



MEETING OF THE OIE AD HOC GROUP ON RABIES¹

Paris, 8 – 10 October 2019

A meeting of the OIE *ad hoc* Group on rabies (hereafter referred to as the Group) was held at the OIE Headquarters in Paris from 8 to 10 October 2019.

1. Opening and adoption of agenda and appointment of a chair and rapporteur

Dr Matthew Stone, Deputy Director General for International Standards and Sciences of the OIE, welcomed the Group. He thanked the experts for their availability and contribution to the work of the OIE and extended his appreciation to their institutes and national governments for allowing their participation in this meeting.

Dr Stone highlighted that one of the important amendments of Chapter 8.14. on Infection with rabies of the *Terrestrial Animal Health Code (Terrestrial Code)*, adopted in May 2019 by the OIE World Assembly was the inclusion of a new article on OIE endorsed official control programme for dog-mediated rabies, and that this Group was tasked to draft a questionnaire for the application for the endorsement by the OIE of an official control programme for dog-mediated rabies.

Dr Stone pointed out that the overall objective of an OIE endorsed official control programme for dog-mediated rabies was internationally recognising Members' national programmes to progressively assist in the control of the disease. He added that this international recognition would be a great incentive for countries to continue their elimination efforts and for decision makers to invest in rabies elimination. He noted that rabies is not a disease for which the OIE grants an official status, but publication of self-declaration of freedom from diseases was a procedure offered by the OIE to increase transparency and visibility of Members' self-declared animal health status.

Dr Stone noted the two other tasks of the Group, notably the discussions on oral rabies vaccination of dogs and the provisions for importation of dogs, cats and ferrets, and encouraged the Group to provide its recommendations based on their experience and scientific expertise.

Dr Gregorio Torres, Head of Science Department, also welcomed and thanked the Group for their commitment and introduced the Terms of Reference (ToR) and the draft agenda of the meeting. He reminded the Group of the confidentiality of documents and acknowledged that all experts had signed the forms for undertaking of confidentiality.

The meeting was chaired by Dr Gideon Brückner, and Dr Thomas Müller was appointed as rapporteur. The draft agenda was adopted by the Group.

The declared interests were reviewed by the OIE and the Group and it was agreed that none represented a potential conflict in relation to the ToR of the meeting.

The Agenda and list of participants are presented as Appendices I and II, respectively.

¹ Note: This ad hoc Group report reflects the views of its members and may not necessarily reflect the views of the OIE. This report should be read in conjunction with the February 2020 report of the Scientific Commission for Animal Diseases because this report provides its considerations and comments. It is available at: <http://www.oie.int/en/international-standard-setting/specialists-commissions-groups/scientific-commission-reports/meetings-reports/>

2. Introduction to the OIE procedures for official recognition of disease status and for the endorsement of national official control programmes

Dr Marija Popovic of the OIE Status Department gave a presentation on the two different OIE procedures available to OIE Members in terms of rabies: i) procedure for the publication of a self-declaration of a country or a zone; and ii) procedure for the endorsement of national official control programmes.

In relation to the procedure for official endorsement, she made note of Members' obligation to annually reconfirm their progress made on the OIE endorsed official control programme in accordance with the provisions of the relevant disease chapter of the *Terrestrial Code*. She also highlighted the main roles of the questionnaire as follows: i) to provide guidance to Members on how to collect and compile documented evidence that supports demonstration of compliance with the requirements described in the *Terrestrial Code*; ii) to use as a tool to provide a standardised and transparent format to the submission and evaluation process; and iii) to ensure that information provided by Members adequately describes the animal health situation with regard to a particular disease, when submitting an application for official recognition of disease status or for the endorsement of national official control programmes.

It was highlighted that the questionnaire would be proposed to be published on the OIE website, and not in the OIE *Terrestrial Code* to allow its re-examination and amendment when necessary to ensure it remains up-to-date and fit for purpose as a tool for compilation and evaluation of applications by Members and experts, without the effort and timelines associated with the adoption process for amendments to texts of the *Terrestrial Code*.

Dr Lea Knopf provided a brief overview on World Health Organization's (WHO) Generic Framework for the control, elimination and eradication of Neglected Tropical Diseases (NTD). It was developed in 2015 as part of the NTD roadmap which set regional and global targets for these diseases. The framework defines stages of countries from control, elimination of transmission (verification), elimination as a public health problem (validation) to eradication (certification) and formal WHO accreditation procedures associated with achieving elimination or eradication. Rabies is included in the list of NTDs and disease specific guidance for validation and a proposed approach for verification, jointly with OIE, is available in the 3rd WHO Rabies Expert Consultation on rabies². The OIE self-declaration of freedom from dog-mediated rabies would be an important pillar for verification. WHO additionally would need assurance on continued availability of post-exposure prophylaxis and surveillance.

3. Questionnaire for the application for the endorsement by the OIE of an official control programme for dog-mediated rabies

A draft questionnaire was prepared by the OIE Secretariat based on the existing questionnaires for the OIE endorsed official control programmes for FMD, CBPP and PPR, annex 14 of the 3rd WHO Rabies Expert Consultation on rabies and Article 8.14.11. of the *Terrestrial Code*.

The Group noted that the inclusion of rabies in the list of diseases for which the OIE endorses the national official control programmes responds to Members' requests and should support their efforts to eliminate dog-mediated rabies in line with the Global Strategic Plan to End Human Deaths from Dog-mediated Rabies by 2030.

The Group proposed to add an introductory paragraph to the questionnaire stating that the purpose and overall objective of an OIE endorsed official control programme for dog-mediated rabies is an incentive for Members to progressively improve their public health situation related to dog-mediated rabies, and to enable them to eventually make a self-declaration as a country or zone free from dog-mediated rabies.

The Group proposed four sections for the questionnaire:

3.1. Introduction

In this section, Members should provide detailed information on the human and dog demographics relevant to the spread of rabies virus in dogs (i.e. population size, distribution, human:dog ratio, etc.).

² <https://apps.who.int/iris/bitstream/handle/10665/272364/9789241210218-eng.pdf>

3.2. Governance of the national control programme for dog-mediated rabies

Given the zoonotic nature and specificities of rabies, the Group underlined the importance for Members to identify all competent authorities involved in the supervision, control, enforcement and monitoring of rabies-related activities. Evidence should be provided on the involvement, collaboration and commitment of all key authorities (e.g. Veterinary Services, human health authorities and other competent authorities).

The Group discussed the differences in rabies governance structures among Members. Their roles and the responsibilities of all competent authorities should be clearly described in the national control programme. Members should also list the legal framework that supports the rabies control and elimination activities.

3.3. Current status and control of dog mediated rabies

This section should include information on the following:

a) Epidemiology

Members should demonstrate a good understanding of the epidemiology of the disease by describing the spatial and temporal rabies situation of at least the past five years, making references to the existing knowledge and knowledge gaps. Understanding of the epidemiological situation in the surrounding countries should also be provided.

b) Surveillance

Members should provide documented evidence that surveillance for rabies in the country complies with provisions of the *Terrestrial Code*. In line with the provisions for country or zone free from dog-mediated rabies, Members should provide information on the number of suspected and confirmed animal and human cases and the number tested negative for at least the past 24 months. Members are also encouraged to provide information on the dog-bite incidents and number of people that receive post-exposure prophylaxis.

c) Rabies diagnosis

Members should demonstrate their laboratory capacity to conduct diagnostic tests in line with the recommendations of the *Terrestrial Manual*. It was also noted that if rabies laboratory tests were not carried out in the country, evidence should be provided to demonstrate prompt access to laboratory testing via facilities in other countries.

d) Dog-mediated rabies control strategy

Members should describe each of the components of the current dog-mediated rabies control strategy.

With regards the vaccination programme, Members should provide information on the vaccination strategies, and on the results of the vaccination campaigns during the last 24 months. The Group highlighted that information on the vaccines used, including the registration and licensing process, and evidence on their compliance with Chapter 3.1.17. of the *Terrestrial Manual* is essential.

With regard to dog population management, the Group was informed that an OIE *ad hoc* Group was planned to take place to amend Chapter 7.7. of the *Terrestrial Code* and it was recommended to ensure harmonisation of the questionnaire and the amended chapter.

The Member's dossier should also describe the measures implemented to prevent reintroduction of rabies, including the requirements for importing susceptible animals.

e) Case investigation procedures

Members should describe their procedures to investigate suspected or confirmed rabies cases in humans and animals.

f) National and international collaboration

The Group emphasised the importance of intersectoral collaboration following the One Health Approach. Members should describe the existing coordination mechanisms between the relevant competent authorities and the private sector at national and international level. Members should demonstrate their active role in coordination activities with neighbouring countries and other countries within their region.

g) Rabies awareness and education programmes

Members should describe their awareness campaigns, training and education programmes on rabies, responsible dog ownership and dog bite prevention, by highlighting the targeted audience and how the awareness and education programmes are coordinated with other competent authorities.

3.4. Work plan, timelines and budget of the official control programme for dog-mediated rabies for the next five years

The Group emphasised the importance of providing information on the work plan, timelines and budget of the control programme as well as defining performance indicators for the next five years. To assist Members in collating this information, the Group agreed to include a reference to examples of tools and resources available in the public domain³ for planning. It was also pointed out that Members should provide in their annual reconfirmation sound evidence to demonstrate positive progress along the OIE endorsed official control programme and with favourable results in the established performance indicators.

Throughout the questionnaire, the Group aligned the terminology to ensure consistency with the *Terrestrial Code* and particularly with Chapter 8.14., Chapter 7.7. and the Glossary.

The Group advised Members to provide maps, figures and tables wherever possible to facilitate the evaluation process.

4. Rabies oral vaccination for dogs

The Group considered a discussion paper on dog oral rabies vaccination drafted by two members of the Group prior to the meeting.

The objective of the discussion paper was to review the state of play and strategic challenges that are impeding the use of oral rabies vaccination in the field as a complementary measure to improve the overall rabies vaccination coverage.

The Group noted that the elimination of canine rabies from countries to date, was achieved through parenteral vaccination of dogs and emphasised that parenteral vaccination should remain the foundation of any dog-mediated rabies elimination programme. However, it was also recognised that the methods that were successful in eliminating canine rabies from these countries may not be easily replicated in all countries. In some circumstances, accessing certain dog populations (e.g. stray dogs) may be resource demanding posing a challenge to some countries to reach an appropriate dog population immunity, sufficient to break the cycle of virus transmission.

The Group emphasised the need to understand the role of dog populations with limited accessibility to parenteral vaccination in the epidemiology of rabies. It was agreed that, if those populations play a minor role in the epidemiology of the disease, it is more cost-effective from the disease control point of view, to concentrate efforts on parenteral vaccination in the population strata that play a major role in the epidemiology of the disease.

The confusing landscape of existing guidance documents and perspectives with regard to oral rabies vaccination of dogs was noted. The Group extensively discussed the factors impeding utilisation of oral vaccines in dog vaccination programmes, and how to assuage important uncertainties.

³ <https://caninerabiesblueprint.org/?lang=en>

4.1. Efficacy and safety of oral rabies vaccines

The Group highlighted the importance of conducting and publishing benchmark immunogenicity studies in dogs to demonstrate efficacy of oral rabies vaccines currently licensed for wildlife.

Considering the similar immunological characteristics of dog populations across countries, the Group emphasised that the results of the immunogenicity studies conducted in one country should be considered valid in other countries.

The Group took note of the existence of technically complex guidelines for regulatory purposes, and the absence of easily readable documents for policy makers and rabies control programme managers. The Group acknowledged the need to provide guidance on how policy makers should interpret safety evaluation studies of already licensed oral rabies vaccines for wildlife.

Despite the current challenges, the Group also acknowledged the existence of several vaccines already licenced for wildlife by regulatory bodies in North America and Europe that could be considered good candidates to conduct field trials in dogs for safety and efficacy.

4.2. Licensure of oral rabies vaccines

Vaccine licensure was identified as one of the major challenges in conducting immunogenicity studies and field trials in dogs. These trials were considered crucial to demonstrate fitness for purpose of oral rabies vaccination as a supplementary tool.

The Group noted that vaccine licensure is not a globally harmonised process and licensure in one country may not be acceptable to another country. Despite the difficulties, the Group acknowledged that some countries in Asia and Africa were making good progress in obtaining a conditional license by national regulatory bodies that may allow proof-of-concept studies and implementation of field trials. The Group encouraged those countries that have done field trials to share the results as soon as they become available.

The Group recommended that the OIE continue its efforts to promote the concept of vaccine regulatory convergence to Members to also facilitate the licensure of oral rabies vaccines for public health importance.

4.3. Capacity for oral rabies vaccines and cost

The Group discussed the current absence of oral vaccine baits for use in dogs manufactured at an amount sufficient to supply large scale dog vaccination programmes. A lack of demand from national dog rabies elimination programmes may limit the production capacity and thus keep the cost high. However, the Group noted that the production and cost would probably adapt to the vaccine demand should dog oral rabies vaccines be increasingly used.

4.4. Role of oral rabies vaccine in a vaccination programme

Vaccination programmes should be designed using fit-for-purpose vaccination methodology and should take into consideration the dog population and the capacities of the vaccination teams.

New tools have been developed to aid in the design of cost-effective rabies elimination programmes, with special consideration to the role and cost of alternative vaccination methods like oral rabies vaccination. The Group encouraged countries to make use of the existing tools to define the best vaccination strategy that would ensure adequate vaccination coverage.

The Group agreed to review the draft discussion paper after the meeting and proposed to circulate it among the OIE Reference Laboratories for rabies before presenting it to the Scientific Commission for Animal Diseases at its February 2020 meeting.

The Group also strongly suggested the drafting of an article on oral dog rabies vaccination for publication in the OIE *Bulletin*.

5. Article 8.14.7. Recommendations for importation of dogs, cats and ferrets from countries considered infected with rabies

The Group was briefed on the divergent views between the Specialist Commissions, the 2017 *ad hoc* Group on rabies and the comments submitted by some Members during the last revision of the article on the timeframe for vaccination, testing and shipment of dogs prior to importation from infected countries.

The Group was requested to provide its expert opinion on the likelihood of vaccinated animals with positive antibody titres incubating the disease and thus posing a risk to importing countries.

The Group considered the scientific rationale provided by some Members and extensively discussed the existing scientific evidence regarding vaccination, immune response, and risk of introduction of rabies. The Group made reference to the scientific literature cited in its 2017 report⁴.

The Group reiterated that there is enough scientific evidence to demonstrate that dogs vaccinated with high quality vaccines and tested one month after vaccination with a positive result of at least 0.5 IU/ml should be considered safe for importation.

It was agreed that the great majority of rabid dogs die before eliciting a measurable immunological response (i.e. antibodies). In the case of apparently healthy dogs infected with rabies virus showing antibodies (which the Group considered as an extremely rare occurrence), they would certainly exhibit clinical signs and die within the proposed 30 days period. Thus, the presence of antibodies in a healthy dog one month after vaccination can only demonstrate that the dog had been vaccinated with a high-quality vaccine.

The Group commented that the current provisions of Article 8.14.7. were more likely based on the results of a model that used theoretical parameters, and therefore was not based on current scientific evidence.

The Group indicated that facilitating safe movement of dogs from infected countries, by reducing the time between vaccination and shipment, may also be an incentive to comply with the provisions of the article.

The Group requested subject-matter expert to conduct a literature review to compile the existing evidence to support its view on the unlikelihood that dogs with positive antibody titres may be incubating the disease.

Finally, the Group noted that since the evidence considered in reviewing the article was specific to dogs, if the Specialist Commissions take forward the recommendation to adjust the time period for vaccination and demonstration of a protective titre prior to importation, specific consideration should be given to whether this change should also apply to the other species currently covered by Article 8.14.7 (i.e. cats and ferrets).

6. Finalisation and adoption of the draft report

The Group reviewed and amended the preliminary draft report provided by the rapporteur. The Group agreed that the report would be subject to a short period of circulation in the Group for comments before the final adoption.

.../Appendices

⁴ Rupprecht *et al.*, 1990; Aubert, 1992; Shimazaki *et al.*, 2003; Muirhead *et al.*, 2008; Brown *et al.*, 2011; Wallace *et al.*, 2017,

Appendix I

MEETING OF THE OIE AD HOC GROUP ON RABIES

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Agenda

1. Opening
 2. Adoption of the agenda and appointment of chairperson and rapporteur
 3. Introduction to the OIE procedures for official recognition of disease status and for the endorsement of national official control programmes
 4. Draft the questionnaire for the application for the endorsement by the OIE of an official control programme for dog-mediated rabies
 5. Rabies oral vaccination for dogs
 6. Importation of dog, cats and ferrets from countries considered infected with rabies
 7. Finalisation and adoption of the draft report
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Appendix II

MEETING OF THE OIE AD HOC GROUP ON RABIES
Paris, 8–10 October 2019

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