





# King Abdulaziz University

## Faculty of Dentistry

# INFECTION CONTROL

## 4.1. INTRODUCTION

Infections and other hazards constitute a threat to patients and to those providing dental care. The dangers must be minimized by adherence to aseptic clinic operations in order to control presence and possible transmission of infections.

A separate manual was designed and written to draw clear instructions and suggestions for dental care providers at the Faculty of Dentistry, KAU. The manual gathers together the policies and procedures that are to be observed in the management of patient care in the clinics at our faculty.

All students, supporting staff and faculty members are responsible for carrying our infection control procedures. The manual is available to everyone in the Faculty of Dentistry. Co-operation and compliance is expected from all.

## 4.2. Tasks performed at the Faculty

**4.2.1. Task I:** These are tasks involving: Exposure to blood, body fluids or tissue. In addition to Tasks with possible spills or splashes of blood, body fluids or tissues. Enrolled under personnel performing these tasks are: Faculty staff members, dental students, dental assistants and laboratory technicians.

**4.2.2. Task II:** These involve no routine exposure to blood, body fluids or tissues but exposure or potential exposure may be part of employment condition. Staffs who, as part of their duties, help clean up, set up, handle instruments, laboratory items are also included.

**4.2.3. Task III:** Persons who are not exposed to blood, body fluids or tissues and their work does not under any circumstances include such jobs.

## 4.3. ORIENTATION OF DENTAL CARE PROVIDERS (DCP)

### **It is the responsibility of:**

**4.3.1. Department Chairmen:** to advice newly employed faculty staff members performing tasks I or II to complete the infection control training program (ICTP) before getting into the clinics.

**4.3.2 Clinical Director:** to require freshmen dental students to attend and complete ICTP before starting their clinical classes.

**4.3.3 Chief Dental Assistant:** to require newly hired auxiliaries to attend and complete the ICTP before proceeding with their duties.

#### **4.4. IMMUNIZATION:**

##### **4.4.1. Faculty hiring rules:**

New employees are requested to comply with medical check up procedures by the University Administration. **THESE INCLUDE:**

- General medical check-up
- Chest x-ray
- Urine analysis
- HIV Screening

It is the responsibility of faculty staff members, students and auxiliaries to obtain recommended immunization prior to entry in the clinic.

##### **4.4.2. RECOMMENDED VACCINATIONS:**

1. Two doses of measles vaccine are recommended if born after 1956.
2. Hepatitis B: 3 doses over 6 months. Antibody titers are checked after 5 years to determine need for booster.
3. Tetanus: Every 10 years. Booster on day of injury if no booster within 5 years.

#### **TESTS:**

Ideally, health care providers (HCP) are tested for TB every year. If the TB test is positive a chest x-ray is required.

#### **NEW DENTAL CARE PROVIDER (DCP) ORIENTATION AND INFECTION CONTROL TRAINING PROGRAM (ICTP)**

##### **EMPLOYEES:**

Within 2 weeks of hiring, the employee is required to receive the hepatitis B vaccine which is available in the department of Community Medicine. Orientation round through dental clinics and laboratories is then arranged and the new employee will then attend the ICTP.

##### **PROCEDURES:**

1. New faculty employee is given a copy of the infection control manual by the Infection Control Committee (ICC).

2. The employee is then scheduled for the training program by the ICC.
3. The employee s required to read the manual and attend the training before starting any dental procedure involving Tasks I and II.
4. ICC is responsible to complete the training form when the employee has received necessary training.
5. Clinical Departments are responsible to provide additional training in specific work procedures to each new employee in the department.

### **STUDENTS:**

Students are required to receive HBV vaccination before clinic entry, before their 4<sup>th</sup> academic year. The vaccination is available in the department of community Medicine. They are also required to read the IC manual and attend the training program.

### **PROCEDURES:**

1. Students will be in direct contact with their class representatives in the ICC as well as with any member of the committee.
2. Students will attend the lectures and watch the video tapes after they read the manual carefully.
3. Students will then be distributed into small groups of 4 and will receive an orientation tour at the Faculty as well as a training application in the clinics x-ray unit and the dental lab.
4. Specific dental procedures requiring specific instructions on infection control procedures are discussed with the students in details by a specialist from clinical department's e.g. endodontic clinics.
5. Small group's supervisors are responsible to complete the students training forms.

## **4.6. COMPETENCE AND COMPLIANCE**

Competence in the practice of infection control is obligatory for all dental students, auxiliaries and faculty members. Continuing review and updating of procedures, materials, equipments and policies is essential throughout professional life.

Compliance by students, auxiliaries and faculty with the guidelines in this manual is expected. Clinical faculty will provide supervision and instruction to ensure safe practice for all concerned.

Non compliance to strict, routine infection control procedures by each student, auxiliary and faculty member can be considered **academic incompetence**. Periodic observation and review of instrument care and clinic procedures can be expected. Failure to observe universal precautions such as wearing gloves, eye protection and masks will result in dismissal from the clinics.

For complete information regarding practice of infection control, you are required to secure the Infection Control Manual prepared by the Head of the Infection Control Committee and make it handy most especially in the clinics.

Infections and other hazards constitute a threat to patients and to those providing dental care. The dangers must be minimized by adherence to aseptic clinic operations in order to control presence and possible transmission of infections.

This manual was designed and written to draw clear instructions and suggestions for dental care providers at the Faculty of Dentistry, KAU. The manual gathers together the policies and procedures that are to be observed in the management of patient care in clinics at our faculty.

All students, supporting staff and faculty members are responsible for carrying out infection control procedures. The manual is available to everyone in the Faculty of Dentistry. Cooperation and compliance is expected from all.

#### **4.6. CONTROL OF CROSS INFECTION IN THE DENTAL CLINIC CLINICAL ASEPSIS**

In the dental clinic, blood, saliva and saliva contaminated with blood can be spread during dental treatment or during clinic or instruments cleaning. Decontamination in any clinic is achieved through 3 procedures; cleaning, disinfection and sterilization. These procedures differ in the number and types of micro-organisms killed. By knowing the differences between these procedures, you will know how to choose the right way to make contaminated items safe to touch and use.

#### **4.7. CLEANING:**

Physical removal of debris and reduction of the number of micro-organisms present. This step is the basic in clinic asepsis and all items should be cleaned before disinfection or sterilization.

#### **How to clean your clinic?**

1. Surface cleaning: surfaces to be disinfected are also cleaned since you will use the spray-wipe-spray techniques for disinfection.

In this technique you spray the disinfectant, then wipe with disposable towel. Next, spray more disinfectant and leave to dry. However, some disinfectants recently are used in one step.

***Surfaces that require only cleaning, e.g. dental chair, may be cleaned by:***

- a. Soap and water.
- b. Foam spray containing phenol compounds or glutaraldehyde.

**NOTICE:** Foams are not disinfectants, they just clean.

**Instruments cleaning:**

- a. Clean your instruments by scrubbing them with a heavy duty brush under running water.
- b. You may also use the ultrasonic baths located in each clinic.

**4.8. If you will use the ultrasonic bath notice the following:**

- Use the ultrasonic bath solution only.
- Adjust proper heat and time according to the uncleanliness of your instruments.
- Ultrasonic cleaning is recommended for tough debris such as dentin powder, dried cement etc.

**For instruments cleaning:** use heavy duty rubber gloves. Latex or vinyl gloves are very likely to break and you are at risk for direct contamination.

**4.9. DISINFECTION:**

The process that kills pathogenic organisms but not necessarily all microorganisms. Non-pathogenic microorganisms may stay on disinfected item. How many and what kind of microorganisms are killed by infection depends on the level of disinfection used.

The efficiency of disinfectant depends on the concentration of its active ingredients and length of time of disinfection.

**A hospital disinfectant should kill**

- Gram+ve bacteria: (staph aureus)
- Gram+ve bacteria: Salmonella typhirium
- Viruses: such as polio 2 and HIV
- Fungi
- Mycobacterium tuberculosis (Mt), Not Mt var. bovis.



### **Levels of Disinfection:**

Low-level disinfection: least effective disinfection killing some bacteria, viruses and fungi. It does not kill *Mycobacterium tuberculosis* var. *bovis*.

Intermediate-level disinfection: this process kills *Mt va. Bovis*. It will also kill some bacterial spores, HIV and HBV.

High-level disinfection / Hospital level: powerful process that will kill *Mt var. bovis*, viruses, fungi but not necessarily all bacterial spores.

### **Important:**

It is generally understood that if you see a process that kills T.B. organisms; that you will also kill organisms that are easier to kill such as hepatitis B and HI viruses.

### **4.10. STERILIZATION:**

This process kills all microorganisms including bacterial spores which are the most difficult microorganisms to kill.

Methods of sterilization: generally there are several methods of sterilization. These include moist heat under pressure (steam autoclave), dry heat, chemical vapour under pressure (ethyleneoxide) and prolonged immersion in liquid disinfectants / sterilants (cold sterilization). At our faculty we use steam autoclaves, cold sterilization and dry heat sterilizers. It is important that you know the advantages and the disadvantages of each method used in our clinics so that you can decide the appropriate method to use for various instruments.

### **4.11. METHODS OF STERILIZATION: ADVANTAGES AND DISADVANTAGES**

#### **STEAM AUTOCLAVE**

#### **ADVANTAGES**

Efficient  
Quick and easy  
Allows package sterilization  
Penetrates fabric and papers

#### **DISADVANTAGES**

- may leave instruments wet allowing them to rust
- requires packaging
- damage plastic
- may dull sharp items

## CHEMICAL STERILIZATION

### ADVANTAGES

Cheap  
Can sterilize items that  
could be damaged by heat  
Effectiveness

### DISADVANTAGES

- may rust instruments
- has limited life
- can not be checked for
- toxic fumes
- can not be used for  
packages
- must be rinsed with sterile  
water

## DRY HEAT OVENS

### ADVANTAGES

Fast  
  
In expensive  
  
No rusting

### DISADVANTAGES

- cycle can be interrupted and  
prevent sterilization.
- lack of cooling periods in  
some machines when it is  
present it takes long time.
- can not be used for fabrics  
and temperature-sensitive

instruments.

#### 4.12. UNIVERSAL PRECAUTIONS FOR INFECTION CONTROL

Even when healthy, the mouth contains hundreds of possible pathogens. Almost every class of microorganisms is included among those that can reside in saliva, sputum, blood, tissue fluid, crevicular fluid, dental plaque, carious lesions as well as in healthy and diseased oral tissues, including the salivary glands. These pathogens include HBV, herpes group viruses (herpes simplex HSV, Epstein Bars EBV, cytomegalovirus CMV) and HIV. Documented outbreaks of HBV and transmission of HSV in dental clinics indicate the legitimate use of universal precautions for all patients during all dental

procedures. Universal precautions are intended to prevent parenteral, mucous membrane and non-intact skin of DHCWs to blood-and-saliva borne pathogens. Other body fluids to which universal precautions apply are not likely to be encountered in the dental practice.

#### **4.13. PROTECTIVE BARRIERS:**

##### **Hand Washing**

Wearing gloves and hand washing will not provide enough protection if there are open sores present, oozing dermatitis or similar lesions.

**Hand washing:** First step in the practice of universal precautions. Hand washing and glove wearing are effective when:

- Rings, bracelets and watches are removed.
- Nails are cut short, no nail polish or false fingernails.

##### ***Ordinary hand washing techniques: required:***

- Before treatment
- Between patients
- After glove removal
- Whenever hands or skin surfaces are contaminated with blood or other body fluids.
- Before leaving the operatory.

Ordinary hand washing can be done using ordinary soap or soap with anti microbial agent since the later has a cumulative effect leaving the hands highly disinfected after 7-10 usages. Dry with disposable towels.

**Surgical Scrub:** A special anti microbial agent is required whenever a surgical scrub is needed. Leave the special soap on hands and arms for few minutes then rinse thoroughly and dry with sterile towel.

##### **Gloves**

Will protect DHCW by providing an extra barrier against entry of microorganisms through breaks of skin. They will also protect the patients from contracting microorganism on the DHCWs hands.

##### **When should you wear gloves:**

- Whenever hands touch patient's mouth.
- Whenever you touch instruments.
- Whenever you touch equipments.
- Whenever you touch surfaces that might be contaminated.

- \* **Gloves used for patient's treatment or any other purpose (using amalgamator, for Example) should not be worn outside treatment areas, dispensary etc.**
- \* **Gloves used during patients contact are specifically not to be worn when handling dental records.**

## **GLOVES & TASKS:**

In the faculty and students clinic, 3 types of disposable gloves are placed on clinic carts.

**Vinyl gloves:** disposable examination gloves suitable for procedures involving contact with oral mucous membranes.

Latex gloves: examination gloves suitable for same purpose as vinyl. However, latex gloves are more resistant to punctures than vinyl gloves. Nevertheless, when intact they both are equally effective.

- Remember that vinyl and latex examination gloves are **non-sterile**.

Sterile disposable gloves: available on clinic carts. These are used when sterility is needed during either restorative, periodontal or surgical procedures.

## **General purpose utility gloves:**

Each student should purchase and keep at least one pair of those rubber household gloves. They are used to clean instruments before sterilization and also to disinfect the cubicle. These gloves are ideally autoclaved at the end of each day or they can be thoroughly washed with soap and water then decontaminated with a disinfecting solution.

## **Remember:**

1. To check that your gloves are intact every 10 minutes or so.
2. Never wash disposable gloves and re-use them.
3. If your gloves are torn, cut or punctured, remove them immediately and dispose of them. Then wash your hands thoroughly with soap and water. If accidental exposure took place follow steps in page 22.
4. If you have any oxidative skin lesions or dermatitis, you are discouraged from working on patients until complete healing takes place.

#### **4.14. MASKS AND EYEWEAR:**

These protective barriers should be worn for facial protection whenever blood or fluids contaminated with blood may be splattered. Procedures that may include such incidents are:

All patients' treatment

Cleaning instruments

Disposing of contaminated fluids

- A mask is ineffective when it becomes wet. It is preferred that a fresh mask is used for every patient.
- Remember to wear masks before wearing gloves and try to minimize touching the mask with your gloved hands.
- Two types of masks are available on clinic carts.

Protective eyeweares are necessary and mandatory for all dental procedure. Prescription glasses do not provide side protection. Therefore, face shield or goggles are recommended.

Non-disposable eyewear should be washed with soap and water, then immerse in glutaraldehyde for 10 minutes, then rinse with water.

- Face shields are available at the dispensary area.
- For users of prescription glasses: If you can get clip-on side shields to fit on your frame, they are effective.

#### **4.15. ATTIRE:**

Although risks of exposure from contaminated clothing are small, it is unhygienic to wear contaminated clothes outside treatment areas.

- Long sleeves and high neck are essential for a clinic coat.
- Change your coat at least daily whenever needed, e.g. when it becomes visibly contaminated with blood or other fluids.
- Do not keep your clinic coat with your street clothes in the same locker.

- Dirty clinic coats should be washed using bleach.
- Disposable plastic aprons may be used for procedures with risk of blood contamination, e.g. periodontal surgery, polishing oral prophy etc.

**For Male DHCW: Notice:**

- Head covers should not be worn inside treatment areas. They should not be even spread on cubicle walls.
- Facial hair should be completely covered under face shields.
- Slippers are not allowed in the treatment areas.
- Neckties should be tucked inside buttoned clinic coat.

**For Female DCHW: Notice:**

- Pin long hair back.
- Cover hair whenever possible.
- For those who wear long head covers, your covers should be tightly tucked inside your clinic coat.

**4.16**

**Use and Disposal of needles and Sharp Instruments**

Almost all accidental exposures resulting in contraction of infectious diseases by HCW were through needle pricks or other sharp instruments handling.

**Try to be extremely careful handling such instruments which may include:**

- Needles
- Scalpels
- Explorers
- Scalers
- Rotating burs
- Endodontic files
- Rotating pumice and stone wheels.

Place all disposable sharp instruments such as needles, disposables scalpels, endodontic files, and burs into the puncture-resistant sharps containers located in every clinic area.

### How to recap used needles:

#### Never:

- Recap a needle using two hands.
- Break the needle.
- Place used needles in plastic waste bags.

#### Recap the needle using:

- a. The one-hand scoop technique before disposal. (See illustration below)
- b. The special device for that purpose.

## 4.17. INFECTION CONTROL PROTOCOL FOR INSTRUMENTS

Instruments and equipments used in the dental practice and dental laboratory are classified into critical, semi-critical and non critical instruments by the CDC in 1993.

STATUS	INSTRUMENTS	HOW TO HANDLE
Critical	These are instruments that invade tissues e.g. scalpels, scalers, surgical forceps, burs, files.	Sterilization
Semi-critical	These instruments are used intraorally, but do not invade tissue e.g. amalgam condenser mirror	Sterilization or high level disinfection
Non-critical	Instruments or equipments that do not get inside the mouth, they only contact intact skin e.g. x-ray cone, parts of face bow	Medium or low level disinfection

The infection control protocols vary from one specialized area to another and they may also vary from one dental procedure to another. In this section general items of infection control protocols are stated for each dental operator, e.g. clinic, lab. Etc. Those protocols should be strictly followed. Any violation will be considered **academic incompetence**.

## STUDENTS CLINICS

Male students clinics are located in the ground level (G level), and female students clinics are located in first level (Level 1). The cubicles are serially numbered and each student is assigned to a particular cubicle all year long. The cubicle neatness and cleanliness is the student's responsibility. It is also the student's responsibility to be sure of the following:

1. Remove all used items after each patient treatment. Borrowed items should be returned to the dispensary, used instruments should be also cleaned and prepared for autoclaving.
2. Contaminated waste disposal is also the student's responsibility. Contaminated waste should be placed in assigned plastic bags and sharps are disposed in special puncture-resistant containers.
3. At the end of clinical sessions each student should clean and disinfect his/her cubicle properly (except floor area). Blood spatters should receive high level disinfection. For example, if the unit sink has spots of visible blood it has to be generously sprayed with full strength cocide wipe, then generously sprayed with cocide again and left to dry (about 10-15 minutes).
4. The hand pieces used at KAU can be sterilized by autoclaving. Sterilization for the hand pieces is requiring between patients. Steps are:
  - a. Wipe your hand piece with a clean towel moistened with cocide.
  - b. Lubricate the hand piece and put it in the autoclave bag.
  - c. You may return it to CSSD at the end of the day or if you do not need shortly.
  - d. If you need your hand piece soon, use the fact autoclave in your clinic area.

When the hand piece is sterilized, take it out of autoclave bag and operate it for 20 seconds to get rid of lubricants. Then use your lubricant assigned for **sterilized hand piece** and lubricate it again. Then run it once more for 20-30 seconds.

5. Coverage of frequently used items, e.g. light handles, chairs, buttons etc., and proper disposal of covers.



## **CLINIC PREPARATION:**

**Note:** Student infection control procedures posted in each cubicle.

**Flush:** Water from high speed hand piece hose and air-water syringe each for 1 minute at the beginning of each treatment session.

**Wear:** House hold, heavy duty gloves and:

- a. Wash the dental chair with soap and water.
- b. Disinfect all working surface with the disinfecting solution using the spray-wipe-spray technique. Wipe with disposable paper towels. Most organisms are removed (but not inactivated) by wiping or scrubbing. Spray disinfectant again and leave to air dry.

### **Surfaces to be disinfected and covered when possible:**

#### **Dental Light:**

- Switches
- Handles

#### **Unit:**

- Bracket table
- Bracket table handle
- Air/water syringe tip, handle, holder
- Saliva ejector attachment
- All hoses
- Handpiece holders and levers
- Control switches

#### **Dental Chairs:**

- Control switches
- Arms and head rest

#### Clinicians Stool

- Back front and edges

#### View Box:

- Disinfected
- Switches should be covered

#### Miscellaneous to be

- Patient mirror
- Pens and pencils for charting
- Stethoscope
- Safety glasses and face shields: rinse under running water after using the disinfectant.

#### Coverage Procedures:

Use plastic cling wrap or tin foil for frequently used items.

Use open bib napkin on bracket table and bench surfaces with anticipated contact with contaminated items.

#### INSTRUMENTS PREPARATION:

Take out trays required for the procedures you intend to perform. Leave instruments wrapped until time of use.

#### Burs:

**You should use a sterile autoclave bur block for each clinical session.**

- From the storage sterilized bur block, select burs that you anticipate to use with sterile cotton pliers and leave pliers near storage bur block. Always remember that burs are **critical instruments**.

- Disposable burs are safe and convenient, though expensive. If you intend to use disposable burs, you may keep in mind that those burs are autoclavable but they lose their efficiency by time.
- Use metal brush that is autoclavable along with ultrasonic bath to clean burs before sterilization.

**Note:**

Make every attempt to anticipate all the material and instruments you will need so that you do not have to leave your cubicle during an appointment.

- Do not visit other students to request or borrow items.

**Remember: They too have prepared and disinfected their cubicles.**

- Do not ask auxiliaries for special tasks and favours.

**Remember: They too have their assignments and other students to help!**

**Beginning the Day Procedures:**

1. Getting into clinics for patient treatment you must put on a clean clinic coat. Street clothes **are not** suitable for any dental procedures.

**Remember: Keep street clothes away from soiled coats or items.**

2. Before cleaning and disinfecting your cubicle you must wear utility gloves or nitrile rubber **NOT** latex.
3. Clean and disinfect surfaces as indicated before. Cover frequently-used items as mentioned before. Check that floors are clean.
4. Flush water through all the dental unit, air water syringe and ultrasonic scaler lines for 1-3 minutes
5. Take off utility gloves. Put on disposable vinyl or latex gloves and do the following:
  - Check out treatment trays from dispensary.
  - Retrieve needed instruments from drawers.
  - Insert a sterile tip into the air water syringe.

- Unwrap the hand piece (if needed) from autoclave bag lubricate it with clean can in your cubicle and operate it for 30 seconds.
  - Unwrap proxy angles, contra angles etc from sterilization bags and keep the bags.
1. Just prior to patient treatment remove instruments from sterilization bags.

### **Operatories between patients:**

2. After patient dismissal **dispose or all throw away materials properly**. **DO NOT** use hands to pick up sharp items. Place all sharps in puncture-resistant container in the hallways.
3. Take off gloves used for patient treatment and dispose them.
4. To clean the operatory you must still wear face shield and utility gloves.
5. Wipe the hand piece with a disinfectant, then detach from hose end. Lubricate the hand piece and put in to its original autoclave bag and turn it to central sterilization.
6. Remove the used tip from the air water syringe and place it on used instruments tray. Remove use tip from high volume suction end. If disposable, place in the waste container. If non-disposable, place on the used instrument tray.
7. Clean and disinfect surfaces that were not covered, using the spray-wipe-spray technique.
8. Take off all coverings and place in the waste container.
9. Wipe all used surfaces with cocide and recover them (if another treatment session will start).
10. Do not forget to disinfect items like pens and pencils used during patient treatment.
11. Be sure to disinfect non-disposable items like: glass slabs, mixing bowls, shade guides, tubes of impression materials etc. before returning them to the dispensary or cart in the clinics.
12. Amalgam capsule are disposed in special containers labelled for that purpose in the clinics.

### **RE-SETTING OPERATORIES:**

*Follow steps as “preparing your cubicle”*

**End of day procedures:**

13. All operatories must be cleaned as between patients and items covered should be disinfected.
14. Flush all dental unit and scaler for 3 minutes.
15. The dental assistant should thoroughly clean suction lines of each unit by:
  - Orotol: follow directions on the container.
  - Household bleach or ¼ cup bleach – 1 gallon water.
1. Students should make sure that all waste is disposed of properly and no used disposable items should be left in the cubicle over night, even used paper cups and coverings like tin foil or plastic wraps.

**Preparing Instruments for Sterilization:**

2. Clean your instruments and put them in fresh autoclave bags.
3. Borrowed items: clean all borrowed instruments and put them back in their original bags with your name on the bags.
4. It is the student responsibility that all borrowed instruments are thoroughly cleaned.

<b>X-RAY PROTOCOL</b>
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X-ray units are located in the first and ground levels clinics. Each x-ray room is equipped with dental chair and x-ray machine. The control buttons are located outside the room.

**The following steps should be strictly followed for x-ray taking:**

**I. Before seating the patient:**

5. Use surface disinfectant to spray:
  - Hand-control exposure buttons
  - Chair, head rest

- Chair switches
- Tube head
- Lead apron, collar

2. Prepare the following:

- Film(s) in disposable cup
- Cotton rolls
- Styrofoam bite blocks/bite wing tabs.

## **II. Seat Patients**

1. Place covers: lead apron collar
2. Bib napkin

## **III. During the Procedure:**

1. Always use barrier techniques
  - a. gloves
  - b. masks
  - c. eye ware or face shields
2. Use films in envelopes.
3. Place exposed (contaminated) films in plastic cups.

## **IV. After the Procedure:**

- \* Hang up lead apron and collar
- \* Set aside plastic cup with exposed (film(s))
- \* Dispose of all disposables, e.g. Styrofoam bite blocks, cotton rolls, bite wing tabs etc.
- \* Disinfect as in I

## **V. Film Processing:**

1. Wear gloves
2. Set 2 clean cups
3. Remove plastic film shields without touching films and drop film into one of the clean cups.
4. Repeat if you have more than one film
5. Dispose cup of films and also of gloves
6. Wash hands
7. Process films as follows:
  - a. Put the cup of films and a paper towel in the day light loader; close the lid.

- b. Put on clean examination gloves.
  - c. Put gloved hands through the light shield, unwrap the film packets and deposit the film into the loading chute slots.
  - d. Place the film wrapping into the cup. Remove gloves and place into cup.
  - e. Activate the film drop mechanisms and put the loading chute cover in place.
  - f. Remove from the daylight loader, lift the lid and dispose cup with waste and wash hands thoroughly.
- **For known infectious patients you may receive instructions from Radiology Division.**

## **CONTROL OF CROSS INFECTION IN THE DENTAL LABORATORY**

Among several areas in the dental practice that should receive special attention. This area relates mostly to Prosthodontics procedures. Recent recommendations of the CDC regarding dental lab are directed towards disinfection and sterilization of lab-related instruments and multi-use items.

**The following items should be disinfected after each use by the spray-wipe-spray technique with disinfectant.**

### **Items:**

- Articulator
- Face bow
- Rubber mixing bowls
- Spatulas
- Impression syringes (NOT TIPS)
- Demel hand piece
- Pens, pencils, rulers
- Shade guides-after second spray wipe with water or alcohol

**The following items should be sterilized by either autoclaving or cold (chemical) sterilization in full strength cocide overnight.**

**Items:**

- Face bow fork
- Impression stock trays
- Waxing instruments
- Laboratory burs
- Polishing rubber points
- Impressions syringes: Tips

**Impressions, casts, prosthesis, bite registrations records:**

These items represent potential hazard since impressions, for example, can be contaminated with debris, saliva and blood. Therefore, any of those items should be disinfected before sending them out of the clinic to the lab.

**How to disinfect impressions cast dentures etc.:**

**Because of concern for accuracy, these items are disinfected differently.**

1. All of them should be gently rinsed under water to remove debris saliva or organic materials.
1. Alginate and polyether impressions are placed on paper towels and sprayed with sodium hypochlorite.
2. Compound and zinc oxide impressions are sprayed with cocide.
3. The impressions are then wrapped in a towel wet the suitable disinfectant, placed in a plastic bag and sent to the lab. With the lab. form.
4. Prosthesis, such as record bases and wax rims shellac, trial bases with tooth set up, dentures, are disinfected by sodium-hypochlorite, 1:10 dilution.
5. Fixed prosthesis (metal/porcelain) and removable partials are disinfected by cocide.

**Items received from the lab.:**



1. Remove transport wrap and place in a work pan. DO NOT assume that such items were disinfected before you receive them; Therefore, it is a good idea to disinfect them before insertion in the patient mouth.
2. If the new appliance needs to be cleaned in ultrasonic bath, use fresh bath solution in the pan.

**This solution should not be re-used.**

3. Casts: A stone containing chloramine-T is preferably used. However, for regular plaster, stone and dies stone casts: the cast is sprayed with glutaraldehyde, wait for 3 minutes than spray again and rinse with water.

<b>In the Dental Laboratory:</b>
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**Work Area:**

- Work area should be wiped and disinfected then a clean counter top paper is laid down.
- For lab. Work of each new patient: cleaned disinfected and/or sterilized instruments are used.
- After finishing all work, clean work area of all debris.

**Personal Protection in the lab:**

- Try to minimize your trips back and forth between clinic and lab.
- When in the lab, coat and safety glasses should be worn at all times.
- When using rotary instruments: masks should be worn.
- **Gloves:** should be worn when pouring an impression or when handling an intra oral device.
- No item should go to the lab. With blood or gross debris on it.
- Long hair should be tied back.
- No eating, drinking or smoking in the lab.

- Wash hands thoroughly before and after lab. work.

#### **Pumice / Lathe:**

- To polish acrylic appliances (trays, denture, provisional, crowns, etc.) sterilized pumice wheels, burs, abrasive stone, rags, wheels, etc. are used. In addition fresh pumice is required for each use.
- **DO NOT** use gloves when operating the lathe.
- Before removing a soft reline from a denture or grinding to prepare a denture for a reline, it should be disinfected first by immersion in glutaraldehyde for 10 minutes.

### **ORAL PATHOLOGY AND MICROBIOLOGY SPECIMENS**

1. When a specimen is to be sent to a laboratory the clinician in charge has to ensure that arrangement are made to receive it. We do not have pathology lab, facility for the time being. However, we hope to get the facility here at school in the near future.
2. Ensure specimens and accompanying request forms are properly filled.
3. Microbiology specimens should be labelled with “Danger of Infection”.

### **ORTHODONTICS CLINICS**

Follow the instructions of the Division

#### **4.18. ACCIDENTAL EXPOSURE**

#### **4.19. EVALAUTION AND FOLLOW-UP**

**What is accidental exposure?**

A specific occupational incident involving eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other infectious materials, including saliva.

**Incident report for students and faculty employee:**

**Faculty employees include faculty staff members, auxiliaries, others.**

1. Emergency first aid should be available during all clinic periods to be administered approximately in case of exposure.
2. Immediately following an exposure incident, documentation to of the route(s) of exposure and circumstances surrounding the incident are recorded on Accidental Exposure form by the **faculty member or session supervisor.** The following information should be precisely described:
  - a. Circumstances of exposure.
  - b. Information on the activity the employee was engaged in at the time of the incident.
  - c. Extent of appropriate work practice.
  - d. Extent of protective barriers used.
  - e. Source of exposure.
1. **Both:** exposed person and source individual are offered the opportunity of having a blood sample drawn in the Oral Surgery Dept., ground level.
2. The procedures, routes of evaluation, results of testing are completely confidential.
3. If the exposed person and source individual agree on testing, the blood will be tested in the University Hospital for HBV, HCV and HIV.
4. If one of those persons declined testing, the infection control officer in charge should record that the exposed person declines testing on the form. The exposed person should sign it.
5. If the concerned persons consent to blood collection but not to any of the tests, the blood sample is drawn and frozen for ninety (90) days in case the exposed persons decides to proceed for testing.
6. Medical prophylaxis and consultations area available at no cost following accidental exposure at the outpatient University Hospital Clinic / Community Medicine Department.
7. Within 2 weeks of the incident, the infection control committee should prepare a report of test results, if any: and evaluation of the exposed person. However, this

information is confidential between the infection control officer and the exposed person.

#### **4.20.           INCEDENTS REPROTS FOR SOURCE INDIVIDUAL**

After accidental exposure, documentation of the source individual (the patient) is established and recorded on the accidental exposure form, unless identification of source individual is not feasible.

1. If the infectious status of the source individual is known, testing should not be repeated.
2. The faculty member, clinic supervisor, or infection control officer asks the patient to consent to the confidential blood testing in order to:
  - Determine the patients antibody status regarding HIV, HBV and HVC so that to assure the exposed person or proceed with medical treatment immediately.
  - Results of testing are required in the patient's records.
  - Reduce the anxiety of the exposed person.
1. If the source individual refuses testing, the member in charge should report this on the form.
2. If the patient consents to testing, blood is drawn at the Oral Surgery Department and sent to University Hospital.
3. Results of testing are accessible to infection control officer, patient and exposed individual.
4. If the patient is accidentally exposed to the blood or body fluids of a health care worker, the above procedures should be followed.

**KING ABDULAZIZ UNIVERSITY  
FACULTY OF DENTISTRY**

**ACCIDENTAL EXPOSURE REPORT  
(Health Care Provider)**

Date: \_\_\_\_\_

Time: \_\_\_\_\_

This information is confidential. DO NOT place in patient's record. DO NOT chart any information in patient's record. DO NOT photocopy, this form should be handled to Infection Control Committee.

**EXPOSED PERSON INFORMATION**

Patient Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone #: \_\_\_\_\_

Record #: \_\_\_\_\_

Student Name: \_\_\_\_\_

Year: \_\_\_\_\_

Employee: \_\_\_\_\_

Dept.: \_\_\_\_\_

Ext.: \_\_\_\_\_

Others: Specify: \_\_\_\_\_

Age: \_\_\_\_\_

Phone #: \_\_\_\_\_

**KING ABDULAZIZ UNIVERSITY  
FACULTY OF DENTISTRY**

**INCIDENT INFORMATION**

Date of Incident \_\_\_\_\_ Time \_\_\_\_\_ a.m. ( ) p.m. ( )

Department \_\_\_\_\_ Location \_\_\_\_\_

Faculty Member \_\_\_\_\_ Assigned Students \_\_\_\_\_

Supervisor \_\_\_\_\_

Witnesses: 1. \_\_\_\_\_ Phone# \_\_\_\_\_  
2. \_\_\_\_\_ Phone# \_\_\_\_\_

Did the incident occur because of faculty equipment?

( ) YES ( ) NO

If yes: Type of Equipment: \_\_\_\_\_

Did the incident occur because of defective material?

( ) YES ( ) NO

If yes: List type of material and lot \_\_\_\_\_

Brief explanation of the incident: \_\_\_\_\_

Treatment or first aid required: \_\_\_\_\_

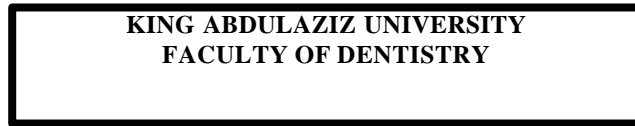
Follow-up treatment required: \_\_\_\_\_

In your opinion, this incident happened because of: (Specify)

- Unsafe working conditions \_\_\_\_\_
- Unsafe procedure, work area \_\_\_\_\_
- Defective equipment \_\_\_\_\_

- Others \_\_\_\_\_

_____ Date of Report	_____ Reporter's Name	_____ Reporter's Sig.	_____ Tel. No.
-------------------------	--------------------------	--------------------------	-------------------



**POST EXPOSURE EVALAUTION CONSENT FORM  
FOR EXPOSED PERSONS**

**NAME:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

An exposure incident has occurred resulting in contact of the eye, mouth other mucous membrane, or non-intact skin with blood or other potentially infectious materials.

I was advised that it would be advantageous to submit to confidential blood test for Hepatitis B and C viruses, and HIV (the AIDS virus).

I hereby authorized the Faculty of Dentistry to use the tests results for the most benefits.

_____ <b>Exposed person's signature</b>	_____ <b>Date</b>
--	----------------------

_____ <b>Witness</b>	_____ <b>Date</b>
-------------------------	----------------------

**KING ABDULAZIZ UNIVERSITY  
FACULTY OF DENTISTRY**

**POST EXPOSURE EVALAUTION CONSENT FORM  
FOR SOURCE INDIVIDUAL**

**Patients Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Registration No.:** \_\_\_\_\_

The dentist has explained to me that an incident has occurred resulting in contact of the eye, mouth, other mucous membrane, or non-intact skin with blood or other body fluids.

The dentist has advised me that it would be advantageous to submit to a confidential test for hepatitis B, C and HIV (the AIDS virus).

I hereby authorized the Faculty of Dentistry to sue the results of these test for most benefits.

\_\_\_\_\_  
**Patients Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Witness**

\_\_\_\_\_  
**Date**



#### 4.21. WASTE DISPOSAL

1. It is ensured at the Faculty of Dentistry that the worksite is maintained in a clean and sanitary condition.
2. **Regular waste:** as personally used paper cups, tissues etc. are disposed in the small bin in the cubicle or in the regular waste bins.
3. **Contaminated waste:** material contaminated with any body fluid (Blood and saliva) should be disposed in separate plastic bags located in the cubicle. Those bags are placed in the big dumper in the clinic afterwards.
4. **Broken glassware:** Whether contaminated or not, it shall NOT be picked up directly with hands. It should be cleaned using mechanical means such as a brush, tongs, forceps etc. It should be placed in a paper bag and taken to the assistant for disposal.
5. **Reusable sharps :** should NOT be placed in a manner that the user will reach for them with his / her hands.
6. **Sharps waste:** should be discharged as soon as possible in the puncture resistant containers in the clinics.
7. **Reusable sharps :** containers shall not be opened, emptied, or cleaned in a manner that exposes the employee to the risk of sticks or cuts.

#### 4.22. BIBLIOGRAPHY

1. Occupation Safety Health Administration: Cross infection control in dentistry. Located at the Faculty library.
2. Infection control in the Dental environment. Martin Dunitz, University Press, Cambridge 2<sup>nd</sup> ed. 1993.
3. American Dental Association council on dental Therapeutics and Council on Prosthetic Services and Dental Laboratory Relations. Guidelines for Infection control in the Dental office and Commercial Dental Laboratory. JAM Dent. Assoc. (1985) 110: 969-72.

4. Centers for Disease Control, Recommended infection control practices for dentistry. MMWR (1986) 35:237-42.
5. Mitchell R. Russel J. The elimination of cross infection in dental practice a five year follow-up. Br Dent J (1989) 166: 209-11.

**KING ABDULAZIZ UNIVERSITY HOSPITAL  
HAEMATOLOGY DEPARTMENT  
COMPLETE BLOOD COUNT  
K.A.U.H.**

**AFFIX BAR  
CODE HERE**

NAME				AGE		SEX	
HOSPITAL NO				DATE		WARD	
ETHNIC ORIGIN				REQ'D BY			
CASS NO				PARTIAL ASP			
TIME							
I.D.							
				TEST NO			

SA	OP CODES	NORMAL VALUES	<input type="checkbox"/> DIFFERENTIAL					
		WBC $\times 10^3$	POLY		MORPH	1	2	3
		RBC $\times 10^3$	BAND		POLYCHROM			
		HGB g/dL	LYMPH		HYPOCHROM			
		Hct %	MONO		POIK			
		MCV fL	EOS		TARGET			
		MCH pg	BASO		SPHERO			
		MCHC g/dL	ATYP LYMP		ANISO			
		RDW %	METAP		MICRO			
		PLT $\times 10^3$	MYELO		MACRO			
			PRO-MYELO		SICKLE CELLS			
			BLAST		BASO STIP			
					VACUOLES			
					TOXIC GRAN			
			OTHERS					
		MPV fL						
		LYMPH %	W		LYMPHO-PENIA			LYMPHO-CYTOSIS
		MONO %	B		NEUTRO-PENIA			NEUTRO-PHILIA
		NEUT %	C		VAR LYMPHS			MONO-CYTOSIS
		EOS %			BLASTS			EOSINO-PHILIA
		BASO %	R		IMM/GRAN BANDS			BASO-PHILIA
		LYMPH $\times 10^3$	B		NRBC			ANISO
		MONO $\times 10^3$	C		POIK			MICRO
		NEUT $\times 10^3$			RBC FRAG			MACRO
		EOS $\times 10^3$	P		RBC AGG			HYPO
		BASO $\times 10^3$	L		PLT CLUMPS			LARGE PLTS
			T		GIANT PLTS			SMALL PLTS

REMARKS CLINICAL DX	RETIC		SED. RATE	
	NRBC / 100 WBC			

FILM COMMENT

Lab. No.

Signed

FBC ☐

ESR ☐

KAUH 364

CHEMISTRY 1

KING ABULAZIZ UNIVERSITY  
HOSPITAL

Jeddah, Saudi Arabia

Tel. 64 01000 - 6952088

الستشفى الجامعي  
كلية الطب

جامعة الملك عبدالعزيز

تلفون ٦٩٥٢٠٨٨ - ٦٤٠١٠٠٠

Hosp. No.

رقم المريض

Family name

الاسم

First, second

☐ Out patient

☐ In patient

Order by Dr.

Next

Appoint

الرجاء

تتأجل

Sex

الجنس

Age

العمر

Consultant

المستشار

Unit

الوحدة

Date

التاريخ

Clinical Details

Signed \_\_\_\_\_

Investigation required

☐ Routine

☐ Urgent

<input type="checkbox"/> Sodium (138 - 145) mmol/l	<input type="checkbox"/> Glucose Fasting (3.0 - 6.0) mmol/l
<input type="checkbox"/> Potassium (3.5 - 5.0) mmol/l	<input type="checkbox"/> Glucose 2 hrs p.p mmol/l
<input type="checkbox"/> Chloride (98 - 105) mmol/l	<input type="checkbox"/> Glucose 3 p.m. mmol/l
<input type="checkbox"/> HCO <sub>3</sub> <sup>-</sup> (CO <sub>2</sub> ) (24 - 30) mmol/l	<input type="checkbox"/> Amylase (75 - 380) IU/l
<input type="checkbox"/> Urea (3.0 - 8.5) mmol/l	<input type="checkbox"/> Total Bilirubin ( 5 - 17 ) μmol/l
<input type="checkbox"/> Creatinine (60 - 120) μmol/l	<input type="checkbox"/> Calcium (2.1 - 2.6) mmol/l

EAU 308

Date \_\_\_\_\_

Pathologist \_\_\_\_\_

IMMUNOLOGY 2

KING ABDULAZIZ UNIVERSITY  
HOSPITAL

Jeddah, Saudi Arabia

Tel. 6401000-6952088

المستشفى الجامعي  
كلية الطب

جامعة الملك عبدالعزيز

تلفون ٦٩٥٢٠٨٨ - ٦٤٠١٠٠٠

Hosp. No.

رقم المريض

Family name

الاسم

First, second

☐ Out patient☐ In patient

Ordered by Dr.

Next  
Appointالراجعة  
تالية

Sex

النوع

Age

العمر

Consultant

الطبيب

Unit

الوحدة

Date

التاريخ

Clinical Details

Signed \_\_\_\_\_

<input type="checkbox"/> Hepatitis HBs Ag	<input type="checkbox"/> C-reactive protein	<input type="checkbox"/> Schistosomiasis
<input type="checkbox"/> VDRL/RPR	<input type="checkbox"/> ASO titre	Skin test: immediate mm
<input type="checkbox"/> TPHA	<input type="checkbox"/> Rheumatoid factor(RF)	delayed mm
<input type="checkbox"/> Widal Test	<input type="checkbox"/> DNA-antibodies	IHA :
<input type="checkbox"/> Rubella	<input type="checkbox"/> Antinuclear antibody(ANA)	Hydatid disease :
<input type="checkbox"/> Mononucleosis Slide test	<input type="checkbox"/> Smooth muscle/mitochondrial antibody	Skin test: immediate mm
<input type="checkbox"/> Paul Bunnel- Davidshon test	<input type="checkbox"/> Thyroid Antibody:	delayed mm
<input type="checkbox"/> Pregnancy test	Thyroglobulin	IHA :
<input type="checkbox"/> Other	Microsomal	<input type="checkbox"/> Toxoplasmosis (IHA)
<input type="checkbox"/>		<input type="checkbox"/>

جامعة الملك عبدالعزيز

<b>CHEMISTRY 3</b>		<b>KING ABDOULAZIZ UNIVERSITY HOSPITAL</b>		<b>المستشفى الجامعي كلية الطب</b>		Hosp. No.	رقم المريض
Jeddah, Saudi Arabia		جامعة الملك عبدالعزيز		٦٩٥٢٠٨٨ - ٦٩٠١٠٠٠		Family name	الاسم
Tel. 6401000 - 6952088		تلفون		٦٩٥٢٠٨٨ - ٦٩٠١٠٠٠		First, second	
<input type="checkbox"/> Out patient <input type="checkbox"/> In patient		Order by Dr.		Next Appointment		Sex	العمر
Clinical Details		Signed _____		Age		Consultant	الطبيب
				Unit		Unit	الوحدة
				Date		Date	التاريخ

**Investigation required :**

<input type="checkbox"/>	G. T. T.	<input type="checkbox"/>	Amylase	Results :
<input type="checkbox"/>	Creatinine Clearance	<input type="checkbox"/>	Acid Phosphatase	
<input type="checkbox"/>	Urea Clearance	<input type="checkbox"/>	Serum Protein Electrophoresis	
<input type="checkbox"/>	24h Urinary Na, K.	<input type="checkbox"/>	17-Oxo- and oxogenic Steroids	
<input type="checkbox"/>	24h Urinary Ca, PO <sub>4</sub>	<input type="checkbox"/>	VMA	
<input type="checkbox"/>	24h Urinary Uric Acid	<input type="checkbox"/>	SHIAA	

KAU 180

Date \_\_\_\_\_ Pathologist \_\_\_\_\_