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## **Level 3 Diploma in Dental Nursing - 5234**

### **Unit 305 Principles of infection control in the dental environment**

**Below contain all areas that make up the 305 dental exam, please be aware of all the learning outcomes, assessment criteria and range, and ensure you revise thoroughly in all these areas.**

The aim of this unit is to describe infectious diseases, their routes of transmission and methods of preventing cross infection.

**Learning outcome:** 1. understand the process of infection control

**Assessment criteria:** 1.1 describe the causes of cross infection  
1.2 describe the methods for preventing cross infection  
1.3 explain the principles of Standard (Universal) **infection control precautions.**

**Range:**

**Infection control precautions:**

- a) transmission of infection
- b) measures for preventing cross infection
- c) management of blood and body fluid spillages
- d) social, clinical and aseptic hand hygiene procedures
- e) barrier techniques including zoning
- f) importance of record keeping in relation to cross infection
- g) waste segregation
- h) disposal of waste
- i) maintenance and testing of equipment
- j) maintenance and testing
- k) PPE
- l) personal hygiene

**Learning outcome:** 2. understand the significance of micro-organisms

**Assessment criteria:** 2.1 describe the main **micro-organisms** in potentially infectious conditions  
2.2 explain the **routes** of transmission of micro-organisms  
2.3 explain the significance of the terms pathogens and non-pathogens.

**Range:**

**Micro-organisms:**

- a) groups of micro organisms present in the oral cavity e.g, bacteria, viruses, fungi and spores
- b) organisms capable of producing disease

**Routes:**

- a) routes of entry
- b) direct/indirect contact.

**Learning outcome:** 3. understand the management of infectious conditions affecting dental patients

- Assessment criteria:** 3.1 describe infectious conditions which affect individuals within the dental environment  
3.2 describe what actions to take to prevent the spread of **infectious diseases** in the dental environment  
3.3 explain the importance of immunisation of **dental personnel**  
3.4 describe how the potentially infectious conditions affect the body systems

**Range:****Infectious diseases**

- a) Hepatitis B
- b) HIV
- c) Herpes Simplex
- d) Creutzfeldt-Jakob Disease

**Dental personnel**

- a) Dentist
- b) DCP personnel
- c) Policies and records, e.g. control of infection policy, staff induction policy, staff immunisation, records, relevance of staff and patient medical histories.

**Learning outcome:** 4. know the various methods of decontamination and sterilisation.

- Assessment criteria:** 4.1 describe the principles and methods of **clinical and industrial sterilisation**  
4.2 describe the types of sterilisation equipment used in the dental environment  
4.3 describe the principles and methods of **disinfection**  
4.4 explain the **preparation of a clinical area** to control cross infection  
4.5 explain the procedures used to decontaminate a clinical environment after use  
4.6 state the chemical names for decontaminants and where they are used.

**Range:****Clinical and industrial sterilisation**

- a) Clinical equipment used in preparing items for sterilisation, e.g washers, disinfectors, ultrasonic cleaners
- b) Sterilisation equipment and methods, e.g vacuum and non-vacuum autoclaves, gamma radiation, measures for checking sterility cycles, decontamination areas, storage of instruments

**Disinfection**

- a) Difference between asepsis, sterilisation and disinfection
- b) Different types of disinfectants and their uses in clinical environments.

**Preparation of a clinical area**

- a) Different methods used in maintaining the cleanliness of clinical surfaces, equipment, hand pieces, instruments and hand hygiene.

**Learner outcome:** 5. understand relevant health and safety legislation, policies and guidelines.

- Assessment criteria:** 5.1 identify **health and safety policies and guidelines** in relation to infection control  
5.2 describe how to deal with a **sharps injury**  
5.3 explain the use of personal protective equipment in the dental environment  
5.4 describe ways of dealing with clinical and non-clinical waste.

**Range:****Health and safety policies and guidelines**

- a) Health and Safety at Work Act

- b) Control of Substances Hazardous to Health regulations (COSHH)
- c) Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
- d) Special Waste and Hazardous Waste Regulations
- e) Department of Health guidelines and regulations e.g. Decontamination in primary care dental practices, Care Quality Commission, Health & Safety Executive guidelines, best practice guidelines, GDC Scope of Practice

**Sharps injury**

- a) protocols for sharps disposal
- b) clean sharps injuries
- c) contaminated sharps injuries

## Revision Questions & Exercises

*Please use Third Edition Diploma in Dental Nursing Level 3 book chapters:*

*1 – 301 ensure your own actions reduce risks to health and safety  
 4 – 304 prepare and maintain environment, instruments and equipment for clinical dental procedures  
 12 – 312 principles of infection control in the dental environment*

- 1. Define the term "cross infection".**
- 2. How often and how long should you run your waterlines through for? and why is this done?**
- 3. What are the different transmission routes of infection?**
- 4. Explain the following hand hygiene procedures and what detergent would be used for each?**
  - Social
  - Clinical/Hygienic
  - Surgical
- 5. Define the following terms:**
  - Disinfection
  - Sterilisation
  - Asepsis
  - Decontamination
- 6. What would you use to clean up a urine spillage?**
- 7. Research the three main shapes of dental bacteria? What are they and how do they present?**
- 8. Complete this table;**

Microorganism	Example
<b>Bacteria</b>	
<b>Fungi</b>	
<b>Virus</b>	

- 9. Explain the significance of the terms "pathogen" and "non-pathogen"?**
- 10. Explain the following conditions, and what effects, if any, do they have on the human body?**
  - Hepatitis B
  - HIV
  - Herpes Simplex
  - Creutzfeldt-Jakob Disease (CJD)
- 11. Define the term "Standard (Universal) Infection Control Precautions"**

12. List the compulsory immunisations that all members of the dental team must have?

13. Explain the following and why are they used?

- Ultrasonic Bath
- Autoclave/Steriliser
- Washer Disinfector
- Industrial Sterilisation

14. Research two types of autoclaves, their holding temperature, pressure and time.

15. What are the 4 national standard colour codes for cleaning equipment? and what areas do they apply to?

16. What is the importance of zoning within the surgeries and decontamination room?

17. Complete this grid:

Decontaminant	Chemical Name	Usage
Surface Disinfectant		
Disinfectant Wipes		
Impression Disinfectant		
Ultrasonic Bath Cleaner		
Instrument Cleaner		
Aspirator Cleaner		
(other)		
(other)		

18. What are the bodies three natural defences against infection?

19. What pathogenic microorganisms are of particular concern to the dental team?

20. List the groups of people who are higher risk carriers of the Hepatitis B virus (HBV)?

21. List the steps in dealing with a sharps injury.

22. What is gamma radiation used for?

**Extra resources:**

Levisons multiple choice questions website:

<http://bcs.wiley.com/he-bcs/Books?action=index&bcsId=8225&itemId=111850044X>

Please use both interactive multiple choice questions and interactive extended multiple choice questions.

See chapters:

4 – health and safety in the dental workplace

7 – microbiology and pathology

8 – infection control and cleanliness

## **Mock Questions**

**1. Bacteria are single-celled microorganisms responsible for causing many diseases, some of which are relevant to the dental team. Which one of the following bacteria live in colonies arranged as chains of circular microorganisms?**

- a) bacilli
- b) spirochaetes
- c) streptococci
- d) lactobacilli

**2. What is the appropriate colour coding given to cleaning equipment used in clinical and healthcare areas?**

- a) blue
- b) red
- c) green
- d) yellow

**3. Ultrasonic baths are used to**

- a) disinfect laboratory items
- b) sterilise hand instruments
- c) disinfect handpieces
- d) remove debris

**4. Some dental products are sterilised industrially by exposure to**

- a) x-rays
- b) steam at 160 degrees for one hour
- c) ultraviolet light
- d) gamma rays

**5. Which of the following diseases is caused by a bloodborne virus that can be spread by inoculation injuries and bites, and increases the risk of liver cancer in those infected with it?**

- a) AIDS
- b) hepatitis B
- c) mumps
- d) tetanus

**6. The essential requirements of a correctly equipped decontamination room include various appliances and equipment. Which of the following is an optional component of the set-up?**

- a) dirty zone
- b) extractor fan
- c) manual scrub sink
- d) washer-disinfector

**7. Various techniques are available within the dental workplace to reduce the risk of cross-infection. Which of the following options is the most likely method of reducing the risk of cross-infection to zero?**

- a) use of disposables
- b) use of vacuum autoclave
- c) zoning technique
- d) use of barriers

**8. Sterilisation is the killing of all**

- a) bacteria and viruses
- b) fungi and bacteria
- c) viruses, fungi and bacteria
- d) viruses, bacteria, spores and fungi

**9. An autoclave has the following operatives:**

- a) 160 degrees celsius for 10 minutes
- b) 134 degrees celsius for 1 hour
- c) 134 degrees celsius for 3 minutes
- d) 140 degrees celsius for 3 minutes

**10. A used pair of extraction forceps is best sterilized by:**

- a) scrubbing off debris, then autoclaving
- b) soaking in hypochlorite, then running under the tap
- c) autoclaving
- d) passing through a naked flame

**11. Disinfectants that kill bacteria are:**

- a) bacteriostatic
- b) viricidal
- c) sterilisers
- d) bactericidal

**12. The following can be used to wipe metal surfaces, except:**

- a) chlorhexidine
- b) isopropyl alcohol
- c) aldehyde solution
- d) sodium hypochlorite

**13. Impressions are best disinfected by:**

- a) rinsing and immersing in hypochlorite for 10 minutes
- b) rinsing under the hot tap for 30 seconds
- c) spraying with isopropyl alcohol
- d) rinsing and spraying with chlorhexidine

**14. A used scalpel blade should be treated thus:**

- a) autoclaved after scrubbing with water
- b) disposed of in the clinical waste bin
- c) reused after overnight soaking in hypochlorite
- d) disposed of in the sharps bin

**15. Cross infection policy should include notes on:**

- a) mercury spillage
- b) sharps injury and clinical waste disposal
- c) fire regulations
- d) none of the above

**16. All staff should be immunized against the following:**

- a) hepatitis B
- b) tetanus
- c) polio
- d) all of the above

**17. Extracted teeth should be disposed of by:**

- a) being discarded in the sharps bin
- b) being thrown into the rubbish bin
- c) broken into pieces and washed down the drains
- d) given to the patient to dispose of themselves

**18. A patient known to be HIV-positive should be:**

- a) treated as all patients are, as cross-infection policy should prevent contamination
- b) refused treatment and referred to hospital
- c) only treated at the end of the day
- d) only treated by staff vaccinated against HIV

**19. The technique of destroying bacteria, fungi and some viruses but not spores is called:**

- a) steam sterilisation
- b) disinfection
- c) cold sterilisation
- d) social cleanliness

**20. All the following are bacterial infections, except:**

- a) dental caries
- b) meningococcal meningitis
- c) oral thrush
- d) periodontitis

**21. Infection with hepatitis B (serum hepatitis) in the dental surgery usually occurs by contact with:**

- a) blood
- b) saliva
- c) aerosol spray
- d) spinal fluid

**22. The absence of all living pathogenic micro-organisms is the definition for:**

- a) infection
- b) disinfection
- c) asepsis
- d) pathology

**23. A technique of separating clean and dirty areas in the dental surgery is called:**

- a) cross-infection
- b) inoculation
- c) sterilization
- d) zoning

**24. A micro-organism capable of producing a disease is known as:**

- a) pathogenic
- b) bacteriostatic
- c) autoimmune
- d) non-pathogenic

**25. Spirochetes, bacilli and cocci are all examples of:**

- a) fungi
- b) protozoa
- c) spores
- d) bacteria

**26. Personal protective equipment (PPE) required when working in the dental surgery includes:**

- a) face mask
- b) goggles and visor
- c) nitrile or vinyl gloves
- d) all of the above

**27. "S" type autoclaves differ from "N" type ones by working:**

- a) under vacuum
- b) at 134 degrees celsius
- c) under pressure
- d) to sterilise their contents

**28. A dirty needle stick injury should be reported to:**

- a) occupational health contact
- b) own doctor
- c) neither of the above
- d) both of the above

**29. What term describes the killing of bacteria, fungi and some virus?**

- a) disinfection
- b) sterilisation
- c) decontamination
- d) asepsis

**30. What one of the following is a hand washing procedure?**

- a) general
- b) hygienic
- c) decontamination
- d) disinfected

**31. When should you dispose of a face mask?**

- a) at the end of the morning and afternoon sessions
- b) at the end of the day
- c) after each patient
- d) when visibly contaminated

**32. If you receive a sharps injury, what is the first action you take?**

- a) immediately report it to your manager
- b) wash the area with soap and running water, dry and cover
- c) consult a microbiologist at your local hospital
- d) stop what you are doing and squeeze wound to encourage bleeding



**33. What type of microorganism is candida albicans?**

- a) bacteria
- b) virus
- c) infection
- d) fungi

**34. What type of microorganism is streptococcus mutans?**

- a) fungi
- b) bacteria
- c) caries
- d) dental disease

**35. What is the environmental protection act?**

- a) legislation by which practices ensure their waste is managed and disposed of safely and correctly
- b) legislation by which the practice agrees to not harm the environment
- c) legislation by which practices used radiation safely and only take radiographs that are clinically justified
- d) legislation by which practices used chemicals and other hazardous substances accordingly.

**36. If a major accident was to occur, who should this be reported to?**

- a) your manager and principal dentist
- b) the health and safety executive
- c) environmental health
- d) the police

**37. What does COSHH stand for?**

- a) control of substances harmful to health
- b) control of solutions hazardous to health
- c) control of substances hazardous to health
- d) care of substances harmful to health

## **Unit 305                      Principles of infection control in the dental environment**

### **Guidance**

The term 'standard (Universal) infection control precautions' may also be referred to as 'standard precautions' in dental settings.

Within the tutor's scheme of work emphasis should be placed on infection prevention and control.