



Introduction to Clinic Documents and Informational Manuals:

Clinical informational manuals are reviewed annually, updated as needed, and approved by the Clinical Policy Committee. There are five each listed below with a short description of its contents. By selecting any of them you will reach their complete table of contents r document.

2008 Emergency Response Manual:

The emergency response manual is a short guide in dealing with a medical emergency within the setting of the VC-7, 8 or 9 clinics. The manual explains each person's responsibility, the location of medical emergency supplies and the appropriate phone numbers needed.

2008 Manual on Infection Control and Environmental Health and Safety:

This manual explains in detail the responsibilities of the provider in maintaining a safe working environment within the dental setting. It explains the appropriate procedures for maintaining the dental operatory, handling of instruments and the appropriate means of safe disposal of all hazardous materials. It is a supplement to the annual training.

2008 Student, Faculty and Staff Exposure Control Plan:

The exposure control plan is a manual that describes all of the safety issues for all working individuals within the dental clinics. The plan is modeled after the requirement of the Bloodborne Pathogen Standards.

Bloodborne Pathogen Standard:

The Bloodborne Pathogen Standard in its entirety.

Billing Compliance Plan:

The Billing Compliance Plan is reviewed on an annual basis and is developed to ensure that all Billing Standards are presented to Faculty, Students and Staff. This plan is reviewed and approved by the Office of Billing Compliance at the Columbia University Medical Center.



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I. Introduction

Although life threatening emergency situations do not occur frequently in the dental office, they do occur. Were these preventable? It is estimated that even taking all possible precautions medical emergencies will occur. The question: How do we deal with the medical emergency when it occurs?

Prevention is the key to reducing the incidence and severity of potential emergencies . Never treat a stranger! Review the medical history and record the patient's vital signs at the initial visit. Minimal evaluation for dental patients should include the measurement of vital signs. Since many diseases develop without symptoms they may go undetected by the patient. Recognize risk factors of serious systemic diseases.



II. Emergency Response

A. Protocol

1. Treating doctor: The student is considered to be the person directly responsible for recognizing the emergent situation and seeking help in an appropriate manner. This person is not to leave the patient but is to request help from a neighboring student. The neighboring student acts as the treating doctors HELP.
2. Instructor: The nearest instructor obtained by the HELP evaluates the patient with the treating doctor and determines if further assistance is needed.
3. HELP: Once the instructor has been summoned, the HELP proceeds immediately to the nearest location to get oxygen, sphygmomanometer, and stethoscope.
4. Further Assistance: If after evaluation further assistance is needed, the Faculty member will direct the protocol (see section III) and have HELP call Emergency Response Team (ERT) (X65690) and, if necessary, the Presbyterian Hospital Cardiac Arrest Team (X63333) check these phone numbers..
5. Crash Cart: If needed the HELP will be sent for the nearest crash cart.
6. Wheelchair: If needed a designee will be sent to the oral surgery clinic to obtain a wheelchair.

B. Emergency Response Team: The ERT will be arranged through the Division of Oral and Maxillofacial Surgery. The ERT is composed of the clinic charge nurse oral and maxillofacial surgery residents and faculty. In the event an emergency situation requires further intervention the Presbyterian Hospital Cardiac Arrest Team should be called X63333.



C. Emergency Equipment:

1. **Portable Oxygen, Blood Pressure Cuff, Stethoscope**

Located in the central supply areas on V-7, VC-8 and the emergency cart location on VC-9 are portable Oxygen, Blood Pressure Cuff, and Stethoscope. In the event of an emergency, the HELP should be sent to obtain the equipment needed. If the central supply area is closed the help should call the oral and maxillofacial surgery clinic at 58496, give the location and nature of the emergency. If the line is busy the Help should go to the VC-7 Oral and Maxillofacial Surgery Clinic.

2. **Crash Carts (All Crash Carts are replenished via the Pharmacy of Presbyterian Hospital) and Automatic External Defibrillators:**

VC-7: Located in the hallway between Oral Radiology and Oral and Maxillofacial Surgery is the Hospital Crash Cart and defibrillator. The Nurse Manager checks this cart daily for lock integrity and monthly for all contents.

VC-8: Located in the central billing office in the center of the clinic is a Hospital Crash Cart and AED. This cart is checked daily for lock integrity and monthly for all contents by the VC-8 supervisor.

VC-9: Located at the entrance to the VC-9 clinic is a Hospital Crash Cart and AED. This cart is checked daily for lock integrity and monthly for all contents by the VC-9 supervisor.

D. Basic Cardiac Life Support (BCLS):

1. Students: All students are certified in BCLS during their medical emergency course given just prior to their clinical experience.
2. Hospital residents: All oral and maxillofacial surgery residents and general



practice dental residents are certified in BCLS and Advanced Cardiac Life Support. This is maintained throughout the residency program as per New York Presbyterian Policy.

2. Faculty: Clinical faculty are required for appointment to be certified in BCLS. Annually CPR training and recertification is offered. All Oral and Maxillofacial Surgery Faculty and the Clinic Charge Nurse are required to maintain certification in both Basic and Advanced Cardiac Life Support.
3. Staff: Those staff involved in direct patient care must be certified in BCLS unless excused for medical reasons. Annually CPR training and recertification is offered.



III. Emergency Response Protocol

A. Treating Doctor:

1. Recognize emergent situation. Never leave the patient and institute BCLS as needed.
2. Calls nearest available student, who will be your HELP.
3. Sends HELP for supervising instructor and then for sphygmomanometer, stethoscope, oxygen tank and mask (located at the module).
4. Informs the faculty of patients PMH and the history of the emergency.
5. Faculty to evaluate and take control.
6. Informs the ERT if called (X65690) of the patients PMH and the history of the emergency.

B. Faculty

1. Obtains patient's history from treating doctor or patient.
2. Evaluates the patient using BCLS Standards and vital signs.
3. Determines patient's disposition.



4. Sends HELP to get crash cart, wheelchair and if needed:

a. Calls ERT X65690 X58496

b. Calls Code X63333

c. HELP then returns to area of emergency.

C. HELP

1. Gets faculty according to treating doctor and then sphygmomanometer, stethoscope, oxygen tank and mask.

2. Returns for orders from faculty. The faculty then informs HELP to:

a. Initiate ERT response (X65690X54896) if needed and return immediately to area of emergency with crash cart, wheelchair.

b. Initiate the Presbyterian Hospital Cardiac Arrest Team (X63333) if needed and initiate ERT as in (a).

c. Returns to emergency site.



IV. Emergency Response Team (ERT)

- A. Senior Resident in the Oral and Maxillofacial Surgery Clinic is the first person to respond and the person in charge. Determines time to transport and the need for further help.

- B. Attending in the Oral and Maxillofacial Surgery Clinic: To respond with the Senior resident.

- C. Nurse Manager (NM): Assists in the treatment and is responsible for medications and equipment during the emergency.

- D. HELP: Responsible for the recording of all information during the emergency.



V. Emergency Equipment Locations

A. VC-7 between Oral Radiology and the Oral and Maxillofacial Surgery Clinic, VC-8 Central Billing Office and VC-9 emergency alcove at clinic entrance:

1. Sphygmomanometer
2. Stethoscope
3. Oxygen with mask
4. AED

B. Waterloo Crash Cart Locations

1. VC-7 Oral and Maxillofacial Surgery Clinic with defibrillator
2. VC-8 Central Sterilization Suite
3. VC-9 Emergency Alcove at clinic entrance



VI. Transferring Patient to Area A Presbyterian Hospital

- A. Know medical history

- B. Vital signs

- C. IV line if needed

- D. Incident report

- E. Call ER - Area A X66204 inform them of the patient.

- F. Student and Resident to write a brief note describing the incident, action taken, medication given, vital signs, and short patient history. The student and resident go to the ER with the patient.

- G. Transfer of care to the Emergency Personnel.



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INFECTION CONTROL

OVERVIEW

Improper management of blood, saliva and infected periodontal tissue pose high infection risks to dental personnel. Practical control of such material is a multi-step process and should include:

I. Barrier technique.

II. Aseptic technique.

III. Surface disinfection.

IV. Instrument sterilization.

The purpose of this multi-step process is to ensure that the following goals are met:

1. Reduce the number of available pathogenic organisms.
2. Break the cycle of infection transmission to maintain asepsis.
3. Treat all patients and/or instruments as if infectious **"STANDARD PRECAUTIONS"**
4. Protect health care providers, patients and personnel from cross contamination.



I. BARRIER TECHNIQUES:

Gloves:

For the protection of personnel and patients gloves **MUST** always be worn when touching blood, saliva, or mucous membranes. Gloves **MUST** be worn when touching blood soiled items, body fluids or secretions, as well as surfaces contaminated by them. Gloves **MUST NOT** be reused or washed and reused. Torn or punctured gloves **MUST** be removed, hands washed, and replaced immediately.

Heavy Utility Gloves:

When cleaning instruments and the units heavy utility gloves **MUST** be used.

Surgical Mask:

For the protection of personnel and patients, masks **MUST** always be worn when aerosol, splashing and/or spattering of fluids and debris is possible.



Protective Eyewear:

For the protection of personnel and patients protective eyewear **MUST** always be worn when aerosol, splashing and/or spattering of fluids and debris is possible. Eyewear must have side shields. A face shield may be worn instead.

Gowns:

For the protection of personnel, disposable gowns must be worn over clothing when clothing is likely to be soiled with blood or other fluids. Gowns **should be changed daily** or sooner if they become heavily soiled. Disposable gowns should be used for all procedures except clinical examinations. They can be disposed of in normal waste. These gowns must **NOT** be worn outside the clinical areas.

Protective Barriers:

Coverings must be used on hard to clean surfaces exposed to contamination. Between each patient these covers **must** be removed and discarded appropriately while wearing gloves.

Rubber Dam Isolation:

Whenever possible, rubber dam isolation with the use of high speed evacuation and proper patient positioning should be used to minimize the formation of droplets.



II. ASEPTIC TECHNIQUE

Handwashing and Handsanitzers:

The single most important means of preventing the spread of infection is handwashing. Hands should be washed using soap by vigorous and thorough scrubbing for a minimum of 15 seconds prior to the initial patient contact of the day and whenever hands are visibly soiled. When hands are not visibly soiled they should be sanitized using an alcohol hand sanitizer. If hands are washed they should be rinsed and dried using fresh paper towels. Faucet handles are considered contaminated and should be turned off using dry paper towels. Hands should be washed or sanitized immediately after removing gloves due to the build up of bacteria under them. Hands should always be washed or if not visibly soiled sanitized before leaving the operatory and prior to the next patient. In the event a glove is torn, it should be removed and hands immediately washed or sanitized.

Sharp Instruments and needles:

Sharp items are considered potentially infectious and **must** be handled with great care. Needles and scalpel blades **must** be placed into puncture resistant containers. Whenever possible needles should not be recapped, but if need be, the cap must be replaced using the no touch technique, a hemostat, a recapping device or college pliers. Other items such as irrigation syringes, endodontic instruments, orthodontic wires, anesthetic carpules, scalpel blades, **must** also be disposed of in puncture resistant containers.

Chain of Asepsis:

Do not, during treatment, touch ones nose, eyes, glasses, hair, pants, phone, charts, pencils, chairs, etc. If this occurs one should remove their gloves, wash or sanitize their hands and immediately re-glove to re-establish clinical asepsis. **Whenever leaving the operatory gloves should be removed and hands washed or sanitized. Never wash/sanitize and reuse gloves.**



III. SURFACE DISINFECTION

Degree of Risk in Transmitting Disease:

Categories created by Spaulding on the degree of spreading infection and how to eliminate this risk.

1. **Critical Items:** These are instruments or materials that are introduced directly into the body, into the blood or into a normally sterile area of the body. Sterilization of critical items is the only acceptable means of controlling the risk of infection.

2. **Semi-critical Items:** These are instruments and/or materials that do not normally disrupt intact mucous membranes. Sterilization is desirable however high-level disinfection gives a reasonable means of controlling the risk of infection. All items that are semi-critical and capable of being sterilized should be sterilized.

3. **Non-critical Items:** These are items that do not ordinarily contact the patient directly or contact only unbroken skin. Low level disinfection is a reasonable means of controlling the risk of infection.

Disinfection:

Disinfection refers to the use of a germicidal chemical agent to destroy the potential infectivity of a material. It is a less lethal process than sterilization. The effectiveness of a disinfectant is controlled by many factors. These factors include:

- a. Number of organisms.
- b. Concentration and type of chemical.
- c. Length of exposure to the disinfectant.
- d. Temperature.
- e. Type of material being disinfected.



All disinfectants must be EPA Hospital approved and must be used according to the manufacturer's directions.

High Level Disinfection:

An essential property of a high level disinfectant is effectiveness against bacterial endospores. If the contact time is long enough this type of germicide can be used as a sterilant.

Low Level Disinfectant:

These disinfectants are those that cannot be relied upon to destroy, within a practical period of time, bacterial endospores, the tubercle bacilli, or small non-lipid viruses.

Disinfection of Counter Tops and Surfaces:

Areas that may have become contaminated with blood or saliva should be cleaned of extraneous organic material and then decontaminated with a high or intermediate disinfectant. Impervious backed paper, inexpensive foil, or clear plastic wrap may also be used to cover surfaces that may become contaminated, and do not lend themselves well to disinfection.

Disinfection of Materials, Supplies, and Impression Materials:

Thoroughly and carefully clean blood or saliva from laboratory supplies and materials using a brush and running water. Materials impressions and prosthetic devices should be decontaminated with disinfectant. Prosthetic devices should be disinfected with high level disinfection. A list of acceptable disinfectants for impression materials is located in the appendix. (Infection control recommendations for the Dental Office and the Dental Laboratory JADA Vol. 127, May 1996 pp. 672-680)



IV. INSTRUMENT STERILIZATION

STERILIZATION:

The use of physical or chemical agents to eliminate all viable microbes from a material.

The method of sterilization most commonly used in dentistry is heat. Most microbes are destroyed with just the use of boiling water however; spores of some organisms can survive boiling for hours. At the present time the accepted methods of sterilization are:

1. **Steam under pressure: 121 C at 15 psi for 15 minutes is the most efficient and rapid method.** Non-stainless steel instruments must be protected from damage by using a reducing agent prior to sterilization.
2. **Dry Heat: 160-170 C (320-347 F) for 1-1.5 hours.** Instruments must be completely dry and clean of organic debris prior to this process.
3. **Ethylene Oxide:** The use of this sterilant at a low temperature. The disadvantage is the length of time required, 10 hours or more.

Sterilization of Instruments:

Surgical instruments or those instruments that normally penetrate soft tissue must be sterilized after each use. Instruments that may come into contact with oral tissues should, if possible, be sterilized after each use. However, if sterilization is not feasible, the latter instruments should receive chemical sterilization according to manufacturer's directions.

Methods of Sterilization or High Level Disinfection:

Before being processed instruments should be cleaned to remove gross debris. This should be done using ultrasonic cleaning. The use of an ultrasonic cleaning device can be used in an effort to prevent hand injury by loosening the gross debris. In the absence of ultrasonic cleaning instruments should be cleaned by hand using heavy utility gloves for protection. Once cleaned, the instruments can be processed. Metal and heat-stable dental instruments must be sterilized between patients. The cycle should be tested with a spore strip on a weekly basis. Heat sensitive instruments should have chemical sterilization, which may require up to ten hours.



Sterilization of Handpiece:

Dental handpiece must be sterilized between patients. Manufacturer directions must be followed to ensure safe processing. Disposable prophylaxis angles are for single patient use. Prior to sterilization handpiece should be flushed for 30 seconds.

Sterilization Monitoring:

All items that are sterilized must be wrapped and dated according to clinical policy and procedure. The item must be sealed with a heat sensitive indicator. Each sterilizer is biologically monitored weekly.



V. PROCEDURES OF INFECTION CONTROL AT COLUMBIA UNIVERSITY COLLEGE OF DENTAL MEDICINE

A. Prior to Seating the Patient:

1. Cleaning the High Speed Evacuation Lines:

Using utility gloves, on Fridays the suction lines should be flushed with an intermediate to high non-corrosive disinfectant. A semi-synthetic phenolic at the beginning and end of the day should be used on surfaces. **Do not use sodium hypochlorite or glutaraldehyde** for surface disinfection.

2. Wipe off all surfaces of gross debris using a moist paper towel.

Using utility gloves and prior to each patient all surfaces in the dental operator that are considered non-critical should be wiped with clean moist paper towels to remove gross debris. Non-critical surfaces are those areas that do not ordinarily contact the patient directly. Examples include chair handles, light handles, x-ray machines, bracket tables, chair back, counter tops and others.

3. Surface Disinfection:

Once the gross debris has been removed the non-critical surfaces should be wiped with an intermediate level disinfectant. A semi-synthetic phenolic is acceptable. The surface should be allowed to air dry. Disinfectant wipes are available throughout the clinic. **Do not use Cidex (Glutaraldehyde) or Bleach for surface disinfection.** All surfaces not covered by barriers that are or possibly have become contaminated must be disinfected.

4. Remove Gloves:

Once the non-critical areas have been disinfected you should remove your utility gloves and wash your hands immediately. The utility gloves should be allowed to air dry.

5. Surface Barriers:

Cover all non-critical areas that are unable to be easily disinfected. The use of plastic bags in an appropriate manner can be accomplished quickly and easily. Do **NOT** use tape to attach plastic or other coverings. Flat surface areas that are non-critical can be covered with non-porous paper to protect the



surfaces. Surface barriers should be used on light handles, triplex syringe handles, suction tubing, counter tops and mobile work surfaces.

6. Headrest Covers:

Headrest covers must be changed between each patient.

7. Disposable Saliva Ejectors, High Speed evacuation Tips and Triplex Syringe Tips:

Saliva ejectors, high speed evacuation and triplex syringe tips MUST NOT be reused. They should be disposed of between each patient.

8. Handpiece:

Prior to a procedure the high speed handpiece should be flushed for 30 seconds.

9. Instruments:

Prior to seating the patient all instruments needed for treatment must be accessible. Instruments used in the deliver of dental care should be considered critical items. Review the procedure and the instruments needed prior to seating the patient. This includes restorative tray, rubber dam tray and clamps, examination tray, burs needed, wedges, matrix bands etc.

10. Work stations:

Once the instruments are set up for patient care and patient care is started, all cabinets, and draws must be closed and **one must not open cabinets or draws while wearing gloves.** If instruments are needed, the gloves should be removed, hands sanitized and then the cabinet or draw opened. The use of an instrument, clean on one end and contaminated on the handle end, can be used to open a draw and remove the instrument. This would eliminate the need to remove gloves.

11. Radiographs:

Prior to seating the patient all pertinent x-rays should be placed on the view box and the patient chart placed **away** from the area of contamination.

12. Gloves, Mask, and Protective Eyewear:

Place a pair of gloves, a mask, and protective eyewear in the operatory. These should be worn after the patient is seated and properly positioned.



13. Seat Patient

B. Once the patient is seated:

1. Patient Position

Prior to putting on gloves, the patient should be seated and positioned according to the procedure to be performed (ie. supine, 45 degrees etc.)

2. Light Position:

Prior to putting on gloves the examination light should be adjusted to provide adequate lighting for the procedure to be done. Doing this may eliminate the need for adjustment later.

3. Handpiece Position:

Prior to putting on gloves the operating unit should be positioned for easy access. This positioning may eliminate the need for adjustment later.

Personal Protective Equipment: (PPE) Gown, Mask, Eyewear and gloves:

4. Protective Eyewear and Mask:

Prior to putting on gloves you should put on a gown, glasses and mask in a comfortable position to proceed with the procedure. This may eliminate the need for adjustment once the procedure has started and thus prevent contamination of the field.

5. Gowns:

Disposable gowns **must** be worn for all procedures except examinations.

6. Wash Hands:

Hands must be washed with soap if visibly contaminated or sanitized if not visibly soiled according to the directions of the manufacturer and aseptic technique. This is described under hand washing.



7. Gloves:

Once hands are clean put on examination gloves. Whenever the practitioner leaves the operatory the gloves must be removed immediately and hands washed or sanitized. Gloves should also be removed if the practitioner wishes to use items not in the operating field.

8. Rubber Dam and High Speed Suction:

The use of isolation and high speed evacuation should be used whenever possible to limit the amount of aerosol and spatter.

9. Instrumentation:

All instruments used in intra-oral procedures should be contained in a single location. This limits the field of contamination.

10. During the Procedure:

One should maintain the operating area in a neat organized manner. During the procedure it may be necessary to stop and reorganize.

11. Sterile Instruments:

Only sterile instruments can be use during the procedure.

12. Patient Dismissal:

Once the procedure is completed remove your gloves, immediately wash your hands, and dismiss your patient.

C. Unit Breakdown:

1. Gloves:

Once the patient is dismissed prepare for unit disinfection and instrument sterilization by putting on utility gloves. The use of heavy industrial rubber gloves is most desirable for this task however latex gloves can be used. These types of gloves must be allowed to air dry before putting them away to prevent cracking, and should be disinfected using a disposable surface wipe.



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2. Needles and Sharps:

Carefully dispose of the syringe needle, any scalpel blades, anesthetic cartridges, Endodontic irrigating syringe, or any other potentially sharp object in the puncture proof sharps containers. Needles should be handled with the utmost care. Recapping **must** be done using the no touch technique, a recapping device or with the assistance of a hemostat or college pliers in a direction away from the operator.

3. Instruments:

Place all instruments used in your intra-oral procedure in a holding solution. This holding solution should be an enzymatic disinfectant this will help loosen debris. The instruments should remain in this solution while cleaning the rest of the dental unit.

4. Remove Barriers:

All disposable coverings and other items should be removed. Care must be taken to make sure that there are not any disposables remaining on or around the dental unit. All disposable barriers that are not blood stained can be placed in normal waste receptacles.

5. Remove Gross Debris:

Using a damp paper towel wipe down areas of possible contamination. These areas include: Chair, counter tops, handles, bracket table, suction tubing and any other areas you may consider as potentially contaminated. The aerosol of the high speed handpiece has a spray area of about 6 feet.

6. Disinfectant wipe:

Using a disinfectant, phenolic, wipe those areas of possible contamination and allow to air dry.

7. Instruments:

While waiting for the chair to dry, wipe gross debris from instruments that are in the holding solution. Use heavy utility gloves. **This is a very common time for percutaneous exposure. Do not pick up a handful of instruments at a time.**



8. Rinse Instruments:

Once debrided, instruments should be rinsed with running water and dried.

9. Sterilization:

Instruments, handpiece, and burs must be steam autoclaved and should be placed on a tray. See appendix for a list of instrument sterilization methods recommended by the ADA. Instrument request forms (IRF) are exchanged for trays when submitted.

10. Process of Instrument Submission:

All items capable of being steam sterilized must be submitted to central sterilization. Prior to submitting the instruments, using heavy utility gloves, gross debris must be removed. Instruments should be placed in their autoclave cassettes. Handpiece should be placed in their cassettes, packaged, dated and labeled with student ID. If instruments are to be transported through the stairwell, they must be wrapped with plastic. Instruments are submitted to the decontamination area and signed for by module staff on the IRF.

11. Handpiece:

Handpiece **must** be autoclaved according to manufacturer's directions. Handpiece should be run for 30 seconds to flush the lines before and after each patient and at the beginning and end of each day.

12. Suction:

At the end of the week the suction should be flushed with enzymatic solution.

13. Remove Utility Gloves:

Once the unit disinfection is complete gloves should be removed and hands washed. The utility gloves should be disinfected and allowed to air dry before storing.

14. Next Patient:

Prior to seating the next patient, start operatory preparation with #5 on the infection control check list titled "**Prior to Seating the Patient**".



15. End of Day:

At the end of the day the dental unit should be turned off and raised in an upright position with the rheostat on the chair. There should not be any disposables on the units, counters and floors. The sink area should be clean. Walls and windows sills - must be cleared of debris.



VI. PARENTERAL EXPOSURE PROTOCOL POLICY AND PROCEDURE

A. Definition of 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 mucous membranes by saliva (in dentistry), blood, or a mixture of both saliva and blood.

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

C. Protocol: In the event of an occupational exposure:

Student Exposure:

1. **Immediately** cleanse the wound thoroughly with soap and water.
2. Inform the faculty member you are working with and a clinic administrator.
3. Inform the patient, with the faculty member and clinic administrator present, of your exposure and discuss the obtainment of permission for blood testing. This can be done through the patient's private physician if they have one or we can refer the patient. This will be done at a cost to the clinic. Assure the patient that there is no risk to them and that it is for your information and reassurance that you need the evaluation.
4. The patient should be screened for HBcAb, HBsAg, HBsAb, HCAb and with an expedited anti-HIV test.



5. The student should go to Student Health (X73400) if before 5 pm or the NYPH emergency room if after 5 pm.
6. Students must complete an incident report and may do so after they present to student health.

Faculty Exposure

1. **Immediately** cleanse the wound thoroughly with soap and water.
2. Inform the patient of your exposure and discuss the obtainment and permission for blood testing. This can be done through the patient's private physician if they have one or we can refer the patient. This will be done at a cost to the clinic. Assure the patient that there is no risk to them and that it is for your information and reassurance that you need the evaluation.
3. Please obtain an incident report in the office of clinic administration. Please complete the form so that we can send it to the University.
4. During clinic hours either contact your private physician or Occupational Health on the first floor of the Harkness Pavilion (X67590).
5. After clinic hours either contact your private physician, or dial N-STIK (Needle-stick hot line) on any medical center phone for instructions, or page the on call infectious disease resident by calling the page operator X62323 or go to the emergency room.

Staff Exposure:

1. **Immediately** cleanse the wound thoroughly with soap and water.



2. Attempt to determine the source of the contamination. If the source is obtainable inform them of the exposure and obtain permission for testing.
3. Discuss with supervisor, fill out incident report.
4. During clinic hours either contact your private physician or Occupational Health on the first floor of the Harkness Pavillion (X67590).
5. After clinic hours either contact your private physician, or dial N-STIK (Needle-stick hot line) on any medical center phone for instructions, or page the on call infectious disease resident by calling the page operator X62323 or go to the emergency room.



VII. TUBERCULOSIS: PROTOCOL, POLICY AND PROCEDURE

Policy: All patients with a history of Tuberculosis or suspected of having Tuberculosis will be handled with a hierarchy of control.

Purpose: To prevent the spread of tuberculosis during clinical dental care.

Procedure: The following will be the procedures for patients who present to the dental clinics with a history of tuberculosis.

1. Treatment should be delayed until a determination of infectious tuberculosis is made.
2. In screening patients for the identification of infectious active tuberculosis the following should be considered.
 - a. A diagnosis of active pulmonary tuberculosis should be considered for all patients with any of the following clinical profiles.
 1. Productive or persistent cough, night sweats, unexplained weight loss or hemoptysis.
 2. Known or suspected HIV infection with cough or fever, even in the absence of "classic" chest x-ray.
 3. Cough and fever, coupled with: (a) significant reaction to tuberculin test, (b) history of significant reaction to a skin test, (c) history of exposure to infectious tuberculosis.
 - b. Any patient with a history of tuberculosis or positive skin test that is scheduled



for dental procedure should be promptly referred for evaluation for possible infectiousness and have clinical evidence that they are noninfectious before elective dental care is provided.

3. Elective dental care should not be performed on patients with active tuberculosis until the patient is rendered noninfectious.

4. In the event that emergent dental care is needed for a patient with active tuberculosis this treatment should be done in a negative pressure room and the staff member must use a respirator mask approved for isolation. This care should be coordinated with the Hospital Dental Service Division of Oral and Maxillofacial Surgery.



VIII. HAZARDOUS MATERIALS

A. INTRODUCTION

The purpose of the Environmental Safety and Hazardous Materials section is to provide you with information that will help protect you against hazardous substances in the workplace of the Columbia University College of Dental Medicine. Within this program you will be informed of the hazardous properties of substances with which you work or come into contact and the handling procedures and measures necessary to protect your self from these substances. The manual explains those situations in which you might be exposed to hazardous substances under normal working conditions or during emergency situations.

The Columbia University Medical Center has an Environmental Health and Safety website on which compliance and MSDS information is available.

<http://ehs.columbia.edu/indexMC.html>

This manual includes a list of materials present in the dental clinics. In addition a file of Material Safety Data Sheets (MSDS) is maintained in the Office of Clinic Administration and in Central Sterilization VC-8.

B. HAZARDOUS CHEMICALS:

A **hazardous substance** is any substance considered to be a physical or health hazard.

A *physical hazard* is any chemical for which there is scientific evidence that it is a combustible liquid or compressed gas, an organic peroxide, or a material that is explosive, flammable, oxidizing, pyrophoric, unstable (reactive), or water-reactive.

A *health hazard* is any chemical or biological substance or agent which is considered to be a carcinogen, a toxic or highly toxic agent, a reproductive toxin, an irritant or corrosive, or an agent which acts on the circulatory system or damages the lungs, skin, eyes, or mucous membranes.



When working with hazardous chemicals:

- Do not use a flame near flammable chemicals.
- Do not eat, drink or smoke in areas where chemicals are used.
- When appropriate, wear protective eyewear and mask.
- Know the proper cleanup procedures for chemicals.
- Dispose of all hazardous chemicals in accordance with Columbia University Medical Center Policies. Requests for chemical waste disposal can be submitted to Environmental Health and Safety at <http://vesta.cumc.columbia.edu/ehs/wastepickup/> or by calling X56780.

Common products handled at the College of Dental Medicine include but is not limited to the following list. Consumer products (products used in the same manner and frequency as they would be at home) and drugs in solid, final form are **not** included in this list.

CHEMICAL NAME	MAY BE FOUND IN
Acid, Nitric	Pickling solutions; some bleaching solutions
Acid, phosphoric	Etching agents; phosphate cements.
Acid, picric	Pickling agents.
Acid, sulfuric	Etchants for alloys; copper plating solutions.
Alcohol, isopropyl	Solvents; wiping agents.
Alcohol, methyl	Denatured alcohol.
Asbestos	Soldering investments, crucible linings.
Beryllium	Base-metal alloys.
Formaldehyde	Sterilizing solutions.



Iodine	Iodophor disinfectants; antimicrobial hand cleaners.
Lead/inorganic lead compounds	Impression materials (some polysulfides)
Liquid petroleum gas	Burners.
Mercury, inorganic	Amalgam.
Mercury, organic	Topical antiseptics.
Methyl acetate	Solvents.
Methyl methacrylate	Denture base resins.
Methylene chloride	Solvents.
Nickel	Steel orthodontic appliances.
Nitrous oxide	Nitrous oxide.
Oil mist, mineral	Handpiece lubricants.
Petroleum distillates	Solvents; waxes; jellies.
Phenol	Disinfectants.
Phthalic anhydride	Resins.
Platinum soluble salts	Impression materials.
Platinum	Casting alloys.
Propane	Burners.
Rouge	Polishing agent.



Silica, amorphous	Composite resins.
Silica, crystalline (quartz)	Composite resins; porcelain; investments.
Silicon carbide	Polishing disks; cutting wheels.
Silver	Amalgam; casting alloys; photographic solutions.
Talc	Gloves.
Tin, inorganic compounds	Amalgam; polishing pastes.
Tin, organic compounds	Impression materials (condensation silicones).
Titanium dioxide	Porcelain; impression materials.
Toluene	Solvents.
Vinyl chloride	Maxillofacial plastics; mouth guard trays
Zirconium compounds	Porcelain; polishing pastes

Descriptions of some of the more prominent materials follow:

Acid-Etch Materials are solutions and gels used with bonding techniques. They usually contain phosphoric acid. Hazards with these materials include eye injury and/or acid burns with possible sloughing of tissue. Appropriate precautions includes::

- Handle acid-soaked material with forceps or gloves.
- Clean up manageable spills immediately or contact Environmental Health and Safety X56780 for assistance. Collect all spill clean-up debris for proper disposal by Environmental Health and Safety. Do NOT throw in regular trash.
- Avoid skin or soft tissue contact.



- Rinse with large amounts of running water in case of eye or skin contact.

Asbestos is used in lining materials for casting rings, crucibles, and some soldering investments. Asbestos hazards include respiratory disease and mesothelioma of the lung. Safety precautions include wearing gloves, protective eyewear, and mask. The College of Dental Medicine has replaced the former materials listed above with the newer ones that do not have asbestos.

Flammable gases include nitrous oxide, oxygen, and liquefied petroleum gas. The main hazard with these materials is fire. To maximize safety:

- Test periodically for leaks.
- Avoid contact between compressed oxygen gas and lubricants or grease.
- Keep sparks or flames away from flammable gases.
- Secure tanks of oxygen and nitrous oxide by chaining them to the wall or placing them in approved cylinder holders to prevent toppling.

Flammable liquids include such solvents as acetone and alcohol. As with flammable gases, the primary hazard is fire or explosion. To maximize safety:

- Store in tightly covered containers.
- Provide adequate ventilation.
- Have fire extinguisher available at locations where these liquids are used.
- Avoid sparks or flames in areas where flammable liquids are used.
- Store any flammable liquid in excess of 10 gallons per location in a flame-proof cabinet.

Mercury is extremely common in dentistry and is used most often in pre-measured amalgam capsules. It is also available in bulk form and found in scrap amalgam. Some associated hazards resulting from mercury exposure include nausea, loss of appetite, diarrhea, fine tremors, depression, fatigue, increased irritability, headache, insomnia, allergic manifestation, contact dermatitis, pneumonitis, nephritis, dark pigmentation of the marginal gingiva, and loosening of the teeth. When working with mercury:

- Work in well ventilated spaces and avoid direct skin contact.
- Store mercury in unbreakable tightly sealed containers away from any source of heat.
- Salvage amalgam scrap and extracted teeth with amalgam. These should be deposited in containers located within the clinic designated for scrap amalgam. When containers are full request clinic administration for disposal by Environmental Health and Safety.
- Call Environmental Health and Safety X56780 for clean up of mercury spills..



Nickel and other metals are found in some dental alloys, gold alloys and solders. Particles can be released during grinding. Hazards associated with these metals include: allergic manifestations and irritation to the eyes and respiratory system. When working with alloys always wear protective eyewear and a mask during grinding procedures.

Nitrous oxide is used in conscious sedation. Nitrous oxide abuse or high exposure levels may cause adverse effects, especially neuropathies and spontaneous abortions. When using nitrous oxide/oxygen for conscious sedation, use the minimal amount necessary to achieve the desired level of sedation. Use a scavenging system and always maintain adequate ventilation. Periodically check nitrous oxide machines, lines, hoses and masks for leaks (use NO₂ Detection Meter for leak check). All areas in which Nitrous Oxide is used are measured for ambient gas on an annual basis.

Organic Chemicals include alcohols, solvents and monomers such as methylmethacrylate and dimethacrylate. The halogen containing organic liquids include: chloroform, carbon tetrachloride and some solvents and cleaners. Some of these chemicals are carcinogens. Hazards include: fire, allergy, contact dermatitis, irritation to mucous membranes, respiratory problems, nausea, liver and kidney damage, cancer, central nervous system depression, headache, drowsiness, and loss of consciousness. The following precautions should be taken:

- Avoid skin contact and excessive inhalation of vapors.
- Work in well ventilated areas. Use chemical fume hood if available.
- Use forceps or gloves when handling contaminated gauze or brushes.
- Keep containers tightly closed when not in use and store all containers on flat sturdy surfaces.
- Clean the outside surfaces of containers after use to prevent residual material from contacting the user.

Radiographic Chemicals are used in the developing and fixing of radiographic film. If used carelessly, they can cause contact dermatitis and irritation of the eyes, nose, throat, and respiratory system from vapors and fine particulates of chemicals. Proper manipulation of these chemicals includes the following:

- Use protective eyewear; wear heavy-duty rubber gloves to avoid skin contact. Wash off chemicals with large amounts of soap and water if contact occurs.
- Minimize exposure to dry powder during the mixing of solutions.
- Work in well ventilated areas.



- Clean up manageable spills immediately or contact Environmental Health and Safety X56780 for assistance. Collect all spill clean-up debris for proper disposal by Environmental Health and Safety.
- .
- Store photographic solutions and chemicals in tightly covered containers.
- Save the lead backing of dental film for recycling.
- Automatic processors have a silver recovery system.
- Portable processors have portable silver recovery systems.
- NOTE: Only Fixer solution should be introduced in to the silver recovery system.

Pickling solutions are strongly acidic liquids used to remove contaminants from the surface of cast metals. They contain metal ions after use; the components may be volatile. If used carelessly, these solutions may cause burning and irritation of the skin and mucous membranes, damage to the eyes, and irritation to the respiratory system. When using pickling solutions:

- Wear safety glasses for eye protection and use forceps to hold the object being pickled.
- Avoid skin contact by wearing heavy-duty rubber gloves.
- Use in well ventilated areas to minimize the formation of airborne droplets. Store solutions in covered glass containers.
- Avoid splattering; do not place hot objects into the solution.

Plaster and other gypsum products are very common dental materials used for study models, diagnostic casts, working models, etc. They contain such compounds as silica and calcium sulfate. Improper or careless handling can cause irritation and impairment of the respiratory system, silicosis, and irritation of the eyes. When handling these powders or trimming models, always wear protective eyewear and a mask, minimize the exposure to powder and work in a well-ventilated area.

C. MATERIAL SAFETY DATA SHEETS (MSDS)

Material Safety Data Sheets contain safety and technical data about a product. These sheets are maintained in the Office of Clinic Administration and in Central Sterilization. The Columbia University Office of Environmental, Health and Safety also maintain this information. This information is available to all faculty, staff and students.



All MSDS sheets must contain the following information in the same order. The detail of each sheet is determined by the extent to which the material is hazardous.

Section I:	Product Identification
Section II:	Hazardous Ingredients
Section III:	Physical Data
Section IV:	Fire and Explosion Hazard Data
Section V:	Health Hazard Data
Section VI:	Reactivity Data
Section VII:	Spill or Leak Procedures
Section VIII:	Special Protection Information
Section IX:	Special Precautions

D. CONTAINER LABELING

All containers must be labeled with the identity of the contents and must show hazard warnings for employee protection. In most cases the manufacturer, supplier or distributor already labels containers. The manufacturer is responsible for labeling products properly. If a product is not labeled when it arrives it must be labeled. In addition if you place the contents in another container it must be labeled.

Accepted guidelines for labeling containers are:

1. All chemicals must retain the original label on the original containers.
2. For highly toxic or flammable chemicals, attach a supplemental National Fire Protection Association (NFPA) label with the appropriate number rating indicated for each hazard (Section IX of the product MSDS).



3. Labels should list at least the chemical identity, appropriate hazard warning, and the name and address of the manufacturer. Products regulated by the FDA are exempt from the requirement.
4. If you transfer chemicals from a labeled container to a portable container intended only for your **immediate** use, no labels are required.

E. HAZARD CATEGORIES OF CHEMICALS/DISINFECTANTS

Chemicals and disinfectants are divided into four categories, based on their toxicity to humans and animals. One method of expressing toxicity is the LD 50: LD means Lethal Dose and 50 refers to the dose in mgs/kg required to kill 50% of the test animals in research laboratory experiments.

The lower the LD 50 the more toxic the chemical. For example and LD 50 of 30 mgs/kg is highly toxic while an LD 50 of 600 mgs/kg would be slightly toxic. The four categories and the signal words that must appear on labels are:

Category I: Highly Toxic LD 50 < 50 mg/kg

Labels in this category must contain the following:

1. The signal words DANGER and POISON
2. A skull and cross bones symbol
3. The instruction "Call a physician immediately" in case of accidental poisoning
4. An antidote statement

Category II: Moderately Toxic LD 50 50-500 mg/kg

Labels in this category must contain the following:



1. The signal word WARNING must appear.

Category III: Slightly Toxic LD 50 >500 mg/kg

Labels in this category must contain the following:

1. The signal word Caution.

Category IV: Relatively Non-Toxic

These chemicals have little or not toxicity. Labels in this category must contain the following:

1. The signal words are Keep out of reach of children.

For certain chemicals, special caution statements such as the following may be required on the label:

- Flammable
- Use only in closed systems
- Do not contaminate surfaces used in food preparation.

F. CHEMICAL/DISINFECTANT SAFETY

Safety in the use of chemicals and disinfectants begins with an understanding of some definitions:



Toxicity: Acute (short term) toxicity is a measure of how poisonous a chemical is after a single exposure. A chemical with a high acute toxicity can be deadly if even a very small amount is absorbed. Chronic (long-term) toxicity is a measure of how poisonous a chemical is after small, repeated doses over a period of time.

Hazard: is the potential for exposure to a chemical or other hazardous material. Even slightly toxic materials can be very hazardous if the person using them is careless during use and allows him or herself or others to come in contact with excessive amounts of the material.

Storage:

Always store chemicals in their original containers with readable labels. Keep lids tight when containers are not being used. Check containers periodically for corrosion, leaks, breaks etc. so that faulty containers may be disposed of or replaced before they constitute a hazard. Never store chemicals near food or drugs, and never permit anyone to eat in a room where chemicals are stored.

Mixing:

Each time you use a chemical, read the directions for mixing before you open the container. Always use gloves and protective eyewear when using chemicals. When pouring, keep the container and chemical below eye level to avoid splash or spill on your glasses or face.

Measure carefully when mixing chemicals using only the amount called for on the label. Do not mix or transfer unless there is good light and ventilation.

Empty chemical containers should not be converted for storing other materials.

G. MANAGING EMERGENCIES WITH HAZARDOUS MATERIALS



Chemical Spills:

Common sense is important in managing emergencies with hazardous materials. Eye wash stations are located within the laboratory and dental clinics. In the event of splatter to one's eyes they should be used. A first aid kit for minor injuries is located in the VC-8-218 laboratory. If it is used please inform the laboratory manager so that items may be replaced. In addition the injury should be reported to clinic administration so an incident report may be filed.

➤ In the event of an unmanageable spill vacate and confine the area and call Environmental Health and Safety X56780. In the event of a small, manageable spill use the spill kits available at the dispensary on each floor. If you are unsure what to do please call Environmental Health and Safety X56780 and a floor administrator.

A spill kit with instructions is available at each clinic dispensary. Wear utility gloves, safety glasses and mask during the clean up. For spills of less than one gallon, the nature of the cleanup depends on whether the chemical is acid-based or alkaline-based.

Acid-based spills: Pour material provided in the kit on the spill. After the fizzing stops sweep up the mixture and dispose according to environmental safety direction.

Alkaline-based spills: Absorb with the material provided in the kit. Sweep up the mixture and dispose according to environmental safety direction.

Fire:

The fire safety procedures for the dental clinic are to use the fire system used by the New York Presbyterian Hospital which has been reviewed and approved by the Department of Health. If the fire is small try and extinguish it using the fire extinguisher. In the event of a large fire call X64444 to report it. The department of fire safety reviews fire safety annually.

Portable fire extinguishers are designed to put out small fires or contain them until the fire department arrives. They are not meant to fight large or spreading fires. There are four different types



of fires:

- Type A: Ordinary combustibles such as wood, cloth, paper, rubber and many plastics.

- Type B: Flammable liquids (gasoline, oil, grease, tar) and flammable gases.

- Type C: Energized electrical equipment (wiring, fuses boxes, circuit breakers, machinery and appliances).

- Type D: Combustible metals such as magnesium, potassium, etc.

Be certain you are fighting a fire with the proper extinguisher. It is particularly dangerous to use water or a Type A extinguisher on a grease or electrical fire.

To operate a fire extinguisher, pull the pin and aim low, pointing the extinguisher nozzle at the fire's base. Squeeze the handle to release the extinguishing material and sweep from side to side. Keep the extinguisher aimed at the base of the fire and sweep back and forth until it appears to be out.

Medical Emergency:

A house phone extension is located directly outside the North door of the VC-8-218 laboratory.

Response to medical emergencies is contained in the Medical Emergency Response Manual Section of this book. Important medical emergency numbers are listed below:

Medical Emergency Numbers:

Oral Surgery X65690



Cardiac Arrest X63333

Security X78100

Medical emergency carts are located on each floor of the clinics in the following locations:

VC-7 Oral Surgery

VC-8 Central Sterilization

VC-9 Emergency Alcove at the entrance of the general clinic

Poison Control:

The number to reach the poison control center in New York 764-7667

H. TRAINING:

Everyone who works within the School is potentially exposed to hazardous chemicals, materials and blood borne pathogens. Training sessions are done annually.



APPENDIX

Policy Statements

Clinical Affairs regarding blood borne infectious diseases.

Student Affairs regarding infectious diseases.

Infection Control Recommendations for the Dental Office and the Dental Laboratory. JADA Vol 127. May 1996, pp 672-680.

RECOMMENDED READING

Recommended Guidelines for Infection Control in Dental Health-Care Settings --- 2003 MMWR December 19, 2003 / 52(RR17);1-61 <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm>

Recommended Infection Control Practices for Dentistry 1993. MMWR

May 28, 1993 Vol 41 No. RR-8. pp. 1-12

Update: Universal Precautions for Prevention of Transmission of the Human Immunodeficiency Virus, Hepatitis B Virus and other Bloodborne Pathogens in Health-Care Settings. MMWR June 24, 1988 Vol. 37 No. 24 pp. 377-388.

Recommendations for Preventing Transmission of HIV and Hepatitis B Virus to Patients During Exposure Prone Invasive Procedures. MMWR, July 12, 1991. Vol. 40 No. RR-8

"A Matter of Policy" JADA Vol. 122. August 1991 pp. 45-48.



"When your patients ask about HIV and Infection Control" JADA Vol. 122

August 1991 p. 49

"A Cautionary Tale for Our Times" JADA Vol. 123. March 1992 pp.44-80.



POLICY STATEMENT:

Clinical Affairs Policy Regarding Individuals with Bloodborne Infectious Diseases

1. A written asepsis, infection and hazard control manual is annually distributed to all clinical students, staff and faculty.
2. Attestation is received from students, staff and faculty for compliance with the policy and procedures of the asepsis, infection and hazard control manual.
3. All patients are accepted for treatment that meet educational guidelines and are treated in compliance with the patient bill of rights.
4. All patients are treated under "standard precautions". This refers to the method of infection control in which all blood and body fluids are treated as potentially infectious.
5. All designated infectious waste is disposed of by Columbia University in compliance with all state and city regulations.

This statement is available to all students, staff and faculty from the Office of Clinic Administration and the Office of Student Affairs.



POLICY STATEMENT

Student Affairs Policy Regarding Students and Infectious Diseases

Accidental exposure to infectious disease agents in spite of all appropriate precautions is a risk faced by the population at large and by all health care professionals in particular. Health care professionals must learn about and consider using available immunizations and precautions regarding known disease entities.

I. Hepatitis B

It is the policy of the College of Dental Medicine that all newly enrolled students must present to the Student Health Service an original or copy document of a laboratory titer test result demonstrating immunity to the Hepatitis B virus. If a student has a negative titer, i.e., has not been immunized nor has had Hepatitis B or such documentation is not available, students at their own option must do one of the following:

- A) With a physician of your selection begin the immunization process with a Hepatitis B vaccine (e.g. Recombivax or other). Immunization requires 3 injections over several months, or
- B) Begin the process of immunization with the Student Health Service

It is important to note that a "letter" from your physician is **not** acceptable as evidence of sufficient antibody levels; an actual copy of the laboratory report giving exact antibody levels to the hepatitis B virus is necessary.

II. Tuberculosis



Tuberculosis incidence has increased in recent years. All health care professionals are required to be tested for infection annually. The student Health Service performs this test as part of the covered services. If a student has reason to expect infection, e.g., known exposure with compromised barrier protection or the development of symptoms, more frequent testing is available by appointment at Student Health.

III. Immunizations

New York State **by law** requires immunity to mumps, measles, and rubella. Immunity to MMR must be documented. Student Health provides these services.

This statement is available to all students, staff and faculty from the Office of Clinic Administration and the Office of Student Affairs.



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I. OSHA STANDARD

A complete copy of the OSHA standard for Bloodborne Pathogens is available in the Office of Clinic Administration and on the OSHA web site:^A The Occupational Safety and Health Administration has published a standard to protect employees from occupational exposure to Bloodborne pathogens. This standard sets forth the specific requirements OSHA believes will help prevent the transmission of Bloodborne disease to employees. OSHA's rule is largely based on the Centers for Disease Control recommendations concerning Standard precautions to prevent HBV, HCV and HIV transmission. A copy of the Standard is included in the appendix of this section.



II. EPIDEMIOLOGY, MODES OF TRANSMISSION AND SYMPTOMS OF BLOODBORNE DISEASES

A. Hepatitis B (HBV)

1. **Epidemiology:** Workers with occupational exposure to blood have a prevalence of serum markers to HBV (Hepatitis B Virus) in excess of the general population. These markers indicate previous infection. The high number of individuals with serum HBV markers is related to the number of exposures to blood and/or needles but not patient contacts. High risk groups for hepatitis B include, among others, operating room staff, blood drawers, surgeons, dental professionals, and blood bank technicians.

2. **Modes of Transmission:** Blood and body fluids contaminated with blood contain the highest quantities of virus and are the most likely sources of HBV transmission. Certain other body fluids such as saliva contain infectious virus but at 1000th of the concentration found in whole blood. Lesions, dermatitis and injuries on the hands may provide a route of entry for the virus. In addition, transfer may occur via contaminated inanimate objects or environmental surfaces.

3. **Symptoms:** About 33% of infected individuals have no symptoms when infected with HBV, 33% have mild flu like symptoms that are usually not diagnosed as HBV and the remaining 33% have a much more severe course of the illness. This includes jaundiced (yellow skin), dark urine, extreme fatigue, loss of appetite, nausea, stomach pain and sometimes-joint pain, rash and fever. There are about 300-500 infections in Health Care Workers annually.

C. Hepatitis C:

1. **Epidemiology:** There are approximately 30,000 new cases per year and mostly are caused due to illegal injection of drugs. Transfusion associated cases are rare and occur in less than one per 2 million transfused units of blood. It is estimated that 3.9 million (1.8%) Americans have been infected of whom 2.7 are chronically infected. The risk of perinatal HCV transmission is about 4%. People at risk include: IV drug users, hemodialysis patients, patients with undiagnosed liver problems, infants born to infected mothers, healthcare workers.



2. Modes of transmission: Occurs when blood from an infected person enters the body of a person not infected. Spread primarily through the sharing of needles.
3. Symptoms: 80% of those infected have no symptoms. Those that do primarily suffer from jaundice, fatigue, dark urine, abdominal pain, loss of appetite and nausea. Long term effects of HCV include: 55-85% are chronically infected while 70% of those have chronic liver disease. 1 to 5% of these chronically infected individuals will die from their liver disease. It is the leading indication for a liver transplant.

B. Human immunodeficiency virus infection (HIV)

1. Epidemiology: Although there have been over 1 million cases of HIV in the United States only a very small number (57 as of December 2001) of HIV infections have been documented in healthcare workers with no other risk factors. The transmission in these few cases involved needle sticks, extensive contact with blood to mucous membranes and/or open skin lesions.
2. Modes of Transmission: Although HIV has been isolated in many body fluids only epidemiologic evidence of transmission has been with blood, semen, vaginal secretions and possibly breast milk. Documented modes of transmission include: engaging in sexual intercourse with an HIV-infected person, using needles contaminated with the virus, having parenteral, mucous membrane, or non-intact skin contact with HIV-infected blood, blood components, or blood products, +receiving transplants of HIV-infected organs and tissues, receiving transfusions of HIV-infected blood, and perinatal transmission(from mother to child around the time of birth).

The amount of virus in the fluid may be very important in the likelihood of transmission since there is a greater probability of infection from contaminated blood products than from accidental exposure

3. Symptoms: Within a month after exposure the individual may experience a flu-like illness. Signs and symptoms may include: fever, swollen glands, aches in joints and muscles, diarrhea, fatigue and rash. This is usually self-limiting and is followed or accompanied by the development of antibodies to HIV. Following this acute illness the patient experiences a continuum of events. Initially the patient is without symptoms and apparently healthy. This may last sometimes longer than 10 years. The individual



will develop symptoms uniquely associated with a later stage of HIV infection that is classified as acquired immune deficiency syndrome of AIDS. Some of these signs and symptoms are persistent swollen glands, fever for more than a month, significant weight loss, persistent diarrhea or a combination of these. An individual with HIV infection is considered to have AIDS when one or more so-called indicator diseases has been diagnosed. The most common of these diseases are: pneumocystis carinii pneumonia, esophageal candidiasis, dementia and cancers such as Kaposi's sarcoma and non-Hodgkin's lymphoma. An HIV infected person is also considered to have AIDS if they have a blood count of less 200/mm³ of CD4. The CD4 cell is the primary target for HIV. The decreased number of these cells is directly related to the severity of the illness.

C. Other Blood Borne Pathogens

1. Herpes Simplex:

a. Epidemiology: The virus is prevalent in almost the entire population. This has been proven by serological markers.

b. Modes of Transmission: The virus is not carried in the blood but is found in secretions associated with open sores ie. cold sores. The virus primarily is located in the routes of several nerve ganglia.

c. Symptoms: Associated with the virus are open sores. Most individuals are infected at a very early age and the primary infection goes unnoticed. However at a later stage the symptoms include flu like prodromal illness associated with oral sores.



III. EXPOSURE CONTROL PLAN

- A. Location: The location of the exposure control plan for Columbia University College of Dental Medicine is in the Office of Clinic Administration (PH. 7 Stem) and on the Columbia University College of Dental Medicine intranet. The College of Dental Medicine adheres to Standard Precautions.
- B. Contents: The contents of the exposure control plan is explained on an annual basis and updated, as needed, during the course of the year.
- C. Training: The training of employees takes place by the office of clinic administration in conjunction with the Office of Environmental Safety during an annual staff development day so that interaction of questions and answers can take place. This training takes place during work hours. The written information that is to be presented is distributed.
- D. Explanation: The Exposure Control Plan is a document that outlines those employed individuals who have potential occupational exposure to bloodborne pathogens, how to prevent possible exposure, what to do in case of exposure, training methods to help prevent exposure, and record keeping.



IV. RECOGNITION OF TASKS AND ACTIVITIES THAT MAY INVOLVE EXPOSURE

A. Definition of Tasks: Tasks that involve contact with blood or other potentially infectious materials and mucous membranes may result in exposure to bloodborne pathogens. Items contaminated with blood or other potentially infectious materials can also result in occupational exposure.

B. Jobs at Risk:

1. Dentist: In providing care and handling instruments a dentist has the potential for occupational exposure. Tasks that are of high risk include:

- a. Recapping of needles without using a device or a one handed technique.
- b. Removal of anesthetic cartridge and needle from syringe.
- c. Passing of instruments during a procedure.
- d. Giving an injection of anesthetic, using a scalpel, and using a handpiece in a poorly visualized field.
- e. Scraping oneself with handpiece and contaminated bur.
- f. Cleaning and disinfecting instruments and dental equipment.

2. Dental Hygienist: In providing care and handling instruments a hygienist



has the potential for occupational exposure. Tasks that are of high risk include:

- a. Use of scaling instruments during patient care.
- b. Passing of instruments during a procedure.
- c. Cleaning and disinfecting instruments and dental equipment.
- d. Use of ultrasonic scaler and prophy angle during procedures.

3. Dental Assistants: During procedures, handling of instruments, processing of instruments and setting up the dental operatory a dental assistant has the potential for occupational exposure. Tasks that are of high risk include:

- a. Processing of instruments for sterilization.
- b. Passing of instruments during a procedure.
- c. Disinfection of operatory.
- d. Disassembly of syringes and deposit of cartridges into sharps containers

4. X-ray Technicians: During the taking of radiographs, processing of radiographs, processing of radiographic instrumentation and room preparation the technician has the potential for occupational exposure. Tasks that are of high risk include:



- a. Placing and removing radiographs intra-orally.
- b. Unwrapping and processing radiographs.
- c. Disinfecting the operatory in preparation for the next procedure.
- d. Preparing intra-oral radiographic devices for sterilization.

5. Supply and Sterilization clerk: During the processing of instruments for sterilization the module supply clerk has the potential for occupational exposure. Tasks that are of high risk include:

- a. Handling of cassettes and processing instruments for sterilization by ultrasonic cleaning.
- b. Ultrasonic cleaning of instruments prior to packaging.

6. Dental Technicians: During the processing of dental work in the laboratory the technician has the potential for occupational exposure. Tasks that are of high risk include:

- a. Handling of intra-oral devices that have not been disinfected.
- b. Handling of oral impressions that have not been disinfected.
- c. Processing of intra oral prosthesis.



7 Equipment maintenance: During the maintenance of dental equipment the technician has the potential for occupational exposure. Tasks that are of high risk include:

- a. Repair of suction lines within dental units.
- b. Repair of dental units and the internal lines within the unit.

C. The following positions have no occupational exposure:

1. Senior Dental Receptionist
2. Dental Receptionist
3. Administrative assistant
4. Record Room Clerk



V. METHODS TO REDUCE EXPOSURE

The use and limitations of methods that will prevent or reduce exposure, including, appropriate engineering controls, work practices, and personal protective equipment (PPE).

A. Standard Precautions: All patients and all instruments and materials used in the care of these patients shall be considered infectious. Therefore all methods used to reduce the risk of exposure should be done with all patients.

B. Work practice and engineering controls: These controls are used to reduce exposure risk. They include the following:

1. Handwashing and Alcohol Hand Sanitation: All employees must wash their hands at the beginning of the day, prior to wearing gloves, immediately after removing gloves, as soon as possible after an exposure, after eating and after going to the lavatory. Handwashing when done in connection with patient care should be done with soap. The use of alcohol sanitizers may be substituted when hands are not visibly soiled. However hands still must be washed with soap and water at the beginning of the day and after using the lavatory.

2. Sharps Disposal: Contaminated sharps include: Needles, scalpel blades, anesthetic cartridges, endodontic irrigating syringes, endodontic files, burs, and orthodontic wires. Needles should not be bent or broken. Needles should not be recapped unless done with a one handed scoop technique or a recapping device. On an annual basis, using suggestions and data recapping devices are evaluated for their appropriateness in the dental health care arena.

All sharps must be disposed of in sharps containers. Sharps containers must be located in areas close to the area of use. Containers are maintained in the clinical area and central module supply. Sharps containers are puncture resistant red containers. They **must never** be overfilled.

3. Eating and personal habits: Eating, drinking, applying cosmetics and handling of contact lenses is **prohibited** in areas that have potentially infectious materials. This



includes: Any clinical area, laboratory, module supply, and sterilization areas.

4. Minimizing of exposure: All procedures i.e. patient care, instrument processing, and operatory preparation should be performed in a way to minimize aerosol and splashing. This includes the use of high speed evacuation, covering ultrasonic cleaners and rinsers driers.



VI. TYPES OF PERSONNEL PROTECTIVE EQUIPMENT (PPE), THEIR USE, LOCATION, THEIR REMOVAL, DISPOSAL, AND/OR DECONTAMINATION

A. Masks: Masks must be worn whenever an aerosol or splatter could result in mucous membrane contamination. If this is during patient care it should be changed for each patient. During the processing of instruments the same mask can be worn. The mask must be changed if it becomes wet or moist. Masks are readily available in all patient care locations. Masks should be removed upon leaving the clinical area or the area in which they were used for protection. They should not be worn in other areas. Upon removal they can be disposed of in normal non-regulated waste unless they are saturated with blood.

B. Protective eyewear: Protective eyewear must be worn whenever an aerosol or splash or splatter could result in mucous membrane contamination. Eyewear must have side shields or be of a full face shield type. If this is during patient care it should be changed for each patient or disinfected between patients. During the processing of instruments the same eye protection can be worn and changed once a day or disinfected. Protective eyewear should be readily available in all patient care locations and at the module supply desk. The eyewear should be removed or disinfected prior to leaving the clinical area or the area in which they were used for protection. Eyewear can be reused by disinfecting with a low level disinfectant.

C. Gloves:

1. Industrial Heavy Gloves: These gloves are used for the processing of instruments, disinfection of the dental unit and operatory areas and the removal of sharps used in patient care. They should be located in all areas in which processing of instruments and disinfection is done. This includes central module supply and clinical areas. Once contaminated they can be disinfected using a high level disinfectant. They should be disposed of and replaced once there are signs of wear and/or cracking. The gloves should not be stored wet but should be allowed to air dry. Hands should be washed or alcohol sanitized after removal of these gloves.

2. Non-sterile Latex gloves for patient care: These gloves are used during the provision of patient care in which non-sterile gloves are acceptable. These gloves should be located in all clinic areas and have sufficient sizes to offer adequate tactile sense for the procedure. Hands should be washed or alcohol sanitized prior to placing these gloves on and after removal. These gloves can be disposed of in normal waste



unless saturated with blood.

3. Sterile Latex gloves: These gloves should be used as described above for non-sterile latex gloves but should be reserved for those procedures that require sterile gloves.

 4. Non-Latex gloves: These gloves can be substituted for Non-Sterile Latex Gloves for those allergic to latex. These gloves should be disposed of in non-regulated waste receptacles unless visibly soiled with blood. They should never be washed and reused.
- D. Gowns: The use of gowns in the protection of personal clothing must be done during procedures in which aerosol or splatter will occur.
1. Disposable Fluid Resistant Gowns: These gowns should be worn by dentists, hygienists, dental assistants, module supply, laboratory technicians, x-ray technicians and equipment technicians whenever aerosol and or splashing can occur to protect personal clothing. These gowns are available at the module supply areas. The gowns should not be worn outside the clinical areas of VC-7, VC-8 and VC-9. They should be deposited in the non regulated waste bins. These gowns should be used during instrument decontamination.
- E. Other equipment:
1. Head coverings and shoe coverings are not needed in the out-patient dental setting. Other than in the central sterilization area.



VII. SELECTION OF PERSONNEL PROTECTIVE EQUIPMENT ACCORDING TO JOB AND TASK

A. Gloves: Gloves must be worn whenever you anticipate contact with blood, saliva, mucous membranes or blood contaminated objects or surfaces. The type of glove depends on the job, the tactile sense needed, comfort and task to be performed.

1. Latex: These gloves offer most tactile sense but least protection from sharp instruments. They should be used during patient care activities.
2. Utility: These gloves offer most protection from sharp instruments but least amount of tactile sense. They should be used when processing instruments for sterilization.

B. Masks: Masks must be worn to protect the mucous membranes of the nose and mouth from exposure to blood and saliva during splash, spatter or aerosolization. True spatter as opposed to aerosol is more of a risk and occurs during use of the air-water syringe, cavitron and the processing of instruments.

1. Fit: The mask must fit snugly around the nose and mouth area.
2. Change: The mask must be changed between patients or when it has become saturated with moisture. Remove it as soon as you are finished and do not leave it hanging around your neck.

C. Protective Eyewear: Protective eyewear must be worn to protect the mucous membranes of the eyes from projectiles and spatter of blood and saliva. Spatter is a greater risk than aerosol. Thus those procedures that produce spatter, splash and aerosol require the use of protective eyewear. Those procedures include: The use of ultrasonic equipment, air-water syringe, processing of instruments and others.



1. Eye glasses and side shields: Prescription glasses may be used as long as side shields are in place.
 2. Goggles: Protective goggles can be worn.
 3. Face Shields: May be used instead of glasses or goggles, however a mask must still be used.
- D. Gowns: Protective disposable gowns must be used during patient care. The gowns should be fluid resistant. These gowns will be supplied by the College. They must not leave the clinical area.
- E. Location of Personnel Protective Equipment:
1. Gloves: Latex Gloves will be located at the module supply areas and throughout the clinical areas. Each employee will maintain their own utility gloves and keep them in an area that is readily accessible.
 2. Masks: Masks will be located at the module supply areas and throughout the clinical areas.
 3. Eyewear: Each employee will be given their own safety glasses with side shields. If side shields are requested for their prescription glasses they will be provided.
 4. Gowns: Disposable gowns will be available on each clinical floor in designated areas.



VIII HEPATITIS VACCINE

A. Background: Hepatitis B is a major health hazard for members of the dental health care team. In 1982 a vaccine was developed and recommended for all dental health care providers. The original vaccine was derived from human serum. In 1986 a new vaccine derived from recombinant DNA using yeast was developed. Both vaccines are considered to be safe and effective in producing immunity to HBV. The vaccine is administered in three doses. The second injection is given one month after the first and the third 5 months after the second. Health Care Workers should be tested for anti-HbsAg 1-2 months after the completion of the 3 dose series. If negative they should undergo a second 3 dose series or evaluated to be HbSAg positive.

1. Efficacy: The vaccine is very effective in the prevention of contraction of HBV. Over 90% of individuals convert to Antibody positive after being administered the vaccine series.

2. Safety: To date no severe side effects have been reported from recipients of either vaccine. The major side effect is pain at the injection site. At times a mild fever may develop.

3. Benefits: The benefit of becoming antibody positive from the vaccine is immunity to Hepatitis B virus and thus from contracting the disease and thus preventing the mortality and morbidity associated with it.

B. Availability: The vaccine is available to all at risk employees at no cost to the employee. It is administered by the Occupational Health Service. It will not be administered to: 1) employees who have previously completed the hepatitis B vaccination series, 2) employees who have immunity to hepatitis B or 3) employees in which it is medically contraindicated.

C. Declination: Employees who decline the vaccination after being informed of its' benefits and its' risks will be asked to sign a statement of declination. However employees who continue to be employed and are at risk may request the vaccination at any time. All individuals who receive the vaccine do not develop immunity to HBV. Students are required to be vaccinated.



IX. ACTIONS TO TAKE IN THE EVENT OF EXPOSURE TO BLOODBORNE PATHOGENS

A. Definition of Exposure: An exposure incident is a specific eye mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that result from the performance of an employees duty. An example is a puncture with a contaminated instrument.

B. Cleanse the Area: Immediately after exposure the area should be cleaned with soap and water. The soap used in the clinical area is adequate.

C. Source identification: The employee should make every effort to identify the source. Testing the source individual's blood cannot be done in New York without written consent of the individual. Thus the source individual may decline testing. The employee should contact their supervisor or any other clinic supervisor. Every attempt will be made to have the source patient tested. As soon as the results of the source individual's blood tests are known they are made available through consultation with Occupational Health.

D. Accident report: The employee (Faculty and Staff) must report the incident to their supervisor and clinic administration. An incident report must be completed, however in the case of an exposure this can be done after reporting to Occupational Health.

E. Occupational Health (Harkness 1 South X57590): The employee (Staff and Faculty) Must report to Occupational Health as outlined in the "Parenteral Exposure Protocol Policy and Procedure" located in the Infection Control and Environmental Hazards and Materials Manual. All medical information pertaining to an exposure is maintained in Occupational Health not in the medical record. All counseling and medical advise is handled through Occupational Health. All testing and information is maintained in confidence. The employee has the right to decline testing. Occupational Health will keep the employee informed of all results and follow-up care and counseling.

F. Student Incident Report: Students with an exposure must complete a university incident report. However this does not have to be done for 48 hours.



G. Student Health: Students must inform student health (X53400) as outlined in the "Parenteral Exposure Protocol Policy and Procedure" located in the Infection Control and Environmental Hazards and Materials Manual.

X. LABELING:

A. Biohazard Labels: Identification of all items that do not come in specific containers with biohazard labels will be so labeled.

B. Standard Precautions: Standard precautions are used at Columbia University College of Dental Medicine and thus specific labels are only used in circumstances that warrant.


C. Laundry: Contaminated laundry bins will be so designated with red bags. These are located in the Oral Surgery Clinic.

D. Material Safety Data Sheets (MSDS): Are maintained in the Central Sterilization Area, and the Office of Environmental Health and Safety. They are also available through the website of the Office of Environmental Health and Safety



Contents – BloodBorne Pathogens

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- **Part Number:** 1910
 - **Part Title:** Occupational Safety and Health Standards
 - **Subpart:** Z
 - **Subpart Title:** Toxic and Hazardous Substances
 - **Standard Number:** 1910.1030
 - **Title:** Bloodborne pathogens.

 - **Appendix:** A
-

[1910.1030\(a\)](#)

Scope and Application. This section applies to all occupational exposure to blood or other potentially infectious materials as defined by paragraph (b) of this section.

[1910.1030\(b\)](#)

Definitions. For purposes of this section, the following shall apply:

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.



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

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

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

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

Director means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Needleless systems means a device that does not use needles for:

(1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (2) The administration of medication or fluids; or (3) Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from



the performance of an employee's duties.

Other Potentially Infectious Materials means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

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

Production Facility means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

Regulated Waste means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Research Laboratory means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

Sharps with engineered sharps injury protections means a nonneedle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

Sterilize means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.



Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

[1910.1030\(c\)](#)

Exposure Control --

[1910.1030\(c\)\(1\)](#)

Exposure Control Plan.

1910.1030(c)(1)(i)

Each employer having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure.

[1910.1030\(c\)\(1\)\(ii\)](#)

The Exposure Control Plan shall contain at least the following elements:

[1910.1030\(c\)\(1\)\(ii\)\(A\)](#)

The exposure determination required by paragraph (c)(2),

[1910.1030\(c\)\(1\)\(ii\)\(B\)](#)

The schedule and method of implementation for paragraphs (d) Methods of Compliance, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, (g) Communication of Hazards to Employees, and (h) Recordkeeping, of this standard, and

1910.1030(c)(1)(ii)(C)

The procedure for the evaluation of circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of this standard.

1910.1030(c)(1)(iii)

Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.1020(e).

[1910.1030\(c\)\(1\)\(iv\)](#)

The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:

[1910.1030\(c\)\(1\)\(iv\)\(A\)](#)



Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens;
and

[1910.1030\(c\)\(1\)\(iv\)\(B\)](#)

Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

[1910.1030\(c\)\(1\)\(v\)](#)

An employer, who is required to establish an Exposure Control Plan shall solicit input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the solicitation in the Exposure Control Plan.

[1910.1030\(c\)\(1\)\(vi\)](#)

The Exposure Control Plan shall be made available to the Assistant Secretary and the Director upon request for examination and copying.

[1910.1030\(c\)\(2\)](#)

Exposure Determination.

[1910.1030\(c\)\(2\)\(i\)](#)

Each employer who has an employee(s) with occupational exposure as defined by paragraph (b) of this section shall prepare an exposure determination. This exposure determination shall contain the following:

[1910.1030\(c\)\(2\)\(i\)\(A\)](#)

A list of all job classifications in which all employees in those job classifications have occupational exposure;

[1910.1030\(c\)\(2\)\(i\)\(B\)](#)

A list of job classifications in which some employees have occupational exposure, and

[1910.1030\(c\)\(2\)\(i\)\(C\)](#)

A list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs and that are performed by employees in job classifications listed in accordance with the provisions of paragraph (c)(2)(i)(B) of this standard.

[1910.1030\(c\)\(2\)\(ii\)](#)

This exposure determination shall be made without regard to the use of personal protective equipment.

[1910.1030\(d\)](#)

Methods of Compliance --

[1910.1030\(d\)\(1\)](#)



General. Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

[1910.1030\(d\)\(2\)](#)

Engineering and Work Practice Controls.

[1910.1030\(d\)\(2\)\(i\)](#)

Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

1910.1030(d)(2)(ii)

Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

[1910.1030\(d\)\(2\)\(iii\)](#)

Employers shall provide handwashing facilities which are readily accessible to employees.

1910.1030(d)(2)(iv)

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

[1910.1030\(d\)\(2\)\(v\)](#)

Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

[1910.1030\(d\)\(2\)\(vi\)](#)

Employers shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

[1910.1030\(d\)\(2\)\(vii\)](#)

Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited.

[1910.1030\(d\)\(2\)\(vii\)\(A\)](#)

Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.

[1910.1030\(d\)\(2\)\(vii\)\(B\)](#)



Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

[1910.1030\(d\)\(2\)\(viii\)](#)

Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:

1910.1030(d)(2)(viii)(A)

Puncture resistant;

1910.1030(d)(2)(viii)(B)

Labeled or color-coded in accordance with this standard;

1910.1030(d)(2)(viii)(C)

Leakproof on the sides and bottom; and

1910.1030(d)(2)(viii)(D)

In accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps.

[1910.1030\(d\)\(2\)\(ix\)](#)

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

1910.1030(d)(2)(x)

Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.

[1910.1030\(d\)\(2\)\(xi\)](#)

All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

1910.1030(d)(2)(xii)

Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

[1910.1030\(d\)\(2\)\(xiii\)](#)

Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

1910.1030(d)(2)(xiii)(A)

The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens/containers remain within the facility.



Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens/containers leave the facility.

1910.1030(d)(2)(xiii)(B)

If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.

1910.1030(d)(2)(xiii)(C)

If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.

1910.1030(d)(2)(xiv)

Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

1910.1030(d)(2)(xiv)(A)

A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.

1910.1030(d)(2)(xiv)(B)

The employer shall ensure that this information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, prior to handling, servicing, or shipping so that appropriate precautions will be taken.

1910.1030(d)(3)

Personal Protective Equipment --

1910.1030(d)(3)(i)

Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

1910.1030(d)(3)(ii)

Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was



the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgement, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

[1910.1030\(d\)\(3\)\(iii\)](#)

Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

[1910.1030\(d\)\(3\)\(iv\)](#)

Cleaning, Laundering, and Disposal. The employer shall clean, launder, and dispose of personal protective equipment required by paragraphs (d) and (e) of this standard, at no cost to the employee.

[1910.1030\(d\)\(3\)\(v\)](#)

Repair and Replacement. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

[1910.1030\(d\)\(3\)\(vi\)](#)

If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

[1910.1030\(d\)\(3\)\(vii\)](#)

All personal protective equipment shall be removed prior to leaving the work area.

[1910.1030\(d\)\(3\)\(viii\)](#)

When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

[1910.1030\(d\)\(3\)\(ix\)](#)

Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.

[1910.1030\(d\)\(3\)\(ix\)\(A\)](#)

Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

[1910.1030\(d\)\(3\)\(ix\)\(B\)](#)

Disposable (single use) gloves shall not be washed or decontaminated for re-use.



1910.1030(d)(3)(ix)(C)

Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

1910.1030(d)(3)(ix)(D)

If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:

1910.1030(d)(3)(ix)(D)(1)

Periodically reevaluate this policy;

1910.1030(d)(3)(ix)(D)(2)

Make gloves available to all employees who wish to use them for phlebotomy;

1910.1030(d)(3)(ix)(D)(3)

Not discourage the use of gloves for phlebotomy; and

1910.1030(d)(3)(ix)(D)(4)

Require that gloves be used for phlebotomy in the following circumstances:

1910.1030(d)(3)(ix)(D)(4)(i)

When the employee has cuts, scratches, or other breaks in his or her skin;

1910.1030(d)(3)(ix)(D)(4)(ii)

When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and

1910.1030(d)(3)(ix)(D)(4)(iii)

When the employee is receiving training in phlebotomy.

[1910.1030\(d\)\(3\)\(x\)](#)

Masks, Eye Protection, and Face Shields. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

1910.1030(d)(3)(xi)

Gowns, Aprons, and Other Protective Body Clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.



[1910.1030\(d\)\(3\)\(xii\)](#)

Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).

1910.1030(d)(4)

Housekeeping --

[1910.1030\(d\)\(4\)\(i\)](#)

General. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

[1910.1030\(d\)\(4\)\(ii\)](#)

All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.

[1910.1030\(d\)\(4\)\(ii\)\(A\)](#)

Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.

1910.1030(d)(4)(ii)(B)

Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.

1910.1030(d)(4)(ii)(C)

All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

1910.1030(d)(4)(ii)(D)

Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

[1910.1030\(d\)\(4\)\(ii\)\(E\)](#)

Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.



[1910.1030\(d\)\(4\)\(iii\)](#)

Regulated Waste --

[1910.1030\(d\)\(4\)\(iii\)\(A\)](#)

Contaminated Sharps Discarding and Containment.

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)](#)

Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)\(i\)](#)

Closable;

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)\(ii\)](#)

Puncture resistant;

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)\(iii\)](#)

Leakproof on sides and bottom; and

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(1\)\(iv\)](#)

Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(2\)](#)

During use, containers for contaminated sharps shall be:

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(2\)\(i\)](#)

Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(2\)\(ii\)](#)

Maintained upright throughout use; and

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(2\)\(iii\)](#)

Replaced routinely and not be allowed to overfill.

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(3\)](#)

When moving containers of contaminated sharps from the area of use, the containers shall be:

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(3\)\(i\)](#)

Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(3\)\(ii\)](#)



Placed in a secondary container if leakage is possible. The second container shall be:

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(3\)\(ii\)\(A\)](#)

Closable;

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(3\)\(ii\)\(B\)](#)

Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(3\)\(ii\)\(C\)](#)

Labeled or color-coded according to paragraph (g)(1)(i) of this standard.

[1910.1030\(d\)\(4\)\(iii\)\(A\)\(4\)](#)

Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

[1910.1030\(d\)\(4\)\(iii\)\(B\)](#)

Other Regulated Waste Containment --

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(1\)](#)

Regulated waste shall be placed in containers which are:

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(1\)\(i\)](#)

Closable;

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(1\)\(ii\)](#)

Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(1\)\(iii\)](#)

Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(1\)\(iv\)](#)

Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(2\)](#)

If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(2\)\(i\)](#)

Closable;

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(2\)\(ii\)](#)

Constructed to contain all contents and prevent leakage of fluids during handling, storage,



transport or shipping;

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(2\)\(iii\)](#)

Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and

[1910.1030\(d\)\(4\)\(iii\)\(B\)\(2\)\(iv\)](#)

Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

[1910.1030\(d\)\(4\)\(iii\)\(C\)](#)

Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.

[1910.1030\(d\)\(4\)\(iv\)](#)

Laundry.

[1910.1030\(d\)\(4\)\(iv\)\(A\)](#)

Contaminated laundry shall be handled as little as possible with a minimum of agitation.

[1910.1030\(d\)\(4\)\(iv\)\(A\)\(1\)](#)

Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

[1910.1030\(d\)\(4\)\(iv\)\(A\)\(2\)](#)

Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.

[1910.1030\(d\)\(4\)\(iv\)\(A\)\(3\)](#)

Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

[1910.1030\(d\)\(4\)\(iv\)\(B\)](#)

The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

[1910.1030\(d\)\(4\)\(iv\)\(C\)](#)

When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i).

[1910.1030\(e\)](#)



HIV and HBV Research Laboratories and Production Facilities.

1910.1030(e)(1)

This paragraph applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.

1910.1030(e)(2)

Research laboratories and production facilities shall meet the following criteria:

1910.1030(e)(2)(i)

Standard Microbiological Practices. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

1910.1030(e)(2)(ii)

Special Practices.

1910.1030(e)(2)(ii)(A)

Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.

1910.1030(e)(2)(ii)(B)

Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.

1910.1030(e)(2)(ii)(C)

Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.

1910.1030(e)(2)(ii)(D)

When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign shall comply with paragraph (g)(1)(ii) of this standard.

1910.1030(e)(2)(ii)(E)

All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.

1910.1030(e)(2)(ii)(F)



Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

1910.1030(e)(2)(ii)(G)

Special care shall be taken to avoid skin contact with other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials is unavoidable.

1910.1030(e)(2)(ii)(H)

Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

1910.1030(e)(2)(ii)(I)

Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.

1910.1030(e)(2)(ii)(J)

Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) shall be used for the injection or aspiration of other potentially infectious materials. Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or decontaminated before reuse or disposal.

1910.1030(e)(2)(ii)(K)

All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

1910.1030(e)(2)(ii)(L)

A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.

1910.1030(e)(2)(ii)(M)

A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures, and shall be required to follow them.

1910.1030(e)(2)(iii)

Containment Equipment.



1910.1030(e)(2)(iii)(A)

Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

1910.1030(e)(2)(iii)(B)

Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.

1910.1030(e)(3)

HIV and HBV research laboratories shall meet the following criteria:

1910.1030(e)(3)(i)

Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area.

1910.1030(e)(3)(ii)

An autoclave for decontamination of regulated waste shall be available.

1910.1030(e)(4)

HIV and HBV production facilities shall meet the following criteria:

1910.1030(e)(4)(i)

The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.

1910.1030(e)(4)(ii)

The surfaces of doors, walls, floors and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.

1910.1030(e)(4)(iii)

Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.

1910.1030(e)(4)(iv)

Access doors to the work area or containment module shall be self-closing.



1910.1030(e)(4)(v)

An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

1910.1030(e)(4)(vi)

A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

1910.1030(e)(5)

Training Requirements. Additional training requirements for employees in HIV and HBV research laboratories and HIV and HBV production facilities are specified in paragraph (g)(2)(ix).

[1910.1030\(f\)](#)

Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up --

[1910.1030\(f\)\(1\)](#)

General.

[1910.1030\(f\)\(1\)\(i\)](#)

The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

[1910.1030\(f\)\(1\)\(ii\)](#)

The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are:

1910.1030(f)(1)(ii)(A)

Made available at no cost to the employee;

1910.1030(f)(1)(ii)(B)

Made available to the employee at a reasonable time and place;

1910.1030(f)(1)(ii)(C)

Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and

[1910.1030\(f\)\(1\)\(ii\)\(D\)](#)

Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).



1910.1030(f)(1)(iii)

The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

1910.1030(f)(2)

Hepatitis B Vaccination.

1910.1030(f)(2)(i)

Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

1910.1030(f)(2)(ii)

The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.

1910.1030(f)(2)(iii)

If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.

1910.1030(f)(2)(iv)

The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in Appendix A.

1910.1030(f)(2)(v)

If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).

1910.1030(f)(3)

Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

1910.1030(f)(3)(i)

Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;

1910.1030(f)(3)(ii)

Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;



1910.1030(f)(3)(ii)(A)

The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.

1910.1030(f)(3)(ii)(B)

When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

1910.1030(f)(3)(ii)(C)

Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

1910.1030(f)(3)(iii)

Collection and testing of blood for HBV and HIV serological status;

1910.1030(f)(3)(iii)(A)

The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

1910.1030(f)(3)(iii)(B)

If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

1910.1030(f)(3)(iv)

Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service;

1910.1030(f)(3)(v)

Counseling; and

1910.1030(f)(3)(vi)

Evaluation of reported illnesses.

1910.1030(f)(4)

Information Provided to the Healthcare Professional.

1910.1030(f)(4)(i)

The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.



1910.1030(f)(4)(ii)

The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

1910.1030(f)(4)(ii)(A)

A copy of this regulation;

1910.1030(f)(4)(ii)(B)

A description of the exposed employee's duties as they relate to the exposure incident;

1910.1030(f)(4)(ii)(C)

Documentation of the route(s) of exposure and circumstances under which exposure occurred;

1910.1030(f)(4)(ii)(D)

Results of the source individual's blood testing, if available; and

1910.1030(f)(4)(ii)(E)

All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

[1910.1030\(f\)\(5\)](#)

Healthcare Professional's Written Opinion. The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

1910.1030(f)(5)(i)

The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

1910.1030(f)(5)(ii)

The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

1910.1030(f)(5)(ii)(A)

That the employee has been informed of the results of the evaluation; and

1910.1030(f)(5)(ii)(B)

That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

1910.1030(f)(5)(iii)

All other findings or diagnoses shall remain confidential and shall not be included in the



written report.

1910.1030(f)(6)

Medical Recordkeeping. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.

[1910.1030\(g\)](#)

Communication of Hazards to Employees --

[1910.1030\(g\)\(1\)](#)

Labels and Signs --

[1910.1030\(g\)\(1\)\(i\)](#)

Labels.

1910.1030(g)(1)(i)(A)

Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in paragraph (g)(1)(i)(E), (F) and (G).

1910.1030(g)(1)(i)(B)

Labels required by this section shall include the following legend:



1910.1030(g)(1)(i)(C)

These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

1910.1030(g)(1)(i)(D)

Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

[1910.1030\(g\)\(1\)\(i\)\(E\)](#)

Red bags or red containers may be substituted for labels.



1910.1030(g)(1)(i)(F)

Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of paragraph (g).

1910.1030(g)(1)(i)(G)

Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

1910.1030(g)(1)(i)(H)

Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.

1910.1030(g)(1)(i)(I)

Regulated waste that has been decontaminated need not be labeled or color-coded.

1910.1030(g)(1)(ii)

Signs.

1910.1030(g)(1)(ii)(A)

The employer shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:



(Name of the Infectious Agent)

(Special requirements for entering the area)

(Name, telephone number of the laboratory director or other responsible person.)

1910.1030(g)(1)(ii)(B)

These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.

1910.1030(g)(2)



Information and Training.

1910.1030(g)(2)(i)

Employers shall ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.

1910.1030(g)(2)(ii)

Training shall be provided as follows:

1910.1030(g)(2)(ii)(A)

At the time of initial assignment to tasks where occupational exposure may take place;

1910.1030(g)(2)(ii)(B)

At least annually thereafter.

1910.1030(g)(2)(iii)

[Reserved]

1910.1030(g)(2)(iv)

Annual training for all employees shall be provided within one year of their previous training.

1910.1030(g)(2)(v)

Employers shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

1910.1030(g)(2)(vi)

Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

1910.1030(g)(2)(vii)

The training program shall contain at a minimum the following elements:

1910.1030(g)(2)(vii)(A)

An accessible copy of the regulatory text of this standard and an explanation of its contents;

1910.1030(g)(2)(vii)(B)

A general explanation of the epidemiology and symptoms of bloodborne diseases;

1910.1030(g)(2)(vii)(C)

An explanation of the modes of transmission of bloodborne pathogens;

1910.1030(g)(2)(vii)(D)

An explanation of the employer's exposure control plan and the means by which the



employee can obtain a copy of the written plan;

[1910.1030\(g\)\(2\)\(vii\)\(E\)](#)

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;

[1910.1030\(g\)\(2\)\(vii\)\(F\)](#)

An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment;

[1910.1030\(g\)\(2\)\(vii\)\(G\)](#)

Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;

[1910.1030\(g\)\(2\)\(vii\)\(H\)](#)

An explanation of the basis for selection of personal protective equipment;

[1910.1030\(g\)\(2\)\(vii\)\(I\)](#)

Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;

[1910.1030\(g\)\(2\)\(vii\)\(J\)](#)

Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;

[1910.1030\(g\)\(2\)\(vii\)\(K\)](#)

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;

[1910.1030\(g\)\(2\)\(vii\)\(L\)](#)

Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;

[1910.1030\(g\)\(2\)\(vii\)\(M\)](#)

An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and

[1910.1030\(g\)\(2\)\(vii\)\(N\)](#)

An opportunity for interactive questions and answers with the person conducting the training session.

[1910.1030\(g\)\(2\)\(viii\)](#)

The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the



training will address.

1910.1030(g)(2)(ix)

Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.

1910.1030(g)(2)(ix)(A)

The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.

1910.1030(g)(2)(ix)(B)

The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.

1910.1030(g)(2)(ix)(C)

The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

1910.1030(h)

Recordkeeping --

1910.1030(h)(1)

Medical Records.

1910.1030(h)(1)(i)

The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020.

1910.1030(h)(1)(ii)

This record shall include:

1910.1030(h)(1)(ii)(A)

The name and social security number of the employee;

1910.1030(h)(1)(ii)(B)

A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by paragraph (f)(2);

1910.1030(h)(1)(ii)(C)

A copy of all results of examinations, medical testing, and follow-up procedures as required



by paragraph (f)(3);

1910.1030(h)(1)(ii)(D)

The employer's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and

1910.1030(h)(1)(ii)(E)

A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B)(C) and (D).

1910.1030(h)(1)(iii)

Confidentiality. The employer shall ensure that employee medical records required by paragraph (h)(1) are:

1910.1030(h)(1)(iii)(A)

Kept confidential; and

1910.1030(h)(1)(iii)(B)

Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

1910.1030(h)(1)(iv)

The employer shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.

1910.1030(h)(2)

Training Records.

1910.1030(h)(2)(i)

Training records shall include the following information:

1910.1030(h)(2)(i)(A)

The dates of the training sessions;

1910.1030(h)(2)(i)(B)

The contents or a summary of the training sessions;

1910.1030(h)(2)(i)(C)

The names and qualifications of persons conducting the training; and

1910.1030(h)(2)(i)(D)

The names and job titles of all persons attending the training sessions.

1910.1030(h)(2)(ii)



Training records shall be maintained for 3 years from the date on which the training occurred.

1910.1030(h)(3)

Availability.

1910.1030(h)(3)(i)

The employer shall ensure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.

[1910.1030\(h\)\(3\)\(ii\)](#)

Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary.

[1910.1030\(h\)\(3\)\(iii\)](#)

Employee medical records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.

[1910.1030\(h\)\(4\)](#)

Transfer of Records.

1910.1030(h)(4)(i)

The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).

1910.1030(h)(4)(ii)

If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three month period.

[1910.1030\(h\)\(5\)](#)

Sharps injury log.

1910.1030(h)(5)(i)

The employer shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:

[1910.1030\(h\)\(5\)\(i\)\(A\)](#)



The type and brand of device involved in the incident,

1910.1030(h)(5)(i)(B)

The department or work area where the exposure incident occurred, and

[1910.1030\(h\)\(5\)\(i\)\(C\)](#)

An explanation of how the incident occurred.

1910.1030(h)(5)(ii)

The requirement to establish and maintain a sharps injury log shall apply to any employer who is required to maintain a log of occupational injuries and illnesses under 29 CFR 1904.

1910.1030(h)(5)(iii)

The sharps injury log shall be maintained for the period required by 29 CFR 1904.6.

1910.1030(i)

Dates --

1910.1030(i)(1)

Effective Date. The standard shall become effective on March 6, 1992.

1910.1030(i)(2)

The Exposure Control Plan required by paragraph (c) of this section shall be completed on or before May 5, 1992.

1910.1030(i)(3)

Paragraph (g)(2) Information and Training and (h) Recordkeeping shall take effect on or before June 4, 1992.

1910.1030(i)(4)

Paragraphs (d)(2) Engineering and Work Practice Controls, (d)(3) Personal Protective Equipment, (d)(4) Housekeeping, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, and (g)(1) Labels and Signs, shall take effect July 6, 1992.

[56 FR 64004, Dec. 06, 1991, as amended at 57 FR 12717, April 13, 1992; 57 FR 29206, July 1, 1992; 61 FR 5507, Feb. 13, 1996; 66 FR 5325 Jan., 18, 2001; 71 FR 16672 and 16673, April 3, 2006]



COLUMBIA UNIVERSITY

College of Dental Medicine

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Occupational Safety & Health Administration
200 Constitution Avenue, NW
Washington, DC 20210



Introduction

The dentist/physician and administrative staff within the College of Dental Medicine (CDM) will comply with all Columbia University Medical Center guidelines and regulations put forth in the University Billing Compliance Plan documents.

The dentist/physician and administrative personnel are committed to ensuring that all professional fee billings are conducted in compliance with all applicable federal and state laws and regulations. The CDM Compliance Plan will be in agreement and compliance with the University's documents.

The provisions of this plan apply to all faculty, residents and professional personnel involved in the billing of professional services. This plan applies to billing for all clinical activity for which the professional fee revenues either flow through University accounts or are subject to an academic assessment by the University, in essence all faculty with clinical teaching responsibilities. The term "billing personnel" includes All University staffs who assist or perform professional fee billing for clinical services.

The administration responsibility for direction and implementation of the College of Dental Medicine's Billing compliance Plan are assigned to:

Ronnie Myers, DDS., Associate Dean for Clinical Affairs

Marla Deneff, Director for Clinical Business Affairs

Susan J. Taylor, Billing Compliance Coordinator

Compliance activities are coordinated with Columbia University Healthcare Inc. practice sites:

1. Vanderbilt Clinic
2. Community Dent Care School Based Health Clinics
3. Mobile Dental Center
4. Naomi Berrie Diabetes Center
5. Pediatric Dentistry Haven Clinic
6. Thelma C. Davidson Adair Center

All of the above sites are subject to the same pre-billing review process.



Billing Activities, Policies and Procedure

CDM will bill only for professional services actually and/or supervised by the faculty supervision as defined by CUHC Rules and Regulations of the Professional Staff. The dentist/physician is responsible for submission of accurate billing information, which must include, but is not limited to the CDT/CPT procedural code(s), the diagnosis, and the date of service, and the Physicians At Teaching Hospital (PATH) regulations as set forth by the centers for Medicare and Medicaid Services and New York State Article 28 Diagnostic Treatment Regulations. The dentist/physician is responsible to ensure that all documentation in the medical record substantiates the professional service submitted for payment.

Billing protocols are revised as needed and shared with all appropriate staff. The professional billing staff is responsible for accurately submitting all charges for services in a timely manner and or closure on all patient accounts.

- All providers must complete and sign an encounter form for each visit. The attending must personally specify the diagnosis and CDT/CPT procedure code for each service.
- All attendings must write a note to document an outpatient visit jointly seen, or followed by, a resident or post doctoral clinical fellow, or pre-doctoral student.

Education and Training Sessions

Education sessions are held to ensure compliance with this plan. All newly appointed faculty, residents, post doctoral, pre-doctoral and billing personnel are initially educated to applicable billing compliance policies, procedures, and documentation guidelines.

All faculty, residents, post doctoral, pre-doctoral and professional billing personnel must attend and complete a 1 hour educational session after they join CDM and annually, thereafter, coordinated with the Office for Billing Compliance, via live sessions, or web-based modules. Additional sessions may be held as deemed necessary and appropriate by the Departmental Compliance Leaders for all who are involved in billing cycle, during each academic year regarding billing compliance and billing issues. The attendance log for each session is maintained by the Compliance Leaders and made available to the Office for Billing Compliance.

An additional educational session can be scheduled based on the departmental or individual departments needs.

The documents that are provided to all faculty, residents, post doctoral, pre-doctoral and professional billing personnel, upon their initial training include, but are not limited to, the following:



- The Columbia University Billing Compliance Plan
- The College of Dental Medicine Billing Compliance Plan

Professional and Employee Courtesy

The Office of Inspector General (OIG) model compliance plan for dentist/physician states that the routine waiver of deductibles, coinsurance, and copayments, for federal and commercial health care insurance programs is not permitted. Professional and employee courtesy, once common practice is no longer acceptable unless the entire fee is discounted, reduced, or waived. The term “accepting insurance” or “accepting assignment” includes the collection of deductibles, coinsurance, and copayments.

All discounts and fees reductions extended as professional or employee courtesy must be approved by the Program Director or the Attending Dentist/Physician and documented in the patients chart and on the encounter form. All dentist/physician of care are expected to make a good faith effort to collect these payments for all clinical service charges submitted to all payers.

Waiver of the entire fee is generally not an issue as long as the intent is not to induce referrals, or receive illegal remuneration.

Quality Assurance for Billing Activities

The CDM billing office conducts pre-billing review of all claims before they are submitted to insurance carriers to ensure compliance with 3rd party rules and regulations. The supporting documentation that may be reviewed includes, but is not limited to:

- The claim form
- The patient’s account form
- The medical record note
- Receipt of payment
- Correspondence with insurer and/or patients

It is the responsibility of the billing physicians/dentists and other health care providers to ensure that appropriate documentation supports the charges submitted for payment.

Non-compliance issues will be reported to the Compliance Leaders. The departmental leader concerned will be notified and educated to any non-compliance issue. The Compliance Leaders will report all problems or issues regarding non-compliance to the Office for Billing Compliance for review, discussion and resolution.



Collection of Health Insurance Copayments, Deductibles, and Coinsurance

Most health care insurance plans require customers to share the cost of the health insurance benefit. Cost sharing is met through the imposition of health insurance deductibles, coinsurance, and copayments. Each insurance company may implement varying dollar amounts for patient cost sharing, depending on the type of insurance and the premium paid for the insurance coverage.

Routine or consistent waiver of the customer's cost sharing is considered an abusive behavior by HCFA, and may be seen as a violation of the individual health care insurance contract. The waiver of deductibles and coinsurance may be constructed as a physician's willingness to accept a lower reimbursement than the published fee schedule, which includes the patient's cost sharing for the covered benefit.

Waiver of the professional fee is defined as no charge to the insurer and the patient for clinical services or items rendered. This type of courtesy is acceptable as long as it is not related to referral patterns or illegal remuneration. All insurance, including secondary insurance, should be billed and deductibles, coinsurance, and co-payments collected, with the exception of those services for which either the insurance or the patient is charged.

The Office for Billing Compliance recommends:

- All copayments, coinsurance, and deductibles must be collected, as far as reasonable, at the time of the service.
- Dentist/physician practices will make at least one documented attempt to collect coinsurance, copayments, and deductibles.
- The effort to collect deductibles, coinsurance, and copayments must be documented.
- If these amounts remain non-collectable, the monies should be noted as non-collectable in the patient account record, and removed from the outstanding accounts receivable system.
- Waivers of deductibles, coinsurance and copayments are acceptable only if collection presents a clear financial hardship for the patient. Financial hardship is determined by financial need, not indigence, and may be based on assessing medical expenses as a percentage of income. Patient financial hardship may also include Medicaid eligibility and employment status.



Compliance Issues

All faculty, residents and billing personnel are encouraged to communicate and discuss all issues affecting operational management and billing compliance. Compliance issues are to be directed to the Department's Compliance Leaders. They may also be directed to the Office for Billing Compliance.

A compliance issue log will be maintained and shared with the Office for Billing Compliance. The log will contain the issue, steps taken for resolution, and the final resolution. Periodic re-evaluation for the effectiveness of the resolutions will be performed.

Faculty, residents and billing personnel should report all compliance issues, concerns, and questions to the Departmental Compliance Leaders. They may also utilize the University's billing compliance hotline at 212-305-7739.

Corrective Action Plan

Whenever the conduct of any member of the faculty or staff is considered to be inconsistent with the University's Standards of Conduct or Standards of Professional Billing as defined in the Columbia University Billing Compliance Plan, a request for corrective action may be made. A request for corrective action will be in writing, and will set forth the facts upon which it is based.

Corrective action may include one or more of the following action:

- Issuance of a written warning or a letter of reprimand
- Requirement of further training or in-service education, which may be at the individual's expense
- Imposition of terms of probation
- A recommendation of the restriction, suspension or termination of appointment

Record Retention Policy

Patient medical records and related administrative and billing records shall be retained in their original or legally reproduced form for a period of at least six (6) years from the date of the last encounter or three (3) years after the patient's age of majority, whichever is greater, unless otherwise required by any other university records retention policies or applicable statutes, rules, or regulations. Medical records for patient who are mentally incompetent during any time they are treated shall be maintained for at least three (3) years after death. These minimum periods for retention of patient medical records may



be extended at the discretion of providers. Patient medical records and related administrative and billing records should be properly discarded at the conclusion of the retention periods set forth in this policy.

Annual Review

This plan will be reviewed annually. Timely revisions will be made as necessary and incorporated into the plan. Specific objectives for the succeeding year will be formulated based on the prior year's quality assurance activities.

Appendix A

Monitoring Activities

Columbia University Health Care (CUHC) and the College of Dental Medicine have an ongoing commitment to ensuring that its patient care and clinical audits are conducted in accordance with applicable law and regulation. Charts will be reviewed pre-billing for quality assurance prior to billing by the Billing Compliance Coordinator, who assesses the accuracy of procedure codes (CDT) as well as medical record integrity.

Pre-Billing Reviews Implementation Plan

The process for determining compliancy is as follows:

- 25-30 charts for each program will be randomly selected
- Each chart/medical record will be audited against the completed encounter form.
- The audit will be for, but not limited to:

Patient Identification

Conditions or reasons for which care is provided

Nature and extent of services provided

Type of services ordered for the recipient, providers or facilities

Medicaid prior approval

Date of service provided

CDT/CPT Code

Providers/student signature

Signature of attending faculty/supervising dentist

Entering of notes in a timely manner



Monitoring

The encounter form must match the billing policy and procedure. Any discrepancies that are found will be marked off on a CDM Audit Cover Sheet. This cover sheet ensures clarity for the dentist/provider, as to exactly what was found to be non-compliant and serves as a platform for the educational tutorials given to the dentist/provider. It is a documented audit trail for billing issues, due to code changes if necessary.

Education & Training

Once the charts have been audited, programs with a compliance rate of 90% or greater will be removed from pre-review audit. Instead routine audits will be conducted once every three months, using a random review of 15-30 charts, depending on the volume of appointments scheduled. The programs with a compliance rate below 90% will have the audit information shared with the Program Director, Division Director, and Section Chair, whose responsibility it will be to ensure corrective action is taken. Non-compliant programs will be audited again in one month. Compliant programs will be audited every three months.

Corrective Action

If the program is still non-compliant following three successive audits an education session with the Billing Compliance Coordinator and Program Director will be held. All the information compiled in the pre-review audit will be recorded on a compliance audit log and reported for review to Clinical Administration and the CUHC Office for Billing Compliance.