This pack you will help you to:

- Describe some common canine diseases
- Describe ways of preventing and treating them
About this pack

Objectives

When you have completed this pack you should be able to describe some of the main infectious diseases of dogs.

This pack will help you to:
  • Describe some common canine diseases
  • Describe ways of preventing and treating them

This pack is also relevant to the level 3 unit Understand and Promote Animal Health, and in particular the following outcomes:
  • Outcome 2: Understand common diseases and disorders, their treatment and prevention

Links to other packs

This is one in a series of learning packs, each dealing with a particular aspect of animal health.
  • Pack 1: Introduction to animal health
  • Pack 2: Assessing physical health
  • Pack 3: Bacterial, viral and fungal diseases
  • Pack 4: Parasites, poisons and metabolic disorders
  • Pack 5: Notifiable diseases
  • Pack 6: Zoonoses
  • Pack 7: Ectoparasites
  • Pack 8: Infectious diseases of dogs
  • Pack 9: Infectious diseases of cats
  • Pack 10: Infectious diseases of rabbits
  • Pack 11: First aid for animals

Each pack contains several activities which ask you to think the topic through or to apply it to an organisation you know of. In some cases you may be able to work on these activities with other people in your group.
Introduction

Packs 3 and 4 looked in broad terms at the main causes of disease in companion animals. This pack looks at some of the more important canine diseases in greater detail:

- Canine distemper
- Canine parvovirus
- Kennel cough
- Infectious canine hepatitis
- Para influenza
- Canine leptospirosis

Canine distemper

Canine distemper is a contagious, incurable, often fatal, viral disease that affects the respiratory, gastrointestinal, and central nervous systems of dogs and other species including fox, badger, mink and ferret. It is caused by the canine distemper virus (CDV).

Distemper is most frequently seen in dogs between 6-9 months of age, following the fall of maternal antibodies and where acquired immunity has not yet been established. However, distemper can occur in susceptible dogs of any age. Most outbreaks occur in cities, housing estates, rescue centres or where dogs are kept in high density populations.

Incidence

Canine distemper occurs worldwide, and once was the leading cause of death in unvaccinated puppies. Widespread vaccination programmes have dramatically reduced its incidence.

CDV occurs among domestic dogs and many other carnivores, including raccoons, skunks, and foxes. CDV is fairly common in wildlife.

Young puppies between 3 and 6 months old are most likely to get the infection and are more likely to die than infected adults.

Transmission

Infected dogs shed the virus through bodily secretions and excretions, especially respiratory secretions. It is mainly transmitted by airborne viral particles that dogs breathe in. It has an incubation period of 7-21 days.

Dogs in recovery may continue to shed the virus for several weeks after symptoms disappear, but they no longer shed the virus once they are fully recovered.
Prevention

The best prevention against canine distemper is vaccination. Vaccination works well even in animals that have already been exposed to the virus, if it is administered within 4 days of exposure.

Exposure to CDV via vaccination induces long lasting, but not permanent, immunity. Dogs should receive annual vaccinations to ensure protection.

Most puppies are born with their mother’s antibodies to CDV, which prevents them from becoming infected if exposed to the virus. They begin to lose their maternal protection between 6 and 12 weeks of age, which is when puppies should be vaccinated.

Two to three vaccinations should be administered during this period. Dogs should be revaccinated yearly thereafter.

Symptoms

The initial symptom is fever, which usually peaks 3 to 6 days after infection.

The fever often goes unnoticed and may peak again a few days later. Dogs may experience eye and nose discharge, depression, and loss of appetite (anorexia).

After the fever, symptoms vary considerably, depending on the strain of the virus and the dog’s immunity.

Many dogs experience gastrointestinal and respiratory symptoms, such as:

- Conjunctivitis (discharge from the eye)
- Diarrhoea
- Fever (usually present but unnoticed)
- Pneumonia (cough, laboured breathing)
- Rhinitis (runny nose)
- Vomiting

Diagnosis

Diagnosis can be difficult and is based on the dog’s vaccination history, clinical symptoms, and laboratory tests.

- Blood tests are usually not helpful in the diagnosis
- Imaging studies (e.g., x-rays, CT scans) can diagnose pneumonia.
Treatment
Since there is no cure for distemper, treatment is supportive.

- Provide a clean, warm, draft-free environment.
- Keep eyes and nose clear of discharge.
- Give anti-nausea and anti-vomiting drugs if there is vomiting.
- Give drugs for diarrhoea.
- Monitor closely for dehydration. Dogs without an appetite that are experiencing vomiting and diarrhoea may require intravenous rehydration therapy.

Multidog households
Any dog that is suspected of being infected should be isolated from other dogs. Other dogs should be vaccinated, if they haven't already been.

CDV doesn't last long outside the dog's body; heat, sunlight, most detergents, soaps, and various chemicals inactivate it. After an infected dog has been removed from the premises, contaminated objects and living areas should be disinfected with a 1:30 bleach-water solution.

One-dog households
If a dog has died from CDV infection, pet owners should wait about one month before introducing a new puppy or dog into the home. Contaminated objects and living areas should be thoroughly cleaned and disinfected with a 1:30 bleach-water solution.

Prognosis
Prognosis depends on the strain of canine distemper virus and the dog's immune response. After the initial fever passes, the disease can progress in a number of ways.

- More than half of all dogs die between 2 weeks and 3 months after infection, usually from central nervous system complications.
- Most veterinarians recommend euthanasia for dogs that suffer severe problems with the central nervous system.
- Dogs that appear to recover may develop chronic or fatal central nervous system problems.
- Dogs with mild symptoms may recover, though the symptoms can persist for several months or longer.
- Dogs with a strong immune response may never show any signs of infection.
- Once a dog has fully recovered, it is not contagious.
Canine parvovirus

Parvoviruses are a large group; almost every mammal species (including humans) seems to have its own parvovirus.

Each virus will infect specific animals i.e. the pig parvovirus will not infect people, the canine parvovirus will not infect cats etc. The canine parvovirus will affect most members of the dog family (wolves, coyotes, foxes etc.)

Disinfecting the environment

Canine parvovirus is especially hardy in the environment. It is able to stand freezing temperatures in the ground outdoors and many household disinfectants are not capable of killing it indoors.

Infected dogs shed large amounts of the virus (in their stool) during the 2 weeks following exposure. Because such enormous amounts of virus are shed, there is a great potential for environmental contamination when an infected dog has been there.

It is carried on shoes or clothing to new areas, which accounts for its rapid worldwide spread shortly after its original appearance.

- Indoors, the virus is no longer infective within one month; therefore, it should be safe to introduce a new puppy indoors one month after the infection has ended.
- Outdoors, shaded areas should be considered contaminated for seven months. Areas with good sunlight exposure should be considered contaminated for five months.

The best and most effective disinfectant against viruses (including parvovirus) is bleach which completely kills parvovirus. One part bleach is mixed with 30 parts water and is applied to bowls, floors, surfaces, toys, bedding, and anything contaminated.

Prevention

Parvovirus usually only occurs in puppies. However, adult dogs should still be vaccinated against it.

Puppies are protected by their mothers milk that is produced in the first few days after they have been born. This milk is called colostrum and the protection will last for up to 4 months.
Treatment

It is common to hospitalise a puppy because:

- fluids must be replaced as the puppy can suffer from severe diarrhoea
- antibiotics need to be given
- nausea (sickness) must be controlled

When the puppy returns home it will need continual care.

Medications

Your puppy will be finishing up a course of antibiotics and may also be on some medication for nausea or diarrhoea. It is important that you give your puppy the medication prescribed for the full amount of time it has prescribed.

Diet

Your puppy is recovering from some extensive damage to his/her intestinal tract. It is typical for stool to be a little loose at first or for no stool to be produced for a few days as the tract recovers.

Your puppy may be very hungry after going so long without food. Do not allow the puppy to gorge as this can result in vomiting or diarrhoea. Feed smaller meals separated by at least an hour or two.

Exercise

Your puppy should be considered contagious to other puppies for a good month so it is important to restrict trips to the park, obedience school or other areas.

Other pets

Cats and humans are not susceptible to canine parvovirus infection.
Kennel cough

Kennel cough (or Canine Contagious Respiratory Disease – CCRD) is a contagious respiratory disease of dogs. It is a highly infectious disease which is most prevalent where large numbers of dogs are kept within the same air space. Infection follows direct or airborne contact and is caused by a virus and bacteria working together on the lining of the respiratory tract.

Symptoms

Kennel cough in dogs shows signs of a coarse, dry, hacking cough about three to seven days after the dog is initially infected.

Many dogs that acquire kennel cough will cough every few minutes, all day long. Their general state of health and alertness will be unaffected; they usually have no rise in temperature, and do not lose their appetite.

The signs of canine cough usually last from 7 to 21 days and can be very annoying for the dog and the dog’s owners.

Life threatening cases of kennel cough are extremely rare and a vast majority of dogs that get the infection will recover on their own with no medication.

It is possible to vaccinate dogs against kennel cough and many kennels insist on recent vaccination. This is administered in the form of a nasal spray which is effective for 6 months.

Transmission

The bacterial spores are present in the expired air of an infected dog.

The reason this disease seems so common, and is even named ‘kennel’ cough, is that wherever there are numbers of dogs confined together in an enclosed environment such as a kennel, animal shelter, or indoor dog show, the disease is much more likely to be spread.

Note: Even in the most hygienic, well ventilated, spacious kennels the possibility of a dog getting kennel cough exists.

Treatment

Many dogs that contract kennel cough will display only minor signs of coughing that may last seven to ten days and will not require any medication at all.

The majority of dogs with the disease continue to eat, sleep, play and act normally.

Treatment is generally limited to relieving the coughing.
Other canine diseases

**Infectious Canine Hepatitis**

Infectious Canine Hepatitis (Rubarth’s disease) is a viral disease of dogs and foxes that targets the liver, lymphoid tissue and vascular epithelium. It is most common in young puppies and often has a sudden onset resulting in death. The virus that causes hepatitis can survive outside of a host for up to 10 days which means that it can be spread both directly and indirectly. However ingestion and aerosol are the main routes of transmission.

Dogs that are recovering from infection can continue to excrete virus in their faeces for up to 6 months. Following recovery around 20% of dogs develop ‘blue eye’ in one or both eyes. This virus is very painful and infected dogs will often show signs of depression, anorexia, pyrexia, haemorrhagic diarrhoea and severe abdominal pain. Treatment is limited and extends to fluid replacement therapy, blood transfusion, antibiotics and B vitamin therapy.

**Para influenza**

Para influenza is a virus that causes symptoms very similar to Kennel Cough. This virus has an incubation period of 5-7 days and is transmitted via direct or indirect contact. Treatment is limited however most infected dogs survive.

**Canine Leptospirosis**

Canine Leptospirosis is caused by a bacterium that causes sudden death in young puppies, depression, pyrexia, anorexia, polydipsia, vomiting, haemorrhagic diarrhoea, petechial haemorrhage on mucous membranes, jaundice, pain, oral ulceration and death. Affects the liver and kidneys and is transmissible to humans! It is transmitted via indirect contact of urine. Rats also play a large role in transmitting the disease in their urine. Treatment is administered in the form of fluid replacement therapy, blood transfusion and intensive antibiotic treatment.

**Resources and further reading**

There will be a great deal of materials on animal health and diseases in your college library. You might find the following particularly useful:

- Cooper, B, Mullineaux, E and Turner, L (eds), *BSAVA Textbook of Veterinary Nursing*, British Small Animal Veterinary Association, 2011
Knowledge quiz

1. Which of the following diseases affecting dogs is caused by bacteria?
   a) distemper
   b) parvovirus
   c) kennel cough

2. When should dogs be vaccinated against distemper?

3. Give three symptoms of parvovirus:
   a) 
   b) 
   c) 

4. How should you disinfect the environment following a parvovirus infection?

5. What is the main symptom of kennel cough?

6. How can kennels reduce the risk of a kennel cough outbreak?

7. For how long after recovering from infection may a dog continue to pass on Infectious Canine Hepatitis
Acknowledgements

This learning pack has been produced by the Land Based Colleges National Consortium Ltd.

The LBCNC is a consortium of colleges working in the land-based sector which cooperate in the development and production of quality flexible learning materials which encourage independent learning.

We would like to acknowledge the contributions made by the following individuals and colleges in the development of this learning pack.

Initial source material and guidance
Caroline Georghiou, Myerscough College

Critical review and comment
Claudine Sutton, Derby College
Maz Hopcroft, Sparsholt College

Additional source material
Debbie Smith, Bridgwater College