Management of Infectious Diseases in Schools

MICHIGAN SCHOOL NURSE GUIDELINES AND RESOURCES

Original Date of Issue: 2016
Foreword

These guidelines contain current best practice recommendations for the health service topic addressed. The guidelines 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 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 infectious diseases in schools.

Overview

Infectious diseases kill more people worldwide than any other single cause (National Institutes for Health [NIH], 2016). The Mayo Foundation for Medical Education and Research (MFMER) (2016) defined infectious diseases as disorders caused by organisms — such as bacteria, viruses, fungi or parasites. Infectious diseases can be passed from person to person, transmitted by bites from insects or animals, while others are acquired by ingesting contaminated food or water or being exposed to organisms in the environment (MFMER, 2016). The National Institute of Allergy and Infectious Disease (NIAID)(2010) reported that new infectious diseases continue to evolve and "emerge." Changes in human demographics, behavior, land use, etc., are contributing to new disease emergence by changing transmission dynamics to bring people into closer and more frequent contact with pathogens (NIAID, 2010). The NIAID (2010) continued to inform that imprudent use of antimicrobial drugs and pesticides has led to the development of resistant pathogens, allowing many diseases that were formerly treatable with drugs to make a comeback (e.g., tuberculosis, malaria, nosocomial, and foodborne infections). Decreased compliance with vaccination policy has also led to re-emergence of diseases such as measles and pertussis, which were previously under control (NIAID, 2010).

The American Academy of Pediatrics Committee (AAP) on Infectious Diseases (2015a) stated that the clustering of children in the school setting provides opportunities for the transmission of infectious diseases and that the likelihood that infection in one or more children will pose a risk for schoolmates depends on the mechanism of pathogen transmission, ease in which the organism is spread, and the likelihood that classmates are immune because of immunization or previous infection. Most children will have at least 6 to 8 respiratory infections each year that includes colds, ear infections, sinus infections, bronchitis, and pneumonia (AAP, 2015a).

Information and annual summaries about vaccine preventable diseases in Michigan (Michigan Department of Health and Human Services [MDHHHS], 2016a) can be found at http://www.michigan.gov/mdhhs/0,5885,7-339-73971_4911_4914-47024--,00.html.

Reportable infectious diseases in Michigan (MDHHS, 2016b) summaries can be found at http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_5320_6687-211228--,00.html.
# Legal Framework for Managing Infectious Diseases in Schools

## Federal Law


Federal law related to infectious diseases in schools protects the privacy of individual students and food safety in schools. The Bloodborne Pathogen Standard provides enforcement procedures for occupational exposure to bloodborne pathogens.

<table>
<thead>
<tr>
<th>CPL 2-2.69 (November 27, 2001)</th>
<th>Revised Bloodborne Pathogens Standard; expands bloodborne pathogens to include any pathogenic microorganism, including hepatitis C virus (HCV) present in blood or other potentially infectious materials (OPIM).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Educational and Privacy Rights and Privacy Act</td>
<td>Family Educational Rights and Privacy Act (FERPA) does not allow school personnel to discuss discipline, consequences, or services given to other children.</td>
</tr>
<tr>
<td>Food Safety and Modernization Act</td>
<td>The FDA Food Safety Modernization Act (FSMA), enables FDA to better protect public health by strengthening the food safety system.</td>
</tr>
<tr>
<td><a href="http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm239907.htm">http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm239907.htm</a></td>
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Michigan Law

Michigan law requires schools to report specific diseases.

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School Nurse's Role

The National Association of School Nurses (NASN) believes that promotion of immunizations is central to the public health focus of school nursing practice (NASN, 2015). Public health provides the foundation for the specialty practice of school nursing and is one of the five principles of the Framework for 21st Century School Nursing Practice (NASN, 2016). Key tenets and responsibilities of public health practiced by school nurses include surveillance, outreach, population-based care, levels of prevention, social determinants of health and health equity (Maughan, Bobo, Butler, Schantz, & Schoessler, 2015; NASN, 2016). These principles provide guidance for school nurses when preventing and managing infectious diseases in the school setting. The school nurse observes trends and conditions and help in the prevention of infectious disease outbreaks. School nurses can prevent outbreaks by supporting immunization compliance and promoting influenza vaccination (Maughan et al., 2015).

Recommendations for Practice

Surveillance

1. Maintain up to date knowledge about mandated reportable infectious diseases to assist with early recognition and prevention of transmission (Galemore, 2016; Michigan Department of Education [MDE] and MDHHS, 2016). Reportable communicable disease information can be found at [http://www.michigan.gov/documents/mdch/Managing_CD_in_Schools_FINAL_469824_7.PDF](http://www.michigan.gov/documents/mdch/Managing_CD_in_Schools_FINAL_469824_7.PDF).

2. Non-disease specific absenteeism rates alone have been found to be of little use for school-based influenza. Collecting causes of absenteeism in schools might be beneficial (Egger, Hoen, Brownstein, Buckeridge, Olson & Konty, 2012).

Current issues and updates about communicable diseases in Michigan (MDHHS, 2016c), including a weekly surveillance report can be found at http://www.michigan.gov/mdhhs/0,5885,7-339-71550_5104_53072--,00.html.

Outreach

1. Collaborate with school administrators and the district communication team to deliver accurate information about infectious disease outbreaks in a timely and effective manner via the school website, letters, email messages, automated calling, local cable and media sources:
   - Sources of information should include the CDC as well as the local and state health departments (Silkworth & Hoxie, 2012).
   - Daily meetings with the communications director and administration may be necessary to determine current and future communication needs regarding infectious diseases for staff, students, families and the media (Silkworth & Hoxie, 2012).
   - Fact sheets may be helpful to provide consistency of information.
   - Principals and other administrators should be provided with specific messages to be sent out to their communications networks to ensure consistency of messages (Silkworth & Hoxie, 2012).


Population-based Care

1. Establish relationships with state and local health officials for ongoing communication about influenza and other infectious diseases (CDC, 2016b).
   - Utilize the state immunization information system, Michigan Care Improvement Registry (MICR) (MDHHS, 2016d) to report student immunization compliance at https://www.mcir.org/school-childcare/reporting-immunization-program-status-to-the-health-department/.

Levels of Prevention

Primary Prevention

Infectious Disease Prevention

1. Promote vaccination as the best available preventive measure against influenza (NASN, 2015; AAP Committee on Infectious Diseases, 2015b). During seasons when the vaccine is only moderately effective, influenza vaccine has been shown to reduce illness, antibiotic use, doctor visits, time lost from work, hospitalizations, and deaths. The seasonal vaccine is not 100% effective but it still is the best strategy available for preventing illness from influenza.
2. Consider school-located influenza vaccination clinics to improve coverage rates (NASN, 2015; Asay et al., 2012; Christensen, et al., 2012)
3. Send alerts to families that the influenza vaccine is available (AAP Committee on Infectious Diseases, 2015b).
4. Encourage students and staff to stay home when they are sick (CDC, 2016c).
5. Documentation of immunization status of children should be reviewed at the time of enrollment and regularly scheduled intervals thereafter (AAP Committee of Infectious Diseases, 2015a; NASN, 2015).
6. Educate parents and school staff about the importance of immunizations and vaccination schedules (NASN, 2015; Peterson et al., 2012). Vaccine safety, effectiveness, and indications must be communicated often and clearly to the public (AAP Committee on Infectious Diseases, 2015).
7. Refer students and families to local providers of vaccinations (NASN, 2015).
8. Provide education to athletes, coaches, trainers, other staff and parents about preventing skin and soft tissue infections in the school setting. Education should include symptoms, spread of the infection, prevention and reporting the infection immediately to school staff (Buss & Connolly, 2014).

**Environmental Hygiene**

3. Maintain a sanitary setting to prevent the spread of illnesses (MDE & MDHHS, 2016). Specific information about safe and effective cleaning of surfaces can be found at [http://www.michigan.gov/documents/mdch/Managing_CD_in_Schools_FINAL_469824_7.PDF](http://www.michigan.gov/documents/mdch/Managing_CD_in_Schools_FINAL_469824_7.PDF). Encourage routine surface cleaning through education, policy, and the provision of supplies. The CDC provides information about how to clean and disinfect schools to slow the spread of the flu ([http://www.cdc.gov/flu/school/cleaning.htm](http://www.cdc.gov/flu/school/cleaning.htm)). Match your cleaning activities to the types of germs you want to remove or kill.
4. Conduct educational sessions in the classroom to demonstrate both effective handwashing techniques and effective cleaning of environmental surfaces (Bright, Boone & Gerba, 2010).
5. Collaborate with school administrators to ensure environmental control measures are in place to prevent exposure to bloodborne pathogens.

**Policies and Procedures**

1. Collaborate with school administrators to ensure policies and procedures are in place for managing and preventing the spread of infectious diseases in the school setting. The policies and procedures should meet any regulatory requirements for communicable disease control measures and outbreaks. The policies should also address family rights to privacy (Laubin, Schwab & Doyle, 2012).
2. Collaborate with school administrators to ensure the school has a reliable process for notification and education of parents during an exposure or outbreak (Laubin et al., 2012).
3. Policies and procedures should detail the appropriate communications for handling routine communicable diseases as well as non-routine communicable diseases (Laubin et al., 2012).
4. Policies and procedures to manage all potential exposures to blood or blood-containing materials should be established and implemented (AAP, 2015b).
5. Maintain principles of confidentiality while obtaining and managing consent forms, scheduling and arranging for testing, and interpreting results for managing a communicable disease outbreak in the school setting (Galemore, 2016).

Secondary Prevention

1. The MDE and the MDCH (2016) provide a guidance document for schools about managing communicable diseases in the school setting. Information is provided about when students need to stay home from school, reporting requirements and selected diseases. This document can be retrieved from http://www.michigan.gov/documents/mdch/Managing_CD_in_Schools_FINAL_469824_7.PDF. The AAP Committee on Infectious Diseases (2015a) also provides evidence-based guidelines regarding school exclusion and disease management. The list of reportable diseases in Michigan (MDHHS, 2016e) by condition can be found directly at http://www.michigan.gov/documents/mdch/Reportable_Diseases_Michigan_by_Condition_478488_7.pdf. MDHHS (2016f) also provides a disease reporting guidance document for health professionals at http://www.michigan.gov/documents/hlth_care_prof_guide_167371_7.pdf.


3. If a vaccine-preventable disease to which children may be susceptible occurs in the school, all unimmunized and under-immunized children should be excluded for the duration of possible exposure or until they have completed their immunizations (AAP Committee on Infectious Diseases, 2015a).

4. Temporary school closings can be used in limited circumstances to prevent the spread of infection when available control measures are considered inadequate and/or there is an expected high rate of morbidity and mortality (AAP Committee on Infectious Diseases, 2015a).

5. Animal bites should always be reported to your Local Health Department and/or animal control within 24 hours because of the risk of rabies (MDE & MDHHS, 2016).

Social Determinants of Health and Health Equity

1. The provision of comprehensive, coordinated, culturally and linguistically effective care, and continuous health services provided in a quality medical home should be integral to all efforts on behalf of immigrant children (AAP Council on Community Pediatrics, 2013).

2. Collaborate with school district cultural liaisons and/or language interpreters for translation of letters and forms being sent to parents (Laubin et al., 2012).

3. Easy-to-follow instructions using pictograms, videos, and other visual aids should be developed before any incident in formats that can be readily understood by caregivers, who will undoubtedly be under great stress during an emergency and who may have limited health literacy themselves (AAP Disaster Preparedness Advisory Council, 2016).

4. The CDC (2009) 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
5. The CDC (2012) offers materials designed to improve the knowledge of seasonal flu in refugee populations written in their native languages
http://www.cdc.gov/immigrantrefugeehealth/resources/index.html

Red Flags for Managing Infectious Diseases in the School Setting

1. Immigrant children who are foreign-born may not have been screened at birth for congenital syphilis. In comparison with US-born children, they also have lower immunization rates, especially for vaccines that are not routinely administered in their countries of origin. Some children may lack immunization records. Foreign-born immigrant children have a higher incidence or prevalence of some infectious diseases, such as tuberculosis, hepatitis A, amebiasis, and parasitosis (AAP Council on Community Pediatrics, 2013a).

2. Many migrant children face a panoply of health problems related to their living and working conditions, including workplace injuries, substandard housing, and unreliable transportation. These factors can contribute to higher rates of respiratory tract and ear infections, bacterial and viral gastroenteritis, tuberculosis, nutritional deficiencies, intestinal parasites, skin infections, dental problems, lead and pesticide exposure, and undiagnosed congenital anomalies (AAP Council on Community Pediatrics, 2013a).

3. Homeless children have shown higher rates of acute and chronic health problems than low-income children with homes. Cross-sectional surveys conducted in the 1990s reveal increased rates of multiple infectious, respiratory, gastrointestinal, and dermatologic diseases and otitis media, diarrhea, bronchitis, scabies, lice, and dental caries (AAP Council on Community Pediatrics, 2013b).

4. Early childhood caries is an infectious disease influenced by multiple factors, including socioeconomic determinants, and requires a combination of approaches for improvement. The oral health of Indigenous children of Canada (First Nations, Inuit, and Métis) and the United States (American Indian, Alaska Native) is a major child health issue due to a higher prevalence of early childhood caries (ECC) and resulting adverse health effects in this community. A 1999 Indian Health Services (IHS) survey of 2663 American Indian/Alaskan Native (AI/AN) children between 2 and 5 years of age revealed that 68% had untreated decay, which is more than 3 times greater than the rate found in children from the National Health and Nutrition Examination Survey (19%) (AAP Committee on Native American Health, Canadian Pediatric Society, First Nations, Intuit and Metis Committee, 2011).

5. Water fountain toggles, pencil sharpeners, keyboards, and faucet handles were found to be the most bacterially contaminated fomites (classroom contact surfaces) and desktops, faucet handles, and paper towel dispensers were the most contaminated fomites with viruses in a study completed by Bright et al., (2010).

6. The privacy of a student with a communicable disease or infestation must be protected (Laubin et al., 2012).
7. Before adolescence, children with tuberculosis are generally not contagious, but students who are in close contact with an older child, teacher or other adult with infectious tuberculosis should be evaluated for infection (AAP Committee on Infectious Diseases, 2015).

8. Studies have shown that the flu virus can live and potentially infect a person for only 2 to 8 hours after being deposited on a surface. Therefore, special sanitizing processes beyond routine cleaning, including closing schools to clean every surface in the building, are not necessary or recommended to slow the spread of flu, even during a flu outbreak (CDC, 2014b).

References


Centers for Disease Control and Prevention (2009). Simply Put: A guide to creating easy-to-understand
MICHIGAN ASSOCIATION OF SCHOOL NURSES MANAGEMENT OF INFECTIOUS DISEASES IN SCHOOLS


