Prevention & Management of Concussions in Schools

MICHIGAN SCHOOL NURSE GUIDELINES AND RESOURCES

Original Date of Issue: 2016
**Foreword**

These guidelines contain recommendations for current best practices for the health service topic addressed. They have been reviewed by the School Nurse Practice Subcommittee of the Michigan Statewide School Nurse Task Force as a means to provide consistent and safe care to the students. Specific laws and regulations that direct school nursing practice or other health services are identified in the guidelines. There is no guarantee that the use of guidance in this document will lead to any particular result or outcome. The information in this document was researched in January, 2016.

**Purpose**

This document will provide guidelines and resources for the prevention and management of concussions in schools.

**Overview**

Almost half a million (473,947) emergency department visits for Traumatic Brain Injury (TBI) are made annually by children aged 0 to 14 years (Centers for Disease Control and Prevention [CDC], 2013). Concussion is defined by the CDC (2015a) as a type of traumatic brain injury—or TBI—caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth. This sudden movement can cause the brain to bounce around or twist in the skull, stretching and damaging the brain cells and creating chemical changes in the brain. Research shows that improperly managed concussion can lead to long term cognitive deficits and mental health problems (Rivera & Roberson, 2015).

Children and adolescents participating in physical education classes, recreational activities, playground activities and sports are at risk for sustaining a concussion (Valovich McLeod, 2014). Rivera (2015) described other risk factors for concussion that included athletes participating in contact or collision sports; adolescents from age 10 - 19; and students with attention deficit and/or hyperactivity disorder, depression or learning disabilities.

A concussion can produce a range of symptoms that may impede academic functioning (Ransom, Vaughan, Pratson, Sady, McGill & Gioia, 2015). The absence of appropriate accommodations for students who have sustained concussions may result in intensification in the number and severity of symptoms, thus extending recovery and academic effects (Master, Gioia, Leddy & Grady, 2012).

**Symptoms of a Concussion**

**Concussion Signs Observed (CDC, 2015b)**

- Shows mood, behavior, or personality changes.
- Loss of consciousness
- Can’t recall events prior to or after the hit or fall.
- Can’t recognize people or places.
- Appears dazed or stunned.
Forgets an instruction, is confused about an assignment or position, or is unsure of the game, score or opponent.
- Moves clumsily.
- Answers questions slowly.
- Slurred speech.
- Looks drowsy and cannot be awakened.
- Have one pupil larger than another.
- Convulsions or seizures.
- Confused, restless, or agitated.
- Unusual behavior.
- Will not stop crying and cannot be consoled.

**Concussion Signs Reported (CDC, 2015b)**
- Repeated nausea or vomiting.
- Balance problems or dizziness, or double or blurry vision.
- Headache that gets worse and does not go away.
- Weakness, numbness or decreased coordination.
- Bothered by light or noise.
- Feeling sluggish, groggy, hazy, or foggy.
- Confusion, or concentration or memory problems.
- Just not “feeling right” or “feeling down.”

**Legal Framework for Managing Concussions in Schools**

The legal framework for responding to students with concussions consists of a continuum of three overlapping options depending on the severity of symptoms, likely duration of symptoms, and provisions of state law that may add to requirements of federal law (Zirkel & Brown, 2015).

**Federal law provides two options:**

- Individuals with Disabilities (IDEA, 2012) – IEP
- Section 504 of the Rehabilitation Act (2012) and Americans with Disabilities Act (ADA, 2012) – 504 plan.

In 2012, Michigan passed Public Act 342 of 2012 requiring the Michigan Department of Health and Human Services (MDHHS) to develop, adopt and approve educational training materials for sports concussion awareness compliance.

Public Act 343 of 2012 requires all coaches, employees, volunteers, and other adults involved with a youth athletic activity to complete a concussion awareness on-line training program. The organizing entity must provide educational materials on the signs/symptoms and consequences of concussions to each youth athlete and their parents/guardians and obtain a signed statement acknowledging receipt of the information for the organizing entity to keep on record.

The law also requires immediate removal of an athlete from physical participation in an athletic activity who is suspected of sustaining a concussion. The student athlete must then be evaluated by and receive
written clearance from an appropriate health professional before he or she can return to physical activity. The MDHHS provides resources for school districts to implement the law (MDHHS, 2016a).

Public Acts 342 and 343 do not specifically address post-concussion school services. Schools could consider an Individualized Health Plan (IHP) designed to acknowledge and prepare for the student’s health care needs in school.

Federal Law

<table>
<thead>
<tr>
<th>Act/Reauthorization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americans with Disabilities Act of 1990 (ADA)</td>
<td>Disability discrimination prohibited.</td>
</tr>
<tr>
<td>Section 504, Rehabilitation Act of 1973</td>
<td>Protects the rights of children with special health-care needs (CSHCN) by providing related services, including health services, to those not eligible for special education.</td>
</tr>
<tr>
<td>34 CFR Part 300 Individuals with Disabilities Act of 1997 (IDEA)</td>
<td>Guarantees access to education and related services to assist children with disabilities benefit from special education. Reauthorization of 2004, Sec. 602 (26) list school nurse services as a related service.</td>
</tr>
</tbody>
</table>

Michigan Law

<table>
<thead>
<tr>
<th>Act/Reauthorization</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 12 of 2014</td>
<td>The governing body of a school that operates K-12 shall adopt and implement a cardiac emergency response plan for the school. The plan must include at least: 1) Use and regular maintenance of the auto external defibrillator, 2) Activation of a cardiac emergency response team during an identified cardiac emergency, 3) A plan for effective communication, and 4) If a school is grades 9-12 a training plan for use of an auto external defibrillator in CPR rescue techniques.</td>
</tr>
<tr>
<td>Public Act 342 of 2012</td>
<td>Requires the Department of Community Health’s development, adoption and approval of educational and training materials for sports concussion awareness compliance.</td>
</tr>
<tr>
<td>Public Act 343 of 2012</td>
<td>Requires Compliance of Sports Concussion Awareness Training for organizing entities, sponsors or operators of an athletic activity in which youth athletes will participate.</td>
</tr>
</tbody>
</table>

**School Nurse’s Role**
The National Association of School Nurses (NASN) (NASN, 2012) indicates that the school nurse is an essential member of the team addressing concussions. The role includes:

- Providing concussion prevention education to parents, students and staff.
- Identifying suspected concussions.
- Collaborate with school staff and health care provider on the return to play protocol.
- Guiding the student’s post-concussion graduated academic activity and re-entry process.
- Collaborating with the team of stakeholders including health care providers, school staff, athletic trainers and parents.

**Recommendations for Practice**

### Concussion Prevention Education to Parents, Students and Staff


3. Collaborate with school officials to create safe school environments in by ensuring the school has policies and procedures in place to have an environment that is a safe and healthy place for students (CDC, 2015c). The CDC (2015c) specifically recommended:

   - Encouraging staff to keep the physical space safe, stairs and hallways clear of clutter, and rugs secured to the floor.
   - Ensuring surfaces are checked where students are physically active, such as playing fields and playgrounds.
   - Playground surfaces should be made of shock-absorbing material, such as hardwood mulch or sand, and maintained to an appropriate depth.
   - Proper supervision of students.

4. Collaborate with school officials to ensure appropriate staff take the training required by Michigan law. In order to meet the legal requirements all coaches, employees, volunteers, and other adults who are involved with youth athletic activities must complete one of the concussion on-line training courses: 1) Youth Sports Training found at: [http://www.cdc.gov/concussion/HeadsUp/Training/index.html](http://www.cdc.gov/concussion/HeadsUp/Training/index.html) or 2) High School training found at [http://nfhslearn.com/?courseID=38000](http://nfhslearn.com/?courseID=38000) (MDHHS, 2016a). Staff and/or volunteers need to print and save the certificate that is offered at the end of the training session.
5. Collaborate with school officials to ensure all coaches, employees, volunteers, and other adults who are involved with youth athletic activity are aware that Michigan law requires immediate removal of an athlete from physical participation in an athletic activity who is suspected of sustaining a concussion. The student athlete must receive written clearance from an appropriate health care professional before he or she can return to the activity (MDHHS, n.d.). The Medical Clearance Return to Play Form can be retrieved at http://www.michigan.gov/documents/mdch/Medical_C Clearance_to_Return_to_Play_Form_414367_7.pdf


Identifying Suspected Concussions

The CDC (2015c) (p.5) provides specific guidance about steps to take when a student takes a bump, blow, or jolt to the head or body that includes:

- Observing for symptoms when the student first arrives in the health office, fifteen minutes later and at the end of 30 minutes (CDC, 2015c).
- Completing the Concussion Signs and Symptoms Checklist and monitoring students consistently during the observation period (CDC, 2015c) (p.5). The Checklist is located at: http://www.cdc.gov/headsup/pdfs/schools/tbi_schools_checklist_508-a.pdf.
- Calling Emergency Medical Services (symptom dependent) if symptoms are present or refer the student immediately to a health care professional with experience in evaluating for concussion. Send a copy of the Concussion Signs and Symptoms Checklist with the student for the health care professional to review (CDC, 2015c).
- Contact the parent or guardian when symptoms are not present and send a copy of the Concussion Signs and Symptoms Checklist with the student for their parent/guardians (CDC, 2015c). Students should not return to sports or recreation activities on the day of the injury (CDC, 2015c). Parent/guardians should be asked to continue to observe the student at home for any changes explaining that signs and symptoms of concussion can take time to appear (CDC, 2015c). Note that “if signs or symptoms appear, the student should be seen right away by a health care professional with experience in evaluating for concussion” (CDC, 2015c) (p.5).
- Recommend students follow their health care professional’s guidance about when they can return to school and to physical activity (CDC, 2015c).
- Document the evaluation and communicate the findings to parents and appropriate medical and school personnel. Follow-up evaluations should also be documented and communicated (Valovich McLeod, 2014).

Guiding Student’s Post Concussion Academic Activity and Re-entry Process

1. Determine if the school has a policy in place to help students recovering from a concussion succeed when they return to school. Policy statements can include the district’s or school’s commitment to safety, a brief description of concussion, a plan to help students ease back into
school life (return to learning, social activity, etc.), and information on how students can safely return to physical activity (CDC, 2015c).

2. Collaborate with other school health professionals, health care professionals, parents and students to support the student recovering from a concussion. All school staff, such as teachers, school nurses, counselors, administrators, speech-language pathologists, coaches, and others should be informed about a returning student’s injury.

3. Utilize a return-to-learn concussion management protocol designed to support student recovery while formally accommodating academics. The protocol should include data collection that describes the nature and extent of academic progress, classroom behaviors, and school-day symptoms so the school team can fine tune the accommodations or determine more formal action, such as IDEA or Section 504 evaluation process is warranted (Zirkel & Brown, 2015).

   - Short-term, informal, symptom-based accommodations can continually be adjusted until symptoms are resolved (CDC, 2013; Halstead, 2013).
   - Implement strategies based upon symptoms, such as, frequent breaks; early dismissal; reduced exposure to computers, smart boards, videos; lunch in a quiet area; avoidance of noisy gyms; earplugs; extra time to complete tests; late start or shortened school day; rest breaks; extension of assignments; accommodations for light or noise sensitivity; reduced workload should be considered on an individualized basis (Halstead et al., 2013; Olympia, Ritter, Brady & Bramley, 2015).
   - The CDC (2015d) offers a five step guideline for return to play progression that can be retrieved from http://www.cdc.gov/headsup/providers/return_to_activities.html

4. Understand potential problems for the student upon the re-entry process. Halstead (2013) identified the following:

   - Headache (can be triggered by fluorescent lighting, loud noises and focusing on tasks).
   - Dizziness (may make standing quickly or walking in a crowded environment challenging).
   - Vision problems (may cause difficulty reading and copying; difficulty paying attention to visual tasks).
   - Sensitivity to light (may have difficulty with slide presentations, movies, computers).
   - Sensitivity to noise (may have difficulty in lunchroom, shop classes, music classes, PE classes, hallways, organized sports).
   - Difficulty concentrating (could cause a lack of focus in classroom).
   - Difficulty remembering (may cause difficulty with test taking).
   - Trouble falling asleep (excessive fatigue can disturb memory).
Red Flags for Managing Concussions in the School Setting

1. Danger signs that indicate EMS should be called immediately: One pupil larger than another; drowsiness or cannot be awakened; headache that worsens and does not go away; weakness, numbness, or decreased coordination; repeated vomiting or nausea; unusual behavior, confusion, restlessness or agitation; loss of consciousness, slurred speech, seizures (CDC, 2015c).

2. Some students may not experience or report symptoms until hours or days after the injury (CDC, 2015c).

3. Anyone with a suspected or diagnosed concussion should NEVER return to sports or recreation activities on the same day the injury occurred. Activities (physical education, sports practices or games, physical activity at recess) should be delayed until a licensed health care professional experienced in evaluating for concussion says they are symptom-free and approves the return to play (CDC, 2015c).

4. Most concussions last less than three weeks, however, additional cognitive overexertion during this fragile period can extend the recovery time (Brown et al., 2014).

5. Concussion has many signs and symptoms, some of which overlap other medical conditions. Loss of consciousness is uncommon (<10%), and if it last longer than 30 seconds, it may indicate more significant intracranial injury (Halstead, Walter & The Council on Sports Medicine and Fitness, 2010).

6. Students should be performing at their pre-injury cognitive “baseline” before returning to sports, full physical activity, or other extracurricular activities following a concussion (Halstead et al., 2013).

7. For licensed individuals, driving should be prohibited until there is medical clearance (Rivera, 2015).

References


**Resources**


National Association of School Nurses. Located at [www.nans.org](http://www.nans.org)