

Federal TVET Agency



Animal health care service II

Learning Guide 38

Unit of Competence: Assist Animal Surgical Operation

Module Title: Assisting Animal Surgical Operation

LG Code: AGR AHC2 M12 L02 LG38

TTLM Code: AGR AHC2 TTLM 0919v1

LO2: Prepare theatre or surgical operating area for use

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Clean and disinfect instruments, tools and equipment
- Select surgical packs and equipment
- Staff preparation

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 instruments, tools and equipment
- Select surgical packs and equipment
- Staff preparation

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 17.
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 9.
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 11.
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. If you earned a satisfactory evaluation proceed to “Operation Sheet 1” in page 12. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
15. Read the “Operation Sheet 1” and try to understand the procedures discussed.
16. If you earned a satisfactory evaluation proceed to “Operation Sheet 2” in page 12. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
17. Read the “Operation Sheet 2” and try to understand the procedures discussed.

LO2. Prepare theatre or surgical operating area for use

Information Sheet-1	Clean and disinfect instruments, tools and equipment
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- ✚ Cleaning is the single most important step in making a medical device ready for reuse.
- ✚ Without adequate cleaning, many disinfection and sterilization processes are ineffective.
- ✚ Cleaning is critical in removal of gross debris, prevention of cross contamination and protection of the healthcare worker in the processing area.

There are basic principles of washing instruments, whether by hand or machine:

- Use a cool-water rinse to remove gross debris.
- Fat or protein sediments and debris dried to the instrument surface may require an enzyme detergent soak.
- Water temperature should be less than 140 degrees Fahrenheit.
- Choose a detergent compatible with the makeup of the surgical instrument.

Instrument Preparation and cleaning

Clean all instruments and materials prior to sterilization.

- Dirt, blood and gross contaminants should be completely removed as they compromise sterilization.
- Instruments can be washed manually with a brush or in a washer sterilizer.
- Rinse instruments thoroughly after washing to remove any residues from the cleaning agents.
- Dry and safely store the instruments after cleaning.

Disinfection:

Disinfection decreases the viral and bacterial burden of an instrument, but does not clean debris or confer sterility.

- ✚ It is important to use all disinfectant solutions within their expiry date as some solutions like hypochlorite lose their activity very quickly.
- ✚ They must always be available for cleaning working surfaces, equipment that cannot be autoclaved and non disposable items and for dealing with any spillage involving pathological specimens.
- ✚ All disinfectants have "Contact Time", which means they must be left in contact with an infectious agent for a certain period of time.
- ✚ After disinfection, clean with normal detergent and water to remove the inactivated material and the used disinfectant.
- ✚ Before sterilization all equipment must be disinfected and then cleaned to remove debris.

Disinfectants used.

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Proper care of instruments during an operative procedure, coupled with meticulous methods of cleaning and disinfection, ensures patient safety for all surgical interventions.

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

1. Write basic principles of washing instruments?(4pts)
2. List out commonly used disinfectants(2pts)

Unsatisfactory - below 10 points

Note: Satisfactory rating - 10 points

Answer Sheet

You can ask you teacher for the copy of the correct answers

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

1. -

2.

Surgical instruments

- ✚ Surgical instruments used in veterinary surgery should be of stainless steel as they are resistant to corrosion and have excellent strength.
- ✚ Good quality of instruments minimizes damage to the patient.

Surgery materials, equipments and tools:

- ❖ Swabs, drapes, gloves, gowns, apron, masks, caps, cotton wool, gauze, scissors, different types of forceps, suturing needles, hemostats, tooth rasp, hoof trimmer, scalpel handle and blade, catgut, silk, nylon, instrument table, emasculator, elastrator, tray, trocar and cannula, dehorning wire, disinfectants detergents and sterilizers include autoclave, hot air oven and chemicals like formaldehyde and ethylene oxide, UV-light, obstetrical kit, emergency kit.

Common surgical instruments

- **Tissue forceps:** used on skin and soft tissue
- **Hemostats:** used to clamp and hold blood vessels.
- **Tissue forceps:** used to catch hold the tissue to facilitate deeper exposure of tissue.
- **Needle holder:** facilitate passage of suture needle through the tissue. Grasped at the midpoint.
- **Scissors:** used to cut tissue and suture materials except wire.
 - ✓ Types of points: Blunt-blunt, sharp-sharp and sharp-blunt
 - ✓ Types of shape: Straight and curved
 - ✓ Types of cutting edge : Plain and serrated
- **Towel clamps:** used to hold the drapes in position. Small amount of skin used to be grasped to secure the drape.
- **Groove director:** has a groove in the blade portion which facilitates incision/cutting of tissue without damaging underlined structures.
- **Bard parker:** used to handle blade. It is used to incises tissues and cause minimal trauma to penetrate the desired depth.

General instruments

- **Trocar and cannula:** is used for removal of gases from rumen or tapping of rumen through Paralumbar fossa.
- **Emasculator:** draws the cord into the jaws, thus avoids its slipping during castration. It cuts as well as seals the cord thus avoid danger after bleeding
- **Castration clamp:** is used for clamping of cord in large animals to facilitate ligature and its cutting during open method of castration.

- **Burdizzo castrator:** is used to for closed method or bloodless castration of bull, sheep, goat and pig.

Teat instruments

- **Teat plug:** is used to retain medication inside the canal and to plug the teat in case of leaky teats.
- **Teat bistoury:** is used to enlarge the teat canal and to remove the growth inside the canal.
- **Teat tumor extractor:** used to remove the teat tumor or polyps from the canal.
- **Teat slitter:** is used to for closed teat surgery.
- **Udder infusion tubes:** is used to for infusion of intra-mammary medication.
- **Milk tube:** used to infuse medication through teat canal and for milking the animal after surgery of teat or udder.
- **Teat scissors:** is used trim the extra growth or to cut outside growth. Generally used for closed teat surgery.

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

3. Write at least six surgical materials, tools and equipments(2pts)
4. Write at least four common surgical instruments(2pts)
5. Write at least three general surgical instruments(3pts)
6. List out test instrument.(3pts)

Unsatisfactory - below 10 points

Note: Satisfactory rating - 10 points

Answer Sheet

You can ask you teacher for the copy of the correct answers

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

1. -

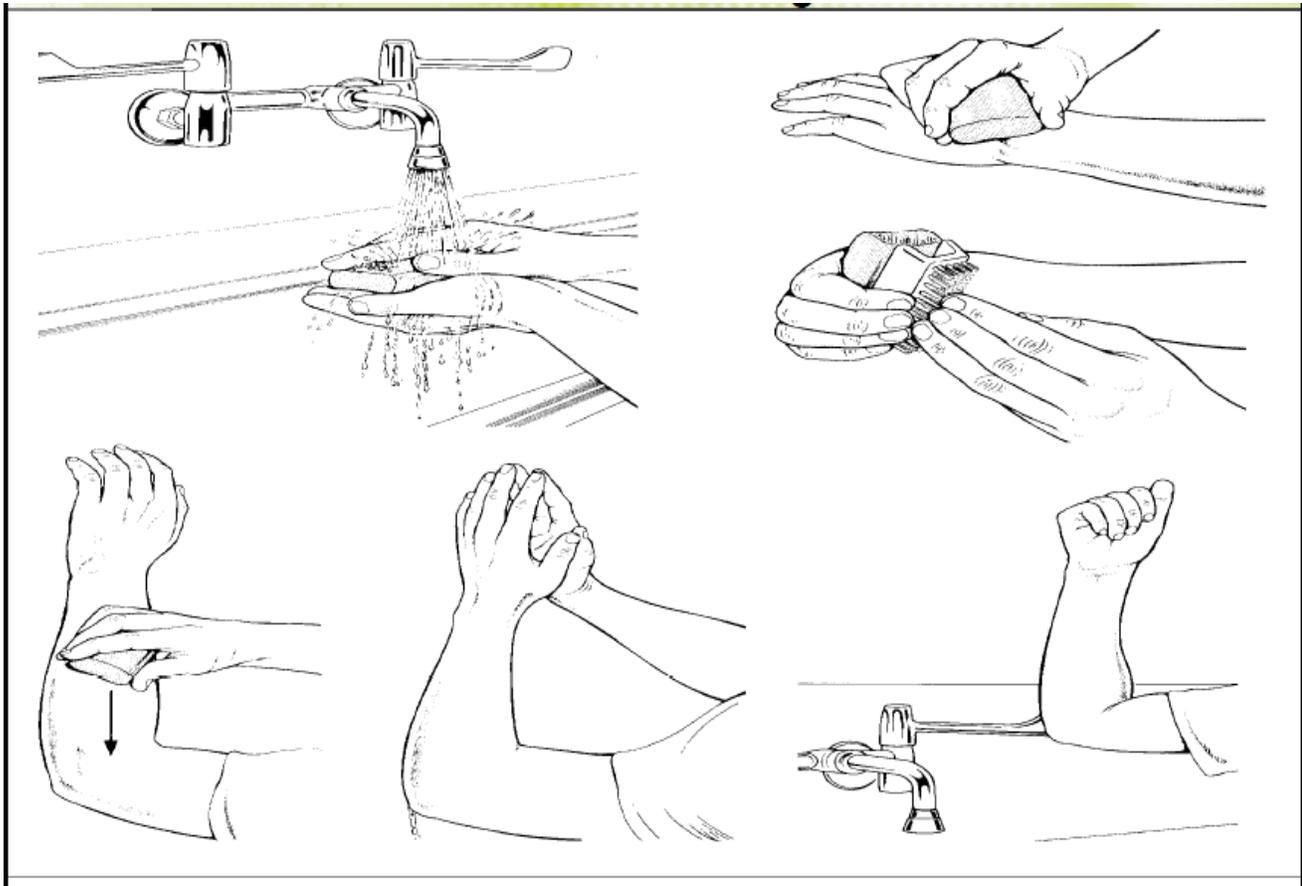
2.

Surgeon Preparation

- ✚ Before each operation all members of the surgical team will scrub.
- ✚ Prior to scrubbing hands, the surgeon should don a surgical cap, facemasks, surgical scrubs and appropriate shoes.

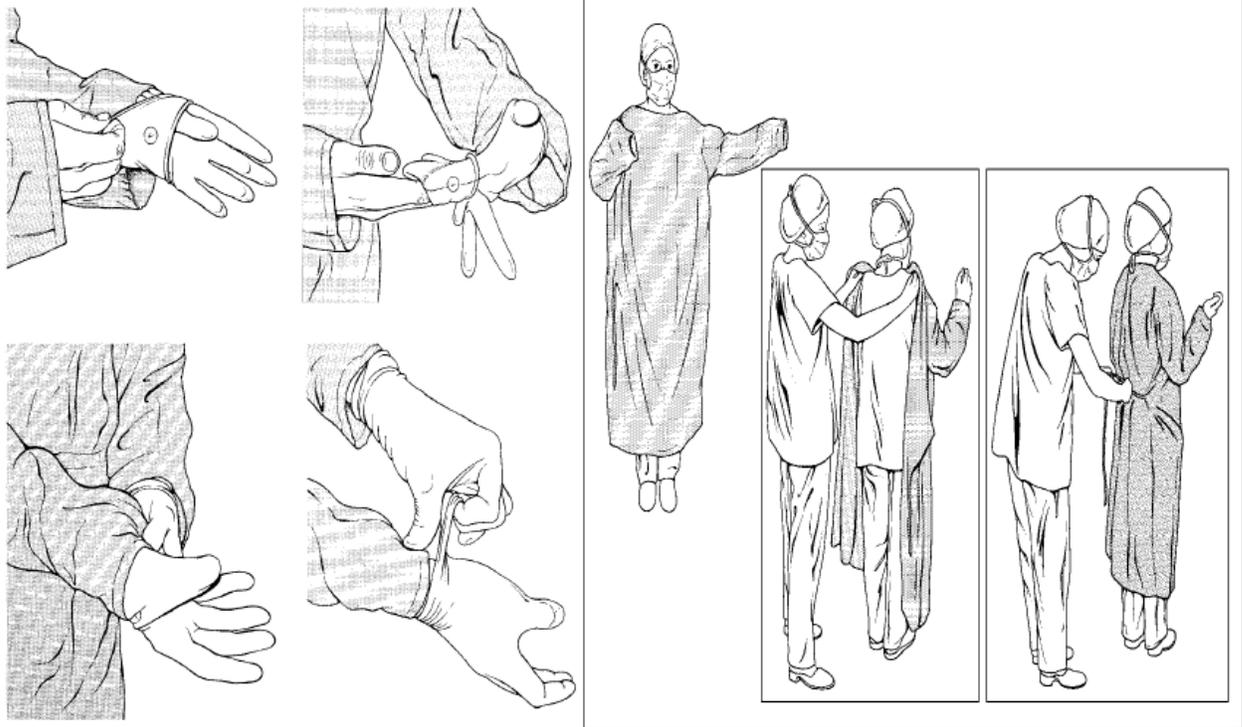
When scrubbing

- Remove jewellery items and ensure that fingernails are trimmed short.
- Scrubbing should be thorough beginning at the tip of the fingers all the way to the elbows using a surgical scrub containing a germicide e.g. chlorhexidine.
- Vigour and exposure times are critical, 3-15 minutes or 5-20 brush strokes per surface, with at least two thorough scrubs and rinses.
- After scrubbing hold up your arms to allow water to drip off your elbows
- Turn off the tap with your elbow



After scrubbing your hands

- Dry your hands with a sterile towel beginning at the tip of the fingers to the elbow.
- Rotate the towel and repeat the procedure on the other hand.
- After drying the hands, proceed to put on a sterile gown.
- Lift the gown, unfold away from the table, and insert your arms into the sleeves.
- The assistant closes the back of the gown, and the surgeon closes the waist tie.
- Open the paper covering (outer covering should have been previously opened) on the gloves as illustrated.
- Insert the gloves as shown making sure not to touch any non-sterile surfaces.
- If you accidentally touch a non-sterile surface with your gown or gloves discard them and re-gown and/or re-glove as appropriate.
- Always maintain a zone of sterility in front of you.
- Clasp your hands in front of you making sure the hands are above the table, above your waist and no higher than your shoulders.



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

1. Write at least two materials used for surgeon preparation (4pts).
2. List two methods of scrubbing. (3pts)

Unsatisfactory - below 7 points

Note: Satisfactory rating - 7 points

Answer Sheet

You can ask you teacher for the copy of the correct answers

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

Operation sheet-1	Preparation of staff
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Hand scrubbing procedures

Steps:

1. Remove jewellery items
2. Trim finger nails.
3. Scrub hands (finger and elbows)
4. Hold up your arms to allow water to drip off your elbows
5. Turn off the tap with your elbow

Operation sheet-2	Preparation of staff
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Hand drying and PPE wearing procedures

1. Dry hands with a sterile towel.
2. Rotate the towel and repeat the procedure on the other hand.
3. After drying the hands, proceed to put on a sterile gown.
4. Lift the gown, unfold away from the table, and insert your arms into the sleeves.
5. The assistant closes the back of the gown, and the surgeon closes the waist tie.
6. Open the paper covering Insert the gloves.