Promoting a Safe and Healthy Physical School Environment

School nurses may observe environmental issues that could have a health impact. In addition, they are often asked to provide sources for related information. The National Association of School Nurses (NASN) has taken the position "that the registered professional school nurse (hereinafter referred to as school nurse) is an important member of the team that mitigates the effects of environmental health hazards in the school setting" (2021). NASN has also compiled a number of environmentally related resources. This section is intended to assist the school nurse with fulfilling their role in helping to assure a school environment that is both safe and healthy.

The School Children's Health Act of 2006 protects children in schools from exposure to toxicants from arsenic-treated wood, mercury, diesel exhaust fumes, pesticides, mold, and mildew. NCSU has published an example Integrated Pest Management (IPM) policy for pest management in the school setting from the North Carolina State Board Association. The North Carolina Department of Agriculture and Consumer Services (NC DACS) regulates the use of pesticide products, while staff in the Division of Health and Human Services work to address public health concerns with regard to pesticides and perform public health surveillance of pesticide-related illness and injuries.

In addition to a school district's sanitation program staff, additional services are provided jointly to schools by local health departments and the Environmental Health Section within the Division of Public Health, NCDHHS. School environmental health and safety are not regulated by the federal Department of Education or the federal Department of Health and Human Services. The NC Public Health School Sanitation Program monitors and oversees sanitation requirements for public and private schools and provides consultation to local health departments regarding communicable disease control and sanitation in the school setting. Technical assistance, continuing education and training are provided for local health departments, environmental health specialists and public health nurses involved with the implementation of the School Sanitation Program.

The mission of the EPA is for each school and district to implement a comprehensive and sustainable environmental health program that includes preventive measures and maintenance of school buildings and grounds. The EPA webpage for schools also addresses a variety of potential problems in the school setting. Some topics that school nurses may be involved with are listed below, along with related resources.

1. **Outdoor Air Quality** - Local emergency planning committees, coordinated by the county emergency management agency, collect data and maintain records about accidental release of certain chemicals and ensure that the industry immediately notifies the appropriate federal, state, and local agencies when releases occur. The North Carolina Division of Air Quality (DAC) has created the NC Air Awareness program that seeks to reduce air pollution and to explain how the health effects of air pollution can be minimized by modification of outdoor activities on ozone action days. A downloadable application is available titled "EnviroFlash" that is provided through a partnership of the US EPA and

state and local air quality agencies that post air quality notifications. Outdoor air quality, such as bus idling, is addressed on the Reducing Diesel Emissions from School Buses webpage. According to *N.C. Gen Stat. §115C-12(34), NC has a duty to protect the health of school age children from toxicants at school.*

2. **Indoor Air Quality** - The Occupational and Environmental Epidemiology (OEE) Branch (within the Division of Public Health Epidemiology Section), has a program on Indoor Environmental Quality that describes the main factors that affect indoor air quality as being indoor pollutant sources such as HVAC systems, pollutant pathways or avenues through which pollutants are distributed in a building, occupants, and their activities. Industrial hygienists, physicians, and toxicologists with OEE can serve as consultants to school systems. The American Lung Association has created a Healthy Air Walkthrough Classroom Checklist. The list includes keeping classrooms "fragrance free" to minimize asthma triggers. The EPA provides guidance for creating healthy indoor air quality in schools with their Indoor Air Quality for Schools Action Kit.

   CDC School Preparedness provides guidance on improving air quality in the school setting. Along with other mitigation strategies, proper ventilation can help to decrease the spread of disease by reducing the number of virus particles circulating in the air.

3. **Animals in the School Setting -** NC G.S. 168-4.2 states that every person with a disability has the right to be accompanied by a service animal that has been trained to assist the person with his or her specific disability in any of the places listed. Service animals are **not** considered to be pets. NCDHHS/DPH also provides guidelines for animals in NC schools. These guidelines should be considered in the development of local policy around animals in the classroom. (Additional information on Service Animals is available in Section E, Chapter 10).

4. **Asbestos -** Asbestos is a mineral fiber that naturally occurs in rock and soil and because of its strength, it has been used in the past for insulation and fire retardation. Fibers released into the air by the disturbance of asbestos are associated with an increased risk of developing lung diseases. Federal requirements direct school compliance with the Asbestos Hazard Emergency Response Act (AHERA). Resources for schools and parents can be found here.

5. **Food Safety -** The United States Department of Agriculture (USDA) requires that all schools have a food safety plan in place that is based on Hazard Analysis Critical Control Points (HACCP) principles. Schools that do not meet this mandate may jeopardize federal funding. The Child Nutrition Program contained within the Hazard Communication Standard provides resources that include food safety, equipment standards, and facility requirements while meeting the North Carolina Food Code. NC Department of Public

Instruction's School Nutrition Division has listed the NC specific Guiding Principles to align with USDA HACCP principles.

6. **Chemical Management** – Substances used for pest control, cleaning supplies, and other chemical exposures fall into this category. The EPA has provided a toolkit to provide safe chemical management in K-12 schools and a list of "green supplies" that are environmentally-friendly as well as tips for reducing waste. The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs formerly known as Material Safety Data Sheets (MSDSs) to communicate the information on hazardous chemical products. The school should maintain readily accessible copies of these sheets for products used on campus.

7. **Handwashing -** Proper handwashing is the most important factor in promoting a healthy school environment. The CDC has created the program, About Life is Better with Clean Hands Campaign. These resources provide instructional materials for use in the school setting as well as methods for reinforcing the importance of handwashing hygiene.

8. **Lead -** Lead is a naturally occurring element found in small amounts in the earth's crust. While it does have some beneficial uses, it can be toxic to humans and animals. Lead is particularly dangerous to children who easily absorb it and whose brain and nervous systems are more sensitive to the damaging effects of lead. Children may be exposed to lead by eating and drinking food or water containing lead or from dishes or glasses that contain lead, inhaling dust from lead-based paint, or lead-contaminated soil or from playing with toys containing lead paint. The EPA has created *Protect Your Family from Sources of Lead* as a resource to prevent lead exposure in childhood.

9. **Mold** - Mold in schools is caused by moisture problems that result from leaks, condensation, and excessive humidity. Information and resources about mold in schools is provided by the EPA: Fact Sheet Mold in Schools and Mold Resources for Schools and Commercial Buildings. The CDC provides the Dampness and Mold Assessment Tool-School Buildings. This resource provides a scoring method to assess all aspects of a school building. The purpose is to identify problems and prioritize repairs if dampness and/or mold are concerns

10. **Polychlorinated biphenyls (PCBs)** are a group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms. PCBs were used in building construction beginning in the 1950s in window caulking, adhesives, fluorescent light ballasts, inks, and carbonless copy paper. PCBs have been shown to cause cancer, immunity problems, neurological effects, reproductive problems, and endocrine disfunction. Resources to

identify PCBs in the school setting are provided by the EPA: Learn about Polychlorinated Biphenyls.

11. **Pest management in the school setting -** U.S. Code at Title 5, Section 136r-1 details the EPA mission to protect human health and the environment by providing an integrated approach to pest management. Vector-borne illnesses may present in the school setting. Information on this type of disease may be found at CDC's Vector-Borne Diseases . The most common vector-borne diseases found in NC are carried by ticks and mosquitoes. Maps showing the distribution of reported tick-borne and mosquito-borne illness are available at the NCDHHS Epidemiology Division. Bed bugs, a world-wide problem, are resurging, causing property loss, expense, and inconvenience. NC State University's School of Integrated Pest Management's resource page for schools on bedbugs can be found here. The EPA and CDC provide resources to learn about bed bugs, how to prevent and treat infestations..
12. **Radon** - Another pollutant that may be found in schools is radon gas. Radon gas may seep from the soil through foundational cracks of a school building. The EPA recommends that all schools test for radon. Resources for schools can be found here.

13. **Safe drinking water in the school setting** - Several resources are available to provide guidance for schools related to safe drinking water. CDC Healthy Schools: Water Access in Schools can be found here. Information about Ground Water and Drinking Water is provided on the EPA website. Ensuring Drinking Water Quality in Schools During and After Extended Closures provides schools with additional guidance to promote safe drinking water.

The NC Department of Labor through the Occupational Safety and Health Division regulates workplace safety and health laws that apply to all state and local government agencies and the private sector. Each school system is required to provide its employees with a safe and healthy working environment. They can assist a school system in evaluating and recommending controls for any situation or condition that poses a safety and/or health hazard to employees. The local health department, including their environmental health section, is also a partner and source of guidance for potential environmental issues in schools.

Reference

National Association of School Nurses. (2021). *Environmental health in the school setting—The role of the school nurse* (Position Statement). Silver Spring, MD: Author.