Essential protocols for everyday practice cleaning and disinfection

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Tracy Mayne RVN, VHA, CVPM, discusses preventive procedures to adopt in the vital fight against hospital acquired infections

IN my very first job, my boss drummed into me that: “Cleanliness is next to godliness.” I now find myself saying that very same sentence to my staff and trainees, on almost a daily basis, because it is so fundamental in our line of work.

Figure 1. A well organised and clean practice makes the cleaning process a great deal easier.

There is no place in today’s veterinary practice for anything less than first-class cleaning and disinfection protocols. When I first qualified, we did not have to cope with hospital acquired infections, such as MRSA, and we could get away with very basic cleaning and disinfection procedures, but this is no longer the case.

The consequences may not be immediately obvious, but when the practice starts seeing infection cases presented in patients that have recently been hospitalised, the cleaning, disinfection and sterilisation processes are the first areas to be examined.

It is important before you start to compile your protocols you have a tidy and well-organised practice to start with, as this will make your life a great deal easier when it comes to cleaning, disinfection and general maintenance (**Figure 1**).

When I am writing a new cleaning/disinfection protocol for a new item of equipment or area of the practice, I refer to the Department of Health website. It has a series of guidance notes written for NHS hospitals (HTM 01 series). Advice is provided on decontamination and the health care environment. The series covers medical equipment as well as how to decontaminate your laboratory, pharmacy and dental areas. These are excellent templates to help you construct a fool-proof standard operating procedure (SOP).

It is imperative a risk assessment for every area of the practice and for each item of equipment is carried out and must be completed before you write your cleaning/disinfection SOP.

A risk assessment sheet should also be completed for the cleaning agents and disinfectants you intend to use. Chemical disinfectants are often toxic when in contact with the skin, mucous membranes and/or by vapour inhalation. They may also be corrosive and/or flammable. Practices may not be aware, but under The Control of Substances Hazardous to Health (COSHH) regulations, we are required to carry out a risk assessment before using a disinfectant.

To complete a risk assessment for your cleaning products and disinfectants you will need a copy of the material safety data sheet for each product. All manufacturers will be able to provide you with the safety data sheet for their product on request. You then need to check the sheet to make sure the product has an official certificate for use. This will outline how the product works and what it will kill.

Example wording from a material safety data sheet:

“This disinfectant has been approved for use in England by the secretary of state for the Department for Environment, Food and Rural Affairs and in Scotland by the Scottish Ministers for the purposes of: …”

“The contents of this container are guaranteed to be of the same quality and composition as the sample submitted for approval testing.”

Most data sheets are available for download from the supplier’s website.

Writing the SOP

Once the risk assessment is complete we can go on to write the SOP. You may refer to more than one agent to be used during the cleaning/disinfection process and I would recommend linking the SOP to the material safety data sheet of the products listed in your SOP. This way, staff can easily find the sheet should they need further information – for example, if they splash the product in their eye.

TABLE 1. Cleaning products used in practice

Category of disinfectant	Bacteriocidal or bacterio-static	Inactivated by organic matter	Kills gram +ve bacteria	Kills gram –ve bacteria	Kills bacte-rial spores	Kills fungi
Alcohols (eg ethanol)	Bacteriocidal	Yes	Yes	Yes	No	Low
Ammonium compounds	Bacteriostatic	Yes	Yes	Mode-rate	No	Low
Biguanides (eg chlorhexidine gluconate)	Bacteriocidal	Yes	Yes	Yes	No	Low
Phenol compounds	Bacteriocidal	No	Yes	Yes	No	Yes

Note: All products inactivated by organic matter must be preceded by a thorough cleaning process using a domestic cleaning product of your choice.

Table 1. Cleaning products used in practice.

TABLE 2. An example of a dilutions chart everyone can refer to

Disinfectant agent	Stock concentration	Manufacturer's recommended dilution	Mls required to make up one gallon	Stability after dilution
Ethanol	70-90 per cent	As is (70-90 per cent)	None	Not to be diluted
Chlorhexidine	2 per cent	0.15 per cent (low risk) 0.50 per cent	30 90	product expiration*
Lysol (phenol compound)	7.5 per cent	1 per cent 2 per cent	50 100	Product expiration*

**Product remains stable until expiration date, regardless of dilution.*

Table 2. An example of a dilutions chart everyone can refer to.

Choosing the right products

A clear understanding of the definition and function of different cleaning products is important to be able to design an effective cleaning protocol (**Table 1** and **Table 2**).

Three types of product are generally used for environmental cleaning:

- Soap/detergent: cleaning agent that works by suspending dirt and grease. Does not kill harmful microorganisms.
- Disinfectant: chemical agent that kills harmful microorganisms. Does not necessarily remove dirt or grease.
- Degreaser: more powerful soap/ detergent specially formulated to penetrate layers of dried-on body oils and other greasy debris.

It is important to always follow the manufacturer's storage and dilution recommendations. We recently moved our disinfectants to the utility room, because our prep room can reach more than 30°C in the summer, and most disinfectants must be stored between 0 and 30°C. We write the correct dilutions in permanent marker on the sides of the dispensing pumps for normal and high-risk cleaning/disinfection – this way no one can forget (**Figure 2**). You can purchase automatic disinfectant dispensing pumps that give the correct measure each time, ruling out human error (**Figure 3**).

It is worth checking when selecting your disinfectants that viruses such as feline infectious peritonitis and feline calicivirus are killed, as they are two of the most resistant viruses – and two of the most infectious.

Disinfectants vary in their properties; therefore, it is important to choose the right one for a specific task, in a particular set of circumstances, (**Figure 4**). It may be necessary to put up notices, such as on the washing machine or infusion pump, to remind staff of the correct protocols (**Figure 5**).

Figure 2. Write the correct dilution on the side of dispensing pumps.

Figure 3. Automatic pump dispensers rule out human error.

Figure 4. All cleaning products used should be clearly labelled.

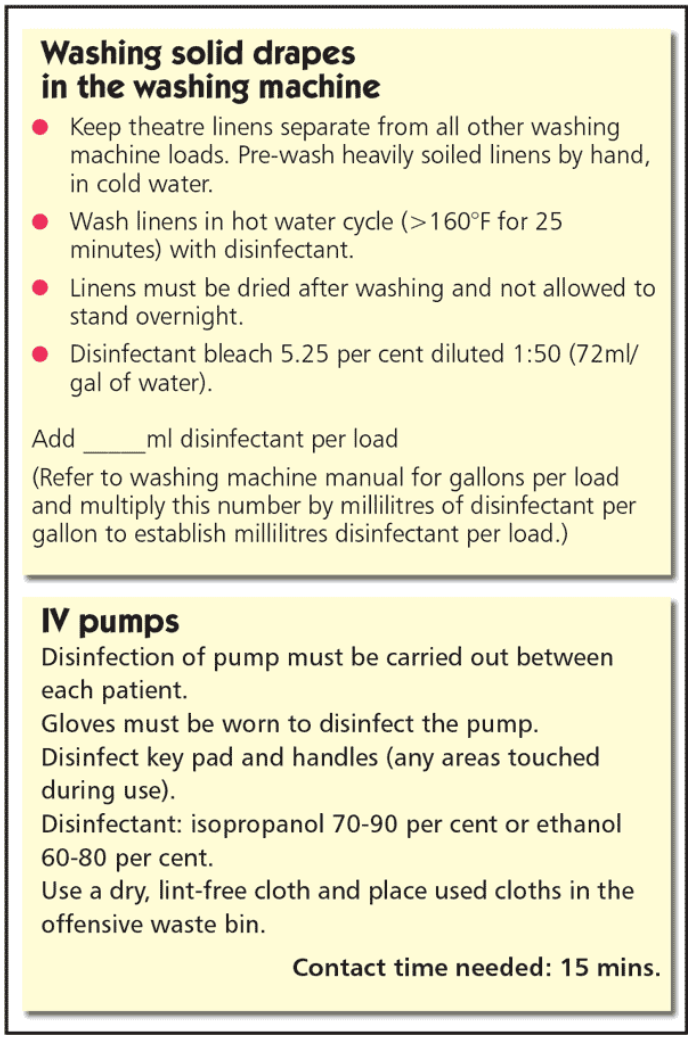

Figure 5. Notices to remind staff of protocols.

Know your products

It is worth creating a simple table that outlines the products you use in your practice and what they are active against.

In addition to our cleaning and disinfection protocol we clinically audit any infection cases when completing rechecks on a patient that has spent time in the practice. The computer system prompts us to record any complications. We can then list and audit the “yes” results. This enables us to drill down into the audit information and identify trends that reveal why these infections have occurred.

Some examples are listed below:

- Introduction of a new staff member (new staff members have not received adequate

training protocols).
- Introduction of a new cleaning/disinfectant chemical (the wrong dilutions may be being used).
- Introduction of a new autoclave, washing machine, ultrasonic bath, etc (faulty equipment, incorrect settings/programmes being run).
- Ann is back from holiday and has started bringing her dog to work (we prefer staff not to bring their pets to work as they are a potential source of contamination).
- All bitch spay sutures with 3/0 dissolvable sutures are showing wound breakdowns.
- Ten per cent of all dogs hospitalised in the end dog kennel have had postoperative wound infections.

Once these trends have been identified, action can be taken as part of the cleaning and disinfection protocol. Many practices don’t clinically audit patients that have spent time in the practice for complications, but it can be a valuable tool in the prevention and spread of infection.

The RCVS now encourages practices at tier two and tier three of the Practice Standards Scheme to carry out regular clinical auditing analysis and meetings. The RCVS asks practices are able to demonstrate what actions have been taken to minimise any complications identified.

Often the simplest of changes can make a big difference to clinical audit results. These could include:

- closing all doors leading from the dentistry area, so aerosols released during dental procedures do not leave the area;
- nurses wearing gloves when inspecting surgical sites before discharge;
- increasing the number of wash stations in the practice;
- practice partners wearing gloves when operating; and
- adequate induction and ongoing training on the practice cleaning and disinfection protocols.

An often-overlooked area of practice cleaning and disinfection protocols is equipment maintenance. This leaves areas that re very difficult to keep clean and equipment that cannot be roperly cleaned, disinfected and sterilised.

It is imperative as part of an SOP to:

- regularly inspect all receptacles, sinks, surfaces, water supplies nd drains for contamination and damage;
- plan preventive maintenance and servicing for all equipment and utilities. All chips, splits and dents are potential areas for bacteria to multiply in;
- keep the practice in good decorative order; it is very difficult to wipe the theatre walls down if they have chipped or there is peeling paint work; and
- clean the air conditioning filters. Our air-conditioning unit is set to tell me when it needs

cleaning and it is at least every 30 days for the one in the prep room. It may seem to me that the unit looks fine, but when I get up to clean it I am always staggered by the amount of fine dust that has gathered.

Summary

Cleaning and disinfection strategies should include a regular cleaning schedule, with attention to appropriate disinfection agents and their necessary contact times. Cleaning tools, disinfection agents and hand hygiene stations should be readily available and easily accessible.

Putting together a comprehensive cleaning and disinfection protocol is an intimidating and tedious project, but, once it is in place, it can dramatically reduce hospital acquired infections and the general pathogen load within a practice. Staff education is imperative for protocol compliance; people need to understand the reasons behind the need for such rigorous guidelines. And a protocol that no one understands or can follow is not worth the paper it is written on.

References

- Johnson J A and Porter J A. Guidelines for reducing pathogens in veterinary Practice Hospitals: Disinfectant Selection Cleaning Protocols and Hand Hygiene, Department of Health Publications (www.dh.gov.uk/en/AdvanceSearchResult/index.htm?searchTerms=HTM01).

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