



## Animal health care service II

### Learning Guide 40

**Unit of Competence:** Assist Animal Surgical Operation

**Module Title:** Assisting Animal Surgical Operation

**LG Code:** AGR AHC2 M12 L01 LG40

**TTLM Code:** AGR AHC2 TTLM 0919v1

**LO4:** Clean up theatre equipment

## LO4: Clean up theatre equipment

<b>Instruction Sheet</b>	<b>Learning Guide 40</b>
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Clean and disinfect surgical theatre equipment and surroundings
- Sterilize and maintain surgical instrument and equipments
- Prepare theatre linen for sterilization
- Store equipment and gowns

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to –

- Clean and disinfect surgical theatre equipment and surroundings
- Sterilize and maintain surgical instrument and equipments
- Prepare theatre linen for sterilization
- Store equipment and gowns

### **Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 20.
3. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the “Self-check 1” in page 6.
5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
6. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
7. Submit your accomplished Self-check. This will form part of your training portfolio.
8. Read the information written in the “Information Sheet 2”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
9. Accomplish the “Self-check 2” in page 8.

10. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 2).
11. Read the information written in the “Information Sheets 3. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
12. Accomplish the “Self-check 3” in page 10.
13. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 3).
14. Read the information written in the “Information Sheets 4. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
15. Accomplish the “Self-check 4” in page 12.
16. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 3).
17. If you earned a satisfactory evaluation proceed to “Operation Sheet 1” in page 13. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
18. Read the “Operation Sheet 1” and try to understand the procedures discussed.
19. If you earned a satisfactory evaluation proceed to “Operation Sheet 2” in page 13. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
20. Read the “Operation Sheet 2” and try to understand the procedures discussed.

## LO4 Clean up theatre equipment

<b>Information Sheet-1</b>	Clean and disinfect surgical theatre equipment and surroundings
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### At the completion of surgical operation:

- ❖ Remove all opened surgical packs and contaminated equipment for cleaning.
- ❖ Sort all instruments prior to washing to avoid damaging the finer instruments with the heavier ones.
- ❖ Rinse instruments and drapes, especially if cleaning is to be delayed.
- ❖ Use only commercially prepared instrument detergents made up to the correct concentration.
- ❖ Remove scalpel blades from scalpel handles.
- ❖ Dispose of blades and needles and other sharps into the appropriate containers.
- ❖ Dispose of other waste according to clinic policy.

### 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

The two main methods of cleaning surgical instruments:

#### 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 cavitations.
- 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. Keep the following points 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.

<b>Self-Check -1</b>	<b>Written Test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the use of lubricating for instruments?(2pts)
2. Mention the methods of cleaning.(3pts)
3. Write the safety precaution followed.(3pts)

**Note: Satisfactory rating - 8 points**

**Unsatisfactory - below 8 points**

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

1. \_\_\_\_\_  
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- ❖ Before sterilizing medical items, they must first be disinfected and vigorously cleaned to remove all organic material.
- ❖ Proper disinfection decreases the risk for the person who will be cleaning the instruments.
- ❖ Sterilization of all surgical instruments and supplies is crucial in preventing disease transmission.
- ❖ Prior to sterilization, instruments are sorted as required to make up a surgical kit. And then sterilize the instruments.

**The methods of sterilization in common use are:**

**1. Autoclaving**

- ❖ Autoclaving should be the main form of sterilization.
- ❖ All viruses, bacteria spores and prions, are inactivated by steam sterilization (autoclaving) for 20 minutes at 121°C–132°C or for 30 minutes if the instruments are in wrapped packs.
- ❖ Appropriate indicators must be used each time to show that sterilization has been accomplished.
- ❖ At the end of the procedure, the outsides of the packs of instruments should not have wet spots, which may indicate that sterilization has not occurred.

**2. Dry heat**

- If items cannot be autoclaved, they can be sterilized by dry heat oven for 1–2 hours at 170°C.
- Instruments must be clean and free of grease or oil.
- Sterilizing by hot air is a poor alternative to autoclaving since it is suitable only for metal instruments and a few natural suture materials.

**3. Antiseptics/chemicals**

- Sharp instruments, other delicate equipment and certain catheters and tubes can be sterilized by exposure to formaldehyde, glutaral (glutaraldehyde) or chlorhexidine.
- If you are using formaldehyde, carefully clean the equipment and then expose it to vapour from para-formaldehyde tablets in a closed container for 48 hours.
- Glutaral is a disinfectant that is extremely effective against bacteria, fungi and a wide range of viruses.

**NB.** Always follows the manufacturer's instructions for use.

<b>Self-Check -2</b>	<b>Written Test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Mention and discuss methods of sterilization.
2. Why equipments should cleaned and disinfect before sterilization?

**Note: Satisfactory rating - 3 points                      Unsatisfactory - below 3 points**

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
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**Prepare theatre linen for sterilization**

- ❖ 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 and fluff could become potential foreign bodies at the surgical site.

<b>Self-Check -3</b>	<b>Written Test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Mention materials included in surgical linen.
2. For what reason surgical linen should checked before packaging?

**Note: Satisfactory rating - 3 points**

**Unsatisfactory - below 3 points**

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
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**Store drapes and gowns**

- 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.

**Store equipment**

- Dry instruments and supplies should be loosely packed in standard or special packs in order of use.
- Take special care to avoid damaging delicate instruments.
- Packs should be dated.
- Packs should be stored in an appropriate manner after sterilization.
- Wrapped and sterilized packs are good for 6 months if properly stored.
- Storing packs in sealed in plastic will bags prolongs their shelf life.

<b>Self-Check -4</b>	<b>Written Test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. How to store gowns and equipments?(3)

**Note: Satisfactory rating - 3 points**                      **Unsatisfactory - below 3 points**  
**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

1. \_\_\_\_\_  
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<b>Operation sheet-1</b>	Clean and disinfect surgical theatre and theatre linen
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**Procedures**

**Step 1:** Remove dirt and debris manually or using tooth brush

**Step 2:** Rinse in cool distilled water

**Step 3:** Soaked in biological stain remover

**Step 4:** Wash with water and detergent

**Step 5:** Rinse in disinfectants

**Step 5:** Hung out to dry on a line in the sunshine if possible.

<b>Operation sheet-2</b>	Prepare theatre linen for sterilization
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**Procedures**

**Step 1:** Fold package and drapes in a manner easy to unfold.

**Step 2:** Fold gowns

**Step 3:** Place the folded gown inside a cover sheet.

**Step 4:** Pack surgical drapes

**Step 5:** Store in appropriate manner