RECOMMENDATIONS FOR SCHOOLS AND CHILD CARE FACILITIES ON THE PREVENTION OF HEPATITIS B, HEPATITIS C AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTIONS

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INTRODUCTION

Blood-borne viral illnesses such as Hepatitis B, Hepatitis C and HIV are not common among children and adolescents of our community. The presence of a child or staff member with a detected or undetected blood-borne infection will raise questions about the risk of infection to others.

This document will address pre-admission and pre-employment policies, dealing with a known carrier in a school, assessment of children according to risk, disclosure, precautions, the role of immunization, confidentiality and first aid measures. Ottawa Public Health recommends that this document be adopted as policy by all schools.

For further information, call the Communicable Disease Program at 613-580-6744 ext. 24224.
I. BACKGROUND INFORMATION

A. Description of Hepatitis B Infection, Hepatitis C Infection and Human Immunodeficiency Virus (HIV) Infection

**Hepatitis B Infection**
- Hepatitis B is a virus that causes infection of the liver.
- Some people who become infected with Hepatitis B will not even become ill. In rare situations, death may result from very serious damage to the liver.
- Young children are less likely to show symptoms of illness than adults. Among all the people who become infected with Hepatitis B, regardless of whether they become ill, about 5% to 10% of adults and 70% to 90% of children infected early in life will become chronic carriers (someone who has the Hepatitis B virus). Both chronic carriers and acutely infected people can transmit Hepatitis B to other people.
- Hepatitis B is not a common infection because of the way it is spread (see section B).
- There is a vaccine to protect people against Hepatitis B, which is about 95% effective.

**Hepatitis C Infection**
- Hepatitis C is another virus that causes infection of the liver.
- This type of infection is spread by direct blood-to-blood contact with an infected person.
- There is no immunization against Hepatitis C.
- It can cause acute and chronic infections.
- This type of infection is much less common than Hepatitis A or B.

**Hepatitis A Infection**
- Hepatitis A is another virus that causes infection of the liver. This virus is spread quite differently from Hepatitis B. It is present in the stool of people who have the infection, and is spread via contaminated food, water or personal contact.
- Hepatitis A is a common infection and often presents no symptoms in younger children. It is less serious than Hepatitis B. People who have been exposed to this virus can be given Hepatitis A vaccine to decrease the risk of infection.
- A vaccine is now available to protect people against Hepatitis A virus. Proper hand washing is very efficient in preventing the spread of Hepatitis A virus.

**HIV Infection**
- Acquired Immune Deficiency Syndrome (AIDS) is caused by the Human Immunodeficiency Virus (HIV). The virus damages and eventually destroys the immune system, leaving the person vulnerable to life-threatening infections and cancer.
- HIV infection in children is not common.
- There is no vaccine for HIV and there is no cure.
B. Transmission of Hepatitis B, Hepatitis C and Human Immunodeficiency Virus (HIV)

*Hepatitis B Virus*

The Hepatitis B virus, is found in the blood, semen, vaginal fluids, and saliva*, of an infected person. Transmission occurs when the virus enters the body of another person in the following ways:

Common ways are:
- blood contact (e.g. sharing of drug paraphernalia, sharing of blood contaminated personal articles, needlestick injury)
- infected semen, vaginal fluids – unprotected sexual contact
- perinatal – infected mother to newborn before and during birth

Less common ways are:
- infected blood or saliva* contacting broken skin;
- infected blood or saliva* contacting mucous membranes (e.g., mouth, eyes).

*Hepatitis B virus is present in saliva in minute quantities in comparison to blood. The risk of transmission through saliva is extremely small.

*Hepatitis C Virus*

The Hepatitis C virus is found in the blood of an infected person. Transmission occurs when the virus enters the bloodstream of another person in the following ways:

Common ways are:
- direct blood contact (e.g., sharing drug paraphernalia)

Less common ways are:
- blood contact by sharing of contaminated personal articles e.g., toothbrushes, razors or scissors; needlestick injury
- tattooing, piercing done in unsterile environment
- unprotected sexual contact
- infected mother to baby before and during birth.

Since 1992, blood and other blood products continue to be screened for Hepatitis C, therefore the risk of transmission is minimal.

Hepatitis C transmission in the school is unlikely but it is possible when blood of an infected person enters another person’s body through a break in the skin or through mucous membrane exposure.
**Human Immunodeficiency Virus HIV**

The HIV virus found in blood, semen, vaginal fluids and breast milk can be transmitted to others. **HIV is not transmitted through saliva.** Transmission occurs when the virus gains access to the circulation of another person through the following mechanisms:

- direct needle punctures (e.g., sharing needles);
- infected blood contacting broken skin;
- infected blood contacting mucous membranes.

The most common routes of infection are: sexual, percutaneous (through the skin, e.g., injection drug use, transfusion, occupational needle stick injuries) and perinatal (e.g., mothers to newborns before and during birth).

HIV transmission has never been documented within school settings. HIV transmission within household settings has only occurred when one of the above listed risks is present. The HIV virus is very fragile outside of the body and is not transmissible during the course of regular activities at schools.

**C. Situations that Do Not Lead to the Transmission of Hepatitis B, Hepatitis C or HIV**

There is **no risk** of transmission of Hepatitis B, Hepatitis C or HIV in the following situations:
- Changing children’s diapers
- Changing children’s clothes
- Toileting
- Blowing children’s noses
- Feeding children
- Washing hands and faces
II. PREVENTION AND CONTROL OF HEPATITIS B, HEPATITIS C AND HIV INFECTIONS IN SCHOOL SETTINGS

A. Routine Practices

There is a small risk of transmission of Hepatitis B when there is blood loss caused by injuries. As a consequence, one should focus on avoiding transmission by using sensible precautions. The term "Routine Practices" is used to describe specific procedures that must be used at all times to prevent transmission of infectious diseases including blood-borne infections (See Section III).

B. Biting

The prevalence of hepatitis B in children is extremely low. The theoretical risk for a young child biting or being bitten by child who is a hepatitis B carrier is also extremely low. Therefore, it recommended that:

- schools and CCF no longer report child bites unless the biting or bitten child is known to be infected with hepatitis B, hepatitis C or HIV,
- schools and CCF continue to immediately notify parents or guardians when there is a bite that breaks the skin,
- schools and CCF are encouraged to provide a copy of the fact sheet “When Children Bite” to parents or guardians of children who bite or have been bitten,
- schools and CCF encourage parents to share the hepatitis B, hepatitis C and HIV status of their child to school principals and directors of child care facilities,
- schools and CCF continue to call the Communicable Disease Program if they have questions regarding a communicable disease and/or child bite.

C. Open or Bleeding Injuries or Sores

Children, volunteers and staff who have sores that are weeping or bleeding should have the sores covered with bandages or clothing, so that blood will not come into contact with other children, volunteers or staff. Covering sores and skin lesions also helps to protect lesions from getting infected with micro-organisms.

D. Approach to a Known Carrier

A known carrier of the HIV, Hepatitis B or Hepatitis C virus may be either a staff member, a child or a volunteer attending the school. The principal should contact the Communicable Disease Program at 613-580-6744 ext. 24224 to discuss if extra precautions are required to prevent transmission.

There is no need for special precautions to be taken over and above routine practices to protect the staff, volunteers or other children from HIV, Hepatitis B or Hepatitis C infection. However, an HIV-infected child may be at risk of infection from other children, staff or volunteers. Parents are encouraged to let the principal know if their child is HIV positive. If a child who is known to be HIV positive has been exposed to diseases such as
chicken pox, measles or TB in the facility, the principal should notify the parent immediately.

If a family provides information to a school regarding the HIV, Hepatitis B, Hepatitis C status of a child or family member, this information must be kept confidential. See section on Confidentiality. It is important to note that you may not be informed of all known carriers in your school and as such should treat all children as potential carriers and use routine practices.

E. Immunization

An effective vaccine against Hepatitis B is available. In Ontario, all children will be immunized in grade 7 through the current provincial program. Most people, staff and students, do not need immunization based on their risk in the school setting. Ottawa Public Health does recommend that all teens and young adults be immunized because of the increased risk of being exposed to Hepatitis B through lifestyle behaviors outside the school setting.

Children under age 7 whose families have immigrated from countries with a high prevalence of Hepatitis B should be offered Hepatitis B immunization now rather than waiting for the Ottawa Public Health’s grade 7 (age 12) school immunization program. This is because of the possible risk of household transmission from carriers. The Immunization Program at 613-580-6744 ext.24108 will determine which families come from an endemic country.

Note that Hepatitis B immunization is not required for attendance at a childcare facility but should be strongly recommended for at-risk children (see above). Free Hepatitis B vaccine is also recommended and available for household contacts and sexual partners of anyone with Hepatitis B infection.

F. Pre-Admission and Pre-Employment

There is no need to routinely screen children for Hepatitis B infection, Hepatitis C or HIV infection prior to entering school. Staff and volunteers do not need to be screened for Hepatitis B, Hepatitis C or HIV prior to employment.

G. Confidentiality

It is critical that confidentiality of medical information is respected and protected. This requirement is not only a professional and ethical responsibility, but a legal responsibility as well. Inappropriate disclosure of communicable disease is prohibited by Ontario law (Health Protection and Promotion Act, Section 38, 1983).

When a child’s, staff’s or volunteer’s HIV or Hepatitis B or C status comes to the attention of the school, the principal will take responsibility to ensure that confidentiality is maintained. It is not appropriate to provide this information to staff, volunteers, nor to the parents of other students unless the parents or the infected individual consent to the release of information. If parents demand to know if there is a child, staff or volunteer who has
Hepatitis B infection or HIV infection in the school, then the policies and the procedures adopted by the school to prevent the spread of communicable diseases could be discussed. The exception to confidentiality would be when a discussion with appropriate public health consultants is necessary in the course of assessing the child's status.

If a staff member is known to be HIV or Hepatitis B or C positive, the principal should ensure that this information is protected, and released only with the expressed consent of the infected person.
III. EXPLICIT POLICIES FOR ROUTINE PRACTICES

A. Routine Preventive Measures

1. Toys
   - Avoid plush toys because they may become saturated with saliva, nasal discharges or blood.
   - Remove and set aside all toys that have been mouthed.
   - Sanitize before giving to another child (refer to section on Sanitizing Methods).
   - Every day, sanitize all toys that are mouthed by children.
   - Discard cracked and broken toys.

2. Toothbrushes and Other Personal Items
   - Toothbrushes and other personal items are not to be shared because they could become contaminated with blood.
   - Tooth brushing programs must be monitored by staff.
   - Nail clippers must be sanitized after each use.

3. Medical Procedures
   Keep other children away from areas where medical procedures such as bandaging are performed to minimize their exposure to blood.

4. Broken Skin
   Broken skin (cuts, abrasions, eczema) found on staff, volunteers and children is to be protected from contact with blood or saliva by covering with a bandage or clothing.

5. Hand Hygiene
   Hand hygiene is a general term that can apply to handwashing with soap and water for 15 seconds or the use of alcohol-based hand sanitizers. Hand hygiene is widely recognized as the single most effective method for preventing the spread of infections. Handwashing is the physical removal of dirt, organic material and transient micro-organisms by friction and rinsing with warm water. Liquid soap should always be used. Hand sanitizing is the use of disinfectants that are available as rubs, gels or rinses that contain either 60 per cent propanol or 70 per cent ethanol. Hand sanitizers are widely used in health care settings, or in situations when hand sinks are not accessible.
   Hand hygiene should always be performed:
   - Before eating or preparing food
   - After using the washroom
   - After sneezing, coughing or blowing your nose
   - Any time hands may have become soiled
6. Gloves

Types of Gloves

- Rubber/utility gloves: are multi-purpose reusable gloves.
- Disposable gloves: are single-use gloves.
  - Latex: disposable glove which offers the optimal protection against possible viruses in the blood or body fluid.
  - Vinyl: an acceptable alternative to latex disposable gloves. Check with the manufacturer to ensure that the quality of the vinyl is comparable to that of the latex disposable glove.

Use of Gloves

- Always use gloves (either utility or disposable) for clean-up of blood and body fluids and the follow-up sanitizing procedure (e.g., floors, toys, table tops, etc.).
- Use 1:10 bleach (5% sodium hypochlorite) solution or 0.5% accelerated hydrogen peroxide to sanitize utility gloves after each use.
- Sanitize utility gloves after blood and body fluid clean-up and before beginning the sanitizing procedure.
- Use disposable gloves when cleaning blood off a child.
- Discard disposable gloves after one use.

7. Sanitizing Methods

The method used in clean-up of blood and body fluids involves cleaning first with soap and hot water and then sanitizing with a 1:10 household bleach (5% sodium hypochlorite) solution or 0.5% accelerated hydrogen peroxide. A concentration of 5000 ppm of either of these products will be effective.

Preparation Procedure

- Prepare sanitizing solution daily.
- Dilute 1 part household bleach in 10 parts water (100 ml bleach in 1L of water). Alternatively, use 0.5% accelerated hydrogen peroxide without dilution.
- Label the container with the name, strength and date of preparation of the solution (e.g., Bleach Sanitizer 1:10, 01/01/00).
- Keep solution in a closed container.
- Store solution in a safe place not accessible to children.
- Dispose of sanitizing solution at the end of each day.

Sanitizing Procedure

- A contaminated surface or object must be cleaned with soap and water prior to sanitization with a 1:10 bleach sanitizing solution.
- Disposable towels or cloths should be used to remove blood or body fluid spills.
- Sanitize the contaminated surface or object by either:
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- using a spray bottle filled with the sanitizing solution,
- using a single-use towel soaked in the sanitizing solution,
- immersing the object in a container filled with the sanitizing solution, or
- using a mop soaked in 1:10 sanitizing solution.

- Leave the sanitizing solution in contact with the surface/object for at least ten minute with bleach or five minutes with accelerated hydrogen peroxide in order for it to be effective.
- Rinsing is necessary.
- Discard all contaminated clean-up materials (e.g., paper towels) in double plastic bags.
- Dispose of contaminated sanitizing solution into the drainage system after each use.

8. Floor Mops

- Clean floor mops with soap and water.
- Sanitize in 1:10 solution only.
- Wring as dry as possible.
- Hang to dry.
- Dispose of solution used to sanitize mop into the drainage system after each use.

N.B. Although bleach is recommended for a sanitizing solution, other disinfectants may be used, e.g. quaternaries. Call Ottawa Public Health’s Environment and Health Protection Division at 613-580-6744 ext. 23806 if you are considering using an alternative product. Verify with them if the product has the sanitizing capacity needed to achieve the level of sanitizing required. When using an alternative product, follow the sanitizing instructions supplied by the manufacturer.

B. Response to Incidents Involving Blood

Examples of injuries involving blood include:
- Nose bleeds
- Fights resulting in bleeding
- Injuries with sharp objects resulting in bleeding
- Cuts and abrasions resulting in bleeding
- Bites with broken skin resulting in bleeding

1. Equipment for First Aid Situations

- First aid kit
- Sanitizing solution (see section on Sanitizing Methods)
- Gloves (see section on Gloves)
- Clean-up materials (e.g., paper towels and plastic bags).

2. First Aid Procedures

- Minimize the number of staff and children who are exposed to blood.
• Wear gloves but DO NOT delay in providing first aid if gloves are not at hand. Care for the injured child immediately.
• Encourage the child to do as much of the personal care as possible.
• Use disposable wipes (paper towel) to clean the child and control bleeding.
• Use only water to clean mouth, nose or eyes.
• Clean cuts and/or abrasions with soap and water. The use of an antiseptic is optional.
• Wash any visible blood off the skin of others with warm soapy water.
• Remove bloodstained clothes from the child, pack in double plastic bags and return to parent for cleaning.
• Discard bloodstained clean-up materials and gloves in double plastic lined garbage containers.

3. Exposure of Other Children or Other Staff or Volunteers

Call the Communicable Disease Program at 613-580-6744 ext 24224 if any of the following occur:

• One child bites another and draws blood.
• Blood from one person enters through the broken skin of another person.
• Blood of one person enters the mucous membranes (e.g., inside the mouth, nose or ears) of another person.

If exposure to HIV, Hepatitis B or Hepatitis C is suspected, immediately contact Ottawa Public Health’s Communicable Disease Program for follow-up and to determine extra steps that need to be undertaken.

4. Clean up of Blood on Equipment, Toys and Environment

a. Blood on Indoor Toys and Hard Surfaces

• Wear gloves (see section on Gloves).
• Sanitize bloodstained toys or hard surfaces (see section on Sanitizing Methods).
• Discard sanitizing solution into the drainage system.

b. Blood on Outdoor Toys and Equipment
(e.g., shovels, buckets, climbers and swings)

• Wear gloves (see section on Gloves).
• A water hose may be used to remove excess blood; spray or soak with sanitizing solution (see section on Sanitizing Methods).
• Discard sanitizing solution into the drainage system.

c. Blood in Sandboxes, on Bike Paths and Other Ground Surfaces
• Remove bloodsoaked sand or dirt with a shovel, and discard it away from the play area.
• Hose hard surface areas with water until visible blood is removed.
• Use soapy water or sanitizing solution to clean hard surface areas (e.g., concrete or pavement).

d. **Blood on Portable Wading Pools and Water Tables**

• Discard the water away from the play area.
• Spray or soak the interior with a sanitizing solution (See section on Sanitizing Methods).

e. **Blood on Carpets**

• Wear gloves (see section on Gloves).
• **Area rugs** that cannot be washed in the hot water cycle of a washing machine with bleach should be rolled up and sent for cleaning **after** the blood has dried, or steam cleaned.
• **Wall-to-wall carpets** should be cleaned with soap and water, and rinsed thoroughly with water, or steam cleaned.

f. **Blood on Floors, Table Tops and Other Hard Surfaces**

• Wear gloves (see section on Gloves).
• Follow the sanitizing procedure (see section on Sanitizing Methods).
• Sanitize the sponge or floor mop (see section on Sanitizing Methods).
• Discard the sanitizing solution into the drainage system after each use.