



Ethiopian TVET System



**Animal Health Care Service Level -I  
Training Module –Learning Guide 46-  
48**

**Based on Version 3 March 2018**

**Occupational Standard (OS)**

Unit of Competence: Provide Basic First Aid to  
Animals

Module Title: Providing Basic First Aid to Animals

TTLM Code: AGRAHC1 TTLM13 0919v1

October 2019



# **Module Title:-Providing Basic First Aid to Animals**

**TTLM Code: AGRAHC1 TTLM13 0919v1**

**This module includes the following Learning Guides**

LG46: Assess emergency situation and plan response

(LG Code: AGR AHC1 M13 LO1-LG

LG47: Apply basic first aid care.

(LG Code: AGR AHC1 M13 LO2-LG-47)

LG48: Record and report

(LG Code: AGR AHC1 M13 LO3-LG-48)



<b>Instruction Sheet</b>	<b>Learning Guide46 #-</b>
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Recognizing emergency situation.
- Assessing risk posed to self, others and animals
- Assessing vital signs and physical condition of animals
- Evaluating and selecting procedures, Options for assisting

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 –**

- Recognise emergency situation.
- Assess risk posed to self, others and animals.
- assess physical condition and vital signs of the animal
- Evaluate options for assisting animals and select procedures

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7.
3. Read the information written in the “Information Sheets 1”2, 3 and 4. 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” **2and 3 in page 12, 16, 24and 28respectively**
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.



## Information Sheet-1

## Recognizing emergency situation

### Tools and equipments which may be used during emergency situation

- ✓ **Roller bandage:** - bandaging the injured arm to keep pressure on the wound.
- ✓ **Gloves:-** used by the first aid assistant (professionals) to prevent zoonotic disease by inserting into hands
- ✓ **Scissors:** - used to cut bandages and other dressings.
- ✓ **Cold pack:** - put and press on the burn area.
- ✓ **Tweezers:** - used to stand or put up of dressing materials from the wound.
- ✓ **Disposal bags:-** to dispose the different devices that are used in first aid
- ✓ **Antiseptics:** - to kill the microorganisms during giving first aid cause wounds are contaminated by micro organisms.
- ✓ **Boots:** - inserted to the leg and protect from injury and zoonotic diseases.
- ✓ **Nose ring:-** is a restraining material used to control bulls
- ✓ **Mouth gag:** - is a material which is inserted through mouth and to examine the oral cavity and esophagus.
- ✓ **Drenching gun:** - it is a type of plastic gun used to drink an animal's solution fluids.
- ✓ **Ropes:-** is a device used for casting of animals
- ✓ **Kennels:** - used to restraining of dogs.
- ✓ **Crush :-** is made up of wood or metals used to restrain animals such as cattle's, equines during treatment and examination
- ✓ **Sedatives:** - are medicines that are used to calm of the animals.
- ✓ **Iodine solution:-** to clean the wound and its surrounding.
- ✓ **Alcohol:** - to disinfect the surrounding wound.
- ✓ **Water:** - to clean the dirty areas. To cold or flush the burned area.
- ✓ **Hobbies:** - used to restraining of horses.



- ✓ **Stethoscope:** - is used to measure respiration and heart beat.
- ✓ **Thermometer:** - to measure body temperature.
- ✓ **Vagina speculum:** - to detect or visualize vagina.
- ✓ **Urethral catheter:** - to collect urine or to catheterization of urinary bladder.
- ✓ **Syringe and hypodermic needles:** - to administer drugs.
- ✓ **Disease:** disorder of structure or function in a human, animal, or plant, especially one that produces specific symptoms or that affects a specific location and is not simply a direct result of physical injury.
- ✓ **Health:** physical, mental, social and economical wellbeing of an individual
- ✓ **Lesion:** is the 'abnormality' in the tissue and it can be either functional or morphological or both.
- ✓ **First aid kit** is a collection of supplies and equipment that is used to give emergency help
- ✓ **Obstetric kit:** collection of supplies and equipment that is used to relief dystocia
- ✓ **Stomach tube:** it is plastic tube which is important to relief bloat and also administering drugs by inserting through mouth for cattle and sheep
- **Nasogastric tube:** tube it is plastic tube which is important to relief bloat by inserting through nose in the case of equine species
- ✓ **Trocar and canula:** used for piercing of bloating rumen at paralumbar fossa
- ✓ **First aid book:** used for recording of phone numbers of emergency centers and veterinarians

## 1. Concept of Emergency situation

An emergency situation may be seen as one in which human and/or animal safety and wellbeing are at risk. This may be a potential risk that needs addressing before harm occurs, or may refer to an incident that has already occurred. Having a basic knowledge of animal first aid will be of great value to you as a member of the animal care industry. With the ability to assess a patient and recognize the signs of pain, distress and injury or illness, emergency situations for animal patients can be recognized and addressed. From these



observations, deciding whether an animal needs professional treatment may be crucial for welfare and even survival. The occurrence of emergency was vary in different circumstances, therefore understand the cause of emergency, the type of emergency, severity of emergency is very important to take actions that are used to minimize the emergency situations.

## 2. Common Emergency situation in animal

☞ **Poisons:** it is a substance that cause death, injury or harm to animals(insecticides, pesticides, toxic plants,drug overdose and other chemicals)

### ➤ **Lead poisoning**

- In veterinary medicine, lead poisoning is most common in dogs and cattle but limited in other species due to reduced accessibility and selective feeding habits. The sources of lead include used in oil and battery, paint, grease, lead shot.
- **Signs:** acute course characterized by ataxia, blindness, salivation, spastic switching of eyelids, jaw champing.

### ➤ **Strychnine poisoning**

- ✓ Strychnine is a better fasting alkaloid used as pesticides to control Golphers, moles, and rats. It use is restricted in Ethiopia but used for the same purpose under the veterinarian supervision for the control of stray dogs. Accidental poisoning might occur to animals and humans. The onset occurs from 10 minutes to 3 hours.
- ✓ **Clinical signs:** the signs include anxiety, stiffness, violent titanic seifures, saw-stances, opisthotonous, and persistent rigid extension of all four limbs.

### ➤ **Cyanide poisoning**

- ✓ Cyanogenic glycosides accumulate in some plants(e.g. johnson grass, sorghum.. etc) whenever their cycle of vegetation is interrupted: for example when they wither after a sudden remove of water, after application of herbicides or under special climatic influences cyanide interferes with oxygen transport to tissues and will die quickly.



✓ **Clinical symptoms:-** excitement followed by staggering, dyspnea with tachycardia, cattle stand with their mouths wide open, salivation and frothy foam, nystagmus, delirium of the lacrimation, increased excitability.

✓ **First aid:** -Sodium nitrite 10% in distilled water was given.

☞ **injury or trauma** (falls, head, eye, dog attack, Burns, gunshot, penetrating wounds, hernias

➤ **Animal bites**

Animal bites cause a wound and carry the risk of rabies, which can be fatal without prompt treatment. Rabies should be suspected in cases of unprovoked attacks, strangely acting animals or wild (none domesticated animals).

➤ **Hernia**

**A hernia** is the abnormal exit of tissue or an organ, such as the bowel, through the wall of the cavity in which it normally resides. A hernia occurs when there is a weakness or hole in the peritoneum, the muscular wall that usually keeps abdominal organs in place. This defect in the peritoneum allows organs and tissues to push through, or herniate, producing a bulge.

➤ Car accident (common veterinary emergency) crushing by cars Kangaroos, dogs, horse, cattle, cats, and birds are often found injured beside the road. Injury can vary from shock, fractures to internal bleeding. The severity of the injury will determine the most appropriate course of action. In all cases basic treatment and release is the preferred option however seeking veterinary care or euthanasia should be considered if prognosis is poor.

☞ **Fight/ flight:** Cats often prey on smaller mammals, reptiles and birds. Dogs usually attack larger animals such as possums, wallabies, bandicoots, birds and bobtails. Both dogs and cats have a lot of bacteria in their mouth and it is typical for infections to result from bite wounds. Any open wound should be lightly covered to prevent fly strike. The severity of the injury will determine the most appropriate course of action. If the prognosis is poor a decision will need to be made to euthanase or seek veterinary treatment.

☞ **flood/drought**



Floods can bring a range of animal health problems, from food shortage and plant toxicity to dehydration, infection and disease. Pasture and crops damaged by flooding may leave farmers needing to find alternative feed for stock over the coming months.

In particular, mould growth on water damaged feed reduced the nutritive value and palatability of both standing and stored feed, with some mould toxicity causing death or longer-term health problems such as liver damage.

Surprisingly, dehydration can be a problem with stock often refusing to drink flood water if it is polluted or tastes different from their normal supply. It's important to watch your stock carefully to ensure they are drinking adequately.

On the other hand during drought season there is scarcity of feed due to this animals are faced challenges like physical accidents, aberrant eating habits (eating of sand); and predisposition to infectious disease

☞ **Cardiac arrest**, also known as cardiopulmonary arrest, is defined as the failure of the respiratory and circulatory systems in an acute manner

☞ **Shock (collapse)**

it is a result of a collapsed circulatory system and can occur due to stress, blood loss, fluid loss, low blood pressure and a damaged heart. Many animals which are badly injured show signs of shock. Signs of shock include rapid pulse or breathing, hypothermia (eg. mammals may shiver and birds fluff their feathers) and pale/white gums. The signs of shock are not always obvious and can develop over time. An animal in shock is usually still, quiet and cold. Treatment for shock should first aim at reducing stress (e.g. covering the animal's eyes), stopping any visible signs of bleeding and then making sure the animal is kept warm and quiet.

☞ **Dystocia**

Dystocia –is difficulty in birth /if parturition does not occur within 24hrs Or the drop in rectal temperature (<37.7°c) Or prolonged gestation period.



Birth is an extremely complicated process and dystocia may arise if any part or parts of the process fail or become uncoordinated.

Causes of dystocia-divided in to

### 1. Maternal causes

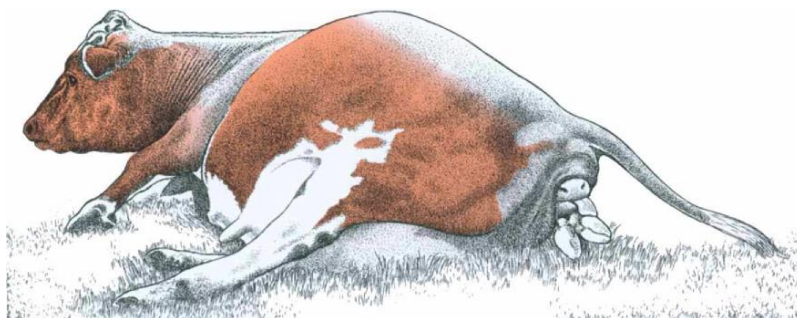
The maternal components of birth are the provision of expulsive force and a bony & soft tissue birth canal through the fetus can pass.

#### ➤ Failure of expulsive force

- I. Abdoiminal – inability to strain (due to aging, pain, diaphragmatic rupture, tracheal/laryngeal damages.
- II. Obstruction of birth canal due to -Bony pelvis –fracture, breed, diet, immaturity, neoplasia, vulva (immaturity), vagina (hymen, prevaginal abscess
- III. Premature birth, Environmental disturbance, Myometrial defects

### 2. Fetal causes

The fetal components of birth include initiation of birth process the assumption of correct presentation, position, posture & size of the fetus.



**Fig 1: cow with dystocia**

#### ☞ **Wound**

A wound is a type of injury which happens relatively quickly in which skin is torn, cut, or punctured (an *open* wound), or where blunt force trauma causes a contusion (a *closed* wound). In pathology, it specifically refers to a sharp injury which damages the Epidermis of the skin

According to level of contamination, a wound can be classified as:



- **Clean wound:** - made under sterile conditions where there are no organisms present, and the skin is likely to heal without complications.
- **Contaminated wound:-** usually resulting from accidental injury; there are pathogenic organisms and foreign bodies in the wound
- **Infected wound:** - the wound has pathogenic organisms present and multiplying, exhibiting clinical signs of infection (yellow appearance, soreness, redness, oozing pus).
- **Colonized wound** – a chronic situation, containing pathogenic organisms, difficult to heal (i.e. bed sore).

Also wound is classified as

#### I. Open wounds

- ✓ **Incisions or incised wounds** – caused by a clean, sharp-edged object such as a knife, razor, or glass splinter.
- ✓ **Lacerations** – irregular tear-like wounds caused by some blunt trauma. Lacerations and incisions may appear linear (regular) or stellate (irregular).
- ✓ **Abrasions (grazes)** – superficial wounds in which the top most layer of the skin (the epidermis) is scraped off. Abrasions are often caused by a sliding fall on to a rough surface such as asphalt, tree bark or concrete.
- ✓ **Avulsions** – injuries in which a body structure is forcibly detached from its normal point of insertion. A type of amputation where the extremity is pulled off rather than cut off.
- ✓ **Puncture wounds** – caused by an object puncturing the skin, such as a splinter, nail or needle.
- ✓ **Penetration wounds** – caused by an object such as a knife entering and coming out from the skin.
- ✓ **Gunshot wounds** – caused by a bullet or similar projectile driving into or through the body. There may be two wounds, one at the site of entry and one at the site of exit, generally referred to as a "through-and-through."



II. Closed wounds have fewer categories, but are just as dangerous as open wounds:

- ✓ **Hematomas (or blood tumor)** – caused by damage to a blood vessel that in turn causes blood to collect under the skin. Hematomas that originate from internal blood vessel pathology are petechiae, purpura, and ecchymosis. The different classifications are based on size. Hematomas that originate from an external source of trauma are contusions, also commonly called bruises. Crush injury – caused by a great or extreme amount of force applied over a long period of time.

### ☞ **Bleeding**

The presence of blood over a considerable area of animals's body does not always indicate severe bleeding. The blood may ooze from multiple small wounds or be smeared, giving the appearance of more blood than is actually present. The rate at which blood is lost from a wound depends on the size and kind of blood vessel ruptured. Bright red, spurting blood indicates injury to an artery while welling or steadily flowing, dark red blood indicates injury to a vein. Welling or spurting blood is an unmistakable sign of severe bleeding. If a major artery ruptures, the patient may bleed to death within a minute. Injuries to veins and minor arteries bleed more slowly but may also be fatal if left unattended. Shock usually results from loss of fluids, such as blood, and must be prevented as soon as the loss of blood has been stopped.

### ☞ **Burn**

A burn is an injury to the skin caused by exposure to fire, hot liquids or metals, radiation, chemicals, electricity, or the sun's ultraviolet rays. Burns are classified according to the depth of tissue damage and extent of the burn. A first-degree, or superficial, burn, which involves only the surface of the skin, is characterized by reddening. A second-degree burn extends beneath skin surface and causes blistering and severe pain while a third-degree, or full-thickness, burn causes charring and destruction of the cell-producing layer of skin. The severity of a burn depends also on the area involved, expressed as a percentage of the total body



surface area. Severe burns cause shock and loss of body fluids. The animal suffering third-degree burns over more than 10 percent of body surface area should be hospitalized as soon as possible

### **Cause of burns**

#### ➤ Heat burns

- ✓ Heat burns may be caused by flames or contact with steam or any hot object. The severity of burn depends on the amount of damage to the skin and other tissues under the skin.

#### ❖ Types of Heat burn

- ✓ First degree burns: - superficial burns: damage only the skin's outer layer.
- ✓ Second degree burns:-partial thickness burns: damage the skin's deeper layers.
- ✓ Third degree burns:- full thickness burns : damage the skin all the way up to the muscles.

#### ➤ Chemical burns

Many strong chemicals found in the work place and the home can burn the animals.

#### ☞ **Snake bite**

The progression of events after pit viper envenomation can be divided into 3 phases: the first 2 hr, the ensuing 24 hr, and a variable period (usually ~10 days) afterward. The first 2 hr is the acute stage in which untreated, severely envenomized animals usually die. If death does not occur during this period, and the untreated animal is not in shock or depressed, the prognosis usually is favorable. The acute phase can be prolonged for several hours by use of corticosteroids and, if they are administered, prognostication should be withheld. If the animal is active and alert after 24 hr, death due to the direct effects of the venom is unlikely. The third phase is a convalescent period in which infection



(possibly anaerobic) may be of concern. If necrosis has been extensive, sloughing occurs and may be so severe as to involve an entire limb.

### ☞ **Fracture**

It is a broken bone.

Types of fracture

- I. Closed fracture: fractures in which there is no related external wound.
- II. Open (formerly known as compound) fracture: fractures associated directly with open wounds (the bone may or may not be visible through the wound).
- III. Dislocation: an injury to the connective tissues holding a joint in position that results in displacement of a bone at the joint.
- IV. Sprain: an injury to a joint, ligament, or tendon in the region of a joint. It involves partial tearing or stretching of these structures without dislocation or fracture.

☞ **Bloat:** it is over distension of the rumen and reticulum with the gases of fermentation, either in the form of persistent foam mixed with the rumen contents or in the form of free gas separated from the ingesta. There are two classes of bloat:

- ❖ **Frothy or primary bloat** is dietary in origin and occurs in cattle on legume pasture and in feedlot cattle on highly fermentable **grain** diets
- ❖ **Free gas or secondary bloat or chronic bloat** is usually due to failure of eructation of free gas because of a physical interference with eructation

<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 emergency situation (1pts)?
2. List at least 5 common emergency situation in animals (5pts)
3. Discuss about cause of dystociais dystopia (4pts).
4. List and discuss types of bloat (4 pts)

**Note: Satisfactory rating 7 points**

**Unsatisfactory - below 7 points**

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

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

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



<b>Information Sheet-2</b>	<b>Assessing risk pose to self, others and animals</b>
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**Risk** is the probability of harm occurring from exposure to a hazard and the likely consequences of that harm or damage

**1. Risks to the professional worker**

Whenveterinarians, animal handlers/workers may encounter different risks during handling of animals for emergency situation.

- **Animal bites and Scratches:** is an ever present hazard that faces all employees working directly with lab animals or any diagnostic practices.
- **Protocol-related hazards:** are those hazards specifically associated with either routine operational or experiment-specific protocols. E.g. a specific viral vector carrying a transgene (having the genetic material) for toxic production.
  - Some general hazards also associated with protocols like the risk of fire and electrical hazard in the use of experiment-specific equipment are not included in the category of protocol-related hazard.
- **Zoonoses:** are those diseases that can be transmitted from animals to humans. Some diseases can be transmitted to the professional during animal handling and medicating practices. E.g. bovine TB, anthrax, rabies
- **Inherent hazards:** these are some potential hazards inherent in any work environment. These includes poor ergonomics, (the study of working condition, especially design of equipments, buildings etc) slips and falls, electrical safety hazard etc.
- **Allergy:** hypersensitivity reactions to the animal allergens are serious occupational health problems that developed in many individuals after repeated exposure.
  - The rabbit and mouse appear to be the most allergenic lab animals. The urinary and salivary protein from the animals fur, bedding and caging are known source of allergens.



## 2. Risks to the animal

During first aid practices animals might be faced with risks like:

- Allergic reaction with some drugs and site of administration.
- Swelling at the site of drug injection site
- The needle may be broken inside the animal body.
- Drug resistance with respect to the under dosage of the drug and
- Over dosage of the drug which might result even death
- Freighting which lead to stress
- Break when try to escape
- Injuries while falling

**Hazard** is a situation that has the potential harm to animals, a person, the environment and/or damage property.

### Why we study hazards?

The objectives of studying hazards/ risks in veterinary clinic are

- To prevent exposure to hazards/risks to people, animals
- To assist practitioners in identifying and assessing the hazards in their practice
- Determining what steps must be taken to eliminate or reduce hazards/risks

### Common Hazards occur during animal emergency situation

- I. **Physical hazards** - falls, animal bites/ **Scratches**, needle stick/sharps injuries, radiation, kicking
- II. **Chemical hazards** - Anesthetic gas, ethylene oxide, insecticides and disinfectants, latex glove allergy, acid
- III. **Biologic hazards –Zoonoses disease**





## Risk assessment

Risk assessment is a process of analysis and evaluation. The purpose of risk assessment is to determine whether there is any likelihood of injury, illness or diseases associated with each of the potentially hazardous situations identified in the hazard identification process by considering:-

- Whether any person/animal would be exposed to the identified situation under all possible scenarios (e.g. services, operation, etc.)
- What existing measures are in place to protect the health and safety who may be exposed
- How adequate the existing measures for protecting the health and safety of people/animal who may be exposed

If the likelihood that anyone will be exposed to the situation under all possible scenarios is zero, then there is no risk and no additional risk control measures are required.

## Risk control

The hierarchy of control measures include:-

1. eliminate – removing the hazard
2. substitute – replacing a hazardous substance or process with a less hazardous one
3. isolation – restricting access to plant and equipment or in the case of substances locking
4. engineering - redesign a process or a piece of equipment to make it less hazardous
5. administrative – adopting standard operating procedures or safe work practices or providing appropriate training, instruction or information
6. personal protective equipment (PPE) – use of PPE



<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. What is hazard (1pts)?
2. Write types of hazards (2pts)
3. What are the risk control hierarchies (3pts)?
4. What is the difference between hazard and risk (2pts)
5. What are **Risks to the professional worker during emergency situation (2pts)**

**Note: Satisfactory rating - 5 points**

**Unsatisfactory - below 5 points**

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

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

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



<b>Information Sheet-3</b>	<b>Assessing vital signs and physical condition of animals</b>
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## Assessing animal conditions

Having the skills to efficiently and accurately assess an animal will help you judge how urgent the situation is and what if any, immediate action is needed. Additionally, the animal's condition may impact on how you are able to seek the help you need for example, can the animal be safely transported?

### 1. Physical condition of animals

The animal physical condition is assessed at static position and while moving in order to know feeding, urinating, defecation, interactions between group members, responses to external stimuli walking condition, gait, body condition score, posture and gross clinical abnormalities like Burns, lacerations, scratches and broken bones or limbs.

#### ➤ **BODY CONDITION**

It is assessed by inspection and palpation by giving attention all body prominences, ribs, shoulder, blade, spinous process of cervical, thoracic and lumbar vertebrae. Dewlap, brisket, thigh muscles and perineal regions should be viewed and judged.

From patho-physiological and nutritional stand point the physical condition can be demarcated as follow:

- ☞ **Good:** - In normal animal all the body prominences of the skeleton are covered with flush (muscle) and cushioned fat. The body has normal symmetry.
- ☞ **Fatty (obese):**- is a pathological deposition of a fat. There is an abdominal protrusion and body assumes round shape.
- ☞ **Thin (lean):**- Various parts of the skeleton are prominent. E.g. ribs, pelvis and supra orbital fossa are deepened.



☞ **Emaciation:** - there is wasting or atrophy of the muscle and bones are very much prominent with depression of supra orbital fossa. The difference between thinness and emaciation is only of degree.

## Posture

It denotes the general appearance of the animal from anatomical aspect when the animal remains in stationary situation. How does it stand? How does it sit? How does it lie

Examples that indicate abnormalities of posture

- ✓ **Kyphosis**- it is dorsal bending of the spinal column
- ✓ **Lordosis** - it is ventral bending of the spinal column

## 2. Vital signs of an animals

Taking the **vital sign** of an animal gives a good indication of its state of health. It is important to become familiar with the range of normal values of different species.

**The most vital sign of the animals are the following in:**

- **Temperature**
- **Pulse(heart rate)**
- **Respiration**

⇒ **Body temperature taking**

Temperature is defined as “the degree of heat of a living body . The body temperature is taken using mercury or digital electronic thermometer placed carefully into the rectum. Recording of temperature helps in establishing a diagnosis of febrile disease from a febrile one. temperature in domestic animals is recorded in the rectum except poultry. In female animals vaginal temperature may be considered but it may remain high 0.5 degree centigrade than the rectal temperature of healthy animal.

- ✓ **Factors that affect body temperature in normal animals**
  - ▶ Exercise



- ▶ Environmental temperature and humidity and ventilation
- ▶ Age, species:- in small animals > larger, younger animals > old
- ▶ Sex:- Female > male, pregnant > non pregnant
- ▶ Feeding

**Normal temperature in domestic animals:**

Type of Animal	Temperature	
	° C	° F
Horse	37.7-38.68	99.86-101.62
Cattle	38.3-38.8	100.94-101.84
Sheep	38.8-40	101.84-104
Goat	38.8-40	101.84-104
Pig	38.8-39.4	101.8-102.9
Poultry	40-43	104-109.4



**Fig1:-** Taking of temperature in cattle

Certain conditions that associate with body temperature are:-

- A) **Hypothermia**:- this is a drop in body temperature ( sub normal or below normal ). This could be due to:-



- Malnutrition
- old age (senility)
- Emaciation
- Neonatal lambs subjected to cold
- Terminal stage of many diseases except tetanus (due to increased muscle twitch)
- Shock( circulatory collapse)
- Parturient paresis (hypocalcaemia), etc.

B) **Hyperthermia**:- this is an increase in body  $T^0$  above critical point which can be due to physical factors such as;-

- Excessive heat production
- Excessive heat absorption
- Reduced heat loss from the body

Certain conditions that associate with body temperature are:-

C) **Hypothermia**:- this is a drop in body temperature ( sub normal or below normal ). This could be due to:-

- Malnutrition
- old age (senility)
- Emaciation
- Neonatal lambs subjected to cold
- Terminal stage of many diseases except tetanus (due to increased muscle twitch)
- Shock( circulatory collapse)



- Parturient paresis (hypocalcaemia), etc.

D) **Hyperthermia**:- this is an increase in body  $T^{\circ}$  above critical point which can be due to physical factors such as:-

- Excessive heat production
- Excessive heat absorption
- Reduced heat loss from the body
- may be accompanied by other signs like shivering (chill), loss of appetite, increase in pulse and respiration rate, depression, etc. however, the rise in body  $T^{\circ}$  is one characteristics readily available sign of fever. For a fever to develop, exogenous pyrogens capable of inducing a febrile reaction (response) are phagocitized by neutrophil leukocytes, which release endogenous pyrogens. These endopyrogens exert effect on the thermoregulatory center (hypothalamus) of brain causing febrile state (increase in body  $T^{\circ}$ ). it is suggested that the increase in the body  $T^{\circ}$  that causes an increase in the antibody production. Hence, fever is a complex local or generalized response on the part of the body defense against abnormal or diseased state (i.e. it is one of the defense mechanism).

#### ⇒ **Pulse Taking**

Pulse is the elongation and expansion of the arterial wall by arterial blood due to contraction of the left ventricle. It is the regular beating of the heart as felt by fingers on the surface of the body where arteries found superficially.

#### ✓ **Sites of pulse taking**

##### **In horse**

- **submandibular (external maxillary) artery** on the medial aspect of ventral border of mandible.
- Transverse facial artery at mid-way between the base ear and eye



- ▶ Median artery at the upper extremity of medial aspect of fore limb (i.e. between humerus and ulna).

☞ **In cattle**

- ▶ Facial artery on the lateral side of the mandible.
- ▶ Middle coccygeal artery which is palpable on the underside of base of the tail (the best site).
- ▶ Transverse artery
- ▶ Median artery

☞ **For small animals including sheep /goat, dog, cat, pig, calf**

- ▶ Femoral artery situated on the medial side of the thigh.

**Normal pulse rate (beats/min)**

Animals	Pulse rate
Cattle	45-50
Horse	36-42
Sheep /goat	70-80
Camel	28-32
Dog	90-100
Cat	100-120
Pig	70-80
Chicken	250-300

✓ ***Physiological factors affecting the pulse rate in normal animals***

- |            |                      |                             |
|------------|----------------------|-----------------------------|
| ♥ Species  | ♥ Physical condition | ♥ Environmental temperature |
| ♥ Size     | ♥ Ingestion of food  | ♥ Parturition               |
| ♥ Age      | ♥ Sex                | ♥ Excitement                |
| ♥ Exercise | ♥ Pregnancy          |                             |





✓ **Abnormal types of pulse:**

Abnormal pulse rates are classified as increased or decreased number of beats per minute.

- **Tachycardia:** - when the number of pulse rate is higher than expected (normal). It is observed in septicemia, toxemia, pain, excitement, circulatory failure, etc
- **Bradycardia:** - is decreasing the number of pulse rate and occurs during presence of tumor or abscesses in cranium, diaphragmatic adhesions, chronic hydrocephalus, alcohol and lead poisoning.

⇒ **Respiration rate**

It refers to those physical actions by means of which air is brought into and expelled from the lung and it is the number of breather per minutes.

Respiratory activity can be assessed by:-

- Movement of nostrils
- Movement of thorax (ribs/ intercostal muscles)
- Movement of abdomen (diaphragm)

- ✓ **Respiratory rate** –is number of respiration per minutes.
- ✓ **Respiration rhythm** – refers to the regularity of time between the intervals of inspiration and expiration.
- ✓ **Respiratory depth**- refers to amplitude of movement of external respiratory organs indicating the volume of air taken in and the capacity of the lung.

**Types of respiration:** there are three types of respiration based on the external muscles predominantly involved in the respiratory movement

- a. Costal respiration: in dogs and cats
- b. Costo-abdominal: in equine
- c. Abdominal: in cattle, sheep and goats

Abnormal respiration

- ♥ **Dyspnoea:** is any subjectively assessed difficulty in respiration is known as.
- ♥ **Eupnoea:** is the state of normal breathing.
- ♥ **Hyperpnoea:** increased respiratory frequency with or without an increase in the amplitude of movements
- ♥ **Polypnoea:** increased respiratory frequency with reduction in depth or associated movement

♥ **Oligopnoea:** decreased or retarded respiratory frequency

Normal respiration rates (breaths/min.) in resting animals

Animal	Respiratory rate
Horse	8-16
Cattle	10-30
Sheep/goat	12-20
Dog	10-30
Cat	20-30
Pig	10-20
Chicken	20-36



**Fig2:-**Taking of respiratory rate in dog



**Fig3:-** Taking of respiratory rate in horse



<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. Write grades of body condition score (4pts)?
2. Write abnormal pulse rate (2pts)
3. List at least 5 factors that affect internal body temperature (5pts)

**Note: Satisfactory rating - half points**

**Unsatisfactory - below half points**

**Answer Sheet**

Score = _____
Rating: _____

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

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



<b>Information Sheet-4</b>	<b>Evaluating and selecting procedures, Options for assisting</b>
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## **Animal needs**

In order to survive, an organism requires nutrition, water, oxygen, a habitat and proper temperature. A lack of any of these fundamental necessities proves detrimental to an animal's survival at most and its growth and development at the very least. Of the five, the habitat is a prerequisite of sorts, for the other four are found within an animal's habitat.

### **1. Water**

Ordinarily, animals should have access to potable, uncontaminated drinking water according to their particular requirements. Water quality and the definition of potable water can vary with locality. Periodic monitoring for pH, hardness, and microbial or chemical contamination might be necessary to ensure that water quality is acceptable, particularly for use in studies in which normal components of water in a given locality can influence the results obtained. Water can be treated or purified to minimize or eliminate contamination when protocols require highly purified water. The selection of water treatments should be carefully considered because many forms of water treatment have the potential to cause physiologic alterations, changes in microflora, or effects on experimental results. For example, chlorination of the water supply can be useful for some species but toxic to others (such as aquatic species).

The most important nutrient for survival is water, according to the University of Florida's Institute of Food and Agricultural Sciences Extension. Water is the medium in which all chemical reactions take place within an animal's body. If an animal loses one-tenth of its water for any reason, the results are fatal. Water also functions in excretion of wastes, regulating body temperature and transporting food.



## 2. Food

Animals should be fed palatable, noncontaminated, and nutritionally adequate food daily or according to their particular requirements unless the protocol in which they are being used requires otherwise. Subcommittees of the National Research Council Committee on Animal Nutrition have prepared comprehensive treatments of the nutrient requirements of laboratory animals. Their publications consider issues of quality assurance, freedom from chemical or microbial contaminants and presence of natural toxicants in feedstuffs, bioavailability of nutrients in feeds, and palatability.

Animal-colony managers should be judicious in purchasing, transporting, storing, and handling food to minimize the introduction of diseases, parasites, potential disease vectors (e.g., insects and other vermin), and chemical contaminants into animal colonies. Purchasers are encouraged to consider manufacturers'

In terms of diet, three types of animals exist: carnivores, herbivores and omnivores. At a fundamental level, food provides energy for animals. Adaptations enable all animals to get food. Toothed herbivores, for example, have large, flat, round teeth that help them grind plant leaves and grasses. Some carnivorous animals, such as bears, dogs and the big cats (cats) have sharp canines and incisors for chewing through meat with ease. The digestive systems of animals have proteins known as enzymes that break down food and convert it into energy.

## 3. Oxygen

All animals must breathe in oxygen in order to survive. Land-dwelling species receive oxygen from the air, which they inhale directly to their lungs. Marine and freshwater species filter oxygen from water by using their gills. Oxygen is also important in destroying harmful bacteria in an animal's body without sacrificing the body's necessary bacteria.

## 4. Temperature

External temperature is a major factor in animals' survival. Of the vertebrate groups, amphibians, reptiles and fish -- animals said to be cold-blooded -- take on the temperature of their environment. Most have thin skin. Birds and mammals, on the other hand, which are termed warm-blooded, can regulate their own body temperature. However, some



mammals, such as bears, gophers and bats, hibernate during the winter to avoid colder temperatures. Hibernation allows animals to live off stored body fat and drop their body temperature to about 50 degrees Fahrenheit.

## 5. Shelter

Proper housing and management of animal facilities are essential to animal well-being, to the quality of research data and teaching or testing programs in which animals are used, and to the health and safety of personnel. A good management program provides the environment, housing, and care that permit animals to grow, mature, reproduce, and maintain good health; provides for their well-being; and minimizes variations that can affect research results.

Specific operating practices depend on many factors that are peculiar to individual institutions and situations. Well-trained and motivated personnel can often ensure high-quality animal care, even in institutions with less than optimal physical plants or equipment.

Many factors should be considered in planning for adequate and appropriate physical and social environment, housing, space, and management. These include

- The species, strain, and breed of the animal and individual characteristics, such as sex, age, size, behavior, experiences, and health.
- The ability of the animals to form social groups with conspecifics through sight, smell, and possibly contact, whether the animals are maintained singly or in groups.
- The design and construction of housing.
- The availability or suitability of enrichments.

Animals should be housed with a goal of maximizing species-specific behaviors and minimizing stress-induced behaviors. For social species, this normally requires housing in compatible pairs or groups

## Other parameters

### 1. Health Checking

Performing a daily check of animal health and environment, or health checking, is another important aspect of every laboratory animal facility. All animals should be observed for signs of illness, injury, or abnormal behavior by a person trained to recognize such signs. A proper



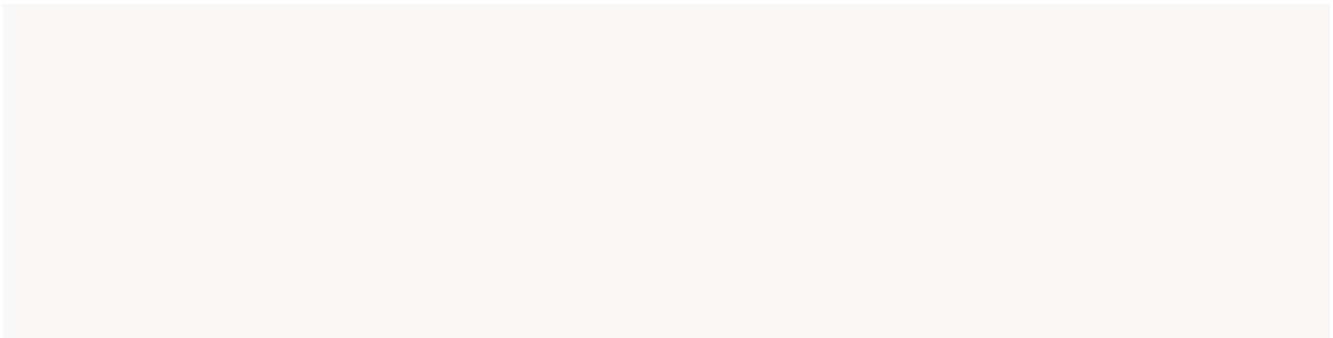
health check should consist of evaluating food and water availability, the health status of the animal, and the condition of the microenvironment. In addition, animal facility personnel should also examine the macroenvironment, to include temperature, humidity, noise, light intensity, light cycle, functionality of equipment, cleanliness, and organization.

## 2. Sanitation

The maintenance of conditions conducive to health involves bedding change (as appropriate), cleaning, and disinfection. Cleaning removes excessive amounts of dirt and debris, and disinfection reduces or eliminates unacceptable concentrations of microorganisms.

The frequency and intensity of cleaning and disinfection should depend on what is needed to provide a healthy environment for an animal, in accord with its normal behavior and physiologic characteristics. Methods and frequencies of sanitation will vary with many factors, including the type, physical properties, and size of the enclosure; the type, number, size, age, and reproductive status of the animals; the use and type of bedding materials; temperature and relative humidity; the nature of the materials that create the need for sanitation; the normal physiologic and behavioral characteristics of the animals; and the rate of soiling of the surfaces of the enclosure. Some housing systems or experimental protocols might require specific husbandry techniques, such as aseptic handling or modification in the frequency of bedding change.

Agents designed to mask animal odors should not be used in animal housing facilities. They cannot substitute for good sanitation practices or for the provision of adequate ventilation, and they expose animals to volatile compounds that might alter basic physiologic and metabolic processes.



<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. List the animal needs (6pts)

**Note: Satisfactory rating - 3 points**

**Unsatisfactory - below 3 points**

**Answer Sheet**

Score = _____
Rating: _____

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

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





## Operation Sheet 1

## Body temperature recording

### Procedure:

1. The thermometer should be sterilized by disinfectant before use
2. The thermometer should be well shaken before recording of the temperature to bring the mercury column down below the lowest point likely to be observed in different species of animals (when using manual thermometer )
3. The bulb end of the thermometer should be lubricated with liquid paraffin or glycerin or soap.
4. If the rectum is filled with fecal contents, then the content should be removed before inserting the thermometer
5. Care should be taken so that the bulb of the thermometer remains in contact with the rectal mucous membrane
6. The thermometer should be kept in site for at least 3-5 minutes (manual thermometer).
7. Read the thermometer
8. After taking the temperature thermometer is washed and dipped in disinfectants & cleaned with piece of towel. .



<b>Operation Sheet 2</b>	<b>pulse taking</b>
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**Procedures**

1. With the aid of an assistant, restrain the patient.
2. Ensure that the patient is relaxed and still.
3. using the tips of your fingers, apply them directly on the artery.
4. Count the rate of pumps over a minute.
5. Record this information

**Operation Sheet-3****measuring respiratory rate****Procedures:****OPTION I**

- A) Stand near the animal without disturbing it
- B) Count the movements of contraction or expansion of the thorax and abdomen per minute.
- C)
- D) Record the result

**OPTION II**

- A) Apply the palm of your hand over the nostrils keeping about 4-5 inches away from nostrils
- B) Feel and count for the nostril air movement per minute.
- C) Record the result

**III. by using stethoscope**

- 1. Restrain and handling animals safely and humanely
- 2. Find the lung sound by using stethoscope mostly at right side of chest
- 3. On stop watch and start count for 15 seconds and multiply by 4 in order to get for one minute breath
- 4. Record the result as ---breath/minute



<b>LAP Test</b>	<b>Practical Demonstration</b>
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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within 30 minutes.

**Task 1: Measure internal body temperature**

**Task 2: Taking pulse rate**

**Task 3: Taking respiratory rate**



## List of Reference Materials

### 1- BOOKS

- Aiello S. and Mays A. 1998. *The Merck veterinary manual* 7<sup>th</sup> ed. Whitehouse Station, N.J., Merck and Co. in cooperation with Merial Ltd.
- Diana Hamilton-Fairley. 1999. *Lecture notes: obstetrics and gynaecology* 2<sup>nd</sup> edition. Blackwell Publishing Ltd
- Radostits O.M., Gay C.C and Hinchcliff K.W. 2006. *Veterinary Medicine*. 10<sup>th</sup> ed. Saunders, 1430-1431.
- *Veterinary clinical diagnosis* Second Edition W. R.KELLY M.A., Professor of Medicine, Pharmacology and Food Hygiene, Faculty of Veterinary Medicine, University College, Dublin Bailliere Tindall • London

### 2- WEB ADDRESSES: (<https://wagwalking.com/condition/cardiac-arrest>).

(<https://sciencing.com/5-basic-needs-animal-12001250.html>):

<http://agriculture.vic.gov.au/agriculture/animal-health-and-welfare/animal-health/animal-health-in-a-drought>



<b>Instruction Sheet</b>	<b>Learning Guide 47#-</b>
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Handling animals safely and humanely to minimise pain and injuries.
- Identifying and using procedures, tools and equipment for first aid
- providing basic first aid care
- seeking of first aid assistance
- Use OHS procedures and PPE during animal handling.

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 –**

- Handle Animal safely and humanely to minimise pain and further injuries and make comfortable using available resources.
- uses Procedures, tools and equipment for first aid
- provide Basic first aid



- Seek First aid assistances from others as appropriate and required.
- Uses OHS procedures and PPE at all times when handling animals.

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7.
3. Read the information written in the “Information Sheets 1” 2,3, 4 and 5. 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” 2, 3, 4 and 5 in page 34, 36, 38, 45 and 47 respectively.
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.



<b>Information Sheet-1</b>	<b>Handling animals safely and humanely to minimise pain and injuries.</b>
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## **Handling of animals**

The objective of humane animal handling is to move animals or to perform clinical procedure like first aid with minimum stress to both the animals and handler. Considerate handling reduces the risk to the animal of pain, injury and suffering. Unfamiliar surroundings, noisy and aggressive handling, and the proximity of unknown animals or people can cause even the calmest of animals to become difficult to handle and much more likely to cause injury to themselves, other animals or handlers. Handling, especially by unfamiliar handlers, has the potential to be a highly stressful experience for animals. By working in a quiet, calm and considerate manner, handling can be carried out efficiently, with less effort and with less likelihood of the handler or the animals becoming stressed or injured.

### **Stress**

Some stress is a normal part of an animal's life, but it becomes a problem and causes suffering when it is severe or prolonged. The factors which can cause stress are called





'stressors' and these include, for example, noise, unfamiliar surroundings, unfamiliar animals and dogs. Although many animals might be able to tolerate a single stressor for a short period of time, multiple stressors over a long period of time, or a severe single stressor, can produce adverse effects and compromise animal welfare. The ability of an animal to cope with stressors depends on the:

- Genetic background of the breed
- Animal's past experience
- Type of stress factor
- Intensity and duration of the stress

For example, in markets, animals which have been frequently handled or have been in a similar situation before will be more able to cope with this situation compared to those that have not previously left the farm. It is important to remember that some degree of stress may be almost inevitable in handling livestock, but the aim must be to keep this to a minimum. Prolonged stress must be avoided in all circumstances. It can reduce the ability of the animal's immune system to fight diseases, especially in young animals.

### **Flight zone**

the 'flight zone' is a concept used to describe a circle of space around an animal which, when entered, causes the animal to move away from you. The size of the flight zone will depend on the breed of animal and its previous experience. For example, hill cattle and sheep, which are not used to being handled, tend to have much larger flight zones than dairy animals which are handled daily. Non-domesticated animals such as bison and wild boar will tend to have much larger flight zones than their domesticated equivalents. The actions of the handler can also affect the size of the flight zone: a noisy and aggressive handler will increase the size of the flight zone compared to a calm and confident handler who will be able to get much closer to an animal

- **Restraining: it is the restriction of animal movement for a limited time.**

### **TYPES OF RESTRAINT**

- **physical restraining** includes handling of animals with the use of various instruments such as ropes, crush, bull holder, muzzle
- **Chemical method:** it is used to aggressive animals and also to perform painful and prolonged procedures. Eg. tranquillisers such as chlorpromazine, acepromazine, acetylpromazine, promazine, and trimepazine



➤ **Verbal:** it is most frequently used in pet animals by using sound (site, go, stop )

**Purpose of restraining** may include:

- ✓ Examination (diagnosis)
- ✓ Transporting
- ✓ Treatment
- ✓ Caring



<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 flight zone (2pts)?
2. What is restraining and discuss types of restraining (5pts)
3. List the purpose of restraining (3 pts)

**Note: Satisfactory rating - 5 points**

**Unsatisfactory - below 5 points**

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

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

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



<b>Information Sheet-2</b>	<b>Identifying and using procedures, tools and equipment for first aid</b>
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### **Tools and equipment**

Tools is a device or implement, especially one held in the hand, used to carry out a particular function (trucal and canula, stomach tube, syringes, needle etc)

**Equipment** is the necessary items for a particular purpose. **Equipment** usually denotes a set of **tools** that are used to achieve a specific objective.

### **First aid tools and equipment**

- ☞ Stomach tube
- ☞ Nasogastric tube
- ☞ A **first aid kit**



**A simple first aid kit for animals should include (but not limited to) the following items:**

- Latex gloves
- Gauze sponges
- Gauze roll
- Bandages
- Scissors
- Forceps
- Tweezers, leash
- Towel
- Cotton
- ☞ Trocar and canula:



trocar and canula



☞ Stethoscope:

- 3% Hydrogen peroxide, Epsom salt
- Antiseptics and disinfectants
- ☞ Broad spectrum antibiotics, anti pain drugs(diclofenac, diprone)
- ☞ Obstetric kit it is used for to relief dystocia
- ☞ Ropes for restarting
- ☞ First aid book, list of phone numbers of emergency centers and veterinarians
- ☞ Digital thermometer for temperature taking





<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. List at least 5 tools and equipment which are used to perform first aid (5 pts )
2. What is the difference between tools and equipments (2 pts)

**Note: Satisfactory rating - 4 points**

**Unsatisfactory - below 4 points**

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

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

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



### Information Sheet-3

### Providing basic first aid care

First *aids* is the provision of initial care for an illness or injury. Planning for medical emergencies when you are far from help. It is about the provision of immediate care. It is usually performed by a non-expert person to a sick or injured animal until definitive medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care past the first aid intervention. It generally consists of a series of simple and in some cases, potentially life-saving techniques that an individual can be trained to perform with minimal equipment

The aims of first aid are to:

- preserve life
- protect the unconscious victim
- prevent the condition from worsening
- relieve pain
- promote recovery.

Basic principles of first aid are: (while we are giving first aid for the animals we)

- Protect yourself from harm
- Do not further harm to your patient
- Stabilize and prevent secondary injury;
- Stay calm; things often look worse than they are
- Prevent injuries and illness.

#### **The Rules of First Aid are:**

- Don't Panic.
- Maintain to airway.
- Control Hemorrhage.
- Contact a Veterinarian as soon as possible.



<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. What is first aid (1 pts )
2. Mention the rule of first aid (4 pts)
3. List the basic principle of first aid(3pts)

**Note: Satisfactory rating - 4 points**

**Unsatisfactory - below 4 points**

**Answer Sheet**

Score = _____
Rating: _____

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

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





<b>Information Sheet-4</b>	<b>Seeking of first aid assistance</b>
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During perform basic first aid there may be required assistance for animal handling/perform procedure /cleaning equipments

### 1. Veterinarians

A veterinarian is a medical professional who protects the health and well-being of both animals and people. They diagnose and control animal diseases and treat sick and injured animals. They also advise owners on proper care of their pets and livestock. Veterinarians provide a wide range of services in private practice, teaching, research, government service, public health, military service, private industry, and other areas.

When taking the veterinarian's oath, a **doctor** solemnly swears to use his or her scientific knowledge and skills "for the benefit of society, through the protection of animal health, the relief of animal suffering, the conservation of animal resources, the promotion of public health, and the advancement of medical knowledge."

A Veterinarian:

- Diagnoses animal health problems
  - Vaccinates against diseases, such as distemper and rabies
  - Medicates animals suffering from infections or illnesses
  - Treats and dresses wounds
  - Sets fractures
  - Performs minor to complex surgery, depending on training
  - Advises owners about animal feeding, behavior and breeding
  - Euthanizes animals when necessary
  - Provides preventive care to maintain the health of livestock
  - Performs diagnostic tests such as X-ray, EKG, ultrasound, blood, urine, and faeces
2. **Para-veterinarians workers** are those people who assist a veterinary physician in the performance of their duties, or carry out animal health procedures autonomously as part of a veterinary care system. The job role varies throughout the world, and common titles



include **veterinary nurse, veterinary technician, veterinary assistant** and **veterinary technologist**, and variants with the prefix of 'animal health'.

3. **Veterinary technicians** are now employed by veterinary practices to assist in a wide variety of tasks. They can collect and computerize animal health and production records from individual herds, collect laboratory samples and assist in the preparation of reports. Under the veterinary supervision they can do routine elective surgical procedures such as dehorning, castration, foot-trimming and vaccinations.
4. **Animal handler:**A person listed on an application to the Animal Ethics Committee who will be responsible for handling animals during the project

### 5. **Veterinary assistant**

In most countries, a veterinary assistant is a person with fewer or no formal animal health qualifications, who has no autonomous practice, but who is designated to assist a vet and act under their direct instruction.

Training programs are often workplace-based, and no formal license or certification is required to perform the role.

In the US, today's veterinary assistants, have the option to earn a certificate of completion by taking basic animal health classes like contagious disease, animal restraint, record keeping, work place safety, administration, etc. Having the knowledge and basics down allows for trust and smoother job training of veterinary assistants. Certificates clear up hierarchy. Seniority becomes clear: vet techs, vet assistants, tech assistants and kennel help. Makes for happier workers and more efficient work. Their scope of practice remains limited and equal to many on the job training staff Local laws restrict what activities a veterinary assistant may perform, as some procedures may only be legally completed by a licensed Vet Tech. Mostly the big three: IV anesthesia induction, oral surgery, splinting and casting, and in some states, giving the rabies vaccine

6. **Supervisors:**The term “supervisor” typically refers to one’s immediate superior in the workplace, that is, the person whom you report directly to in the organization. Supervisors typically are responsible for their direct reports’ progress and productivity in the organization. Supervision often includes conducting basic management skills (decision making, problem solving, planning, delegation and meeting management), organizing teams, noticing the need for and designing new job roles in the group, hiring new



employees, training new employees, employee performance management (setting goals, observing and giving feedback, addressing performance issues, firing employees, etc.) and ensuring conformance to personnel policies and other internal regulations.

Supervisors typically have strong working knowledge of the activities in their group, e.g., how to develop their product, carry out their service, etc.



<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. What veterinarians do (6 pts?)
2. Who are Para- veterinarians (4 pts?)

**Note: Satisfactory rating - 5 points**

**Unsatisfactory - below 5 points**

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

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

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



<b>Information Sheet-5</b>	<b>Uses OHS procedures and PPE at all times when handling animals</b>
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### **Occupational Health and Safety**

**OHS:** As defined by the World Health Organization (WHO) "occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards. Health has been defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Occupational health is a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation, in the way that causes least harm to their health. Health has been defined as It contrasts, for example, with the promotion of health and safety at work, which is concerned with preventing harm from any incidental hazards, arising in the workplace.

Since 1950, the International Labour Organization (ILO) and the World Health Organization (WHO) have shared a common definition of occupational health. It was adopted by the Joint ILO/WHO Committee on Occupational Health at its first session in 1950 and revised at its twelfth session in 1995. The definition reads:

The main focus in occupational health is on three different objectives:

- (i) the maintenance and promotion of workers' health and working capacity;
- (ii) the improvement of working environment and work to become conducive to safety and health



- (iii) Development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings. The concept of working culture is intended in this context to mean a reflection of the essential value systems adopted by the undertaking concerned. Such a culture is reflected in practice in the managerial systems, personnel policy, principles for participation, training policies and quality management of the undertaking. It is achieved by correct manual handling, follow organization instructions and wears appropriate PPE

### **Personal protective equipment (PPE)**

Occupational health is concerned with the control of occupational health hazards that arise as a result of or during work activities. Personal protective equipment (PPE) is the least effective method of controlling occupational hazards and should be used only when other methods cannot control hazards sufficiently. PPE can be uncomfortable, may decrease work performance and may create new health and safety hazards. Performing an emergency care for animals needs a great care to the professional. It's important to use all personal protective equipments in appropriate manner. Even if someone can't get appropriate PPE at the site of injury, it's important to exploit any other safety equipments locally. Equipments like plastic bags can use in any actions related with blood and related suspected infectious materials. But it doesn't mean that these locally available equipments are capable enough to safe ones harm, but the use of such materials carefully can reduce the risk posed to the professional.

What must keeps in mind is, implementation of OHS is not only for clinical or any laboratory activities. Being safe is not limited in time, place, and activities

Personal protective equipment includes

- Gloves it is important to protect hands from contamination, there are different types of gloves (latex wearing during handling clinical case; surgical during handling surgical case; leather wearing during sterilization process; rubber wearing during animal handling and cleaning of clinic and farms)
- Goggles it is made up of plastic to prevent eyes from injuries in the work place
- Cover all it is made of cotton important to cover our body parts,
- boots important for to protect legs from injury



- mouth mask to prevent entrance of foreign particles through mouth
- helmets to protect heads
- apron protect from contamination especially during handling surgical case



<b>Self-Check –5</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 PPE (pts1?)
2. What is OHS (pts1?)
3. List necessary PPE wearing during animal handling perform emergency procedures (8pts)

**Note: Satisfactory rating - 4 points**

**Unsatisfactory - below 4 points**

**Answer Sheet**

Score = _____
Rating: _____

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

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





<b>Operation Sheet 1</b>	<b>Bleeding management</b>
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**PROCEDURE:**

1. Restrain animals appropriately and handle humanely
2. Apply pressure directly over the wound and, when possible, elevate the bleeding body part.
3. If bleeding is from artery apply pressure above site of bleeding and if bleeding is from vein apply pressure below site of bleeding.
4. The first-aid provider should use bandages to hold a sterile dressing or clean cloth firmly over the wound.
5. Dressings that become saturated with blood should not be removed but should be reinforced with additional layers.
6. If an arm or leg wound bleeds rapidly and cannot be controlled by dressings and bandages,
7. The first-aid provider can apply pressure to the artery at a point adjacent to the bleed called the pressure point.



Operation Sheet 2	Bloat management
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2. Restrain the animal and handle animals safely and humanely
3. Apply trocar and canula on the left paralumbar fossa .
4. Leave it until the gas is completely out.
5. Remove trocar and canula carefully.
6. Clean and disinfecting areas
7. Give antibiotics to prevent secondary bacterial complication
8. Follow up
9. Cleaning worked materials and disposed wastes
10. Washing and clean your hands and other parts after finishing the task

**Operation Sheet 3****Dystopia management****Procedures**

1. Place the animal in clean environment
2. Tie the tail to the cow, or have someone hold it away from the vulva
3. After washing your hands and arms, put on a new arm length glove and lubricant it with savlon
4. Insert your hand slowly into the vagina cupping your fingers.
5. Check the presentation of the calf, if it comes in normal presentation assist the cow when the dam pushes
6. If the calf's presentation is abnormal, or if the calf is too large to pass through the birth canal, a veterinarian should be contacted.
7. If you don't have immediate access to a veterinarian, you can try to reposition a calf in an abnormal presentation. Then assist the cow when the dam pushes
8. After giving birth, clean and wash the hind quarter of the dam



<b>Operation Sheet 4</b>	<b>First aid taken for burns</b>
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## Procedures

### I. Chemical burns

- ✓ Restrain the animal and handle animals safely and humanely
- ✓ With a dry chemical, first brush it off the victim's skin (wear medical gloves to avoid contact with the chemicals)
- ✓ With a spilled liquid giving off fumes, move the victim to a ventilated area.
- ✓ Wash off the area as quickly as possible with running water for 20-30 min.
- ✓ Put a dry dressing over the burn.
- ✓ Seek medical attention for any dangerous burn

### II. Heat burns

- ✓ Stop the burning by removing the heat source.
- ✓ Cool the burned area with room temperature.
- ✓ Put a dressing over the burn to protect the area, but keep it loose and do not tape it to the skin.
- ✓ For large burns seek medical attention.



<b>Operation Sheet 5</b>	<b>First aid for wound</b>
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#### Procedures

- ✓ Restrain animals appropriately
- ✓ Wear suitable PPE and Follow OHS
- ✓ clean and shave the site of wound with soap and water
- ✓ put the area dry and apply iodine or antibiotic ointments/spray
- ✓ Administer tetanus antitoxin if necessary especially equine species
- ✓ Regular wound lavage or debridement and change the dressing daily



<b>Operation Sheet 6</b>	<b>First Aid for Snake Bite</b>
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### Procedures

- ✓ Restrain animals appropriately
- ✓ Wear suitable PPE and Follow OHS
- ✓ Wash the bite wound with soap and water
- ✓ Tourniquet above the bites
- ✓ Wide the opening of the bite site and bleeding in order to minimize the poisonous
- ✓ Seek medical attention



<b>Operation Sheet 7</b>	<b>First aid for electrocution</b>
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Procedures:

- ✓ In order to avoid injury to yourself, it is imperative that you do not touch the animal until the electrical source has been turned off or moved
  
- ✓ Unplug the electrical cord or shut off the electricity.
- ✓ If this is not possible, use a dry wooden broom or other non-conductive object to move the animal away from the source of the electricity.
- ✓ Check for breathing and pulse.
- ✓ If the animal is breathing, check its mouth for burns. Apply cool compresses to burns.
- ✓ Cover the animal with a blanket to prevent heat loss.
- ✓ Seek veterinary attention as soon as possible.



<b>LAP Test</b>	<b>Practical Demonstration</b>
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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within 30 minutes.

**Task1: perform Stop bleeding**

**Task2: perform acute bloat management**

**Task3: perform dystocia manage**

**Task4: perform first aid for chemical burns**

**Task5: perform first aid for wound**

**Task 6: perform first aid for snake bite**

**Task 7: Perform first aid forelectrocution**





## List of Reference Materials

### I. BOOKS

1. Aiello S. and Mays A. 1998. *The Merck veterinary manual* 7<sup>th</sup> ed. Whitehouse Station, N.J., Merck and Co. in cooperation with Merial Ltd.
2. Diana Hamilton-Fairley. 1999. *Lecture notes: obstetrics and gynaecology* 2<sup>nd</sup> edition. Blackwell Publishing Ltd
3. Radostits O.M., Gay C.C and Hinchcliff K.W. 2006. *Veterinary Medicine*. 10<sup>th</sup> ed. Saunders, 1430-1431.
4. *Veterinary clinical diagnosis* Second Edition W. R.KELLY M.A., *Professor of Medicine, Pharmacology and Food Hygiene, Faculty of Veterinary Medicine, University College, Dublin* BAILLIERE TINDALL • LONDON

### II. WEB ADDRESSES:

1. <https://en.wikipedia.org/wiki/Wound>).
2. AVMA Emergency Preparedness and Response Guide.
3. *American Veterinary Medical Association*. <http://www.avma.org/disaster/default.asp>
4. <https://www.careerexplorer.com/careers/veterinary-assistant/>
5. <https://www.thebalancecareers.com/veterinarian-526081>
6. <https://www.prospects.ac.uk/job-profiles/veterinary-nurse>
7. <https://www.prosci.com/resources/articles/manager-change-management-role>



<b>Instruction Sheet</b>	<b>Learning Guide48 #-</b>
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- recording and documenting basic first aid support services
- Reporting and completing first aid support activities on referral slip

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 –**

- records and documents basic first aid support services on the animal file
- reports all first aid support activities and complete on referral slip

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 6.
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”and 2in **page52 and 54**respectively.
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. Submit your accomplished Self-check. This will form part of your training portfolio



### Record keeping and documentation

Record keeping is an essential part of good veterinary practice and considered by many as a basic tool to help in caring for patients.

Good record keeping helps to protect the welfare of patients by promoting high standards of clinical care, allowing better communication between members of the whole health care team, giving an accurate account of treatment, and allowing the ability to detect problems at an early stage. Good record keeping is an indication of a skilled and safe practitioner, and just as true is the fact that careless or incomplete record keeping often reveals wider problems with an individual's practice. There is also a benchmark on record keeping contained in the Essence of Care document – the government's tool to improve the quality of nursing care.

### Records should be:-

- ✓ Be factual, consistent and accurate
- ✓ Be written as soon as possible after an event has occurred
- ✓ Be written clearly and to prevent text being erased
- ✓ Be written in such a manner that any alterations or additions are dated; timed and signed, allowing the original entry to still be read clearly
- ✓ Be accurately dated, timed and signed
- ✓ Not include abbreviations, jargon, meaningless phrases, and irrelevant speculation
- ✓ Be readable on any photocopies
- ✓ Be written, wherever possible, with the involvement of the patient or their carer
- ✓ Be consecutive
- ✓ Identify problems that have arisen and the action taken to remedy them
- ✓ Provide clear evidence of the care planned, decisions made, care delivered and information shared.

**NB:** Patients' owners also have rights of access to health records, governed by the provisions of the Data Protection Act 1998. It gives patients and clients access to their paper-based and computer-held records.



As records are becoming increasingly held on computers, the principle of confidentiality of information held about patients is just as important for this as in all other records, including those sent by fax. A nurse is professionally accountable for making sure that whatever system is used is fully secure.

The different activities performed in the veterinary clinic area should be recorded daily. These recorded documents will show the successes that are achieved, the difficulties encountered in the work and the existing opportunities. Field days undertaken in the village, the trainings and workshops given for farmers should be documented to use in the proceeding activities. The superior practices of model farmers should be them documented to be used by other farmers. Information that is reached by the extension worker should be recorded to have up to date information and to utilize it whenever needed. Record keeping in first aid. A detailed history gives rehabilitators or veterinarians information about the situation and also allows the animal to be returned to the exact location of origin if rehabilitation is successful.

## **Records – What to Document**

In the first aid recording my may include:

- Date
- Name of the patient
- Name of the client
- Animal species, age and sex
- Identity the emergency situation ;
- First aid procedure conduct to save its life ;
- Patients current situation (rehabilitation/dead; nee to referral or recommend for euthanasia ;
- Veterinarian name and signature who handle the case
- Client name and signature ;



<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 important of record keeping (1pts)?
2. Write the record document may contain in the case of emergency situation (2 pts)

**Note: Satisfactory rating - 4 points**

**Unsatisfactory - below 4 points**

**Answer Sheet**

Score = _____
Rating: _____

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

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



<b>Information Sheet-2</b>	<b>Reporting and completing first aid support activities on referral slip</b>
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After recording and documenting the overall status of patient, the first aid man should report to the supervisor by referral slip.

Referral a\_patient: whose case has been referred to a specialist or professional group

*Eg. "The patient is a referral from Dr. -----"*

Please see University Of California, Davis Veterinary Medical Teaching Hospital  
Patient Referral



**UNIVERSITY OF CALIFORNIA, DAVIS  
VETERINARY MEDICAL TEACHING HOSPITAL  
PATIENT REFERRAL**

Date: _____
This will introduce my client: _____
and patient named: _____
Referred by Dr.: _____

Please indicate the level of communication you prefer on this case:

- Written case summary is sent to all referring veterinarians within 10 days of discharge.
- Phone call within 24 hours of arrival.
- Phone call when significant event occurs, i.e., a diagnosis is made, patient condition changes, etc.
- Communication by fax is acceptable. My fax number is \_\_\_\_\_



Communication by e-mail is acceptable. My e-mail address  
is \_\_\_\_\_

Case history including duration of illness, signs observed, laboratory results, radiographic results (include radiographs), surgical/medical treatment received, immunizations diet, etc.

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Suggestions, expectations and comments by Referring Veterinarians:

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Please fax this form to:  
9620  
  
9815

Small Animal Clinic: (530) 752-

Large Animal Clinic: (530) 752-

Please call the VMTH for an appointment:

(530) 752-1393



<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 medical referral (3pts?)

**Note: Satisfactory rating - 2 points**

**Unsatisfactory - below 2 points**

**Answer Sheet**

Score = _____
Rating: _____

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

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





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### 1. BOOKS

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- II. Diana Hamilton-Fairley.1999. Lecture notes: obstetrics and gynaecology 2<sup>nd</sup> edition. Blackwell Publishing Ltd
- III. Radostits O.M., Gay C.C and Hinchcliff K.W. 2006. *Veterinary Medicine*. 10<sup>th</sup> ed. Saunders, 1430-1431.
- IV. Veterinary clinical diagnosis Second Edition W. R.KELLY M.A., *Professor of Medicine, Pharmacology and Food Hygiene, Faculty of Veterinary Medicine, University College, Dublin* BAILLIERE TINDALL • LONDON

### WEB ADDRESSES:

<https://www.definitions.net/definition/referral>

<https://www.definitions.net/definition/referral>