

INFECTION CONTROL POLICIES

I. General Guidelines

A. Universal Precautions

Universal precautions will be observed in the treatment of all patients. The blood and other body fluids will be treated as if known to be infected with HIV, HBV, HCV, or other blood-borne pathogens. The relevance of universal precautions to other aspects of disease transmission was recognized, and in 1996, CDC expanded the concept and changed the term to *standard precautions*. Standard precautions integrate and expand the elements of universal precautions into a standard of care designed to protect HCP (health care providers) and patients from pathogens that can be spread by blood or any other body fluid, excretion, or secretion. Standard precautions apply to contact with 1) blood; 2) all body fluids, secretions, and excretions (except sweat), regardless of whether they contain blood; 3) non-intact skin; and 4) mucous membranes. Saliva has always been considered a potentially infectious material in dental infection control; thus, no operational difference exists in clinical dental practice between universal precautions and standard precautions.

B. Personal Protective Equipment

Personal protective equipment that does not permit blood or other potentially infectious materials to pass through or to reach employee's work clothes, street clothes undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions or for duration of the time that the protective equipment will be used will be provided by the employer at no cost to employee. The use of personal protective equipment will be enforced whenever occupational exposure to blood or other potentially infectious materials (e.g., saliva or blood) may be anticipated.

1. **Gloves**

Disposable exam gloves will be worn whenever there is a potential for hand contact with mucous membranes, blood, saliva, or instruments and equipment that may have been contaminated with patient body fluids. Sterile surgical gloves will be used for all surgical procedures.

Gloves will be changed as soon as practical when contaminated and as soon as feasible when torn, punctured or when their ability to function as a barrier is compromised. Single use gloves will not be washed or decontaminated for re-use.

2. **Masks and Protective Eyewear**

Masks in combination with eye protection, such as goggles, glasses with side shields, or chin length plastic face shields shall be worn whenever splashes, spray, splatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or other mouth contamination can reasonably be anticipated. Masks must be changed between patients or more often if they become wet. Eyewear must be disinfected between patients.

3. Protective Clothing

Long-sleeve protective gowns shall be worn in occupational exposure situations when generation of blood or other potentially infectious materials from the patient's mouth may reasonably be anticipated. For most dental procedures, a lab coat is sufficient. If the lab coat does not prevent oral fluids of the patient from contacting work clothes, street clothes, or skin, a more protective and fluid-resistant material will be used.

II. Protocol for Occupational Exposures

A. All occupational exposures must be reported immediately to the supervising faculty and the Dental Assisting Department Head.

1. Supervising faculty, and/or adjunct faculty, is to be notified immediately of all exposures. Student should immediately call own physician and request appointment within 24 hours.
2. Any lab tests requested by attending physician (HIV and Hepatitis B) will be student's responsibility. If the student's tests positive for Hepatitis B and/or HIV, he/she will be referred to community resources for follow-up.
3. Immediate treatment of wound sustained from needle stick, cut from instrument, or perforation of the skin.
4. Person should return for HIV results from primary practitioner in two and a half weeks.
5. Person should seek medical evaluation for any unusual problems, such as fatigue, fever, swollen glands, or rash.

B. Occupational Exposures:

1. Contaminated needle- stick
2. Puncture wound from a contaminated sharp dental instrument
3. Contamination of any obviously open wound, non-intact skin, or the mucous membranes by saliva (in dentistry), blood, or a mixture of both saliva and blood.

C. Definitions

1. HBsAg refers to the hepatitis B surface antigen
2. Anti-HBs refers to the antibody to the hepatitis B surface antigen
3. HBIG refers to hepatitis B immune globulin
4. Anti-HIV refers to the antibody to the human immunodeficiency virus

D. Exposure to the patient's blood or saliva on the unbroken skin is not considered significant.

1. Protocol:

- a. Immediately clean the wound thoroughly for 10 minutes with antimicrobial soap and running water

- b. Obtain the patient's and recipient permission for blood testing and arrange for pre-test counseling
- c. Have a sample of the patient's blood drawn the same day as the exposure. The blood should be tested for HBsAg and anti-HIV
- d. The person who was exposed should also have blood drawn to test for HBsAg, anti-HBs, anti-HIV preferably the same day as the exposure if all possible.
- e. The exposure recipient should be notified of the signs and symptoms associated with anti-HIV seroconversion and given the opportunity for clinical evaluation.

Hepatitis Blood Test Results and Treatment Recommendations:

<u>Patient's Antigen Status</u>	<u>Recipient of Exposure</u>
A. HBsAg negative	a. Hepatitis B vaccine if not already received
B. HBsAg positive, refuses	a. HBsAg positive recipient: refer to Medical evaluation b. Anti-HBs positive recipient: c. Hepatitis B vaccine recipient with laboratory proven seroconversion, redetermine anti-HBs level unless adequate level was demonstrated within past 24 months: one additional dose of vaccine and one dose of HBIG if anti-HBs negative on testing. d. Hepatitis B vaccine recipient without laboratory proven seroconversion: one additional dose of vaccine and one dose of HBIG if anti-HBs negative on testing. e. Anti-HBs negative recipient: HBIG starting within 48 hours after exposure (0.06 ml/kg intramuscularly) and hepatitis vaccination within 7 days.

HIV Blood Test Results and Treatment Recommendations:

<u>Patient's Antibody Status</u>	<u>Recipient of Exposure</u>
A. Diagnosed AIDS, anti-HIV Positive refuses testing, or Unknown source	a. Anti-HIV positive: post- test counseling and medical evaluation b. Anti-HIV negative: post-test counseling And repeat testing at 6 weeks, and 3, 6, 9 and 12 months
B. Anti-HIV negative	a) Anti-HIV positive: post-test counseling And medical evaluation b) Anti-HIV negative: post-test counseling and optional follow-up at 12 weeks

III. PROCEDURES OF DENTAL ASSISTING INFECTION CONTROL

Students working in direct contact with patients must follow these guidelines:

A. Instrument Asepsis:

1. Critical Instruments: Instruments and equipment that penetrate bone or soft tissue will be heat sterilized or disposed of following each use.
2. Semi-critical Instruments: Instruments and equipment that come in contact with oral tissues or fluids without penetrating tissue will be heat sterilized when possible. If heat sterilization is not feasible for these items, a hospital level tuberculocidal disinfectant will be used according to label instructions.
3. Non Critical Instruments: Instruments that contact only intact skin but may become contaminated during patient treatment will be disinfected with an intermediate or low level disinfectant between patients.
4. All critical and semi-critical instruments will be packed before sterilization and remain packaged until ready for use. Sterilization will be verified through use of biological monitoring (spore test) completed weekly. Individual packages will be monitored using a chemical indicator such as autoclave tape or color-change indicator on the packaging.

B. Hand-hygiene

1. Before donning gloves, and after removing gloves, hands will be washed and dried thoroughly. For surgical procedures, an anti-microbial soap will be used. Latex exam gloves will be used if contact with patient care equipment or patient's body fluids is likely. If tear or puncture of glove occurs, gloves will be removed, hands washed, and a new pair

of gloves worn. Gloves will not be washed or disinfected for reuse. If an employee with occupational exposure has a documented allergy to latex, or other component of exam gloves, hypoallergenic gloves will be provided at no cost to the employee/student by the dental assisting program.

C. Fingernails and Artificial Nails

1. Although the relationship between fingernail length and wound infection is unknown, keeping nails short is considered key because the majority of flora on the hands are found under and around the fingernails.
2. Fingernails should be short enough to allow DHCP(dental health care personnel) to thoroughly clean underneath them and prevent glove tears.
3. Sharp nail edges or broken nails are also likely to increase glove failure. Long artificial or natural nails can make donning gloves more difficult and can cause gloves to tear more readily.
4. Artificial fingernails or extenders have been epidemiologically implicated in multiple outbreaks involving fungal and bacterial infections in hospital intensive-care units and operating rooms.
5. Freshly applied nail polish on natural nails does not increase the microbial load from periungual skin if fingernails are short; however, chipped nail polish can harbor added bacteria.

D. Jewelry

1. Skin underneath rings is more heavily colonized than comparable areas of skin on fingers without rings.
2. Rings and decorative nail jewelry can make donning gloves more difficult and cause gloves to tear more readily.
3. Jewelry should not interfere with glove use (e.g., impair ability to wear the correct-sized glove or alter glove integrity).

E. Handling for Personal Protective Equipment

1. Mask will be changed between patients and whenever they become moistened. Gowns are changed daily or when visibly soiled. Gowns are either laundered at the expense of employer, or disposable gowns may be used. No employee is permitted to take home gowns or lab coats for laundering. All personal protective equipment is to be removed prior to leaving the work areas.

F. General Asepsis

1. During patient treatment a constant awareness of cross-contamination will be maintained. All persons will avoid touching objects and areas during patient treatment that cannot be easily decontaminated. Equipment barriers are used when deemed appropriate and are

changed between each patient. Plastic over-gloves may be used to protect exam gloves when handling objects or surfaces that are not contaminated and cannot be decontaminated should they be touch during patient treatment with the exam gloves. Counter tops will keep free of excessive materials and containers to reduce the likelihood of cross contamination.

2. Dental unit lines will be flushed with air or water for two minutes at the beginning of each day, prior to attaching hand-pieces, air/water syringes or ultrasonic scalers. Additionally, lines will be flushed for 30 seconds between each patient. If a system shown to be effective in control of biofilm is in use, flushing will not be performed.
3. Eating, drinking, smoking, applying cosmetics and lip balm, and handling contact lenses is prohibited in patient treatment areas and in areas which may contain surfaces or objects contaminated with the blood or saliva of patients. These areas include treatment rooms, sterilization areas, and dental laboratory areas.

G. Accident Prevention

1. Contaminated sharp instruments and equipment will be handled as little as possible to avoid accidental puncture injury. Instrument transfers will be accomplished in a safe manner. Needles will not be manually recapped, but will be recapped either by using the one-handed scoop technique or by use of recapping device that does not require the person recapping the needle to place a hand in front of the used needle.

H. Engineered Sharps Injury Protection

1. When available and shown effective, engineered sharps protection devices such as, self-sheathing needles will be used in connection with dental procedures. If currently available devices are deemed inappropriate because they interfere with dental procedure, are not safer than the current device or jeopardize patient safety, new devices will be evaluated for use, as they become available.
2. New devices will be evaluated by representative number of employees that use existing sharp device. The results of the evaluation will be recorded as a part of the comprehensive exposure control plan.

I. Clean-up Treatment Room

1. Following patient treatment all equipment barriers will be removed. If surfaces and equipment not protected by barriers became contaminated during procedure, those areas will be decontaminated with an EPA registered tuberculocidal disinfectant following the removal of visible and non-visible debris. The following steps should be taken to ensure proper decontamination:
2. Spray surface or a paper towel with cleaner/disinfectant, or use premoistened disinfectant towelette.
3. Wipe clinical contact areas to remove debris.
4. Spray with disinfectant or thoroughly wet surfaces and objects with premoistened towelette, allow to stand for recommended time. (Usually 10 minutes.)

J. Waste Disposal

1. Disposable items used during patient treatment will be discarded in a lined garbage container. The liner will be removed each time the garbage is disposed of. The person handling the garbage will wear exam gloves to prevent accidental exposure to blood or saliva. If the items contain tissues, blood or other potentially infectious materials that may be released if compressed, or fluid blood or saliva, they will be collected in a container dedicated to biohazard waste. That container must be red and labeled with the universal biohazard symbol. Disposable contaminated sharps must be disposed of as soon as possible into a sharps container. Sharps containers are puncture resistant, leak proof on sides and bottom, label with the universal biohazard symbol and the legend "Biohazard". They are available in the treatment room and
2. Tray room/Laboratory. Disposable sharps include needles, blades, wires, glass and other objects capable of puncturing skin. Sharps containers will be closed when full, and disposed of in accordance with state and local regulations governing the transport, treatment, and disposal of biohazard waste.

K. Sterilization room

Instrument Sterilization

1. Instruments which penetrate bone or soft tissue must be either disposed or heat sterilized following use. These are classified as critical instruments. Semi-critical instruments are those which contact oral fluids and tissue, but do not necessarily penetrate tissues (i.e. mouth mirror and amalgam carrier). These items should also be heat sterilized following use, unless it is not possible due to the design of the item. In this case, immersion in a chemical sterilant/disinfectant may be used for the time required by the manufacturer to achieve sterilization. Noncritical instruments and items are those which do not enter the oral cavity, but may become contaminated during patient treatment (i.e. x-ray heads). If the item cannot be heat sterilized, disinfection with a chemical germicide which is EPA-registered and labeled tuberculocidal is appropriate.
2. Personal protective equipment, including heavy-duty rubber gloves, eye protection, and gown will be worn when processing used instruments. Instruments are placed in an ultrasonic cleaner or washer/disinfector for cleaning. Upon removal, instruments will be carefully dried and placed in a pouch for sterilization. If instrument cassettes are used, the entire cassette will be processed with the instruments remaining in the cassette. Instruments are scrubbed by hand only when the ultrasonic cleaner fails to remove all debris. If this is necessary, the employee continues to wear the heavy-duty gloves and scrubs instruments individually in order to avoid accidental injury. If debris remains on an instrument following the cleaning process, that debris should be removed carefully by cleaning with gauze soaked in appropriate solvent, or by use of a brush. Instruments which are not intended for immediate re-use will be packed prior to sterilization and will remain packed until ready for use. Pouches (or cassettes) will be placed on a single layer or loosely on

sides in the sterilizer. The instruments will be processed for the appropriate length of time at proper temperature and pressure. Verification of sterilization is achieved through the use of biological indicators (spore test) conducted weekly. Individual packages of instruments are monitored through the use of process indicators such as autoclave tape and color-change indicators on pouches.

3. Instrument trays are disinfected in the same manner as equipment and surfaces, using the spray wipe technique described earlier. *Plastic barriers may be used as an alternative to disinfection provided the barriers are changed between each use.*

L. X-ray Rooms and Processing Area Infection Control Protocol

The following protocol minimizes the risk of cross-contamination during x-ray procedures.

1. Assemble x-ray films, film holders and cup, and place equipment barriers before donning gloves or while wearing clean gloves.
2. Drape patient with lead shield.
3. Put on exam gloves.
4. Take x-rays, placing each in a paper cup following exposure.
5. When all x-rays have been exposed, removed gloves, washed hands, and place cup of x-rays in the daylight loader.
6. Wearing clean gloves, place hands through sleeves of daylight loader; open all film packets allowing film inside packet to drop onto a clean surface without touching the films.
7. Remove gloves.
8. Process films with bare hands. Because the films have not been touched with contaminated gloves or contacted oral tissues, no special precautions are necessary when mounting processed films.
9. Remove plastic barriers from x-ray equipment. If barriers were not used, disinfect the surfaces which were touched during the procedure.
10. Alternatively, x-ray films with barrier packs may be used. The barriers are removed immediately after exposure of the x-ray, all films are placed in a clean cup, and gloves are removed before processing or handling the films. For digital radiographs, a combination of barriers and surface disinfectants are used.

M. Laboratory Asepsis

1. Impressions must be rinsed to remove blood and saliva before decontamination. Impressions should be either sprayed or immerse in an EPA registered tuberculocidal disinfectant for at least 10 minutes. The impressions may be then poured up in stone or plaster, or sent to the dental laboratory off-site.
2. Prostheses and Crowns Prostheses and temporary crowns must be disinfected before manipulation in the laboratory, before being inserted into the patient's mouth and after removal from the patient's mouth.

3. **Lathe pans and wheels** Lathe pan, rag wheels, etc. should be maintained in a clean condition and disinfected regularly. Rag wheels will be autoclaved following use or disposable wheels will be used. Pumice may be mixed with disinfectant to inhibit contamination during polishing.

IV. Infection Control Protocol for Blood and Body fluids Spills

Spills containing the blood or body fluids of patients will be cleaned up using absorbent material. Personnel conducting the clean-up will wear gloves and protective attire. If the material may release body fluids, it will be discarded with the regulated medical waste. If the material will not release body fluids, it will be discarded in the regular thrash, taking care not to handle with bare hands. The area of the spill will be decontaminated by washing with a dilute bleach solution. The bleach solution will be mixed fresh for each use and will consist of one part bleach to ten parts water.

A. CDC NATIONAL CENTER FOR INFECTIOUS DISEASE HEPATITIS B FACT SHEET

SIGNS & SYMPTOMS	About 30% of persons have no signs or symptoms. Signs and symptoms are less common in children than adults.	
	<ul style="list-style-type: none"> • Jaundice • Fatigue • Abdominal pain 	<ul style="list-style-type: none"> • Loss of appetite • Nausea, vomiting • Joint pain
CAUSE	<ul style="list-style-type: none"> • Hepatitis B Virus (HBV) 	
LONG-TERM EFFECTS WITHOUT VACCINATION	<p>Chronic infection occurs in:</p> <ul style="list-style-type: none"> • 90% of infants infected at birth • 30% of children infected at age 1-5 years • 6% of persons infected after age 5 years <p>Death from chronic liver disease occurs in</p> <ul style="list-style-type: none"> • 15-25% of chronically infected persons 	
TRANSMISSION	<ul style="list-style-type: none"> • Occurs when blood or body fluids from an infected person enters the body of a person who is not immune. • HBV is spread through having sex with an infected person without using condom (the efficacy of latex condoms in preventing infection with HBV is unknown, but their proper use may reduce transmission), sharing needles or “works” when “shooting” drugs, through needle-sticks or sharps exposures on the job, or from an infected mother to her baby during birth. <p>Persons at risk for HBV Infection might also be at risk for infection with Hepatitis C Virus (HCV) or HIV.</p>	
RISK	<ul style="list-style-type: none"> • Persons with multiple sex partners or diagnosis of a sexually transmitted disease 	<ul style="list-style-type: none"> • Infants born to infected mothers • Infants/children of immigrants from areas with high rates of HBV infection

GROUPS	<ul style="list-style-type: none"> • Men who have sex with men • Sex contacts of infected persons • Injection drug users • Household contacts of chronically infected persons 	<p>(view map)</p> <ul style="list-style-type: none"> • Health care and public safety workers (View current post-exposure prophylaxis recommendations.) • Hemodialysis patients
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PREVENTION	<ul style="list-style-type: none"> • Hepatitis B vaccine is the best protection. • If you are having sex, but not with one steady partner, use latex condoms correctly and every time you have sex. The efficacy of latex condoms in preventing infection with HBV is unknown, but their proper use may reduce transmission. • If you are pregnant, you should get a blood test for Hepatitis B; Infants born to HBV-infected mothers should be given HBIG (Hepatitis B immune globulin) and vaccine within 12 hours after birth. • Do not shoot drugs; if you shoot drugs, stop and get into treatment program; if you can't stop, never share needles, syringes, water, or "works", and get vaccinated against Hepatitis A and B. • Do not share personal care items that might have blood on them (razors, toothbrushes). • Consider the risks if you are thinking about getting a tattoo or body piercing. You might get infected if the tools have someone else's blood on them or if the artist or piercer does not follow good health practices. • If you have or had hepatitis B, do not donate blood, organs, or tissue. • If you are a health care or public safety worker, get vaccinated against hepatitis B, and always follow routine barrier precautions and safely handle needles and other sharps. (View current post-exposure prophylaxis recommendations.)
VACCINE RECOMMENDATIONS	<ul style="list-style-type: none"> • Hepatitis B vaccine available since 1982 • Routine vaccination of 0-18 year olds • Vaccination of risk groups of all ages (see section on risk groups)
<ul style="list-style-type: none"> • TREATMENTS & MEDICAL MANAGEMENT 	<ul style="list-style-type: none"> • HBV infected persons should be evaluated by their doctor for liver disease. • Adefovir dipivoxil, alph interferon, and lamivudine are three drugs licensed for the treatment of persons with chronic Hepatitis B. • These drugs should not be used by pregnant women. • Drinking alcohol can make your liver disease worse.
TRENDS & STATISTICS	<ul style="list-style-type: none"> • Number of new infections per year has declined from an average of 260,000 in the 1980s to about 78,000 in 2001. • Highest rate of disease occurs in 20-49-year-olds. • Greatest decline has happened among children and adolescents due to routine Hepatitis B vaccination. • Estimated 1.25 million chronically infected Americans, of whom 20-30% acquired their infections in childhood.

Last updated April 8, 2011

**B. CDC NATIONAL CENTER FOR INFECTIOUS DISEASE
HEPATITIS C FACT SHEET**

SIGNS & SYMPTOMS	80% of persons have no signs or symptoms.	
	<ul style="list-style-type: none"> • Jaundice • Fatigue • Dark urine 	<ul style="list-style-type: none"> • Abdominal pain • Loss of appetite • Nausea
CAUSE	<ul style="list-style-type: none"> • Hepatitis C virus (HVC) 	
LONG-TERM EFFECTS	<ul style="list-style-type: none"> • Chronic Infection: 75-85% of infected persons • Chronic liver disease: 70% of chronically infected persons • Deaths from chronic liver disease: <3% • Leading indication for liver transplant 	

TRANSMISSION	<ul style="list-style-type: none"> Occurs when blood or body fluids from an infected person enters the body of a person who is not infected. HCV is spread through sharing needles or “works” when “shooting” drugs, through needle-sticks or sharps exposure on the job, or from an infected mother to her baby during birth. <p>Persons at risk for HCV infection might also be at risk for infection with Hepatitis B virus (HBV) or HIV.</p> <p>Recommendations for Testing Based on Risk for HCV Infection.</p>																														
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Persons at risk for HCV infection might also be at risk for infection with Hepatitis B virus (HBV) or HIV.

Recommendations for Testing Based on Risk for HCV Infection.

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*Anyone who wants to get tested should ask their doctor.

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Recommendations for testing based on risk for HCV infection	<table border="1"> <thead> <tr> <th>PERSONS</th><th>RISK OF INFECTION</th><th>TESTING RECOMMENDED?</th></tr> </thead> <tbody> <tr> <td>Injection drug users</td><td>High</td><td>Yes</td></tr> <tr> <td>Recipients of clotting factors made before 1987</td><td>High</td><td>Yes</td></tr> <tr> <td>Hemodialysis patients</td><td>Intermediate</td><td>Yes</td></tr> <tr> <td>Recipients of blood and/or solid organs before 1992</td><td>Intermediate</td><td>Yes</td></tr> <tr> <td>People with undiagnosed liver problems</td><td>Intermediate</td><td>Yes</td></tr> <tr> <td>Infants born to infected mothers</td><td>Intermediate</td><td>After 12-18 mos. old</td></tr> <tr> <td>Healthcare/public safety workers</td><td>Low</td><td>Only after known exposure</td></tr> <tr> <td>People having sex with multiple partners</td><td>Low</td><td>No*</td></tr> <tr> <td>People having sex with an infected steady partner</td><td>Low</td><td>No*</td></tr> </tbody> </table> <p>*Anyone who wants to get tested should ask their doctor.</p>	PERSONS	RISK OF INFECTION	TESTING RECOMMENDED?	Injection drug users	High	Yes	Recipients of clotting factors made before 1987	High	Yes	Hemodialysis patients	Intermediate	Yes	Recipients of blood and/or solid organs before 1992	Intermediate	Yes	People with undiagnosed liver problems	Intermediate	Yes	Infants born to infected mothers	Intermediate	After 12-18 mos. old	Healthcare/public safety workers	Low	Only after known exposure	People having sex with multiple partners	Low	No*	People having sex with an infected steady partner	Low	No*
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<p>PREVENTION</p>	<ul style="list-style-type: none"> • There is no vaccine to prevent Hepatitis C. • Do not shoot drugs; if you shoot drugs, stop and get into a treatment program; if you can't stop, never share needles, syringes, water, or "works", and get vaccinated against Hepatitis A & B. • Do not share personal care items that might have blood on them (razors, toothbrushes). • If you are a health care or public safety worker, always follow routine barrier precautions and safely handle needles or other sharps; get vaccinated against Hepatitis B. • Consider the risks if you are thinking about getting a tattoo or body piercing. You might get infected if the tools have someone else's blood on them or if the artist or piercer does not follow good health practices. • HCV can be spread by sex, but this is rare. If you are having sex with more than one steady sex partner, use latex condoms* correctly and every time to prevent the spread of sexually transmitted diseases. You should also get vaccinated against Hepatitis B. • If you are HCV positive, do not donate blood, organs, or tissue.
<p>TREATMENT & MEDICAL MANAGEMENT <u>NATIONAL INSTITUTES OF HEALTH fact sheet on treatments</u></p>	<ul style="list-style-type: none"> • HCV positive persons should be evaluated by their doctor for liver disease. • Interferon and ribavirin are two drugs licensed for the treatment of persons with chronic Hepatitis C. • Interferon can be taken alone or in combination with ribavirin. • Combination therapy can get rid of the virus in up to 5 out of 10 persons for genotype 1 and in up to 8 out of 10 persons for genotype 2 and 3. • Drinking alcohol can make your liver disease worse.
<p>STATISTICS & TRENDS</p>	<ul style="list-style-type: none"> • Number of new infections per year has declined from an average of 240,000 in the 1980s to about 25,000 in 2001. • Most infections are due to illegal injection drug use. • Transfusion-associated cases occurred prior to blood donor screening; now occurs in less than one per million transfused unit of blood. • Estimated 3.9 million (1.8%) Americans have been infected with HCV, of whom 2.7 million are chronically infected.

Last reviewed April 8, 2011

V. Frequently Asked Questions

What is the risk for HCV infection from a needle-stick exposure to HCV Hepatitis C and healthcare workers contaminated blood?

After needle-stick or sharps exposure to HCV positive blood, about 2 (1.8%) healthcare workers out of 100 will get infected with HCV (range 0%-10%).

What are the recommendations for follow-up of healthcare workers after exposure to HCV positive blood?

Anti-viral agents (e.g., interferon) or immune globulin should not be used for post-exposure prophylaxis.

1. For the source, baseline testing for anti-HCV.
2. For the person exposed to an HCV-positive source, baseline and follow-up testing including baseline testing for anti-HCV and ALT activity; and follow-up testing for anti-HCV, (e.g., at 4-6 months) and ALT activity. (If earlier diagnosis of HCV infection is desired, testing for HCV RNA may be performed at 4-6 weeks.)
3. Confirmation by supplemental anti-HCV testing of all anti-HCV results reported as positive by enzyme immunoassay.
- 4.

Should HCV-infected healthcare workers be restricted in their work?

No, there are no recommendations to restrict a healthcare worker who is infected with HCV. The risk of transmission from an infected healthcare worker to a patient appears to be very low. As recommended for all healthcare workers, those who are HCV positive should follow strict aseptic technique and standard precautions, including appropriate use of hand washing, protective barriers, and care in the use and disposal of needles and other sharp instruments.

From: National Center for Infectious Diseases Viral Hepatitis C.

VI. Minimum Standards for Infection Control.

1. As used in this section:
 - a. “Universal precautions”/ Standard precautions is an approach to infection control according to which all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV and other blood-borne pathogens.
 - b. “Critical instruments” are surgical and other instruments used to penetrate soft tissue or bone.
 - c. “Semi-critical instruments” are surgical and other instruments that are not used to penetrate soft tissue or bone, but contact oral tissue.
 - d. “None-critical instruments and devices” are instruments and devices that contact intact skin.

e. “Low-level disinfection” is the least effective disinfection process. It does not kill bacterial spores or mycobacterium tuberculosis var bovis, a laboratory test organism used to classify the strength of disinfectant chemicals.

f. “Intermediate-level disinfection” kills mycobacterium tuberculosis var bovis that indicates less resistant organisms such as, Hepatitis B and HIV are also killed.

g. “High-level disinfection” kills some, but not necessarily all bacterial spores. This process kills mycobacterium tuberculosis var bovis, and other bacteria, fungi and viruses.

2. Licensees with one or more employees shall comply with infection control precautions mandated by the California Occupational Safety and Health Administration.

3. All licensees shall comply with the following minimum precautions to minimize the transmission of pathogens in health care settings:

- a. Universal precautions/standard precautions shall be practiced in the care of all patients.
- b. Medical exam gloves shall be worn whenever there is potential for contact with blood, blood-contaminated saliva, or mucous membranes. **Sterile gloves shall be worn in connection with surgical procedures involving soft tissue or bone.** Sterile coolants/irrigants shall be used for surgical procedures involving soft tissue or bone. Sterile coolant/irrigants are deemed to be sterile when delivered using a device or process that has a Food and Drug Administration (FDA) marketing clearance for delivery of sterile coolant/irrigants to the patient. Delivery of sterile coolant/irrigants shall be in accordance with the manufacturer’s directions.
- c. Healthcare workers shall wash hands and put on new gloves before treating each patient. Antimicrobial soap shall be used to wash hands for surgical procedures. Healthcare workers shall wash hands after removing and discarding gloves after treatment of each patient or before leaving the operatory. Gloves shall not be washed before or after use.
- d. Healthcare workers shall wear surgical face masks and either chin length plastic face shields or surgical masks and protective eyewear when treating patients. After each patient and during patient treatment if applicable, masks shall be changed if moist or contaminated. After each patient, face shields and protective eyewear shall be cleaned and disinfected, if contaminated.
- e. Healthcare workers shall wear reusable or disposable gowns when their clothing is likely to be soiled with blood or other bodily fluids.
- f. Protective attire must be removed when leaving the laboratories and work areas.
- g. Items or surfaces such as, but not limited to, light handles which are impossible to clean and disinfect, shall be protected with impervious barriers. Between patients, the covering must be removed, discarded and replaced with clean covering.
- h. Splash shields shall be used in dental laboratories.
- i. Healthcare workers who have exudative lesions or weeping dermatitis shall refrain from all direct patient care and from handling patient care equipment until the condition resolves.

- j. Needles shall be recapped only by using the scoop technique or a mechanical device designed for holding the needle sheath, or a mechanical device which eliminates the need for two handed capping. Needles shall not be bent or broken prior to disposal. Disposable needles, syringes, scalpel blades and/or other sharp items and instruments shall be placed into puncture resistant containers for disposal.
- k. Heat stable critical and semi-critical instruments shall be cleaned and sterilized before use by using steam under pressure (autoclaving), dry heat, or chemical vapor. Cal/EPA 1 – registered sterilants/disinfectants shall be used for sterilization of heat-sensitive critical items and for high-level disinfection of heat-sensitive semi-critical items.
- l. Heavy-duty utility gloves shall be worn to process instruments before sterilization or high-level disinfection.
- m. Critical and semi-critical instruments shall be packaged before sterilization if they are not to be used immediately and remain sealed until used.
- n. Proper functioning of the sterilization cycle shall be verified at least weekly through use of a biological indicator (such as spore test).
- o. Counter tops and dental unit surfaces shall be cleaned with disposable towels followed by a Cal/an EPA intermediate-level disinfectant between patients. Cal/EPA low-level disinfectants shall be used for visibly soiled areas as floors, walls and other housekeeping surfaces.
- p. Intraoral items such as impressions, bite registrations, prosthetic and orthodontic appliances shall be cleaned and disinfected with an intermediate-level disinfectant before manipulation in the laboratory and before placement in the patient's mouth.
- q. All high-speed dental hand-pieces, low-speed hand-piece components used intra-orally, and other dental unit attachments such as, reusable air/water syringe tips and ultrasonic scaler tips shall be heat-sterilized between uses.
- r. Anti-retraction devices in dental unit water lines shall be installed and maintained.
- s. The dental unit line shall be flushed between each patient.
- t. Single-use disposable instruments (e.g. prophylaxis, angles, prophylaxis cups and brushes, tips for high-speed evacuators, saliva ejectors, air/water syringe tips) shall be used for one patient only and discarded appropriately.
- u. At the beginning of each workday, dental unit lines shall be purged with air or flushed with water for at least two (2) minutes prior to attaching hand-pieces, scalers and other devices.
- v. Contaminated solid waste shall be disposed of according to applicable local, state and federal environmental standards.
- w. A written protocol shall be developed for proper instrument processing, operator cleanliness, and management of injuries. A copy of this regulation shall be conspicuously posted in each dental office.

VII. The Board shall review this regulation annually.

NOTE: Authority cited: Section 1614, Business and Professions Code, Reference: Section 1680, Business and Professions Code.

VIII. INFECTION CONTROL TRAINING SESSION

A training session in infection control was conducted for the undersigned employees of _____ . The elements of the training session included the following topics:

1. *An explanation of the contents of the Cal-OSHA Blood-borne Pathogens Standard. Information on the availability of the written regulation was given.*
2. A general explanation of the epidemiology and symptoms of blood-borne diseases.
3. An explanation of the modes of transmission of diseases.
4. *An explanation of the exposure control plan and the **means by which an employee can obtain a copy of the written plan.***
5. An explanation of the appropriate methods for recognizing task and other activities that may involve exposure to blood and other potentially infectious materials.
6. An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practice controls, and personal protective equipment.
7. Information on the types, proper use, **location**, removal, handling, and disposal of personal protective equipment.
8. An explanation of the basis for selection of personal protective equipment.
9. Information on the Hepatitis B vaccine, including information on efficacy, safety, method of administration, the benefits of being vaccinated.
10. Information on the appropriate steps to take and the **person (s) to contact** in an emergency involving blood or other potentially infectious materials.
11. An explanation of the procedure to follow if an exposure incident occurs, including the **method of reporting the incident and the medical follow-up that will be made available.**
12. Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident.
13. An explanation of the signs and labels and/or color-coding used to identify container of regulated waste, refrigerators and freezers containing blood or other potentially infectious materials; and other containers used to store, transport or ship blood or other potentially infectious materials.
14. An opportunity for interactive questions and answers with the person conducting the training session.

Training conducted by: _____ Date: _____

ATTENDED BY	
NAME	JOB DESCRIPTION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

TABLE 1. Suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health-care settings, in the absence of state and local regulations*

Disease/problem	Work restriction	Duration
Conjunctivitis	Restrict from patient contact and contact with patient's environment.	Until discharge ceases
Cytomegalovirus infection	No restriction	
Diarrheal disease		
Acute stage (diarrhea with other symptoms)	Restrict from patient contact, contact with patient's environment, and food-handling.	Until symptoms resolve
Convalescent stage, <i>Salmonella</i> species	Restrict from care of patients at high risk.	Until symptoms resolve; consult with local and state health authorities regarding need for negative stool cultures
Enteroviral infection	Restrict from care of infants, neonates, and immunocompromised patients and their environments.	Until symptoms resolve
Hepatitis A	Restrict from patient contact, contact with patient's environment, and food-handling.	Until 7 days after onset of jaundice
Hepatitis B		
Personnel with acute or chronic hepatitis B surface antigenemia who do not perform exposure-prone procedures	No restriction [†] ; refer to state regulations. Standard precautions should always be followed.	
Personnel with acute or chronic hepatitis B e antigenemia who perform exposure-prone procedures	Do not perform exposure-prone invasive procedures until counsel from a review panel has been sought; panel should review and recommend procedures that personnel can perform, taking into account specific procedures as well as skill and technique. Standard precautions should always be observed. Refer to state and local regulations or recommendations.	Until hepatitis B e antigen is negative
Hepatitis C	No restrictions on professional activity. [†] HCV-positive health-care personnel should follow as appropriate.	

TABLE 1. (Continued) Suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health-care settings, in the absence of state and local regulations*

Disease/problem	Work restriction	Duration
Pediculosis	Restrict from patient contact	Until treated and observed to be free of adult and immature lice
Pertussis		
Active	Exclude from duty	From beginning of catarrhal stage through third week after onset of paroxysms, or until 5 days after start of effective antibiotic therapy
Postexposure (asymptomatic personnel)	No restriction, prophylaxis recommended	
Postexposure (symptomatic personnel)	Exclude from duty	Until 5 days after start of effective antibiotic therapy
Rubella		
Active	Exclude from duty	Until 5 days after rash appears
Postexposure (susceptible personnel)	Exclude from duty	From seventh day after first exposure through twenty-first day after last exposure
Staphylococcus aureus infection		
Active, draining skin lesions	Restrict from contact with patients and patient's environment or food handling.	Until lesions have resolved
Carrier state	No restriction unless personnel are epidemiologically linked to transmission of the organism	
Streptococcal infection, group A	Restrict from patient care, contact with patient's environment, and food-handling.	Until 24 hours after adequate treatment started
Tuberculosis		
Active disease	Exclude from duty	Until proved noninfectious
PPD converter	No restriction	
Varicella (chicken pox)		
Active	Exclude from duty	Until all lesions dry and crust
Postexposure (susceptible personnel)	Exclude from duty	From tenth day after first exposure through twenty-first day (twenty-eighth day if varicella-zoster immune globulin [VZIG] administered) after last exposure.
Zoster (shingles)		
Localized, in healthy person	Cover lesions, restrict from care of patients [§] at high risk	Until all lesions dry and crust
Generalized or localized in immunosuppressed person	Restrict from patient contact	Until all lesions dry and crust
Postexposure (susceptible personnel)	Restrict from patient contact	From tenth day after first exposure through twenty-first day (twenty-eighth day if VZIG administered) after last exposure or, if varicella occurs, when lesions crust and dry
Viral respiratory infection, acute febrile	Consider excluding from the care of patients at high risk [¶] or contact with such patients' environments during community outbreak of respiratory syncytial virus and influenza	Until acute symptoms resolve

Source: Adapted from Bolyard EA. Hospital Infection Control Practices Advisory Committee. Guidelines for infection control in health care personnel, 1998. *Am J Infect Control* 1998;26:289–354.

* Modified from recommendations of the Advisory Committee on Immunization Practices (ACIP).

[†] Unless epidemiologically linked to transmission of infection.

[§] Those susceptible to varicella and who are at increased risk of complications of varicella (e.g., neonates and immunocompromised persons of any age).

[¶] Patients at high risk as defined by ACIP for complications of influenza.

TABLE 2. Hand-hygiene methods and indications

Method	Agent	Purpose	Duration (minimum)	Indication*
Routine handwash	Water and nonantimicrobial soap (e.g., plain soap) [†]	Remove soil and transient microorganisms	15 seconds [§]	Before and after treating each patient (e.g., before glove placement and after glove removal). After barehanded touching of inanimate objects likely to be contaminated by blood or saliva. Before leaving the dental operator or the dental laboratory. When visibly soiled. [¶] Before regloving after removing gloves that are torn, out, or punctured.
Antiseptic handwash	Water and antimicrobial soap (e.g., chlorhexidine, iodine and iodophors, chloroxylenol [PCMX], triclosan)	Remove or destroy transient microorganisms and reduce resident flora	15 seconds [§]	
Antiseptic hand rub	Alcohol-based hand rub [¶]	Remove or destroy transient microorganisms and reduce resident flora	Rub hands until the agent is dry [¶]	
Surgical antisepsis	Water and antimicrobial soap (e.g., chlorhexidine, iodine and iodophors, chloroxylenol [PCMX], triclosan) Water and non-antimicrobial soap (e.g., plain soap [†]) followed by an alcohol-based surgical hand-scrub product with persistent activity	Remove or destroy transient microorganisms and reduce resident flora (persistent effect)	2–6 minutes Follow manufacturer instructions for surgical hand-scrub product with persistent activity ^{¶¶}	Before donning sterile surgeon's gloves for surgical procedures ^{¶¶}

* (7,9,11,13,113,120–123,125,126,136–138).

[†] Pathogenic organisms have been found on or around bar soap during and after use (139). Use of liquid soap with hands-free dispensing controls is preferable.

[§] Time reported as effective in removing most transient flora from the skin. For most procedures, a vigorous rubbing together of all surfaces of premoistened lathered hands and fingers for ≥15 seconds, followed by rinsing under a stream of cool or tepid water is recommended (9,120,123,140,141). Hands should always be dried thoroughly before donning gloves.

[¶] Alcohol-based hand rubs should contain 60%–95% ethanol or isopropanol and should not be used in the presence of visible soil or organic material. If using an alcohol-based hand rub, apply adequate amount to palm of one hand and rub hands together, covering all surfaces of the hands and fingers, until hands are dry. Follow manufacturer's recommendations regarding the volume of product to use. If hands feel dry after rubbing them together for 10–15 seconds, an insufficient volume of product likely was applied. The drying effect of alcohol can be reduced or eliminated by adding 1%–3% glycerol or other skin-conditioning agents (123).

^{¶¶} After application of alcohol-based surgical hand-scrub product with persistent activity as recommended, allow hands and forearms to dry thoroughly and immediately don sterile surgeon's gloves (144,145). Follow manufacturer instructions (122,123,137,146).

^{¶¶} Before beginning surgical hand scrub, remove all arm jewelry and any hand jewelry that may make donning gloves more difficult, cause gloves to tear more readily (142,143), or interfere with glove usage (e.g., ability to wear the correct-sized glove or altered glove integrity).

TABLE 3. Glove types and indications

Glove	Indication	Comment	Commercially available glove materials ^a	
			Material	Attributes [†]
Patient examination gloves [§]	Patient care, examinations, other nonsurgical procedures involving contact with mucous membranes, and laboratory procedures	Medical device regulated by the Food and Drug Administration (FDA). Nonsterile and sterile single-use disposable. Use for one patient and discard appropriately.	Natural-rubber latex (NRL)	1, 2
			Nitrile	2, 3
			Nitrile and chloroprene (neoprene) blends	2, 3
			Nitrile & NRL blends	1, 2, 3
			Butadiene methyl methacrylate	2, 3
Surgeon's gloves [§]	Surgical procedures	Medical device regulated by the FDA. Sterile and single-use disposable. Use for one patient and discard appropriately.	Polyvinyl chloride (PVC, vinyl)	4
			Polyurethane	4
			Styrene-based copolymer	4, 5
			NRL	1, 2
			Nitrile	2, 3
Nonmedical gloves	Housekeeping procedures (e.g., cleaning and disinfection)	Not a medical device regulated by the FDA. Commonly referred to as utility, industrial, or general purpose gloves. Should be puncture- or chemical-resistant, depending on the task. Latex gloves do not provide adequate chemical protection.	Chloroprene (neoprene)	2, 3
			Nitrile	2, 3
	Handling contaminated sharps or chemicals		Butyl rubber	2, 3
			Fluoroelastomer	3, 4, 6
	Not for use during patient care	Sanitize after use.	Polyethylene and ethylene vinyl alcohol copolymer	3, 4, 6

^a Physical properties can vary by material, manufacturer, and protein and chemical composition.

[†] 1 contains allergenic NRL proteins.

2 vulcanized rubber, contains allergenic rubber processing chemicals.

3 likely to have enhanced chemical or puncture resistance.

4 nonvulcanized and does not contain rubber processing chemicals.

5 inappropriate for use with methacrylates.

6 resistant to most methacrylates.

[§] Medical or dental gloves include patient-examination gloves and surgeon's (i.e., surgical) gloves and are medical devices regulated by the FDA. Only FDA-cleared medical or dental patient-examination gloves and surgical gloves can be used for patient care.