ANIMAL HEALTH CARE SERVICE

Level -I

Learning Guide #39

Unit of Competence Support Health Care Provision for Pregnant, Parturient and Lactating Animals

Module Title: Supporting Health Care Provision for Pregnant, Parturient and Lactating Animals

LG Code: AGR AHC1 M11LO1LG39

TTLM Code: AGR AHC1 TTLM 0919V1

LO1: Follow OHS practices

Instruction Sheet	Learning Guide #

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

- Maintaining personal hygiene and cleanliness standards in accordance with OHSand organisational policies and procedures.
- Following workplace procedures and work instructions for controlling risks accurately.
- Identifying and reporting hazards to supervisors
- Preparing appropriate tools for checking animal health and control

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 –**

- Personal hygiene and cleanliness standards are maintained in accordance with OHS and organisational policies and procedures.
- Workplace procedures and work instructions for controlling risks are followed accurately.
- Hazards are identified and reported to supervisors.
- Appropriate tools for checking animal health and control are prepared according to workplace guidelines.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 20.

3. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the “Self-check 1” **in page -.**
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.

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Information sheet-1	Maintaining personal hygiene and cleanliness standards in accordance with OHS and organisational policies and procedures

1.1 Maintaining personal hygiene and cleanliness in obstetrics

1. First the nail of fingers should remove to avoid damage during rectal examination
2. The arm and hands should be washed with clean water and soap before wearing glove.
3. Next the fingers thumb should be brushed with sterile brush then palm and back of the hand
4. Pour 70% isopropyl of ethyl alcohol over the hand and arms to disinfect
5. put on sterile gloves

1.2 Clean animal housing

The pregnant animals' house hygieneshould be maintained to reduce infection and contagious diseases are as follows:

a. Proper disposal of wastes and dead animals
b. Proper sanitation and disinfection
c. Providing ration as required
d. Vaccination

Proper cleaning and sanitation removes most of germs and parasites along with dirt, thereby remaining germs are few in number and possibly in weakened condition so as to be harmless under ordinary conditions. Following are the main points in this context:

1. Proper sanitation discovers causes of all preventable diseases.
2. It helps to device means of rendering the causes ineffective if not removed of the causes of spread of disease
3. Helps in providing the favorable conditions of life in respect of water, air, well sanitized sheds etc.
4. Helps in increasing the efficiency of animals
5. Prevent economic losses due to infection

6. Helps in development and growth of animals, makes life vigorous and productive
7. Lowers the rate of mortality and increases the longevity of animals
8. Prevents occurrence of diseases and establishes conditions that ensure preservation of health
9. Helps in minimizing contamination and production of good quality milk and milk products
10. Helps dairy man to learn and make continuous efforts at improvement

Sanitizing agent

It is a solution which will hold the number of bacteria below 25% per(sq).(or 4 bacteria/cm^2) on the surface of utensils, milk containers or dairy equipments. In general half the strength of a disinfectant substance is needed for sanitizing purpose.

Sanitation programme

It includes the following:

1. Adequate ventilation
2. Proper lighting
3. Adequate drainage
4. Proper cleaning
5. Proper disinfection

Losses among livestock from infectious diseases and parasites can be prevented if the following essential features of adequate sanitation are adopted in the veterinary clinic facilities:

a. Proper ventilation without drafts, and without moisture on walls and ceiling.
b. Proper disposal of manure, feed wastes and other excreta twice daily and keeping manure pit covered with straw to prevent practice place of flies.

c. Proper construction of smooth and wide enough gutter for holding accumulated droppings and with proper slope to facilitate drainage of liquid excreta.
d. Watering and feeding utensils so constructed that they may be easily cleaned and thoroughly disinfected.
e. Good lighting programme through doors, windows, ventilation and artificial lights to facilitate proper cleaning and keeping floor dry.
f. Smooth inside of walls with corners rounded to facilitate cleaning and disinfection.
g. Use of proper and clean bedding material (saw dust, paddy straws, etc) and removed at least once daily.
h. Avoiding use of permanent pastures where internal parasites or their intermediate hosts are found.
i. Adequate cleaning prior to disinfection.
j. Sweeping and scrubbing all feed racks, troughs, and passages and disinfecting with lye solution.
k. Burning of all sweeping and scrapings.
l. Application of heavy coating of white-wash containing a reliable disinfectant to the floors, walls, and partitions, mangers etc. (1/2 kg of lime in one gallon of water and disinfectant).
m. Providing plenty of shade in hot weather.
n. Separate housing of animals
o. Protecting feed and water from being contaminated with sewage disposals.
p. Proper disposal of infected litter, dead animal and animal products
q. Abundant supply of clean water with good pressure for easy and effective cleaning of caring facilities.
r. Clinical housing facilities must be constructed of concrete; metal stanchion and partitions which are easier to clean than wood.
s. Cleaning should be followed by the use of disinfectants over all surfaces.

DISINFECTION

It means act of destroying the cause of an infection

Disinfectant is any compound used to kill bacteria, virus, fungi and parasites.

Types of disinfectants:

a. **Physical**: sunlight and heat (hot air, hot water, steam, fire)
b. **Chemicals**: acids, alkalis and compounds

Acids include Boric acid, carbolic acid (phenol), etc.

Alkalie include hydroxide, lime solution, potassium hydroxide, hydrogen per oxide

Compounds include: mercury chloride, potassium per manganate, quaternary ammonium compounds, etc.

Four essentials of practical work of disinfection:

i. Preparation of building
ii. Selection of the type of disinfectant
iii. Methods of application of disinfectant
iv. Cautions

Common disinfectants:

a. Washing soda (sodium carbonate)
b. Lime
c. Potassium permanganate
d. Phenol
e. Formalin formaldehyde
f. Bleaching powder
g. Sodium hypochlorite
h. Quaternary ammonium salts
i. Boric acid

Safe Waste Disposal Practices in Animal Facilities

Work in animal facilities commonly involves use of sharp instruments. All sharp items (e.g., needles, scalpels, capillary tubes, etc.) must be handled safely, and placed in designated sharps containers for disposal as per institutional policy. Needles should never be recapped and re-used.

Animal Waste Disposal

All animals, animal wastes and related materials should be disposed of as per institutional policy. Institutions commonly have a protocol defining proper disposal of all animal carcasses or organs. For example, this might involve collection of all such materials for incineration or other safe disposal. Disposal of non-contaminated waste (dirty bedding, feed, etc.) may differ from institution to institution. Adherence to animal facility waste disposal policies will minimize the risks to the community.

Self-Check-3	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Discuss how personal hygiene maintained? (4)

2. How sanitation maintained?(4)

3. What is the difference between cleaning and sanitation?(4)

Note: Satisfactory rating –6 points Unsatisfactory - below 6 points

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

Answer Sheet

Score = _____

Name: _____ Date: _____

Short Answer Questions

Information sheet-2	Following workplace procedures and work instructions for controlling risks accurately

2.1 Workplace Health and Safety requirements

A Workplace Health and Safety Officer is trained and engaged to provide expert advice on OHS issues and to identify health and safety hazards and help implement risk assessments in the workplace.

A combination of OHS consultation mechanisms as prescribed by the OHS legislation is recommended.

As legislative consultation arrangements evolve and differ from state to state, a review of your state's/territory's current OHS legislation is recommended

Roles and Responsibilities

.Many basic elements (e.g., rights and responsibilities of workers, responsibilities of employers, supervisors, etc.) are similar in all the jurisdictions across Canada for example; the details of the OH&S legislation and how the laws are enforced vary from one jurisdiction to another. In addition, provisions in the regulations may be "mandatory", "discretionary" or "as directed by the Minister". In May 2001, a number of amendments to the Occupational Health and Safety Act were proclaimed. One important amendment, effective January 1, 2002, requires employers with ten or more employees to establish and maintain a written health and safety program, and for employers with less than ten employees to establish and maintain a written health and safety policy. Specific regulations outlining the

required elements of an occupational health and safety policy and program were approved by government in December 2001,and are reproduced below.

A. Employer responsibilities include:

- providing and maintaining safe equipment, systems and tools;
- providing and maintaining the information, instruction; training, supervision and facilities that are necessary to ensure the health, safety and welfare of workers;
- ensuring workers use necessary protective clothing and devices;
- ensuring work procedures comply with legislation and safe work practices at all times;
- ensuring all workers are aware of workplace hazards and follow safe work practices and procedures;
- consulting/cooperating with the WH&S representative/OH&S committee
- ensuring workplace inspections are completed on a regular basis and follow-up actions taken as necessary;
- ensuring WH&S representative/OH&S committee participate in workplace inspections; and
- Reporting serious injuries or death to the assistant deputy minister and the WH&S representative/OH&S committee.

B. Employee responsibilities include:

- protecting his/her own and other workers' health and safety;
- consulting/cooperating with the WH&S representative/OH&S committee;
- knowing and following legislation and safe work practices at all times;
- properly using all safety clothing/equipment/devices provided; and
- reporting unsafe conditions in the workplace.

C. the role of health and safety committee:

The role of health and safety committees or joint health and safety committees include:

- act as an advisory body
- identify hazards and obtain information about them
- recommend corrective actions
- assist in resolving work refusal cases
- participate in accident investigations and workplace inspections

make recommendations to the management regarding actions required to resolve health and safety concerns.

Occupational health & safety in vet surgery

Like any other jobs, there are professional hazards, which occur at veterinary surgery while performing surgical activities. Veterinary occupational health and safety policy and procedure help to reduce these veterinary occupational risks. Veterinarians, animal handlers, animal health technicians and animal health assistances can be exposed to occupational health risks, while working around animal houses & veterinary clinics. With the knowledge of what causes injuries & disease, is easier to design and implement suitable measures to wards privations certain safety rules must be followed when attempting to capture, restrain, treat, feed or exercise animals

Application of OHS procedures and techniques in veterinary surgery

The essential requirements for any work with infectious agents are as follows:

1. Personnel access to the surgery should be restricted.

2. Protective clothing, including gloves, mask cover/gas mask must be worn in surgical area and removed when leaving the surgery
3. Surgery room door should be closed when work is in progress & ventilation should be provided by extracting air from the room.
4. Food or drink must be not stored or consumed in surgery room
5. Smoking must not take place in the surgery room
6. Emergency plan should be developed
7. Materials for disposal must be transported without spillage in strong containers.
8. Waste materials should be incinerate/burn
9. Any accident must be recorded and reported to the safety officer
10. Using of relevant protective clothing and equipment
11. Using gowns, goggles , cap and gloves
12. Checking and fulfilling required safety devices before starting operation
13. Using anaesthesia during operation

As an employer, you are in charge of a safe and healthy working environment for your employees. You are familiar with the safety risks within your sector, as well as the measures you can take to counteract these risks.

2.1 WHAT IS PERSONAL PROTECTIVE EQUIPMENT (PPE)?

PPE means personal protective equipment or equipment you use to guarantee your (own) safety.

Use PPE always and anywhere where necessary. Observe the instructions for use, maintain them well and check regularly if they still offer sufficient protection. But when do you use what type of protection?

2.2 TYPES OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. SAFETY FOR THE HEAD

Wearing a **helmet** offers protection and can prevent head injuries. Select a sturdy helmet that is adapted to the working conditions. These days you can find many elegant designs and you can choose extra options such as an adjustable interior harness and comfortable sweatbands.

2. PROTECT YOUR EYES

The eyes are the most complex and fragile parts of our body. Each day, more than 600 people worldwide sustain eye injuries during their work. Thanks to a good pair of **safety glasses**, these injuries could be prevented. Do you come into contact with bright light or infrared radiation? Then **welding goggles or a shield** offer the ideal protection!

3. HEARING PROTECTION

Do you work in an environment with high sound levels? In that case it is very important to consider hearing protection. **Earplugs** are very comfortable, but earmuffs are convenient on the work floor as you can quickly put these on or take them off.

4. MAINTAIN A GOOD RESPIRATION

Wearing a **mask** at work is no luxury, definitely not when coming into contact with hazardous materials. 15% of the employees within the EU inhale vapours, smoke, powder or dusk while performing their job. **Dust masks** offer protection against fine dust and other dangerous particles. If the materials are truly toxic, use a **full-face mask**. This adheres tightly to the face, to protect the nose and mouth against harmful pollution.

5. PROTECT YOUR HANDS WITH THE RIGHT GLOVES

Hands and fingers are often injured, so it is vital to protect them properly. Depending on the sector you work in, you can choose from gloves for **different applications**:

- protection against vibrations
- protection against cuts by sharp materials
- protection against cold or heat
- protection against bacteriological risks
- Protection against splashes from diluted chemicals.

6. PROTECTION FOR THE FEET

Even your feet need solid protection. **Safety shoes** (type Sb, S1, S2 or S3) **and boots** (type S4 or S5) are the ideal solution to protect the feet against heavy weights. An **antiskid sole** is useful when working in a damp environment,

definitely if you know that 16,2% of all industrial accidents are caused by tripping or sliding. On slippery surfaces, such as snow and ice, **shoe claws** are recommended. Special socks can provide extra comfort.

7. WEAR THE CORRECT WORK CLOTHING

Preventing accidents is crucial in a crowded workshop. That is why a good visibility at work is a must: a **high-visibility jacket and pants made of a strong fabric** can help prevent accidents. Just like the hand protection, there are versions for different applications.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is responsibility of employee and employee in maintaining OHS?(6 points)

2. List Personal protective equipments(6 points)

Note: **Satisfactory rating above 6 points Unsatisfactory - below 6 points**

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information sheet-3	Identifying and reporting hazards to supervisors

2.2 Definition of terms

Occupational health: the effect of work on human health and the impact of workers

health on their work

Occupational Health and Safety (OHS)**: **Any occurrence which results in personal injury, disease or death, or property damage

A hazard: A hazard is anything that has the potential to harm the health or Safety of a person.

Risk: Risk is the significance of the hazard in terms of likelihood and severity of any possible injury.

Safety: The provision and control of work environment systems and human behaviour which together give relative freedom from those conditions and circumstances which can cause personal injury, disease or death, or property damage.

Hazardous Substances Any substance that has the potential to harm the health of persons in the workplace and includes chemicals scheduled under the Poisons Act, chemicals classified under the Dangerous Goods Act (1975) or Hazardous Wastes.

OHS policies: An OHS policy is a broad statement that says who is responsible for managing and monitoring OHS and lists any particular objectives for OHS, such as reducing vehicle accidents or days off work due to work-related illness or injury. It is supported by a set of OHS procedures and work instructions that together should cover what must be done to eliminate or minimize risks in the work-place

Personal Protective Equipment (PPE): Personal protective equipment (PPE) may include ear, eye and chemical protection, protective clothing, sunscreen lotion, gloves, safety harness and headgear**:**

Procedures: Hazard policies and procedures, emergency policies and procedures, procedures for use of personal protective clothing and equipment, hazard identification and issue resolution procedures, job procedures and work instructions, reporting procedures, and the installation of workplace safety signage.

Why OHS is Important

Occupational Health and Safety (OHS) is about working safely and ensuring that the work place is a safe place for everyone, including visitors to the Property.

It is normal to think that 'I'm Ok, nothing will happen to me.' But if we are careless around the workplace then accidents will happen. The results may be minor like a cut finger or bruised leg. However, when you think about the machinery,

chemicals and other hazards on a in livestock farm, you realize that it could be a very dangerous place.

3.2 **Concept of hazards**

The term hazard: A hazard is anything that has the potential to harm the health or Safety of a person or an animal.
The hazard identification process is designed to identify all the possible situations where people may possibly be exposed to injury, illness and disease arising from all sources including the above.

Prior to the introduction of any plant, substances, processes or work practices in the workplace, it is essential for the hazard identification process to be carried out to identify whether there is any potential for injury, illness or disease associated with such introduction. This will assist you to take the necessary actions for what may otherwise be extremely costly further down the track if no action is taken at this early stage.

Carrying out hazard identification for all existing plant, substances, processes and work practices in your workplace may require some effort. If you have a large workplace, it is a good idea to split it into several discrete areas for the hazard identification process, and to tackle one area at a time. Priority should be given to areas with hazardous plant, substances, processes or environment.

In order to minimize the time involved, it is better to perform hazard identification on all sources of hazards in a particular area of the workplace instead of doing each hazard source (e.g. plant, hazardous substances etc) at a time.

The relevant health and safety representatives need to be consulted during the hazard identification process. Employees working in the area have day to day experience of any hazards and should be involved in the hazard identification process. Advice should also be sought from people who are associated with the activities and processes in the area because they may provide valuable input.

Hazards in the workplace can change from day to day. In order to effectively manage workplace health and safety you need to introduce proper systems and procedures to ensure hazard identification is carried out on a regular basis. The OHS legislation requires you to repeat the hazard identification process:

3.3 Types of hazards

1. **Physical Hazards:** this can be electrical equipment's, open flames, lab. Instruments and glassware can all be hazardous if improperly used.
   - **Electricity:** is one of the most important physical hazards, when the electrical equipment's are use, the technicians should follow the use instruction. In the lab work should avoid electrical overloaded. They are a potential fire hazard and can also cause equipment damage.
   - **Fire:**is other of the most important physical hazards, but is not common. It can occur when open flames, such as Bunsen burners, are in use. It can damage clothing and long hair if are near to the fire. When necessary use is any flammable chemicals is better keep in a flameproof cabinet. In case of fire, in the lab should be fire extinguisher and any escape route in case of the exit is blocked.
   - **Laboratory equipment:** during working with autoclave, the technician should work carefully trying to avoid any explosions and burns; because it use pressurized steam to sterilize surgical instruments, glassware, sterile solutions, materials to be used in microbiology, for decontaminate materials such as blood specimens, bacterial cultures or filled biohazard containers before disposal and other materials present special hazards, etc.
2. **Chemical hazards** can be flammable, toxic, caustic, corrosive, carcinogen or mutagenic.

All chemicals must be labeled with**"hazard information"** on the containers

3. **Biological hazards:**

It can be contaminated with bacteria, virus, fungus, or parasites. It can produce also by bite from the laboratory animals. In microbiology lab, making any

bacteriological culture is recommendable in the microbiological safety cabinet. Avoid contact from biological culture. After any lab work, the technician and all surfaces must be disinfected with known disinfectants.

4. Allergic hazards:

Allergic hazards associated with breathing or contacting animal dander or urine allergens (among others). The safest policy is to reduce exposureby wearing protective clothing (such as facemasks, gloves, and a lab coat) when handling animals.

1.1 procedures to remove or minimize hazards

- **Design or re-organize to eliminate hazards**

It is often cheaper and more practical to eliminate hazards at the design or planning stage of a product, process or place used for work. In these early phases, there is greater scope to design out hazards or incorporate risk control measures that are compatible with the original design and functional requirements. For example, remove trip hazards on the floor or dispose of unwanted chemicals.

- **Substitute the hazard with something safer**

If it is not reasonably practical to eliminate the hazards and associated risks, you should minimize the risk. For example, today the dangers associated with asbestos are well known and there are numerous alternatives to asbestos products currently on the market including cellulose fiber, thermoset plastic flour or polyurethane foams. Replacing solvent- based paints with water-based ones is also a better alternative.

- **Isolate the hazard from people**

This involves physically separating the source of harm from people by distance or using barriers. For example, introducing a strict work area, using guard rails/fence around exposed edges and holes in the floors, using remote control systems to operate machinery, enclosing a noisy process from a person and storing chemicals in a fume cabinet.

- **Use engineering controls**

An engineering control is a control measure that is physical in nature, including a mechanical device or process. For example this can be done through the use of machine guards, effective ventilation systems and setting work rates on a roster to reduce fatigue.

- **Use administrative controls**

Administrative controls are work methods or procedures that are designed to minimize exposure to a hazard. Establish appropriate procedures and safe work practices such as; limit exposure time to a hazardous task so that fewer employees are exposed, routine maintenance and housekeeping procedures, training on hazards and correct work methods and use signs to warn people of a hazard.

- **Use Personal Protective Equipment (PPE)**

Provide suitable and properly maintained PPE and ensure employees are trained in its proper use. Examples include gloves, earplugs, face masks, hard hats, gloves, aprons and protective eyewear. PPE limits exposure to harmful effects of a hazard but only if workers wear and use the PPE correctly.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List out methods of minimization of hazards (2pts?)
2. Why it's important hazard minimization methods (3 points)

Note: Satisfactory rating - 2 and 3 points Unsatisfactory - below 2and 3 points

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

3. Define hazards? (2pts)
4. List the type of hazards and explain each of them. (6 points)

Note: **Satisfactory rating - 2 and 6 points Unsatisfactory - below 2and 6 points**

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Preparing appropriate tools for checking animal health and control

Common Tools/instruments used in animal restraint and health:

A. Tools used for restraining:

1. Mouth gag probang: a device used for examination of mouth, teeth and administering drug.
2. Bull holder: to control the bull.
3. Nose tongs: a clamp used to grasp the nasal septum and can severely restrict activity.
4. Bull nose ring: to lead the animal and use safely.
5. Bull nose punch: to make hole in the nose of bull for fitting the nose ring/nose string.
6. Muzzle prong: rubber device to fit on muzzle of animals to prevent self-sucking of milk, licking wound, biting, eating, or drinking, etc.
7. Halter: for handling and leading the animals and are used when the head needs to be tightly restrained.
8. Cradle: a device used to immobilize the neck of animals, short piece of wood bored longitudinally for passing string in it.
9. Anti cow kicker: to prevent kicking by the hind leg of less animal and prevent injury at milking time.
10. Milker's restraint rope: for tying legs at milking times.
11. Udder-Kinch: to prevent kicking by animals, as cow will crouch when rope pulled up-side.
12. Hobbles: a band of leather or of a wooven cord which is applied around the animal's leg. It may have a rope or metal ring attached to it through which rope is passed. They can be applied around the pastern or hock.
13. Casting rope: to throw animal on the ground and bring under control for various operations.
14. Trevis or cruch: used for restraining large animals, when casting is not needed. It is a cage like structure with four (4) corners poles fixed.
15. Squeeze chute/head catch: used for rigid confinement of animals and for head controlling.
16. Stocks: are made of heavy pipes/poles/wooden tool , anchored well to the ground surface, with the horizontal pieces set at the level of animal's shoulder (large animals); used for holding confinement of animals for various procedures.

B. Tools used as aid for administration of drugs

1. Syringes with needles: to give injection of medicines/vaccines.
2. Stomach tube: made of rubber used to feed animals artificially or administer the medicines orally.
3. Drenching gun: to give medicine to animals in suspension/solution/liquid forms orally.

4. Balling gun: to give medicine to animals in bolli, paste, pills etc into the throat.
5. Gravity injection out-fit: used for transferring sterile solution medications from the bottle through a rubber hose and needle into vein/peritoneal cavity/teat.
6. Sprayer: used for spraying insecticides.
7. Dipping fork: for dipping animals to protect from ectoparasites.

C. Tools used as an aid for injuries and treatment of wounds

1. Thomas splint: used to apply some traction upon fractured limbs.
2. Scissors: for general use in cutting bandages, tissues, etc.
3. Dissecting or dressing forceps: for cleaning wounds and dissecting purpose.
4. Suture needle: made of metal for suturing wounds.

D. Tools used in surgical operations

1. Burdizzo's castrator**:** used for closed castrationof male cattle, sheep and goats.
2. Elastrator: used for castration of calves or removing tender horns in young calves.
3. Emasculator: used for open castration in equines, camels, etc.
4. Docking machine: to cut the tail of lambs, dogs, etc.
5. Hair clipping machine: to remove hairs on belly, under tail, skin surfaces.
6. Mechanical dehorner: to cut the horns.
7. Dehorning saw: to cut the horns.
8. Bone cutter: used for cutting bones-broken or increased.
9. Trocar and canulla: remove gas from rumen in bloat.
10. Teat dilator: to remove blockage of teats.
11. Teat siphon: to remove milk from teats when blockage occurs.
12. Teat tumor remover: to make passage clear in teats.
13. Dystocia set: used in difficult parturition/delivery/birth.
14. Obstetrical phantom box: to facilitate delivery of abnormal presentation of calf.
15. Embryotomy knife: to cut the dead calf in the uterus and remove it in dystocia.
16. Prolapse clamp: to prevent prolapsed of uterus and vagina.
17. Hoof trimmer and hoof knife: to cut the hoof as an aid for shoeing the animals.
18. Pincers: for withdrawing nails at shoeing time and drawing clenches.
19. Electrical dehorner: to remove horn buds in calves.
20. Tattooing forceps: to give permanent number to animal for identification.

21. Earnotcher: to make notches on the ear for permanent marking of animals.
22. Ear/neck chain tags: used for giving number to animal on the ear.
23. Branding iron set: for branding animals and giving permanent number
24. Cathetor: to remove urine from bladder.
25. Artery forceps: to close the artery/vein to stop bleeding.
26. Scalpel: used for cutting wounds and dissection.
27. Tooth cutter: to cut tooth.
28. Driving hammer: for driving nails at shoeing time.

E. Tools used for diagnostic purposes

1. Clinical thermometer: to record temperature of the body.
2. Stethoscope: to detect abnormal sounds of internal hollow organs.
3. Measuring tape: to note length for girth of animals.
4. Weigh bridge: to record the weight of animals.
5. Mastaid paddle: used for detection of mastitis in California Mastitis Test
6. Strip cup : to detect mastitis infection.
7. Vaginal speculum: used for examination of vagina.
8. Eye speculum: for examination of eye by opening the eyelids.
9. Microscope: for examination of diagnostic specimens.
10. Blood lancet: to cut tissues and collect blood samples.
11. Haemocytometer with micro-pipette: for counting RBC and WBC.
12. Mortar and pestle: to grind large-sized samples/medicines into smaller ones and prepare powder.
13. Measuring glass: to measure water for preparation of mixtures.
14. Enamel tray: to keep tools and drugs.
15. Stirring plunger: used for mixing liquids in vets.
16. Autoclave: used for sterilization of tools and glass wares.

F. Tools used for sanitary aspects

1. Apron: to protect clothes from soiling.
2. Floor squeeze: to clean floor.
3. Shovels, brooms: for cleaning barns.
4. Dung scraper: cleaning of dung/manure.
5. Scrubbing brush: for cleaning water troughs, walls, utensils.
6. Body brush: used for grooming of animals.
7. Curry comb: used for grooming of animals.
8. Washing trough: for cleaning tools and utensils.
9. Autoclave: used for sterilization of tools and glass wares.

1. ANIMAL HANDLING AND RESTRAINT

***Why Learn Restraint Techniques*?**

Purposes:

- To attend animals safely
- To prevent injuries to animals
- To carry out operations and administer drugs conveniently and efficiently

Definition:

Restraint means hold back, check, or suppress action; to keep something under control; or to deprive of physical freedom. Restraint is also defined as forcible confinement; in veterinary practice it is the forcible confinement of an animal within the practice's care.

Restraint is the use of manual, mechanical, or chemical means to limit some or all of an animal's normal movement for such purposes as examination, collection of samples, and drug administration.

Or Restraint is the restriction of movement of any animal and may vary from simply confining the animal in an enclosure, small space, box, or crate, to completely restricting its muscular activity (immobilization).

Various degrees of patient restraint can be used to allow the veterinary medical team to examine, treat, and perform supportive procedures as prescribed by the veterinarian:

Restraint in its mildest form is a gentle touch and a soft voice. For example, when first meeting a canine patient, you need to start with a soft stroke to the head and a gentle hello. This will go a long way in gaining the animal's trust.

In its moderate form, restraint can involve confinement in a corral, box stall, or cage that limits the animal's movement or may be as restrictive as immobilizing a portion of the animal's body, as is necessary for jugular venipuncture.

Restraint in its most restrictive form can be as involved as causing a reduction or complete loss of muscular control through the use of chemicals such as tranquilizers, sedatives, and general anesthetics.

Basic Principles of Restraint

If you are considering restraining an animal, then ask the following questions:

(a) why is the animal being restrained? Is it necessary?

(b) Which method should be used? (greatest gain, least hazard).

(c) When is the best time of day to restrain the animal?

(d) Who is best qualified to carry out the procedure ? (Least amount of time, least amount of stress.)

(e) What is the best location.

If restraint devices are required, they should be suitable in size, design, and operation to minimize discomfort or injury to the animal. Typically, animals are restrained for brief periods, usually minutes, in most practice's care.

Where at all possible, handling should be avoided by using shifts. Veterinary technicians and assistants will be using restraint techniques every day in their professional lives. It is a skill that takes practice to master and to feel confident performing. It should be the objective of the restrainer to never let the person performing the procedure get hurt. Anyone who is performing a procedure wants to be able to concentrate on the task at hand and not have to worry about what the animal is doing. A technician or assistant should have the attitude that "no one will get hurt while I am restraining the animal." The potential for serious injury is ever present.

Because the veterinary facility is liable for any injury an owner sustains from their pet, owners should not be allowed to perform restraint. It goes without saying that the average owner is not likely trained in proper restraint techniques.

Different animals require different restraint techniques. For example, cats usually do well with minimal restraint, whereas a dog typically requires more control. Individual animal temperaments will also dictate which technique is appropriate. A friendly dog may require less restraint than a fearful or aggressive dog.

Some techniques are appropriate to perform in of the pet's owner, whereas others are not as they may look harsh. For example, the cat 'stretch' restraint technique, while not harmful to the cat, may be viewed by the owner as cruel.

Different restraint techniques are required for the performance of veterinary procedures. For example, an unpleasant procedure such as a rectal examination will require more restraint than auscultation of the heart. Certain procedures require special techniques. For example, the restraint for obtaining blood from the jugular vein is vastly different than that required for venipuncture of the medial saphenous.

Restraint devices or chemical restraint should be considered for prolonged or potentially painful procedures.

In all situations, regardless of species, one must have patience. If a restrainer is in a bad mood or is pressed for time, this could make a difficult situation worse.

Health and Safety in animal handling and restraint

Basic Guidelines for Performing Animal Restraint

To work safely with an animal a person should:

- understand basic animal behaviour in relation to their interactions with people during handling
- appreciate the "flight zones" typical of a species
- understand how to communicate with the animal
- use appropriate restraint techniques
- use restraint equipment properly
- identify any animals that may be unpredictable
- wear appropriate protective clothing and equipment
- maintain appropriate vaccination status

Important guidelines for restraint of any duration

- Restraint devices should not be used simply as a convenience in handling or managing animals.
- When restraint devices are used, they should be specifically designed to accomplish healthcare goals that are impossible or impractical to accomplish by other means or to prevent injury to animals or personnel.
- The period of restraint should be the minimum required to accomplish the procedure.
- If possible, animals placed in restraint devices should be given training to adapt to the equipment and personnel.
- Provision should be made for observation of the animal at appropriate intervals.
- Veterinary care should be provided if lesions or illnesses associated with restraint are observed. The presence of lesions, illnesses, or severe behavioral change often necessitates temporary or permanent removal of the animal from restraint.

General Guidelines for Care of Restrained Animals

- Restraint procedures should only be invoked after all other less stressful procedures have been rejected as alternatives.
- Supervision of animals in restraining devices should only be assigned to fully qualified and experienced personnel.
- The principal veterinary staffhas the responsibility to ensure that all members of the veterinary staff, particularly those responsible for day-to-day animal care, are fully aware of the rationale for the restraint procedures and for the complications for the animal which may occur as a result of the restraint.
- Consultation should be sought with those experienced in the restraint procedures to be invoked, prior to its initial use, to ensure that minimal restraint is used to accomplish the procedure goals.
- Physiologic, biochemical and hormonal changes occur in any restrained animal and veterinary staffshould consider how these effects will influence their proposed restraint procedures.

The principles of low stress restraint are:

a. Solid sides or barriers around the cattle to prevent them from seeing people deep inside their flight zone. This is especially important for wild or excitable cattle.
b. To prevent lunging at the headgate, the bovine's view of an escape pathway must be blocked until it is fully restrained. This principle does not apply to pigs.
c. Provide non-slip flooring for all species of animals.
d. Slow steady motion of a restraint device is calming, while sudden jerky motion excites. Applies to all species.

e. Use the concept of optimal pressure. Sufficient pressure must be applied to provide the feeling of restraint, but excessive pressure that causes pain or discomfort must be avoided. This principle applies to all species.
f. The entrance of the restraint device must be well lighted. All species must be able to see a place to go.
g. Livestock will remain calmer if they can see other animals close to them.
h. Engineer equipment to minimize noise. High pitched noise is more disturbing to livestock than a low pitched rumble from a conveyor.
i. Restraint devices must be designed to avoid uncomfortable pressure points on the animal's body.
j. Restrain animal in an upright position.

Because every restraint incident will affect the life, activities and behaviour of an animal the following points should be considered:

- Restraint of an animal should be used only when absolutely necessary and never as part of a daily maintenance routine (except where the animal may be routinely moved through a squeeze cage, or chained, for example).
- Only use the minimum amount of force necessary to accomplish the task.

Indications / circumstances requiring restraint

Animals can be unpredictable and might not react they way you expect. Animals in pain can be very aggressive and/or defensive. Restraint is used to protect the animal and the veterinary staff.
Animals can be injured by trying to get away from the veterinary staff, such as a horse receiving a laceration on a protruding nail. Two dogs in a vet office might get in a fight while passing each other. And clients will blame the veterinarian and the staff for injuries an animal may receive while in the vet's care.
To avoid discomfort for the animal veterinarians should use the least amount of restraint for a procedure as possible.

Without proper restrain an animal can injure itself during and/or after a procedure. Such as an injury if an animal moves while receiving an injection. Or an animal removing its stitches without the use of an Elizabethan collar.

Clients often base their impression of the care their animal receives on the manner in which their animals are restrained.

Without proper restrain an animal can injure the staff; Injuries may result in loss of income or efficiency; Bites and scratches from small animal; Kicks and body slams from large animals.

The goal of restraint is to handle an animal in such a way that a procedure can be done without injuring the animal and without causing any injury to the humans involved in the procedure.

In general, restraint is required for:

- many production and management practices, such as :
  - Health care: physical examination, sampling and therapeutic procedures
  - Identification: ear tagging, tattooing, branding
  - Weighing
  - Breeding
  - Showing
  - Transportation
  - Pregnancy diagnosis
  - Implanting growth stimulants
- Safety
  - Animal
  - Persons
  - Equipments/facility
- Animal escape
- Success of a procedure
- Wise use of resources
- Time management

Complications of restraint

Restraint is required for proper transportation, examination and treatment of any animal species.

The degree of restraint required reflects:

- The species and/or breeds
- The animal's familiarity with handling
- Anticipated invasiveness and
- The duration of the procedure

It is the handler's responsibility to use appropriate techniques that facilitate the success and safety of all humans and animals involved in a procedure. Unfortunately, despite all attempts to minimize complications, restraint can adversely affect some animals.

Undesirable effects that can be associated with restraint include:

- Trauma, including contusions, bruising, lacerations, and nerve paralysis

- Metabolic disturbances: acidosis, hypoxia, hypocalcaemia, hyperglycemia, & hypoglycemia
- Hyperthermia
- Regurgitation
- Pregnancy complications and displaced abomasums
- Pneumonia and bloat
- Emotional stress

HANDLING AND RESTRAINT OF CATTLE

- Bovine in species
- Large ruminant herbivore
- With various types:
    - Cow: female of reproductive age.
    - Bull: intact male of reproductive age.
    - Calf/calves: young cattle of either sex.
    - Steer: neutered adult male.
    - Beef: meet derived from adult cattle.
    - Veil: meet of young calf

Danger Potential:

- Cattle resist restraint in several ways:
- Horned animals are capable of causing severe injury using quick thrusts sideways and forwards; handlers need to be aware of the arc of the swing at all times.
- Butting with the head is a danger in both polled and horned cattle and handlers can easily be knocked down or crushed against fences or walls.
- Cattle seldom use the front feet as weapons, although they may paw the ground to display aggression. However, they can cause fractures or severe bruising when stepping on feet, and even small calves can inflict pain.
- Cattle are adept at kicking with their hind feet. They usually kick forward and out to the side and can reach a good distance. Although they seldom kick straight backwards, they are able to do so.
- The tail, especially when debris is tangled into the switch, can also be a weapon, especially if flicked into the handler's eye.

- Different breeds of cattle vary greatly in the amount of restraint needed.
- Dairy cattle are in general much more docile, sometimes only requiring a halter or stanchion. Beef cattle, usually handled much less, require more restraint, such as the use of a chute or stocks.

Physical Restraint

Rope Halter:

A rope halter is the basic tool of restraint for cattle. Commercial cow halters are available. It is important to place the halter on the cow correctly.

Often a handler will try to place the halter on upside down, or it is placed improperly with the rope behind the horns, but not behind the ears. The rope should tighten under the chin, rather than behind the poll.

In a stanchion or chute, it is fairly simple to place a halter on the cow, but in a box stall it is more of a challenge. If the nose loop is made larger than the poll loop, the cow can sometimes flip the poll loop over the head, allowing the nose loop to drop down over the nose and under the chin. When the rope is pulled the nose loop will tighten.

Once the animal is haltered, the rope should be tied to a secure object (e.g. a post). If the cow is in a head gate, the head should be pulled to the side and secured with a quick release knot. It is the primary method of restraint used in dairy cattle is the halter.

The halter is sometimes used in beef cattle to control the head after the animal is restrained in a chute. The halter can be made of cotton, nylon, twine, etc.

It is mainly used to control the head and once the head is controlled, the animal can be handled with relative ease.

The proper placement of the halter is important and it begins with making sure the lead is placed on the left side of the animals head.

A simple rhyme to help remember how to correctly place the halter on the head is a follows; "the part that draws goes under the jaws." This leaves the top part of the halter to go over the poll and behind the ears.

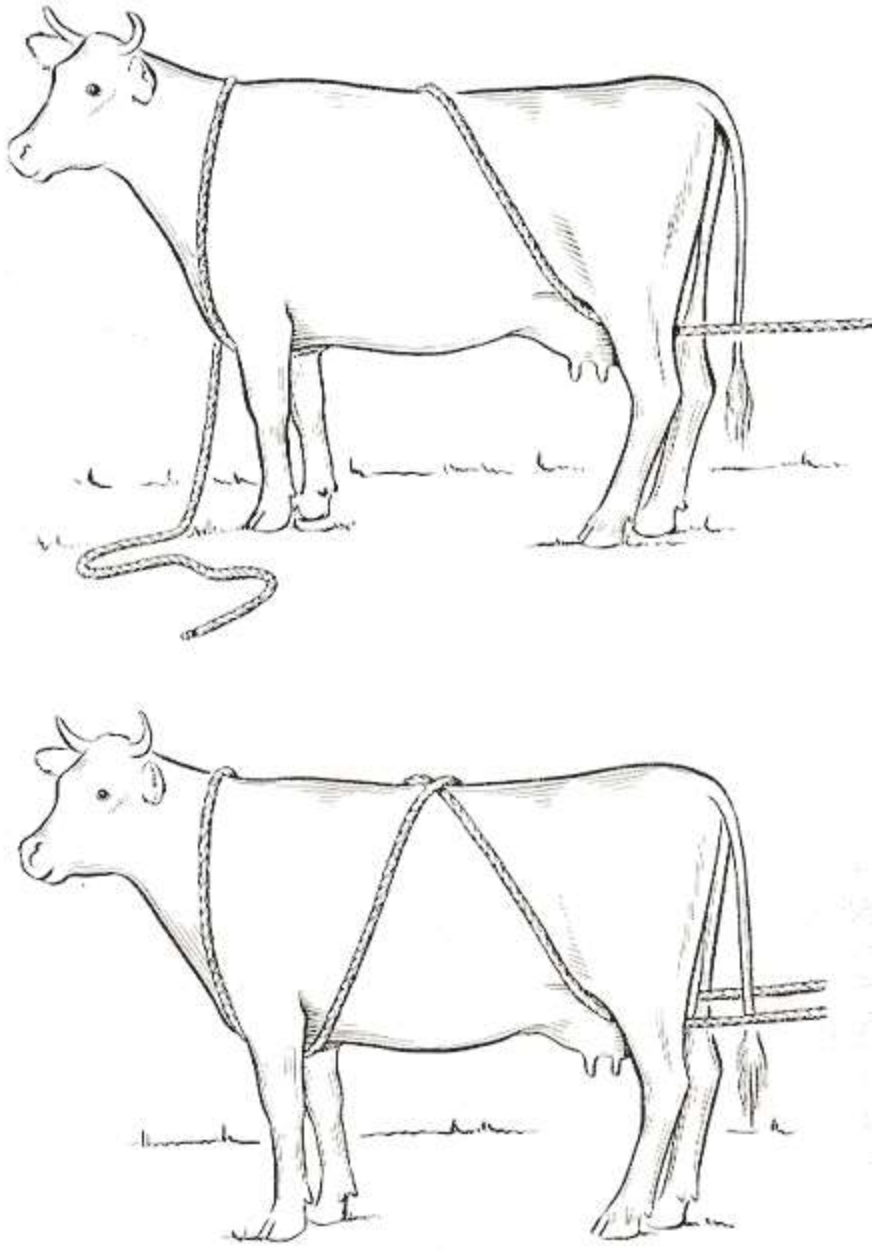

Fig.Restraining for pregnant animal

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is restraint?(6 points)

2. Mention type of restrain advised by pregnant animal(6 points)

Note: **Satisfactory rating above 6 points Unsatisfactory - below 6 points**

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation Sheet-1	**Prepare personnel for pregnant animal health care work**

Methods

1. Clean your hands with detergents
2. Disinfect your hand
3. Wear sterile glove
4. Do animal care activity
5. Dispose wastes
6. Clean non disposable materials and replace to its original place
7. Remove gloves safely
8. Clean and disinfect your hand again

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 2 hours.

Task-1: Prepare PPE required for safe work
Task-2: Do personal and animal preparation
Task-3: Do restraining for pregnant animals