Guidance

The cascade: prescribing unauthorised medicines

Guidance for prescribing vets on the use of the cascade.

About the cascade

Veterinary medicines are authorised for specific conditions for specific target species, based on assessed data. The conditions of use for each authorised veterinary medicine are listed in its Summary of Product Characteristics (SPC). Our Product Information Database contains the SPCs and the authorised territory of all veterinary medicines authorised in the UK. These will be indicated by GB-only, NI-only or UK wide.

Where there is no suitable veterinary medicine authorised in your territory for the specific condition in the animal being treated, to avoid unacceptable suffering, you are permitted to use your clinical judgement to treat animals under your care in accordance with the cascade.

The cascade is a risk-based decision tree. Prescribing decisions in accordance with the cascade should be made on a case-by-case basis. For example, if a suspected adverse event occurred when using a medicine in an animal, this does not mean that the cascade should be routinely used when treating other animals.

The steps, in descending order of suitability, are:

For vets in Great Britain:

Step	Permitted source
Step 1	Veterinary medicine with a Marketing Authorisation valid in GB or UK wide for indicated species and condition
Step 2	Veterinary medicine with a Marketing Authorisation valid in NI for indicated species and condition, in accordance with an Special Import Certificate granted by the VMD
Step 3	Veterinary medicine with a Marketing Authorisation valid in GB, NI or UK wide for a different species or condition. For products not authorised in GB or UK wide a Special Import Certificate from the VMD is required
Step 4	Human medicine with a Marketing Authorisation valid in GB, NI or UK wide OR an authorised veterinary medicine from outside of the UK. For products not authorised in GB or UK wide a Special Import Certificate from the VMD is required; in the case of a food-producing animal the medicine must be authorised for a food-producing species
Step 5	Extemporaneous preparation prepared by a vet, pharmacist or person holding an appropriate Manufacturer's Authorisation, located in the UK

Step	Permitted source
Exception	In exceptional circumstances, a human medicine may be imported from outside of the UK. For products not authorised in GB or UK wide a Special Import Certificate from the VMD is required

For vets in Northern Ireland:

Step	Permitted source
Step 1	Veterinary medicine with a Marketing Authorisation valid in NI or UK wide for indicated species and condition
Step 2	Veterinary medicine with a Marketing Authorisation valid in NI or UK wide for a different species or condition
Step 3	Human medicine with a Marketing Authorisation valid in NI or UK wide OR a veterinary medicine with a Marketing Authorisation valid in an EU member State. For products not authorised in NI or UK wide a Special Import Certificate from the VMD is required; in the case of a food-producing animal the medicine must be authorised for a food-producing species

Step	Permitted source
Step 4	Extemporaneous preparation prepared by a vet, pharmacist or person holding an appropriate Manufacturer's Authorisation, located in UK
Exception	In exceptional circumstances, a veterinary medicine with a Marketing Authorisation in GB or outside the EU may be imported, or a human medicine from outside of NI. For products not authorised in NI or UK wide a Special Import Certificate from the VMD is required

As the prescribing vet you are personally responsible for the choice of product and, as part of the Royal College of Veterinary Surgeons' (RCVS) Code of Professional Conduct for Veterinary Surgeons, you must obtain the owner's consent for their animal to be treated under the cascade. You must also maintain accurate records.

You, or a person acting under your supervision, may administer a product prescribed under the cascade; however, the prescription and use of the product remains your responsibility.

When using a product under the cascade, you should balance the expected benefits to the animal with the risks of using a medicine under the cascade. Risks could include those to:

- the animal
- the owner
- the person administering the medicine
- consumers of produce from treated animals which may contain residues of the veterinary medicine
- the environment

- wider public health, for example increased selection for antimicrobial resistance

When prescribing medicines under the cascade, you must first carry out a clinical assessment of the animal which must be under your care. You must also ensure that the evidence base for your prescribing decisions is robust and complies with Routine Veterinary Practice (RVP). This is particularly important when prescribing medicines lower down the cascade; if the treatment does not comply with RVP, it may require licensing by the Home Office as a regulated procedure under the Animal (Scientific Procedures) Act. Further guidance on RVP is available from the RCVS.

Misuse of the cascade

You must not promote or facilitate any use of the cascade which is not in accordance with Schedule 4 of the Veterinary Medicines Regulations (VMR). This does not prevent a vet from discussing treatment options with the owner or keeper of the animal under treatment.

Dispensing

Only vets registered with the RCVS may prescribe medicines under the cascade.

A Suitably Qualified Person (SQP) may supply an authorised veterinary medicine that falls within the scope of the registration they hold, against a prescription from a vet for use under the cascade. A pharmacist may dispense authorised veterinary and human medicines, and extemporaneous preparations they have prepared, against a prescription from a vet for use under the cascade.

Food-producing species

For use in GB

The following conditions apply when prescribing a product under the cascade for use in food-producing species:

- all substances contained in the medicine must be substances which:
  - have a Maximum Residue Limit (MRL), but not necessarily in the species for which it is intended to be used, or
  - do not fall within the scope of assimilated Regulation (EC) No 470/2009.
- when checking this, you should also consider the 'other provisions' listed with the MRL, for example, some substances are not allowed for use in animals producing eggs or milk for human consumption
- substances with an MRL are listed in the GB MRL Register as established under Article 14A of assimilated Regulation (EC) No 470/2009
- the vet responsible for prescribing the medicine must specify an appropriate withdrawal period
- the vet responsible for prescribing the medicine must keep specified records

For use in NI

The following conditions apply when prescribing a product under the cascade for use in food-producing species:

- the pharmacologically active substances contained in the medicine must have a Maximum Residue Limit (MRL), but not necessarily in the species for which it is intended to be used.
  - when checking this, you should also consider the 'other provisions' listed with the MRL, for example, some substances are not allowed for use in animals producing eggs or milk for human consumption
  - allowed substances are listed in table 1 in the Annex to Regulation (EU) No. 37/2010
- the vet responsible for prescribing the medicine must specify an appropriate withdrawal period

- the vet responsible for prescribing the medicine must keep specified records

Setting withdrawal periods

A withdrawal period is the length of time that must lapse between the final administration of the medicine and the point that the treated animal can be slaughtered to enter the food chain or when produce is taken from the treated animal.

The prescribing vet is required to specify an appropriate withdrawal period when prescribing or administering a medicine to food-producing animals under the cascade. When setting the withdrawal period, the vet must consider known information about the use of the product on the authorised species when prescribing for another species.

Where the product is not used as authorised, for example, when a higher dose or longer duration of treatment is used, or a species for which the product is not indicated is treated, care needs to be taken to ensure that a suitable withdrawal period is set. This ensures that no residues of veterinary medicines above the MRL remain at the time of slaughter or when produce is taken.

The minimum statutory withdrawal periods are for:

For use in GB

Eggs

- the longest withdrawal period provided in the SPC for any species multiplied by a factor of 1.5
- 14 days, if the product is not authorised for animals producing eggs for human consumption

Milk

- the longest withdrawal period provided in the SPC for any species multiplied by a factor of 1.5

- 7 days, if the product is not authorised for animals producing milk for human consumption
- 1 day, if the product has a zero-hour withdrawal period

Meat and offal from food-producing mammals, poultry and farmed game-birds

- the longest withdrawal period provided in the SPC for meat and offal, multiplied by a factor of 1.5
- 28 days, if the product is not authorised for food-producing animals
- 1 day, if the product has a zero-day withdrawal period

Fish meat

- the longest withdrawal period for any of the aquatic species in the SPC multiplied by a factor of 1.5 and expressed as degree-days
- if the product is authorised for food-producing terrestrial animal species, the longest withdrawal period for any of the food-producing animal species in the SPC multiplied by a factor of 50 and expressed as degree-days
- 25 degree-days if the highest withdrawal period for any animal species is zero

For use in NI

Eggs

- the longest withdrawal period provided in the SPC for any species multiplied by a factor of 1.5
- 10 days, if the product is not authorised for animals producing eggs for human consumption

Milk

- the longest withdrawal period provided in the SPC for any species multiplied by a factor of 1.5
- 7 days, if the product is not authorised for animals producing milk for human consumption

- 1 day, if the product has a zero-hour withdrawal period

Meat and offal from food-producing mammals, poultry and farmed game-birds

- the longest withdrawal period provided in the SPC for meat and offal, multiplied by a factor of 1.5
- 28 days, if the product is not authorised for food-producing animals
- 1 day, if the product has a zero-day withdrawal period

Fish meat

- the longest withdrawal period for any of the aquatic species in the SPC multiplied by a factor of 1.5 and expressed as degree-days
- if the product is authorised for food-producing terrestrial animal species, the longest withdrawal period for any of the food-producing animal species in the SPC multiplied by a factor of 50 and expressed as degree-days
- 25 degree-days if the highest withdrawal period for any animal species is zero

If the calculation of a withdrawal period results in a fraction of days, the withdrawal period must be rounded to the nearest number of days, with any half of a day being rounded upwards.

In relation to the calculation of the withdrawal period for milk, if the calculation of the period results in a milk withdrawal period not divisible by 12, the withdrawal period must be rounded up to the nearest multiple of 12 hours.

However, in cases where the authorised withdrawal periods are close to, or longer than, the statutory minimum withdrawal periods, the vet should consider other factors when setting a suitable withdrawal period. Factors to consider include:

- the length of the authorised withdrawal period(s)

- the known pharmacokinetics of the active substance(s) in both the authorised species and the species being treated (if different)

You could, for example, increase the authorised withdrawal period by 50%. Where a 30-day withdrawal period is authorised in cattle (meat and offal), a 45-day withdrawal period might be suitable for goats.

If a higher dose is given, a longer withdrawal period may be necessary.

Honey

As there is no statutory minimum withdrawal period set for honey, you must set a suitable withdrawal period that will ensure no risk to consumer health. Further guidance is available from the National Bee Unit.

Horses

A horse declared as non-food producing in its passport can be treated as a non-food animal under the cascade.

A horse that has not been signed out of the food chain in its passport must be treated as a food-producing animal under the cascade.

There is legislation which lists substances essential for the treatment of horses. These substances can be used in horses declared as food or non-food producing in the passport under the cascade using a statutory withdrawal period of 6 months.

See Horse medicines and record keeping requirements guidance page for more information about the use of medicines in horses.

Human medicines

You are not allowed to prescribe a human medicine simply because it is cheaper than using an authorised veterinary medicine.

Human medicines and veterinary medicines containing the same active substance may not be interchangeable.

Administration of autogenous vaccines

Autogenous vaccines may only be used in exceptional circumstances where there is no suitable, authorised immunological veterinary medicine available for the target species and indication. In these situations, a vet can use their clinical judgement to prescribe an autogenous vaccine in accordance with the cascade.

Importing medicines under the cascade

In order to legally import medicines for use under the cascade you must apply for a Special Import Certificate using our Special Import Scheme. Failure to obtain a certificate for an imported medicine is an offence under the Regulations.

Cascade use when new products come to market

If an authorised veterinary medicine becomes available while an animal is already being treated for a condition under the cascade, you should consider transferring the animal onto the authorised veterinary medicine. However, if you have concerns that changing the product could compromise the stability of the patient's condition, it may be acceptable to continue treatment under the cascade. Any new cases should receive the authorised veterinary medicine.

Extemporaneous preparations

Extemporaneous preparations (may also be known as "veterinary specials") are products that do not hold a Marketing Authorisation

(MA). These products have not been assessed against the same standards of quality, safety (for the target animal, user, consumer and environment) and efficacy as authorised veterinary medicines. They can legally be prescribed, supplied and used under the last step of the cascade.

Extemporaneous preparations carry a higher risk than authorised medicines and you should consider this when prescribing them. There are further requirements for labelling and record keeping under the cascade.

Inspections of veterinary practice premises (VPPs) include supplies of products used under the cascade and associated records.

Manufacturers of extemporaneous products must be authorised, that is hold a ManSA, and comply with the general principles of Good Manufacturing Practice (GMP). Their facilities, equipment and procedures are regularly inspected to ensure they manufacture extemporaneous products to a set quality standard.

Registers

- List of veterinary only extemporaneous preparations manufacturers
- List of combined human and veterinary extemporaneous preparations manufacturers

Further information on the manufacture of extemporaneous preparations can be found on the Authorisation to manufacture veterinary medicines guidance page.

Exemptions for small pet animals

Medicines marketed under the exemption for small pet animals are available over the counter and may be used in accordance with the product's labelling. If you need to use one of these products not in accordance with its recommended use, this would be classed as use under the cascade and considered an extemporaneous preparation.

Stock of medicines

You may keep limited quantities of human medicines, imported medicines and extemporaneous preparations for the treatment of animals where cascade use is required. The amount held should be justified by the immediate clinical need under the cascade rules. These medicines should not be used as a first-choice treatment in every situation. You should keep up to date with new authorisations and change your prescribing habits and stocking policies accordingly.

Each month, we publish details of new MAs and changes to existing MAs in the Veterinary Record.

Labelling

The information that must be included on the label for products used under the cascade is listed in the Veterinary Medicines Regulations (VMR). If all or part of the information cannot be included on the label, you may include it on a separate sheet.

It is the responsibility of the person supplying the medicine to ensure it is appropriately labelled.

Record keeping

As well as the normal record keeping requirements there are specific requirements for when you administer or supply medicines under the cascade.

The RCVS requires that consent must be obtained from clients before prescribing medicines under the cascade. These must be kept for 5 years and made available upon request from a duly authorised person. The records that must be retained are listed in the VMR.

Adverse events

We encourage you to report adverse events associated with all medicines. This includes those prescribed under the cascade; veterinary medicines used outside the terms of their marketing authorisation, human medicines and extemporaneous preparations.

Holders of authorisations to manufacture autogenous vaccines or unauthorised products to be used under the cascade must notify us of any adverse event in relation to a product produced by them within 30 days of learning of the event.

See reporting adverse events for more details.

Practical considerations

Cascade use vs authorised use

Authorised use is when a product is used in accordance with the clinical advice given on the product's SPC. The SPCs for all veterinary medicines authorised in the UK are available on the Product Information Database.

A product's SPC is based on assessed data and details the advice for correct administration, precautions and warnings to ensure safe and effective use of the product. The cascade permits deviations from the SPC when there is no suitable authorised product. Any such deviations should be based on robust clinical reasons, with the individual prescribing vet taking responsibility for use under the cascade.

Use of a route of administration other than the authorised route

Use of an unauthorised route of administration could have serious consequences for the animal, the owner, the environment and the consumer if the product behaves differently when administered by a different route (for example, administering a vaccine intended for intramuscular administration in drinking water or feed).

Responsible use of antibiotics under the cascade

We support and encourage responsible use of antibiotics under the cascade which requires you to consider not only the most appropriate active substance(s) but also:

- the most appropriate formulation
- the posology
- the current pattern of resistance in your locality
- an awareness of how to reduce selection pressure, and
- other related factors such as good biosecurity and husbandry/hygiene, avoiding surgical sepsis

If you can demonstrate that these steps have been taken, then cascade use of antibiotics is supported.

To minimise the development of antibiotic resistance, where a particular antibiotic is shown to be effective against a bacterial pathogen, for example by culture and sensitivity data, you can prescribe a narrow spectrum antibiotic under the cascade instead of a broad spectrum antibiotic that has an authorised indication for the condition being treated.

See our position statement on Responsible use of antibiotics under the cascade for more details.

Examples of how the cascade may be applied

Individual characteristics

If you judge a particular animal's characteristics (such as age, general condition or known sensitivity to a particular substance) to present unacceptable risks and to contra-indicate the use of authorised products, you could conclude that no suitable authorised product existed and consider other treatments.

Chronic infections

If a condition persists following treatment with an authorised product, you may consider that there is no authorised treatment for that particular case and that further use of medicines containing substances in the same chemical group is not appropriate.

Unavailability of product

If a product cannot be obtained despite a thorough search and in a reasonable time, you may conclude that in these circumstances it does not exist. You may follow the cascade to identify a suitable alternative. However, there may be cases where urgency dictates you use whatever is to hand, whether authorised or not. We publish details of supply issues which have the potential to cause animal welfare issues and provide information on alternative products, where possible.

If you cannot obtain authorised products from your usual wholesaler, you may issue a written prescription for the animal owner to use with another supplier.

Animal owner considerations

You may conclude that an animal owner, perhaps due to age or disability, would have difficulties in administering the authorised product. In the interest of animal welfare and treatment compliance you could consider an alternative treatment under the cascade.

Medicines commonly found around the home

In exceptional emergency circumstances, you may judge there is a need to alleviate a pet's discomfort until a home visit can be made or the animal brought to the surgery.

You could recommend that an animal owner use a human medicine that they already have in their possession, such as antihistamine tablets. This does not mean a pet owner should be encouraged to go into a pharmacy and ask for a human medicine for their pet.

Contact

Email: postmaster@vmd.gov.uk quoting ‘the cascade’ in the subject line.