CONTROLLING CROSS INFECTION IN THE DENTAL LABORATORY

Best Practice Guide

Preparing to Work
- A separate work area shall be set aside in the laboratory to receive all incoming work. This should ideally be situated next to a fully operational sink with hot and cold running water and adequate drainage.
- If there is not space to have a separate bench for incoming work and outgoing work, the second best is to make sure that after dealing with all incoming work the surface of the work area is thoroughly disinfected before commencing with preparing outgoing work for postage or delivery.
- Ideally this area should be in a well-ventilated position as the smell of bleach or some proprietary brands can be persistent. The person carrying out the disinfection should be able to actively ventilate (i.e. open a window or turn on an extract ventilation system) allowing any potentially lingering odour to diffuse.
- Under no circumstances shall the person handling incoming work be interrupted by unrelated tasks - answering the telephone, tracing work in the laboratory etc - because of the danger of contaminating other items and the possibility of missing an incoming item or disinfecting it incorrectly.
- Under no circumstances should the person treating incoming work handle outgoing work at the same time. There is a risk that cross infection may occur and the work being returned to the surgery will be contaminated.
- Under no circumstances should the person carrying out this work, eat, drink or smoke whilst processing this incoming work.

The Use of Personal Protective Clothing and Equipment
On hand at the bench shall be a variety of items to enable the technician or laboratory assistant handling the incoming work to carry out their work in a safe manner. Before handling any of the incoming work from the surgery or from the public (i.e. repairs) the technician or laboratory assistant should ensure that they are wearing appropriate protective equipment and clothing.
- Eye protection - Goggles. Goggles should have side-pieces to protect the technician from splashes. People, who have to wear glasses and cannot wear goggles over glasses, should
be supplied with prescription safety glasses. In accordance with the Personal Protective Equipment Regulations these should be supplied free of charge.

- Gloves - Gloves made from materials like latex are highly flammable and gloves may ignite on contact with a naked flame such as a Bunsen burner. If this occurs removal of the glove is difficult or impossible and severe hand skin burns may occur.
- Waterproof apron - to protect the clothing from bleach splashes.

It is advisable that safety signs are put up in this area to remind staff to wear the PPE provided.

Preparing the Work Area
The workbench should be wiped down with disinfectant at the beginning and end of each workday. On hand at the work surface shall be:

- Disinfectant containing sodium hypochlorite - a bottle of household bleach is suitable or a product specifically designed for the disinfection of impressions
- Suitable containers with lids - to place impressions in disinfectant solution.
- A pair of suitable plastic tongs to handle the impressions or other items in the disinfection solution.
- A timer, so that disinfection times are easily monitored and adhered to.

Opening Work and Preparing for Disinfection
Only ever open and handle work from the surgery when wearing full protective equipment and clothing - goggles, gloves and plastic apron.

- Tag and mark the items with appropriate identification prior to being disinfected so that they will be returned to the correct pan after having been disinfected and rinsed.
- Discard all wrappings, packing material etc - and anything that has been in contact with the impression as contaminated Clinical Waste, unless otherwise identified (see Dental Laboratory Waste for further information on disposal).

Disinfecting
Although it is the duty of the dental surgery to disinfect impressions prior to sending them to the laboratory, the reality is that many dentists may be failing to carry this out. It will therefore be commonplace for many impressions to arrive in the laboratory still bearing traces of blood, whilst with other items it may be difficult to determine whether or not they have actually been disinfected.

If in any doubt, always re-disinfect - you have a duty to protect the health and safety of yourself and other members of staff.
• Follow the guidelines set out in the BDA Advice Sheet A12 – Infection Control in Dentistry.
• Rinse the impressions etc under running tap water. Do not use a sink with a plaster trap in it. Plaster traps are ideal breeding grounds for germs.
• Items should be placed in the disinfection solution by using suitable plastic tongs provided. Use a timer to note how long the impression has been in the solution for.
• Place the lid on the container to control the fumes from the disinfecting solutions which can be unpleasant and may cause irritation to the eyes.

**Disinfection Warning:**
Remember: Do not mix bleach with any material that contains ammonia or alcohol, as it will produce a harmful gas.
Bleach will corrode any metal that it comes into contact with. While working with bleach staff should be advised to remove jewellery which may be at risk from discolouration if it comes into accidental contact.
Splashes of bleach on clothing will stain and deteriorate the fabric. Staff should be made aware of Company Rules for PPE and instructed to wear lab coats and plastic aprons to protect their clothing.

**Alginates/Polyether’s - a special case.**
These impression materials are more delicate and require careful handling. Long-term immersion with water should be avoided.
• After careful rinsing, dip the impressions in a suitable solution of disinfectant for a few seconds.
• Rinse and dip again. Wrap in gauze which has been soaked in the disinfectant solution for ten minutes.
• Place the wrapped impression in an airtight environment such as a closed airtight plastic container for ten minutes.

**If using a proprietary brand of impression disinfectant, always follow the manufacturer’s instructions.**

**Following Disinfection**
Following disinfection, impressions and other items should be forwarded to the appropriate production area. The prescription that accompanies the item should be protected by placing in a suitable plastic bag so that it does not contaminate the freshly disinfected item or become wet when in contact with it.
Cross Infection Control in Production Areas

All work benches, sinks and model trimmers in the lab benefit from being wiped down daily with a disinfection solution. Advise cleaning staff to wear suitable heavy-duty gloves for this task.

Work pans should be cleaned after use and disinfected. There should be strict controls in place to avoid finished work ready to be returned to the surgery from being placed in pans that have just held work that was still contaminated.

All staff should be instructed not to eat, drink or smoke at the bench. Staff should be encouraged to practise strict hygiene. Anti-microbial soap should be available in the toilet for washing hands. All cuts and lesions on hands should be immediately covered up with appropriate wound dressing.

As far as is reasonably practical the laboratory should be kept as clean as possible. Due to the nature of the production work which is carried out in the lab, nobody would expect a spotlessly clean working environment. There is however no excuse for not cleaning up on a daily basis and in particular making sure dust is removed by vacuuming and benches are wiped down.

Any installation of new workbenches or modernisation of existing lab work areas should take into account cross infection control prevention. Where ever possible gaps and cracks where workbenches meet walls etc should be kept to a minimum as this makes it more difficult to keep the area clean. Walls and work surfaces and flooring should be capable of being wiped clean.

Pumice

It has been shown that bacteria can survive in dental pumice for extended periods of time. In a dental laboratory where the polishing lathe is constantly used, it is important that the items to be polished are free of bacteria when brought to the area. This is particularly important when dealing with items like repairs. If the repaired prosthesis has not been disinfected it may transfer bacteria into the pumice which will then be used on new appliances. If items are then shipped back to the surgery still contaminated with this pumice it is possible that when the patient is fitted with the appliance, they will be at risk of becoming infected by the bacteria present in the contaminated pumice.

It is therefore important to change the pumice on a regular basis and disinfect the pan holding the pumice before putting fresh pumice into it.

It is strongly advised that the same pumice is not used for new work and repair work. When working on repairs, it is recommended that a small fresh amount of pumice is dispensed and used.

As pumice always produces a contaminated splatter and aerosol, a liquid disinfectant (5 parts sodium hypochlorite to 100 parts distilled water) should be used as the mixing medium in pumice.
Rag Wheels and Brushes
Always wear a dust/mist-type facemask and eye protection when operating a model trimmer, brush trimmer or rag wheel with pumice.

Rag Wheels and brushes should be soaked for ten minutes after use and left to dry overnight.

Returning Work to the Surgery
Ideally appliances being returned to the surgery and items which have been repaired for patients visiting the laboratory should be disinfected prior to return.

Dealing With The Public

Items for repair
Members of the Public visiting the laboratory often bring along items for repair. Very often these items will not even have been cleaned prior to bringing them to the laboratory.

Technicians should only accept items for repair whilst wearing gloves. The item should then be disinfected immediately in a hypochlorite solution as used for disinfecting impressions.

Shade taking
Occasionally a patient may visit you for shade taking. As there may be a small degree of contact with the patient’s mouth, technicians should make sure that they wash their hands with bactericidal liquid soap. Suitable Gloves should also be worn. These gloves should be disposable and changed between patients.

Whilst attending the patient, it is important not to go off and do unrelated work such as opening work sent from the surgery with the same gloves on. Cross contamination could occur and you will be putting the patient at risk. As the shade guide is likely to have contact with the patient’s mouth this also needs to be disinfected between patients.

If possible try to see patients in an area which shields them from the general working conditions of the lab. Even a small lab should be able to screen off an area in the laboratory suitable for seeing patients. This protects them from risks which may arise if they are left unattended in an area of the lab where there may be hazards from machinery and equipment, unpleasant dusts and fumes etc.

Clinical Dental Technicians
If a laboratory chooses to provide dentures direct to the public it is essential that a high standard of infection control should be practised at all times.
Recommended Training Programme

- New and existing employees must be trained to understand how and why cross-infection takes place.

- All employees must be trained to be aware of when, where and how Personal Protective Clothing and Equipment should be worn. They should be trained to be aware that PPE has limitations and should not be seen as working as an absolute safeguard against cross-infection. Employees should be trained to realise that working with care and caution plays a vital part in the prevention of cross-infection.

- All employees should be made aware of the importance of seeking Hepatitis B Vaccination.

- All employees should be trained to disinfect impressions and other items that have been returned to the laboratory such as try-ins or items for repair or adjustment that have had contact with the patient’s mouth.

- New employees should receive cross infection control training as part of their induction.

All training should be reviewed to make sure that the employee has retained what they have been taught and are actually putting it into practice.