

## CHAPTER 8.14.

# INFECTION WITH RABIES VIRUS

### Article 8.14.1.

#### General provisions

Rabies is a disease caused by neurotropic viruses of the Genus *Lyssavirus* in the family *Rhabdoviridae* of the order Mononegavirales and is transmissible to all mammals. Populations of the orders Carnivora and Chiroptera are considered to be the main reservoir hosts.

Rabies virus, the taxonomic prototype species in the *Lyssavirus* Genus formerly referred to as 'classical rabies virus, genotype-1', is found in most parts of the world, and is responsible for the vast majority of reported animal and human rabies cases. The most common source of exposure of humans to rabies virus is the dog.

Other *Lyssavirus* species can cause clinical signs similar to those caused by rabies virus, but have more restricted geographical and host range, with the majority having been isolated only from bats, thus having limited public and animal health implications.

The aim of this chapter is to mitigate the *risk* to the public and animal health posed by *infection* with rabies virus and to prevent the international spread of rabies virus.

*Official control programmes* to reduce the economic and public health burden of rabies are recommended, even in those countries where only bat-mediated rabies or wild carnivore-mediated rabies are present.

The *incubation period* for rabies is highly variable depending on viruses, hosts and sites of entry, and the majority of infected animals will develop disease within six months of exposure.

The *infective period* for rabies virus is variable and can start before the onset of clinical signs. In dogs, cats and ferrets virus shedding can start up to ten days before the onset of the first clinical signs and last until death.

For the purposes of the *Terrestrial Code*:

- a *case* is any *animal* infected with rabies virus;
- dog-mediated rabies is defined as any *case* caused by rabies virus maintained in the dog population (*Canis lupus familiaris*) independently of other animal reservoir species, as determined by epidemiological studies;
- the *incubation period* of *infection* with rabies virus shall be six months.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.14.2.

**Country or zone free from infection with rabies virus**

- 1) A country or *zone* may be considered free from *infection* with rabies virus when:
  - a) it has a record of regular and prompt animal disease reporting in accordance with Chapter 1.1.;
  - b) *infection* with rabies virus is a *notifiable disease* in the entire country and any change in the epidemiological situation or relevant events are reported in accordance with Chapter 1.1.;
  - c) all susceptible animals showing clinical signs suggestive of rabies are subjected to appropriate field and laboratory investigations;
  - d) an ongoing system of *surveillance* in accordance with Chapter 1.4. and Article 8.14.12. has been in place for the past 24 months, with a minimum requirement being an *early warning system* to ensure investigation and reporting of animals suspected of being infected;
  - e) regulatory measures for the prevention of *infection* with rabies virus are implemented in accordance with the relevant recommendations in the *Terrestrial Code* including Articles 8.14.5. to 8.14.10.;
  - f) no *case* of indigenously acquired *infection* with rabies virus has been confirmed during the past 24 months;
  - g) if an imported *case* is confirmed outside a *quarantine station*, epidemiological investigations have ruled out the possibility of secondary *cases*.
- 2) Preventive vaccination of animals does not affect the free status.
- 3) An imported human case of rabies does not affect the free status.

Article 8.14.3.

**Country or zone infected with rabies virus**

A country or *zone* that does not fulfil the requirements of Article 8.14.2. is considered to be infected with rabies virus.

Article 8.14.4.

**Country or zone free from dog-mediated rabies**

- 1) A country or *zone* may be considered free from dog-mediated rabies when:
  - a) it has a record of regular and prompt animal disease reporting in accordance with Chapter 1.1.;
  - b) dog-mediated rabies is a *notifiable disease* in the entire country and any change in the epidemiological situation or relevant events are reported in accordance with Chapter 1.1.;
  - c) an ongoing system of *surveillance* in accordance with Chapter 1.4. and Article 8.14.12. has been in place for the past 24 months, with a minimum requirement being an *early warning system* to ensure investigation and reporting of animals suspected of *infection* with rabies virus;
  - d) regulatory measures for the prevention of *infection* with rabies virus are implemented in accordance with the relevant recommendations in the *Terrestrial Code* including Articles 8.14.5. to 8.14.10.;
  - e) no *case* of indigenously acquired dog-mediated rabies has occurred during the past 24 months;
  - f) a dog population control programme has been implemented and maintained in accordance with Chapter 7.7.
- 2) The following do not affect the status of a country or *zone* free from dog-mediated rabies:
  - preventive vaccination;
  - presence of rabies virus in *wild animals*;
  - imported human cases of rabies;
  - imported *case* outside a *quarantine station* whenever epidemiological investigations have ruled out the possibility of secondary *cases*.

Article 8.14.5.

**Recommendations for importation of domestic and captive wild mammals from countries or zones free from infection with rabies virus**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) and either:
  - a) were kept since birth or at least six months prior to shipment in a free country or zone; or
  - b) were imported in accordance with Articles 8.14.7., 8.14.8., 8.14.9. or 8.14.10.

Article 8.14.6.

**Recommendations for importation of wild and feral mammals from countries or zones free from infection with rabies virus**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) and either:
  - a) have been captured at a distance that precludes any contact with animals in an infected country or zone. The distance should be defined in accordance with the biology of the species exported, including home range and long distance movements; or
  - b) have been kept in captivity for the six months prior to shipment in a country or zone free from *infection* with rabies virus.

Article 8.14.7.

**Recommendations for importation of dogs, cats and ferrets from countries or zones infected with rabies virus**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* complying with the model of Chapter 5.11. attesting that the animals:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were permanently identified and their identification number stated in the certificate;
- 3) and either:
  - a) were vaccinated or revaccinated in accordance with the recommendations of the manufacturer, with a vaccine that was produced in accordance with the *Terrestrial Manual* and were subjected not less than 3 months and not more than 12 months prior to shipment to an antibody titration test as prescribed in the *Terrestrial Manual* with a positive result of at least 0.5 IU/ml;or
  - b) were kept in a *quarantine station* for six months prior to shipment.

Article 8.14.8.

**Recommendations for importation of domestic ruminants, equids, camelids and suids from countries considered infected with rabies**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were permanently identified and the identification number stated in the certificate;

- 3) EITHER
- a) were kept for the 6 months prior to shipment in an *establishment* where there has been no case of rabies for at least 12 months prior to shipment;
- OR
- b) were vaccinated or revaccinated in accordance with the recommendations of the manufacturer. The vaccine was produced and used in accordance with the *Terrestrial Manual*.

Article 8.14.9.

#### **Recommendations for importation of susceptible laboratory animals from countries or zones infected with rabies virus**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were born and kept since birth in a biosecure facility as described in the *Terrestrial Manual* chapter on Management of veterinary diagnostic laboratories, and where there has been no case for at least 12 months prior to shipment.

Article 8.14.10.

#### **Recommendations for importation of wildlife from countries considered infected with rabies**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were kept for the six months prior to shipment in an *establishment* where separation from susceptible animals was maintained and where there has been no case of rabies for at least 12 months prior to shipment.

Article 8.14.11.

#### **OIE endorsed official control programme for dog-mediated rabies**

The overall objective of an OIE endorsed *official control programme* for dog-mediated rabies is for Member Countries to progressively improve their dog-mediated rabies situation and eventually be able to make a self-declaration in accordance with Chapter 1.6. as a country free from dog-mediated rabies. The *official control programme* should be applicable to the entire country even if certain measures are directed towards defined subpopulations only.

Member Countries may, on a voluntary basis, apply for endorsement of their *official control programme* for dog-mediated rabies when they have implemented measures in accordance with this article.

For its *official control programme* for dog-mediated rabies to be endorsed by the OIE, the Member Country should:

- 1) have a record of regular and prompt animal disease reporting in accordance with Chapter 1.1.;
- 2) submit documented evidence (including relevant legislation) of its capacity to control dog-mediated rabies. This evidence may be provided using data generated by the OIE PVS Pathway;
- 3) submit a detailed plan of the programme to control and eventually eradicate dog-mediated rabies in the country including:
  - a) the timeline;
  - b) the performance indicators for assessing the effectiveness of the control measures to be implemented;
  - c) documentation indicating that dog-mediated rabies is a *notifiable disease* and that the *official control programme* for dog-mediated rabies is applicable to the entire country;
- 4) submit a dossier on dog-mediated rabies in the country describing the following:
  - a) the general epidemiology in the country highlighting the current knowledge and gaps in knowledge and the progress that has been made in controlling dog-mediated rabies;
  - b) the measures implemented to prevent introduction of *infection*;
  - c) the rapid detection of, and response to, dog-mediated rabies cases, to reduce the *incidence* and to eliminate transmission in at least one *zone* in the country;
  - d) dog population control programme in accordance with Chapter 7.7.;

- e) collaboration agreements or programmes with other *Competent Authorities* such as those responsible for public health and management of *wild* and *feral animals*;
- 5) submit evidence that *surveillance* of dog-mediated rabies is in place:
  - a) by taking into account provisions in Chapter 1.4. and Article 8.14.12.;
  - b) by having diagnostic capability and procedures, including regular submission of samples to a *laboratory* that carries out diagnosis to support epidemiological investigation;
- 6) where *vaccination* is practised as part of the *official control programme* for dog-mediated rabies, provide:
  - a) evidence (such as copies of legislation) that *vaccination* of selected populations is compulsory and the vaccines are produced in accordance with the *Terrestrial Manual*;
  - b) detailed information on *vaccination* campaigns, in particular on:
    - i) target *populations*;
    - ii) monitoring of *vaccination* coverage;
    - iii) technical specifications of the vaccines used and description of the regulatory procedures in place;
- 7) provide preparedness and contingency plans.

The Member Country's *official control programme* for dog-mediated rabies will be included in the list of programmes endorsed by the OIE only after the submitted evidence has been accepted by the OIE. Retention on the list requires an annual update on the progress of the *official control programme* and information on significant changes concerning the points above. Changes in the epidemiological situation and other significant events should be reported to the OIE in accordance with Chapter 1.1.

The OIE may withdraw the endorsement of the *official control programme* if there is evidence of:

- non-compliance with the timelines or performance indicators of the programme; or
- significant problems with the quality of the *Veterinary Services* as per Section 3 of the *Terrestrial Code*; or
- an increase in the *incidence* of dog-mediated rabies that cannot be explained or addressed by the programme.

#### Article 8.14.12.

#### Surveillance

- 1) A Member Country should justify the *surveillance* strategy chosen in accordance with Chapter 1.4., as being adequate to detect the presence of *infection* with rabies virus, given the prevailing epidemiological situation. *Surveillance* should be under the responsibility of the *Veterinary Authority*.

For the purposes of rabies *surveillance* a suspected *case* is a susceptible animal that shows any change in behaviour followed by death within ten days or that displays any of the following clinical signs: hypersalivation, paralysis, lethargy, abnormal aggression, abnormal vocalisation.

In particular, Member Countries should have in place:

- a) a formal and ongoing system for detecting and investigating suspected *cases*;
- b) a procedure for the rapid collection and transport of samples from suspected *cases* to a *laboratory* for diagnosis;
- c) a system for recording, managing and analysing diagnostic and *surveillance* data.

Rabies *surveillance* provides data that are indicators of the effectiveness of a rabies control programme and of the maintenance of freedom from *infection* with rabies virus in a country or *zone*.

- 2) In addition to principles in Chapter 1.4. the following are critical for rabies *surveillance*:

- a) Public awareness

The *Veterinary Services* should implement programmes to raise awareness among the public, as well as *veterinary paraprofessionals*, *veterinarians* and diagnosticians, who should report promptly any *cases* or suspected *cases*.

- b) Clinical surveillance

Clinical *surveillance* is a critical component of rabies *surveillance* and essential for detecting suspected *cases*. Therefore, a process should be in place and documented for the identification and investigation of suspected *cases* as well as for sample collection for laboratory diagnosis when rabies cannot be ruled out. Animals (especially carnivores and bats) found dead are recognised as an important source of information for rabies *surveillance* and should be part of the clinical *surveillance*.

Laboratory testing should use the recommended sampling techniques, types of samples and tests described in the *Terrestrial Manual*.

c) Sampling

*Surveillance* should target suspected *cases*. Probability sampling strategies are not always useful, as sampling of healthy animals (e.g. not involved in human exposure) rarely returns useful *surveillance* data.

d) Epidemiological investigation

In all situations, especially in countries or *zones* considering self-declaration of freedom, routine epidemiological investigation of *cases* and molecular characterisation of virus isolates from human and animal cases is encouraged. Such an investigation allows identification of sources of *infection*, their geographic origin and their epidemiological significance.

Article 8.14.13.

### Cooperation with other Competent Authorities

The *Veterinary Authority* should coordinate in a timely manner with public health and other *Competent Authorities* and share information to support the decision-making process for the management of human and animal exposure.

In all regions, *Veterinary Authorities* of neighbouring countries should cooperate in the control of dog-mediated rabies.

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NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2019.