Sun Safety in Schools

MICHIGAN SCHOOL NURSE GUIDELINES AND RESOURCES

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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 July, 2016.

Purpose

This document will provide guidelines and resources for sun safety in schools.

Overview

The Center for Disease Control and Prevention (CDC), (2013) recommends that schools be sun-safe places to reduce children’s exposure to ultraviolet (UV) radiation. When children and adolescents are protected from UV exposure their risk for skin cancer is reduced in adulthood (CDC, 2013; U.S. Department of Health and Human Services [USDHHS], 2014). Ultraviolet radiation (UVR) causes the three major forms of skin cancer: basal cell carcinoma; squamous cell carcinoma; and cutaneous malignant melanoma (American Academy of Pediatrics (AAP) Council on Environmental Health and Section on Dermatology, 2011; Glanz, Sarniya, & Wechsler, 2006). Adults are at an increased risk for developing basal cell carcinoma and melanoma when there is a history of one or more sunburns as a child (CDC, 2013). The CDC (2013) also points out that childhood is the time for developing moles which is an important risk factor for skin cancer.

Melanoma is the most common form of cancer for young adults 25-29 years old and the second most common form of cancer for adolescents and young adults 15-29 years old (American Academy of Dermatology [AAD], 2014). The USDHHS (2014) reported that melanoma is responsible for nearly 9,000 deaths each year. Balk (2014) stated that the American Cancer Society reported 3.5 million skin cancers are diagnosed in 2 million Americans each year. Furthermore, while rates of other cancers are decreasing, rates of skin cancer are increasing, including melanoma. Wong, Harris, Rodrigiez-Galindo & Johnson (2013) analyzed trends in melanoma incidence diagnosed between the ages of 0-19 years among US whites by gender, stage, age at diagnosis, and primary site and found overall, pediatric melanoma increased by an average of 2% per year. Boys experienced increased incidence rates on the face and trunk and females on the lower limbs and hip. Girls aged 15-19 had significantly higher rates than boys. (Wong et al., 2013).

A significant portion of sun exposure occurs during the peak sun hours between 10:00 a.m. and 4:00 p.m. (Boe & Tillotson, 2006). Boe and Tillotson (2006) explained the three forms of UV radiation: ultraviolet A (UVA), ultraviolet B (UVB), and ultraviolet C (UVC). UVA is the predominant type of UV radiation from the sun. UVA does not burn the skin, but the radiation can penetrate the outer skin layers and act synergistically with UVB radiation to produce erythema and cancer. UVC radiation is filtered by the ozone layer and is not considered harmful. The effectiveness of sunscreens is measured by their sun protection factor (SPF). In addition to sun exposure, indoor tanning facilities pose a significant threat to
the health of young people (Parsons & Moore, 2014). Jones, Olsen, Michael, & Saraiya (2013) found that many non-Hispanic white high school students underestimate the risk of melanoma and squamous or basal cell skin cancers associated with UV exposure. Sunscreen use was inadequate among white female (27.8%) and male (42.3%) high school students. Ross and Graham (2013) emphasized that early diagnosis is an important component in decreasing morbidity and mortality from skin cancer, especially related to melanoma. The AAD (2014) indicated sunscreens are a safe and effective way to protect against the damaging effects from exposure to ultraviolet radiation and that scientific evidence supports the benefits of sunscreen to minimize short and long-term damage to the skin from UV radiation.

**Michigan and National Data**

The Youth Risk Behavior Survey (YRBS) (CDC, 2016a) is a school-based study used to obtain a nationally representative sample of public and private high school students in the United States. Nationally, in 2015, 7.3% of students had used an indoor tanning device, such as a sunlamp, sunbed, or tanning booth, one or more times during the 12 months before the survey and 55.8% of students had a sunburn (counting even a small part of their skin turning red or hurting for 12 hours or more after being outside in the sun or after using a sunlamp or other indoor tanning device) one or more times during the 12 months before the survey.

**Legal Framework for Sun Safety**

Michigan law requires parent or guardian permission or accompaniment to a tanning facility and use of protective glasses.

**Michigan Law**

| **Public Health Code Act 368 of 1978 Section 333.13405** | Tanning facility - In the case of a customer under 18 years of age, the written statement described in subsection (1) shall also be signed by the customer's parent or legal guardian while the parent or legal guardian is physically present at the tanning facility and shall be signed in the presence of the owner or operator. The customer agrees to use protective eyewear. |

**School Nurse’s Role**

School nurses are in a unique position to promote sun safety for children and adolescents by developing policy, helping teachers incorporate sun-safe curricula, and educating the community (Boe & Tillotson, 2006; Ross & Graham, 2013). School nurses can follow the National Association of School Nurses (NASN) Framework for the 21st Century School Nursing Practice principal of Public Health to promote sun safety at school (Maughan, Bobo, Butler, Schantz, & Schoessler, 2015; NASN, 2016). Public health provides the foundation for the specialty practice of school nursing and is one of the five key principles of the framework. Key tenets and responsibilities of public health practiced by school nurses include surveillance, outreach, population-based care, prevention, social determinants of health and health
equity (NASN 2016). These principles provide guidance for school nurses managing sun safety in schools.

**Recommendations for Practice**

**Surveillance**

Assess students’ sun exposure patterns and reinforce sun-protective barriers (CDC, 2013). School nurses can assess the student’s daily routines, such as, outdoor sun exposure through play, athletics, recess, and outdoor extracurricular activities as well as the use of indoor tanning devices.

**Outreach**

A coordinated school health program that includes family and community can be an effective school-based effort to prevent skin cancer (CDC, 2013; Glanz, Sarniya, & Wechsler, 2006). School nurses can advocate for using the Whole School, Whole Community, Whole Child (WSCC) model to promote sun safety in the school setting. The CDC (2016b) suggested that collaborative actions engaging community support can promote academic success and healthy development for students.

In 2002, CDC released the *Guidelines for School Programs to Prevent Skin Cancer* that provide resources and suggestions for schools to improve sun safety practices in seven major areas: policy, environmental change, education, family involvement, professional development, health services, and evaluation (CDC 2014a). The *Guidelines for School Programs to Prevent Skin Cancer* can provide assistance to the WSCC team for promoting sun safety at school. The USDHHS (2014) recommended involving parents and parent groups in the development and promotion of skin cancer prevention policies for schools.

**Population-based Care**

1. Establish policies that reduce exposure to ultraviolet radiation (Boe & Tillotson, 2006; CDC, 2013; Glanz et al., 2006; USDHHS, 2014). Policies could consider:
   - Scheduling outdoor activities during time when the sun is not at peak intensity (CDC, 2013; USDHHS, 2014).
   - Modifying building and grounds codes to increase availability of shade in frequently used outdoor spaces (CDC, 2013; USDHHS, 2014).
   - Encouraging students to wear protective clothing, hats and sunglasses (CDC, 2013; USDHHS, 2014).
   - Encouraging and supporting health education activities needed for skin cancer prevention (CDC, 2013; USDHHS, 2014).
   - Exemptions for non-descript shirts, sunglasses, caps and hats with wide brims worn for sun protective measures (Glanz et al., 2006; AADA, 2016; AAP Council on Environmental Health and Section on Dermatology, 2011).
   - Sun protection design in new schools.
   - Support sun protection in athletic settings (USDHHS, 2014).

2. Understand that “Field Day” is a common spring event for many schools and involves outdoor activities (Parsons & Moore, 2014).

3. Take into consideration that outdoor activities such as break times, lunch and sporting events frequently occur at time when UV radiation levels are highest (Parsons & Moore, 2014).
Levels of Prevention

Primary Prevention

1. Behavior changes can be accomplished through classroom lessons (CDC, 2013).
   - Include skin cancer prevention as part of a comprehensive health education program (CDC, 2013; Glanz et al., 2006).
   - Teach students knowledge, attitudes, and behavioral skills they need to prevent skin cancer.
   - The Michigan Model for Health (Michigan Department of Health and Human Services [MDHHS], 2016) provides lessons about sun safety with a focus on grades 7-8 and 9-12. Sun safety is also addressed at some K-6 grade levels as part of the safety unit. Information can be found at http://www.michigan.gov/mmh.

2. Disseminate skin cancer prevention information to families (Boe & Tillotson, 2006). Inform parents about school initiatives, policies and obtain their input (CDC, 2013). The CDC (2015) indicated that improving sun protection across the population could potentially lead to reduced Vitamin D concentrations for some people if they do not compensate for it by increasing their vitamin D intake. School nurses can help students and families understand that tanning is not a safe way to get Vitamin D and that the safest way is through the individual’s diet (USDHHS, 2014). The USDHHS (2014) points out that Vitamin D-fortified foods and beverages provide most of the Vitamin D in the U.S. diet (e.g. milk, ready-to-eat breakfast cereals, specific brands of soy beverages, orange juice, yogurt, margarine).

3. Consider school newspapers to publish articles on sun safety initiatives (Parsons & Moore, 2014).

4. Identify opportunities to extend or create new shaded areas (AAP Council on Environmental Health and Section on Dermatology, 2011; CDC, 2013; Parsons & Moore, 2014). The CDC (n.d.) provides a manual that can help schools provide a sun safe environment and have adequate shade. Shade Planning for America’s Schools can be found at: http://www.cdc.gov/cancer/skin/pdf/shade_planning.pdf

5. Teach students sun safety prevention measures:
   - Wear protective clothing and hats (AAP Council on Environmental Health and Section on Dermatology, 2011; ADA, 2014; Boe & Tillotson, 2006; Taliaferro & Resha, 2016). Clothing is an excellent UVR barrier and in contrast to sunscreen, does not diminish throughout the day (AAP Council on Environmental Health and Section on Dermatology, 2011). Select clothing with a tight weave (AAP, 2016). Wear a hat with a three-inch brim (Boe & Tillotson, 2006).
   - Wear sunglasses with at least 99% UVA and UVB protection (AAP, 2016; CDC, 2014b; Taliaferro & Resha, 2013). The CDC recommends wrap-around sunglasses.
   - Seek shade (AAP, 2011; Boe & Tillotson, 2006; Taliaferro and & Resha, 2013).
   - Put sunscreen on 30 minutes before going outdoors as it needs time to absorb in the skin (AAP, 2016). Apply sunscreen of SPF 15 or higher (AAP Council on Environmental Health and Section on Dermatology, 2011; Taliaferro & Resha, 2016; USDHHS, 2014). The ADA (2014) recommends a water-resistant, broad-spectrum sunscreen that protects against UV and UVB radiation with an SPF 30 or higher. The CDC (2014b) recommends checking the expiration date of sunscreen. If there is no expiration date, there is a shelf life of no more than 3 years.
6. Educate students about the risks of sun tanning and tanning beds. Adolescents should be strongly discouraged from visiting tanning parlors (AAP Council on Environmental Health and Section on Dermatology; USDHHS 2014).

7. Include skin cancer prevention with professional development of staff (Glanz et al., 2006).

8. Complement and support skin cancer prevention with school health services, for example, school-based health centers (Glanz et al; 2006).

Note: The ADA (2016) supports state-wide and school district wide policies that allow students to use sunscreen and articles of sun protective clothing during the school without physician authorization. They support the American Medical Association’s policy to exempt sunscreen from over-the-counter medication possession bans in schools and encourage all schools to allow students to bring and possess sunscreen at school without restriction.

**Evaluation**

Periodically evaluate whether schools are implementing the skin cancer prevention guidelines on policies, environmental change, education, families, professional development, and health services (CDC, 2013; Glanz et al., 2006).

**Social Determinants of Health and Health Equity**

1. Collaborate with school district cultural liaisons and/or language interpreters for translation of letters and forms being sent to parents (Silkworth & Hoxie, 2012).
   - The CDC provides a guide to creating easy-to-understand materials (fact sheets, FAQ’s, brochures, booklets, pamphlets, web content) from scientific and technical information. The guide includes practical ways to organize information and use language and visuals. The guide can be retrieved from [http://www.cdc.gov/healthliteracy/pdf/Simply_Put.pdf](http://www.cdc.gov/healthliteracy/pdf/Simply_Put.pdf)

2. Ensure education materials are culturally relevant and developmentally appropriate for all populations. The USDHHS (2014) reported that race and ethnicity play an important role in skin cancer risk because characteristics associated with race and ethnicity (such as skin, hair, and eye color) are indicators of melanoma risk. Blacks and Asians/Pacific Islanders have been found to have the lowest melanoma incidence and death rates, followed by American Indians/Alaska Natives and Hispanics. The USDHHS (2014) further explained that although Blacks have the lowest incidence rates, their survival is poorest, possibly because of lower perceived risk and later diagnoses in addition to certain types of melanoma that are disproportionately diagnosed in this population. The highest melanoma incidence and death rates occur in people of European descent and non-Hispanic whites because they generally have lighter natural skin color (USDHHS, 2014).

3. Younger users of indoor tanning devices are at increased risk for skin cancer (USDHHS, 2014).
Red Flags for Managing Sun Safety in the School Setting

1. Chemical photosensitivity refers to an adverse cutaneous reaction that result when certain chemicals or drugs are applied topically or taken systemically at the same time that a person is exposed to UVR. Drugs associated with phototoxic reactions include those commonly used by adolescents, such as, nonsteroidal inflammatory agents, tetracycline, phenothiazine, psoralens, sulfonamides, and thiazides (AAP Council on Environmental Health and Section on Dermatology, 2011).

2. Acute exposure to UVR can result in photokeratitis. Long term exposure to UBV is associated with an increased risk for cataracts (AAP Council on Environmental Health and Section on Dermatology, 2011).

3. The intensity of UVA radiation produced by large, powerful tanning units may be 10-15 times higher than that of midday sun (AAP Council on Environmental Health and Section on Dermatology, 2011).

4. Snow reflects up to 80% of the sun’s UV rays, intensifying the risk for sun damage (Balk, 2014). Educate students and families to use extra caution near water, snow and sand (AAP Council on Environmental Health and Section on Dermatology, 2011).

5. Refer students for medical attention if there is blistering, fever, or pain from the sunburn (AAP, 2016).

References


