



Table of Contents

LO # 1- Identify Customer Needs	4
Instruction sheet.....	4
Information sheet 1- Use appropriate interpersonal skills	5
Self check 1- Written Exam.....	9
Information sheet 2- Handle customer enquiries courteously	10
Self check 2- Written Exam.....	15
Information sheet 3- Providing advice that addresses customer needs	16
Self check 3- Written exam	19
Information sheet 4- Assisting advice based on suitability for the task	20
Self check 4- Written exam	22
LO # 2- Assist animal health extension and advisory service	23
Instruction sheet.....	23
Information sheet 1- Carrying out exchange of information.....	24
Self check 1- written Exam.....	28
Information sheet 2- Carrying out disease surveillance	29
Self check 2- written Exam.....	33
Information sheet 3- Describing and discussing ecology of livestock diseases.....	34
Self check 3- Written Exam.....	36
Information sheet 4- Describing and discussing time schedule of vaccinations and deworming of animals	37
Self check 4- Written Exam.....	41
LO # 3- Advise source of veterinary inputs	42
Instruction sheet.....	42
Information sheet 1- Delivering Information on veterinary vaccine, drug and chemical	44
Self check 1- Written Exam.....	50

Page 2 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1 June 2021
--------------	--------------------------------	--	----------------------------



Information sheet 2- Informing specific place and availability of animal health care posts 51

Self check 2- Written Exam..... 53

Information sheet 3- Carrying out networking between Animal health care posts, and District administrative..... 54

Self check 3- Written Exam..... 58

Information sheet 4- Advocating information on how to use newly technologies 59

Self check 4- Written Exam..... 61

References..... 62

Page 3 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



LG #51	LO # 1- Identify Customer Needs
---------------	--

Instruction sheet

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

- Using appropriate interpersonal skills
- Handling customer enquiries courteously
- Providing advice that addresses customer needs
- Assisting advice based on suitability for the task

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:

- Identify use of appropriate interpersonal skills
- Implement customer handling enquiries courteously
- Provide information and advice that addresses to customer needs
- Assist by advising based on the suitability for the task

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”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “information sheet”
7. If your performance is unsatisfactory, see your trainer for further instructions

Page 4 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 1- Use appropriate interpersonal skills

1.1 Interpersonal skills

Introduction

Interpersonal skills are the skills we use every day when we communicate and interact with other people, both individually and in groups. Interpersonal skills are sometimes referred to as social skills, people skills, soft skills, or life skills. They include a wide range of skills, but particularly communication skills such as listening and effective speaking. It also the ability to control and manage your emotions. Interpersonal skills are those essential skills involved in dealing with and relating to other people, largely on a one- to-one basis. A social skill means the way in which people can effectively manage their professional relationships. It also could understand how to use facts and emotions to get people on your side. To communicate effectively, the first thing we need is not only a good collection of words, but also a good selection of words.

Indeed, knowing how to speak is fine, but what to speak is the backbone of any conversation. Interpersonal Skills, for all the mystery and high-talk surrounding them, could be something as simple as handling a conversation. It is all about learning the art of giving in rather than giving up.

It is no exaggeration to say that interpersonal skills are the foundation for success in life. People with strong interpersonal skills tend to be able to work well with other people, including in teams or groups, formally and informally. They communicate effectively with others, whether family, friends, colleagues, customers or clients. They also have better relationships at home and at work.

1.1.1 The Importance of Interpersonal Skills

Interpersonal communication is important and core competence in veterinary medicine. The importance of interpersonal skills includes working in a team, business expertise,

Page 5 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



understanding of cultural differences, and communication skills with clients, staff and colleagues. Furthermore, veterinary medicine entails the complex relationship between veterinarian and client, animals, society and employers.

The client-veterinary interaction is delineated in an initial greeting, history taking, performing physical examination, explaining diagnosis, offering treatment options and closing the interaction. Trust and rapport are built up throughout the process through the veterinarian's usage of communication strategies and interpersonal skills. The veterinarian relies on the owners' explanations or clinical examinations to determine the animal illness. Therefore, development of trust in a client–veterinarian relationship is crucial as it will not only enhance the quality of history taking but also will allow better clinical diagnosis and subsequent treatment care.

The study of interpersonal or social skills is complicated and multifaceted, encompassing interpersonal relationships, social competence, and interactive behaviours. Thus, the components of interpersonal or social skills also originate from these different studies. Much of it concerns interpersonal relationships and interaction.

What are Interpersonal Skills?

Interpersonal skills are generally considered to include a wide range of skills, such as: Communication skills, which in turn cover:

- Verbal Communication – what we say and how we say it;
- Non-Verbal Communication – what we communicate without words, for example through body language, or tone of voice; and
- Listening Skills – how we interpret both the verbal and non-verbal messages sent by others.
- Emotional intelligence – being able to understand and manage your own and others' emotions.
- Team-working – being able to work with others in groups and teams, both formal and informal.
- Negotiation, persuasion and influencing skills – working with others to find a mutually agreeable (Win/Win) outcome.

Page 6 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- This may be considered a subset of communication, but it is often treated separately.
- Conflict resolution and mediation – working with others to resolve interpersonal conflict and disagreements in a positive way, which again may be considered a subset of communication.
- Problem solving and decision-making – working with others to identify, define and solve problems, which includes making decisions about the best course of action.

Basically, to communicate is to send and receive messages using a mutually intelligible symbol system, involving both verbal and non-verbal behaviour, such as listening, speaking, writing and non-verbally by facial expressions, gestures, posture, vocal cues and appearance as well as behaviour. There are four basic communication skills:

1. Attending: - which refers to the way listeners orient themselves to speakers, both physically and psychologically.
2. Listening:- which involves receiving and understanding the verbal and non-verbal messages transmitted by speakers.
3. Empathy: - which involves listeners understanding messages from within the speakers' frames of reference and communicating this to them.
4. Probing:- which involves encouraging and prompting speakers to talk about themselves and to define their concern in more concrete and specific terms. High-quality communication is effective and appropriate, which is able to produce the effects intended by the communicators and makes sense to the receiver in terms of wording, statements and logic. Another core element of interpersonal or social skills is self-awareness

1.1.2 Methods of improving and developing interpersonal skills

- Identify areas for improvement; the first step towards improving is to develop your knowledge of yourself and your weaknesses.

Page 7 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- Focus on your basic communication skills; Communication is far more than the words that come out of your mouth. Perhaps one of the most important things you can do for anyone else is to take the time to listen carefully to what they are saying, considering both their verbal and non-verbal communication.
- Improve your more advanced communication skills; Once you are confident in your basic listening and verbal and non-verbal communication, you can move on to more advanced areas around communication, such as becoming more effective in how you speak, and understanding why you may be having communication problems.
- Look inwards; Interpersonal skills may be about how you relate to others, but they start with you. Many will be improved dramatically if you work on your personal skills.
- Use and practise your interpersonal skills in particular situations; there are a number of situations in which you need to use interpersonal skills. Consciously putting yourself in those positions, and practising your skills, then reflecting on the outcomes, will help you to improve.
- Reflect on your experience and improve; the final element in developing and improving your interpersonal skills is to develop the habit of self-reflection. Taking time to think about conversations and interpersonal interactions will enable you to learn from your mistakes and successes, and continue to develop.

Page 8 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 1- Written Exam

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

Short answer questions

1. Define interpersonal skills(3 points)
2. Explain importance of interpersonal skills(2 points)
3. Describe mechanisms of improving interpersonal skills(5 points)

Note: Satisfactory rating – 5 points Unsatisfactory - below 5 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 9 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 2- Handle customer enquiries courteously

1.2 Introduction

What is customer?

A customer can be defined as the person/organization who buys goods & services. There are two main types of customer: An external customer is from outside the organisation providing the product or service. An internal customer is in the same organisation as the person who is providing a product or service to an external customer. On the other hand, customer can be categorized as new and old customers. New customers are those people who will provide future and become part of a customer base in which they will want to retain to buy, sell or use services. Old or existing customers are those customers who will come back and buy again, and buy more or use services.

1.2.1 Customer inquires

Customer inquires is the process of solving customers complaints. Receiving a complaint is often an unexpected part of running any business, including a veterinary practice. Clients or stakeholders usually have the high expectation that their enquiries will be addressed promptly. Understanding the issue behind a potential complaint and trying to resolve the matter can help members in preventing complaints lodged by clients or stakeholders. No business is immune from receiving a complaint, regardless of how successful it is or how customer focused staffs are. There can be a tendency to see a complaint as a personal criticism rather than constructive feedback. However there can be positive outcomes when the situation is managed appropriately.

1.2.3 Why do people complain?

There are many reasons why clients might complain about your practice and the service they've received.

Page 10 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- Sometimes a complaint will almost be expected following an incident; sometimes it will take you by complete surprise. Having an understanding of why people may complain can assist with managing a complaint if it occurs and potentially reducing the likelihood of further complaints. The following are some of the reasons why people may feel the need to complain.
- High expectations – consumer expectations are increasingly high when engaging professional services. Your clients sometimes pay a lot for your service and will most likely see you as a highly trained and qualified professional. This view can have an effect on their expectations about the service and outcomes they anticipate.
- Unrealistic expectations – it’s possible that clients may have unrealistic expectations about what they can reasonably expect from veterinary care. Their high expectations may at times surprise you. It’s therefore important to remember that most clients will not have the clinical knowledge you do and what’s obvious or common sense to you may not be to them. A practice must assist clients to be clear and fully informed about the treatment being provided and the outcomes they can realistically expect. This requires ongoing discussions with clients and, where possible, written information to assist their understanding.
- Belief that someone is responsible – when something goes wrong we often try to determine who’s responsible. Sometimes someone is obviously responsible, sometimes it is hard to determine who’s responsible and other times there is no one person responsible but just an unfortunate set of circumstances. However if a client thought something had gone wrong and this led to their animal being harmed, it’s quite possible they may complain with the intention of holding someone responsible and possibly liable.

Page 11 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- Significant emotional or financial suffering – in many veterinary cases, it is the animals being treated. When treatment doesn't go as planned, the owner of the animal is likely to be emotionally affected. Seeing your animal unwell is quite distressing for many pet owners. In other cases the client will be someone, such as a breeder, who makes their living from their animals. Whilst they may still have an emotional connection to their animals, there is also a financial factor. If there is a poor outcome with these animals, a person's income and livelihood may be affected.

1.2.4 The importance of managing complaints

Clients will generally expect to see their complaint dealt with quickly and fairly. When this doesn't happen it's possible that further complaints will follow and the issue or concern could become a much greater one. Managing complaints should be seen as good 'customer service'. You rely on clients to keep your business afloat. When clients are unhappy with a service they've received, they can talk with their feet by not returning to the practice. Keeping clients happy and satisfied is more likely to see them continue to utilise your service and recommend your practice to others. Complaints can provide a practice with an opportunity to review and improve their service. When investigating and dealing with the complaint, the practice may wish to consider a change in a procedure to avoid that issue arising again in the future.

How to manage complaints

It's advisable that every veterinary practice has a complaints policy. This means that the practice will have an agreed-to process for dealing with a complaint which allows for all complaints to be dealt with in a fair and consistent manner. When faced with a client complaint, veterinarians should consider the following:

- Listen to the client

Page 12 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- ✓ Clients who have complaints are often angry and need the opportunity to vent.
- ✓ Veterinarians should show their clients that they are taking the matter seriously by listening carefully to what they say and taking notes of the conversation.
- ✓ Do not interrupt the clients since this will only anger them further and likely interfere with a clear understanding of the facts.
- Remain calm and objective.
 - ✓ Avoid becoming defensive and/or emotional, since this may inadvertently reinforce the client's belief that the veterinarian acted inappropriately with respect to the care of the client's pet.
 - ✓ A client's criticism of a veterinarian's actions, even when fully justified, does not necessarily mean that any negligence occurred. Veterinary medicine is an imperfect science and veterinarians are not omnipotent.
- Communicate, communicate, and communicate.
 - ✓ Often the client does not fully understand the diagnosis and/or proposed treatment and has unrealistic expectations as to the veterinarian's services and the respective outcome.
 - ✓ Veterinarians can enhance communication and reduce potential misunderstandings by obtaining informed consents, providing fee estimates, encouraging questions, and providing handouts explaining the contemplated services.
- Show sympathy and concern.
 - ✓ Clients whose animals have died are often emotionally distraught and, under certain circumstances, may seek to blame someone (sometimes their veterinarian) for their animal death.

Page 13 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- ✓ Veterinarians who are compassionate and attempt to comfort their clients are more likely to diffuse their client's perception that the veterinarian should be held accountable for their animal death.
- ✓ Veterinarians should not hesitate to recommend grief counseling for clients who appear to have difficulty coping with the loss of their pet.
- When a mistake may have been made:
 - ✓ Veterinarians should always express empathy and compassion for unfortunate outcomes.
 - ✓ Apologetic statements and admissions of fault should be avoided and only be made when the veterinarian is certain of the facts and is sure that a mistake was made.

Page 14 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 2- Written Exam

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

Choose the best answer

1. _____ is someone who buys goods or services(2 points)
 - a. Complain b. customer c. customer inquiries d. customer service
2. Handling customers inquiries courteously means _____(2 points)
 - a. Polite ways of responding to customers compliant
 - b. Aggressive response to customers complaint
 - c. Being defensive to customers complain
3. Which of the following can be the reason for clients complaint in veterinary services (2 points)
 - a. Unrealistic expectations b. high expectations
 - c. emotional or financial suffering d. all
4. How to handle customer inquiries courteously?(2 points)
 - a. Listening to the customer complaints politely
 - b. By giving time to customers to express their concerns
 - c. By avoiding being defensive to customers complaint
 - d. All

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 15 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 3- Providing advice that addresses customer needs

1.3 Customer needs

Customer needs can be defined as the problems that customers intend to solve with the purchase of a good or service. Knowing the customer and his needs is most important for a successful business. The more you know about your customers, the more effective your sales and marketing efforts will be. Customer needs can be assessed by analysing the factor such as who they are, what they buy, and why they buy it. The requirements of a customer can be further categorised in to three;

- Normal Requirements – requirements typically what one gets by just asking customers what they want.
- Expected Requirements – these are the obvious / compulsory requirements. Expected requirements must be fulfilled.
- Exciting Requirements– These are beyond the customer's expectations. If provided, customer would be excited. If not, they would hardly complain.

1.3.2 Customer satisfaction

Customer satisfaction can be defined as a marketing term that measures how products or services supplied by a company meet or surpass a customer's expectation. It can also be defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals". Drawing on personal experience of health services, clients have expectations of equivalence in the veterinary services received, and consequently service expectations continue to rise. The main goal of marketing in veterinary practice is not only to sell a product or service, but also to create mutual profitable long-term relations with clients. To that aim, it is essential to know the client, his requirements, demands and problems.

Page 16 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



1.3.3 The importance of understanding veterinary client expectations

It has been stated that systems of human healthcare should begin with the “needs, wishes and values” of those they serve. In veterinary medicine, such an approach places client expectations at the centre of service provision. It necessitates the imperative to ascertain the expectations of clients and then institute best practices to meet and exceed those expectations to the best of the provider’s ability, thereby enhancing the quality of care clients receive. This is important because quality of care is directly associated with client satisfaction, which, extrapolating from human medicine, has significant implications for increased compliance with medical recommendations, greater client retention, lower rates of malpractice suits, greater profitability, and increased client referrals. Attending to client expectations, therefore, is in everyone’s best interests: the client, the patient, and the veterinary service.

1.3.4 Providing advices to the customers in veterinary services

Customers expect to be given advice on how to maintain their animal health. This may be verbal advice in the consulting room or from staff in reception, but most will also expect leaflets or handouts, or even the option to get advice from the practice website. It therefore makes sense for the practice to have as much advice material available as is practical. This looks professional and is helpful in terms of client understanding and compliance. One of the commonly advice provided for clients is about drug withdrawal periods. Every medicine that is given to animals, including antibiotics, has a withdrawal period. Farmers must follow these withdrawal times to be sure no antibiotics are in our food

Why does the withdrawal period matter?

These are two very important ways that farmers contribute to food safety every single day. Written advice provided by a prescribing/dispensing veterinarian to a client,

Page 17 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



regarding administration of a drug, withholding period, export slaughter intervals, safe handling instructions etc. in addition to the dispensing labels required on containers.

- First, by monitoring which medications they give to their animals, how much they give, and when they give it.
- Second, by maintaining accurate records and sticking to the withdrawal period. There are layers of monitoring in place to make sure that farmers are doing their due diligence and taking care of their animals, their families, and your families.

It simply takes time for the body to break antibiotics (or any medication) down to a form where the medicines are no longer functional and leave the body. This is why withdrawal periods are so important. Following withdrawal periods means that we know there are no traces of antibiotics in the meat or milk you buy at the grocery store. It means that we know that you and your families are not exposed to “extra” or unnecessary antibiotics. It means that farmers are doing everything they can to prevent the development of antibiotic resistance.

Page 18 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 3- Written exam

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

Short answer questions

1. Explain the difference between customer needs and customer satisfaction (4 points)
2. Write the importance of understanding clients expectation in veterinary services(2 points)
3. Describe points to which advices provided for livestock owner(3 points)

Note: Satisfactory rating – 4.5 points

Unsatisfactory - below 4.5 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 19 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 4- Assisting advice based on suitability for the task

1.4 Assisting advice based on suitability for the task

Livestock owner, either small holder or in modern farming system engaged on various activities. To perform these tasks and advantageous they have to manage their animal in scientific ways. The veterinary professionals have responsibility to assist and advice livestock owner on basic herd management practices. In general the assistance and advices for livestock owner may include the following illustrated points.

- General farm management
 - ✓ Farmers should be aware of, and comply with, all legal obligations relevant to livestock production, e.g. disease reporting, record keeping, animal identification and carcass disposal.
 - ✓ When a problem arises in an enterprise, be it a disease, a chemical hazard issue or a physical safety matter, record keeping is central to any effort to trace the source of the problem and eliminate it. Hence, as far as is practicable, farmers should keep records of:
 - ❖ Movements of animals around the enterprise.
 - ❖ Changes to feeding or health regimes, and any other management changes that may occur.
 - ❖ Origin and use of all feeds, drugs, disinfectants, herbicides and other consumable items used on the farm.
 - ❖ Known diseases/infections, diseased/infected animals and mortalities, as far as possible giving details such as dates, diagnoses (where known), animals affected, treatments and results.
 - ✓ Animal identification
 - ✓ Hygiene and disease prevention
 - ❖ Reducing contact between healthy animals and potentially infected animals.



- ❖ Maintaining the hygiene and safety of all facilities.
- ❖ Ensuring overall health of livestock through good nutrition and reducing stress.
- ❖ Keeping records of animal populations in facilities/on farms.
- ✓ Practice breeding and selection such that animals well suited to local conditions are raised and detailed breeding records are kept.
- ✓ Use veterinary medicines and biologicals strictly in accordance with the manufacturer's instructions or veterinary prescription.
- ✓ Use antimicrobials only in accordance with regulatory requirements and other veterinary and public health guidance.

Page 21 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 4- Written exam

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

Say true for the correct statements and false for incorrect one

1. Advising on animal feeding and separation of health and sick animals is not recommended for livestock owner(2 points)
2. Poultry farm owner or manager can get assistance and advices about farm biosecurity implementations(2 points)

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 22 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



LG #52

LO # 2- Assist animal health extension and advisory service

Instruction sheet

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

- Carrying out exchange of information
- Carrying out disease surveillance
- Describing and discussing ecology of livestock diseases
- Describing and discussing time schedule of vaccinations

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:

- Provide information regarding to animal health services
- Carryout animal disease surveillance
- Identify ecology of livestock disease
- Understand and implement time schedule of animal vaccinations

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”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “information sheets
7. If your performance is unsatisfactory, see your trainer for further instructions

Page 23 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 1- Carrying out exchange of information

2.1 Carry out exchange of information on central livestock market and encouraging destocking

The global animal disease information systems served as a reference database for disease events makes accessible to stakeholders data on animal disease outbreaks and surveillance. This system stores outbreak disease records, tracks and monitors disease events for provision of alerts and awareness on health threats. Recognizing the multi-sector nature of disease and health information systems, and the need for real-time data exchange and analysis, Food and Agricultural Organization (FAO) promotes open source technologies and development and inter-operability with other information systems at national, regional and global levels.

Various tools for collecting information about animal health at national, regional and global levels have made significant contributions to the timely reporting of animal disease events, and to analysing animal disease drivers and patterns of transmission and spread. Ongoing challenges relate to the sensitivity of surveillance systems for capturing information about new pathogens or old pathogen emergence. The proliferation in recent years of official and non-official systems, such as ProMED and the Global Public Health Intelligence Network (GPHIN), has been accompanied by different technologies, data requirements and standards. Overlaps between national, regional and global information systems are evident in some regions and most data relating to animal disease outbreaks are entered and processed at national, regional and global levels.

Effective knowledge and information management in the agricultural sector were achieved with the right knowledge and information delivered to the farmers and other stakeholders at the right time in a user-friendly and accessible manner. Effective knowledge management is achieved when the right knowledge and information is

Page 24 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



delivered to the right person at the right time in a user friendly and accessible manner that helps the recipients to perform their jobs efficiently. Currently, several of the information services have been developed in order to provide information in a standard way using question and answer services and that the most popular services are audio or voice based.

2.1.1 Encouraging destocking

Destocking involves the removal of livestock during an emergency before animals become so emaciated that they are worthless or starve to death. Destocking is a long established practice found throughout the world's drylands. Both commercial ranchers and pastoralists sell off surplus animals ahead of the months-long annual dry season in order to capitalize on the best possible prices and to reduce potential losses. During slow-onset emergencies such as droughts, or when conflict prevents movement of people and animals, livestock conditions inevitably deteriorate as feed supplies become scarce. The result is that animals lose both condition and value, and are often presented for sale in local markets. In such situations the livestock owner is doubly disadvantaged as cereal prices increase and livestock prices collapse. Rapid-onset emergencies such as floods or earthquakes can restrict access to, or close local markets. In such circumstances, livestock keepers are unable to sell their livestock. Destocking has advantages and disadvantages.

Advantages of destocking

- Obtaining cash or used as food via slaughtering from destocked animals
- The removal of livestock reduces the demand for fodder or grazing of the remaining herd, which may result in improved rates of survival of core breeding livestock.
- The removal or safe disposal of diseased and emaciated livestock reduces potential environmental and health problems.
- Commercial destocking interventions also help forge links between farmers/pastoral communities and livestock traders.

Page 25 of 65	Moleta PLC Author/Copyright	TVET program title- Animal Health care Service Level -3	version -1 June 2021
------------------	--------------------------------	--	----------------------------



Disadvantages

- Few livestock traders availability during destocking affect the prices
- Destocked animals are lost to the herd and production levels can be seriously affected until replacement animals can be bred, purchased or gifted
- Destocking interventions should not become routine or institutionalized.

Options for destocking

- Commercial destocking (accelerated offtake); it involves the purchase and removal of livestock from disaster-affected areas to places where feed is available, so that animals can recover and subsequently be sold, slaughtered or returned home.
- Humane slaughter for consumption; this methods of destocking is applicable when the number of animals available for sale exceeds market capacity. It is also practiced slaughtering and distributing the meat to beneficiaries before animals loose condition especially in case of draught.
- Humane slaughter for disposal; this represents a last resort when animals are so emaciated that they have neither economic nor nutritional value.

2.1.2 Culling stock infected with untreatable and highly public health threat

Culling is elimination or weeding out of undesirable animals from the herd, for reasons of uneconomic, poor production, or very poor reproductive ability, with sterility problems and breeding, irregularities, very poor conditions, stunted growth, suffering from incurable illness, or disease animals found to be positive for serious infections diseases like Tuberculosis, Johnes disease, Brucellosis, lost one or more quarters and teats of the under due to chronic mastitis resulting in marked reduction in milk production. Culling is referred to as either voluntary or involuntary. Voluntary culls are cows culled

Page 26 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



because they are poor producers, whereas involuntary culls are those culled out of necessity, due to mastitis, extreme lameness, poor reproduction or death.

Human-health threats from livestock come in two basic forms: zoonotic diseases, and food-borne illnesses. Zoonotic diseases are those that arise in animals but can be transmitted to humans. Potentially pandemic viruses, such as influenza, are the most newsworthy, but many others exist, including rabies, brucellosis and anthrax. Food-borne illness can come from disease agents such as salmonella and E. coli or contaminants that enter the food chain during the production and processing of animal-based foods. These illnesses and the way they are managed create problems for everyone, but smallholders are often particularly vulnerable because they are more exposed to the risk and have less capacity to respond and recover.

Out of 1,415 pathogens known to infect humans, 61% were zoonotic. About 75% of the new (emerging) diseases that have affected humans over the past 10 years have been caused by pathogens originating from animal or from products of animal origin. Zoonotic diseases have high overall impact on human health, animal health and hence on livelihood and ecosystem.

Therefore, animal owners should be advised to cull his animals when the animals suffer from incurable (untreatable) contagious disease to limit the transmission and causes public health risks. Animals may also culled for economic point of view.

Page 27 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 1- written Exam

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

Chose the best answers (2 points each)

1. _____ involves the removal of livestock during an emergency before animals become so emaciated that they are worthless or starve to death
 - a. Culling
 - b. destocking
 - c. buying cow during drought season
2. What is the main reason of culling livestock?
 - a. When animal is suffered from incurable disease
 - b. Risk of zoonotic disease
 - c. Reduced fertility
 - d. All
3. One of the following is not methods of destocking
 - a. Commercial destocking
 - b. Humane slaughter for disposal
 - c. Humane slaughter for disposal
 - d. selling of fattened beef cattle

Note: Satisfactory rating – 3 points

Unsatisfactory - below 3 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 28 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 2- Carrying out disease surveillance

2.1 Definition of terminologies

- **Surveillance;** is demonstrating the absence of infection or infestation, determining the presence or distribution of infection or infestation or detecting as early as possible exotic diseases or emerging diseases. It is a tool to monitor disease trends, to facilitate the control of infection or infestation, to provide data for use in risk analysis, for animal or public health purposes
- **Surveillance system;** means the use of one or more surveillance components to generate information on the health status of animal populations.
- **Survey;** means a component of a surveillance system to systematically collect information with a predefined goal on a sample of a defined population group, within a defined period.
- **Early warning;** is to rapidly detect communicable disease phenomena with the potential for serious socioeconomic consequences or international public health concerns in order for adequate and timely response to be taken.
- **Event;** means infection, manifestation of disease or occurrence that creates a potential for disease.

2.2 Animal Disease Surveillance Systems

In designing, implementing and assessing a surveillance system, the following components should be addressed in addition to the quality of Veterinary Services.

- Design of surveillance system
 - ✓ Populations; Surveillance should take into account all animal species susceptible to the infection or infestation in a country, zone or compartment

Page 29 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- ✓ Timing and temporal validity of surveillance data; The timing, duration and frequency of surveillance should be determined taking into consideration factors such as: objectives of the surveillance, biology and epidemiology (e.g. pathogenesis, vectors, transmission pathways, seasonality), risk of introduction and spread, husbandry practices and production systems, disease prevention and control measures (e.g. vaccination, restocking after disinfection), accessibility of target population, geographical factors, environmental factors, including climate conditions.
- ✓ Case definition; a case should be defined using clear criteria for each infection or infestation under surveillance.
- ✓ Epidemiological unit; the relevant epidemiological unit for the surveillance system should be defined to ensure that it is appropriate to meet the objectives of surveillance.
- ✓ Clustering; Clustering may occur at a number of different levels (e.g. a cluster of infected animals within a herd or flock).
- ✓ Follow up actions; the design of the surveillance system should include consideration of what actions will be taken on the basis of the information generated.
- ✓ Diagnostic tests; surveillance involves the use of tests for detection of infection or infestation according to appropriate case definitions. Tests used in surveillance may range from clinical observations and the analysis of production records to rapid field and detailed laboratory assays.

Surveillance methods

A wide variety of surveillance sources may be available. Surveillance systems routinely use data collected by probability-based or non-probability-based methods,

- Surveys; Surveys may be conducted on the entire target population (i.e. a census) or on a sample.
- Risk-based methods; surveillance activities targeting selected subpopulations in which an infection or infestation is more likely to be introduced or found, or more

Page 30 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



likely to spread, or cause other consequences and contribute to early detection, freedom claims, disease control activities, and estimation of prevalence.

- Ante-mortem and post-mortem inspections; Inspection of animals at slaughterhouses/abattoirs may provide valuable surveillance data
- Surveillance of sentinel units; surveillance of sentinel units involve the identification and regular testing of one or more animals of known health or immune status in a specified geographical location to detect the occurrence of infection or infestation
- Clinical surveillance; clinical observations of animals in the field are an important source of surveillance data.

Early warning systems

An early warning system is essential for the timely detection, reporting and communication of occurrence, incursion or emergence of diseases, infections or infestations and is an integral component of emergency preparedness. It should be under the control of the Veterinary Authority and should include the following:

- appropriate access to, and authority over, the target animal populations by the Veterinary Services;
- access to laboratories capable of diagnosing and differentiating relevant infections or infestations;
- training and awareness programmes for veterinarians, veterinary paraprofessionals, animal owners or keepers and others involved in handling animals at the farm or other places where they are kept during their transport or at the slaughterhouse/abattoir, for detecting and reporting unusual animal health incidents;
- epidemiological investigations of suspected cases
- effective systems of communication between the Veterinary Authority and relevant stakeholders

Page 31 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- establishing a national chain of command.

Awareness on impact of disease on economy of farmers

Animal diseases represent threats to the environment, animal welfare, public health, and the economy. Livestock diseases contribute to losses via increased mortality, reduced productivity, control costs, loss in trade, decreased market value, and food insecurity. The economic and social impacts of livestock disease have been recognized globally, in both developed and developing countries. Quantifying the economic impact of an animal disease outbreak is important in support of prevention and control decisions for improved animal health. Cattle are a very common asset in Ethiopian households. Livestock is the biggest income contributor in pastoral and agro-pastoral area. The economic costs of animal disease can be categorized as either direct or indirect losses.

- Direct costs of animal disease include the following
 - ✓ Visible production losses(e.g. death, lower yield and reduced growth)
 - ✓ Invisible losses (e.g. reduced fertility, and changes to herd structure)
 - ✓ Disease control and prevention costs
- Indirect costs of animal disease
 - ✓ Disease control costs
 - ✓ Loss export
 - ✓ Restrict market access

Page 32 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 2- written Exam

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

Short answer questions

1. Define animal disease surveillance(3 points)
2. Explain advantage of early warning systems in animal disease occurrence(2 points)
3. List impact of animal disease impact on the economy of farmers and country(4 points)

Note: Satisfactory rating – 4.5 points

Unsatisfactory - below 4.5 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 33 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 3- Describing and discussing ecology of livestock diseases

2.3 Ecology of livestock diseases

Introduction

Ecology is a branch of biology that deals with the relationships of organisms to one another and to their physical surroundings. Changes in the current conditions of the ecosystem affect many animals and cause higher risk for emergency of diseases and the occurrence of pathogens and parasites. In tropical areas livestock health problems is high due to environmental factors like high temperature and humidity, topography structure of sloppy area exposed to flood so easy to infect soil born diseases, stress factors and drought are common in these area as a result feed availability is limited and low vegetation coverage. Various ecology of livestock disease are there and some of them are described below.

Marshy area; The primary requirements for the establishment of liver fluke are a suitable snail (the intermediate host) and an environment that suits the fluke eggs, the snails and the larval fluke such as springs, slow-moving streams with marshy banks, irrigation channels and seepages. The fluke eggs are passed in the faeces into wet areas. The snail can move with and against the water current for long distances. Cattle often graze in the wet marshy areas favored by the fluke snail, so the eggs are deposited in a suitable environment. If food is available elsewhere, sheep and goats prefer to graze away from marshy pastures. Long wet seasons are usually associated with a higher infection rate but sheep are more likely to ingest large numbers of cysts during dry periods after a wet season, when the animals are forced to graze in swampy areas, resulting in heavy infection.

Due to the great biotic potential of *Fasciola hepatica* and their intermediate host snails, only a continuous and coordinated strategic application of all available measures can

Page 34 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



provide economic control of the disease. Effective control of fasciolosis in livestock is by managing fluke-prone areas, to reduce exposure to infection.

Forest; Forest served as natural habitats of various types of vectors which cause animal disease. One of the most common vectors survives in the forest and affect animal health is tsetse flies. The flies pass most of their time at rest in shaded places in forested areas. The preferred sites are the lower woody parts of vegetation; many tsetse flies hide in holes in the trunks of trees and between roots. However, animals grazing low land area where there are tsetse flies infestations can suffer from trypanosomiasis.

Soil; Animal diseases can develop from sources of infection that are transmitted via the soil. Soil serves as ecology and survival of many infectious diseases. Transmission may occur through the disintegration of infected carcasses. The disease is contracted by the animals grazing close to the ground or during wet seasons when infection may occur through absorption of surface moisture. Example of soil-borne diseases includes anthrax and blackleg. Location or geography includes altitude, soil, vegetation cover and climatic conditions may affect the spatial distribution of diseases and living organisms.

Page 35 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 3- Written Exam

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

Short answer questions

1. Explain the relationship between ecology and animal disease occurrence?(5 points)
2. Discuss marshy area as ecology of livestock disease(3 points)

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 36 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 4- Describing and discussing time schedule of vaccinations and deworming of animals

2.4 Vaccination schedule of livestock

What is vaccination?

Vaccination is a simple, safe, and effective way of protecting people and animals against harmful diseases, before they come into contact with them. It uses natural defenses to build resistance to specific infections and makes immune system stronger. Veterinary vaccines are important for animal health, animal welfare, food production, and public health. They are a cost-effective method to prevent animal disease, enhance the efficiency of food production, and reduce or prevent transmission of zoonotic and foodborne infections to people. Safe and effective animal vaccines are essential to modern society.

Importance of veterinary vaccines

Veterinary vaccine provides various advantages for maintaining livestock health, public health and food productions. Some of this importance is as the following.

- Safe and efficient food production; Veterinary vaccines are used in livestock and poultry to maintain animal health and to improve overall production. More efficient animal production and better access to high-quality protein are essential to feed the growing population
- Control of zoonotic diseases; Vaccines to control zoonotic diseases in food animals, companion animals, and even wildlife have had a major impact on reducing the incidence of zoonotic diseases in people.
- Control of emerging and exotic diseases of animals and people; Rapid development of animal vaccines can play a key role in controlling emerging diseases.

Page 37 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021

- Reduction of the need for antibiotics; Veterinary vaccines reduce the need for antibiotics to treat infections in food producing and companion animals. As a result, concerns related to antibiotic resistance associated with the extensive use of antibiotics in veterinary and human medicine will decrease.
- Food safety vaccines; recently, vaccines have been developed to reduce the shedding of organisms that cause food borne diseases in people. Example vaccines for E coli O157:H7 in cattle and Salmonella enteritidis in chickens are available. These vaccines typically do not improve the health of the vaccinated animal, but they reduce the shedding of pathogens that may contaminate animal products for human consumption.

2.4.1 Vaccination schedule for cattle

Regular vaccination program is crucial for the animal health management. In most cases after the first vaccination a second vaccination has to be given within a short period. This is called a booster. Then after a certain period, often a year, the vaccination has to be repeated to keep the resistance against infectious agent on a protective level. The common vaccines for dairy cattle in Ethiopia are Anthrax, Blackleg, Lumpy Skin Disease, Bovine Pasteurellosis, Food and Mouth Disease, Contagious Bovine Pleuropneumonia Pneumonia.

Table 1: vaccination schedule of cattle

Type of vaccines	Age of vaccination	Rout of administration	Dosage	Immunity development after vaccination	Immunity lasting period	Revaccination time
Anthrax	>3 months	Subcutaneous	1ml	After 10 days	1 year	Every year
Black Leg	>3months	Subcutaneous	2ml	After 10 days	1 year	Every year
B.Pasteurellosis	>3months	Subcutaneous	2ml	After 10 days	6-8 months	6 months
CBPP	>6months	Subcutaneous	1ml	After 2 weeks	1 year	Every year
FMD	>6months	Subcutaneous	4ml	After 2 weeks	6 months	Every year

2.4.2 Vaccination schedule for poultry

Different strategies can be implemented to effectively prevent and control the spread of animal diseases at international, national and farm levels and poultry disease control plans often include the use of vaccination. Vaccines are, in fact, an important component of poultry disease prevention and control worldwide. Their use in poultry production is traditionally aimed at avoiding or minimising the emergence of clinical disease at farm level and thus increasing production. Vaccines and vaccination programmes vary widely, depending on several local factors (e.g. type of production, level of biosecurity, local pattern of disease, status of maternal immunity, vaccines available, costs and potential losses) and indicated in table 2 below.

Table 2: poultry vaccination schedule

Layers

Age	Name of Vaccine	Dose	Route
5-7th day	Lasota	-	I/R or I/O
14-16th day	I.B.D.	-	I/O or D/W
24-26th day	I.B.D. (booster)	-	D/W
30th day	Lasota (booster)	-	D/W
7th week	Fowl Pox	0.2 ml.	I/M
9th week	Deworming	-	-
10th week	R2B	0.5 ml.	I/M
15th week	Debeaking	-	D/W
17th week	Lasota	-	-

Broilers.

Age	Name of Vaccine	Dose	Route
3-5th day	Lasota	-	I/O or I/n
7-9th day	I.B.D.	-	I/O or D/W
16-18th day	I.B.D. (booster)	-	D/W
24-26th day	Lasota (booster)	-	D/W

Note : I/N – Intra Nasal; I/O – Intra Occular; D/W – Drinking water; I/M – Intra Muscular



2.4.3 Deworming of animals against parasitic disease

Endoparasites are commonly encountered in veterinary medicine. Deworming (sometimes known as worming, drenching or dehelminthization) is the giving of an anthelmintic drug (a wormer, dewormer, or drench) to animal to rid them of helminths parasites, such as roundworm, flukes and tapeworm. Parasites are a problem in countries with tropical climates. Deworming makes the animal more resistant to diseases. It helps the animal grow faster, perform better and produce better milk, meat and eggs. Season of deworming is vary depending on the climatic conditions and species of animals but usually carried out early rainy season of the year. Example of anthelmintics used for deworming in Ethiopia is ivermectin, albendazole, tetramizole and fascinex.

Page 40 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 4- Written Exam

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

Short answer questions

1. Write the importance of veterinary vaccine(3 points)
2. Define deworming (2 points)
3. Write the vaccination schedule for small ruminants and equine species(5 points)

Note: Satisfactory rating – 5 points

Unsatisfactory - below 5 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 41 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



LG #53	LO # 3- Advise source of veterinary inputs
---------------	---

Instruction sheet
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"> • Delivering Information on vaccine, drug and chemical • Informing specific place and availability of animal health care posts. • Carrying out networking between animal health care posts, community and district administrative bodies • Advocating information, promoting alternative production and services <p>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:</p> <ul style="list-style-type: none"> • Provide information on vaccine, drug and chemical in meeting or demand of extension service • Identify specific place and inform availability of health care services • Establish network between stakeholders for animal health care services • Advocate information and promote services and production
Learning Instructions:

Page 42 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1 June 2021
------------------	--------------------------------	--	----------------------------



1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “information sheets
7. If your performance is unsatisfactory, see your trainer for further instructions

Page 43 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 1- Delivering Information on veterinary vaccine, drug and chemical

3.1 Definition of terminologies

- Public private partnership (PPP); is a contractual agreement between a public agency (Federal, State or local) and a private sector/entity for the provision of public goods or services by the private. It can also defined as a collaborative approach in which the public and private sector share resources, responsibilities and risks to increase resources, capacities and capabilities.
- Sanitary mandate; is a contractual agreement in whereby the state contracts the private sector to implement certain animal health services which are carried out in the national interest and usually at a cost to the state. It is a contract to perform specific services in specific locality during specific time period.

3.1.1 Deliver information on animal vaccine, drug and chemical use to the community

Veterinary pharmaceuticals are applied or administered to the animals by veterinary professionals or sometimes, the owner or the attendant him/herself. The medicine should be used to achieve a well-defined target or objectives of treatment i.e. should not be used randomly. The medicines should have appropriate quality, desirable action, a few or no side effects, and completely removed from the body of an animal when it is no longer needed. Complete removal helps to avoid unacceptable drug residues in animal products. The medicines used should improve animals'health, and be safe for consumers and the environment as well as legally registered by the regulatory authority.

3.1.2 Rational Use of Veterinary Drugs

The rational use of medicines requires that the animal patient receives appropriate medicines to their clinical needs, in doses that meet the individual requirements for an

Page 44 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



adequate period of time, and at the lowest cost to the owner and the society. Rational use of medicines should meet the following criteria:

- Appropriate indication: The decision to give the medicine(s) based on medical rationale and that therapy is an effective and safe treatment for the right diagnosis.
- Appropriate medicine: The selection of drugs based on safety, efficacy, suitability and cost considerations.
- Appropriate dosage, administration and time of treatment.
- Appropriate animal patient: No contra-indications exist and the likelihood of adverse reactions is minimal, and the drug is acceptable to the owner.
- Correct dispensing: appropriate information for owners about the prescribed drug and animal condition in an appropriate packaging that maintains its stability should exist

3.1.3 Irrational Use of Veterinary Drugs

Irrational medicines use includes:

- Use of drugs when no drug therapy is indicated (e.g. antibiotics for viral infections)
- Use of more medicines than are clinically necessary
- Use of the wrong medicine for a correct indication or vice versa
- Use of medicine with doubtful or unproven efficacy
- Use of correct medicine with incorrect route of administration, dosages, and duration
- Failure to prescribe and dispense in accordance with standard treatment clinical guidelines
- Inappropriate medication by owners.

Page 45 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Sanitary mandate contract scheme for veterinary service implementation is the new system in Ethiopia. Through this program timely, provisions of antibiotic and calendar vaccination of animals were conducted. All private veterinary networks were engaged in operating veterinary pharmacy and providing mobile veterinary services present inputs.

Inefficient delivery of animal health service to smallholder and pastoralist livestock keepers is the main challenge to minimizing the impact of diseases. Veterinary service in Ethiopia is primarily provided by the public sector, with clinics in every district and health posts in almost every kebele. However, effective service to the livestock keepers is not satisfactory. Participation of the private sector is highly low owing to the limited policy support. To increase the participation of the private sector in the veterinary service sector, a Veterinary Service Rationalization Road Map has been proposed in 2014 by the LVC-PPD project. The Health of Ethiopian Animals for Rural Development (HEARD) project has been launched in March 2019 with an aim of implementing the road map that is designed to improving Ethiopia's veterinary service delivery system. HEARD is implemented by the International Livestock Research Institute (ILRI) and the Ethiopian Veterinary Association (EVA). Its focus is on strengthening capacity development and piloting public-private partnerships. The active involvement of the private sector on its own or through public-private partnership (PPP) models is currently constrained by the lack of effective business models. It has been reported that private service providers, especially those providing service at the grassroots level, are struggling to provide quality services and survive as viable businesses and often find themselves being in competition with public service providers.

Veterinary prescription drugs must be properly labeled before being dispensed. Appropriate dispensing and treatment records must be maintained. Veterinary prescription drugs should be dispensed only in quantities required for the treatment of the animal(s) for which the drugs are dispensed. Avoid unlimited refills of prescriptions or any other activity that might result in misuse of drugs. Any drug used in a manner not in accordance with its labeling should be subjected to the same supervisory precautions that apply to veterinary prescription drugs. There is various information delivered to the

Page 46 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1 June 2021
------------------	--------------------------------	--	----------------------------



community regarding to the use of veterinary inputs. This information was described below.

3.1.4 Veterinary Prescription Orders, Labeling and Record Keeping

Veterinary prescription drugs are labeled for use only by or on the order of a licensed veterinarian. Orders issued by licensed veterinarians authorize drug distributors to deliver veterinary prescription drugs to a specific client, or authorize pharmacists to dispense such drugs to a specific client. Veterinary prescription drugs are to be used or prescribed only within the context of a veterinarian-client-patient relationship.

Adequate written treatment records must be maintained by the veterinarian for at least two years (or as otherwise mandated by law), for all animals treated, to document that the drugs were supplied to clients in line with federal and state rules and policies. Food animal owners should have a written treatment records system in place to decrease the risk of violative residues in meat, milk or eggs. All veterinary prescription drugs must be properly labeled when dispensed. A complete label should include all the information set forth under the section on Basic Information for Records, Prescriptions, and Labels.

Basic Information for Records, Prescriptions, and Labels

- ✓ Name, address, and telephone number of veterinarians
- ✓ Name, address, and telephone number of clients
- ✓ Identification of animal(s) treated, species and numbers of animals treated, when possible
- ✓ Date of treatment, prescribing, or dispensing of drug
- ✓ Dosage and duration
- ✓ Route of administration
- ✓ Number of refills
- ✓ Cautionary statements, as needed
- ✓ Expiration date

Page 47 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1 June 2021
------------------	--------------------------------	--	----------------------------



- ✓ Warning: Not for use in humans, keep out of the reach of children
- ✓ Slaughter withdrawal and/or milk withholding times, if applicable
- ✓ Directions for use: For subcutaneous injection only
- ✓ Adverse effects cautions and contraindications: Do not use in calves to be processed for veal.

3.1.5 Handling, Storage and Disposal of veterinary drugs and chemicals

Proper handling and storage of livestock medications can protect your meat and milk products from contamination from drug residue. Using proper storage facilities not only ensures medications remain effective it also helps reduce potential errors in products and treatment. The ideal location for a storage unit is a clean, dry, frost-free area, such as a farm office or utility room. Animal health products should also be protected from changes in temperature, sunlight, dust, moisture, animals and insects.

Different classes of products (ex: antibiotics, vaccines, de-wormers) or products for different species should be stored on separate shelves with labels. By keeping your storage areas organized, you reduce the potential for error. Successfully manage your on-farm medication inventory by practising the following activities.

- Buy drugs in quantities that will be used within a reasonable amount of time.
- Before buying, check product expiry dates.
- Use products with older expiry dates first.
- Check open containers to ensure stoppers and caps have proper seals.
- Products with leaking seals should be used immediately or properly disposed.
- Always check the contents of stored opened containers before using.
- If there is any discolouration or cloudiness, properly dispose.
- Clean and reorganize your storage unit and refrigerator regularly.

Safe disposal of livestock medications is crucial. It ensures farm employees, family, untreated livestock and the environment are protected from accidental exposure to potentially hazardous chemicals. Ensure safe disposal of livestock medications, apply the following precautions.

Page 48 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1 June 2021
------------------	--------------------------------	--	----------------------------



- Animal pesticides (ex: de-wormers, louse control products) must be disposed of the way crop pesticides are.
- Never reuse livestock medicine containers.
- Keep containers that are to be disposed of away from children, livestock and pets

The veterinarian should inform clients to whom prescription drugs are delivered or dispensed about appropriate drug handling, storage, and disposal. In the clinic, veterinary prescription drugs should be stored separately from over the counter drugs, and be easily distinguishable by the professional. Drugs should be stored under conditions recommended by the manufacturer. All drugs should be examined periodically to ensure cleanliness and current dating. Food animal clients should be advised that veterinary prescription drugs should be securely stored, with access limited to key personnel.

Page 49 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 1- Written Exam

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

Short answer questions

1. Describe irrational use of veterinary drug use(3 points)
2. Explain information delivered to the community while using veterinary drugs and chemicals(5 points)

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 50 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 2- Informing specific place and availability of animal health care posts

3.2 The Development of Veterinary Services in Ethiopia

Traditional veterinary service is believed to have been in practice in Ethiopia long ago however, it is difficult to indicate the exact date of its beginning. Traditional healers (Dhidhiibduu) used to treat both human and animal patients through drenching of herbal drugs, incising and cauterizing of abscesses and wounds using sharp objects and hot metals, mending fractures and rehabilitating dislocations. Such practices still exist in some parts of the country. Modern veterinary services started relatively recently in Ethiopia. A French Veterinary Mission began providing veterinary services in 1908. During its occupation of Eritrea, and later other parts of the country from 1936-41, the Italian army was treating equines used in its cavalry unit. Moreover, it established a laboratory around Kechene Medhanealem, in Addis Ababa, where some vaccines were produced.

The progress of veterinary services was slowed down for a while after the Italians were forced out of the country. However it was later decided that the Ministry of Agriculture should take over the laboratory. Thus, the first Ethiopian veterinarians took the responsibility for providing animal health services. British experts were invited to the country and Ethiopians professionals were trained at home and some were sent to East Africa to get training in laboratory techniques and vaccine production. In addition 250 vaccinators were trained by the Point 4-aid organization of the USA and were later assigned to serve in the various provinces of the country.

Thus, the modern veterinary service that started in the 1900s showed slow progress in the first fifty years. Following this it has shown progressive improvement and at present fast change is observed in areas of manpower, infrastructure, material and financial build up.

Page 51 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1 June 2021
------------------	--------------------------------	--	----------------------------



3.2.1 Veterinary Service Delivery System

Livestock owners have been getting veterinary service by the veterinary clinics in the zone and health posts at woreda level as well as Community-based Animal Health Workers (CAHW's) at Kebele level. Sometimes this division is not respected and livestock owners can get the services from which ever animal health services but mostly cost and distance determine the preference of the livestock owners and also not undermining the mobile nature of the pastoralists. In general, Government veterinary staffs mostly are delivering the services at veterinary clinics or posts while CAHWs at field. CAHWs and government veterinary staffs were identified curative service providers in the assessed areas. The service was found to be limited to administration of antibiotic, antihelmitic and trypanocidal drugs; closed castrations and minor surgical treatments.

3.2.3 Private animal health service delivery

Currently, participation of the private sector in the delivery of veterinary services is occurring at an increasing rate. However, most of the participants are geared towards operating drugs shops and importation of veterinary pharmaceuticals, while clinical or diagnostic services are very minimal and are operative in and around Addis Ababa where there are commercial livestock farms. The private clinics resemble the government clinic in the services providing with one notable exception is unable to vaccinate.

Page 52 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 2- Written Exam

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

Short answer questions

1. Describe community based animal health workers (3 points)
2. Explain the place where livestock owner can get veterinary services in Ethiopia (2 points)

Note: Satisfactory rating – 2.5 points

Unsatisfactory - below 2.5 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 53 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 3- Carrying out networking between Animal health care posts, and District administrative

3.3 Network between Animal health care posts, Community and administrative

Animal diseases are big factors limiting productivity, although modern veterinary services in Ethiopia started early in the 19th century. The country has established animal health services by both the national and regional governments, and by private individuals, and supported by non-government organizations. In general, both public and private actors are involved in animal health service provision. The regulatory aspect is the mandate of the public sector. Publicly funded animal health services are found at federal, regional, zonal, Woreda (district), and Kebele (village) level, in line with the public administrative setup in the country.

3.3.1 Federal level

Ministry of Agriculture and Livestock Resources (MoAL), under which there is a State Minister for Animal Health is the responsible bodies at federal level. The structure and policy directives of the 'Animal Disease and Feed Quality Control Sector', previously under the MoLF, will be directly transferred to the responsibility of the new minister and their staff, detailing those mandates should provide a useful picture of the government's thinking surrounding animal health policy. The 'Animal Disease and Feed Quality Control Sector' comprised six directorates that dealt mainly with inspection and certification:

- the Epidemiology Directorate
- the Disease Prevention and Control Directorate
- the Export Abattoirs Inspection and Certification Directorate
- the Quarantine, Import and Export Inspection and Certification Directorate
- the Veterinary Public Health Directorate

Page 54 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



- the Livestock Identification and Traceability Control Directorate.

Each of these six directorates was provided with a list of mandates, which it was expected to perform. In addition, five semiautonomous institutes dealing with animal health are accountable to the federal government. These are:

- the Veterinary Drug and Feed Administration and Control Authority (VDFACA)
- the National Animal Health Institute
- the National Tsetse fly and Trypanosomiasis Investigation and Control Centre
- the National Animal Health Diagnostic and Investigation Centre (NAHDIC), and
- the National Artificial Insemination Centre.

As the names of the respective institutes indicate, their responsibilities are specialised. While responsibility for animal health in Ethiopia's livestock sector has fallen within the remit of the Agriculture and Livestock ministries within the federal government, risks posed to the human population by the zoonotic transmission of animal diseases tend to be considered the responsibility of those working in human health. The VDFACA may issue directives and guidelines on the use and disposal of any veterinary drugs or feed.

3.3.2 Regional level

The organizational setup of institutions providing animal health services is quite different across the ten regions and two chartered cities (Addis Ababa and Dire Dawa) of Ethiopia. In some regions, where the livestock population is very large, such as Amhara, Oromia and Southern Nations Nationalities and Peoples Region (SNNPR), regional Livestock Sector Development Agencies are responsible for the livestock sector and related public services; including the prevention and management of animal diseases. These regional agencies are accountable to Regional Bureaus of Agriculture and Rural Development. In emerging regions like Afar, Harari and Somali, there are Bureaus of Pastoral and Agro-pastoral Development, and in the remaining regions, Tigray, Beneshangul-Gumuz, and Gambella, the issues of livestock are addressed by the

Page 55 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Livestock Development Sectors under the Bureaus of Agriculture and Rural Development.

3.3.3 Zonal and Woreda level

At zonal and Woreda level in Amhara, Oromia and SNNPR, aligned representatives of the regional livestock agencies are accountable to zonal and Woreda Offices of Agriculture. At Woreda level, two departments within the Office of Agriculture play a crucial role: First, the livestock extension which provides extension services related to livestock, including animal health and artificial insemination services; and second, the 'animal health desk' which provides services relating to vaccination, animal health services, and capacity building. To ensure better service coverage and quality, there is one public veterinary clinic in most Woreda across regions with the basic human resources and facilities required to provide this.

Animal health related a veterinarian who is often based at the Woreda Office of Agriculture provides services at Kebele (subdivision of Woreda) level. At Kebele level, livestock production and health services are related to the Livestock Extension. The frontline public livestock related a Livestock Development Agent with vocational training in livestock sciences provides services at Kebele level.

3.3.4 Community-based Animal Health Service Workers (CAHWS)

CAHWs have historically played a role as animal health service providers in many parts of Africa, including Ethiopia. Their training was limited but then again their role was limited but useful. The Food and Agriculture Organization (FAO) of the United Nations has a definite opinion about the use of CAHWs in Ethiopia, which includes the sustainability of Ethiopia's community-based animal health delivery system and that CAHWs have become an integral part of animal health service delivery in remote pastoral areas of Ethiopia over the past 20 years.

Community-based animal health services are veterinary services provided by the community for the community. Here, community associations or individuals take the

Page 56 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



responsibility to plan, manage, deliver, and finance the provision of services to their own community. Community-based Animal Health Service Workers is an approach developed to provide basic services and give husbandry advice to livestock keepers. They are in charge of disseminating certain farming techniques and methods in order to optimize animal production and play an important role in epidemiological surveillance. Today, CAHWs play a vital role in providing quality animal health services in most parts of Ethiopia. They are supported by senior staff at woreda agricultural offices. The staff in the woreda offices is also responsible for distribution of vaccines, drugs and instruments. However, the distributions of rural animal health posts/clinics were limited in the country.

Page 57 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 3- Written Exam

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

Short answer questions

1. Explain the regulatory mandates Woreda on animal health service delivery systems (4 points)

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 58 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Information sheet 4- Advocating information on how to use newly technologies

3.4 Introduction

Technologies are increasingly being developed in a global market. An understanding of the processes leading to the adoption of new technologies by smallholders has long been seen as important to the planning and implementation of successful research and extension programs. Both conventional and newer technologies, in particular related to biotechnology, information and precision farming techniques, are global businesses.

Livestock development technology adoption

The technologies most frequently adopted from extension services providers by farmers included disease prevention and control, improved livestock breeding, tick control, pasture management and preservation and animal waste management technologies. The adoption rate was higher among farmers that belonged to farmers' groups. Male farmers adopted more advice from extension workers than females. It was also evident that adoption level was higher among educated farmers than semi illiterate farmers. Similarly, farmers with diversified livestock enterprises implemented more technologies than those with single or fewer livestock enterprises.

Adoption of technologies was linked to social groups and networks among the farmers that played significant roles in mobilization and information sharing. Farmers laid strategies and guidelines to enhance technology adoption and dissemination including: promoting farmer to farmer information sharing, promoting exchange visits, setting norms on how to improve their livestock and promoting collective livestock treatment. Farmers who belonged to groups and also collaborated with other groups significantly developed their livestock enterprises. The dissemination of those technologies is often within the national market, but their application is local.

Page 59 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Several factors are facilitating the adoption of technologies for sustainable farming systems. Research and development efforts, the trend towards better education and training of farmers, the shift in the focus of advice, quicker and cheaper means of disseminating and sharing information, availability of financial resources, pressures from consumers, non-government organisations, the media and the public in general are contributing towards facilitating the adoption of sustainable farm technologies. Many policies, including those relating to agriculture, environment, and research and development, are providing a combination of incentives and disincentives to technology adoption. However, the combination of the many different economic, structural, behavioural and policy factors in a wide range of different situations means that there is no simple or unique explanation as to what leads farmers to adopt particular technologies.

The adoption of technologies for sustainable farming systems will be facilitated by a wider participatory approach involving a range of stakeholders.

Page 60 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Self check 4- Written Exam

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

Short answer questions

1. Discuss mechanisms of advocating improved dairy cattle breed to the farmer(2 points)
2. Explain stakeholder involved in the promotion of new veterinary technologies(2 points)

Note: Satisfactory rating – 2 points

Unsatisfactory - below 2 points

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

Answer Sheet

Score = _____
Rating: _____

Name..... ID..... Date.....

Page 61 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



References

Book and scientific journals

1. Adam Bekele, Dawit Alemu, Tilaye Teklewold, Henrietta L. Moore, Catherine Hodge and Stefan Berg (2018): Journal of Toxicology and Environmental Health Sciences, Vol. 10(12).
2. Berhanu Admassu (2005): Primary Animal Health Care in Ethiopia: The experience so far; Community-based Animal Health and Participatory Epidemiology unit.
3. Dairy Cattle Health Management. SNV-EDGET Ethiopia project training manual (2018).
4. Debbie Lynn Stoewen (2015): Clients' Service Expectations and Practitioners' Treatment Recommendations in Veterinary Oncology
5. Dereje Derso and Ekuogbe Ejiro (2015): The contribution of information and communication technologies to the Ethiopian agricultural extension system: a review of literature on agriculture knowledge management, African Journal of Agricultural Science and Technology (AJAST) Vol. 3, Issue 9
6. Erica Pavord and Elaine Donnelly (2015): Communication and Interpersonal Skills, 2nd Edition.
7. FAO (2011): Challenges of animal health information systems and surveillance for animal diseases and zoonoses
8. FAO (2016): Livestock-related interventions during emergencies; Animal Production and Health Manual No. 18. Rome.
9. Li-Na ZHANG (2018): Importance of Interpersonal Skills at Work towards Managing People in an Educational Context; 5th international conference on management science and management innovation, volume 54.
10. OIE (2019): Animal health surveillance; Terrestrial Animal Health Code - 28/06/2019

Page 62 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



11. OIE, FAO and WHO (2006): Global Early Warning and Response System for Major Animal Diseases, including Zoonoses (GLEWS), Final version adopted by the three organizations.
12. Public-private partnerships (PPPs) for veterinary service delivery in Ethiopia 20 June 2019, Lalibela Hall, ILRI campus, Addis Ababa, workshop report.
13. Ramees Rahman M. and Safeena P.K. (2016): Customer Needs and Customer Satisfaction; Training Manual on Equipping Fisherwomen Youth for Future
14. Silke Gaida, Anja Härtl, Andrea Tipold and Marc Dilly (2018): Communication identity in veterinary medicine: a grounded theory approach, Jo. Vet Rec Open
15. Standard Veterinary Treatment Guidelines for Ethiopia, 2nd Edition, 2020
16. Tadele Mirkena, Orsolya Mikecz, Thomas Cherenet, Asefa Deressa, Bemnet Teshome, Mustafa Abu, Ugo Pica-Ciamarra (2019): Livestock, health, livelihoods and the environment in Ethiopia; An integrated analysis
17. Veterinary Pharmaceuticals Management Manual for Ethiopia, 1st Edition, 2020
18. Vivi Pietikainen (2006): Measures to prevent overstocking and overgrazing in woodlands, A case study in Babati, northern Tanzania.

Website references

1. <https://www.skillsyouneed.com/interpersonal-skills.html>
2. <https://bmcvetres.biomedcentral.com/articles/10.1186/s12917-020-02558-2>
3. <https://www.skillsyouneed.com/interpersonal-skills.html>
4. <http://bieap.gov.in/DairyAnimalManagementTheory.pdf>

Page 63 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



Acknowledgement

We wish to extend thanks and appreciation to the many representatives of TVET instructors and respective, and Oromia TVET expertise donate their time and knowledge for the development of this Teaching, Training and Learning Materials (TTLM).

We would like also to express our appreciation to **Holeta Polytechnic College** and the **World Bank Project** who made their effort by organizing, planning, and financial supporting for development of this Teaching, Training and Learning Materials (TTLM) with required standards and quality possible. This Teaching, Training and Learning Materials (TTLM) was developed on **June 2021 at Adama**, Pan-Afric Hotel.

Page 64 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021



The trainers who developed the learning guide

No	Name	Qualification	Educational background	TVET College	Phone. No.	E-mail
1	Dr. Addisu Bedashu	A	DVM	Holeta PTC	0910281160	addisubedashu@gmail.com
2	Dr. Boki Negesa	A	DVM	Holeta PTC	0920563622	bokanegesa@gmail.com
3	Dr. Abate Worku	A	DVM	Holeta PTC	0923382973	abateworku48@gmail.com
4	Dr. Derere Dejene	A	DVM	Kombolcha TVET	0910749376	deraradejene@yahoo.com
5	Dr. Bikila Imiru	B	DVM	Chancho TVET	0917027759	bikilaaimmiruu59@gmail.com
6	Dr. Milkessa Tesema	A	DVM	Chancho TVET	0912257297	mengistut38@gmail.com
7	Dr. Kumera Lamesa	B	DVM	Bako PTC	0913191366	kumelame@gmail.com

Page 65 of 65	Holeta PTC Author/Copyright	TVET program title- Animal Health care Service Level -3	Version -1
			June 2021