

Guideline for Infection prevention in dental practices

INITIATIVE

Royal Dutch Dental Association

AUTHORISING ASSOCIATIONS/ORGANISATIONS

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Summary of the recommendations

Summary Chapter 3

Personal hygiene and protective equipment

3.1 What personal hygiene measures are applicable in a dental practice?

For the protection of the patient:

Nails:

- clip fingernails short and keep them clean;
- do not wear nail polish;
- do not wear artificial fingernails.

Hair:

- make sure your hair is clean;
- pin up long hair, or fasten it in such a way that it cannot come into contact with the patient or patient items when work is in progress.

Beards and moustaches:

- clip beards and moustaches short.

Jewellery:

- do not wear jewellery/accessories on your hands/forearms when working.

Remove a jewel from a piercing when the jewel poses an obstruction:

- for the correct execution of hygiene measures;
- when providing care or treatment to patients.

Use of handkerchiefs when coughing, sneezing and blowing the nose:

- use paper handkerchiefs (tissues) when working;
- dispose of the tissues immediately after use and subsequently perform hand hygiene (see chapter 4 of the guideline).

Eating and drinking:

- do not eat and drink in the critical work areas.

Footwear:

- do not wear open shoes.

Work clothing (including head scarves, if any):

- wear work clothing when performing patient-related tasks and when working with patient items;
- wear work clothing with short sleeves;
- wear light-coloured work clothing;
- do not wear jewellery/accessories on top of work clothing;
- wear work clothing only in the dental practice;
- immediately replace visibly soiled work clothing with clean work clothing;
- when wearing a headscarf make sure it does not come into contact with the patient or with patient items;
- change work clothing (including headscarves) every day;
- wash work clothing at a temperature of at least 60°C.

3.2 What personal protective equipment is used in a dental practice?

For the protection of the care provider

Equipment for personal protection

- only use personal protective equipment with current NEN-EN numbers and CE-labels;

Gloves:

- always wear medical gloves when your hands come, or may come into contact with:
 - blood;
 - saliva;
 - mucous membranes;
 - broken skin;
 - used instrumentation.
- use medical gloves only once and for one patient only;
- when the sequence of procedures is from dirty to clean, replace medical gloves in between;
- immediately replace medical gloves when they are damaged;
- do not touch with soiled gloves surfaces that cannot be disinfected, such as patient files;
- always perform hand hygiene after removing the medical gloves;
- wear sterile surgical gloves when performing CH-1 surgical procedures; in all other cases non-sterile medical gloves can be used;
- wear heavy duty disposable utility gloves when cleaning used instrumentation by hand.

Eye protection:

- Always use protective eyewear in treatment situations where there is a risk of coughing, splattering or aerosols;
- Clean protective eyewear between patients and when visibly soiled. Cleaning protective eyewear is followed by disinfection with a suitable disinfectant.

Equipment for the protection of the patient and the care provider:

Mask covering the nose and mouth:

Wear a surgical mask which covers the nose and mouth:

- when there is a risk of aerosols;
- when there is a risk of splattering;
- when the care provider has a cold.

Dispose of the surgical mask when:

- the mask is damp or soiled;
- after each patient treated.

Summary Chapter 4

Hand hygiene

4.1 What are indications for hand hygiene?

Wash the hands with soap and water:

- when they are visibly dirty ;
- when they feel sticky;
- after using the toilet;
- after blowing the nose, sneezing or coughing.

Perform hand disinfection :

- **BEFORE** hand contact with the patient. Shaking hands is excluded;
- **BEFORE** clean and aseptic procedures, also when no medical gloves are worn;
- **AFTER** possible hand contact with body fluids or surfaces/items that have been in contact with body fluids;
- **AFTER** hand contact with the patient. Shaking hands is excluded;
- **AFTER** hand contact with the direct environment of the patient.

Hand care:

- cover open wounds or broken skin with a waterproof plaster, also when gloves are worn;
- use a moisturizing hand cream at the end of the working day, if needed.

4.2 What materials should be used for hand hygiene

Water taps

- use hands free water taps

Soap

- use liquid soap from a soap dispenser

Hand disinfectant

- for non-surgical hand disinfection use a hand disinfectant which meets the European standard EN 1500 and is marked with an N-number;
- for surgical (pre-operative) hand disinfection use a hand disinfectant which meets the European standard NEN-EN-12791 and is marked with an N-number;
- use hand disinfectant from a dispenser.

Hand cream

- if needed, apply hand cream from small tubes for personal use, or from dispensers with disposable containers.

Dispensers

- do not touch the mouth of a dispenser, or the opening of a tube when using;
- do not use dispensers with a container that can be refilled.

4.3 How should care providers in a dental practice wash and disinfect their hands?

Thorough washing of the hands (see also image 4.2 in the guideline):

- do not wear rings, wrist watches, bracelets or clothing with long sleeves;
- use (liquid) soap from a dispenser;
- wet the hands with free running water from a tap;
- cover the hands with a layer of liquid soap from the dispenser without touching the mouth of the dispenser;
- then vigorously rub the hands together during 10 seconds, making sure that finger tips, thumbs and areas between the fingers and wrists are well rubbed;
- rinse the hands thoroughly;
- then dry the hands with a disposable hand towel, also dry the wrists and the skin between the fingers;
- dispose of the used hand towel in the appropriate bin.

Thorough hand disinfection (see also image 4.2 in the guideline):

- do not wear rings, wrist watches, bracelets or clothing with long sleeves;
- apply hand disinfectant from a dispenser onto the dry hands without touching the mouth of the dispenser;
- use a quantity of disinfectant that will fill the hollow of one hand;
- then carefully rub the hands together for about 30 seconds until they are dry. The fingertips, thumbs, areas between the fingers and wrists must also be thoroughly rubbed with disinfectant;
- consult a doctor in case of allergies or eczema.

4.4 What are the hand hygiene requirements for those performing a surgical procedure?

Perform pre-surgical hand disinfection prior to CH-1 surgical procedures.

Execution of pre-surgical hand cleaning and hand disinfection

First surgical procedure, in chronological order:

- use a nailbrush when there is visible dirt underneath the fingernails;
- clean the hands and wrists with soap and water;
- use a soft brush when the hands are visibly dirty;
- pay special attention to nails and knuckles;
- then thoroughly dry the hands and wrists with disposable towels;
- then rub the hands with disinfectant, making sure that the hands and wrists stay wet for the time indicated by the manufacturer;
- keep rubbing the hands until the disinfectant has dried up;
- do not don sterile surgical gloves until the hands and wrists are dry;

Subsequent surgical procedures:

- if members of the surgical team perform subsequent surgical procedures in other patients, hand disinfection will suffice in between the various procedures. If, however, the hands are visibly dirty these are first washed with soap and water.

Summary Chapter 5 Infections and immunisation

5.1 What is the policy for *care providers* with regard to Hepatitis B?

Implementation of the following recommendations is the sole responsibility of the dental practitioner.

Hepatitis B vaccination:

- in accordance with the advice in the National guideline for the prevention of hepatitis B transmission from medical staff to patients, all oral care providers (dentists, oral hygienists, oral surgeons, orthodontists, denturists and all dental assistants and interns who are working within the field of oral care) must have been vaccinated against hepatitis B.
- always check the response to the vaccination 4 to 6 weeks after vaccination;
- in case of *non-responders* have an HBsAg test done every three months and consult the **GGD**¹ doctor about the procedure to be followed when there is a positive result.

HBsAg positive:

- the **Arbodienst**² or the GGD reports to the Committee for iatrogenic hepatitis when HBsAg positive test results indicate that a care provider poses a risk. The Committee for iatrogenic hepatitis determines whether or not the care provider who poses a risk may continue to work.

Registration

- Record the following particulars for each care provider:
 - hepatitis B vaccination status;
 - anti-HBs-titre and the duration he/she will be protected on the basis of the anti HBs-titre;
 - follow-up tests, needed on the basis of the anti-HBs-titre;
 - a copy of the vaccination certificate of each care provider has to be available at the work location of the care provider.

5.2 What is the policy when *care providers* refuse hepatitis B vaccination?

Implementation of the following recommendations is the sole responsibility of the dental practitioner:

¹ **GGD doctor:** medical doctor employed in Dutch regional public health care services

² **Arbodienst:** advisory body for employers and employees on: work circumstances, prevention of illness and re-integration after illness. The Arbodienst has a medical doctor in employment.

- state in job applications/ job vacancies that vaccination against hepatitis B is compulsory;
- check every three months the HBsAg status of care providers who are not vaccinated, or HBe-antibody non-responders;
- record every three months the hepatitis B status of all care providers who pose a risk by refusing hepatitis B vaccination.

5.3 How should care providers deal with the national vaccination programme for infectious diseases?

- annual flu vaccination for oral care providers is advised, but not compulsory;
- taking part in the national vaccination programme, including recording of the status, is advised but not compulsory.

5.4 What is the policy with regard to *care providers* with HIV?

Implementation of the following recommendations is de responsibility of the dental practitioner:

- an hiv-positive care provider may perform patient-related tasks, after consulting his/her own doctor.

5.5 What is the policy with regard to *care providers* with MRSA?

- an MRSA-positive care provider should not be given patient-related tasks so long as the MRSA infection is being/has not been treated.
- follow the SWAB guideline 'Treatment MRSA carriers' (www.swab.nl). The MRSA-positive care provider has to consult a doctor, or if possible an MRSA expert, before performing his/her tasks.

5.6 What is the policy with regard to *care providers* with a Highly Resistant Micro-Organism (HRMO)?

- take the general precautionary measures for infection prevention.

5.7 What is the policy with regard to *care providers* with tuberculosis?

- a care provider with a *Mycobacterium tuberculosis* (TB) infection has to contact the GGD doctor.

5.8 What is the policy with regard to *care providers* with obligatory notifiable infectious diseases?

- care providers have to know which illnesses implicate a prohibition of professional practising and act accordingly.

5.9 What is the policy with regard to *care providers* with non-obligatory notifiable infectious diseases?

- if a member of staff with an infectious disease is working, take the general precautionary measures for infection prevention;
- if it is not possible to implement the general precautions properly due to an infectious disease: the care provider must abstain from contact with the patient. When in doubt: consult a (GGD) doctor.

5.10 What is the policy with regard to *patients* who are known to be positive with MRSA or another HRMO?

- When a patient has an HRMO infection take the general precautions for infection prevention.

5.11 What is the policy with regard to *patients* who are known to be HBV, HCV, or HIV positive?

- there is no reason to refuse treatment to HBV, HCV or HIV-positive patients in the dental practice;
- take the general precautions for infection prevention.

5.12 What is the policy with regard to *patients* with tuberculosis?

When it concerns a patient with open tuberculosis:

- treat only in a specialised treatment centre (hospital/oral surgeon):
 - offer emergency treatment only and the most essential help;
 - consult the pulmonary specialist who treats the patient before giving treatment;
 - prevent the production of aerosols as much as possible;
 - implement the general precautions for infection prevention; the use of FFP2 masks is necessary;
 - do not enter the treatment room within 30 minutes after the treatment has finished without wearing an FFP2 mask;
 - ask the GGD doctor whether ring-testing is necessary.

5.13 What is the policy with regard to *patients* with other infectious diseases?

- take the general precautions for infection prevention.

5.14 What is the (waiting room) policy in case of an epidemic?

- in case of an epidemic implement the waiting room policy for GPs (if available);
- delay non-urgent treatment of a patient with an infectious disease, if possible;
- take the general precautions for infection prevention.

Summary Chapter 6

Accidental exposure to blood

6.1 What is the policy with regard to vaccination of employees?

- employers are obliged to offer hepatitis B vaccination to their employees;
- employers have to arrange for good practice logistics to reduce the chances of accidental exposure to blood as much as possible.

6.2 How can accidental exposure to blood be prevented?

Prevention of accidental blood contact:

Needles:

- make sure that a needle container is always within reach when disposable sharps are used;
- use a needle container that meets UN test standards, according to manufacturer's instructions;
- oral care providers in employment should not recap hypodermic needles ;
- independent care providers are permitted to recap, but if they wish to do so, are advised to use the one-handed scoop technique such as described in KNMT recommendations.

6.3 What to do in case of accidental exposure to blood?

Procedure in case of a wound on the skin:

- bleed the wound thoroughly (by squeezing);
- rinse the wound with tap water or physiological salt;
- disinfect the wound with a hand disinfectant which has been approved for these purposes for the Dutch market;
- record, if possible, all the available personal data of the "source".

Procedure in case of contamination by mucous membranes:

- immediately rinse with tap water or physiological salt or use an eye shower;
- in case of oral contamination rinse the mouth well and do not swallow. Rinse with a chlorhexidine solution (0.12-0.2%) for 30-60 seconds;
- in case of wounds or contamination by mucous membranes record all the available personal data of the "source", if possible.

- provide a clear and easily accessible protocol for accidental exposure to blood;
- make follow-up arrangements after accidental exposure to blood with "KNMT-Prick Point", the Arbodienst, the local GGD, or the Infection control department of the local hospital;
- make sure that follow-up procedures are completed within a few hours after the accident;

- the employee has to report an accident with possible HIV, HBV or HCV contamination to the employer, who is obliged to notify the Dutch Labour Inspectorate.

6.4 When should accidental exposure to blood be reported?

- report any accidental exposure to blood to the Arbo doctor;
- record as many data as possible of the "source";
- get in touch with the Arbo doctor, or the doctor with whom arrangements have been made about treatment after accidents;
- after the accident take action as soon as possible, preferably within 2 hours, but at the latest 72 hours after the accident, to facilitate a quick start with post exposition prophylaxis (PEP), if applicable;
- if the source is HBV, HCV or HIV positive, you have to contact an Arbo doctor or a specialist;

6.5 How to deal with bite accidents?

- wounds resulting from bites have to be treated immediately. Use if possible a 1% povidone iodine solution because it kills viruses;
- when the skin is broken as a result of a human bite, antibiotic prophylaxis is called for. This treatment should be started in consultation with the GP;
- bite accidents have to be reported to the Arbo doctor;
- conduct source research if blood transmission from the patient to the care provider is likely.

Summary Chapter 7

Cleaning, disinfection of surfaces, work areas, apparatus and equipment

7.1 What is the policy with regard to the cleaning of practice areas?

Work surfaces, apparatus and equipment

- when there is visible contamination, *before* disinfecting, clean all work top surfaces, apparatus and equipment that are touched during treatment, or come into contact with patient items;
- use sleeves when apparatus or items are difficult to disinfect;
- disinfect before each treatment all surfaces/worktops on which clean or sterile instruments are put ready for use;
- at the end of each day disinfect all surfaces/worktops, apparatus and equipment that have been touched during treatment or have been in contact with patient items.

Suction unit

- briefly flush the suction hose with clean water after the treatment has finished;
- clean the suction hoses at the end of the day by sucking into the hoses a detergent/disinfectant dissolved in lukewarm water;

- wear heavy duty disposable gloves when cleaning or replacing the hose filters of the suction unit;
- wear heavy duty disposable gloves when replacing or cleaning the amalgam separator;
- after each patient flush the spittoon with ample running water. If necessary, first remove the remains of impression material etc. and then clean the spittoon with a wipe with water and a detergent.

Ultrasonic bath

- empty the ultrasonic bath at the end of the day;
- never put your hands in the ultrasonic bath;
- replace items that have come into contact with a patient only in the ultrasonic bath "au-bain-marie";

Floors, furnishings and sanitary facilities

- lay down in a cleaning protocol the cleaning and maintenance procedures for work areas in the practice;
- regularly check the cleaning results and adjust the protocol if necessary;
- make optimal use of disposables for cleaning and disinfection purposes;
- clean and dry the cleaning utensils after use;
- wear heavy duty disposable gloves when cleaning;
- clean the non-critical areas, apart from sanitary facilities, at least weekly;
- clean critical work areas and sanitary facilities daily;
- empty pedal bins and refuse containers daily.
- Cleaning procedure:
 - first remove visible dirt;
 - sweep floors and surfaces preferably dry;
 - work from clean to dirty and from critical to non-critical areas.

7.2 What materials and agents have to be used in disinfection?

- Clean visibly dirty surfaces, apparatus and equipment prior to chemical disinfection, since organic matter has a negative effect on the performance of disinfectants;
- for the disinfection of specific medical items only use agents with a CE-marking, or an N-number;
- use a disinfectant with an N-number for surface disinfection;
- use a disinfectant in the right concentration and adhere to the soaking time as indicated;
- never use chlorine in combination with cleaning agents;
- for cleaning and disinfecting of work surfaces, apparatus and equipment always use disposable cloths or wipes;
- always wear heavy duty disposable gloves when disinfecting.

7.3 What is the policy with regard to disinfection of impressions and dental technical work?

- wear medical gloves when touching non disinfected impressions and dental technical work;
- disinfect impressions and technical work by submersion, before dispatching to the dental laboratory, or adapting;
- prior to disinfecting, rinse the impressions and technical work with running water until all visible dirt has been removed;
- disinfect the impression or the technical work by submersion in a suitable disinfectant and follow the dosage and soaking instructions;
- disinfect incoming technical work by submersion in a suitable disinfectant; then rinse with running water before inserting into the patient;
- refresh the disinfectant daily, or when using a commercially available disinfectant by following the manufacturer's instructions, and in case of visible contamination when disinfecting impressions and technical work;
- clean the (storage) container for impressions and dental technical work after use.

Summary Chapter 8

Cleaning, disinfection and sterilisation of instrumentation

8.1 What is the policy with regard to CDS-methods (Cleaning, Disinfection and Sterilisation) of instrumentation?

Cleaning and (thermal) disinfection

Mechanically

- always clean instruments before disinfection and sterilisation;
- clean instruments preferably in a thermal washer disinfectant;
- only instruments that are intolerant to damp, high temperatures, or the chemicals used in a thermal washer disinfectant, and for which there is no alternative, may be cleaned and chemically disinfected by hand;
- if a thermal washer disinfectant is not available make arrangements with an external care provider;
- follow the manufacturer's/supplier's instructions carefully when loading the thermal washer disinfectant and sterilisation device.

Ultrasonic

- use, if possible, an ultrasonic cleaning device for instruments that are difficult to clean.

Category A

- perform cleaning, thermal disinfection and packaged sterilisation of instrumentation, including hand and angular pieces, for invasive procedures involving contact with sterile tissues, such as:
 - CH1 procedures (see chapter 11 of the guideline).
- perform cleaning, thermal disinfection, and at least unwrapped sterilisation, including hand and angular pieces, for procedures such as :

- CH2 procedures (see chapter 11 of the guideline).

Category B

- perform at least cleaning and thermal disinfection of instrumentation, including hand and angular pieces, for procedures in which instrumentation may come into contact with mucous membranes, such as:
 - *root canal treatments;*
 - *(regular) dental check-ups;*
 - *removal of supra and subgingival tartar;*
 - *curettage;*
 - *restorations;*
 - *orthodontic treatments;*
 - *dental radiography*
- use endodontic instruments such as endodontic irrigation tips, reamers and extirpation needles for one person only.

Category C

- only perform cleaning and thermal disinfection on instruments that are not used inside the patient's mouth and therefore do not come into contact with mucous membranes;
- only employ chemical disinfection when the instrument is not tolerant to thermal disinfection.

8.2 What is the policy with regard to CDS methods (cleaning, disinfection, sterilisation) of hollow instrumentation?

- use a thermal washer disinfecter with special adaptors for hollow instrumentation;
- hand pieces and angled shafts are cleaned, thermally disinfected or sterilised whereby the following choices can be made:
 - A) thermal washer disinfecter with special adaptors;
 - B) cleaning device for hand pieces and angled shafts with the possibility of thermal disinfection/sterilisation;
 - C) cleaning device for hand pieces and angled shafts without the possibility of thermal disinfection/sterilisation, followed (possibly) by packaged sterilisation ;
- hollow instruments for which there are no thermal washer disinfecter adaptors have to be cleaned manually and subsequently sterilised in a B class autoclave.

8.3 What is the policy with regard to the air and waterline device

- after each patient the air and water device has to be flushed with water and air during 10 seconds;
- the outer walls of the air and water device have to be cleaned and disinfected after use, or wrapped in a sleeve;

- non-disposable tips (for which there are no adaptors in cleaning and thermal disinfection devices) have to be cleaned on the inside, flushed and subsequently sterilised.

8.4 What is the procedure for ultrasonic cleaning and how should the device be maintained?

- consider to make use of ultrasonic cleaning for burs, hollow and hinged instruments;
- use the ultrasonic cleaner in accordance with the manufacturer's instructions;
- check the ultrasonic functions regularly with the aid of e.g. the Sonocheck, an aluminium foil test or by lab-slide testing.

8.5 what thermal washer disinfectors are approved?

- use only thermal washer disinfectors that meet NEN-EN-ISO 15883-1-2 standards;
- for cleaning and disinfection of hollow instruments use special adaptors in a thermal washer disinfectant (such as approved by the manufacturer and included in the CE label applicable to the device).

8.6 How should the process of monitoring a thermal washer disinfectant be managed?

- use a thermal washer disinfectant according to the manufacturer's instructions;
- visually check the cleanliness of the instruments after each disinfection process;
- carry out user maintenance and check-ups yourself, according to the manufacturer's instructions and document this;
- have regular maintenance services and control testing done -at least once a year- by the supplier or manufacturer conform the NEN-standard R8154 and document this.

8.7 What is the policy with regard to chemical disinfection of instrumentation?

- use chemical disinfection of instrumentation only if instruments are not tolerant to thermal washer disinfection, or if the instrument used is not semi-critical or critical;
- only use disinfectants that are legally approved in the Netherlands for disinfection purposes of instrumentation (see chapter 7 of the guideline);
- always use the appropriate concentrations and immersion times such as advised for a particular disinfectant;
- use a closed container;
- refresh the disinfection liquid daily, or sooner according to manufacturer's instructions, and immediately if visibly contaminated.

8.8 Which sterilisation devices are approved?

- use a NEN-/ISO-/CE-approved steam sterilisation device (NEN-EN 13060) suitable for instruments and items that have to be sterilised;

8.9 How should the sterilisation process be monitored?

- use a sterilisation device in accordance with the manufacturer's instructions;
- follow the correct procedure according to NEN-standard EN13060 and document this yourself;
- carry out your own user maintenance conform the manufacturer's instructions and document this;
- have regular maintenance services and control testing done conform the NEN-standard R8153 by the supplier, or by another firm accredited by the manufacturer and document this.

8.10 How long do wrapped instruments remain sterile?

- re-sterilise at the latest six months after the sterilisation date;
- package the instruments before re-sterilisation in a new sterilisation wrapping;
- instrumentation in damp or damaged packaging has to be re-packaged and re-sterilised;
- note the sterility expiry date on the package.

Summary Chapter 9

Preconditions for areas in a dental practice

9.1 What are the workspace and logistic preconditions as regards hygiene during dental treatment?

Dental practice

- Create a visible separation between:
 - critical work areas (treatment room and area where instrumentation is cleaned and disinfected);
 - non-critical (public) areas (entrance, corridor, office, waiting room, toilets).

Critical area:

- besides treatment areas a dental practice ideally has a separate area for cleaning, disinfection and sterilisation of instrumentation and other items. If this is not possible, these functions have to be carried out at different times and the work method has to be laid down in a protocol;
- in the area where surgical procedures are executed there is to be no cleaning, disinfection and sterilisation of instrumentation and other items;
- surgical procedures are executed in a treatment room where there are no other patients present;

- place closed cabinets in the critical areas in which sterile instruments can be stored clean, dry and free from dust.
- when aerosols occur use an aerosol suction device whenever possible;
- use of a rubber dam while drilling may limit the risks of infection from aerosol production;
- in critical work areas there is no need for specific air purification;
- in critical work areas the presence of animals and plants is not permitted. An exception may be made for assistance dogs.

For new practices or renovations:

- designate at least two critical work areas, one of which is used for cleaning, disinfection and sterilisation purposes;
- when designing the treatment room take into account splatter and aerosol zones when positioning the dental treatment chairs, the use of closed cabinets and positioning of apparatus;

layout of the treatment room and CDS area

- separate the work surfaces in clean and dirty areas, including corresponding routing of instruments and staff;
- in the treatment and CDS areas work surfaces can be cleaned easily and thoroughly;
- use materials with a smooth surface that are resistant to the approved cleaning agents and disinfectants;
- put single apparatus and work aids as much as possible in closed cabinets in the treatment room;
- install a wash basin within easy reach;
- place a soap dispenser and hand disinfectant within easy reach to facilitate correct hand hygiene;

9.2 What non-clinical patient-related procedures can take place in the treatment room?

- updating of patient records is permitted within the splatter zone, provided that the equipment used can be cleaned/disinfected, or has been covered with disposables;
- perform good hand hygiene when using the telephone in critical areas.

9.3 Is eating and drinking permitted in critical areas?

- Do not eat or drink in critical areas.

Summary chapter 10

Policy with regard to the dental unit water quality

How should the waterlines in the dental unit be flushed and disinfected?

General

- lay down all the controlling measures in protocols and action plans (see table 10.1 of the guideline);
- fit anti-retraction valves that are connected to the water mains to all dental units, in order to prevent water from flowing back into the water mains system (NEN-EN 1717);
- the water mains system of the treatment unit should comply with the NEN-EN ISO 7494 design standard;
- when a dental treatment unit is fitted with self-contained water bottles: disconnect the bottles at the end of each day, drain and rinse them, disinfect them and air dry them.

Flushing of the dental unit waterline system

- every day, before treating the first patient, flush the waterlines of all the instruments that work with water, to ensure that water from the dental unit in the tubing and reservoirs is totally refreshed, according to the manufacturer's instructions;
- always flush the waterlines of all the instruments used between two patients for 10 seconds.

Disinfection of the waterline system

- disinfect and/or flush the waterline system whenever necessary and always after a long period of non-use (weekends/holidays) according to the manufacturer's instructions;
- do not actively heat the water in the waterline system unless effective measures have been taken to prevent bacterial growth;

10.2 How should the quality of dental unit water be monitored?

Check the dental unit water by taking the following steps:

1. make a risk assessment and draw up a management control plan for each dental unit in the practice;
2. check each dental unit for the number of aerobe water bacteria at 22°C, preferably just before disinfecting and document the number of cfu/ml;
3. *if <100 cfu/ml*: check again after 6 months (Arbo legislation for Legionella control);
4. *if >100cfu/ml*: take measures as regards the infrastructure, aiming for a maximum of 100cfu/ml (see table 10.1 of the guideline) and/or the disinfection protocol (if necessary ask the manufacturer). Check the incoming water from the main water supply to the building, if necessary. Then, check again the number of cfu/ml and document. Keep repeating until the norm has been reached. After this the control schedule may be continued every 6 months;

5. *if the norm is exceeded by a 100 fold (>10,000 cfu/ml):* check each dental unit for the presence of living legionella bacteria according to NEN 6265. Take additional measures if the water in the dental unit contains >100 cfu/ml of living legionella bacteria as opposed to the infrastructure and/or the disinfection protocol aiming at a maximum of 100 cfu/ml legionella. Then check again and repeat until the norm has been reached. After this, the control schedule may be continued every six months;

Summary Chapter 11

Intra oral surgical procedures

11.1 What is the policy with regards to the working area in the dental practice for surgical procedures?

For category CH-1 intra oral surgical procedures with a sterile work tray:

- strive towards a sterile work area by:
 - always working with an assistant;
 - equipping the treatment room for sterile working;
 - having the practitioner and assistant wear clean work clothing and personal protective equipment (surgical mask and protective eye-wear);
 - disinfecting the area around the mouth with 0.12-0.2% chlorhexidine or hand alcohol and covering with a sterile cloth;
 - laying out sterile instruments and sterile materials on a sterile work tray;
 - making use of sterile gloves, sleeves and handles;
 - following the guideline for pre-surgical hand disinfection, see guideline for hand hygiene;
 - using sterile water, or a sterile physiological salt solution as a cooling agent for rotating instrumentation and for rinsing the wound area (afterwards).

For category CH-2 intra oral surgical procedures with a clean work tray:

- create a clean work area by:
 - having the practitioner and assistant wear clean work clothing and personal protective equipment (surgical mask and protective eye-wear);
 - laying out sterilised instruments and materials on a clean work tray.

Summary Chapter 12

Waste disposal

12.1 What is the policy with regard to waste management and disposal?

Non-industrial waste

- separate regular waste as much as possible at the source;
- separate waste products only when this does not lead to an increased safety risk to patients, practice staff and waste collectors;

- offer regular waste as domestic waste to waste collectors, or enter into a contract with an industrial waste collector.

Clinical waste from humans

Waste contaminated with blood:

- package items that are contaminated with blood in a heavy duty plastic bag before putting them out with other domestic waste;
- put analgesia carpules that are contaminated with blood in the needle container.

Rinsing liquids contaminated with blood:

- Flush rinsing liquids via a closed system straight into the sewer.

Small hazardous waste

- offer full needle containers, residues of toxic chemical substances, the contents of filters from the suction device and residues from the amalgam separator as small hazardous waste;
- for the collection and disposal of small hazardous waste make arrangements with a specialist contractor, who is authorised by the Dutch department of Infrastructure and the Environment to collect and dispose of small hazardous waste.