Unit 15: Principles of Animal Health

Unit code: F/503/1686

QCF level: 5

Credit value: 15

Aim

This unit aims to develop learners' understanding of animal health. Learners will have the opportunity to investigate the nature of the disease process and examine the relationship between the host and the infective agent.

Unit abstract

Animal health and welfare are important to owners and professionals working in animal management and learners need to understand the mechanisms of disease and immunity, and how these can be adjusted and manipulated to maintain the animal health and welfare.

The unit covers scientific aspects of animal health and ill-health and the management of specific diseases and injuries as well as the use of veterinary medicines to treat and prevent ill health.

Learning outcomes

On successful completion of this unit a learner will:

1 Understand the role of the immune system in animals

2 Understand the nature and process of disease and the relationship between the host and the infective agent

3 Understand the appropriate management of specific diseases and injuries in animals

4 Understand the safe use of veterinary medicines.

Unit content

1 **Understand the role of the immune system in animals**

Disease and immunity: structure of the immune system; T-cells; B-cells; natural killer cells; phagocytes; platelets; thymus; spleen; interaction between different immunities; compromised immunity (causes and effects)

Innate and adaptive immunity: exterior defences; complement and interferons; inflammation; antibodies; antigens; integrated defence mechanisms

Cellular immunity: T-cell functions; antigen presenting cells; cell mediated cytotoxicity; macrophages; lymphokines

Humoral immunity: antigen-antibody binding; affinity and avidity; methods of action

2 **Understand the nature and process of disease and the relationship between the host and the infective agent**

Epidemiology: reservoirs; host resistance; host susceptibility; control strategies; epidemiological methods

Diagnosis: sample collection; haematology; biochemistry; microscopic examination; bacterial examination; immunological examination; interpreting results against benchmarks

Host-pathogen relationships: host properties; pathogen properties; consequences of exposure; spread of infection; mechanisms of tissue injury

3 **Understand the appropriate management of specific diseases and injuries in animals**

Diseases and conditions: causal agents; aetiology; signs; effects; prognosis; prevention and treatment; metabolic diseases; diet-related conditions; ectoparasites and endoparasites; lifecycle; signs; effects; prognosis; prevention and treatment; haemorrhage; wounds; sprains; strains; dislocations; fractures; head, internal and limb injuries; zoonoses; anthroponotics; notifiable diseases; contagious diseases; management of a disease outbreak

First aid: roles and limitations; conditions necessitating first aid; first aid procedures; first aid kits; wound management and bandaging techniques

Nursing techniques: disinfection; asepsis and sterilisation; isolation and quarantine; barrier nursing; nursing practices; veterinary referral; ethical treatments; euthanasia; disposal of cadavers and clinical waste

4 **Understand the safe use of veterinary medicines**

Legislation: Medicines Act 1968; Misuse of Drugs Act 1971; Misuse of Drugs Regulations 1985; Medicines Regulations 1994; Health and Safety at Work Act 1974; COSHH

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Pharmacology: categories; classes and schedules of drugs; pharmacological terminology; dose calculations; contraindications; risks (toxic effects, lethal doses, storage, handling); therapeutic index; methods and routes of administrating medication; safe storage; handling; administration and disposal of medication

Alternative therapies: homeopathy; osteopathy; chiropracty; physiotherapy; acupuncture; aromatherapy; shiatsu; reiki; herbalism

Supply of veterinary medicines: role of the veterinary surgeon, veterinary nurse and other suitably qualified persons (SQP's) in the control and supply of veterinary medicines; restrictions on the SQP e.g. supply of POM-VPS, NFA-VPS and AVM-GSL only; role of AMTRA; CPD requirements of AMTRA; premises registration and requirements for supply of veterinary medicines; role of AMI (Animal Medicines Inspectorate); Veterinary Medicines Regulations 2005

Learning outcomes and assessment criteria

Learning outcomes On successful completion of this unit a learner will:		Assessment criteria for pass The learner can:	
LO1	Understand the role of the immune system in animals	1.1	describe the structure of the immune system
		1.2	explain the difference between innate and adaptive immunity
		1.3	summarise the roles of humoral and cellular immunity during and after infections
		1.4	discuss the interaction between cellular and humoral immunity during infection
LO2	Understand the nature and process of disease and the relationship between the host and the infective agent	2.1	discuss the epidemiological aspects of important veterinary infections
		2.2	interpret the results from different diagnostic procedures accurately
		2.3	explain the outcome of different host-parasite relationships
LO3	Understand the appropriate management of specific diseases and injuries in animals	3.1	explain the cause, effect, prevention and treatment of common animal diseases
		3.2	discuss the management of zoonotic, anthroponotic and notifable disease outbreaks
		3.3	evaluate the effect of common endo- and ectoparasites in relation to animal health, to include life-cycles, prevention and treatment
		3.4	discuss appropriate first aid treatment for a range of trauma conditions and their subsequent management techniques
		3.5	critically review nursing techniques available for a range of given animal health scenarios
LO4	Understand the safe use of veterinary medicines	4.1	review the legislation relating to the use of veterinary medicines
		4.2	evaluate the role and risks of pharmacology in the treatment of disease
		4.3	discuss the increasing use of alternative therapies

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Guidance

Links

This unit links to the following units in this qualification:

Unit 2: Animal Husbandry Management

Unit 3: Animal Health and Welfare

Unit 7: Biological Principles

Unit 10: Anatomy and Physiology

Unit 18: Animal Nursing.

Essential requirements

Learners need access to laboratory equipment such as microscopes, and examples of diagnostic techniques, as well as appropriate up-to-date literature and journals. Access to veterinary equipment (whether in use or not) is also essential to introduce learners to the different methods used in first aid and veterinary pharmacology.

Animal welfare requirements must be paramount at all times. Animals must not be subjected to stress or overuse during delivery of this unit.

Employer engagement and vocational contexts

Delivery of this unit would benefit from guest speakers from the veterinary and pharmacological sector who could discuss the analysis of results from diagnostics, the role of the immune system and potential disruption of the natural immunity, and demonstrate some common first aid techniques used on animals in 'real-life' situations.

Visits to veterinary surgeries and laboratories involved with vaccinations and analysing diagnostic tests could also be beneficial.

This unit could be run in conjunction with *Unit 18: Animal nursing*, as the units complement each other very well and cover similar subjects in different contexts.