



Higher National Unit specification: general information

Unit title: Veterinary Nursing: Pharmacology

Unit code: H0YP 34

Superclass: SN

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Version: 01

Unit purpose

This Unit is designed to develop a knowledge and understanding of commonly used animal drugs and medicines and the legislation relating to their use. This includes methods of administering drugs and their distribution, mode of action and breakdown within the body. The knowledge gained from this Unit will enable candidates to effectively administer drugs and medicines to animals, under veterinary direction. The Unit is suitable for candidates seeking employment in veterinary nursing, animal care or similar professions.

On completion of the Unit the candidate should be able to:

- 1 Describe the legislation, policies and procedures relating to the prescription and use of animal medicines.
- 2 Compare the techniques used to administer drugs to animals.
- 3 Explain the basic principles of pharmacology.
- 4 Explain the actions of commonly used animal medicines.

Recommended prior knowledge and skills

Candidates should, ideally, have achieved a credit level pass in Standard Grade Biology or equivalent and should have a good knowledge of the anatomy and physiology of healthy animals.

Credit points and level

1 Higher National Unit credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

General information (cont)

Core Skills

There are opportunities to develop the Using Number component of the *Numeracy* Core Skill at level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes. It is included in the framework of the HNC in Animal Nursing and HND in Veterinary Nursing.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the legislation, policies and procedures relating to the prescription and use of animal medicines.

Knowledge and/or Skills

- ◆ Veterinary Medicines Regulations 2005 and any subsequent amendments.
- ◆ Relevant parts of Medicines Act 1968, Medicines Regulations 1994, Retailers Records for Veterinary Medicinal Products Regulations 2000, Misuse of Drugs Act 1971, Misuse of Drugs Regulations 1985, Health and Safety at Work Act 1974, Control of Substances Hazardous to Health Regulations 2002 and any other new legislation.
- ◆ Prescription of controlled drugs including Prescription Only Medicines- Veterinarian (POM-V).
- ◆ Prescription of Prescription only Medicines - Veterinarian, Pharmacist, Suitably Qualified Persons (POM-VPS), Non Food Animal – Veterinarian, Pharmacist, Suitably Qualified Person (NFA-VPS) and Authorised Veterinary Medicine - General Sales List (AVM-GSL) medicines.
- ◆ Prescription and dispensing policies and procedures in veterinary pharmacies and pharmacies.
- ◆ Storage, handling and disposal procedures for veterinary medicines.
- ◆ Prescription policies and procedures in registered merchants and pet shops.
- ◆ Legal requirements for record keeping of pharmacy stock.

Evidence Requirements

- ◆ describe the prescription and supply of two of the four recognised drug categories, making reference to the relevant legislation
- ◆ describe the safe handling, storage and disposal of one medicine in each of the two selected drug categories, making reference to the relevant legislation

Higher National Unit specification: statement of standards (cont)

Unit title: Veterinary Nursing: Pharmacology

Outcome 2

Compare the techniques used to administer drugs to animals.

Knowledge and/or Skills

- ◆ Drug formulations – including tablets, capsules, liquids, powders, gels, ointments, creams and sprays.
- ◆ Weights and measures.
- ◆ Administration calculations, weight per Unit weight.
- ◆ Administration calculations, volume per Unit weight.
- ◆ Administration methods – including oral, rectal, parenteral and topical.
- ◆ Administration procedures:
 - confirming the treatment required
 - correct preparation of the medication
 - calculation of the correct dosage
 - selection and effective maintenance of appropriate equipment
 - ensuring appropriate restraint of the animal
 - assessment and monitoring of patient condition prior to and after administration
 - disposal of surplus and waste materials
 - treatment records.

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ compare three different drug formulations
- ◆ calculate accurately one weight per Unit weight drug requirement and one volume per Unit weight drug requirement
- ◆ compare the procedures used to administer two drugs effectively, each by a different method.

Higher National Unit specification: statement of standards (cont)

Unit title: Veterinary Nursing: Pharmacology

Outcome 3

Explain the basic principles of pharmacology

Knowledge and/or Skills

- ◆ Pharmacokinetics:
 - absorption of drugs
 - distribution of drugs
 - metabolism of drugs
 - excretion of drugs
- ◆ Pharmacodynamics:
 - receptor mediated reactions of drugs
 - non-receptor mediated reactions of drugs
 - potency and efficacy of drugs
 - therapeutic index of drugs
 - side effects of drugs
 - drug interactions.

Evidence Requirements

- ◆ explain how two drugs are absorbed and distributed
- ◆ describe one factor which could influence the absorption and distribution of drugs
- ◆ explain how two drugs are metabolised and excreted
- ◆ explain receptor and non-receptor mediated effects of drugs

Higher National Unit specification: statement of standards (cont)

Unit title: Veterinary Nursing: Pharmacology

Outcome 4

Explain the actions of commonly used animal medicines.

Knowledge and/or Skills

- ◆ Modes of action.
- ◆ Antimicrobials, including bacteriocidal and bacteriostatic antibiotic.
- ◆ Anti-inflammatories (in particular the non-steroidal anti-inflammatories).
- ◆ Parasitocides.
- ◆ Analgesics and sedatives (to include opioid drugs).
- ◆ Cardio-vascular drugs (to include beta blockers).
- ◆ Drugs acting on the urinary system (to include diuretics).
- ◆ Cytotoxic drugs.
- ◆ Drugs acting on the endocrine system (to include anti-epileptic drugs).
- ◆ Vaccines.

Evidence Requirements

- ◆ explain the mode of action of four representative drugs from the following classes:
 - bacteriostatic or bacteriocidal antibiotics
 - non-steroidal anti-inflammatories
 - parasitocides
 - analgesic drugs
 - diuretic drugs
 - anti-epileptic drugs
- ◆ explain how vaccines work within the animal body.

Higher National Unit specification: support notes

Unit title: Veterinary Nursing: Pharmacology

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit is intended for candidates who are studying towards the HNC in Animal Nursing and HND in Veterinary Nursing. The teaching and learning should be delivered in this context. The Unit will also be useful for animal care professionals or enthusiasts who wish to increase their knowledge of drugs and medicines used in the prevention and treatment of animal conditions.

Additional information relating to each Outcome is given below.

Outcome 1

The knowledge and understanding of this Outcome should be integrated into the delivery of other topics in the Unit, as appropriate. Care should be taken to include relevant legislation, policies and procedures which may be introduced subsequent to the writing of this Unit. The importance of correct handling and labelling when dispensing drugs should be emphasised.

Outcome 2

The knowledge and understanding of this Outcome could be delivered in a practical context by developing workshops using real preparations and formulations. Maximum use should be made of opportunities to carry out simple dosage calculations. Care should be taken to emphasise that all drug administration should be carried out under the direction of a qualified veterinary surgeon and that some procedures may only be undertaken by a qualified veterinary surgeon.

Outcome 3

This Outcome covers the basic principles of pharmacokinetics and pharmacodynamics. Candidates should develop an understanding of the factors which influence absorption of drugs. These should include: formulation of the drug; route of administration of the drug; health status of the patient; tissue perfusion at the site of administration. Bioavailability and the first pass effect could also be explained. Factors affecting distribution of drugs should be taught: protein binding; natural barriers, eg the blood-brain barrier; tissue perfusion. For the metabolism of drugs and the organs responsible for this, metabolism must be explained: this should include the effects of drug interaction and species variations. Factors which affect the excretion of drugs should be discussed: route of excretion; renal and hepatic elimination; elimination half-life; therapeutic range; therapeutic index.

Candidates should develop an understanding of receptor mediated pharmacodynamics: agonist and antagonist effects; competitiveness and affinity; downregulation and upregulation; specificity; potency; efficacy. Drug interactions and adverse reaction should also be explained.

Higher National Unit specification: support notes (cont)

Unit title: Veterinary Nursing: Pharmacology

Outcome 4

This Outcome covers the action of commonly used animal medicines. Candidates could be taught how the drugs in each group listed act upon the patient or micro-organism, eg how antibiotics disrupt cell function, how antiviral drugs work, the effect of a diuretic or a beta blocker and how the drugs achieve these effects.

The actions and therapeutic indications of drugs which have similar effects should be discussed, eg narcotic analgesics and NSAID analgesics. Both generic and trade names of commonly used products should be included. Exhaustive lists of drug names are beyond the scope of this Unit.

Guidance on the delivery of this Unit

This Unit has been devised with the intention that it forms part of the framework of the HNC in Animal Nursing and HND in Veterinary Nursing and should be delivered with that in mind.

This Unit will normally be delivered in a classroom setting. In addition to lectures, the teaching and learning could include group discussion, case studies and other classroom-based activities.

Guidance on the assessment of this Unit

Centres should feel free to adopt an appropriate assessment strategy provided that it meets the specifications given in the Statement of Standards for this Unit.

Assessment Guidelines

Outcome 1

The assessment of this Outcome could take the form of a report prepared on open-book conditions.

Outcome 2

This Outcome could be assessed jointly with Outcomes 3 and 4, details of which are given under Outcome 4.

Outcome 3

This Outcome could be assessed jointly with Outcomes 2 and 4, details of which are given under Outcome 4.

Outcome 4

This Outcome could be assessed jointly with Outcomes 2 and 3. This could be conducted as an holistic closed-book written test consisting of structured questions undertaken in controlled conditions and lasting two hours.

Higher National Unit specification: support notes (cont)

Unit title: Veterinary Nursing: Pharmacology

Online and Distance Learning

If this Unit is delivered by open or distance learning methods, additional resources will be required for candidate support, assessment and quality assurance. For further information and advice, please refer to the SQA guide: *Assessment and Quality Assurance for Open and Distance Learning* (www.sqa.org.uk).

Opportunities for developing Core Skills

There are opportunities to develop the Using Number component of the *Numeracy Core Skill* at level 5 in this Unit through the drug requirement calculations involved in Outcome 2. Note that there is no automatic certification of this Core Skills component.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

History of changes to Unit

Version	Description of change	Date

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General information for candidates

Unit title: Veterinary Nursing: Pharmacology

This Unit is included in the framework for the HNC in Animal Nursing and HND in Veterinary Nursing and also addresses the relevant parts of the RCVS syllabus.

It is designed to provide knowledge and understanding of commonly used animal drugs and medicines.

The content of the Unit is organised into four Outcomes, covering the following topics:

- ◆ relevant, current legislation associated with animal medicines
- ◆ the techniques used to administer drugs to animals
- ◆ the basic principles of pharmacology
- ◆ the action of commonly used animal medicines

There are two assessments for this Unit. Current legislation will be assessed by a report prepared in open-book conditions. The remainder of the Unit will be assessed by a two hour closed-book written test consisting of structured questions.