

# Infectious Disease Prevention For EMS Providers



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Revised January 2009



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**Note: This document may be obtained from the EMS & Trauma System internet web site at the following address:**  
<http://www.doh.wa.gov/hsqa/emstrauma/publications.htm>

## **Introduction**

During the last twenty years the knowledge we have gained about infectious disease has increased greatly. The greatest similarity between the different infectious diseases is the ability to prevent them. Continued evaluation is necessary to determine what can be done to further prevent infectious disease, including efforts to promote risk-reducing behavior and, research, development and distribution of treatments and vaccines.

The challenges to those of us who protect the public health are enormous. Yet, the most effective measures for reducing the spread of disease are education and voluntary changes in behavior. Each of us has the responsibility to become educated and to be aware and responsive to what we know about diseases. This information is neither complex nor new. The discipline of practicing it may be.

EMS providers are often the first on the scene for emergency medical care. You are an integral part of the health/illness care system. Since infectious disease is part of our environment, it is necessary that you are informed about disease to protect yourself and those you serve.

## **Acknowledgment**

This curriculum was compiled by Office of Community Health Systems. Review was provided by the Washington State Department of Health, Office of HIV/AIDS Prevention and Education, STD/TB Services, Immunizations, Communicable Disease, Epidemiology, and Toxicology. Review was also provided by the EMS Education Committee; many Emergency Medical Service Instructors; Washington State Patrol and Washington State Department of Labor and Industries.

The final curriculum was edited and published by the Office of Community Health Systems of the Department of Health.

The Office of Community Health Systems thanks everyone who provided invaluable assistance with the development of this curriculum, to include Dane Kessler, T.J. Bishop, Kate West, Wendy Dillon, Jim Pierce, Kim Field, Marcia Goldoft, Judy May, John Furman, Mark Audin, and Barbara Schuler.

## Instructor Course Guide

This training is to be used for initial First Responder and EMS Basic Life Support training courses and initial certification in Washington State. It may be used to meet requirements for EMS continuing medical education (CME) or Ongoing Training and Education programs (OTEP) to meet rectification requirements.

The curriculum meets the requirements of RCW Chapter 70.24.260. The lesson plan is divided into three parts. The order of the instruction may be changed by the instructor to meet the needs of a particular class. All parts, however, must be included in the training.

- |        |                                     |
|--------|-------------------------------------|
| Part 1 | Rights and Responsibilities         |
| Part 2 | Overview of Infectious Diseases     |
| Part 3 | Infectious Disease Control Mandates |

***This curriculum provides training content that meets Washington State Department of Health requirements for EMS provider certification. The training content does not meet Department of Labor and Industries (L&I) requirement for the employer's initial or annual exposure control training. L&I training must include not only information on the employer's site specific exposure control plan but also the route of transmission and effects of infectious diseases addressed by the plan.***

### **Important:**

This curriculum combines and updates and therefore replaces the following manuals:

- Infectious Disease Prevention For EMS Providers – Revised October 1997
- KNOW - HIV/AIDS/HBV EMS Prevention Education  
An HIV/HBV Curriculum Manual - Updated Version - October 1993
- Infectious Disease Prevention Manual for Emergency Medical Personnel, May 1991

This training complies with the AIDS Omnibus Law of 1988, Chapter 70.24.260 RCW. This requires specific infectious disease prevention training prior to the issuance or renewal of a credential for all emergency medical personnel in the State of Washington.

This training does not replace the agency's (employer) requirement for site and workplace specific training as mandated in the applicable standards



## Instructor Lesson Plans

### Objectives

**NOTE:** The objectives and the presentation material contained in this manual replace the infectious disease information contained in both the First Responder and the EMT-Basic training curricula. This information is required instruction for Washington State Basic Life Support training courses and for initial certification in Washington State.

#### OBJECTIVES LEGEND

C=Cognitive P=Psychomotor A=Affective

1 = Knowledge level

2 = Application level

3 = Problem solving level

#### **COGNITIVE OBJECTIVES**

At the completion of this lesson, EMS personnel will be able to:

- 1-2.8 Discuss the importance of using Standard and Extended infection control precaution for all contact with potentially infectious body fluids. (C-1)
- 1-2.9 Describe the steps EMS personnel should take for personal protection from airborne and bloodborne pathogens. (C-1)
- 1-2.10 List the personal protective equipment necessary for each of the following situations: (C-1)
  - Exposure to bloodborne pathogens
  - Exposure to airborne pathogens
- 1-2.11 Identify components of a generic infectious disease exposure control plan as required by WISHA, i.e., Labor and Industries. (C-1)
- 1-2.12 Identify transmission routes of hepatitis A, B, C, TB, HIV, meningitis and measles (bloodborne, airborne and zoonotic diseases). (C-1)
- 1-2.13 Identify how hepatitis A, B, C, TB, HIV/AIDS, Meningitis and Measles affect the body. (C-1)
- 1-2.14 Describe the effects of the Ryan White Act, WISHA mandates and Department of Health requirements (as applicable) have on EMS personnel. (C-1)

#### **AFFECTIVE OBJECTIVES**

At the completion of this lesson, EMS personnel will be able to:

- 1-2.15 Explain the rationale for serving as an advocate for the use of appropriate protective equipment. (A-3)

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### PSYCHOMOTOR OBJECTIVES

- 1-2.16 Given a scenario with potential infectious exposure, EMS personnel will use appropriate personal protective equipment. At the completion of the scenario, EMS personnel will properly remove and discard the protective garments. (P-1, 2)
- 1-2.17 Given the above scenario, EMS personnel will complete disinfection/cleaning and all reporting documentation. (P-1, 3)

### PREPARATION

#### Motivation:

EMS personnel encounter many situations providing emergency medical care to patients where personal safety must be practiced. This lesson provides an overview of infectious diseases; precautions EMS providers may take to prevent reinfection, the responsibilities of EMS employers, and the rights and responsibilities of EMS providers. It is important to realize that the spread of infectious diseases can be prevented. Since infectious diseases are part of our environment, it is imperative that EMS personnel are informed about disease so they may protect themselves, their families, and their patients.

#### Prerequisites:

*BLS - Students must have current AHA-Health Care Provider or ARC Professional Rescuer card.*

### MATERIALS

#### AV Equipment:

Utilize various audio-visual materials relating to the well-being of the EMS Provider. The continuous design and development of new audio-visual materials relating to EMS requires careful review to determine which best meet the needs of the program. Materials should be edited to assure the objectives of the curriculum are met.

#### EMS Equipment:

Engineering controls such as:

- Sharps containers
- Biohazard bags

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Standard and Contact Precautions Equipment such as:

- Eye protection
- Gowns
- Gloves
- Masks

Documentation such as:

- Exposure reporting forms
- Protocols

### **PERSONNEL**

Primary Instructor:

One EMS instructor knowledgeable in infectious diseases and personal protection from airborne and bloodborne pathogens.

Assistant Instructor:

None required

Recommended Minimum Time to Complete:

Four hours **NOTE:** All content areas must be covered.

### **PRESENTATION**

**Declarative (What)**

#### **I. Overview of Rights and Responsibilities of the EMS Provider (Employee and Volunteer)**

A. The Right to a Safe Work Environment

1. The right to a safe workplace is guaranteed every worker by federal and state law. The Occupational Safety and Health Act of 1970 established the federal safe workplace standard. The U.S. Department of Labor establishes and enforces specific workplace standards through the Occupational Health and Safety Administration (OSHA).
2. In 1974, the Washington Safety and Health Act (WISHA) was signed into law. The Washington State Department of Labor and Industries (L&I) is charged with developing and administering safety and health plans “at least as effective as the federal plan.”

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3. Bloodborne pathogens (HIV/HBV), and (TB) are two recognized hazards for EMS and other health care workers.
    - a) WAC 296-62-08001 mandates employers establish, maintain and enforce a written exposure control plan to protect employees and volunteers from the hazards of bloodborne pathogens
    - b) Volunteer agencies are subject to this requirement if their personnel have contact with blood or blood products
  4. The mandatory elements of an exposure control plan are:
    - a) Assessment of employee/volunteer exposure prone tasks and procedures (Job Risk Analysis)
    - b) Control methods
      - (1) Body Substance Isolation (BSI)/Universal Precautions
      - (2) Safe work practices
      - (3) Engineering controls, including handwashing
      - (4) Personal protective equipment
      - (5) Decontamination, safe housekeeping and laundry procedures
    - c) HBV vaccination
    - d) Post exposure evaluation and follow-up
    - e) Hazard communication
      - (1) Labels, bags, signs
    - f) Information and training
      - (1) Initial, annual
    - g) Record keeping
    - h) Annual exposure plan review and enforcement activities
    - i) Employee medical records (confidential for duration of employment plus 30 years)
    - j) Training records
  5. OSHA Fact Sheet 92-46 contains a brief summary of each of the key elements of the federal regulatory standard. Washington's standard is identical (see WAC 296-823-11010)
- B. The Right to Exposure Follow-Up And Evaluation:
1. Employees who experience an exposure have a right to an immediate, confidential medical exam as provided for in the employer's bloodborne exposure control plan.
    - a) "Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials resulting from the performance of an employee's duties."(WAC 296-62-08001(2))
    - b) Following an exposure, the employee must initiate immediate self care. If the exposure is through the skin, this care includes "milking", cleaning

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and washing of an open wound. Care of mucous membrane exposures (nose/eyes/mouth) includes blowing of nose, and rinsing eyes and mouth.

- c) Blood spattered on uniforms is not an exposure incident and will not, by itself, lead to infection. Contact with blood in this manner usually results from the inadequate use of, or requirement for, personal protective equipment.
- d) Self care and medical follow up must be an immediate priority.
  - (1) In the case of an exposure incident, arrangements for testing of the source of the exposure must be made within seven days of the request from the person exposed. (WAC 246.100.205 (3.c.) states: Arrange for testing of the individual who is the source of the exposure to occur within seven days of the request from the person exposed).
  - (2) Medical follow up must be provided consistent with the employer's exposure control plan.
  - (3) A review of exposures may indicate the need for change in the plan or improvement in employee compliance.
- e) The medical evaluation and follow up must be conducted by a licensed health care professional.
  - (1) If the physician decides that HIV drug treatment is warranted, the CDC recommends that treatment begin within two hours from the time of exposure.
  - (2) The Department of Labor and Industries does not require prior authorization to obtain insurance coverage to pay for post exposure treatment.
  - (3) The exposed individual may be offered prophylactic treatment options which may include AZT and other drugs. Hepatitis B vaccine, with or without hepatitis B immune globulin (HBIG) may also be recommended.
- f) The status of the source patient must not be used to determine need for initial treatment and medical follow up.
- g) RCW 70.24.340 and WAC 246-100-205 provide a process for the testing of source patients in the event of a substantial exposure. As defined by WAC 246-100-205:
  - (1) Substantial exposure that presents a possible risk of transmission shall be limited to:
    - (a) A physical assault upon the exposed person involving blood or semen;
    - (b) Intentional, unauthorized, nonconsensual use of needles or sharp implements to inject or mutilate the exposed person; or
    - (c) An accidental parenteral or mucous membrane or non intact skin exposure to blood, semen, or vaginal fluids.

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- h) An exposed employee has the right to request source patient testing following a substantial exposure. WAC 246-100-205 provides that source patient testing may occur when the following conditions are met:
  - (1) A person who has experienced a substantial exposure to another person's bodily fluids in a manner that presents a possible risk of transmission of HIV, and who is exposed while engaged in a category of employment determined to be at risk of substantial exposure to HIV, may ask a state or local health officer to order pretest counseling, HIV testing, and post-test counseling of the person who was the source of the bodily fluids in accordance with RCW [70.24.340](#).
    - (a) Substantial exposure that presents a possible risk of transmission shall be limited to:
      - (i) A physical assault upon the exposed person involving blood or semen;
      - (ii) Intentional, unauthorized, nonconsensual use of needles or sharp implements to inject or mutilate the exposed person; or
      - (iii) An accidental parenteral or mucous membrane or non intact skin exposure to blood, semen, or vaginal fluids.
    - (b) The alleged exposure must have occurred on the job while the individual was employed or acting as an authorized volunteer in one of the following employment categories that are at risk of substantial exposure to HIV:
      - (i) Law enforcement officer;
      - (ii) Firefighter;
      - (iii) Health care provider (including EMS providers);
      - (iv) Staff of health care facilities;
      - (v) Funeral directors or
      - (vi) Embalmers.
  - (2) The local health officer:
    - (a) Determine that the alleged exposure meets the criteria established in this section for substantial exposure that presents a possible risk of transmission, and
    - (b) Ensures that pretest counseling of the individual to be tested, or a legal representative occurs; and
    - (c) Arranges for the testing of the individual who is the source of the exposure to occur within seven days of the request from the person exposed; and
    - (d) Ensure that the records on HIV testing ordered by the county health officer are maintained only by the ordering health officer.

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- (3) The health officer, as a precondition for ordering counseling and testing of the person who was the source of the bodily fluids, may require that the exposed individual agree to be tested for HIV if such testing is determined appropriate by the health officer.
    - (4) This section does not apply to the department of corrections or to inmates in its custody or subject to its jurisdiction.
  - i) Source patient testing is the responsibility of the local health officer.
    - (1) The health officer must determine that an alleged exposure meets the definition of a “substantial exposure” before proceeding.
    - (2) The source patient is then asked to voluntarily submit to testing.
    - (3) If the patient refuses, a written order for testing may be issued.
    - (4) As a last resort, the health officer may seek a court order to enforce the request for testing.
2. Local Health Department Protocol
  - a) The employee and/or employer may contact the local health department for local policy, operating hours and notification procedure. All information exchanged between the employee and local health department on baseline testing of the employee and/or source person test results is confidential.
3. HIV Testing: a person offering HIV testing shall
  - a) Provide a brief evaluation of both behavioral and clinical HIV risk factors; and
  - b) Unless the person has been previously tested and declines receipt of information, explicitly provide verbal or written information that is culturally, linguistically, developmentally and, medically appropriate to the individual being tested regarding HIV including:
    - (1) The benefits of learning HIV status and the potential dangers of the disease; and
    - (2) A description of ways in which HIV is transmitted and ways in which it can be prevented; and
    - (3) The meaning of HIV test results and the importance of obtaining test results; and
    - (4) As appropriate, the availability of anonymous HIV testing and the differences between anonymous testing and confidential testing; and
  - c) Obtain or ensure explicit verbal or written informed consent of the individual to be tested prior to ordering or prescribing an HIV test, unless excepted under provisions in chapter 70.24 RCW and document the consent of the individual being tested; and
  - d) Recommend and offer or refer for pretest counseling described under WAC 246-100-209 to any person requesting pretest counseling and to any person determined to be at increased risk for HIV as defined by

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Federal Centers for Disease Control and Prevention published in *Revised Guidelines for HIV Counseling, Testing and Referral, November 9, 2001*. The individual's decision to refuse pretest counseling is not grounds for denying HIV testing; and

- e) Provide or refer for other appropriate prevention, support or medical services, including Hepatitis services
4. If the individual being counseled tested positive for HIV infection the healthcare provider shall:
- a) Provide or arrange for at least one individual in-person counseling session
  - b) Unless testing was anonymous, inform the individual that the identity of the individual testing positive for HIV infection will be confidentially reported to the state or local health officer;
  - c) Ensure compliance with the partner notification provisions and inform the tested person of those requirements;
  - d) Develop or adopt a system to avoid documenting the names of referred partners in the permanent record of the individual being counseled; and
  - e) Offer referral for alcohol and drug and mental health counseling, including suicide prevention, if appropriate; and
  - f) Provide or refer for medical evaluation including services for other bloodborne pathogens, antiretroviral treatment, HIV prevention and other support services; and
  - g) Provide or refer for TB screening.
5. Post-Exposure HIV Testing
- a) Post-exposure HIV tests should be completed at “baseline (0)” 3, 6, 9 and 12 months following the exposure.
  - b) It is essential that during this time period, the exposed individual have no additional exposures from unsafe sexual activities or sharing of needles, and does not expose his/her sex or needle-sharing partners.
  - c) This means abstinence from sexual intercourse (anal, vaginal, and oral) or consistent and correct use of condoms, and no sharing of injection equipment.
  - d) Employees can also be referred to local health departments for further risk reduction information.
6. “Confidential” versus “Anonymous” HIV Testing - Most health departments in Washington State provide “anonymous” and “confidential” HIV testing.
- a) “Confidential” testing will have confidential records kept by the designated health care provider with copies available to the tested employee.
  - b) “Anonymous” testing means no names or personal identifiers are used, thus the test results will not be available to the employee for insurance claim purposes at a later date.

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C. The Right to Confidentiality

- a) Any diagnosis made following the medical evaluation of a substantial exposure to blood, semen or vaginal secretions is strictly confidential and cannot be reported directly to the employer.
  - (1) The employer must establish a system that maintains the required medical records separate from the employee personnel records, and in a way that protects the confidentiality of the employee's identity and test results.
  - (2) Exposure records are extremely important should an employee become ill at a future date.
- b) AIDS (medically diagnosed) and symptomatic HIV infection have been reportable conditions in Washington since 1984 and 1993 respectively. In 1999, asymptomatic HIV infection also became reportable. In the case of HIV or AIDS, providers who diagnose a person must submit a confidential case report to the local health jurisdiction within 3 days. Reporting of HIV and AIDS cases assists local and state officials in tracking the epidemic. It also allows for effective planning and intervention to be provided in the effort to reduce the transmission of HIV to other people.
- c) Information about a patient or EMS provider with sexually transmitted disease is specifically protected in WAC 246-100-205. This chapter and section requires:
  - (1) Identifying information about any individual with a reportable disease condition pursuant to RCW 70.24.105 shall be protected by persons with knowledge of such identity.

**NOTE: WAC 246-101-101 contains an extensive list of reportable diseases and conditions. AIDS, acute HBV and TB are included on this list.**

- (2) Health care providers, employees of a health care facility or medical laboratory, and other individuals with knowledge of a person with sexually transmitted disease, following the basic principles of health care providers, which respect the human dignity and confidentiality of patients:
  - (a) May disclose the identity of a person or release identifying information only as specified in RCW 70.24.105; and
  - (b) Shall establish and implement policies and procedures to maintain confidentiality related to a patient's medical information.
- (3) For the purpose of RCW 70.24.105(6), customary methods for exchange of medical information shall be limited as follows:
  - (a) Health care providers may exchange confidential medical information related to HIV testing, HIV test results and Confirmed STD diagnosis and treatment in order to provide health care services to the patient. Meaning:

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- (i) "Health care services to the patient" means personal interaction, treatment, consultation, or intervention for patient care.
    - (ii) The information shared impacts the care or treatment decisions concerning the patient; and
    - (iii) The health care provider requires information for the patient's benefit. The information may not be used for:
      - (a) Infection control
      - (b) A substitute for Standard and Contact Precautions.
  - (b) An exchange of information shall be accompanied or followed by a written notice within ten days, which includes the following or substantially similar language:
    - (i) "This information has been disclosed to you from records whose confidentiality is protected by state law. State law prohibits you from making any further disclosure of it without the specific written consent of the person to whom it pertains, or as otherwise permitted by state law. A general authorization for the release of medical or other information is NOT sufficient for this purpose."
- (4) This WAC allows for the exchange of information about HIV or STD in a patient under limited circumstances and conditions. The employer must have a written policy and procedure explaining how confidentiality of patient medical information will be maintained.
- (5) This policy must include all areas of operation from the initial patient contact, verbal communication, to the handling of written records. Consider the following:
- (a) **Radio communication whether for dispatch or field communication is not confidential and must never be used to communicate a patient's HIV or STD status.**
  - (b) Cell phones are not phones; they are radios and are not a confidential means of communication.
  - (c) The confidentiality of written reports cannot be assured unless access to them is strictly controlled.
    - (i) This begins with the individual completing the form.
    - (ii) Completed forms should be transferred and filed following a procedure which assures their confidentiality.
  - (d) The policy must also describe the process for the release of patient records.
  - (e) The policy must reflect that the exchange of information between health care providers will occur only if both (3) (a) (i) and (ii) above are met.
    - (i) The use of the patient's HIV or STD status to warn or alert other health care providers to the need to take precautions

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is not allowed by this policy and undermines the practice of Standard and Contact Precautions.

- (ii) Codes or key words used to communicate a patient's status are similarly prohibited.
  - (6) WAC 246-100-011(28) contains the following list of sexually transmitted diseases covered by RCW 70.24.105:
    - (a) Acute pelvic inflammatory disease
    - (b) Chancroid
    - (c) Chlamydia trachomatis infection
    - (d) Genital and neonatal herpes simplex
    - (e) Genital human papilloma virus infection (HPV)
    - (f) Gonorrhea
    - (g) Granuloma inguinale
    - (h) Hepatitis B infection
    - (i) Human immunodeficiency virus infection (HIV)
    - (j) Lymphogranuloma venereum
    - (k) Non-gonococcal urethritis (NGU)
    - (l) Syphilis
  - d) The rights of employees or any other individual diagnosed with or perceived to have HIV or AIDS are protected in matters of employment, housing, public accommodation, and personal services such as legal services and health care. RCW 49.60, the state law against discrimination, also assures that the employers make reasonable work site accommodations and provide a work place free of discrimination or harassing behaviors.
2. Breach of Confidentiality
- a) A breach of confidentiality is illegal. If such a breach results in any adverse action by management, supervisors or employees against any disabled person, legal action can be taken.
3. Legal Recourse
- a) Any person and/or patient may then have legal recourse against the person violating his/her confidentiality if medical information is revealed without the person's consent.
  - b) If this happens, contact the Commission on Human Rights or Office for Civil Rights.
  - c)
4. Penalty (Chapter 70.24) - The AIDS Omnibus bill states:
- a) **70.24.080 Penalty** - Any person who shall violate any of the provisions of this chapter or any lawful rule adopted by the board pursuant to the authority herein granted, or who shall fail or refuse to obey any lawful

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order issued by any state, county, or municipal health officer, pursuant to the authority granted in this chapter, shall be deemed guilty of a gross misdemeanor punishable as provided under RCW 9A.20.021.

**b) 70.24.084 Violations of chapter -- Aggrieved persons -- Right of Action:**

- (1) Any persons aggrieved by a violation of this chapter shall have right of action in superior court and may recover
  - (a) Against any person who negligently violates a provision of this chapter, one thousand dollars, or actual damages, whichever is greater, for each violation.
  - (b) Against any person who intentionally or recklessly violates a provision of this chapter, two thousand dollars, or actual damages, whichever is greater, for each violation.
  - (c) Reasonable attorney's fees and costs.
  - (d) Such other relief, including an injunction, as the court may deem appropriate.
- (2) Any action under this chapter is barred unless action is commenced within three years after the cause of action accrues.
- (3) Nothing in this chapter limits the rights of the subject of a test for a sexually transmitted disease to recover damages or other relief under any other applicable law.
- (4) Nothing in this chapter may be construed to impose civil liability or criminal sanction for disclosure of a test result for a sexually transmitted disease in accordance with any reporting requirements for a diagnosed case of sexually transmitted disease by the department to the Centers for Disease Control and Prevention of the United States Public Health Service.

5. Filing of Complaint - Any person with HIV infection/AIDS and/or another sexually transmitted disease who feels his/her confidentiality was breached has the right to file a complaint with the Washington Commission for Human Rights and/or the Office for Civil Rights of the US Department of Health and Human Services.

**D. The Right to Fair Employment:**

**1. Work Status of Infected Employee:**

- a) HIV infection, Class IV HIV infection and AIDS are all considered a "handicapped status" under Chapter 49.60 RCW in Washington, and Section 504 of the Federal Rehabilitation Act of 1973.
- b) Reclassification of an infected employee can happen only under RCW 49.60 (Human Rights Laws of the State of Washington).
- c) For the purpose of RCW 49.60.172 concerning the absence of HIV infection as a bona fide occupational qualification only, "significant risk" means a job qualification which requires person to person contact likely

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to result in direct introduction of blood into the eye, an open cut or wound, or other interruption of the epidermis when:

- (1) No adequate barrier protection is practical
- (2) Determined only on a case-by-case basis consistent with RCW 49.60.180.

2. Disability:

- a) HIV infection and AIDS are medical conditions which are disabilities under Washington State Law Against Discrimination, Chapter 49.60 RCW. This means it is illegal to discriminate against someone who has AIDS or who is HIV infected. It is also illegal to discriminate against someone who is believed to have AIDS or who is believed to be HIV infected, even though that person is not infected, in:

- (1) Occupational:
  - (a) employment
  - (b) health care
- (2) Non-occupational
  - (a) rental, purchase or sale of apartment, house or real estate
  - (b) places of public accommodation (restaurants, theaters, etc.)
  - (c) health care, legal services, home repairs, and other personal services available to the general public
  - (d) applying for a loan or credit card, or other credit transaction; and
  - (e) certain insurance transactions.

3. Discrimination

- a) Employees with HIV infection have the right to be free from the threat of discrimination.
- b) Employers may not discriminate against persons with HIV infection in:
  - (1) employment
  - (2) recruitment
  - (3) hiring
  - (4) transfers
  - (5) layoffs
  - (6) terminations
  - (7) rate of pay
  - (8) job assignments
  - (9) leaves of absence, sick leave, any other leave, or fringe benefits available by virtue of employment.
- c) Educating employees on the liability of discrimination is the most effective way to promote a work environment free from discrimination and harassment.

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- d) Employees with HIV infection have the right to be treated with the same dignity, concern and support as employees with other life-threatening illnesses.
4. Reasonable Accommodation
- a) Employers are responsible for providing reasonable work-site accommodations which enable a qualified disabled employee or job applicant to perform essential tasks of a particular job.
  - b) Usually, the supervisor works with the employee and his/her physician to assess medical restrictions and devise working conditions that satisfactorily meet the employee's needs.
5. Job interview/Employment
- a) When a person goes for a job interview or is hired, the employer:
    - (1) Cannot ask questions directed at the perception or presence of HIV, symptomatic HIV infection or AIDS unless based on a bona fide occupational qualification, which at this time, as defined in WAC 246-100-204.
    - (2) Cannot require a blood test to determine HIV, symptomatic HIV infection or AIDS.
    - (3) Cannot require a physical examination directed to identify HIV, symptomatic HIV infection or AIDS except for exams needed to evaluate the need for, or nature of, reasonable accommodation or specific job related conditions.
    - (4) Cannot ask questions about lifestyle, living arrangements, sexual orientation or affectional preference.
6. Harassment
- a) Harassment is illegal.
    - (1) Employees shall not harass a person who is perceived to be HIV positive, symptomatic HIV infected or who has AIDS.
    - (2) Any employee who engages in harassing behaviors or discriminatory actions against an HIV infected employee shall be disciplined.
7. Filing of Discrimination Complaint
- a) Persons who are infected, or perceived to be infected with HIV/AIDS or other sexually transmitted diseases, which feel discriminated against on the basis of handicap, may file a complaint with the Office for Civil Rights of the U.S. Department of Health and Human Services, or the Washington State Human Rights Commission.

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- E. The Employee/Volunteer's Responsibility to Maintain Personal Health Records
1. A confidential health history can be very beneficial to the employee. It can contain such entries such as:
    - a) History of childhood illnesses
    - b) Periodic chest x-rays
    - c) Dates of exposure to infectious diseases (does not replace the necessary occupational exposure recording with the supervisor)
    - d) Onset and duration of symptoms with infectious diseases
    - e) TB skin test results
    - f) HCV baseline test results
    - g) HBV baseline test results
    - h) HIV baseline test results
    - i) Vaccinations
  2. An employer **CANNOT** require this information as condition of employment, however:
    - a) The employee/volunteer may find this baseline information helpful in possible claim justification
    - b) The employee/volunteer may choose to file these records with the employer in an "Occupational Exposure File" which is kept confidential, by the employer, according to law.
- F. The Employee/Volunteer's Responsibility to Obtain Necessary Vaccinations:
1. Many adults think that "shots" or immunizations are just for kids.
    - a) Infectious diseases have no age limits and adults need protection too.
    - b) There are some immunizations which are more important for adults than for children.
    - c) Vaccination can prevent the spread of infectious diseases to the EMS provider
    - d) Vaccinations can also prevent the spread of infectious diseases from the EMS provider to his/her family and to other patients.
  2. Adults are encouraged to receive immunization for the following disease if they are not immune:
    - a) Hepatitis B
    - b) Measles
    - c) Mumps
    - d) Rubella
    - e) Pneumococcal disease (some adults)
    - f) Polio
    - g) Tetanus
    - h) Diphtheria

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- i) Influenza.
  - j) Pertussis (whooping cough)
  - k) Hepatitis A
  - l) Chickenpox
  - m) Meningococcal disease (some adults)
3. Immunization Record
- a) A permanent personal immunization record should be kept by everyone (ask your medical provider for a copy of the Washington State Immunization Record with documentation of the vaccinations you received).
    - (1) This record provides documentation for types and dates of vaccinations received.
    - (2) Many of the infectious diseases employees may contract in the course of duty are listed on the immunization record since many are vaccine-preventable.
  - b) A record of immunization can also prevent needless re-vaccination during a public health emergency or when changing health care providers or employment.
  - c) At this time, there is no central immunization registry in the state. It is imperative that employees and patients keep up-to-date immunization records for themselves.

G. The Responsibility to Follow Infection Control Standards:

- 1. WAC 296-62-08001 requires that employers institute an infection control program. It also mandates that:
  - a) At risk employees learn about Standard and Contact Precautions
  - b) Employees use personal protective equipment and safe workplace practices whenever there is “reasonably anticipated potential” for exposure.
  - c) Every employee re-train if not in compliance with the mandates listed above
  - d) Every employee undergo disciplinary action for continuous non-compliance
- 2. Tuberculosis TB)
  - a) Employers are required to address the hazard of TB under their accident prevention program mandated by WAC 296-24-040. The guiding document is OSHA CPL 2/106 dated February 9, 1996. A minimal program defined by this document must begin with an assessment of the incidence of TB in the workplace and identification of the tasks and procedures which put employees at risk. (Refer to local health department for the number of active cases in your area and for the annual prevalence by county broken down into age groups and county of origin.)

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- b) Written policies and procedures which minimize employee risk must include:
    - (1) A protocol for the early identification of symptomatic (chronic cough, weight loss, fever) individuals with active infectious TB disease. Also referral to a medical provider (with written follow up provided by the medical provider).
    - (2) Employee training to ensure knowledge of the transmission of TB, its signs and symptoms, and site specific protocols including the purpose and proper use of workplace controls
    - (3) Medical surveillance of employees including medical screening of current and new employees, and administration and interpretation of TB screening tests.
      - (a) If there is no record of a previous tuberculin skin test in the past 12 months, then the initial tests now require a two step process in which the first test, if negative, is followed by a second test within 1-3 weeks. For blood testing, a single initial test is done.
      - (b) Re-tests must be provided annually or on a more frequent schedule as determined by exposure risk category, if the employee is non-reactive.
    - (4) Annual evaluation and management of employees with positive screening test or history of positive screening tests who are exhibiting symptoms of TB. Individuals with symptoms should have a referral to medical care and written documentation as to follow up recommendations.
    - (5) Isolation room in facilities treating patients with active TB.
  - c) Engineering and work practice controls must be used whenever possible to eliminate or reduce the hazard at the source.
  - d) WAC 296-62-071 is the Respiratory Protection Standard for the State of Washington.
    - (1) This standard requires the employer to develop a respiratory protection program for employees exposed to airborne hazards. (Pages 7 and 8 of the Standard describe the requirement of a minimally acceptable respiratory protection program.)
    - (2) This written program is a requirement in addition to the employers TB Exposure Control Plan.
- NOTE:** Fire departments and other agencies utilizing self contained breathing apparatus are already subject to the provisions of this Standard. The use of HEPA filter mask for TB exposure must be added to their existing Respiratory Protection Plan.
- e) Warning signs in facilities with isolation rooms must state “respiratory isolation and identify the precautions required.
  - f) Records of employee exposures to TB, screening test results and medical evaluations must be kept. TB infections and TB disease are

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recordable illnesses in health care, corrections, long term care facilities and drug/alcohol treatment centers as identified by the CDC.

- g) TB is infectious only prior to a patient taking antituberculous medications or for several weeks after initiation of TB medications. Suspect or diagnosed TB is a health department reportable disease. Each county health department is responsible for the investigation and identification of the contacts of patients diagnosed with active TB. Follow-up of exposure to active TB must be coordinated with the local health department.
  - h) The CDC Guidelines for the Prevention of Mycobacterium TB in Health Care Facilities, 2005 recommends that in the event of an unprotected exposure to confirmed active TB that TB screening test be administered as soon as possible after the exposure has occurred. If the initial test is negative, a second test should be administered 8 to 10 weeks after the end of the exposure event.  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm>
  - i) Any unprotected exposure should be cause to review the employer's TB Exposure Control plan and employee compliance.
3. Failure to follow infection control standards may lead to transmission and possible infection with an infectious disease.
- a) Since some of these diseases, such as hepatitis B are also transmitted through close contact, the EMS provider risks infecting his or her household.
  - b) The EMS provider may also unknowingly infect other patients in the course of assigned duties.
- H. The responsibility to Enforce Infectious Disease Prevention Laws
- 1. Washington State Infectious Disease Chapter
    - a) EMS providers, fire fighters and law enforcement personnel are an integral part of the health care community and thus required to follow all applicable laws and rules. The definition for "health care provider" states:
      - (1) WAC 246-100-011 (15) "Health care provider" means any person having direct or supervisory responsibility for the delivery of health care or medical care who are:
        - (a) Licensed or certified in this state under Title 18 RCW; or
        - (b) Military personnel providing health care within the state regardless of licensure.
    - b) Chapter 248-100 is subject to periodic updates and changes. For current information contact the Washington State Department of Health.

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2. Washington Industrial Safety and Health (WISHA)
  - a) WISHA WRD 88-2B is an enforcement directive for the reduction of occupational exposure to HIV/HBV. This Washington Regional Directive specifically lists such occupations as:
    - (1) “Health care employees, law enforcement, fire, ambulance, and other emergency response employees” (paid and/or volunteer), as “having been widely recognized for potential exposure to HBV and/or HIV. However, WISHA directives apply to “all employers where employees’ jobs involve exposure to body fluids.”

**NOTE: The WRD was first issued in March 1989 and updated on August 31, 1990. It is subject to periodic updates and changes. Contact your local Department of Labor and Industries for current information.**

3. Employee/Volunteer Responsibilities
  - a) Employees must work in a safe manner following the employer’s exposure control plans.
  - b) Employees must work constructively with the employer to identify the in changes needed in work practices or exposure control plans.
  - c) Employees must expect others to work in a safe manner and are responsible for pointing out unsafe practices
  - d) Employees must report all exposure incidents consistent with the employer’s exposure control plans.
  - e) Employees must carefully consider participation in the employer’s vaccination and health monitoring programs.
  - f) Employees must make every effort to avoid becoming a conduit for the spread of diseases to family members and friends

**Employees who do not follow and enforce infectious disease laws and rules are subject to penalties and make themselves liable to court action.**

## **II. Overview of Infectious, Airborne, and Zoonotic Diseases**

An infectious disease is one that can be transmitted from person to person, or from an infected animal or the environment to a person. Illness results when the bacteria, viruses, or other agents invade and multiply in the host (the person's body) and as a result, cause specific diseases. Infectious diseases may be transmitted through direct contact, airborne particles, droplets, contaminated food or water, vectors and objects, and the environment. The following is an overview of infectious diseases which EMS personnel may come in contact with in the course of their work. This overview provides a basic background on the disease, its symptoms, treatment and possible preventive measures.

### **A. HIV/AIDS**

1. Definition of HIV (Human Immunodeficiency Virus)
  - (1) This virus attacks a person's immune system, making it deficient, and damages the body's ability to fight diseases and infections.
  - b) Without a healthy, functioning immune system, a person may become susceptible or vulnerable to infection by bacteria, other viruses, and disease-causing organisms which may cause life-threatening illnesses.
2. Transmission of HIV/AIDS - HIV is transmitted only through specific body fluids such as blood, semen, vaginal, amniotic fluids or any fluid containing visible blood, which have entered through a mucous membrane or a break in the skin.
  - a) The introduction of these or other body fluids which may contain blood into a cut, abrasion and/or mucous membrane constitutes an exposure, but does not mean an automatic infection.
    - (1) Three criteria must be present for transmission of HIV to occur.
      - (a) HIV source: Any HIV-positive person may transmit the virus.
      - (b) Sufficient Dose (infectious concentration/dose)
        - (i) Sufficient dose refers to the concentration and amount of HIV necessary for infection to occur.
        - (ii) Only a few substances (blood, semen, vaginal, and amniotic fluids) have sufficient concentration of HIV in them to be infectious.
      - (c) Access to blood (behavior allowing entry)
        - (i) Access to blood involves behaviors or circumstances that allow infectious fluid to enter the bloodstream.
        - (ii) The most common behaviors allowing entry are sexual intercourse and the use of contaminated drug injection equipment.

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- b) The risk of infection from a single occupational exposure (needlestick or cut) to a person **known** to be HIV positive is 0.3 percent or 3 in 1000.
  - (1) The actual number of health care workers infected through occupational exposure is 57 cases documented and 139 cases possible since 1981 through 2002.
  - (2) According to one study from San Francisco General Hospital, wearing gloves reduces the risk of HIV transmission from a puncture wound through the glove by 50 percent.
- 3. Infection of T-cells
  - A) When HIV enters the body and the bloodstream, the virus starts seeking a particular form of white blood cell that is essential to the functioning of the immune system.
  - B) This cell is called a “T-Helper Lymphocyte,” and one of its functions is to “orchestrate” the immune system in the event of attack from harmful foreign invaders (bacteria, viruses, disease-causing organisms).
  - C) HIV infects the helper T-cells and forces them to make copies of the virus. In the process, the T-helper cells are destroyed
- 4. Antibodies
  - a) When the virus makes contact with the T helper cell, the T helper cell sends signals to other cells which produce antibodies.
  - b) Antibodies are substances produced by the immune system to help get rid of specific foreign invaders that can cause disease.
  - c) Production of antibodies is an essential function of the immune system.
    - (1) The immune system provides the body’s protection against diseases.
    - (2) The body makes a specific antibody for each disease.
    - (3) For example, if someone is exposed to the measles, the immune system will develop antibodies specifically designed to attack the measles virus.
  - d) What is unusual and frustrating with HIV, is the antibodies produced are not effective in fighting the virus overtime. (They fight it initially, but become overwhelmed as the virus multiplies).
- 5. HIV Antibody Test
  - a) There are several tests available which can show if a person has been infected with HIV by detecting the antibodies the immune system has produced to fight off the virus.
    - (1) These tests are not tests for AIDS, but only for the presence of HIV antibodies produced by the immune system.
    - (2) Most people produce antibodies by three months. In extremely rare cases, it can take up to 6 months.

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- (3) Therefore, it is possible for a person to be infected with HIV and test negative on the antibody test.
    - (a) This happens when a person is tested during the early weeks after infection before sufficient antibodies have developed
    - (b) This person could test negative on the antibody test while being infected and infectious to others
  - (4) The period of time between infection with HIV and testing positive on the antibody test is called the “Window Period”.
  - (5) IMPORTANT: during the window period, the infected person tests negative on the antibody test, while being infectious to others.
  - b) It is not recommended that health care providers be baseline tested for HIV unless there has been a “substantial exposure”.
    - (1) The first test is called EIA (Enzyme Linked Immunosorbent Assay), also commonly called ELISA.
      - (A) If this first test is positive, another ELISA is performed.
      - (B) If a person has two positive ELISA tests on the same sample, a Western Blot or other similar test must be done for confirmation.
      - (C) When a person has two positive ELISA tests **and** a positive Western Blot, they can be told that they are infected with HIV.
    - (2) In some cases, the Western Blot will indicate an “indeterminate” result due to a cross reaction with other antibodies or because they are in the process of “seroconverting”.
      - (a) An indeterminate Western Blot is not a positive HIV test.
      - (b) Result. Further testing should be done.
6. Latency Period
- a) Many people who get infected with HIV do not have symptoms for years.
  - b) The virus generally has a long latency period. During this time, they look and feel fine; but inside their bodies, the virus is replicating and slowly destroying the immune system.
  - c) They can infect others by:
    - (1) Unprotected anal, vaginal or oral sexual intercourse and sharing of needles/syringes
    - (2) Unsafe workplace practices. **Ignoring Standard and Contact Precautions can put an employee or coworker at risk for an occupational exposure.**
  - d) The virus can also be passed from an infected mother to her baby during pregnancy or the birth process or immediately following, and possibly from breast feeding.

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7. HIV infection encompasses a broad spectrum of health conditions ranging from mild through disabling symptoms to life-threatening infections. The outcome or manifestation of illness varies from individuals.
  - a) Acute Infection
    - (1) In the initial stage, the virus invades the body and may, but does not always, manifest itself in a brief flu-like illness (fevers, rashes, enlarged lymph gland, aching muscles, respiratory complaints, fatigue).
    - (2) This illness usually starts several weeks after infection and lasts one to two weeks. However, some people are unaware of any sign of illness during this time period.
  - b) Asymptomatic Infection
    - (1) The HIV infection may then enter a lengthy silent stage with the infected person feeling healthy and free of symptoms for many years.
    - (2) However, the virus continues to replicate during this latency period and the person may spread the virus.
  - c) Symptomatic HIV
    - (1) As disease progresses, the person shows signs related to a suppressed immune system.
    - (2) The symptoms of HIV/AIDS depend on the “opportunistic” infections or diseases the individual acquires due to suppressed immune system.
    - (3) Remember:
      - (I) There is no one set of symptoms that are diagnostic of HIV
      - (ii) People can have several of these conditions and not be infected with HIV
  - d) Definition of AIDS:
    - (1) AIDS is a complex condition characterized by the collapse of the body’s natural immunity against disease due to HIV infection.
      - (a) Because of this breakdown of the immune system, people with AIDS are vulnerable to unusual infections or diseases known as “opportunistic” diseases.
      - (b) These diseases usually pose no threat to persons whose immune systems are healthy.
    - (2) “AIDS” stands for Acquired Immunodeficiency Syndrome.
      - (a) Acquired: Indicates it is not an inherited or genetic condition.
      - (b) Immunodeficiency: - Damage to the immune system, the body’s natural ability to protect against infections and diseases.

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- (c) Syndrome: HIV infection can cause a combination of symptoms and/or signs in people ranging from opportunistic infections to life threatening cancers.
- (3) Diagnosis - The diagnosis of AIDS requires evidence of HIV infection or a positive antibody test and the appearance of some very specific indicator conditions/diseases. The diagnosis must be made by a physician.
- e) Diseases and infections associated with HIV infection
  - (1) Some of the “opportunistic” diseases and infections associated with HIV infection:
    - (a) Pneumocystis Pneumonia (PCP) is a lung infection with common symptoms of dry cough and shortness of breath.
    - (b) Kaposi’s Sarcoma (KS) is a cancer with common symptoms of pink, purple or brown spots on the skin.
    - (c) Toxoplasmosis is a brain infection with common symptoms of fever, weakness, confusion and seizures.
    - (d) Cryptococcal Meningitis attacks the central nervous system with common symptoms of headaches, confusion, nausea, seizures and memory loss.
    - (e) Cryptosporidium is a bowel infection with a common symptom of severe diarrhea.
    - (f) Candida Albicans is an infection of the mouth, esophagus or lungs with common symptoms of white coating on the throat, lungs or mouth.
    - (g) Mycobacterium Avium Intracellulare is an infection of the respiratory tract with common symptoms of weakness and wasting.
    - (h) HIV Encephalopathy or AIDS Dementia infects and damages the cells in the brain and spinal cord with common symptoms of mild to severe confusion, memory loss, motor control problems, mood swings and seizures.

**NOTE:** For further information on current medications, call Project Inform at 1-800-822-7422, or the Seattle Treatment Education Project (STEP) at 1-206-329-0264.

- B. Hepatitis Viruses - Blood tests are needed to distinguish the different types of hepatitis.
  - 1. Hepatitis A
    - a) Transmission
      - (1) Hepatitis A (infectious hepatitis) is most commonly transmitted by putting something in the mouth that has been contaminated with the stool of an infected person (oral-fecal transmission).
        - (a) This may be contaminated food or water.

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- (b) Certain sexual practices can also spread hepatitis A
    - (2) The most common source of infection is personal contact with another hepatitis A case.
    - (3) The virus is primarily present in feces of the infected person.
  - b) Signs and Symptoms
    - (1) Hepatitis A virus (HAV) has an average incubation period of 30 days.
    - (2) Hepatitis A presents with fever, abdominal symptoms and often jaundice in older children and adults.
    - (3) Young children are often asymptomatic.
  - c) Hepatitis A Vaccine:
    - (1) Hepatitis A Vaccine, which is safe and effective:
      - (a) Is recommended for persons at risk of HAV infection.
      - (b) Is not routinely recommended by the CDC for all health care workers.
2. Hepatitis B
- a) Transmission:
    - (1) Hepatitis B is most commonly transmitted by:
      - (a) Direct contact with the blood or body fluids of an infected person (bloodborne, mucous membrane or percutaneous transmission).
      - (b) Sexual intercourse
      - (c) Sharing needles or other equipment used to inject drugs
    - (2) The virus is primarily present in the blood of an infected person.
    - (3) The incubation period ranges from 45 to 180 days.
    - (4) Most adults recover, but some never clear the virus and become chronically infected. Those with chronic infection:
      - (a) Can infect other people.
      - (b) May develop a chronic hepatitis that may progress to cirrhosis or liver cancer, both of which can be fatal.
  - b) Signs and Symptoms:
    - (1) Hepatitis B virus (HBV) infection may present common flu-like symptoms (nausea, abdominal pain, fever, fatigue, achy joints), with approximately 30 percent of all infected persons being asymptomatic.
  - c) Hepatitis B Vaccine:
    - (1) Hepatitis B vaccine, which is safe and effective:
      - (a) Is recommended as routine for persons at risk of HBV infection, including emergency medical personnel.

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- (2) Also protects against hepatitis d, also known as Delta hepatitis infection, since the Delta virus can only infect someone who is already infected with hepatitis B.
- (3) A series of three intramuscular injections must be offered by employers to all employees with the potential of blood and/or body fluid contact as part of their job tasks or activities.
  - (a) The employee has the right to refuse the vaccination but this written refusal has to be entered into the employee's confidential medical file.
  - (b) Refusal to be vaccinated cannot compromise the worker's employment status, since Standard and Contact Precautions must always be in place.
  - (c) The employee must understand the risk of transmission in the workplace and the possible liability in transmitting the virus to patients and/or close contacts including household members and sexual partners.
  - (d) If the vaccination is refused, the employee must also be made aware of the need for post-exposure treatment as quickly as possible, or at least **within seven days of the exposure**.
- (4) Hepatitis B vaccines currently available in the United States for adults are Engerix and Recombivax, both synthetic products with very few or no side effects to the recipient.
- (5) The preferred hepatitis B vaccine series schedule is as follows:
  - (a) First vaccination
  - (b) Second vaccination one month after the first
  - (c) Third vaccination six months after the first
- d) Post-vaccine Antibody Testing
  - (1) Although OSHA / WISHA does not require that employers pay for post-vaccine antibody testing, and CDC does not recommend routine post-vaccine testing, some employers provide this. If not, employees who want to know that they are protected from HBV after receiving the vaccine may have to pay for the test.
  - (2) Timing of the test is critical. The optimum time is one month after dose #3, but one to six months is acceptable.
    - (a) If the test reveals an inadequate antibody level, one to three more doses of hepatitis B vaccine may be needed.
    - (b) If additional doses are needed, antibody testing may be done after each additional dose or after completion of all the additional doses.
  - (3) If the antibody level is still inadequate after 6 doses, the person is said to be a non-responder. No additional doses of vaccine are recommended.

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- e) Post-Exposure Treatment
  - (1) Post-exposure treatment needed following possible exposure to HBV depends on the HBV status of the source person and the HBV antibody status of the exposed person. Treatment may include an injection of hepatitis B immune globulin and/or hepatitis B vaccine.
  - (2) This must be administered as quickly as possible, or at least within seven days of exposure.
    - (a) Is estimated to be between 85-95% effective if treatment follows immediately after exposure.
- 3. Hepatitis C (Formerly known as bloodborne Non-A/Non-B hepatitis)
  - a) Hepatitis C Virus (HCV) is most commonly spread by direct contact with the blood of an infected person and is estimated to be between 85-95% effective if treatment follows immediately after exposure. (Bloodborne transmission)
  - b) HCV may present flu-like symptoms. Many infected persons are asymptomatic but can still infect other people.
  - c) The average incubation period is 2 to 24 weeks.
  - d) HCV infection can become chronic: Those with chronic infection carriers:
    - (1) Can infect other people
    - (2) May develop cirrhosis or liver cancer, both of which can be fatal.
    - (3) Have the highest rate of liver transplants in the U.S.
  - e) There is a blood test available to determine if a person is infected. However, the routine test cannot distinguish between acute, chronic and past infections. Additional tests can determine if the person has hepatitis C virus in the blood.
  - f) There is no vaccine available.
- 4. Hepatitis Delta
  - a) Hepatitis Delta Virus (HDV) is found only in HBV infected persons
  - b) Acute HDV infection can be life threatening
  - c) HDV can increase the risk of chronic liver disease developing in an HBV carrier.
  - d) Preventing HBV with vaccine will also prevent HDV.
- C. Herpes Viruses - EMS Providers need to know that new research shows that herpes simplex virus (HSV) types 1 and 2 can be spread when sores are not present. Herpes simplex type 1, which the general public calls "oral herpes," "cold sores" or "fever blisters" can also be spread to and from the genital area. In turn, type 2, though more common in the genital area, can be spread to and from the oral area. Herpetic whitlow is a term used to describe herpes infection of the fingers and cuticles that was common among health care providers before the era of Standard and Contact Precautions.

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1. Herpes Simplex Type 1 (HSV-1) and Herpes Simplex Type 2 (HSV-2)
  - a) General Information
    - (1) Both are viral diseases and may recur. There is no cure.
    - (2) Recent research shows that most infected persons never recognize signs of genital herpes; some will have symptoms shortly after infection and then never again.
    - (3) Many cases of genital herpes are acquired from people who do not know they have it and who were asymptomatic at time of infection.
    - (4) Children as well as adults are potential sources of infection for EMS Providers.
  - b) Transmission of Herpes Simplex Virus Type 1 (HSV-1) and Type 2 (HSV-2)
    - (1) Both types are transmitted by direct skin-to-skin contact from site of infection to site of contact. Sores need not be present. HSV types 1 and 2 can also travel in warm body fluids such as saliva or vaginal fluids flowing over the site of sores or areas of asymptomatic viral shedding.
    - (2) EMS Providers need to be cautioned about autoinoculation.
      - (a) These viruses can infect skin on the hands and body.
      - (b) Transfer of the virus to nasal and eye areas via fingers does occur.
  - c) Signs and Symptoms
    - (1) Primary, or first exposure to Herpes types 1 and 2
      - (a) About 2 to 20 days after exposure to the virus, fluid-filled blisters begin to form. These lesions break, shed large amounts of active virus, and then develop a crust before healing in about 2-3 weeks.
      - (b) Fever, aching muscles or joints, stiff neck or swollen glands are a few of the symptoms that may be experienced with a first-time infection; however, some people do not experience any symptoms at all.
      - (c) A primary herpes infection is of great concern if it occurs during pregnancy. Neither the mother nor the fetus has protective antibodies.
    - (2) Recurrences
      - (a) The time between primary (first infection) and recurrences varies from months to years to never.
        - (i) It is common to have more recurrences in the first few years after initial infection.
        - (ii) Recurrences are usually less painful and shorter than the initial infection as the immune system now has antibodies to herpes

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- (b) For some, a feeling of burning, irritation, itching or tingling may signal an outbreak. The virus travels out from the spinal area and the immune system mounts a counterattack.
- (c) Herpes can look exactly like scabies, syphilis, jock itch and many other skin conditions. Tests include culturing an active lesion before it crusts over.
- d) Treatment
  - (1) At this time, topical antiviral medications for herpes are much less effective than systemic antiviral medications for herpes.
  - (2) Oral antiviral medications for herpes such as acyclovir are far more successful in shortening the length and the severity of recurrences.
  - (3) Consult an infectious disease specialist to consider daily suppressive therapy if there are more than six recurrences per year.
    - (a) Ask about new research.
    - (b) As of June 2007, no herpes vaccine is available. (Do not confuse herpes simplex with herpes zoster, or shingles, due to an entirely different virus that also causes chickenpox. A herpes zoster vaccine is available).
  - (4) C-sections for pregnant women with herpes are no longer standard.
    - (a) What is essential is that the women and her partner disclose everything they know about exposure to herpes so that monitoring will occur.
    - (b) Most women with antibodies to herpes types 1 and 2 deliver healthy babies.
- D. Other Sexually Transmitted Diseases exist, including gonorrhea and syphilis.
  - 1. An EMS provider should:
    - a) Protect themselves using Standard and Contact Precautions, particularly during a delivery
    - b) Be aware that **not** all sores related to sexually transmissible diseases are painful, i.e., syphilis chancres.
  - 2. Understand that the most important new information about STDs is recent research and updated tests indicating asymptomatic infection is extremely common.
  - 3. If an exposure occurs, get tested.

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#### E. Meningitis

##### 1. General Information

- a) Meningitis is an inflammation of the membranes that cover the brain and spinal cord.
- b) It may be caused by a variety of different bacteria, viruses, and other microorganisms.
- c) The contagiousness and severity of the disease depends on the type of microorganism involved.
- d) One of the more severe forms of meningitis is meningococcal meningitis caused by meningococcus bacteria. Although colonization of the back of the throat with meningococcus occurs in about 10% of people, meningococcal meningitis is rare.

##### 2. Transmission

- a) In general, transmission of bacterial meningitis occurs through droplet spread (i.e. bacteria expelled in a sneeze or cough), direct contact with a colonized or infected person or sharing of objects such as beverages or cigarettes freshly contaminated with oral secretions.
- b) Indirect transmission through contact with objects not freshly soiled with the patient's secretion is insignificant since the meningococcus is not a very hardy bacterium and is easily killed by chilling or drying.
- c) The incubation period for meningococcal meningitis ranges from 2-10 days. The infectious period is variable and lasts as long as the bacteria are present in the patient's nasal and oral secretions.

##### 3. Signs and Symptoms

- a) The classic signs and symptoms of meningitis include
  - (1) Fever, headache, and stiff neck and back.
  - (2) Often there are changes in the state of consciousness, ranging from apathy to delirium
  - (3) Vomiting is common.
- b) In meningococcal meningitis, as opposed to that caused by other bacteria
  - (1) The onset of symptoms is often quite sudden.
  - (2) There is frequently a characteristic rash, which maybe blotchy red or bluish.
- c) Other types of meningitis tend to come on more slowly preceded by a few days of sore throat, runny nose, and other upper respiratory symptoms.

##### 4. Treatment - Antibiotics are given to eliminate the bacteria

##### 5. Transportation

- a) When transporting a patient with suspected meningitis, wear a disposable surgical mask while in contact with the patient.

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- b) Washing hands thoroughly once contact is terminated is advised.
- c) If exposure to respiratory secretions has occurred, i.e., when providing mouth to mouth resuscitation, antibiotics should be given.

F. Respiratory Infections

1. Tuberculosis (TB)

- a) TB infection and disease is caused by the Mycobacterium TB and is transmitted in air-borne particles found in sneezing, coughing, and ordinary breath exchange. Organisms must be in the air to be inhaled.
- b) The period needed to determine infection after exposure is 4-12 weeks. There are no symptoms with early TB infection. It can only be determined by TB screening tests including skin tests.
- c) Persons with TB disease exhibit symptoms of chronic cough, weight loss, fatigue, fever, night sweats, and may cough up blood.
- d) A person may be infected with TB at any time of life, and is at the highest risk of disease if infected in early childhood, advanced age, or when immunocompromised.
  - (1) The highest risk of TB disease is in the first one to two years after infection.
  - (2) If TB disease does not develop initially, then the risk becomes greater in later life, after age 65.
- e) A TB test should be performed (if no record of skin test within the last 12 months) as a base line. If a skin test is negative, a repeat test is done in 1-3 weeks. For blood testing, a single initial test is done.
- f) Following an exposure to TB, the test should be:
  - (1) Performed **promptly** to establish a baseline.
  - (2) Repeated again in 12 weeks, if the initial test is non-reactive.
- g) Chest x-rays determine possibility of disease and are indicated post exposure if the tuberculin skin test is reactive.
- h) As soon as a person has been diagnosed with TB disease, the case should be referred to the local health jurisdiction.
- i) TB disease is a reportable disease.
  - (1) If a person with TB disease does not participate in the prescribed drug treatment program, a health officer in Washington State may get a court order for detention.
  - (2) Agencies or individuals who must transport the patient to the detention location (jail or hospital) can be told of the status of the person, but can only transmit such information in a confidential manner, i.e., not over the radio.

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2. Pneumococcal Disease
  - a) The pneumococcus bacterium can cause infection of the lungs (pneumonia), the bloodstream (bacteremia), and the covering of the brain (meningitis).
  - b) Pneumococcal pneumonia begins suddenly with symptoms which may include severe chills, fever, cough and stabbing chest pains.
    - (1) It is important to see a doctor as soon as symptoms appear.
    - (2) Pneumococcal disease can strike anyone at any time with a greater risk to older persons and/or those compromised with other chronic medical conditions.
  - c) Pneumococcal Vaccination
    - (1) Pneumococcal vaccine should be administered to all persons at increased risk of serious pneumococcal infection due to underlying medical conditions and to all persons greater than sixty-five (65) years of age.
      - (a) Administration of the pneumococcal vaccine should be deferred during pregnancy because the effect of the vaccine on the fetus is unknown.
      - (b) The pneumococcal vaccine is not adequately immunogenic in young children and is not recommended for use in children less than two (2) years of age.
    - (2) Previously vaccinated persons should be revaccinated at sixty-five (65) years of age, providing at least five (5) years have passed since the first dose.
    - (3) Revaccination should be considered for:
      - (a) Adults at highest risk who received the vaccine greater than six (6) years before and for those who have shown to have a rapid decline in pneumococcal antibody levels.
      - (b) Children ten (10) years of age and younger, at highest risk of fatal pneumococcal infection, and who received the vaccine three to five (3-5) years before.
      - (c) Individuals likely to have a rapid decline in vaccine-induced antibody levels.
    - (4) The vaccine is approximately sixty (60%) percent effective for the prevention of invasive pneumococcal infection.
    - (5) Side effects from pneumococcal vaccine are mild.
      - (a) Redness and pain at the injection site are experienced in approximately fifty (50%) percent of those persons given the vaccine.
      - (b) Fever, tenderness, and severe local reactions are very uncommon, less than one (1%) percent.
      - (c) Severe systemic reactions, such as anaphylaxis, have rarely been reported.

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#### **G. Intestinal Diseases**

1. Intestinal diseases are spread through fecal-oral transmission. Standard Precautions should prevent transmission.
2. Salmonella
  - a) Salmonellosis presents with acute diarrhea, severe abdominal pain, vomiting and fever lasting days to a week or more.
  - b) Even though the symptoms may only last a few days, Salmonella bacterium may be found in infected feces for several weeks
  - c) In rare instances, infected persons can develop chronic infection.
  - d) Salmonella occur worldwide in humans, birds, reptiles, farm animals, and other animals.
3. Giardia
  - a) Giardiasis is caused by a protozoal infection which affects the small intestine.
  - b) The protozoa is water and food borne and can be transmitted in feces and through oral and sexual contact.
  - c) It is found world-wide in animals and in human beings.
  - d) Infections spread rapidly and the number of cases have been on the rise, especially in day-care centers.
  - e) It presents with diarrhea, nausea, and flatulence.
4. Norovirus
  - a) Norovirus infections are caused by a group of related viruses.
  - b) Infection presents as fever, vomiting, diarrhea, and body aches lasting 1-2 days.
  - c) The viruses spread through oral exposure to vomit or feces.

#### **H. Streptococcus (Strep) and Staphylococcus (Staph) Infections**

1. Strep and Staph organisms are universally found on everyone's skin.
2. In a person with chronic illness or compromised immune system strep and staph may enter the bloodstream and cause infection.
3. These organisms can also be infectious through introduction into wounds and/or abrasions in the skin in healthy people.
4. The combination of illness with the addition of a strep and/or staph infection may lead to complications which can be severe and in some cases even fatal.
5. Some Staph infections known as methicillin Staph Aureus or MRSA are difficult to treat.
6. The bacteria spread by skin to skin contact.

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- I. Zoonotic Diseases - Zoonotic Diseases are transmitted from animals to humans via several routes of transmission including direct contact (bites, scratches), inhalation, and through arthropod (ticks, fleas, mosquito) transmission. Exposure of EMS personnel to zoonotic diseases requires the presence of animals, animal fecal material or urine, or arthropods in the environment where they are working.
  1. Direct contact with animals (bites, scratches)
    - a) Rabies - human rabies is extremely rare in Washington and the United States.
      - (1) Rabies is caused by a virus spread by the bite of an infected animal
      - (2) The first human rabies case in almost 60 years occurred in 1995 in Washington as the result of a bat exposure.
      - (3) Bats are the only known rabies reservoir in Washington, but all mammals are susceptible to rabies.
      - (4) Rarely, other animals are infected by bats and develop rabies.
    - b) If an EMS person is bitten or scratched by a bat or any animal the wound should be cleaned with soap and water immediately.
      - (1) The bite incident should be reported to the local health department and a health care provider for evaluation of potential rabies exposure and treatment, and tetanus immunization status of the bitten individual.
      - (2) The biting animal should be safely captured, if possible, for rabies testing. Animal control can assist with capturing animals.
      - (3) Bite wounds can become infected with bacteria and may need to be treated with antibiotics depending on the assessment of the health care provider.
  2. Inhalation exposure
    - a) Hantavirus is carried by rodents (deer mice in the western U.S.) and shed in the feces, urine and saliva into the environment where rodents live.
      - (1) Persons are exposed through inhalation of the virus in dust in settings infected by deer mice, typically in rural areas.
      - (2) Human infections are rare but nearly half of the cases have been fatal.
      - (3) Precautions can be taken to reduce the likelihood of Hantavirus exposure.
    - b) If EMS personnel have to enter an enclosed environment (building, shed) which is infested with rodents (rodents are seen, droppings on the floor or ground) there is a potential for Hantavirus exposure.
      - (1) Hantavirus is rare and occurs almost always after exposure in buildings in rural areas.
      - (2) Risk of exposure is increased if the conditions are dusty and if dust is aerosolized by cleaning or sweeping.
      - (3) Spraying all rodent droppings with a solution of one part bleach to nine parts water solution will decrease dust production and destroy any virus if it is present.

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- (4) Doors and windows should be opened to increase air flow in this setting.
  - (5) Personal protective equipment (respirators) may be necessary in some settings.
  - (6) Consult the Department of Labor and Industries for more information about personal protective equipment in the occupational setting.
  - (7) If illness occurs after exposure to a rodent infested setting a health care provider should be consulted.
3. Vectorborne Zoonotic Diseases
- a) Ticks can transmit disease to humans in Washington State.
    - (1) Most persons probably pick up ticks in brushy areas of tall grass or vegetation outdoors.
    - (2) This occurs most often in the spring and early summer.
    - (3) After being in such areas, a complete body check for ticks should be done.
    - (4) Early removal of ticks is important. Remove any ticks with forceps.
    - (5) To avoid picking up ticks, wear long sleeves, long pants tucked into your boots.
- J. Vaccine Preventable Diseases
1. Measles
    - a) Measles can be serious for adults.
      - (1) Complications from measles can lead to deafness, pneumonia and death.
    - b) Transmission
      - (1) Measles (Rubeola) is a common childhood illness and is highly infectious by respiratory transmission.
      - (2) The infectious stage lasts until four days after the rash appears.
    - c) Signs and symptoms include high fever, cough, red watery eyes and a generalized rash.
    - d) Measles Vaccination
      - (1) The Department of Health recommends immunization for persons born after 1956 as well as those who have not had:
        - (a) documented live measles vaccine on or after their first birthday
        - (b) a case of measles diagnosed by a doctor
        - (c) a serological (blood) test as proof of immunity
      - (2) All adults not previously vaccinated or who have no proof of immunity, can determine their immune status with a special blood test. If immunity is not present, vaccine should be administered.
      - (3) Measles vaccination is recommended in the form of a combined vaccine with rubella and mumps (MMR vaccine).

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2. Rubella
  - a) Transmission
    - (1) Rubella (three day measles, German Measles) is transmitted from one person to another through nasal and throat secretions as well as urine. This virus may be transmitted to a fetus by an infected mother.
    - (2) The incubation period lasts 14 to 23 days.
  - b) Signs and symptoms include fever, red watery eyes, rash, swollen lymph nodes and headaches.
    - (1) Fetal infection can result in birth defects affecting the brain, eyes, heart, bones, and other organs.
  - c) Rubella Vaccination (normally included with the MMR vaccine)
    - (1) Rubella vaccination is recommended for everyone after the age of 12 months, and is considered to give lifelong immunity.
    - (2) This vaccination is extremely important for women of child-bearing age, since infection with rubella during early pregnancy can lead to birth defects in the child. It is not recommended that women who are pregnant or intend to become pregnant within three months receive the vaccine.
    - (3) Mild side effects may be a rash and/or swelling of the glands of the neck within one to two weeks of the vaccination. About one out of every four adults who receives a rubella vaccination will have some temporary aching or swelling of the joints.
3. Mumps
  - a) Mumps is an infection of the salivary glands with the mumps virus.
  - b) Transmission is from one person to another through oral secretions.
  - c) Complications in adult males may lead to orchitis (an inflammation of the testes).
  - d) Other complications include meningoencephalitis which is an infection of the lining of the brain.
  - e) The vaccination (normally included with the MMR vaccine) is recommended for adults if they are not immune. Testing for immunity is possible.
4. Tetanus
  - a) Tetanus is a rare but serious disease with almost half of the cases resulting in death.
  - b) Transmission occurs when dirt enters a wound, particularly a puncture wound.
  - c) Signs and symptoms include stiffness of the jaw, esophageal muscles, and some of the muscles of the neck, and pain.
  - d) Tetanus Vaccination

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- (1) Everyone needs a series of three injections (usually given as “baby shots”), and a booster every ten years. Boosters are very important as disease can occur in those not up to date.
  - (2) An extra booster may be needed after a deep or contaminated injury.
  - (3) Side effects from Tetanus vaccine consist of soreness at the injection site and slight fever.
5. Whooping Cough
- a) Transmission
    - (1) Whooping cough (Pertussis) is a highly contagious disease.
      - (a) Pertussis is caused by a bacteria found in the mouth, nose and throat of an infected person and is spread by coughing and/or sneezing.
    - b) Signs and symptoms/complications may include pneumonia, convulsions, and encephalitis. The infection can be fatal for infants.
    - c) Whooping cough (Pertussis) vaccine is now administered to persons over 7 years of age. Tdap-(adolescent preparation) is recommended at age 11-12 years for those who completed the recommended childhood DTP/DTaP vaccination series and have not received a Td booster dose. Adolescents’ age 13-18 years who missed the 11-12 year Td/Tdap booster dose should also receive a single dose of Tdap if they have completed the recommended DTP/DTaP childhood series. Adults should have one dose of Tdap at the usual time for the tetanus-diphtheria booster.
6. Influenza
- a) Transmission
    - (1) Influenza, caused by a virus, is spread by direct contact with an infected person, through virus that is coughed or sneezed, or if secretions from freshly contaminated surfaces are rubbed into the eye or nose.
    - (2) A person usually becomes sick within 1 to 3 days after being exposed to the influenza virus.
  - b) Signs and symptoms - fever, chills, headaches, sore throat, dry cough and runny nose are common. The illness is much more severe than a common cold. Droplet Precautions in addition to Standard Precautions must be practiced. More protection may be needed during aerosol generating procedures.
  - c) Influenza Vaccination
    - (1) Different strains of the flu circulate yearly so annual vaccinations are recommended (The flu vaccine is changed each year to prevent the most common strains in circulation).

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- (2) The best time to get the vaccination is in October/November, just prior to the usual flu season. Annual influenza vaccine is recommended for all health care workers.
- (3) Side effects include soreness for a day or two at the injection site or possibly a fever or achiness for one or two days.

**K. Parasitic Infestations**

**1. Lice: Head, Body and Pubic Lice ( "Crabs" )**

**a) General Information**

- (1) Lice (Pediculi) are tiny parasitic creatures that live near hair shafts including those in the pubic area. They can also infest clothing, bedding, and carpets.

**b) Transmission**

- (1) Lice can be passed to others as long as they or their eggs remain alive on an infested person or on equipment.
- (2) Head and body lice can live for 7 to 10 days away from a body-temperature host; crab lice live only 2 days.
- (3) They will try to leave a cold dead person or a person with a high fever, so EMS responders are at risk for lice infestation.
- (4) Adult female lay eggs (nits) and glue the eggs to a hair shaft.
  - (a) 7-10 days later the young emerge and must have a human blood meal within 24 hours.
  - (b) In 2 weeks they are mature.
  - (c) Lice live for 20-30 days, laying 50 eggs in that time.
- (5) Body lice, which live in the seams of clothing and move very rapidly, may be seen when transporting people who cannot or do not wish to have access to daily changes of clothing and laundry facilities. To prevent body lice after exposure:
  - (a) Shower or bathe as soon as possible
  - (b) Launder clothing on the hot cycle as soon as possible and consult the ER as to the necessity of applying a dusting of pediculicides to equipment.

**c) Treatment:**

- (1) Treatment differs for head, body and pubic lice. You can now purchase effective shampoos and other anti-lice products at drug stores.
  - (a) You must follow manufacturer's directions.
  - (b) Pregnant women and infants should have medical attention before using products with lindane.
  - (c) EMS responders should wear garments and use blankets that can be washed in hot soapy water or dry cleaned.

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- (d) Head gear should be checked when performing inspection for lice.
- (e) Sprays are available to treat vehicles infested with lice or scabies.

2. Scabies

a) General Information

- (1) Scabie mites live at almost all body sites, but prefer the skin between fingers, wrists, elbows and genital areas, back of knees, ankles, between toes and under breasts.
- (2) Scabies do not usually affect the head and neck except in infants and bedridden patients.

b) Transmission

- (1) Scabies are “itch-mites” that are spread by skin-to-skin contact.
- (2) The mites cannot live longer than 2-3 days away from a body.
- (3) Patients with a severe form of scabies, called crusted scabies, shed very large amounts of mites. EMS providers should quickly consult an infectious disease expert if they are in contact with these patients.

c) Signs and Symptoms

- (1) Patients may have few or no symptoms of scabies for 4-6 weeks after infestation.
  - (a) After that, intense night itching is a common complaint.
  - (b) Itching is a reaction to chemicals in the mite’s saliva, not the bite.
- (2) People with immune system disorders, (such as those with organ transplants) may experience no symptoms. Disease may be atypical and severe with untreated HIV infection
- (3) The burrows of the scabies mite may appear as a dirty-looking elevated line on the skin, a scaly patch, or as a red or puffy area.
- (4) Your health care provider can do a scraping, ink fluorescent or other simple tests to confirm the presence of scabies.

d) Treatment:

- (1) Because of the 4-6 week incubation period, all close personal contacts and household members should be treated.
- (2) You must follow manufacturer’s directions including warnings and restrictions on use.

### III. Infection Control Standards

#### A. Exposure Control Program Mandates

##### 1. Mandates for Standard Precautions

- a) The term "**Standard Precautions**" applies to a system of infectious disease control that assumes that all contact with blood or other potentially infectious materials (other body fluids mixed with blood) is infectious.
  - (1) It requires that workers are protected at all times of "reasonably anticipated potential for exposure".
  - (2) When the type and level of contamination of fluids is impossible to determine, all body fluids must be considered infectious.
  - (3) Exposure to bloodborne pathogens includes introduction of blood and/or other potentially infectious material (OPIM) into a mucous membrane, a cut, or a wound in the skin.
  - (4) Written exposure control plans specific to the agency must define and explain the application of Standard Precautions for all work practices which provide risk of exposure.
  - (5) **Standard Precautions** considers all body fluids infectious and is the term contained in the CDC Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2004.
  - (6)
- b) The use of Standard Precautions, which includes safe work practices, correct use of engineering controls and personal protective equipment is mandated by WISHA and must be enforced by the agency.
- c) Employees are required to comply with all content of the agency's exposure control plan.
- d) The agency is required to assess all risk, provide a safe work environment and enforce the plan.
- e) An annual review of the exposure control plan must include input from the employees/volunteers and must upgrade the plan to eliminate or reduce hazards in the workplace.
  - (1) Agencies are required to consider upgrading engineering controls and protective equipment as new and safer products come on the market.
  - (2) Employees must comply with all mandates of the plan or face remedial action, including disciplinary action leading to discharge from services.
- f) Suspension or revocation of EMS certification must also be considered if the EMS provider, despite training and availability of all material, does not use Standard and Contact Precautions.
  - (1) Non compliance with the required infection control standards can:
    - (a) Lead to infection of the EMS provider and/or their family
    - (b) Offers a serious risk of infecting the patient.

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- g) If the agency does not comply with the WISHA requirement:
  - (1) Employees have a right under the "Safe Place Standard" to make a confidential report to the Washington State Department of Labor and Industries.
  - (2) Patients, family members, and/or bystanders may report observed non-compliance.
  - (3) WISHA must investigate such reports within 48 hours and will cite and potentially fine the agency with monetary penalties for non-compliance.
- h) If the employee does not use the correct practices, engineering controls, or personal protective equipment due to life-saving or life-threatening situations:
  - (1) The incident must be documented in writing,
  - (2) The agency must investigate and evaluate the incident,
  - (3) Remedial action must be instituted and documented if such action is warranted.
- B. Mandate for Safe Work Practices
  - 1. EMS providers must be trained by the agency on appropriate and safe work practices, applicable engineering controls, and personal protective equipment.
  - 2. Such training includes:
    - a) Safe and appropriate patient care
    - b) Correct use and maintenance of engineering controls
    - c) Correct use, removal and maintenance of protective equipment
    - d) Decontamination, housekeeping and laundry
    - e) Safe containment and transport of biohazard waste
- C. Mandate for Issuance, Safe Use and Maintenance of Engineering Controls
  - 1. WISHA mandates engineering controls must be used to remove or contain a hazard.
  - 2. Engineering controls include sharps containers, needle removal tools, and mechanical sweepers.
  - 3. The agency's exposure control plans must address such controls and provide the appropriate engineering control for the particular hazard, free of charge to the employee.
  - 4. The EMS provider must be trained by the agency on the correct use and maintenance of such controls.
- D. Mandate for Issuance, Safe Use and Maintenance of Personal Protective Equipment
  - 1. The agency is required by WISHA to assess the risk of the EMS provider and offer all necessary and appropriate personal protective clothing, at no cost, to the EMS provider.
  - 2. The agency must train the EMS provider on the appropriate selection of personal protective clothing and the correct use, the safe removal, the maintenance decontamination, laundering or disposal process of each item.
  - 3. The following is a list of mandated items. WISHA does not mandate any particular brand, but does require an appropriate type of protective equipment, such as cut-proof gloves for extrication.

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- a) Gloves
  - (1) Gloves shall be worn when the worker has the potential for direct skin contact with:
    - (a) blood
    - (b) infectious materials
    - (c) mucous membranes
    - (d) non-intact skin of patients, and
    - (e) when handling items or surfaces soiled with blood or other infectious materials.
  - (2) Gloves must be of appropriate material, usually intact latex vinyl. For extrication, cut-proof gloves are available.
    - (a) The use of disposable gloves is necessary for procedures in which body fluids are handled.
      - (i) Surgical or examination gloves shall not be reused once they are contaminated.
      - (ii) General purpose utility (rubber) gloves or leather gloves for other duties such as extrication, housekeeping and laundry can be cleaned and/or washed and reused.
      - (iii) Gloves that are peeling, cracking, or have punctures, tears, or other evidence of deterioration must be replaced.
  - (3) To eliminate the possibility of contamination when attending to more than one patient: **(Demonstrate proper Techniques for glove removal)**
    - (a) Gloves must be removed,
    - (b) Hands wiped with a hand sanitizing wipe (if possible), and
    - (c) A new pair of gloves put on prior to touching another patient.
  - (4) Hands shall be washed after removing gloves or as soon as possible after contact with body fluids.
- b) Masks, Face Shields and Safety Glasses
  - (1) The agency must provide appropriate masks, eye protection or chin-length face shields.
    - (a) These protective devices must fit over the ears and cover the eyes, nose and mouth.
    - (b) They must be worn whenever splashes, spray, spatter, droplets or aerosols of blood or other potentially infectious material may be generated and there is a potential for eye, nose or mouth contamination.
- c) High Efficiency Particulate Air (HEPA) Filters
  - (1) HEPA filters must be used in accordance with the WISHA Respiratory Protection Standard, WAC 296-62-07109.
    - (a) Agencies must develop, implement and maintain standard operating procedures and assign one respiratory program administrator.
    - (b) HEPA filters are used for TB or Hantavirus control, and for protection against other airborne infections.
  - (2) The agency must offer, fit-test and train on the correct use and maintenance of High Efficiency Particulate Air filters (HEPA filters),

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which must have been approved by the National Institute for Safety and Health (NIOSH) for TB control.

- (a) The employee must:
  - (i) Be assessed for the ability to wear a filter mask
  - (ii) Complete a medical questionnaire
  - (iii) Receive a required medical evaluation by a physician if it is determined the employee has asthma or other breathing difficulties.
  - (iv) Participate in a fit-test (for example, with an irritant smoke test) to insure a correct seal.
  - (v) Practice putting the mask on in a correct manner.
  - (vi) If required to comply with the respiratory protection program, keep the areas of their face which comes into contact with the seal of the mask clean shaven.
- d) Resuscitation Equipment
  - (1) The agency must provide pocket masks, resuscitation bags or other ventilation devices in strategic locations.
  - (2) The appropriate equipment is required to be used each time resuscitation is provided.
  - (3) The employee must be trained on the correct maintenance, decontamination or disposal of such equipment
- e) Protective Clothing - (Includes Bunker Gear)
  - (1) The Agency must:
    - (a) Provide protective clothing at no cost to the employee
    - (b) Train the employee on the correct use, safe removal, maintenance, decontamination, and/or disposal of each item.
  - (2) Appropriate protective clothing shall be worn when the employee has a potential for exposure to blood and other potentially infectious materials.
    - (a) Coveralls, gowns or similar clothing shall be worn if there is a potential for soiling of clothes with blood or other potentially infectious materials.
    - (b) Fluid resistant clothing, such as Tyvek suits, shall be worn if there is a potential for splashing or spraying of blood or other potentially infectious materials.
    - (c) Fluid-proof clothing shall be worn if there is a potential for clothing becoming soaked with blood or other potentially infectious materials.
    - (d) Head covering shall be worn if there is a potential for splashing or spattering of blood or other potentially infectious materials on the head.
    - (e) Fluid-proof shoe covers shall be worn if there is a potential for shoes to become contaminated and/or soaked with blood or other infectious materials.
  - (3) If the employee did not have sufficient time to put on protective clothing prior to the exposure, such protective clothing (i.e., a Tyvek

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- suit) must be put on over the contaminated clothing prior to transport, to prevent further possible contamination.
- E. Mandates for Cleaning/Laundrying of Contaminated Items and Areas
1. Written exposure control policies must define:
    - a) All items and areas to be cleaned and laundered
    - b) The method and fluid to be used
    - c) Designated personnel responsible for cleaning
    - d) A posted schedule with the times when cleaning will take place
  2. Exposure control programs must include:
    - a) Step-by-step task outlines for decontamination procedures for decontamination that are specific to the individual work-site and work-place practices.
    - b) Posted rosters and instructions that are kept by the agency for documentation of correct and timely decontamination procedures.
  3. For information see:
    - a) WISHA Bloodborne Pathogens Standard WAC 296-62-08001
    - b) OSHA TB Compliance Policy Letter 2.106
    - c) WISHA Respiratory Protection Standard WAC 296-62-
- F. Mandates for Disposal of Contaminated Items
1. Written exposure control plans must outline all items to be disposed of, the method and container used for disposal, location of such containers and manner of final disposal of contents
  2. The agency must:
    - a) Assign and train employees responsible for such disposal
    - b) Keep a time schedule of the disposal routine
    - c) Check with the environmental health department of their local health department/district for individual county mandates.
- G. Mandates for Confidential Exposure Record-Keeping and Tracking
1. The agency's exposure control programs must include the maintenance system of the occupational exposure record keeping system which ensures confidential recording and tracking of exposures for the duration of employment/service plus 30 years.
    - a) Occupational exposure policies must include a designated person to whom the exposure is reported and with whom the completed OSHA 200 form is filed.
    - b) This designated person may be the agency's infection control officer and also act as the "designated officer" as required under the federal Ryan White Notification Law (as of this revision (1/09), the Ryan White Care Act (Public Law 101-381) has been repealed)

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- c) Washington State EMS providers continue to have the right to request source testing based on current statute and rules under the authority of the Department of Labor and Industries (Washington Administrative Code (WAC) 296-823) and the Department of Health (Revised Code of Washington (RCW) 70.24.105 and 340, and WAC 246-100.205)
  - d) Assistance after an exposure must include:
    - (1) The offer of appropriate medical follow-up,
    - (2) Release from work time to pursue medical testing and prophylactic treatment, and
    - (3) Direction for safe removal of contaminated clothing and decontamination procedures.
  - e) The exposure control program must:
    - (1) Outline other recording mandates for insurance purposes
    - (2) Define the process of post-exposure treatment.
    - (3) Address the mechanism for exposure review, investigation, and remedial action to avoid future exposure situations.
- H. Other Information:
- 1. WISHA MANDATES employees must learn about the agency's exposure control plans prior to commencing service or employment. This includes information regarding the Ryan White Notification Law.
    - a) As of this revision (1/09), the Ryan White Care Act (Public Law 101-381) has been repealed.
    - b) Washington State EMS providers continue to have the right to request source testing based on current statute and rules under the authority of the Department of Labor and Industries (Washington Administrative Code (WAC) 296-823) and the Department of Health (Revised Code of Washington (RCW) 70.24.105 and 340, and WAC 246-100.205)
  - 2. WISHA requires that agencies offer employees, who work as volunteers in "risk" environments, the same protection as other employees.
  - 3. Agencies are required to train employees on the site and work practice specific exposure control programs within ten days of hiring or prior to the work assignment if that occurs within the ten day limit.
  - 4. At the time of training, the agency must offer all appropriate prophylactic medical treatment to the employee. The employee must be given the opportunity to receive the first dose of hepatitis B vaccine or tuberculin skin testing prior to commencing service, if he or she agrees to participate in such prophylactic services.
  - 5. Employees must be issued all engineering controls and personal protective equipment free of charge prior to service.

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## **APPLICATION**

Procedural (How)

The EMS Provider will know how to access additional information on infectious disease exposure, notification and follow-up.

Contextual (When, Where, Why)

1. The EMS Provider will use the aspects of personal protection every day and on every emergency run.

## **STUDENT ACTIVITY**

Auditory (Hear)

1. The student will hear the instructor demonstrate methods of using personal protective equipment.
2. The student will hear the instructor explain individual rights and agency responsibilities.
3. The student will hear the instructor provide information on various airborne and bloodborne pathogens.

Visual (See)

1. The student will see various audio-visual aids or materials of scenes requiring personal protection.
3. The student will see the gown, gloves, mask and eye protection associated with body substance isolation (BSI).

Kinesthetic (Do)

1. The student will practice putting on and removing gowns, gloves and eye protection gear.

## **INSTRUCTOR ACTIVITIES**

Supervise student practice.

Reinforce student progress in cognitive, affective, and psychomotor domains.

Redirect students having difficulty with content (complete remediation form).

## **EVALUATION**

Written:

Develop evaluation instruments, i.e., quizzes, verbal reviews and handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical:

Evaluate the actions of the EMS students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

## **REMEDIATION**

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

## **ENRICHMENT**

What is unique in the local area concerning this topic? Complete enrichment sheets from instructor's course guide and attach to lesson plan.



# **APPENDICES**

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## **APPENDIX A: STUDENT HANDOUTS**

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**APPENDIX A: Student Handouts**  
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**Diseases and Recommended Protective Measures**

<b>Disease</b>	<b>Modes of Transmission</b>	<b>Recommended Protective Clothing</b>	<b>Recommended Protective Procedures</b>	<b>Recommended Vehicle/Equipment Cleaning/Disinfecting</b>
<b>HIV/AIDS</b>	Blood, semen, vaginal fluids and body fluids containing blood  Sexual intercourse with an infected person. Infected needles or syringes  Blood/blood products  Maternal/child (pregnancy & birth)	Disposable mask  Double utility gloves  Eyeglasses/protective eyewear  Waterproof apron or gown, shoe covering if massive trauma  Condoms	Wash hands thoroughly  Use extreme care in suctioning  Never perform unprotected CPR  Use only disposable needles; use needleless systems when possible, do not cut, bend, or recap; seal in a clearly labeled, rigid, puncture-proof bag  Safer sexual practices	Wash soiled vehicle surfaces with hospital-approved germicidal, rinse with diluted bleach solution  Soak and disinfect all non-disposable equipment  Immediately clean up any spills of blood or body fluids; disinfect  Double bag all soiled refuse; dispose of properly  Soak non-disposable linens/clothing in hydrogen peroxide; launder for 25 minutes in hot soapy water; bleach
<b>Hepatitis B</b>	Blood, semen, vaginal fluids and body fluids containing blood  Sexual contact  Used needles or other equipment used to inject drugs  Maternal/child	Disposable gloves  All cuts, lesions, scratches, hang-nails, or other open wounds bandaged    Condoms	Never perform unprotected CPR  Get hepatitis B vaccination. Have post-exposure evaluation ASAP to see if treatment is needed. Have injection of HBIG within two weeks of exposure, and second injection one month later    Use disposable needles; do not cut, bend, or recap; seal in a clearly labeled, rigid, puncture-proof bag	Clean soiled vehicle and non-disposable equipment with a diluted bleach solution  Double-bag and seal all soiled refuse; dispose of properly  Double-bag all soiled clothing and linens; launder non-disposable clothing/linens in hot soapy water and bleach
<b>Hepatitis C</b>	Blood, semen, vaginal fluids and body fluids containing blood  Possible sexual contact  Used needles or other equipment used to inject drugs  Maternal/child	Disposable gloves  All cuts, lesions, scratches, hang-nails, or other open wounds bandaged    Condoms	Never perform unprotected CPR  Use disposable needles; do not cut, bend, or recap; seal in a clearly labeled, rigid, puncture-proof bag	Clean soiled vehicle and non-disposable equipment with a diluted bleach solution  Double-bag and seal all soiled refuse; dispose of properly  Double-bag all soiled clothing and linens; launder non-disposable clothing/linens in hot soapy water and bleach

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<b>Meningitis</b>	Direct contact with oral or nasal secretions	Disposable mask	Wash hands thoroughly Use extreme care in suctioning	Scrub all vehicle parts or surfaces contacted by the patient Launder non-disposable clothing/linens in hot soapy water and diluted bleach
<b>Herpetic Whitlow</b>	Oral secretions	Disposable gloves. Bandage open wounds on hands	Wash hands with germicidal soap	Scrub vehicle surfaces and launder non-disposable clothing/linens contaminated by oral secretions
<b>Tuberculosis(TB)</b>	Airborne spread (usually continual) Direct contact with oral or nasal secretions	Disposable N95 mask	Wash hands thoroughly Avoid mouth-to-mouth ventilation (use mechanical devices)	Scrub vehicle surfaces/equipment contaminated by secretions Launder non-disposable clothing/linens contaminated by secretions in hot soapy water and bleach Incinerate all disposable equipment used on patient
<b>Influenza</b>	Droplet spread Annual Influenza Vaccine	Disposable mask	Wash hands thoroughly Use care in suctioning mouth/nose	Scrub surfaces of vehicle contacted by patient Disinfect all non-disposable equipment used for patient Launder contaminated non-disposable clothing/linens in hot soapy water
<b>Common Childhood Diseases</b>	Droplet spread Oral/nasal secretions Rash	Disposable mask Disposable gloves (chickenpox)	Get vaccination if not already immune (Measles/Mumps/Rubella and Varicella) Use caution in suctioning mouth/nose Avoid touching skin lesions (chickenpox)	Scrub vehicle surfaces and non-disposable equipment contaminated with secretions or lesions Boil non-disposable equipment Launder contaminated non-disposable clothing/linens in hot soapy water. Boil non-disposable clothing/linens contaminated by patients with chickenpox or scarlet fever

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For current statistical information, go to the following web site and select the current Washington State HIV/AIDS Surveillance Report  
[http://www.doh.wa.gov/cfh/HIV\\_AIDS/Prev\\_Edu/Statistics.htm](http://www.doh.wa.gov/cfh/HIV_AIDS/Prev_Edu/Statistics.htm)



**NOTES:**