



SOP for Surgery of Farm Animals

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1. Purpose

1.1 This SOP describes the procedures for major and minor surgeries in farm animals.

2. Scope

2.1 This SOP covers the procedure for preparation of animal, positioning of animal and preparation of surgical team.

3. Responsibilities

Sl. No.	Official Designation	Responsibilities
1.	Veterinarian	Oversee preparation of animal and positioning of animal. Perform surgery.
2.	Paraveterinarian	Preparation of animal and positioning of animal. Perform minor surgeries.
3.	Animal attendant	Assist in preparation of animal and positioning of animal. Restrain the animal.

4. Definitions

4.1 **AHD:** It refers to Animal Health Division under the Department of Livestock.


4.2 **Animal attendant:** It refers to a person who helps in restraining of animals and ensures the well being of the animals during the treatment procedures.

4.3 **Anesthesia:** It refers to insensitivity to pain, especially as artificially induced by the administration of gases or the injection of drugs before surgical operation.

4.4 **Consent form:** A form signed by the pet owner prior to an anesthetic/ surgical procedure to confirm that he or she agrees to the procedure and is aware of any risks that might be involved. The primary purpose of signing of consent form is to provide evidence that the pet owner gave consent to the procedure in question.


4.5 **DoL:** It refers to Department of Livestock.

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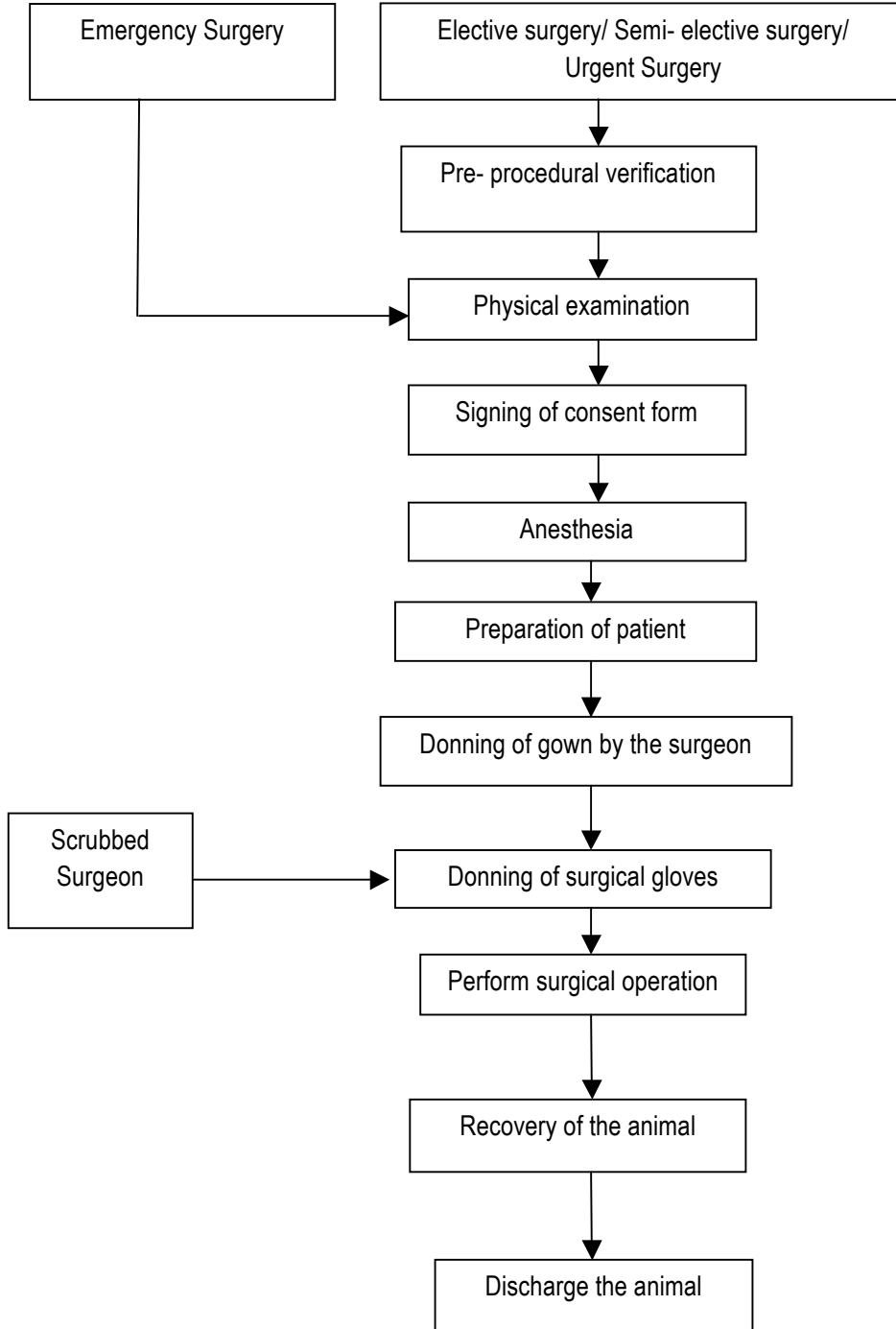
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- 4.6 **DRA:** It refers to Drug Regulatory Authority.
- 4.7 **Effective Date:** It is the date that a document becomes effective for use.
- 4.8 **Elective surgery:** Surgery, which is scheduled in advance because it does not involve a medical emergency (spaying, castration etc).
- 4.9 **Emergency surgery:** Surgery that must be performed without delay. In such cases the patient has no choice other than immediate surgery to prevent permanent disability or death.
- 4.10 **Endotracheal tube:** It refers to a catheter that is inserted into the trachea for the primary purpose of establishing and maintaining a patent airway.
- 4.11 **Extubation:** It is the process of removal of endotracheal tube.
- 4.12 **Farm Animals:** It refers to animals that are raised for home use or for profit. Farm animals include cattle, yak, sheep, goat, pig and horse.
- 4.13 **Intubation:** It is the process of placing a tube into the body for medical purposes. Typically, intubation refers to the placement of an endotracheal tube to assist the patient when they are not breathing effectively. The tube is placed into the trachea and connected to an assistive device for breathing.
- 4.14 **Major surgery:** Surgery which involves invasion/ opening of mesenchymal barrier (pleura, peritoneum and meninges) or an extensive orthopedic procedures which otherwise might leave the animal physically or physiologically disabled.
- 4.15 **Minor surgery:** Surgical procedure which does not expose a body cavity and causes little or no physical impairment or procedure in which only skin, mucous membrane and connective tissues are involved.
- 4.16 **NVH:** It refers to National Veterinary Hospital, Thimphu.
- 4.17 **Para-veterinarian:** It refers to a person with diploma in Animal Science and is authorized to provide treatment to the animals.
- 4.18 **Pre-procedure verification:** It is the process when patient related data is reviewed; the accuracy of the anticipated procedure is verified and the owner/ representative attending the patient understands the planned procedure.
- 4.19 **Restrain:** It refers to application of any procedure designed to restrict its movements in order to facilitate examination of patient.
- 4.20 **Semi-elective:** Surgery that must be done to preserve the patient's life, but does not need to be performed immediately. Eg: Congenital umbilical hernia in pups.
- 4.21 **SOP:** It refers to Standard Operating Procedure.
- 4.22 **Staff:** It refers to veterinarians, para-veterinarians and animal attendants.
- 4.23 **Surgery:** It refers to the treatment of injuries or disorders of the patient by incision or manipulation with instruments.
- 4.24 **Urgent surgery:** Surgery that can wait until the patient is medically stable, but should be done within 24- 48hrs.


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5. Process Map in Flow Chart



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6. Procedure

6.1 Obtain history of deworming of the pet from the owner.

6.2 Pre procedural verification of the animal.

6.2.1 Explain the owner/ representative attending the patient about the risk and benefits involved during and after the surgical procedure.

6.2.2 Ask the owner/ representative to fill the surgery consent form.

6.2.3 Attach prescription with necessary indices and clinical parameters after physical examination.

6.2.4 Physical examination will be done by the veterinarian/paraveterinarian.

6.2.5 The clinical parameters that need to be taken prior to surgery are:

- Body weight of the animal (kg).
- Rectal temperature (°C/ F).
- Conjunctival mucous membrane.
- Capillary refill time (CRT).
- Any other relevant clinical parameters that is necessary according to the surgical case at hand.

6.3 Anesthesia

6.3.1 Local anesthesia (LA)

6.3.1.1 Infiltration anesthesia ('Inverted L block and Ring blocks)

6.3.1.2 Epidural anesthesia

6.3.1.3 Paravertebral anesthesia (Proximal & Distal)

6.3.2 For general anesthesia refer SOP for Anesthesia of Farm Animals.

6.4 Surgical Attire

6.4.1 All the technical personnel (vets and paravets) involved in surgery are required to wear clean surgical scrubs (Green gown).

6.4.2 Green surgical scrubs are to be worn only during surgery.

6.4.3 He/she should wear surgical face mask and cap (hair should be tucked inside the cap).

6.4.4 All the personnel should wear closed foot wear. The shoes should be easy to clean and disinfect.

6.4.5 The outer garments and shoes should be cleaned or changed and disinfected when being soiled with feces, urine, nasal and ocular exudates and body fluids.

6.5 Preparation of animals

6.5.2 Preparation area should be clean.

6.5.3 After the animal has been anaesthetized, hair around the surgical area should be clipped. Hair (bulk) should be clipped towards the direction of the hair flow followed by closer clip of the hair against the direction of the hair flow.

6.5.4 The clipped area should be first washed with antiseptic soap/ shampoo to remove gross debris. Scrub the surgical site with 4% chlorhexidine followed by povidone iodine three-five times. After each spray of scrub solution, swab/ wipe the area with

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cotton starting from surgical site then towards periphery (use cotton for one wipe only).

6.5.5 Spray surgical spirit (90% ethylene) over the surgical site.

6.6 Positioning of the animal

6.6.1 Animal should be moved in such a way that the scrubbed surgical site is not being contaminated.

6.6.2 Positioning of animal entirely depends upon the type and site of surgery to be performed.

6.7 Preparation of surgical team

6.7.1 Scrub (timed technique)

6.7.1.1 Scrub the fingers, between the fingers, back and front of the hand for two minutes.

6.7.1.2 Proceed to arm (keep the hands higher than the arms at all times). Wash each side of the arm from wrist to the elbow for one minute.

6.7.1.3 Rinse the hands and arms by passing them through the flow of water in one direction, from finger tips to arms (do not move them back and forth through the water).

6.7.1.4 Dry the hands and arms with clean sterile towel before donning of gowns and gloves.

6.7.2 Donning of surgical gown (Major surgery)

6.7.2.1 The surgical gown should be folded in such that, the body of the gown (not the sleeves) is folded inside out.

6.7.2.2 The scrubbed surgeon should grasp the sterile gown by the inside of the neck and allow rest of the gown to fall.

6.7.2.3 Touching only inside of the gown the hands are to be inserted into the sleeves keeping the hands covered.

6.7.2.4 An assistant pulls the gown (touching the inside of the gown) over the shoulders and fastens the rear.

6.7.3 Donning of surgical Gloves

6.7.3.1 Closed Gloving for Major surgery

6.7.3.1.1 The inside surface of the left glove is grasped by the left hand through the fabric of the gown (so that the fingers will remain covered at all times).

6.7.3.1.2 The right hand (which remains inside the sleeve) is used to draw the cuff over the left hand.

6.7.3.1.3 The fingers of the left hand are allowed through the sleeve into the glove.

6.7.3.1.4 Same procedure is followed for the right hand.

6.7.3.2 Open Gloving for Minor Surgery (Gown less surgery)

6.7.3.3 Touching the inner surface of the glove, the fingers of one hand is inserted.

6.7.3.4 The thumb remains within the cuff.


6.7.3.5 The other glove is picked in such a way that the outer surfaces do not touch the inner surface.

6.7.3.6 The opposite hand is then inserted inside the glove.

6.7.3.7 The gloves are pulled over the wrist.

6.8 Opening of surgical Instruments.

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6.8.1 A non-scrubbed assistant will open the instrument bin with sterilized instruments.

6.8.2 The surgeon will take the instrument pack from the bin.

6.8.3 The surgeon will unwrap the sterilized surgical instrument, taking care to handle only the sterile part.

6.9 Perform surgical operation by the veterinarian.

6.10 Post operative care.

6.10.1 Antibiotic therapy for 3-5days.

6.10.2 Advise the owner to bring the animal for suture removal after 7-10 days or to bring the animal as soon as they observe discharge (Serous/ purulent/ serosanguineous) from the surgical wound.

6.11 Removal of surgical Gowns and gloves

6.11.1 Surgical gown

6.11.1.1 After assistant unties the neck and back ties, grasp the gown at the shoulders and pull the gown forward and down the arms and gloved hands.

6.11.1.2 Holding the arms away from the body, fold the gown so that the outside of the gown is folded in.

6.11.2 Surgical gloves

6.11.2.1 Take hold of the first glove at the wrist.

6.11.2.2 Fold it over and peel it back, turning it inside out as it goes. Once the glove is off, hold it with your gloved hand.

6.11.2.3 Remove the other glove; place your bare fingers inside the cuff without touching the glove exterior. Peel the glove off from the inside, turning it inside out as it goes. Use it to envelope the other glove.

6.12 Clean the area before you leave.

7. Related Forms or Work Instructions

7.1 SOP for Anesthesia of Farm Animals.

7.2 Consent form.

8. References

8.1 SOP on SOP format - Drug Regulatory Authority of Bhutan.

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