Clean theatre equipment

In this reading, you will cover the following areas:

- Cleaning and maintaining surgical instruments
- Preparing surgical instruments for sterilisation
- Washing theatre linen and preparing it for sterilisation
- Storing surgical equipment and linen
- Cleaning and storing theatre linen
- Post-operative cleaning of the theatre.

Cleaning surgical instruments

At the end of a surgery:

1. Remove all opened surgical packs and contaminated equipment for cleaning.
2. Sort all instruments prior to washing to avoid damaging the finer instruments with the heavier ones.
3. Rinse instruments and drapes, especially if cleaning is to be delayed.
4. Use only commercially prepared instrument detergents made up to the correct concentration.
5. Remove scalpel blades from scalpel handles.
6. Dispose of blades and needles and other sharps into the appropriate containers.
7. Dispose of other waste according to clinic policy.
Close-up of a large yellow plastic bin with the lid opened to expose a black container.

**Safety precautions**

- Be aware of sharp instruments, such as scissors, scalpel blades and needles.
- Some of the cleaning preparations may cause skin allergies.
- Make sure you are wearing suitable protective clothing, such as rubber gloves and plastic aprons, to prevent cross-infection from the contaminated material you are dealing with.

**Methods of cleaning surgical instruments**

View of a wall with white overhead cabinets, a metallic cleaning sink and built-in cabinets underneath the sink. On the right side of the sink, there's a pile of green operating theatre linen.

The table below highlights two main methods of cleaning surgical instruments:
Learning topic: Assist after surgery

**Manual cleaning**

- Before immersing the instruments in the detergent, make sure that the ratchets (closing devices) on the instruments which have them are open.
- Use a toothbrush or scrubbing brush to remove debris from the fine grooves and serration and also from between the hinges and joints of the instruments.
- After the instruments have been cleaned they can be rinsed in hot water and left open on a flat surface to dry.

**Ultrasonic cleaning**

- Some practices also use an ultrasonic cleaner to clean instruments.
- This does not sterilise instruments but is very effective in removing debris from instruments especially in the difficult to access parts, such as the hinges.
- The ultrasonic cleaning process is called cavitation.
- The ultrasonic vibrations through the water containing instrument detergent causes bubbles to collapse and reform many thousands of times per second on the surface of the instruments causing a scrubbing action by which the debris is removed.
- Generally, cleaning by this process takes no longer than ten minutes per load.

**Inspection of the instruments**

During the cleaning process put aside any instrument that seems broken or disfigured. Here are some tips to keep in mind when inspecting instruments:

- Make sure that the ratchets work correctly and that instruments can grip properly. You can test this by using a gauze swab.
- Check the tension on the ratchets by engaging the first notch and tapping the shaft. If they spring open, they are unreliable.
- Check the alignment and angle of the jaws of instruments.
- Scissors become blunt with use and the veterinarian will generally alert you to this so that they can be put aside for sharpening.
- Suture needles also become blunt and their tips can become bent over.

**Lubrication of the instruments**

After cleaning, instruments may be immersed for a short time in commercially available lubrication milk which helps protect the instruments from corrosion. This is not rinsed off.
Storage

Once the instruments are dried and if they are not to be resterilised, they should be stored in a dry place, preferably with their ratchets open or on the first notch.

Storage of instruments with their ratchets fully closed will eventually lead to metal fatigue and loss of function.

Preparation for sterilisation

Prior to sterilisation, instruments are sorted as required to make up a surgical kit. The types of instruments that are generally found in a general surgical kit include:

- scalpel blade handles, No. 3 or 4
- drape or towel clamps
- artery forceps or haemostats—usually several different sizes
- tissue scissors
- suture scissors
- tissue forceps—these look like tweezers—plain and rat toothed
- tissue retractors
- needle holders
- suture needles
- gauze swabs.

Can you accurately identify all the surgical instruments in the above list?
Cleaning of theatre linen

Surgical linen includes material used for packaging sterile equipment, material used for draping the surgical site and surgical gowns.

After use, all theatre linen should be:

1. rinsed in cold water to remove the blood
2. soaked in biological stain remover
3. washed in a washing machine separately from other hospital items to avoid contamination
4. hung out to dry on a line in the sunshine if possible.

Prior to packaging all the linen should be checked for:

- holes
- frayed edges
- loose threads—loose threads and fluff could become potential foreign bodies at the surgical site.

Folding and storing linen

Before they are packaged, drapes are usually folded in a certain manner so that when the surgeon picks them up to use they are easy to unfold and to place around the incision site.

Surgical gowns are also folded in a special way so that the surgeon, when putting it on, does not make contact with the outside of the gown. The folded gown is placed inside a cover sheet. This allows the pack to be opened by a non-scrubbed person without touching the sterile gown and drapes inside.

Surgical drapes are packaged and stored in a similar manner to the instruments.