

Bloodborne Pathogens Exposure Control

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OVERVIEW

Employees incur risk of infection and subsequent illness each time they are exposed to blood or other potentially infectious materials. The Exposure Control Plan (ECP) is the core element used to reduce worker risk by minimizing or eliminating employee exposure incidents to bloodborne pathogens, such as Hepatitis B Virus (HBV), Hepatitis C (HCV), and HIV. An ECP is the district's written policy for implementation of procedures relating to the control of infectious disease hazards for employees. The policy is to be part of the employee accident prevention program or infectious disease policy.

In 1991 the Occupational Safety and Health Administration (OSHA) finalized a federal regulation to protect employees against exposure to Bloodborne Pathogens (BBP), the "Bloodborne Pathogen Standard."

Employers with employee(s) with real or potential occupational exposure to bloodborne pathogens must establish, implement and maintain an effective Exposure Control Plan designed to eliminate or minimize employee exposure. The plan must be in writing and include the following elements: (The components and implementation regulations are specified in detail in the standard.)

The Exposure Control Plan components are:

- 1. Exposure determination.**
- 2. Control methods**
 - a. Standard precautions (includes universal precautions).**
 - b. Hand washing procedures.**
 - c. Use of gloves.**
 - d. Contaminated sharps.**
 - e. Cardiopulmonary Resuscitation (CPR).**
 - f. Housekeeping practices.**
- 3. Training and education of employees (see Section 5).**
- 4. HBV vaccination.**
- 5. Post-vaccination testing for immunity.**
- 6. Post-exposure evaluation and follow-up.**
- 7. Record keeping.**

1. Exposure determination – the employer must make a list of all job classifications in which all employees in those job classifications have occupational exposure; a list of job classifications in which some employees have occupational exposure; and a list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs which are performed by the employees in the listed job classifications. The potential for exposure is to be made without regard to the use of personal protective equipment.

The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary as follows:

1. To reflect new or modified tasks and procedures which affect occupational exposure;
2. To reflect changes in technology which eliminates or reduces exposure to bloodborne pathogens (i.e. ways to reduce needle exposure – needless systems/devices).
3. To include new or revised employee positions with occupational exposure;

4. To review and evaluate the exposure incidents which occurred since the previous update; and
5. To review and respond to information indicating that the Exposure Control Plan is deficient in any area.

Any employee with occupational exposure to blood and other potentially infectious materials is protected by the ECP. Potentially infectious human body fluids are blood, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

Occupational exposure is defined by the Occupational Safety and Health Administration (OSHA) as "reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials, which may result from the performance of an employee's duties." In addition to being "reasonably anticipated," the contact must "result from the performance of an employee's duties."

Examples of occupations considered at risk in schools are listed below. However, individual job duties must be considered when determining those employees at risk.

1. School nurses who provide physical care in which blood or blood-tinged body fluids are present (suctioning, first aid, injections, etc.).
2. Teachers and aides providing physical care to students with potential exposure to blood, e.g., classrooms for the developmentally disabled where biting might be expected.
3. Bus drivers who transport students, described in #2 above, and/or staff who provide first aid to students.
4. Classroom contact with a student who behaves aggressively (biting, scratching) or has special medical problems such as open skin lesions, which increase the risk of exposure to his/her blood or serous secretions.
5. School Speech Language Pathologists (SLP) or therapists providing therapy to students, described in #2 and #4 above.
6. Coaches and assistants providing first aid.

7. First aid providers (to limit the number of employees with occupational exposure, it is recommended schools designate a limited number of first aid providers and assign them to high-risk areas such as playgrounds and the health room).

8. Custodians who clean and dispose of bloody wastes from classrooms (described in #2), or first aid rooms, or who police areas with contaminated wastes (broken glass, discarded drug paraphernalia, etc.).

9. Students in the health occupations.

2. Control methods - The key steps to preventing disease spread at school are hand washing, gloving, and hand washing after removing gloves and before working with the next person. Other control methods include engineering and work practice controls and the use of Personal Protective Equipment such as gloves.

General Precautions

- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational body fluid exposure.
- Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets, or on countertops or bench tops where blood or other potentially infectious materials are present.
- The employer must ensure that the worksite is maintained in a clean and sanitary condition and determine and implement an appropriate cleaning schedule for rooms where body fluids are present.
- Housekeeping workers must wear general-purpose utility gloves during all cleaning of blood or other potentially infectious materials.
- Cleaning schedules must be as frequent as necessary, depending on the area of the school, the type of surface to be cleaned, and the amount and type of soil present.
- Warning labels must be affixed to containers of regulated waste. Labels should be fluorescent orange or orange-red with contrasting color writing. Red bags may be substituted for labels.

Personal Protective Equipment

- Where occupational exposure remains after institution of engineering and work practice controls, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices.
- The employer shall ensure that the employee uses appropriate personal protective equipment with limited exceptions
- The employer shall clean, launder, and dispose of personal protective equipment at no cost to the employee.
- The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

All procedures involving blood or OPIM should be performed in such a way as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

a. Standard precautions (includes universal precautions) are recommended practice for protection against transmission of bloodborne pathogens and other infectious diseases in the workplace and are based on the principle that all blood, body fluids, secretions (including respiratory secretions), excretions (except sweat), non-intact skin, and mucous membranes may contain transmissible infectious agents. Standard precautions include a group of infection prevention practices that apply to all persons, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered. These include hand hygiene, use of personal protective equipment depending on the anticipated exposure, and safe injection practices. Also, equipment or items in the environment likely to have been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents (e.g., wear gloves for direct contact, contain heavily soiled equipment, properly clean and disinfect or sterilize reusable equipment).

b. Hand washing procedures

- Proper hand washing requires:
 - o Use of a plain (non-antimicrobial) soap for routine hand washing and water and vigorous scrubbing for at least 15 seconds and then rinsing under a stream of temperate (warm) water. Soap suspends soil and microorganisms, allowing them to be washed off. Running water is necessary to carry away dirt and debris.

- Use an antimicrobial agent or waterless antiseptic agent for specific circumstances, e.g., control of outbreaks or infections when soap and water are not available.
- Use paper towels to turn off the water faucet.
- Use paper towels to thoroughly dry hands.
- Use paper towels to open any exit door.
- Use paper towels to turn off light.
- Wash after touching any body fluid or contaminated object.
- Wash after gloves are removed and between patients.
- Avoid chapped or cracked skin on hands.

Facilities must provide an adequate supply of running potable water at a temperate temperature (85o–110oF), soap, and single-use towels or hot-air drying machines.

When provision of hand washing facilities is not feasible, the employer must provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towel or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands must be washed with soap and running water as soon as feasible.

c. Use of gloves

When possible, direct skin contact with body fluids should be avoided.

- Disposable non-latex gloves should be available in the offices of coaches, custodians, nurses, principals, and staff in school settings such as the gymnasium, play fields, and health room where contact with blood or other body fluids is likely to occur. All other personnel should have access to first aid supplies, which includes gloves.
- Gloves should be worn when direct hand contact with body fluids is anticipated (treating bloody noses, handling clothes soiled by incontinence, cleaning small spills by hand).
- Disposable (single use) non-latex gloves must be replaced as soon as possible when contaminated or immediately, if they are torn, punctured, or when their ability to function as a barrier is compromised.

- Gloves, used for this purpose, should be placed in a plastic bag or lined trash can, secured, and disposed of daily.
- Because of the increasing incidence of allergic reactions to latex, only non-latex gloves should be used.
- Utility gloves may be cleaned and disinfected for reuse, if they show no signs of deterioration. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration, or when their ability to function as a barrier is compromised.
- Unbroken skin is an excellent barrier to infectious agents. Staff with sores or cuts on their hands (non-intact skin) having contact with blood or body fluids should always double glove, if lesions are extensive.
- Instruction to staff who are at risk for exposure to body fluids should include:
 - o Staff should change gloves between tasks on the same student/staff person after contact with material, which may have a high concentration of microbes.
 - o Teach staff, including bus drivers/monitors and trip sponsors, how to properly remove gloves.
 - o Gloves need not be worn when feeding students or when wiping saliva from skin unless blood is present or the caregiver has cuts or wounds on their hands.
 - o Always wash hands with soap and water after removing gloves.
 - o Unanticipated skin contact with body fluids may occur in situations where gloves may not be immediately available (when wiping a runny nose, applying pressure to a bleeding injury outside of the classroom, helping a student in the bathroom). In these instances, hands and other affected skin areas of all exposed persons should be thoroughly washed with soap and water as soon as possible.
 - o As much as possible, have the student provide direct care for the wound (applying pressure, washing).

If contact with contaminated body fluids to non-intact skin or mucous membranes does occur, the staff member should follow the school's policy for post-exposure management and seek medical evaluation of the need for post-exposure prophylaxis.

d. *Contaminated sharps-*

- Students should be advised to report needles but not touch them.
- Take care to prevent injuries when using needles and other sharps.
- Broken glassware, discarded needles, and other sharps must not be picked up directly with the hands. Cleanup must be accomplished using mechanical means such as a brush and dustpan, tongs, or forceps by staff wearing appropriate protective gloves.
- Contaminated, reusable sharps must not be stored or processed in a manner which requires employees to reach by hand into the containers where these sharps have been placed.
- Contaminated needles and other contaminated sharps must not be bent, recapped, or removed.
- Contaminated sharps must be discarded immediately in containers which are closable, puncture resistant, leak proof on sides and bottom, and labeled or color-coded.
- During use, containers for contaminated sharps must be easily accessible to personnel and located as close as possible to the immediate area where sharps are used (health rooms, science classrooms).
- The containers must be maintained upright throughout use, replaced routinely, and not be allowed to overfill.
- When moving containers of contaminated sharps from the area of use, they must be closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping. They must be placed in a secondary container if leakage is possible. The secondary container must be closable, constructed to contain all contents, and prevent leakage during handling, storage, transport, or shipping. The secondary container must also be labeled and color-coded.
- Containers for contaminated reusable sharps must meet all of the qualifications for disposable containers, except they do not need to be closeable, since devices will be removed from these containers.
- Shearing or breaking of contaminated needles is prohibited.
- Puncture resistant sharps containers should be provided if contaminated sharps (needles) are in the workplace.

- Disposal of these containers depends on local waste management programs.

Check with the environmental health office of your local health jurisdiction for any additional local infectious waste disposal requirements and for information in the absence of a local infectious waste management program

Sharps Injury Log

The bloodborne pathogen rule requires that you establish and maintain a "Sharps Injury Log" to record all contaminated sharps injuries in a facility.

You must:

- Record and maintain contaminated sharps injury information in a way that protects the confidentiality of the injured employee.
- Also record the following additional information for contaminated sharps injuries:
 - The type and brand of device involved in the incident.
 - The department or work area where the exposure incident occurred.
 - An explanation of how the incident occurred.
 - Maintain your contaminated sharps injury records for five years.

The employer shall establish and maintain a Sharps Injury Log, which is a record of each exposure incident involving a sharp. The information recorded shall include the following information, if known or reasonably available:

(A) Date and time of the exposure incident;

(B) Type and brand of sharp involved in the exposure incident;

(C) A description of the exposure incident which shall include:

1. Job classification of the exposed employee;
2. Department or work area where the exposure incident occurred;
3. The procedure that the exposed employee was performing at the time of the incident;
4. How the incident occurred;
5. The body part involved in the exposure incident;

6. If the sharp had engineered sharps injury protection, whether the protective mechanism was activated, and whether the injury occurred before the protective mechanism was activated, during activation of the mechanism or after activation of the mechanism, if applicable;
7. If the sharp had no engineered sharps injury protection, the injured employee's opinion as to whether and how such a mechanism could have prevented the injury; and
8. The employee's opinion about whether any engineering, administrative or work practice control could have prevented the injury.

(D) Each exposure incident shall be recorded on the Sharps Injury Log within 14 working days of the date the incident is reported to the employer.

(E) The information in the Sharps Injury Log shall be recorded and maintained in such a manner as to protect the confidentiality of the injured employee.

The Sharps Injury Log required by subsection (c)(2) shall be provided upon request for examination and copying to employees, to employee representatives, to the Chief, to the Department of Health Services, and to NIOSH.

e. *Cardiopulmonary Resuscitation (CPR)* - Use resuscitation shields with one-way valve (mouth-to-mouth, mouth-to-nose, mouth-to-nose and mouth

f. *Housekeeping practices* - Most schools have standard procedures already in place for removing body fluids (like blood or vomit). These procedures should be reviewed to determine whether appropriate cleaning and disinfection steps have been included.

Some excerpts from the regulations:

Disposal of Sharps Containers-When any container of contaminated sharps is moved from the area of use for the purpose of disposal, the container shall be:

- a. Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping; and
- b. Placed in a secondary container if leakage is possible. The second container shall be:
 - i. Closable;
 - ii. Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

iii. Labeled according to subsection (g)(1)(A) of this section.

Regulated waste not consisting of sharps shall be disposed of in containers which are:

- a. Closable;
- b. Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping;
- c. Labeled and color-coded in accordance with subsection (g)(1)(A) of this section; and
- d. Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

Cleaning and Decontamination of the Worksite.

Employers shall

- ensure that the worksite is maintained in a clean and sanitary condition
- determine and implement appropriate written methods and schedules for effective cleaning and decontamination of the worksite.

Contaminated work surfaces shall

- Be cleaned and decontaminated with an appropriate disinfectant immediately or as soon as feasible when:
 - Surfaces become overtly contaminated;
 - There is a spill of blood or OPIM;
 - Procedures are completed; and
 - At the end of the work shift if the surface may have become contaminated since the last cleaning.

3. Training and education of employees – is provided at no cost to employee and during work hours. The training requirements are very specific.

- Material must be appropriate in content and vocabulary to educational level, literacy, and language background of employees. The training program is to contain the following elements:
 - An accessible copy of the regulatory text of the standard and an explanation of its contents
 - An explanation of the modes of transmission of bloodborne pathogens.
 - An explanation of the employer's exposure control plan, and the means by which the employee can obtain a copy of the written plan.

- An explanation of the appropriate methods for recognizing tasks and other activities, which may involve exposure to blood and other potentially infectious materials.
- An explanation of the use and limitations of methods of control, which may prevent or reduce exposure, including standard precautions, engineering controls, work practices, and personal protective equipment.
- An explanation of the basis for selection of personal protective equipment (primarily gloves).
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment.
- Information on the HBV vaccine, including its efficacy, safety, and the benefits and risks of being vaccinated.
- An explanation of the procedure to follow if an exposure incident occurs and persons to contact in an emergency involving blood or other potentially infectious materials; method of reporting the incident; and the medical follow-up which will be made available.
- An explanation of the signs, labels, tags, and/or color coding used to denote biohazards, e.g., contaminated sharps containers.

4. Hepatitis B Virus (HBV) vaccination.

The HBV vaccination shall be offered, at no cost, to all employees whose jobs involve the risk of directly contacting blood or other potentially infectious materials.

The vaccination is a series of three injections at zero, one, and six months. Field trials of the vaccines have shown 80–90 percent efficiency in preventing infections. The Hepatitis B vaccination shall be made available after the employee has received the required training and within 10 working days of initial assignment to all employees who have occupational exposure risk. Employees may decline vaccination or provide the district with documentation of HBV immunity or a statement of contraindication to vaccination from the employee’s licensed healthcare provider.

5. Post-vaccination testing for immunity.

Testing for immunity after vaccination is not recommended routinely but is advised for persons for whom a suboptimal response may be anticipated, such as those who have received vaccine in the buttock, persons over 50 years of age, and persons known to have HIV infection. Post-vaccination testing for persons at occupational risk who may have needlestick exposures necessitating post-exposure prophylaxis. When necessary, post-vaccination testing should be done between one and six months after completion of the vaccine series to provide definitive

information on response to the vaccine. This decision to test for immunity is made by a licensed healthcare professional and is paid for by the employer.

6. Post-exposure evaluation and follow-up. Following a report of an exposure incident, the employer is required to make immediately available to the exposed employee a confidential medical evaluation and follow-up.

If an employee has direct contact with blood or other potentially infectious materials, as from a needlestick, cut, bite, or eye splash, post-exposure treatment may be necessary. This depends on whether the source of the blood or other body fluid is infected with Hepatitis B, HIV, or Hepatitis C, and whether the employee exposed has previously received Hepatitis B vaccine. Referral to an appropriate licensed healthcare professional must occur as soon as possible after exposure for provision of immediate protection from Hepatitis B/HIV infection, including making available the hepatitis B vaccine. Treatment for other exposure will be initiated by the licensed healthcare provider.

Regulations spell out the employer's, the employee's responsibilities and rights and the specific documentation, and required testing and follow-up.

7. Recordkeeping

There are two types of records that must be kept on school employees. One is medical record on employees who sustain an occupational exposure. The other is training records. Medical Records

- Medical records are confidential and kept for each exposed employee and retained for at least the duration of the employee's tenure, plus 30 years. They include the:
 - Name and social security number of the employee.
 - A copy of the employee's HBV vaccination status and related information.
 - Follow-up information, when applicable.
 - Healthcare professional's written opinions.
 - A copy of information provided to the healthcare professional.
 - The employer has procedures to ensure confidentiality.
 - The record may be kept in the school nurse's files on site or retained by the healthcare provider who rendered services.

Training records include the following:

- Dates of the training sessions.
- A summary of the contents of the training sessions.
- The names and qualifications of the persons conducting the training.
- The names and job titles of all persons attending the training sessions.

- Training records are maintained for three years.
- All medical and training records must be made available upon request to Cal-OSHA or their respective designee upon request for examination and copying.

HIV/AIDS AND OTHER BLOODBORNE PATHOGENS OVERVIEW

DEFINITION

A bloodborne pathogen is a microorganism, such as a virus or bacteria, which is carried in the blood and body fluids and causes disease in humans. Examples of bloodborne pathogens include HIV/AIDS and Hepatitis B and C.

The word hepatitis means "inflammation of the liver." Hepatitis can be caused by many things including drugs, toxins, and viruses. Symptoms may include fatigue, loss of appetite, low-grade fever, nausea, abdominal pain, gastrointestinal upset, and, in some cases, jaundice. There are several types of infections classified as viral hepatitis. Each infection is caused by a different virus. They differ in modes of transmission and clinical course. Laboratory and clinical evidence is necessary to distinguish between the types of hepatitis.

HEPATITIS B

Hepatitis B is caused by infection with the Hepatitis B virus (HBV). The incubation period from the time of exposure to onset of symptoms is 6 weeks to 6 months. HBV is found in highest concentrations in blood and in lower concentrations in other body fluids (e.g., semen, vaginal secretions, and wound exudates). HBV infection can be self-limited or chronic.

In 2009, 3,374 cases of acute Hepatitis B in the United States were reported to CDC; the overall incidence of reported acute Hepatitis B was 1.5 per 100,000 population, the lowest ever recorded. However, because many HBV infections are either asymptomatic or never reported, the actual number of new infections is estimated to be approximately tenfold higher. In 2009, an estimated 38,000 persons in the United States were newly infected with HBV. Rates are highest among adults, particularly males aged 25–44 years.

The rate of new HBV infections has declined by approximately 82% since 1991, when a national strategy to eliminate HBV infection was implemented in the United States. The decline has been greatest among children born since 1991, when routine vaccination of children was first recommended.

HBV is vaccine preventable.

<http://www.cdc.gov/hepatitis/hbv/>

HEPATITIS C

Hepatitis C is caused by infection with the Hepatitis C virus (HCV)

Although much less prevalent than Hepatitis B there are certain populations at a greater risk for acquiring HCV.

The following persons are at known to be at increased risk for HCV infection:

- Current or former injection drug users, including those who injected only once many years ago
- Recipients of clotting factor concentrates made before 1987, when more advanced methods for manufacturing those products were developed
- Recipients of blood transfusions or solid organ transplants before July 1992, when better testing of blood donors became available
- Chronic hemodialysis patients
- Persons with known exposures to HCV, such as
 - health care workers after needlesticks involving HCV-positive blood
 - recipients of blood or organs from a donor who tested HCV-positive
- Persons with HIV infection
- Children born to HCV-positive mothers

Hepatitis C may lead to chronic liver disease.

<http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm>

HIV/AIDS

HIV is the human immunodeficiency virus. It is the virus that can lead to acquired immune deficiency syndrome, or AIDS.

HIV damages a person's body by destroying specific blood cells, called CD4+ T cells, which are crucial to helping the body fight diseases.

AIDS stands for Acquired Immunodeficiency Syndrome. AIDS is the final stage of HIV infection. It can take years for a person infected with HIV, even without treatment, to reach this stage. Having AIDS means the virus has weakened the immune system to the point at which the body has a difficult time fighting infection.

<http://www.cdc.gov/hiv/default.htm>

HIV can be transmitted through the following types of body fluids:

1. Blood (and blood-containing tissues).
2. Semen and pre-ejaculatory fluid.
3. Vaginal and cervical secretions.
4. Breast milk.

HIV is a relatively fragile virus and does not remain viable for long periods of time outside of the human host and/or body fluids.

HIV is not transmitted by casual contact including:

- Hugging.
- Shaking hands.
- Closed mouth kissing (but there is a very small chance of transmission from open-mouthed or "French" kissing with an infected person because of possible blood contact).
- Coughing.
- Sneezing.
- Eating food prepared by a person living with HIV.
- Being bit or stung by an insect.
- Working with, going to school with, or being around someone who has HIV.
- Using drinking fountains, phones, or toilet seats.
- Donating blood.

www.cdc.gov/hiv/resources/qa/transmission.htm

The CDC developed a fact sheet to correct some of the common misperceptions about HIV. The fact sheet can be accessed at www.cdc.gov/hiv/resources/factsheets/.

The CDC recommends specific behaviors to reduce one's risk of HIV transmission

- Do not share needles, syringes, and other equipment used to inject drugs, steroids, vitamins, or for tattooing or body piercing.
- Abstain from sexual intercourse or be in a mutually monogamous relationship with a partner who has been tested and is not infected.

- The correct and consistent use of male latex condoms can reduce the risk of HIV and other sexually transmitted infections (STI) transmission for persons whose sexual behaviors put them at risk for STIs.
- Condoms lubricated with spermicides are no more effective than other lubricated condoms in protecting against the transmission of HIV and other STIs. Avoid use of spermicidal detergent nonoxynol-9 (N9) or petroleum-based lubricants, which can increase transmission.
- Use of a female condom (a thin polyurethane sheath) helps to prevent STIs.
 - For persons allergic to latex, condoms made of polyurethane (a type of plastic) are available.
- Do not share razors or toothbrushes because of the possibility of contact with blood.
- If pregnant, discuss with licensed healthcare provider about HIV testing and transmission associated with breastfeeding.
- Follow standard precautions (includes universal precautions) when handling blood or other potentially infectious materials.

GLOBAL IMPACT OF HIV/AIDS

The CDC estimates approximately 1.1 million persons are living with HIV in the U.S.

This number is expected to continue to increase over time as antiretroviral treatments prolong the lives of those who are infected, and more people become infected with HIV than die from the disease each year. As the number of people living with HIV, or HIV prevalence grows, so does the opportunity for HIV transmission to others.

- In 2007, approximately 2.5 million people were infected with HIV.
- Every day, over 6,800 people become infected with HIV—almost 5 people per minute.
- 5,700 people die from AIDS every day.
- One child dies every minute.
- AIDS has orphaned 15 million children around the world, losing one or both parents to the disease.
- Every 15 seconds, another person age 15–24 becomes infected with HIV/AIDS.

United States

- Roughly, 1 million people in the U.S. are living with HIV/AIDS.

- Since the start of the AIDS epidemic, 1.5 million Americans have been infected with HIV, and more than 524,000 have died of AIDS.
- African Americans account for 48 percent of new HIV infections.
- AIDS is the leading cause of death for African-American women aged 25–34, and HIV rates among Hispanic women are increasing.
- The number of women living with HIV has tripled in the last two decades.
- At least half of all new infections are among people under the age of 25.
- Washington, DC has the highest HIV/AIDS prevalence rates in the U.S., where 1 in 20 people are living with HIV or AIDS.

www.cdc.gov/hiv/topics/surveillance/resources/factsheets/transmission.htm#ref1.

<http://www.prb.org/DataFinder/Topic/Rankings.aspx?ind=245>

<http://www.kff.org/hiv aids/upload/Fact-Sheet-The-Global-Impact-of-HIV-AIDS-on-Youth-July-2004.pdf>

HISTORY AND EPIDEMIOLOGY OF HIV/AIDS

Of the three bloodborne pathogens, HIV and the AIDS illness have received attention in the U.S. since 1981, when the virus was first suspected in this country. In the more than 25 years since HIV/AIDS was identified in the U.S., much has taken place in the discovery of the virus, its complications, treatment, prevention efforts, and social impact as history reveals.

As this timeline reveals, HIV/AIDS has probably been in existence for close to a century. The virus and illness has been addressed in the U.S. since 1981 when the first cases were suspected. In that time, scientists isolated and named the virus, and verified the connection between the HIV virus and AIDS. Medication has been developed to treat HIV/AIDS with some success, but a vaccine to prevent the disease has yet to be discovered. Though the system in which the numbers of cases in the U.S. are reported/recorded have changed recently, the numbers of persons with HIV both in the U.S. and the world stand at epidemic proportions.

Brief Summary of the HIV Epidemic

Before 1959: HIV (the virus that causes AIDS) may have transferred to humans in Africa between 1884 and 1924. CDC identified a type of chimpanzee in West Africa as the source of HIV infection in humans. The virus most likely jumped to humans when humans hunted these chimpanzees for meat and came in contact with their infected blood.

1959: African man dies of a mysterious illness, later determined to be from complications related to an HIV infection.

1970s: African doctors see a rise in infections and wasting—a growing epidemic.

1981: HIV was first identified in the United States after a number of gay men started getting sick with a rare type of cancer.

1982: CDC formally establishes the term Acquired Immune Deficiency Syndrome (AIDS).

1983: Canadian flight attendant dies of AIDS; believed to be responsible for introducing the virus into the U.S. general population.

1984: Scientists identify HIV (initially called HTLV-III or LAV) as the cause of AIDS. Ryan White, an Indiana teenager with AIDS, is barred from school; goes on to speak out publicly against AIDS stigma and discrimination.

1985: One HIV/AIDS case has been reported from each region of the world.

1986: Ricky Ray, a nine-year-old hemophiliac with HIV, is barred from Florida school, and his family's home is burned by arsonists.

1987: AZT is the first drug approved for treating AIDS.

1988: U.S. national AIDS education campaign conducted. A young girl with AIDS can only attend school if she is in a glass enclosure.

1992: FDA approves the first drug to be used in combination with AZT.

1993: After a British study, the AZT debate emerges, with one side proclaiming AZT saves lives, and the other denouncing AZT as useless.

1994: AZT is shown to reduce the risk of mother-to-child transmission of HIV.

1996: Combination antiretroviral treatment is shown to be highly effective against HIV progression.

1997: AIDS deaths begin to decline in developed countries, due to the new drugs.

1998: The first human trial in the United States of an HIV/AIDS vaccine begins. African AIDS activist is beaten to death by neighbors after publicly admitting she was HIV infected.

2000: Among men who have sex with men in the U.S., African American and Latino cases exceed those among white men.

2002: HIV is leading cause of death worldwide among those aged 15–59. UNAIDS reports women comprise about half of all adults living with AIDS worldwide.

2003: The first AIDS vaccine candidate to undergo a major trial is found to be ineffective.

2006: Evidence that male circumcision reduces the risk of heterosexually acquired HIV infection in men by approximately 60 percent.

2007: Another major HIV vaccine trial is halted after preliminary results show no benefit.

2008: CDC adjusted its estimate of new HIV infections because of new technology developed by the agency.

2009: CDC estimates about 1 million people in the United States are living with HIV or AIDS.

About one-quarter of these people do not know they are infected. Not knowing puts them and others at risk.

Sources:

CDC www.cdc.gov/hiv/topics/basic/.

About.com www.aids.about.com/od/newlydiagnosed/a/hivtimeline.htm.

Avert www.avert.org/aids-timeline.htm.

www.kff.org/hivaids/timeline/hivtimeline.cfm.

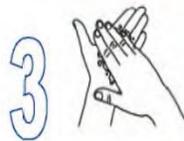
Hand hygiene with soap and water



1
Wet hands with water



2
apply enough soap to cover all hand surfaces



3
rub hands palm to palm



4
right palm over left dorsum with interlaced fingers and vice versa



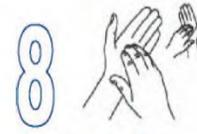
5
palm to palm with fingers interlaced



6
backs of fingers to opposing palms with fingers interlocked



7
rotational rubbing of left thumb clasped in right palm and vice versa



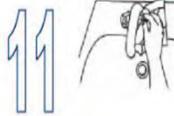
8
rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



9
rinse hands with water



10
dry thoroughly with a single use towel



11
use towel to turn off faucet



12
...and your hands are safe.



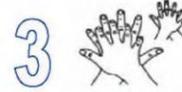
Hand hygiene with alcohol-based rub



1
Apply a palmful of the product in a cupped hand and cover all surfaces.



2
Rub hands palm to palm



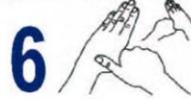
3
Right palm over left dorsum with interlaced fingers and vice versa



4
palm to palm with fingers interlaced



5
backs of fingers to opposing palms with fingers interlocked



6
rotational rubbing of left thumb clasped in right palm and vice versa



7
rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



8
...once dry, your hands are safe.



Correct Procedure for Removing Gloves



1

Grasp glove at heel of hand without touching skin



2

Pull glove toward fingers



3

Remove glove from hand



4

While holding soiled glove, insert index finger and middle of free hand under glove at cuff



5

Pull glove toward fingers



6

As glove is removed it is turned inside out, over the glove that has already been removed



7

Discard contaminated gloves in appropriate waste container and wash hands

Glossary

AIDS - Acquired Immunodeficiency Syndrome (AIDS), the most severe manifestation of infection with the human immunodeficiency virus (HIV).

Antibody - Substance that a person's immune system develops to help fight infection.

Blood Refers to human blood, human blood components, and products made from human blood. The term "human blood components" includes plasma, platelets, and serosanguinous fluids (e.g., exudates from wounds).

Bloodborne Pathogens - Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B virus (HBV), human immunodeficiency virus (HIV), and Hepatitis C virus (HCV). Other examples include malaria, syphilis, babesiosis, brucellosis, leptospirosis, Creutzfeldt-Jakob disease, Human T-lymphotrophic Virus Type 1, and viral hemorrhagic fever.

Centers for Disease Control and Prevention (CDC) Federal - health agency, which is a branch of the U.S. Department of Health and Human Services (DHHS). CDC provides national health and safety guidelines and statistical data on AIDS and other diseases.

Contaminated - The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Laundry - Laundry that has been soiled with blood or other potentially infectious materials or may contain contaminated sharps.

Contaminated Sharps - Any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination - The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles, and the surface or item is rendered safe for handling, use, or disposal.

Disinfect - Cleanse and free from infection by destroying harmful microorganisms.

DOSH - The Washington State Department of Labor and Industries (L&I), Division of Occupational Safety and Health (DOSH), is responsible for administering the requirements under WISHA.

Engineering Controls - Controls (e.g., sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident - A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that result from the performance of an employee's duties. "Non-intact skin" includes skin with dermatitis, hang nails, cuts, abrasions, chafing, etc.

Hand washing Facilities - A facility providing an adequate supply of running potable water, soap, single-use towels or hot air drying machines.

HBV - Hepatitis B virus is a viral infection that affects the liver. The effects of the disease on the liver can range from mild to severe or fatal.

HCV - Hepatitis C virus is a viral infection that affects the liver. Hepatitis C is a leading indication for liver transplant.

High-Risk Behavior - A term that describes certain activities that increase the risk of transmitting HIV or HBV. These include anal intercourse, vaginal intercourse without a condom, oral-anal contact, semen in the mouth, sharing intravenous needles, and intimate blood contact.

HIV Human - Immunodeficiency Virus.

Immune System - A body system that helps resist disease-causing germs, viruses, or other infections.

Infection A condition or state of the body in which a disease-causing agent has entered.

Mucous Membrane - A moist layer of tissue that lines the mouth, eyes, nostrils, vagina, anus, or urethra.

Non-intact Skin Skin that is chapped, abraded, weeping, or has rashes or eruptions.

Occupational Exposure - Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties. The term "reasonably anticipated" includes the potential for exposure as well as actual exposure.

Other Potentially Infectious Materials (OPIM) - The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids, any unfixed tissue or organ (other than intact skin) from a human (living or dead). HIV-containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture medium or other solutions; blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral - The piercing of mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Pathogen - A disease-causing substance.

Personal Protective Equipment (PPE) - Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Regulated Waste - Liquid or semi-liquid blood or other potentially infectious materials. Contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state, if compressed. Items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling. Contaminated sharps, and pathological and micro-biological wastes containing blood or other potentially infectious materials.

Sharps - (See Contaminated Sharps.)

Standard Precautions - In 1996 CDC expanded the concept of infection control/universal precautions. Standard Precautions combine the major features of universal precautions and Body Substance Isolation (BSI) and are based on the principle that all blood, body fluids, secretions (including respiratory secretions), excretions except sweat, non-intact skin, and mucous membranes may contain transmissible infectious agents. Standard Precautions include a group of infection prevention practices that apply to all persons, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered. These include: Hand hygiene, use of personal protective equipment depending on the anticipated exposure, and safe injection practices. Also, equipment or items in the environment likely to have been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents (e.g., wear gloves for direct contact, contain heavily soiled equipment, properly clean and disinfect or sterilize reusable equipment). (Excerpted from CDC, 2007)

Universal Precautions - An approach to infection control was developed in the mid-1980s as a result of the human immunodeficiency virus (HIV) epidemic. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Legal References

OSHA home/Bloodborne Pathogens Standard

www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

Various laws establish parameters for the rights and privacy of individuals with HIV and other communicable diseases, and the requirements for staff training concerning HIV infection.

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (ADA) protect individuals with the Human Immunodeficiency Virus (HIV) or the Acquired Immune Deficiency Syndrome (AIDS) from discrimination on the basis of their disability. Section 504 prohibits discrimination by health care and human service agencies that receive federal funds. Title II of the ADA prohibits discrimination by state and local government entities even if they do not receive federal financial assistance. Title II requires that state and local governments provide individuals with disabilities an equal opportunity to participate in a service or receive a benefit from the entities' activities, programs or services.

<http://www.hhs.gov/ocr/civilrights/resources/factsheets/hiv aids.pdf>

Implementation Resources

The Occupational and Safety Health Administration (OSHA) has Model Exposure Plans available at www.freeoshainfo.com/pubpages/Files/bbp/ModelPlansforBBP.pdf

This links to a comprehensive schools blood borne pathogens exposure control plan from Washington State (Federal laws apply nationally). This includes comprehensive history and overview, sample forms/implementation procedures, additional resources and more.

<http://www.k12.wa.us/HealthServices/pubdocs/GuidelinesHIVBloodborne.pdf>

San Diego Unified School District's Bloodborne Pathogens Exposure Control Plan

<http://www.sandi.net/cms/lib/CA01001235/Centricity/Domain/144/SDUSD%20Bloodborn%20Pathogen%20Program.pdf>

Vista Unified School District's Bloodborne Pathogens Exposure Control Plan

<http://www.vusd.k12.ca.us/Departments/hr/certificatedHR/Bloodborne%20Pathogen/BBP%20Exposure%20Control%20Plan.pdf>

The Commission on Health and Safety and Workers' Compensation

California Department of Industrial Relations *Promoting Injury and Illness Prevention Programs for California's School Employees*

http://www.dir.ca.gov/chswc/SASH/Publications/SASH_Binder.pdf

Additional Resources/References

San Diego County Office of Education – School Nursing 2013

http://www.dir.ca.gov/dosh/dosh_publications/bbpbest1.pdf

<http://www.coastusd.org/Blood%20Path%2010-11.pdf>

<http://www.dir.ca.gov/title8/5193.HTML>

<http://www.osha.gov/Publications/osha3186.pdf>

Centers for Disease Control and Prevention, HIV/AIDS Basic Information.

www.cdc.gov/hiv/topics/basic/index.htm.

www.cdc.gov/hiv/resources/qa/qa1.htm.

<http://aids.gov/>