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Ministry of Labor and Skills

Animal Health

Level-II

Based on March 2022, Version 4 Occupational standard



Module Title: - Carrying out General Clinical Examination of Animals

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Ministry of Labor and Skills

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Introduction to the Module

This module covers the knowledge, skills and attitude required to undertake general physical examination of animals and identify signs of ill health or injury in animals. It also covers defined range of skills to compile patient (animal) and client (animal owner) histories, maintain records and consult the veterinarian as required.

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LG #8 LO #1-Carry out reception duties

Instruction sheet

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

- Receiving client
- Taking owner and patient animal information
- Taking the patient histories
- Completing patient admission and discharge documentation

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Receive clients courteously according to workplace guideline.
- Take owner and patient animal information
- Identify and retrieve existing client and patient histories from clinic records.
- Establish new client and patient records if required.
- Complete patient admission and discharge documentation promptly and efficiently

Learning Instructions:

1) Read the specific objectives of this Learning Guide.
2) Follow the instructions described below and try to understand what are being discussed.
3) Ask your teacher for assistance if you have hard time understanding them.
4) Read the information written in the information Sheets
5) Accomplish the Self-checks
6) Perform Operation Sheets
7) Do the “LAP test”

Information Sheet 1

1.1. Receiving clients

Veterinary clients are just people like us. They all have different personalities, expectations, and pets with a variety of issues. Identifying certain traits in clients can be helpful in how we manage their appointments, interaction, and also our stress levels.

How to talk to the Veterinary Clients in and out of the reception area

a) Avoid Jargon. It may seem self-explanatory, but using medical jargon is one of the fastest ways to lose your clients.
b) Include Quality Websites on Handouts
c) Use Visual Aids.
d) Maximize Transparency
e) Encourage Clients to Use Their Smartphone's
f) Start a YouTube Channel



Figure 1.1:- Responsibility of veterinary receptionst.

https://www.thebalancecareers.com/veterinary-receptionist-125839 Accessed on 30/08/2022

A receptionist is an employee taking an office/administrative support position. The work is usually performed in a waiting area such as a lobby or front office desk of an organization or business. The title "receptionist" is attributed to the person who is specifically employed by an organization to receive or greet any visitors, patients, or clients and answer telephone calls.

Receptionist facilitates client service, communicate a sense of friendliness and helpfulness, and organize appointments so that clients do not have to wait an unreasonable amount of time. The receptionist is a key position in any hospital operation. The “life blood” of the practice (client) must filter through the receptionist via the telephone and one-on-one contact in the reception area. The old adages that “you don’t have a second chance to make a first impression” and “the receptionist will make or break the practice” are key issues for selecting receptionists.

Patient management and client management go hand in hand. Both should be handled together. The first contact is with the receptionist. The receptionist should move the patient and the client as quickly as possible in to an examination room. A patient presented as an emergency should receive priority. Receptionists have the critical role of handling the fee payments, billings, and daily cash records. These duties must be performed effectively to keep the business running smoothly, clients happy, and the rest of veterinary team aware of what happening with the clients and their animals.

1.2. Taking owner and patient animal information

Among the tasks of vet receptionist compiling accurate owner and patient identification (signalment) is important for the duty veterinarian and for accurate record keeping. The signalment is the description of owner of animals and the animal for identification purpose. Patient identification is the **age**, **breed**, **sex**, and **weight** including **reproductive status** of that animal where as owners information includes **Owner’s Name, Address region, City state, Telephone number, area of residence.**

This information is also vital in developing a list of the most likely rule outs for the patient’s problem. It provides clues about risk factors that may be related to species, breed, sex, age, color and weight. For example, a young animal is more likely to be vomiting because of an infectious

agent, toxin ingestion, foreign body obstruction, or intussusceptions; where as an older animal with the same compliant may be more likely to have kidney, liver, or pancreatic disease as the cause of vomiting. Cancerous tumors are less likely to occur in puppies than in older animals. Similarly congenital abnormalities, such as a cleft palate, are often noticed in young animals, so it is rare to first diagnose them in older animals. Certain diseases are heritable and may occur in particular breeds of animal. Knowing the breed is the first step in identifying a possible genetic defect. Knowledge of the sex of the patient and whether it is spayed or neutered can obviously help rule out disorders that affect one sex or the other.

Color pattern is sometimes a useful identifying characteristic. Cattle breeds such as Holstein-Friesians and shorthorns have a wide array of possible color patterns. However, if the patient is a member of breed with a defined, consistent phenotype, physical descriptions will be of limited value. Stating that an Aberdeen Angus cow is black and polled (naturally hornless) provide little useful information because all Aberdeen Angus cows are black and polled.

The use of **tattoos** and **brands**, **numbered ear tags** or **implanted microchips** are preferable identification method especially for herds or multiple-pet households. This is because; these forms of identification are more definitive. In multiple-pet households, particularly in the case of clients with impaired or faulty memory, a definitive identification system may be required such as tattoos or implanted microchips.

A veterinarian's approach to communicating with their client has been found to impact a number of important outcomes of veterinary care including client adherence, client satisfaction, veterinarian satisfaction, and client recall of information, as well as appointment efficiency and accuracy. The style of communication used by veterinarians while interacting with clients can affect the way clients participate in decision-making. While various terms are often used, there are three primary approaches that veterinarians and clients can take during medical decision-making, as described by Charles: paternalistic, shared, and informed. In the paternalistic role, veterinarians make decisions for their clients based on their expertise of what they medically believe would be the 'best' option and where communication is typically one-directional because the veterinarian assumes the client shares the same values. In the shared role, the veterinarian

seeks out and provides information based on the clients' stated preferences and decisions are made together. In this role, there is no dominance within the conversation as the client and veterinarian provide equal input. In the informed role, the veterinarian provides information requested by the client to make a decision. In this role, clients make decisions autonomously, without receiving direction or advice from the veterinarian.

1.3. Taking the patient histories

History taking or anamnesis is the process of taking information on animal patient from owners about its illness, onset of illness and feeding practice through careful questioning of the owner. In Veterinary practice, the disease is presented indirectly in the form of a complaint by the owner or the attendant. Thus, it is very necessary to have all the information from the owner. Most of the time, the owner or attendant fails to provide pertinent and adequate history and inaccurate history may lead to misdiagnosis. The clinician must substantiate these with rational question utilizing professional knowledge.

Without knowing history of animals it is difficult to diagnose disease problem of patient animals. Therefore, the history should be taken from the owners of the patient and recording the owner's complaint. Disease information should include the group(s) affected, the numbers of animal affected (morbidity) and the identities of the animals affected; the number of animals that have died (mortality) should be established. In order to get the accurate and complete history of patience the following things should be focused; patient data, present history, past history and environmental history.

Patient data is essential to identify the patient and it includes: Owner's name, Owner's address: postal address, telephone, kebele, peasant association, species, breed, sex, age, name, ID No., body weight, description including color, marking, polledness, and other identification marks of patient.

a. **Present history of patient**

Present history of patient includes of recording the sequential events from the start of the patient chronic. Questions about physiological functions such as appetite, urination, defecation,

rumination, respiration, sweating, milk production, gait, posture and also of the first symptoms shown by the animal should be asked. All these information deal with the current problem of the animal and the events associated with it.

- **Locations of the problems:** The main attention at the complaint that a farmer has to say and from there clinician can tentatively say can be listed as following:
  - ✓ Digestive system involvement will be shown as absence of rumination, appetite, bloat or diarrhea Respiratory system involvement will be indicated presence of nasal discharge, coughing, dyspnea.
  - ✓ Urinary system involvement will be manifested as frequent urination, passing red coloured or cloudy urine.
  - ✓ Musculo-skeletal and nervous system involvement will be manifested as lameness, inco ordination, and paralysis.

- **Nature of illness:** The clinician should be able to assess and find out the time of onset of disease, any change management practices and signs noticed by the farmers.
  - ✓ To assess to know the duration of disease whether it is peracute, acute, sub acute or chronic
  - ✓ To know number of animal diseased and morbidity rate and mortality rate of animals
  - ✓ Determine whether any drug has been given for animals, before patience come to clinic for assurance
  - ✓ And the following question should be pointed:
  - ✓ When did the farmer notice the disorder? (time)
  - ✓ Did it occur suddenly/slowly? (acute /sub-acute /chronic nature)
  - ✓ What were the signs noticed? (anorexia/drop in milk yield/ others)
  - ✓ Are the animal fed / grazed in pasture / forest grazed? (getting information on management practices e.g. ketosis seen in stall fed animals, while babesiosis seen in forest grazed animals)
  - ✓ Is there any other animal affected with similar condition in the same herd / in other farmer's herd in the village (to find out if the disease is rapidly spreading)?

- ✓ Ask if there has been any introduction of new animal to the herd / village (sick animal may have been bought from affected area and disease has started)
- ✓ Is the affected animal vaccinated against food-andmouth disease (FMD), anthrax, hemorrhagic septicemia (HS), Black quarter (BQ) (to find out if the animal is protected against common diseases).

b. Past history

- Inquiring into the past history may help in arriving at a diagnosis. History of drenching a day or two earlier may cause aspiration pneumonia. History of past disease may be correlated to the present illness. Past history will also give idea if such condition prevailed previously in the area.
  - ✓ Ask if such condition was reported previously too (reveal endemic nature of disease, or occurrence of a new disease)
  - ✓ Does this occur at certain period of time? (Find out the seasonal occurrence of the disease)
  - ✓ Was the disease reported form other places in the locality? (area of spread / occurrence can be found out)
  - ✓ Has any animal recovered from such a sickness?
  - ✓ Is the disease restricted to certain age group / sex? (BQ is seen in animals between 1-3 years of age in both sexes.

C. Environmental history

The environment in biosecurity and regional mineral deficiencies. Risk factors indoors may include ventilation, humidity, dust, stocking density, temperature, lighting, bedding, water availability, feeding facilities and fitments. Environment or surrounding of the animals may help in the diagnosis of disease. Animal grazing on pasture irrigated with sewerage water may suffer from nitrate poisoning. Parasitic diseases are more in animals, which are kept in marshy lands. Recent spraying of weedicide or insecticides may poison the animals. Environmental history can be divided into outdoor environment and indoor environment.

i. **Outdoor environment history:** It regard to the topography of land where animals are reared, vegetation, type of agriculture practiced in the locality, use of chemicals in agriculture (pesticide, weedicide) and system garbage disposal in the area. Animals that are grazed are likely to be infested by parasites and prone to vector borne diseases like babesiosis, trypanosomiasis, or animals that are grazed in the marshy area including paddy filed are likely to be infested by liver fluke etc.

ii. **Indoor environment history**: It regards with the types of animal house. General management the factors of importance includes adequate house space, satisfactory ventilation, facilities for treatment and disposal of wastes. An investigation of the breeding programmes may reveal features of significance when line breeding has led to the appearance of inherited genetic defects. Calving programme should be arranged to avoid the incidence of ketosis, hypomagnesaemia, and calf scour and pregnancy toxaemia.

1.4. Completing patient admission and discharge documentation

1.4.1. Admission and consent forms

Admission and consent forms document in writing an understanding between the veterinary practice and the animal owner. The forms outline the specific conditions, risks of the procedure, and responsibilities of the two parties. In keeping with the doctrine of informed consent, completed authorization (admission) forms provide veterinary practices with legal evidence that the owner was informed of important information and that the owner agreed to pursue a particular course of action based on the circumstances and information given to them.

1.4.2. Discharge and case summary

When the patient is ready to be returned to the client's primary care, a summary of the case is written and discharge instructions are prescribed by the clinician. A copy of the form is given to the owner. In this way the owner has a written account of the patient's diagnosis and treatment. For agriculture animals, slaughter and milk withdrawal times should also be clearly specified. Often the clinician's name and contact information are included on the form so that the owner can call if questions or problems arise.

Table 1.1:- Consent form for treatment or admission

Veterinary clinic/ hospital of_____

Client plate

Consent for treatment and/or admission

I, the undersigned owner, or owner's agent, of the pet identified above, certify that **I am/I am not** (circle one) over eighteen years of age, and hereby consent to the examination of my pet (animal) by staff veterinarians at X (name the clinic). I also agree that after consultation with me, the clinic's doctors may prescribe medication for, treat, hospitalize, anaesthetize, sedate, and/or perform surgery on my animal.

I understand that an estimate of the costs of veterinary services will be provided to me and that I am encouraged to discuss all fees attendant such care before services are rendered and during my pet's (anmal's) ongoing medical treatment. I agree to pay financial responsibility for the balance of all services rendered on a cash, credit card or check basis at the time my animal is discharged from the clinic (hospital).

Have you talked with your veterinarian about the following

The reasonable medical and/or surgical treatment option for your animal?

Sufficient details of the procedure for you to understand what will be performed?

How fully your animal might respond or recover and how long it could take?

Complications, length and type of follow-up, restraint require and expected cost?

Table 1.2:- Summary and discharge form

Veterinary hospital/clinic of _____

Case number:_____
Client's name:_____
Animal's name_____
:

Discharge date_____

Discharge diagnoses for record coding
(indicate "T" for tentative or "C" for confirmed)

_____
_____
_____

Your veterinarian is_____your doctor's telephone no. is_____

Re-examination

- An appointment has been scheduled for your pet to be seen again on_____At_____a.m/p.m
- Your pet needs a re-examination in_____days/weeks/months

If an appointment needs to be changed or arranged, please call (251)461165121 (9:00-4:30, mon-fri)

- No re-exam necessary at this time

Medications and directions for use

_____
_____
_____

Specific instruction:

_____
_____
_____
_____
_____
_____
_____
_____

I have received the above animal and I have been given the opportunity to ask questions about these instructions.

_____ _____ _____ _____
Owner or owner's agent date time staff nurse

B-1 (form control no.)

Self-check 1	Written test

Name…… ID…… Date…….

Answer the questions according to instruction.

I. Choose the best answer (1pt each)

1. Which one is not considered while taking the information of animal owner?

   a) Address region b) Name c)Telephone number d) breed

2. Which one is right about the present history of animal disease?

   a) Identify the nature of disease b) location of the problems c) all d) none of the above

3. Which one of the following is directly related to indoor environmental history of animal?

   a) Stocking density b) temperature c) bedding d) topography of the area

II: Short Answer Questions

1. How to receive clients in veterinary clinic? (2 points)
2. What is signalment? (2 points)
3. Mention the use of signalment? (3 points)
4. What is an anamnesis and mention type of anamnesis? (3 points)

Note: Satisfactory rating – 6.5 points Unsatisfactory - below 6.5 points

Operation Sheet -1

1.1 Techniques to Record patient details and take diseases history

A. Tools and equipments

I. PPE
II. Sick animal with its owner
III. Case recording sheet
IV. Pens/pencils

B. Procedures

- Take owners information
- Write past history of the sick animal on case recording sheet.
- Write the present history of animals on case recording sheet.
- Write the environmental history of the animal on case recording sheet.

1.2. Skills to receive animal owners/clients/

A. Tools and equipments

I. PPE
II. Owner's os sick animal
III. Waiting area/ desk/

B. Procedures

- Welcome/orienting the client to the consultation session
- Clients with respect
- Feedback to client
- Pay attention to needs and concerns
- Share your initial plan (let the client know that you can help them)
- Answer the client's questions and Wrap-Up
- Anticipate problems and obstacles

LAP TEST-1	Performance Test

Name_____ ID_____ signature_____ Date_____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within **1** hour. The project is expected from each student to do it.

Task-1:- Perform patient details and take diseases history

Task 2:- Conduct reception duty in veterinary clinic

LG #9	LO #2- Conduct general examination of animals

Instruction sheet

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

- Collecting and checking-up tools and equipment used for measurement
- Distant examination of animal health condition and abnormal behavior
- Restraining animals for general examination
- Taking physiological parameters /vital signs
- Caring out close physical examination
- Establish diagnostic records

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Collect tools and equipment used for measurement and check-up for functionality.
- Use appropriate restraints to hold patients for examination in line with clinic procedures.
- Check and record distant examination on the general condition and health of animal on standardized case paper/book.
- Recognize abnormal animal behaviour and conditions.
- Take and record physiological parameters /vital signs in line with clinical diagnosis procedure.
- Carry out close physical examination according to the standard procedure.

Learning Instructions:

1) Read the specific objectives of this Learning Guide.
2) Follow the instructions described below.
3) Read the information written in the information Sheets
4) Accomplish the Self-checks
5) Perform Operation Sheets
6) Do the “LAP test”

Information Sheet 2

2.1. Collecting and checking-up tools and equipment used for measurement

Before the commencement of general clinical examination there should be fulfillment of precondition like checking of available tools and equipments in the clinics and farms whether they properly worked or not and ready for use. A Complete List of Veterinary Equipment and Tools Essential for Veterinarians during general examination are:-

i. **PPE**
ii. **Restraining tools for all species of animals: - this can be physical, chemical and verbal restraining methods**
iii. **Clinical work tools and equipments: -** there are numerous equipments but among them few are:-

- **Stethoscope**: - Stethoscopes are the fundamental and one of the most important **Vet Tools** that all professionals in the medical field need, but the vet needs a specific stethoscope for their practices. The Stethoscope is a small, lightweight, and portable tool that has different parts like ear tips, tubes, ear tubes, stem, headset, diaphragm, chest-piece, and bell. The diaphragm or bell picks up the sound created by the animal's body and passes it to the earpiece. The stethoscope is essential because it helps us bypass all muscles and fur, and in fact, helps us hear the sounds of the lungs, intestines, and heartbeat. Thanks to this specialized equipment, it is now easy to examine any large or small animal.

- **Thermometer: -** These can be of the traditional glass and mercury type, although they will require a risk assessment and plans for mercury disposal in case of breakage. They must be thoroughly cleaned and disinfected between patients. Digital rectal thermometers are accurate and easy to read and are usually supplied with sterile single-use disposable probe covers to avoid cross-infection. Ear thermometers can also be used and suitable models are now available for most small animals. These also use disposable covers to prevent cross-infection. It is better to continue to use the same type of thermometer when monitoring the temperature

of an ongoing case, as there can be significant differences in readings between rectal and ear thermometers.

- **Microscope**: - Microscopes are used in veterinary practice for the proper diagnosis and treatment of patients. A microscope can increase the efficiency of a veterinary clinic. They are used to examine patient samples microscopically with the help of certain solutions. The microscope has significant use in veterinary practices for viewing
  - ✓ Ear swabs
  - ✓ Urine sediments
  - ✓ Fecal parasites
  - ✓ Blood cytologies
  - ✓ Differential counts
  - ✓ Tumor aspirates
  - ✓ Embryo transfer
  - ✓ Sperm motilities
  - ✓ Skin issues

For more veterinary equipments and tools you can visit the link https://www.vet-ebooks.com/list-of-veterinary-equipment-and-tools/ accessed on 01/09/2013.

2.2. Distant examination of animal health condition and abnormal behavior

Checking body conditions of the animal started by observation of the animals from distantly. Ideally this procedure should be performed with the patient in its normal environment. This enables its behavior and activities to be monitored without restraint or excitement. These can be compared with those of other member of the group and relative to accepted normal patterns. However, sick animals have often been separated from their group and assembled in collecting yards or holding pens awaiting examination. Observations are most frequently made in this situation; they may include feeding, eating, urinating, defecation, interactions between group members and responses to external stimuli. The patient can be made to rise and walk. The posture, contours and gait can be assessed, and gross clinical abnormalities detected. Useful information is often derived from these observations and this stage in the clinical examination should not be hurried.

Detailed observations can be made in docile animals without restraint; however, restraint may be necessary to facilitate this procedure. Closer observation of the patient may detect smaller and more subtle abnormalities.

For general examination of animals there should be seen animals from the distant in which they behaves and followed by observation of the gait, posture, skin color, coat color and any clinical signs of illness. Because it is often difficult to study domestic animals in a natural environment, Applied Ethology evolved to study domestic and captive animals in environments designed by humans.

Animal behavior is the expression of an effort to adapt or adjust to different internal and external conditions, i.e. behavior can be described as an animal‘s response to a stimulus.

How behavior is observed and recorded

Some factors to be considered when observing behavior include:

a) spacing arrangements between animals (pigs tend to huddle together in a group, sheep graze in flocks and continually monitor each other so a fixed distance between them is maintained, dams and their offspring having a relationship that is undergoing change from birth to weaning and often beyond);
b) orientation;
c) posture;
d) various behavioral rhythms that occur over different times and seasons;
e) Behavior is influenced by the age and sex of the animal and also by its past experience.

2.3. Restraining animals for general examination

Restraint and approach to animals

Restraint is the term used to imply control of an animal and may be necessary for medical reasons and nonmedical procedures. Animals are often resisting to the clinical examination procedures. The animal must be restrained so that it can be examined carefully, safely and with confidence. The methods of restraint should be done, in order to able to carry out the

examination safety and without danger to the clinician and assistants, the methods available may be classified as the following.

A. **Physical restraint.**
B. **Chemical restraint**
C. **Verbal/Moral restraining**

A. Physical restraint:

It is important to perform all the physical manipulations in a quiet and gentle manner in order to carry out the examination safely without causing danger to the clinician or the assistants and to avoid disturbing the patient. This manual is to give the advanced knowledge on how to restraint the domestic animals.

- **Restraints of the equine:** Equipment used for restraint and handling should be effective without causing stress to the horse and should be designed for maximum safety of the handler and horse. A horse should be approached from the front and slightly to the left (near) side because they are accustomed to being handled on that side. They become nervous when handled from the right side. Any restraint method used to assist normal management or treatment of the horse should be the most mild and effective method available, and should be applied for the minimum amount of time necessary to carry out the task. A halter and lead rope is the most common form of restraint. Generally, the safest knots are those that can be quickly untied even if the horse has pulled on it. When used by knowledgeable handlers, other acceptable forms of restraint include hobbles, twitches, lead chains, stocks and chutes. Tethering is a form of restraint that brings a high risk of injury to horses unless used correctly. Tethering does not refer to tie stalls or briefly tying a horse to a fixed object. The following lists are the methods how to restraint horse.
  - ✓ **Applying a halter.**
  - ✓ **Rope twitch**
  - ✓ **The hand twitch**

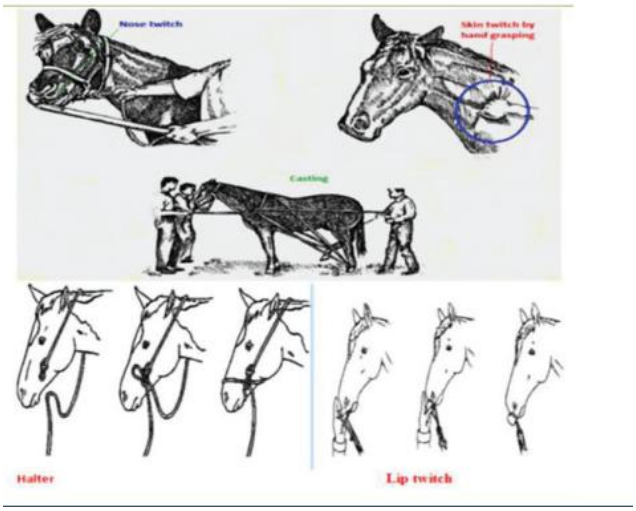


Figure 2.1 physical restraining of equine. Source: - https://equimed.com/health-centers/first-aid/articles/handling-and-restraining-your-sick-or-injured-horse. Accessed on 29/08/2022

- **Restraint of the cattle:** Restraint of cattle depends on breed, age, sex and knowledge of animal behavior. For example, bulls are unpredictable and should be handled with care. Aggressive bulls for instance, will paw the ground with front feet, lower and shake the head. They may also make mowing sounds. Nervous cows will keep head and tail up and may have an anxious expression in their eyes. The followings are the methods for restraint of cattle:
  - ✓ The nasal septum is gripped between the thumb and one finger or with 'bull-holder
  - ✓ Leg twitches are also employed
  - ✓ One rope locking two horns on a post or tree
  - ✓ One rope two-person cattle casting
  - ✓ Two ropes three-person cattle casting
  - ✓ Chest twitch: Chest twitch is used for exceptionally restless cattle.

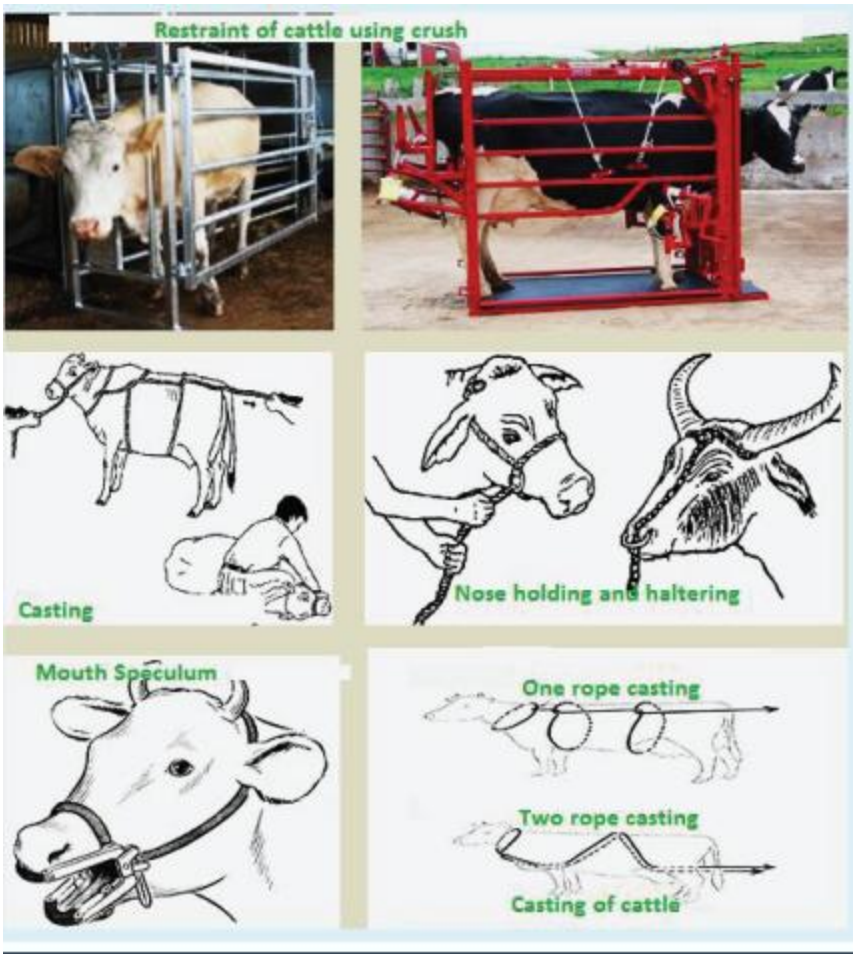


Figure 2.2:- Physical restraining of cattle. Source:- https://vikaspedia.in/agriculture/livestock/cattle-buffalo/restraining-cattle-and-buffalo Accessed on 31/08/2022

- **Restraint of Pet animals**

  Cats have always relied on speed, agility, caution, needle sharp teeth and dagger-like claws for survival. Therefore, they should be approached in a feeble manner**.** Restraint techniques

  of cat are as following:

✓ **Leg restraint:** Always place an index finger or middle finger between two legs. This provides a better grip to prevent escape.

✓ **Head – Mandible hold:** The palm of the hand is placed under the cat's chin and the fingers are used to grasp mandible.

- ✓ **Scruff of the neck:** Hold as much of the loose skin on the back of the cat's neck as possible. This prevents the cat from turning its head to bite.
- ✓ **Restraint with towel:** Cover the head with a towel or cover the entire cat; then lift it up, isolate the needed part and uncover it. This is good for injection or examination.
- ✓ **Restraint bag:** Feline restraint bag (cat bag) is normally used to restrict the movement of the cat and also to protect the handler from scratches.
- ✓ **Restraint with the adhesive tape:** Apply adhesive tape around the legs starting with the hind legs then followed by the forelegs.
- ✓ **Gauze muzzle:** They can be commercially available (leather muzzles) or home made using gauze.

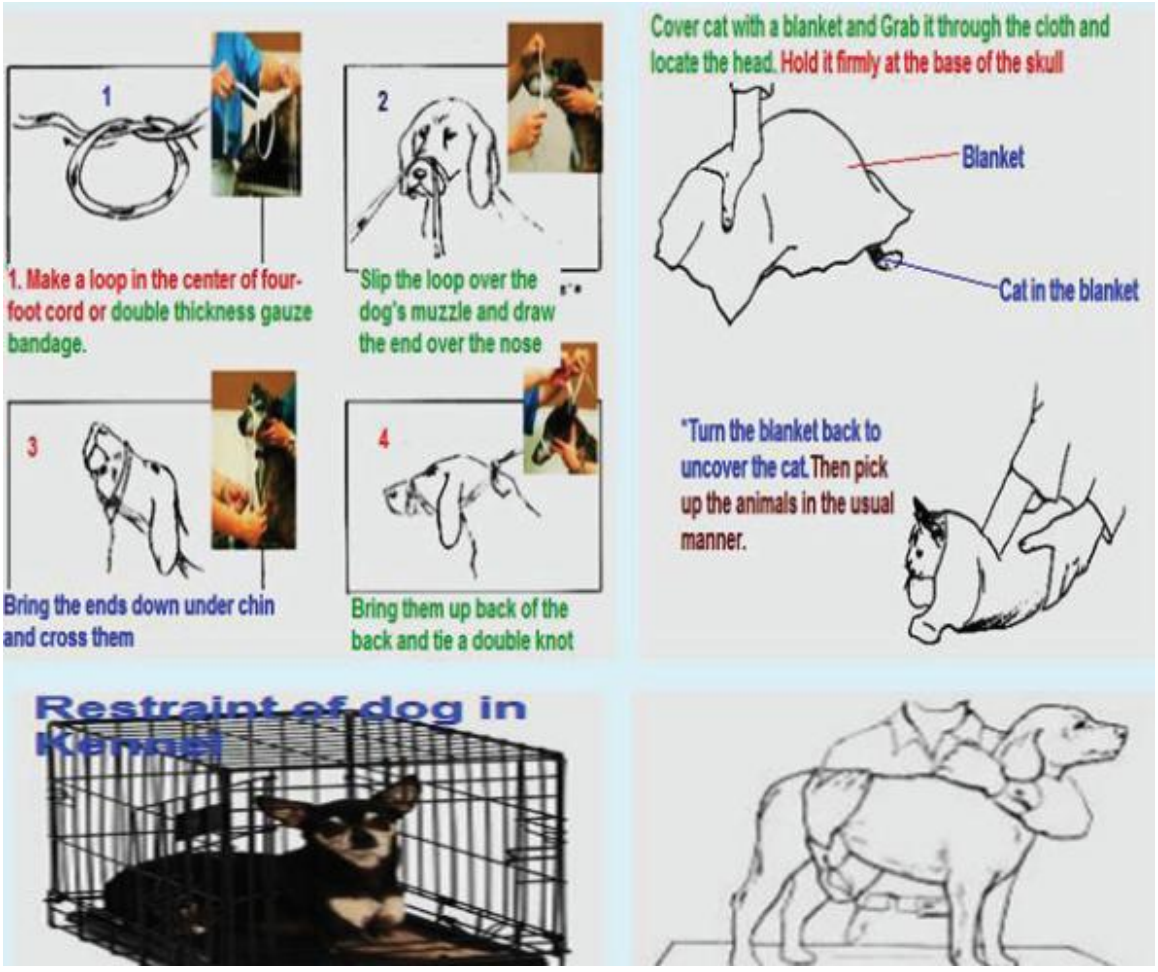


Figure 2.3:- Physical restraining of pet animals

https://www.peertechzpublications.com/articles/IJVSR-3-120.php Accessed on 30/08/2022

B. Chemical restraint

Chemical restraint may be defined as the use of drugs to bring about sedation or neurolepsis, neuroleptnalgesia and anesthesia or short duration general anesthesia. This is a reversible process whose purpose is to produce convenient, safe, effective and inexpensive means of restraint so that clinical procedures may be carried out with minimum of stress, pain, discomfort, and toxic effects to the patient, the anesthetist or the clinician. Drugs that is useful for this purpose includes: acepromazine, acetylpromazine, chlorpromazine, promazine and trimeprazine; members of this group can be used in most species of animals, butorphanol, hloral hydrat.

C. Verbal/moral restraint

The verbal methods of restraint is practiced by owner, the owner can restrain the animals by calling name of animals, feed provision and massaging of animals. When the horse is alert, the ears are flicked forwards and the horse is usually curious of one's approach. A nervous horse will continuously flick the ears back and forth especially when there is activity behind it while an angry or fearful horse will pull its ears backwards. This should however not be confused with laid-back ears where a horse is concentrating on a difficult task such as calf roping or barrel racing. The tail always indicates the horse's attitude. A wringing or circling restraint of domestic, laboratory and wild animal's tail is an indication of nervousness. A tail held straight down indicates pain or sleeping, while a tail clamped tight indicates fear. Nevertheless, each horse is an individual and should be treated accordingly. Horses can be calmed by an even tone of voice and are most cooperative when handled quietly and decisively. They can also, be easily "bribed" with a handful of delicious foods like oats, carrots etc. Scratching behind ears, eye ridges and the neck will convince the horse you are friendly.

2.4. Taking physiological parameters /vital signs

Vital signs are measurements of the body's most basic functions. The main vital signs routinely monitored by veterinarians are body temperature, pulse rate and respiratory rate. Obviously,

there are other important functions in the body, but these three are fundamental for the maintenance of life.

The most vital sign of the sick animals are changes in:

a) **Temperature**
b) **Pulse(heart rate)**
c) **Respiration**

Thermoregulation

Based on thermoregulatory mechanism animals can be categorized as homoeothermic and poiklothermic.

Homoeothermic animals have the ability to maintain constant body temperature independent of external environmental temperature. Mammals and birds are homoeothermic. These animals generate heat through their metabolic processes, and they retain it by having insulating layers of fat, fur, or feathers. Because their bodies are always warm, they can remain active in some of the coldest conditions on earth. The constant body temperature results from a balance between heat generation and heat dissipation. Heat is generated in the body through the intra cellar oxidation of cells.

Liver and heart can produce heat at a fairly uniform rate but muscles can contribute 80% heat when they are active. Heat dissipates from the body mainly by the organs, activities of skin and coat, respiration, urination and detection.

Heat regulation is dependent on both neural and hormonal components.

- ✓ Drop in temperature ⟶ stimulation of anterior pituitary ⟶ releases of the thyrotrophic hormone ⟶ release of thyroxin ⟶ increased basic metabolism rate ⟶ more heat.
- ✓ Warm – blooded mammals and birds are homoeothermic animals.

2.4.1. Body temperature

The body temperature is taken using mercury or digital electronic thermometer placed carefully into the rectum. The thermometer should be lubricated before insertion and checked (in the case

of a mercury thermometer) to ensure that the mercury column has been shaken down before use. It should be held whilst it is in the rectum. Sudden antiperistaltic movements in the rectum may pull the thermometer out of reach towards the colon. The thermometer is left in position for at least 30 seconds; the clinician should ensure the instrument is in contact with the rectal mucosa, especially if a lower than expected reading is obtained. The thermometer must be cleaned after removal from the patient. It must not be wiped clean on the patient's coat. If the animal's temperature is higher or lower than anticipated it should be checked again. The temperature of the body of different animals varies widely. The temperature of the body surface is less than the temperature of the deeper parts. Recording of temperature helps in establishing a diagnosis of febrile disease from a febrile one.

2.4.2. Site of recording: - the temperature in domestic animals is recorded in the rectum.
In female animals vaginal temperature may be considered but it may remain high 0.5 degree centigrade than the rectal temperature of healthy animal.

2.4.3. Procedure of temperature taking

The temperature is recorded with help of clinical thermometer which consists of a mercury reservoir communicating with a thin capillary channel. A range should be from 36^{o}C to 42.5^{o}C.

Procedure

- The thermometer should be sterilized by disinfectant (antiseptics) before use.
- It should be well shaken before recording of temperature to bring the mercury column down below the lowest point likely to be observed in different species of animals.
- The bulb end of the thermometer should be lubricated with liquid paraffin or glycerin or soap. Care should be taken so tat eh bulb of the thermometer remains in contact with the rectal mucous membrane.
- The thermometer should be kept in site for at least for two minutes.
- Read the thermometer.

NB: Temperature of healthy animals may vary during morning and evening (high).

2.4.4. 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
- Sweating
- Feeding
- Stimuli

Table 2.1.Normal temperature in domestic animals:

Type of Animal	Temperature	
	^{o} C	^{o} 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



Figure 2.4:- Temperature taking in animals procedures.

https://www.dogingtonpost.com/fever-how-to-take-your-dogs-temperature/ Accessed on 02/09/2022

Factors that affect body temperature in abnormal animals

For hyperthermia: is elevation of body temperature above the critical points brought by physical factors. It results from retention of excess heat as a consequence of disturbed thermoregulation and impeded heat elimination into the surroundings.

This condition develops due to the following reasons:

- Less humid conditions reduce heat loss
- Reduced air current leading to poor body cooling
- When there is reduction or complete loss of sweating
- In the presence of thick body coat
- Defects in thermoregulation of the body.
- Generally hyperthermia occurs due to environmental factors like excessive heat production, excessive heat absorption, deficiency of heat loss, presence of thick body coat and defect in thermoregulation of the body.

For hypothermia (subnormal rectal temperature): Hypothermia is a condition in which body temperature falls drastically as a result of exposure to cold. The condition involves a paradoxical response to sudden cold: the shutting off of blood flow to the body's surface. First aid may involve wrapping the victim in blankets (along with the rescuer, if necessary). Despite customary belief, alcohol causes loss of heat and should not be given. Treatment involves slowly raising the body temperature by various means. It may also be induced for medical purposes. Reduction in body temperature causes a slowing of the metabolism. This is useful in certain types of surgery and to reduce bleeding in a particular part of the body.

It is a condition which is caused by two reasons:-

a) Pseudo hypothermia (diarrhea, enema, etc) and

b) True hypothermia (shock and prior to death)

NB: true hypothermia shows poor prognosis of the patient.

For fever

Fever is a symptom of many disorders, such as infection by a virus or bacteria**.** Fever, also known as pyrexia, rise in the body's temperature. Fever is a clinical syndrome where hyperthermia is combined with toxaemia. It is caused by disturbance of heat regulating mechanism of the body. It is elicited by chemical substance acting on thermoregulation centre (hypothalamus.) called pyrogens which can be released from specific agents like bacteria, virus, fungi or non specific agents like dead tissue damaged blood.

Temperature of Skin and its appendages:

The external temperature is judged by palpation, passing the palmer surface of the hand from the ears over the horns (in cattle) neck and trunk to the extremities of the cutaneous capillary. Normally the skin temperature shows regular gradation Ear > muzzle > tip of the tail on account of the poorer blood supply. A generalized rise in temperature of the skin occurs during exertion, after unaccustomed exposure to sunlight, high environmental temperature, early stage of hyperpyrexia. The temperature over the whole body surface is lowered shortly before death, in extreme emaciation, following severe haemorrhages, other form of vascular shack.

b. Pulse Taking

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

When determining the pulse frequency, a watch with a second hand should be used and the waves counted for a minimum of 30 seconds, where the number obtained should be multiplied by 2. The techniques of taking the pulse consists of placing the ball part of one or more fingers on the skin over the selected artery and applying gentle pressure until the pulse wave can be detected.

Sites of pulse taking

In horse

- External maxillary artery situated on the medial aspect of the ventral border of the mandible.
- Transverse facial artery between eye and ear
- Median artery
- Great metatarsal artery

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.
- Transverse artery
- Median artery

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

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

Table 2.2. 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



Figure 2.5:- Site of pulse taking in different species of animals Source: - https://rainlandfarm.com/emergency-how-to-take-your-horses-vitals/ Accessed on 30/08/22

- **Factors affecting rate pulse**

✓ Species
✓ Size
✓ Age
✓ Exercise
✓ Physical condition
✓ Ingestion of food
✓ Sex
✓ Pregnancy
✓ Environmental temperature
✓ Parturition
✓ Excitement
✓ Sex

Abnormal types of pulse:

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

When the number of pulse rate is higher than expected (normal) it is called tachy cardia, when it is lower, bradycardia.

a) **Bradycardia** occurs during tumor or abscesses in cranium, diaphragmatic adhesions, chronic hydrocephalus, alcohol and lead poisoning.

b) **Tachycardia** is observed in septicemia, toxemia, pain, excitement circulatory failure.

Abnormal pulse rhythms:

Rhythm denotes regularity of successive "pulse waves" within a definite intervals of time.

In a regular pulse, the beats are separated by intervals of equal duration. In irregular pulse, duration of intervals between successive beats varies. An intermittent pulse is an irregularity a beat fails or dropped now and then.

Abnormal pulse quality

The quality of the pulse is assessed by the degree of digital pressure required to obliterate the pulse wave in the artery. This is the only practical method readily an available to the veterinary clinician where by blood pressure variations and cardiac output can be assessed. Changes in a normal quality of the pulse may be caused by structural or functional disease of the heart and abnormalities of blood vessels (thrombosis, embolism or venous congestion)

Factors influencing pulse

- Species: Different species of animal have different pulse rate, which is number of rise and fall of arterial wall per minute.
- Size: Higher in small than in large animals.
- Age: Higher in young than adult animals.
- Sex: Male slightly lower than female animal.
- Parturition &Late stage of pregnancy: Relatively more pulse rate
- Exercise: Increase pulse rate.
- Ingestion of food: Cause momentary increase in frequency of pulse.
- Posture: Pulse rate reduced about 10% when animal is recumbent than when standing

C. 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.

- The state of normal breathing is called eupnoea.
- Increased respiratory frequency with or without an increase in the amplitude of movements is called hyperpnoea.

- Increased respiratory frequency with reduction in depth or associated movement is called polypnoea.
- Decreased or retarded respiratory frequency is called oligopnoea.

Features of respiration that should be noted during examination of respiration.

i. Respiratory rate – number of respiration per minutes

ii. Respiration rhythm – refers to the regularity of time between the intervals of inspiration and expiration.

Table 2.3:-Normal respiration rates (breaths/min.) in resting animals

Animal	Respiratory rate
Horse	8-16
Cattle	10-30
Sheep/goat	12-20
Camel	5-12
Dog	10-30
Cat	20-30
Pig	10-20
Chicken	20-36



Figure 2.6:- Measuring of respiratory rate of animals https://www.wikihow.pet/Measure-a-Dog%27s-Respiration- Accessed on 01/09/2022

Pathological alterations of respiratory rhythm

- Prolongation of inspiration
- Prolongation of expiration
- Cheyne stokes
- Biota's respiration
- Sync optic respiration

Respiratory depth:– refers to amplitude of movement of external respiratory organs indicating the volume of air taken in and the capacity of the lung. Any subjectively assessed difficulty in respiration is known as dyspnoea.

The following are among abnormal respiration noises of the lung

a) **Hiccough**: - is a short, jerky inspiration caused by stimulation of the prehenic nerve producing sudden contrition of the diaphragm.
b) **Wheezing (blowing)** – Stenosis of upper air passage.
c) **Snoring** – Due to fluttering of the palate in open mouth breathing from interference of air flow through the upper respiratory tract

d) Ex. Nasal granulmoma, tumors of the pharynx, abscesses.
e) **Sneezing** – An explosive expiration through the nose due to irritated mucous membrane.
f) **Rattling** – Accumulation of exudates in the upper air passages, fluttering of relaxed vocal cords on inspiration.
g) **Stenotic laryngeal sound** – due to narrowing or occlusion of the glottis.
h) **Groaning (grunting)** – along inspiration followed by prolonged audible expiration through a partially closed glottis.

2.5. Caring out close physical examination

Methods used in the detection of clinical signs

The clinical examination is performed by senses of sight, touch, hearing and smell.

The important physical examination methods used to detect clinical signs can be classified as:

I. **Inspection**
II. **Palpation,**
III. **Percussion and**
IV. **Auscultation**

For more general examination of sick animal in the clinic and farms see the video link https://www.youtube.com/watch?v=B-a9bxCD1MU Accessed on 02/09/2022.

I. Inspection (visual examination)

What can be observed with the aid of eyes to obtain a general impression, and details of specific lesions are known as inspection. It is carried out some distance away from the animal and in closet. Deviation of various characteristics from the normal, observation of which constitutes the general inspection of an animal, is a useful aid in diagnosing disease. The general inspection includes examination of appearance; behavior; body condition; respiratory movements; state of skin, coat, and abdomen; and various common actions.

II. Palpation

Feeling the part to be examined with the hand (direct touch) or by means of sounds or probes (indirect type). The object of palpation is to detect the presence of pain, variation in size, shape,

consistency, & temperature. Palpation is used to detect the presence of pain in a tissue by noting increased sensitivity and use fingers, palm, back of the hand, and first, in order to get the information about the variation in size, shape, consistency and temperature of body parts and lesions, e.g., the superficial lymph nodes.

Terms Used To Define Palpation

a) **Resilient:** when a structure quickly resumes its normal shape after the application of pressure has ceased.
b) **Doughy**- when pressure causes pitting as in Oedema.
c) **Firm**- when resistance to pressure is similar to that of the normal liver
d) **Hard**- when the structure possesses bone like consistency.
e) **Fluctuating**- when a wave-like movement is produced in a structure by application of alternating pressure.
f) **Emphysematous**- When swollen structure yields crepitating or crackling sound on pressure.



Figure 2.7:- General examination of animals with palpation **Source**: - https://www.cliniciansbrief.com/article/physical-examination Accessed on 30/08/2022

III. Percussion

This is a physical method of examination in which, by means of striking a part of the body, it is possible to obtain information about the conditions of the surrounding tissues and, more particularly the deeper lying parts. On the other hand Percussion is the methods of examination in which part of body to be examined is struck with sharp blow using finger tips to produce audible sound. Sound thus emitted will indicate the nature of the tissue / organ involved for example rumen when bloated will emit drum like sound. Some of the organs that can be examined by percussion are: gastro-intestinal tract, abdomen and thorax, frontal and nasal sinuses. The objectives of percussion are to obtain information about the condition of the surrounding tissues and, more particularly, the deeper lying parts. Percussion can examine the area of the subcutaneous emphysema, lungs, rumen and rump.

Methods of Percussion

I. **Hammer- Pleximeter Percussion** – This is a traditional method of carrying out percussion in large animals using a pleximeter & hammer.

II. **Finger – finger percussion**- this type of purcussion is performed by using both hands, the middle finger of one hand acting as a pleximeter & the flexed middle finger of other hand as a hammer. Finger- finger percussion is mainly applied for small animals' physical examination.

Mediate percussion- when the finger, or a pleximeter, is placed over the area being struck the procedure is termed as mediate percussion.

Immediate percussion- striking the part directly with the fingertips, which is the method most commonly employed, is termed immediate percussion.

The diagnostic value of percussion in large animals is rather limited because the internal organs are too large, and the over lying tissues (muscles, subcutaneous fat) in many instance are too thick to recognize the limits of the organs or abnormal areas, unless the clinician is highly experienced.

General rules while applying percussion

a) The pleximeter or finger must be pressed firmly against the body surface, so that no air exists between the pleximeter & skin.

b) The hand using the hammer must be at a higher level than the hand holding the pleximeter.
c) The blows should fall perpendicularly on to the pleximeter, or directly on to the part of the body being examined
d) The whole area requiring examination should be percussed in a systematic manner.
e) Pleximeter should be struck only when it is stationary
f) The force of the blow shouldn't be heavier than is necessary, the lower they are, the easier it is to distinguish differences in resonance.

Modified forms of percussion

i. **Ballottement –** in ballottement an interrupted firm push struck is applied to an appropriate part of the body with the object of evoking motion with the underlying organ & causing it to rebound on the fingertips. E.g.- pregnancy diagnosis in small animals and small ruminants.
ii. **Fluid percussion:** Free fluid in a body cavity to be recognized by percussing the surface of the body on one side, and detecting the fluid wave produced by palpation of the opposite side.

Quality of Sounds Produced By Percussion

- **Resonant**- it is characteristic of sound emitted by air containing organs, such as the lungs.
- **Tympanic**- it is the sound produced by striking a hollow organ containing air under pressure, e.g. tympanic rumen or caecum.
- **Dull**- it is the sound emitted by a solid organ like the live or heart.

IV. Auscultation

Auscultation is determining the physical condition of deep- lying organs, such as heart, lungs, and gastro intestinal tract, through the sense of hearing and with the aid of the stethoscope.

Methods of Auscultation

a) **Direct method**- it is performed by placing the ear in contact with the body surface over the organ to be examined.

b) **Indirect method-** employing a suitable stethoscope is the more preferable and with adequate experience will ensure more uniform results than the direct method.

Disadvantages of the direct method includes

- Difficulty of maintaining continuous contact with restless animals.
- Friction sounds which arise from opposing movements between the clinician & the coat of the animal.
- Difficulty in excluding extraneous sounds arising from the immediate environment (wind, animals' sound).
- The clinician may harbour potentially pathogenic organisms from the skin of animal (skin zoonoses).
- Auscultation is chiefly used in the examination of lungs, heart, and certain parts of the alimentary tract



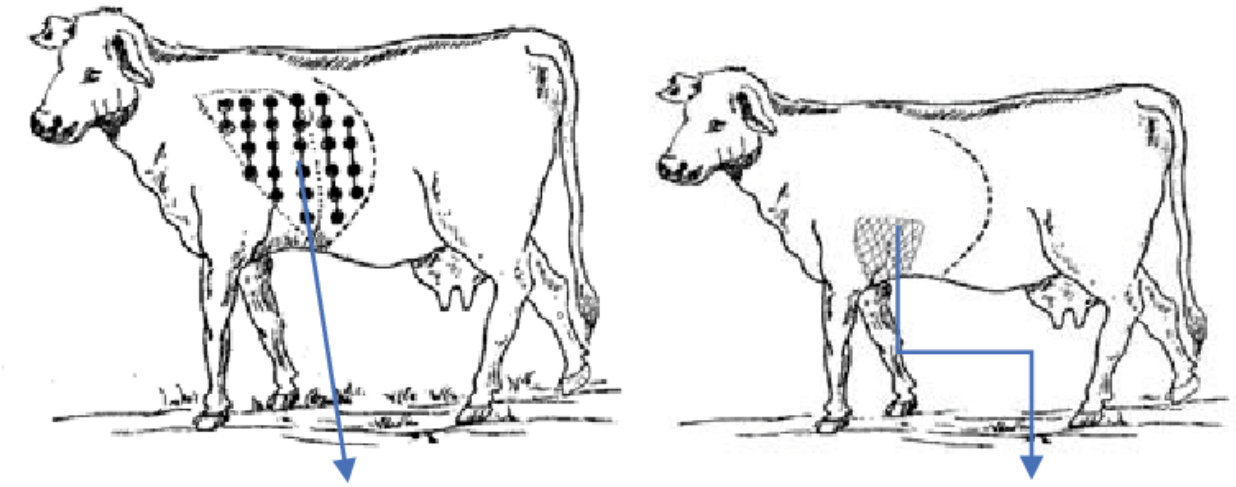


Figure 2.8:- Areas of auscultation on animals during clinical examination. Source: - https://www.researchgate.net/figure/Area-for-lungs-auscultation-Area-for-heart-auscultation_fig2_317561400 Accessed on 31/08/2022

2.6. Establish diagnostic records

In the investigation of any animal disease problem, the veterinarian must, of necessity, undertake a careful and thorough clinical examination with the object of recognizing the nature of the affection, so that effective treatment and, where practicable, control measures are adopted. The same principles may be applied in all cases to deal with the diverse difficulties that clinical

diagnosis presents. It must be emphasized at the outset that performing a clinical examination involves a great deal more than directing attention to the patient; consideration must also be given to the past & immediate circumstances of the animal, and to the **environment. The** tyro-clinician is well advised to adopt the habit of recording clinical data as the soundest basis for expanding the individuals experience & expertise.

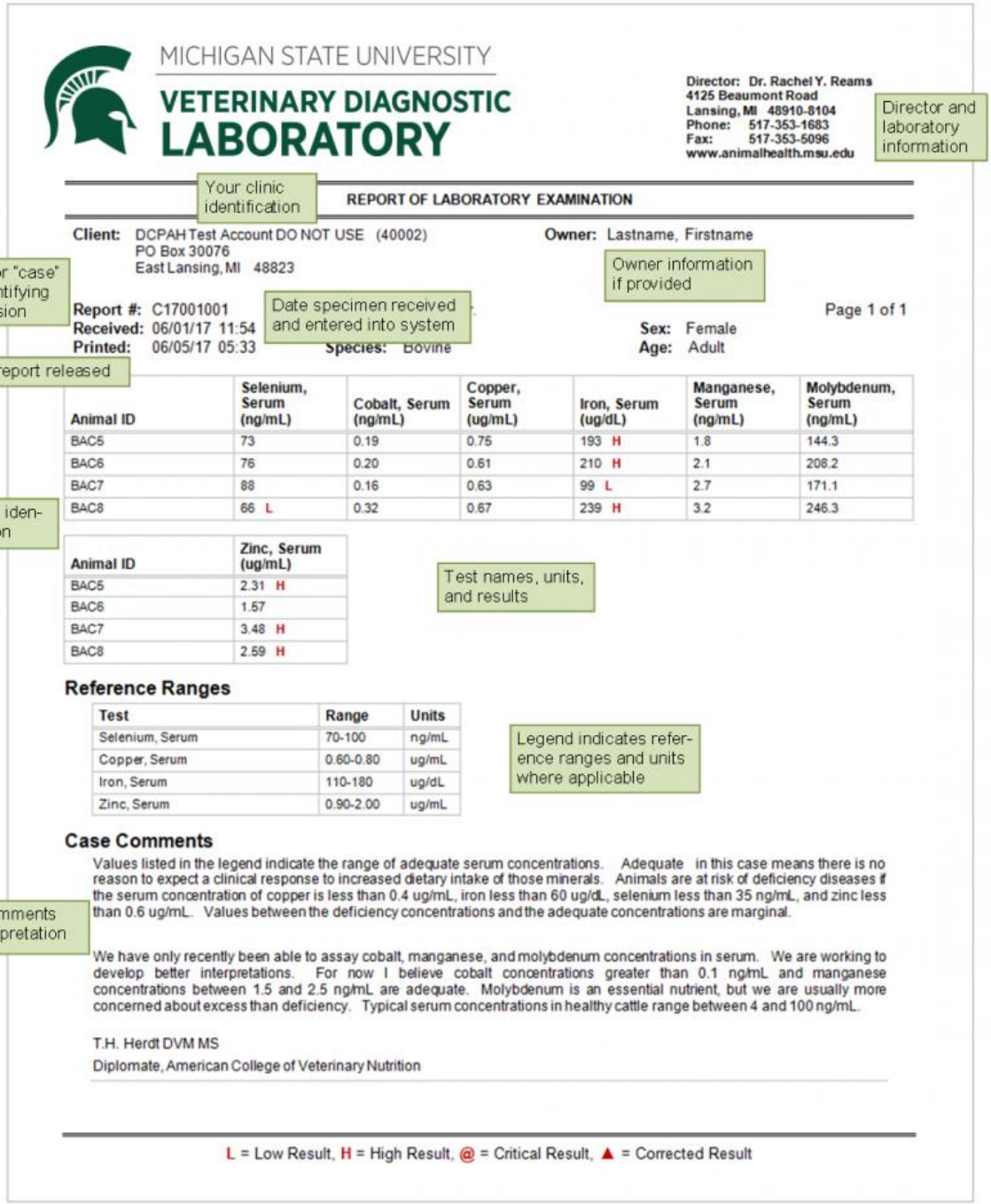
Anatomy, physiology, pathology & ethology (animal behavior) are the basic requirements to make a diagnosis. Obviously an important requisite is complete familiarity with the state of health in all species. The presence of disease is revealed by certain changes in the structure of an organ or tissue and or its function, as well as in the behavior of the whole living organism. Such changes, which may be quantitative, qualitative or both, are described as the clinical signs of disease, and the process of deducing from them the nature of the disease that is present is described as **making diagnosis**.

Types of diagnosis: based on the degree of certainty of the diagnosis and methods used to examine the animal diagnosis can be categorized as:

a. Etiological diagnosis: - To determine the cause of disease.
b. Tentative diagnosis: - if the disease is not recognizable with certainty.
c. Symptomatic diagnosis- If a Particularly Prominent Clinical sign is present, but the site & cause are unknown, e.g. **jaundice.**
d. Complete (confirmatory diagnosis) - If sign, cause, site and nature of a disease are identified.

This all diagnostic procedures are recorded in each diagnostic recorded format.

Table 2.4:- Recording format for animal disease diagnosis



MICHIGAN STATE UNIVERSITY
VETERINARY DIAGNOSTIC LABORATORY

Director: Dr. Rachel Y. Reams
4125 Beaumont Road
Lansing, MI 48910-8104
Phone: 517-353-1683
Fax: 517-353-5096
www.animalhealth.msu.edu

Director and laboratory information

Your clinic identification

REPORT OF LABORATORY EXAMINATION

Client: DCPAH Test Account DO NOT USE (40002)
PO Box 30076
East Lansing, MI 48823

Owner: Lastname, Firstname

Owner information if provided

Encounter or "case" number identifying this submission

Report #: C17001001
Received: 06/01/17 11:54
Printed: 06/05/17 05:33

Date specimen received and entered into system

Page 1 of 1

Sex: Female
Age: Adult
Species: Bovine

Date report released

Animal ID	Selenium, Serum (ng/mL)	Cobalt, Serum (ng/mL)	Copper, Serum (ug/mL)	Iron, Serum (ug/dL)	Manganese, Serum (ng/mL)	Molybdenum, Serum (ng/mL)
BAC5	73	0.19	0.75	193 H	1.8	144.3
BAC6	76	0.20	0.61	210 H	2.1	208.2
BAC7	88	0.16	0.63	99 L	2.7	171.1
BAC8	66 L	0.32	0.67	239 H	3.2	246.3

Animal identification

Animal ID	Zinc, Serum (ug/mL)
BAC5	2.31 H
BAC6	1.57
BAC7	3.48 H
BAC8	2.59 H

Test names, units, and results

Reference Ranges

Test	Range	Units
Selenium, Serum	70-100	ng/mL
Copper, Serum	0.60-0.80	ug/mL
Iron, Serum	110-180	ug/dL
Zinc, Serum	0.90-2.00	ug/mL

Legend indicates reference ranges and units where applicable

Case Comments

Values listed in the legend indicate the range of adequate serum concentrations. Adequate in this case means there is no reason to expect a clinical response to increased dietary intake of those minerals. Animals are at risk of deficiency diseases if the serum concentration of copper is less than 0.4 ug/mL, iron less than 60 ug/dL, selenium less than 35 ng/mL, and zinc less than 0.6 ug/mL. Values between the deficiency concentrations and the adequate concentrations are marginal.

We have only recently been able to assay cobalt, manganese, and molybdenum concentrations in serum. We are working to develop better interpretations. For now I believe cobalt concentrations greater than 0.1 ng/mL and manganese concentrations between 1.5 and 2.5 ng/mL are adequate. Molybdenum is an essential nutrient, but we are usually more concerned about excess than deficiency. Typical serum concentrations in healthy cattle range between 4 and 100 ng/mL.

Case comments and interpretation

T.H. Herdt DVM MS
Diplomate, American College of Veterinary Nutrition

L = Low Result, H = High Result, @ = Critical Result, ▲ = Corrected Result

Self-Check – 2	Written test

Name_____ ID _____ Signature_____ Date_____

Directions: Answer all the questions listed below.

Test I: Short Answer Questions

1. How fevers develop in body system? (2pts)
2. List types of vital signs of any diseases in sick animals? (3pts)

Test II: Choose the best answers (2 each)

3. In which Pathological alterations will change respiratory rhythm

a) Prolongation of inspiration
b) Prolongation of expiration
c) Chyme stokes
d) All

4. Why the diagnostic value of percussion in large animals is rather limited?

a) because the internal organs are too large,
b) because over lying tissues in many instance are too thick
c) Because it limits of the organs or abnormal areas
d) All of the above

5. Bradycardia occurs during

a) tumor or abscesses in cranium,
b) diaphragmatic adhesions,
c) chronic hydrocephalus,
d) All are correct

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**
You can ask you teacher for the copy of the correct answers.

Operation Sheet -2

2.1. Methods of Measure of physiological parameters (vital signs) of animals

A. Tools and equipments

I. PPE

II. Diseased animal (cattle, equine, shoats….)

III. Restraining equipments (physical, chemical and verbal)

IV. Clinical measuring equipments like thermometer, stethoscope…..

B. Procedures

- Wear PPE
- Restrain sick animals
- Take reparatory rate by putting stethoscope to the right lung and count the rate for 15 seconds and multiply by four
- Take heart rate with stethoscope with to left side of thoracic cavity and count the rate for 15 seconds and multiply by four.
- Take pulse rate with stethoscope with to digits, femoral artery or mandibular artery of thoracic cavity and count the rate for 15 seconds and multiply by four

LAP TEST-2	Performance Test

Name_____ ID _____ Signature_____ Date_____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within **30 minutes**. The project is expected from each student to do it.

Task-1 Take physiological parameters (vital signs) of diseased animals

LG# 10	LO #3- Record and report finding of the examination

Instruction sheet

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

- Isolating sick or injured animals and giving veterinary advice
- Recognizing and reporting signs of illness or injury
- Referring ill or injured animals

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- isolate sick or injured animals from other animals, as required, and care for in accordance with supervisor or veterinary advice
- Recognize and report signs of illness or injury
- Summite animals that are ill or injured are for further investigation and clinical support

Learning Instructions:

1) Read the specific objectives of this Learning Guide.
2) Follow the instructions described below.
3) Read the information written in the information Sheets
4) Accomplish the Self-checks

Information Sheet 3

3.1. Isolating sick or injured animals and giving veterinary advice

Isolation is the process of segregation of affected and in contact animals from the apparently healthy ones, in the event of outbreak of a contagious disease. Although the term quarantine applies to isolating new or returning animals that are not known to be ill, and isolation refers to keeping sick animals separate from healthy ones, in both cases a space is needed that meets the definition of an isolation area. Isolation of sick animals is one of the ways of effectively handling sick animals on a farm. Isolation is the process of segregation of affected and in contact animals from the apparently healthy ones, in the event of outbreak of a contagious disease.

Such segregated animals should preferably be housed in a separate isolation shed situated far away from the normal animal house. If a separate shed is not available the animals for isolation should be tied at one end of the shed as far away from the apparently healthy stock as possible. Attendants and equipment for sick animals should be ideally separate. If due to practical reasons this is not possible the sick animals should be attended only after the healthy stock.

Prompt removal of sick animals from the general population is the single most important step in controlling a communicable disease outbreak. This significantly decreases opportunities for transmission to other animals and reduces the infectious dose in the environment. Leaving sick animals in the general population guarantees the spread of infection to others and perpetuation of the outbreak. A common and dangerous belief is that mildly ill animals are not as contagious as those that are sicker this is a myth because the severity of the illness is more dependent on the individual animal's response to the pathogen. Ideally, the animals should be housed in a physically separated and enclosed room for full containment of the pathogens. When animals get sick, they may change their behavior, becoming less active. Separating sick animals in your herd or flock from healthy animals can prevent disease spread. Isolation allows sick animals to rest and recover and prevents disease spreading around the pen, group or wider farm. Infected animals should be isolated for the duration of pathogen shedding. Confirmation of

shedding cessation can be determined by testing for the pathogen in the same manner as for the initial diagnosis. There should be a consultancy and advice on quarantined and isolated animals' owners in which to prevent the transmission of Trans boundary diseases. In addition to this the isolated animals may need to be checked more often. Veterinarians generally train their staff to be very good and give advice for the owners of animals at taking phone calls and giving some "guidance" as to whether they should bring their animals in as an emergency or not.

3.2. **Recognizing and reporting signs of illness or injury**

Though signs and symptoms describe the same conditions, these two are different in many characteristics. While signs are what a doctor (experts) sees, symptoms are what the animal owner or attendants experiences. A symptom can be defined as one of the characters of a disease. Meanwhile, sign is the definite indication of a specific disease. A high temperature, a rapid pulse, low blood pressure, open wound and bruising can be called as signs. Chills, shivering, fever, nausea and shaking are the symptoms.

A record is a permanent written communication that documents information relevant to a client's heath care management. There is multiple purpose of record keeping. These are;

- Supply data that are essential for a programme planning and evaluation
- Records are tools of communication between workers and other concerned bodies
- A record indicates plans for future
- It provides baseline data to estimate the long-term changes related to services

Maintaining accurate, up-to-date records for all animals under your care is critical to animal health. Incomplete and/or incorrect records of any kind could result in unnecessary treatment or diagnoses, both serious animal welfare concerns, and lead to the collection of invalid research data. Good records maintain and transmit accurate information about the animal information collected so that the information: Documents a complete history of each animal owned by or kept at your facility.

The inclusion of identification numbers at former and subsequent institutions links your specimen records to those of other institutions, expanding the known history of that specimen. Provides meaningful archival material for the future. Data accumulated on many individuals is

more useful than information on a single individual of a species. By maintaining comprehensive information about all specimens held, meaningful analyses are possible. Provides legal documentation, including proofs of title and reports for permits. Complete records and files of correspondence, permits, and agreements corroborate justification of actions or aid in defense in legal proceedings.

For ease of interpretation, the format for recording data should be consistent within an institution and, ideally, between all institutions.

- species (scientific and common name)
- specimen ID number assigned by your institution
- sex of the animal
- date of birth or estimated age, birth type (i.e., wild, captive, unknown), and place of birth or wild capture
- parentage, if captive bred
- Previous locations and ID numbers, if any. For other than established institutions, the record should include complete names and addresses.
- All transactions (with dates and names of other parties) which involve the specimen, including information at past locations if known
- Tag, band, tattoo, and transponder numbers, their locations and dates of application, and identifying marks or physical features
- Permits relating to the specimen
- Studbook number(s), if registered
- The date and cause of death, if the specimen is dead

3.2.1. General Signs and symptoms of sickness

Farmers and pastoralists know that animals are sick when they notice changes in behavior such as refusal to eat, keeping to shady areas, or physical signs such as different breathing, coughing, body swellings and weakness etc. The following list of clinical signs intends to help in recognizing disease:

- **Abnormal body temperature** – Temperature is the measures of how hot or cold the animal body is. Temperature can be measured by thermometer such as: digital and manual or

mercury thermometer and its unit is explained by degrees Celsius or degree Ferinaite. Any deviation from normal (i.e. either fever or hypothermia) could indicate a disease condition. Evaluation of body temperature is one of the oldest known diagnostic methods and is still an important sign of health and disease.

Abnormal body temperature can be expressed as follows;

- ✓ **Hyperthermia or over heating**- is an increasing of body temperature above the normal
- ✓ **Hypothermia or sub-normal temperature**- is decreasing of body temperature below the normal range.
- ✓ **Fever**- denotes the elevation of body temperature of animal above normal. Fever is a general reaction of animals to the action of harmful and most frequently infectious agents known as pyrogens. Shivering is often a sign of fever.

- **Abnormal sign in Mouth**: Difficulty in opening the mouth may be caused by excessive muscular activity in some disease. E.g. tetanus. Damage to the tempero- mandibular joint or degenerative changes affecting its articular surfaces may also result in an inability to open the mouth. Other sign of illness in the mouth include inability to co-ordinate lip movements, inability to move the tongue, inability to swallow and immobile tongue.

- **Abnormal sign in Nose/Nostrils**: The muzzle or nose is normally moist with numerous small droplets of fluid being present. A dry nose may be indicative of ill health, especially in pyrexic animals. It may also be found in normal animals which have been resting. The nose may also be very dry in cases of some disease. Abnormality in the nose also include (running nose: watery fluid, pus or bloody fluid). A clear mucoidal nasal discharge is often seen in normal animals, but a muco-purulent discharge can accompany infection in most parts of the respiratory system. The nose is often dirty in very sick animals. A blood-stained nasal discharge may indicate damage to the nasal mucosa. Profuse nasal haemorrhage may be seen as a terminal event in cases of thrombosis of the caudal vena cava.

- **Abnormal sign in body condition:** weak, thin and emaciated
- **Skin and coat abnormalities**: Patches of hair loss, reddening, crusting, or excess scurf (dandruff) may be indicative of skin disease. The following are the major skin and coat abnormalities
    - ✓ **Pruritis (itchiness**): Pruritis is a characteristic sensation, having much in common with pain, but it creates the desire to scratch.
    - ✓ **Maculae or spot:** it is a circumscribed area of discoloration of the skin which is not elevated above the level of the surrounding skin
    - ✓ **Papule or pimple**: it is a solid elevation on the surface of the skin, ranging in size from a pinhead to a pea, caused by a cellular infiltration.
    - ✓ **Ulcer:** it is the result of localized destruction of breakdown of tissue, which may occur as part of an inflammatory reaction
    - ✓ **Crust (scab):** is a firm mass, consisting of dried inflammatory exudates and epithelial debris, or blood. Characteristic crusts occur in ringworm in cattle.
- **Abnormal sign in** abdomen: Distension of abdomen caused by advanced pregnancy, ascites, frothy bloat, gas bloat, neoplasia in the liver and spleen. Hernia swelling is also another cause of increase in the size of the abdomen.
- **Abnormal sign in mucous membranes**: (these are white skin areas inside the eyelids below the eyeball, and the inside of the mouth, nose and vagina): They can be pink, dark-red, bluish, yellow, whitish-pale; with vesicles, with pustules/ulcers/blood/, cheesy deposits, sloughing off and stinking.
- **Sign of illness in Eyes**: Tear production is often increased when the conjunctiva is inflammed, and excessive tears may spill down the animal's face**.** Abnormality in eyes can be cloudy/milky, inflamed, discharging water or pus, bulging out, sunken, bloodshot or blind (not reacting to movement of the hand). Tight closure of both lids (upper and lower) is also indication of illness.
- **Lymph nodes**: easy to locate under the skin: can be enlarged
- **Abnormality in** Feeding (Appetite): Appetite is the first aspect to be affected when the animal is unwell. The animal can exhibit capricious appetite that goes over the normal level, reduced below the normal level or even anorexic. The animal could suddenly develop pica (craves

soil/uncommon feed). This can indicate deficiency for a particular mineral in their system. Off-feed, failing to chew the cud and vomiting

- ✓ Drinking: more//less water than normal or refusal of drinking water
- ✓ Salivation (drooling): It is excess discharge of saliva usually associated with oral lesions, foreign body in the oral cavity and oesophagus and paralysis of pharyngeal area.
- ✓ Grinding the teeth
- ✓ Restlessness: Looking at the flank, rolling and convulsions
- ✓ Staring - not reacting
- ✓ Staggering, turning in circles
- ✓ Arching of the back
- ✓ Stiffness of the legs, unable to rise, paralysis and coma

- **Urine:** abnormal color (red-brown), clear or cloudy
- **Abnormal discharge from vagina**: continuous or intermittent, clear, watery, cloudy or purulent, watery, yellow, pink, blood-streaked, foul-smelling and visible parts of placenta are sign of illness
- **Faeces:** Cattle faeces are usually the consistency of a thick milk shake, although it is always more meaningful to compare the faeces of a sick animal with the other healthy cows in the group. Animal pass feaces containing blood clots, shreds of mucous membranes and worms are said to be abnormal.
- **Defecation** – the animal could be constipated and produce hard faeces. It could also diarrhea or develops dysentery (produce diarrhea with blood). Straining during defecation.
- **Micturition (urination) –** Cattle normally pass urine 8 to 12 times per day. They produce approximately 1 ml of urine per kilogram of body weight per hour. Normally urine consists of golden and clear color. Red, brown or yellow discoloration may indicate the presence of disease. Urine may appear cloudy if pus or blood is present. Increase or decreases in the frequency of urination, difficulty in urination and in the quantity of urine produced are sign of renal disease. In other cases, the animal has urine incontinency (constant dripping of urine), which may be due to paralysis of the bladder or the sphincter muscles that fail to close properly.

- **Pulse rate** – is the elongation and expansion of the arterial wall imparted by arterial blood due to contraction of the left ventricle. It tells us useful information about the cardio-vascular system. It could be fast or slow depending on the health of the animal and other external conditions. Pulse rate is the number of elongation and expansion of arteries per minute. Heart beat is measurement of heart beats per minutes. The results of pulse rate and heart beats are almost the same but the difference is the site of measurements.
- **Abnormal pulse rates**
    - ✓ **Tachycardia is increased number of beats per minute**
    - ✓ **Bradycardia is decreased no of beats per minute**
- **Abnormal respiration or breathing**: In normal cattle there is relatively little movement of the rib cage during respiration. Some movement of the abdominal muscles is usually seen just behind the rib cage during each inspiration, and this should be symmetrical. Signs of illness observed with breathing include depression, frothing at the mouth, increased respiratory rate, mouth breathing, dilation of the nostrils, puffing of the cheeks, purulent nasal discharge, abdominal breathing, laboured breathing, cyanosis, coughing, Tongue protruded, Mouth breathing, Frothing, grunting and pyrexia. The abnormality of respiration rate is known as dyspnea. That means when the measurement of the respiration rate is above or below the normal range.
- **Abnormal respiratory noises (stridosis**) are;
    - ✓ Hiccup (singultus) is a short, jerky inspiration, caused by stimulation of the phrenic nerve producing sudden contraction of the diaphragm.
    - ✓ Wheezing or blowing is stenosis of upper air passages, more pronounced on inspiration.
    - ✓ Snoring: due to fluttering of the soft palate in open mouth breathing, from various interference of air flow through the upper respiratory tract
    - ✓ Sneezing: an explosive expiration through the nose due to irritated nasal mucous membrane.
    - ✓ Groaning or grunting:a long inspiration followed by a prolonged audible expiration through a partially closed glottis. This sound is audible only on expiration. This sound occurs in traumatic gastritis, peritonitis, and vaginal and rectal prolapse

- **Milk**: thick, watery, yellow, pale-white, pink, with pus or clots, blood clots, abnormal color and abnormal smell
- **Absence of sensitivity**: is detected by palpation and pain percussion or pinching or picking of the most sensitive skin (around the eyes, perineum).
- **Vomiting**: The act of forceful emptying of stomach contents by vigorous contractions of diaphragm and abdominal muscles. Vomiting is sign of illness in ruminant and equine species but can be considered as normal condition in small animals i.e cat and dog.
- **Mucus membrane** –normally mucus membrane is bright pink color. The mucous membrane in the eyes, mouth and vagina in the case of females can be examined to determine the health status of an animal. Examination of the mucous membrane should be done in natural light (sunlight) not in the lamplight. The abnormalities of color of mucous membrane are caused by different factors. Some of abnormalities which observed in mucous membranes can be classifiifi ed to: pallor of the mucous membranes may indicate anaemia caused by direct blood loss or by haemolysis, a blue tinge may indicate cyanosis caused by insuffifi cient oxygen in the blood, a yellow color is a sign of jaundice, the mucosae may be bright red (sometimes described as being 'injected mucous membranes') in febrile animals with septicaemia or viraemia, Bright red coloration of the conjunctiva is often seen, for example, in cases of bovine respiratory syncitial virus infection. A cherry-red coloration may be a feature of carbon monoxide poisoning. A greyish tinge in the mucosae may be seen in some cases of toxaemia – such membranes are sometimes said to be 'dirty'. High levels of methaemoglobin, seen in cases of nitrate and/or nitrite poisoning, may cause the mucosae to be brown colored.

- **The color of mucous membrane may change occurs in various diseases as follow by the following**

✓ **Anaemic mucous membrane.**

- Blood loss anaemia.
- Parasitic infestations leading to haemolysis.
- Tumours or leucosis.
- Iron defifi ciency anemia.
- Long-standing infectious diseases.
- ✓Exposure to X-rays and some medications.

✓ **Congested mucous membrane.**

- High environmental temperatures and exercise.
- Any disease resulting in fever.
- Diseases of the heart, brain and its membranes.
- Hyperthermia
- Conjunctivitis
- Trauma
- Obstruction of jugular V

✓ **Yellowish or icteric mucous membrane.**

- Icterus of jaundice occurs due to increase of blood bilirubin concentration (blood parasites, leptospirosis, hepatitis, cholangitis, cholecystitis and cholangiohepatitis).
- Infectious anaemia and contagious pleuropheumonia of horses.

✓ **Chronic gastric dilatation.**

- **Disease like:** Liver diseases, Fascioliasis, Hemolyticanemia, Hypophosphatemia.
- Cyanosed mucous membrane.
- Bluish discoloration of visible mucous membranes resulting from presence of reduced haemoglobin in blood capillaries.
- Carbon monoxide poisoning respiratory diseases
- Myocarditis, pericarditis.
- Plant and mineral intoxications.

✓ **Swelling of mucous membrane**: Inflammation of mucous membranes results in its swelling; in which case the mucous membranes may also be hot and tender (i.e. showing cardinal signs of inflammation). Marked swelling of conjunctival mucous membranes is characteristic of equine influenza. A slight degree of swelling is noticed in contagious pleuropneumonia of horse and cattle plague, anthrax and fowl diphtheria.

3.2.2. Reporting of Signs of disease and symptoms of sickness

Each country differs in its quality of reporting of diseases, irrespective of its level of economic development. The quality of reporting is influenced not only by the willingness of countries to

report diseases, but also by their ability to diagnose those diseases. Government funded diagnostic laboratories, whether provincial or federal, should actively investigate outbreaks of zoonotic diseases, whereas routine diagnostic services could be provided by private laboratories.
In addition, there is an urgent need for real-time information on livestock movements, both nationally and between countries, in order to understand better the spatial implications of diseases for their control. Hence the reporting of diseases is strictly followed by the guide line of OIE standard.

3.3. Referring ill or injured animals

A referral is a written request from one veterinary professional to another veterinary professional or animal health service, asking them to diagnose or treat the sick animal for a particular condition.There are four possible reasons for referral from the available clinic to other standard veterinary hospital or clinic

Reasons for Referral

To re assure the patient or the patient's owner that a serious disease is not present

To motivate the patient to adhere to medical advice

To enhance the patient's owners trust in their medical judgment

Because they had insufficient time to evaluate the patient thorough in the clinic

Table: - 3.1:-Veterinary referral form.

Date _____ Case Number_____

Companion animal client/ patient information form

Please provide the following information for our records: **please print!**

Owner(client) information

Owner's Name		
Address region		
City state		
Telephone number (Area code, if long distance)	Home	Business (office)
Driver's license number	Place Of Employment	How long?

Animal information

Animal species (dog, cat, other)		Breed
Animal's name	Sex	Has animal been sexually altered ☐yes ☐no
color	Birth date(month/year, or approximate)	

Referral information

Were you referred by a veterinarian? ☐ yes ☐ no	If you were referred by a vet, please complete the following:
Veterinarian's name	phone
Address	City/state

Statement of ownership and consent: I am the owbner of the above described animal, or have authorization from the owner to consent to its treatment.

I hereby authorize the performance of proffetionaly accepted diagnostic, therapeutic, anesthetic, and surgical procedures necessary for its treatment.

I accept financial responsibility for these services.

I have read the above consent and understand why the above procedures may be necessary. I also have been told of the possible complications and alternatives to the listed procedures.

Payment choice ☐Cash ☐Check ☐ Bank card

Signature (owner/ agent)_____ Date _____

Self-Check – 3	Written test

Name_____ ID_____signature_____ Date_____

Directions: Answer all the questions listed below.

Short Answer Questions

1. Mention general Signs and symptoms of sickness of animals? (3 pts)
2. What are the four possible reasons for referral from the available clinic to other standard veterinary hospital? (4pts)
3. Mention and describe the major skin and coat abnormalities in animals? (2 pts)
4. What is record keeping in clinical diagnosis? (1 pt)

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

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