coordinating a student's educational program with outpatient therapies can be challenging, especially when plans are frequently revised to reflect skill mastery (NINDS, 2002). The school nurse is the ideal liaison between the medical and educational communities to facilitate transition between settings and monitor progress toward full-time school reentry.

Medications may also be required to manage physical and behavioral effects of TBI (NINDS, 2002). Physical symptoms may include headaches, muscle contractures, seizures, incontinence, and paralysis, among others. Behavioral effects may include, but are not limited to, interruptions in the sleep-wake cycles, inattention, depression, behavioral outbursts, aggression, and impulsivity. Medications are directed at prevention or management. Commonly prescribed medications include antipsychotics, psycho



blockers, anticonvulsants, and antidepressants (Senelick & Ryan, 1998). Medication monitoring during the school day is essential to maximize effectiveness while minimizing side effects.

### *School Reentry*

Planning for school reentry should begin once the child's health status is stable. Planning must consider student safety and address school community concerns, while maintaining confidentiality. Request that the parent or guardian sign a release to permit sharing of information between the school and medical providers. If the student remains hospitalized, try to arrange for a school represen-

tative to attend staffings or discharge planning meetings. If the student is homebound, schedule a planning meeting with staff, parents, and, if appropriate, the student prior to reentry. The school needs information from the physician or hospital to adequately prepare for a severely injured student's return. Medical orders for activity restrictions and outpatient therapies provide important information when planning for reentry. Medical records will also provide vital information regarding the student's cognitive functioning, gross and fine motor skills, communication and language skills, and current psychosocial functioning level (Tyler & Mira, 1999).

## Individualized Healthcare Plan

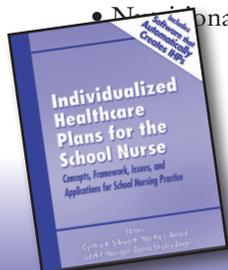
### Assessment

#### *History*

- Source of brain injury (motor vehicle accident, fall, sports, abuse, gunshot, other)
- Region of brain affected and type of injury
- Duration of unconsciousness
- Length of post-traumatic amnesia
- Glasgow Coma Scale rating upon presentation to emergency department and changes throughout hospitalization
- Age when injury occurred
- Physical and cognitive abilities prior to the accident
- Difficulty with behavior or impulsivity noted prior to the accident
- Presence of other health concerns prior to the accident
- Date of last complete physical examination
- Last date for professional vision and hearing examinations

#### *Current Status and Management*

- Effects of injury on normal developmental milestones
- Challenges to mobility, such as balance, muscle weakness, and residual paralysis
- Observed changes in mood, affect, behavior, memory, organization, or psychosocial functioning since the accident
- Changes noted in stamina or tolerance since the accident
- Changes noted in five senses since accident (hearing, vision, taste, smell or touch)
- Changes noted in health status since the accident
- Residual disability related to brain injury
- Level of supervision required to monitor safety needs with both decision making and mobility
- Need for activity restrictions
- Use of prescription and over-the-counter medications
- Use of alternative medicine (herbal, homeopathic, vitamin and mineral supplements, etc.)
- Use of adaptive aids, equipment, or devices
- Accessibility of school building, including restrooms
- Ability to participate in standard emergency building evacuation plans and potential need for modifications
- Daily transportation needs between school and home and for field trips
- Supplies, medication, or equipment needed during the school day
- Need for ongoing community services such as therapy or rehabilitation
- Nutritional status and need for supplements or caloric adjustments



### *Self-care*

- Personal hygiene needs (toileting, bathing, grooming, and dressing)
- Medications/treatments/procedures administered independently at home and with supervision
- Self-management skills currently taught at home (medication administration, procedures, and other)
- Student's ability to monitor his/her own health status
- Student's ability to ask for assistance when needed
- Student's ability to make decisions and exercise judgment
- Changes in self-care needs during transitions through grade levels, building changes, and in preparation for adult living

### *Psychosocial Status*

- Family and student's perception of overall health status
- Family and student's ability to cope with changes after brain injury
- Family and student's ability to address circumstances surrounding the accident (guilt, blame, shame, remorse, and grief)
- Presence of other family major life stressors (other family members killed or injured, divorce, job loss, or other)
- Reaction of friends and family after the accident and effect on student/family
- Concerns regarding peer interactions or with student's social skills
- Changes in mood or coping style since the accident
- Disclosure of student's disability with peers and peer response
- Participation in extracurricular and community activities
- Existence of social support network within the extended family or community
- Community resource(s) currently in use and remaining unmet needs

### *Academic Issues*

- Past school attendance record
- Student's academic history prior to and since the accident, noting any decline in scores/grades
- Plans for present or future employment, including vocational training needs
- Modifications, accommodation, adaptations required for the student during the school day
- Additional modifications, accommodation, adaptations needed during the school day
- Existence of 504 plan or individualized education program (IEP) to address health and educational needs at school
- Required staff training to address student needs
- Need for behavior management plan at school

## **Nursing Diagnoses (N.D.) (NANDA, 2003)**

**N.D. 1** Fatigue (NANDA 00093) related to:

- ongoing recovery after injury
- depression
- reduced physical stamina

**N.D. 2** Impaired memory (NANDA 00131) related to:

- neurologic damage

**N.D. 3** Imbalanced nutrition: more than body requirements (NANDA 00001) related to:

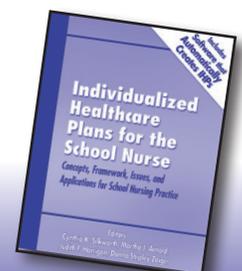
- increased intake
- decreased caloric demands
- sedentary lifestyle
- impaired mobility

**N.D. 4** Toileting self-care deficit (NANDA 00110) related to:

- impaired mobility
- cognitive impairment

**N.D. 5** Risk for injury (NANDA 00035) related to:

- impaired physical mobility
- impulsivity
- impaired problem-solving abilities
- uncontrolled movements of seizures
- visual perceptual changes



**N.D.6** Risk for noncompliance with prescribed treatment (NANDA 00079) related to:

- denial of need for medication/ therapy
- memory impairment
- perceived ineffectiveness of medication/therapy
- time involvement with therapy
- cost of therapy
- loss of control

**N.D. 7** Ineffective coping (NANDA 00069) related to:

- impulsivity
- inadequate social support
- ineffective parental coping

**N.D. 8** Ineffective role performance (NANDA 00055) related to:

- absence from school due to therapy and rehabilitation
- impaired coping
- cognitive deficits (such as memory loss or poor organizational skills)
- mood disturbance
- impaired self-esteem
- transition into new environment

**N.D 9** Risk for other-directed violence (NANDA 00138) related to:

- impulsivity
- neurologic impairment

**N.D. 10** Impaired social interaction (NANDA 0052) related to:

- failure to recognize social cues
- flat affect
- perseveration of ideas
- impulsivity
- impaired social boundaries
- neurologic impairment
- impaired self-esteem

**N.D. 11** Disturbed sensory perception (NANDA 00122) related to:

- visual distortion (double vision, field deficits)
- impaired hearing
- delays in central processing

**N.D. 12** Impaired adjustment (NANDA 00070) related to:

- neurologic impairment
- recent disability
- lack of limitation awareness
- lack of support (family or peer)
- transition into new environment

**N. D. 13** Knowledge deficit (NANDA 00126) related to:

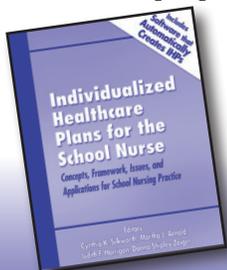
- implications of TBI on learning
- implications of TBI on future health needs
- effects of repeat injuries
- medication management

**N. D. 14** Acute pain (NANDA 00132) related to:

- failure to intervene early in the pain process
- effects of physical therapy

**N. D. 15** Impaired physical mobility (NANDA 00085) related to:

- effects of residual paralysis
- muscle weakness
- poor balance
- visual disturbances
- weight gain



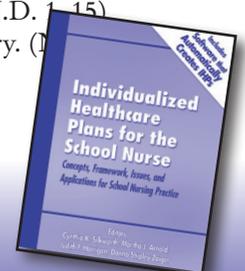
## Goals

- The student will demonstrate improved physical activity tolerance. (N.D. 1, 3, 14, 15)
- The student will assist with identifying modifications required during the school day on account of TBI. (N.D. 1–5, 7–12, 14, 15)
- The student will attend school/class and participate with modifications made as needed. (N.D. 1–5, 7–12, 14, 15)
- The student will attend his/her 504/IEP meetings and participate in team decision making and academic goal setting. (N.D. 1–15)
- The student will progress toward adapting to living with the effects of TBI. (N.D. 1–15)
- The student will collaborate with primary caregiver, school staff, and healthcare providers to identify and prioritize therapy goals (i.e., physical, occupational, speech, cognitive, behavioral) and develop an action plan. (N. D. 2–4, 6–12, 14, 15)
- The student will follow the school routine schedule. (N.D. 2, 8, 12)
- The student will maintain a body mass index (BMI) below the 95th percentile of BMI index by age and sex. (N.D. 3, 15)
- The student will remain free from injury. (N.D. 5, 9, 15)
- The student will demonstrate compliance with prescribed medications/treatments/therapy. (N.D. 6, 14, 15)
- The student will identify a source of social support outside immediate family. (N.D. 7–10, 12)
- The student will demonstrate use of adaptive coping skills. (N.D. 7–10, 12, 14)
- The student will demonstrate improved self-esteem. (N.D. 8, 10)
- The student will recognize and honor social boundaries of others. (N.D. 10)
- The student will develop compensatory strategies for sensory deficits. (N.D. 11, 15)
- The student will use knowledge of his/her brain injury to self-advocate with peers and staff. (N.D. 12, 13, 15)
- The student will demonstrate mastery of self-medication management. (N.D. 13, 15)
- The student will report decreased level of pain after therapeutic intervention(s). (N.D.14)
- The student will demonstrate improved physical mobility in the school setting. (N. D. 14, 15)
- The student will demonstrate increased muscle strength. (N. D. 15)
- The student will, in collaboration with primary caregiver and providers, develop a mutually agreeable treatment plan. (N.D. 1–15)

## Nursing Interventions

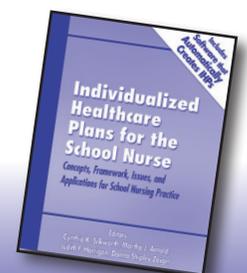
### *Student/Family Interventions*

- Obtain a signed release of information to obtain pertinent medical records and to share information with the medical provider. (N.D. 1–15)
- Obtain parental and student permission to share relevant medical information with school personnel who have a legitimate need to know. (N.D. 1–15)
- Establish a preferred mode of scheduled communication with parents/ guardians to facilitate coordination of medical treatment and to monitor the student's social and emotional adjustment. (N.D. 1–15)
- Facilitate student participation in the therapeutic plan. (N.D. 1–15)
- determine student's current level of participation
  - set participation goals with student and primary caregiver
  - explore strategies with the student to progress towards goal attainment
  - breakdown treatment plan into discrete teachable components
  - maintain consistency in student performance of self-help skills through written protocol and support staff training
  - encourage the student to participate in monitoring progress toward goal attainment
  - evaluate plan and modify, in collaboration with student and family, as needed for goal attainment
  - provide ongoing feedback to primary caregiver regarding student's progress towards goal attainment
  - provide positive reinforcement to student
  - assist student in developing realistic therapeutic expectations
- Establish a mode of communication with parents/guardians to facilitate coordination of medical treatment and to monitor the student's social and emotional adjustment. (N.D. 1–4)
- In collaboration with the medical providers, family, and student, develop a school reentry plan. (N.D. 1–15)
- Arrange a tour of the empty building and a walk-through of the student's schedule prior to reentry. (N.D. 12, 15)





- assess environment for dangerous items and remove them from the area
- Provide medication management. (N.D. 5–7, 9, 10, 13–15)
- determine medication required and administer per physician’s orders
  - assess student’s ability to self-medicate
  - assist student to identify effective medication strategies to manage pain related to PT
  - monitor effectiveness of medications
  - monitor for adverse drug effects
  - review with the student/family appropriate use of over-the-counter as well as prescription medications
  - discuss use of herbals and alternative therapies that may interact with over-the-counter or prescription medication
  - monitor student’s medication/treatment compliance
  - assist to identify and remove barriers to medication compliance
  - collaborate with other healthcare providers regarding medication treatment results and the need for adjustments
  - problem solve with other healthcare providers regarding issues related to noncompliance
- Develop trusting open communication with the student, encouraging verbalization of feelings of anger, frustration, depression, concerns, and fears. (N.D. 6–10, 12–14)
- Facilitate development of adaptive coping skills. (N. D. 7–10, 12, 14, 15)
- appraise student’s adjustment after TBI and its impact on family and peers
  - provide age-appropriate explanations of diagnosis and its links to current functional difficulties
  - encourage realistic hopefulness towards regaining lost skills
  - evaluate student’s decision-making abilities
  - seek to understand the student’s perspective
  - encourage gradual reentry into former activities while following medical recommendations
  - support use of adaptive defense mechanisms
  - plan situations to allow maximum student autonomy
  - identify and promote constructive outlets for anger and frustration
  - facilitate access to potential sources of social support
  - instruct student in self-calming strategies
  - facilitate student’s adaptation to living with a disability
  - collaborate with mental health professionals to promote continuity between settings
- Promote self-esteem enhancement. (N.D. 7, 8, 10, 12)
- facilitate an environment that encourages self-esteem
  - assist student to identify the impact of TBI on self concept
  - assist student to examine negative self perceptions and reasons for self criticism
  - monitor self-critical statements
  - assist student to identify self-destructive behaviors
  - facilitate contact with peers during periods of absence
  - facilitate self-expression with peers
  - provide social-skills training
  - monitor student for signs of social isolation
  - assist student to identify strengths and reinforce examples of those strengths when observed
  - convey confidence in student’s abilities for self care
- Promote optimal growth and development. (N.D. 8, 10, 12)
- build trust with the student and parents (guardians)
  - teach student how to ask for help when needed and refuse help politely when not needed
  - adapt age-appropriate risk-avoidance instruction to intellectual abilities (reproduction, AIDS, drug and alcohol awareness)
  - encourage goal setting
  - while on physical activity restrictions, promote use of safe exercise such as walking or use of a stationary bike
  - refer to mental health professional or school counselor as needed
- Determine precipitating factors for pain and its impact on learning and activity level. (N.D. 1, 7, 8, 14, 15)
- Assist student to anticipate precipitating pain factors and to engage in strategies or interventions to avoid pain exacerbations. (N.D. 14, 15) Develop a menu of pain-relief strategies based on etiology of pain (muscular, bone, headache, other). (N.D. 14, 15)



### *School/Teacher Interventions*

Obtain medical orders for BI management at school when applicable. (N.D. 1, 3–6, 14)

Educate school staff as to the effects of traumatic brain injury on memory. (N.D. 2) Provide BI educational materials to designated school personnel and allow time for questions. (N.D. 7–12)

Assist teacher(s) to monitor student's activity tolerance and make adjustments in scheduling as needed. (N.D. 1, 7–10, 14, 15)

With parent and student permission, provide opportunities for student/ family/ nurse to educate classmates regarding BI. (N.D. 7–12)

Refer student to building student assistance team or 504 coordinator as needed. (N.D. 1, 2, 7–12, 15)

Collaborate with the educational team to identify potential required health accommodations such as: (N.D. 1–15)

- shortened school day to minimize fatigue
- two sets of texts, in case student forgets to bring books home
- use of a daily planner as a memory guide
- assigned seating closest to instruction to facilitate attention
- peer buddy to facilitate transitions between classes
- alternate pass times to minimize stimuli or enhance safety
- alternate activities during recess or physical education class
- encourage rest periods at school as needed to ease transition into school

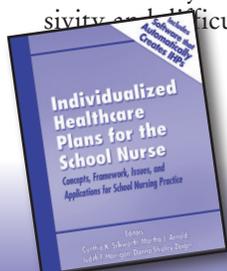
### **Expected Student Outcomes**

The student will:

- Participate in usual activities without signs of fatigue. (N.D. 1, 15)
- Improve school attendance with accommodations as needed. (N.D. 1–5, 7, 9, 10, 11, 14, 15)
- Navigate hallways between classes with minimal directions from staff. (N.D. 2)
- Engage in safe regular exercise while restricted from PE/recess. (N.D. 1, 3, 15)
- With adult assistance, select healthy choices from the school cafeteria menu. (N. D. 3)
- Assist with transfers from wheelchair to toilet. (N.D. 4, 15)
- Demonstrate use of safe technique when using adaptive mobility equipment (wheelchair, walker, crutches). (N.D. 5, 15)
- Come to the health office daily to take prescribed medications. (N.D. 6)
- Demonstrate effective use of at least one coping skill during times of frustration. (N.D. 7–10, 12, 14)
- Describe himself/herself as an active part of the school community. (N.D. 8–10, 12)
- Attend his/her school health planning meetings. (N.D. 8, 12)
- Identify and utilize existing community resources as needed. (N.D. 2–4, 7–15)
- Participate in development of the behavior management treatment plan. (N.D. 6–10, 12)
- Demonstrate a reduction in self-critical comments. (N.D. 7, 8, 10, 12)
- Obtain counseling as needed. (N.D. 1–14)
- With adult assistance, identify early signs and symptoms of depression. (N.D. 7, 8, 12, 14)
- Utilize community resources to assist with reintegration into school. (N.D. 2, 4, 7–12)
- Demonstrate use of consistent therapeutic strategies across all settings. (N.D. 7–10, 12, 14, 15)
- Experience an increased level of comfort, allowing active participation in school activities. (N.D. 14)

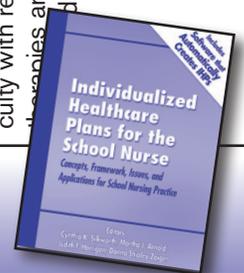
### **Case Study**

Emma is a 15-year-old high school student who suffered a severe traumatic brain injury 1 month ago as the result of a car accident. Emma lives at home with her parents and younger brother. According to her mother, Emma was unconscious for 5 days and has no memory of events that occurred the week prior to the accident or the first week of hospitalization. Medical records confirm frontal and temporal lobe contusions with an initial Glasgow Coma Score score of 4 in the emergency department. While an inpatient, Emma is receiving physical therapy (PT), occupational therapy (OT), and speech therapy. Her anticipated discharge is in 2 weeks with return to school the following week. She will continue to have outpatient OT and PT services to assist with managing her residual short-term memory deficits and double vision. Prior to the accident, Emma took stimulant medication daily for impulsivity and difficulty concentrating.

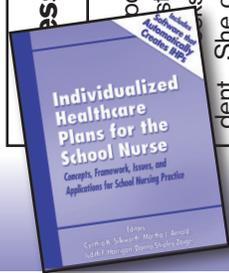


## Traumatic Brain Injury

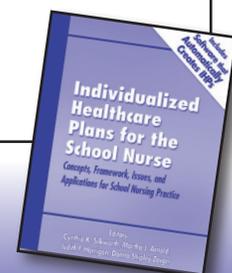
Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
<p>Parents report Emma is sleeping 10 to 14 hours per day and complains of constant tiredness.</p> <p>Prior to the accident Emma participated in chorus, volleyball, and dance team.</p> <p>Discharge planning meeting is scheduled in 2 weeks.</p>	<p>Fatigue related to ongoing recovery after injury.</p>	<p>Emma will attend class with modifications as needed.</p>	<ol style="list-style-type: none"> <li>1. Obtain signed release of information to facilitate communication between medical providers and school.</li> <li>2. Collaborate with medical providers to develop a school reentry plan.</li> <li>3. Encourage gradual reentry into former school activities.</li> <li>4. Collaborate with the educational team to identify potential accommodations or modifications needed at school to minimize fatigue such as schedule changes, shortened school day, dropping a class, or resting during the school day.</li> <li>5. Refer Emma to educational assessment teams as needed to receive services.</li> <li>6. With parent's and Emma's permission, educate peers regarding the effects of traumatic brain injury.</li> </ol>	<p>Emma will participate in usual activities without signs of fatigue.</p> <p>Emma will improve school attendance with accommodations as needed.</p>
<p>Visited Emma while inpatient. She had difficulty remembering names of other students.</p> <p>Parents report she has difficulty with remembering when classes are scheduled and where they are held. Done the previous</p>	<p>Impaired memory related to neurological damage.</p>	<p>Emma will be able to follow the routine school schedule.</p>	<ol style="list-style-type: none"> <li>1. Arrange a tour of the empty building and a walk-through following Emma's schedule prior to reentry.</li> <li>2. Assist Emma to identify and implement effective memory strategies to prompt coming to the health office at scheduled times.</li> <li>3. Educate school staff as to the effects of traumatic brain injury on memory.</li> </ol>	<p>Emma will navigate the hallways between classes with minimal directions from staff.</p>



Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
<p>Report Emma had quit stimulant medication 2 weeks prior to the accident. She complained the medication made her feel sick to her stomach and wasn't helping.</p> <p>Parents have requested that Emma take her morning dose of stimulant medication at school to make sure she is compliant.</p>	<p>Risk for noncompliance with prescribed treatment related to perceived ineffectiveness of medication therapy.</p>	<p>Emma will demonstrate compliance with prescribed medications.</p>	<ol style="list-style-type: none"> <li>1. Develop trusting, open communication with Emma, encouraging verbalization of feelings of anger, frustration, depression, concerns, and fears.</li> <li>2. Facilitate participation in the therapeutic plan by assisting Emma to develop realistic medication goals and expectations.</li> <li>3. Establish preferred mode of scheduled communication with parents to facilitate coordination of medication management.</li> <li>4. Contact parents weekly to report progress with medication compliance.</li> <li>5. Monitor Emma for adverse drug effects.</li> <li>6. Assist to identify and remove barriers to medication compliance.</li> <li>7. Collaborate with other healthcare providers regarding medication treatment results and the need for adjustments.</li> <li>8. Problem-solve with other healthcare providers regarding issues related to non-compliance.</li> </ol>	<p>Emma will come to the health office daily to take prescribed medication.</p> <p>Emma will verbalize change in perception toward effectiveness of medication therapy.</p>

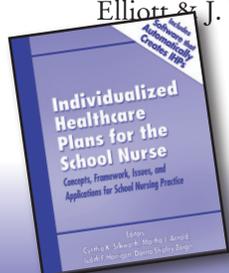


Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
<p>Parents are concerned Emma will have difficulty adjusting to her yearlong physical activity restrictions. Initially, in the hospital, Emma had frequent visitors. Her parents believe the visits have become infrequent, because she failed to recognize some classmates and had difficulty carrying on conversation.</p> <p>Private occupational therapist and speech therapist are partnering together to improve working memory and conversation strategies.</p>	<p>Risk for impaired adjustment related to recent disability.</p>	<p>Emma will progress toward adapting to living with the effects of TBI.</p>	<ol style="list-style-type: none"> <li>1. Refer family to counseling resources as needed to facilitate Emma's and the family's adaptation to living with the effects of TBI.</li> <li>2. Assist Emma to develop personal health and rehabilitation goals.</li> <li>3. Facilitate development of adaptive coping skills.</li> <li>4. With parent's and Emma's permission, provide opportunities for student/family/nurse to educate classmates regarding TBI.</li> <li>5. Weekly appraise Emma's adjustment after TBI and its impact on peers and make referrals to school counselor as needed.</li> <li>6. Support use of adaptive defense mechanisms.</li> <li>7. Encourage realistic hopefulness toward regaining lost skills.</li> <li>8. Monitor Emma for signs of isolation.</li> <li>9. Plan situations to allow Emma maximum autonomy.</li> <li>10. Identify and promote constructive outlets for anger and frustration.</li> <li>11. Facilitate access to potential sources of social support.</li> </ol>	<p>Emma will utilize community resources to assist with reintegration into school.</p> <p>Emma will describe herself as an active part of the school community.</p> <p>Emma will, with adult assistance, identify early signs and symptoms of depression.</p>



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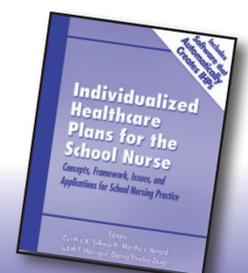
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## Resources

### Web sites

Brain Injury Association of New Jersey

*Brain injury: A Guide for School Nurses*

*Brain Injury: A Guide for Educators*  
[http://www.bianj.org/hwch\\_pubs.html](http://www.bianj.org/hwch_pubs.html)

Center for Neuro Skills

*The Traumatic Brain Injury Resource Guide*

<http://www.neuroskills.com>

Health Resource Center

*Secondary Education*

1-800-544-3284

202-833-5696 (fax)

<http://www.heath.gwu.edu/>

I. M. Brainy, Brain Injury Awareness and Prevention Kit

<http://www.biausa.org/Pages/biam2003/imbrainy.html>

MEDLINEplus Health Information Brain Injury Resource Site

<http://www.nlm.nih.gov/medlineplus/headandbraininjuries.html>

The TBI Help Desk for Caregivers

<http://www.tbihelp.org/>

University of Iowa Virtual Hospital  
*Acute Brain Injury: A Guide for Families and Friends* (2000)

[http://www.vh.org/navigation/vh/to\\_pics/pediatric\\_patient\\_head\\_and\\_brain\\_injuries.html](http://www.vh.org/navigation/vh/to_pics/pediatric_patient_head_and_brain_injuries.html)

### Organizations

Brain Injury Association

105 North Alfred Street

Alexandria, VA 22314-3010

1-800-444-6443

[familyhelpline@biausa.org](mailto:familyhelpline@biausa.org)

<http://www.biausa.org>

Brain Injury Society

1901 Avenue North

Suite 5E

Brooklyn, NY 11230

718-645-4401

718-469-4100 (fax)

[bisociety@aoll.com](mailto:bisociety@aoll.com)

<http://www.bisociety.org>

Head Injury Hotline

212 Pioneer Building

Seattle, WA 98104-2221

206-621-8558

[brain@headinjury.com](mailto:brain@headinjury.com)

<http://www.headinjury.com>

National Rehabilitation Information Center (NARIC)

1010 Wayne Avenue

Silver Spring, MD 20910-5633

1-800-346-2742

301-562-2401 (fax)

[naricinfo@kra.org](mailto:naricinfo@kra.org)

<http://www.naric.com>

Research and Training Center on the Community Integration of Individuals with TBI (RTC/TBI)

One Gustave L. Levy Place

Box 1240

New York, NY 10029

212-241-7917

<http://www.mssm.edu/tbinet>

