

OIE standards and guidelines related to trade and poultry diseases

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Summary

Recognising how difficult it is for some countries to fully eliminate animal diseases from their territory as a whole or to maintain an animal disease free status in parts of their national territory, the World Organisation for Animal Health (OIE) has introduced the concepts of 'zoning' and 'compartmentalisation' for the purposes of disease control and international trade. Full definitions of these terms are contained in the OIE *Terrestrial Animal Health Code*. Compartmentalisation is based on a functional separation by biosecurity measures, whereas zoning is based on a geographical separation. In both cases, relevant animal subpopulations should be clearly defined, recognisable and traceable and should be epidemiologically separated from other subpopulations. Veterinary Authorities as well as the private sector have important responsibilities in establishing and maintaining zones and compartments.

Keywords

Avian influenza – Compartmentalisation – International trade – Newcastle disease – OIE standards – World Organisation for Animal Health – Zoning.

Introduction

The World Organisation for Animal Health (OIE) (www.oie.int) is an independent intergovernmental organisation founded in 1924, which has 172 Member Countries and Territories (as of January 2008). The OIE's mandate is to improve animal health worldwide. The organisation fulfils this mandate through five of its six primary objectives, namely:

- to ensure transparency in the global animal disease situation
- to collect, analyse and disseminate veterinary scientific information and to provide a continuous update on disease prevention and control methods
- to encourage international solidarity in the control of animal diseases

- to safeguard world trade by publishing health standards for international trade in animals and animal products
- to improve the legal framework and resources of Veterinary Services.

For several years the OIE has also had the additional objective of improving animal production food safety and animal welfare.

The OIE's headquarters (the Central Bureau) are in Paris, France, and there are nine regional offices across five regions (Africa, Asia and the Pacific, the Middle East, Europe, and the Americas). The OIE also operates two regional animal health centres in collaboration with the Food and Agriculture Organization of the United Nations (FAO); one in Bamako and the other in Beirut. These centres serve as regional centres of expertise and more are planned for the future.

In order to meet the objective of ensuring transparency in the global animal disease situation, the OIE manages the World Animal Health Information System (WAHIS) (1), which is based on the commitment of Member Countries and Territories to notify the OIE of the main animal diseases, including zoonoses, that occur within their borders. In 2004, OIE Member Countries and Territories approved the creation of a single list of notifiable diseases to replace the former lists A and B. The content of this list is based on a decision tree which is part of the *Terrestrial Animal Health Code* (hereafter referred to as the *Terrestrial Code*). Currently, about 100 diseases are listed, 13 of which are poultry diseases; these include highly pathogenic avian influenza (HPAI), Newcastle disease, Marek's disease, infectious bursal disease and avian infectious laryngotracheitis (3). First outbreaks of all listed diseases should be officially notified to the OIE Central Bureau within 24 hours and regular update reports should be provided on the outbreak situation. This information is immediately disseminated to the delegates of all Member Countries and Territories. The information can be used to analyse the risk of introduction of animal diseases for their own countries. Member Countries and Territories must also provide six-monthly reports on their animal disease situation. The World Animal Health Information Database (WAHID) interface provides access to all data held within WAHIS (6). The OIE Animal Health Information Department actively approaches delegates to verify unofficial information on outbreaks of animal diseases in Member Countries and Territories. In the Global Early Warning and Response System (GLEWS) – a cooperation mechanism between the OIE, FAO and the World Health Organization (WHO) – the official and unofficial outbreak information of the three organisations is shared to allow for better intervention, better analysis of data and more targeted capacity-building in relevant Member Countries and Territories.

As the international standard-setting body for animal health, the OIE has defined standards on the surveillance and notification of listed diseases – including poultry diseases – and on related trade issues, e.g. the provision of certificates attesting that animals and/or animal products being traded are from zones/compartments that are free of listed diseases. The aim of the *Terrestrial Code* (4) is to ensure the sanitary safety of international trade in terrestrial animals and their products, by detailing the health measures to be used by the Veterinary Services of importing and exporting countries. The measures are also designed to prevent the transfer of pathogenic or zoonotic agents without imposing unjustified trade restrictions.

The OIE continually updates its disease standards, taking into account the latest scientific information on diseases. For example, the chapter on avian influenza of the *Terrestrial Code* was updated in 2004. The new chapter has

several significant changes compared to the previous one, such as differentiating between low pathogenic avian influenza and HPAI, and stating that only cases of HPAI in poultry should be taken into account for the purposes of international trade (cases in wild birds cannot be used as justification for blocking trade). The chapter gives trade recommendations on poultry and poultry products, including fresh meat, meat products, eggs, feathers and down. The *Terrestrial Code* also provides general guidelines for surveillance and specific guidelines per disease.

The specific disease standards are further defined by related chapters, appendices and definitions, for example:

- standards for surveillance allowing countries to declare freedom from disease
- standards for conducting risk assessments
- humane methods for killing animals if stamping-out of infected populations is necessary
- methods for the disposal of dead animals
- biosecurity standards for poultry establishments
- standards for the inactivation of viruses
- definitions of an infected and an uninfected country, zone or compartment.

The OIE also publishes guidelines on the use of vaccination when relevant, e.g. for avian influenza prevention and control.

The *Terrestrial Code* is accompanied by the *OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (referred to hereafter as the *Terrestrial Manual*) (7), which outlines a harmonised approach to disease diagnosis by describing internationally agreed laboratory diagnostic techniques. The instructions in the *Terrestrial Manual* should be followed in order to be able to compare results from different laboratories in different countries, and for this purpose quality systems should be implemented in laboratories. The *Terrestrial Manual* also gives general guidelines on principles for the quality of veterinary vaccine production and guidelines for the development, production and use of disease-specific vaccines.

Avian influenza and Newcastle disease

The spread of the current HPAI strain H5N1 has led to an unprecedented situation over the past few years (9). The disease has important economic and social consequences

in affected countries and humans may be infected due to its zoonotic nature. An important risk is the possible development of a human pandemic virus as a result of mutation or reassortment with a human influenza virus.

The OIE strategy for controlling and eradicating avian influenza focuses on eradication at the animal source through the following key actions: early detection, early warning, rapid confirmation of suspects, rapid response and rapid and transparent notification. The main goal is to reduce the virus load and circulation in poultry and limit the spread to unaffected areas or countries, thereby decreasing the risk of human infections and the development of a human pandemic virus (10). High quality Veterinary Services that comply with OIE standards and national legislation and that have a clear national chain of command are the basis of animal disease control and eradication (5, 8). Considerable constraints to the effective control of animal diseases can be found in developing or in-transition countries, since many of these countries have weak or non-existent Veterinary Services.

Newcastle disease is a disease of poultry that is endemic in many parts of the world and which is difficult to differentiate from HPAI on the basis of clinical signs. Most areas affected by HPAI also deal with endemic Newcastle disease infections with high mortality in poultry. Many countries have expressed their interest in the introduction of the concepts of zoning and compartmentalisation for these two diseases.

Zoning and compartmentalisation

Recognising the difficulty that some countries have in eliminating animal diseases from their territory as a whole and maintaining an animal disease free status, the OIE has introduced the concepts of zoning and compartmentalisation into the *Terrestrial Code* for purposes of disease control and international trade. This means that if disease is eliminated from any area of a country then this area can be designated 'disease-free', even if the country as a whole is not yet free of disease. Countries can establish these disease-free areas (zones/compartments) by defining an animal subpopulation with a distinct health status ('free from a certain disease') within its boundaries. They may then resume trade from this part of the territory. While compartmentalisation is defined as 'one or more establishments under a common biosecurity management system containing animals with a distinct health status' and is therefore based on a functional separation, zoning applies to animals with a distinct health status on the basis of geographical separation. Zoning has been used regularly by countries in their disease eradication programmes,

whereas compartmentalisation is a relatively new concept. Both concepts allow a concentration of personnel and financial resources where there is the greatest chance of success in controlling or eliminating the disease and in gaining or maintaining market access for certain commodities.

The international standards on zoning and compartmentalisation can be found in *Terrestrial Code* Chapter 1.3.5. on 'Zoning and Compartmentalisation'. The 'General Guidelines on the Application of Compartmentalisation' are currently under development and should be added as an appendix to the *Terrestrial Code* towards the end of 2008 after endorsement by the OIE International Committee (4). For countries wishing to implement compartmentalisation before this time, the OIE has developed a checklist on the practical application of the concept for avian influenza and Newcastle disease (available on the OIE website [2]). To implement zoning or compartmentalisation other factors, such as strong Veterinary Services, a good identification and traceability system and good surveillance programmes, are crucial. Relevant information on these related issues can also be found in the *Terrestrial Code*: Chapter 1.3.3. Evaluation of Veterinary Services; Chapter 1.3.4. Guidelines for the Evaluation of Veterinary Services; Appendix 3.5.1. General Principles for the Identification and Traceability of Live Animals; Appendix 3.8.1. General Guidelines for Animal Health Surveillance; and other appendices on disease specific surveillance (4).

The OIE feels that the time is right to emphasise the possibility of introducing the concepts of zoning and compartmentalisation in disease eradication programmes; however, it should be recognised that the concepts are not automatically applicable to all situations. The basis of both concepts is the possibility of a clear epidemiological differentiation between the animals that belong to the zone or compartment and the ones that do not. The effective implementation of either concept will be influenced by several technical issues, such as the epidemiology of the disease(s) of concern, the structure and distribution of the animal population, country and infrastructure factors, the biosecurity measures which may be applicable, the health status of animals in adjacent areas and the necessary surveillance in and outside of the compartments or zones (which is linked to the efficiency of the Veterinary Services). For a disease that is transmitted only through direct contact between infected and non-infected animals the biosecurity measures needed are different from those that are required for diseases that can also be transmitted by air over long distances or that are transmitted only by feed. In the case of the poultry sector it will, in general, be easier to implement biosecurity measures in areas where there is a high percentage of highly industrialised commercial poultry than it will in areas with a high percentage of smallholders or backyard poultry.

Principles of defining a zone or compartment

The first basic principle of defining a zone or compartment is the clear definition of the animal subpopulation belonging to the zone or compartment. For a zone this means that the extent of the zone, i.e. its geographical limits, including a buffer zone, should be clear; for a compartment it means defining which establishments and related functional units (e.g. feed production units, slaughterhouses, etc.) are included. The functional relationships between the units belonging to the compartment, and the contribution they make to the compartment, should be described. The animals belonging to the subpopulation of either a zone or a compartment should always be recognisable and traceable.

The second important principle is to ensure the epidemiological separation of the subpopulation in the zone or compartment from other populations and potential sources of infection. Physical and spatial factors such as the location of the nearest flocks outside the zone or compartment, the structure of those populations and their health status, and the presence of wild bird populations may affect the status of the zone or compartment. Environmental factors, such as the existence of nearby wetlands, or seasonal factors may also be important in the epidemiological separation. A good biosecurity plan should always be provided for either a zone or a compartment.

In the case of zoning, the Veterinary Authority will be primarily responsible for providing this biosecurity plan, but in the case of compartmentalisation the private company that manages the compartment has the first responsibility for providing such a plan. The biosecurity plan must describe all factors relevant to the integrity of the zone or compartment and must show that the zone or compartment is epidemiologically closed. It must provide clear evidence that critical control points for introduction of the pathogen are well managed. Well-described standard operating procedures to implement, maintain and monitor the measures for managing the critical points properly should be provided.

Important elements of a biosecurity plan are the quality assurance schemes, procedures for animal and human movement controls, poultry health measures (including vaccinations, medications and other veterinary care), control over vehicles entering and leaving zones/compartments, security of feed and water sources, control of pests and wild bird populations, etc.

To make sure that the subpopulation in the compartment complies with the defined health status a surveillance programme should be implemented. Many different combinations of testing and surveillance may be applied to gain the necessary confidence in the disease-free status of the compartment. However, they should be in compliance

with the OIE general and disease specific surveillance guidelines (4). Information on the baseline health status of the subpopulation before the zone or compartment was established and on the surveillance system implemented should be available. Standard operating procedures on the measures to be taken if disease is suspected or detected must also be available. A prerequisite for a surveillance programme is the availability of high quality diagnostic services.

Responsibilities of the private sector and the Veterinary Authority

The Veterinary Authority and the animal health industry both have responsibilities in the establishment of zones and compartments.

The Veterinary Authority is responsible for the national infrastructure needed to maintain a zone or compartment (appropriate legislation, national reference laboratories, identification and registration systems, etc.) and for the quality of the Veterinary Services (i.e. governmental and non-governmental organisations that implement animal health and welfare measures).

Compartmentalisation should ideally be the initiative of the private sector and it is particularly applicable in intensive industries that are vertically integrated. The responsibilities of those managing the compartment will lie primarily in the application and monitoring of biosecurity measures, including the use of corrective actions and the implementation of quality assurance schemes. The management of the compartment should also provide information on the baseline health status of the subpopulation and the surveillance implemented to ensure early detection of disease introduction. The compartment should have standard operating procedures for all actions taken related to the maintenance of the compartment and these actions should all be documented. The records should be readily accessible for supervision by the Veterinary Services. The management of the compartment also has the responsibility for clarifying the relationships between the different units comprising the compartment.

The Veterinary Services are responsible for the supervision, auditing and certification of the compartments. Veterinary Services should implement the surveillance programmes in cooperation with the private sector. The Veterinary Services may also provide model biosecurity plans and generic compartmentalisation criteria to facilitate the establishment of the compartments. The costs of maintaining the integrity of compartments should be borne by the private sector.

The initiative of zoning will normally be taken by the government and the Veterinary Services will be responsible

for the creation of the zone. Nevertheless, the establishments in the zone will be responsible for implementing all measures required by the Veterinary Services, including the biosecurity measures.

Zones and compartments can be established for national disease control purposes or for international trade purposes. The steps to be taken by Veterinary Services to resume or maintain trade between exporting and importing countries depend on the circumstances existing within the countries and also on their previous trading history. The importing country must have confidence in the integrity of the zone or compartment as defined by the exporting country. The dossier provided to the importing country must, therefore, contain all information needed for the evaluation and for determining whether it can accept imports from the designated zone or compartment. In the case of compartmentalisation a large part of the dossier will have to be provided by the management of the

compartment itself. The importing country must be authorised to conduct an audit *in situ* at any moment.

In conclusion it can be said that zoning and compartmentalisation will become important tools in the control of poultry diseases such as HPAI and Newcastle disease. High quality Veterinary Services and strong commitment from governments as well as private industry are needed to implement these concepts.

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Les normes et lignes directrices de l'OIE sur le commerce et les maladies aviaires

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Résumé

Consciente des difficultés que connaissent certains pays pour éradiquer totalement les maladies animales de leur territoire ou pour conserver le statut indemne de maladie de certains segments de leur territoire national, l'Organisation mondiale de la santé animale (OIE) a introduit les concepts de « zonage » et de « compartimentation » applicables dans le cadre de la lutte contre les maladies animales et des échanges internationaux. La définition précise de ces termes figure dans le *Code sanitaire pour les animaux terrestres* de l'OIE. La compartimentation repose essentiellement sur une séparation fonctionnelle, assurée par l'application de mesures de biosécurité, tandis que le zonage repose sur une séparation géographique. Dans les deux cas, les sous-populations animales concernées doivent être clairement définies, reconnaissables et identifiables par traçabilité ; elles doivent aussi être séparées des autres sous-populations du point de vue épidémiologique. Les Autorités vétérinaires et le secteur privé ont des responsabilités importantes dans l'établissement et le maintien des zones et des compartiments.

Mots-clés

Commerce international – Compartimentation – Influenza aviaire – Maladie de Newcastle – Norme de l'OIE – Organisation mondiale de la santé animale – Zonage.



Normas y directrices de la OIE relacionadas con el comercio y enfermedades de las aves de corral

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Resumen

Sabedora de lo difícil que resulta para algunos países hacer desaparecer por completo determinadas enfermedades animales de todo su territorio o conservar el estatuto de 'libre de enfermedad' en ciertas partes del mismo, la Organización Mundial de Sanidad Animal (OIE) ha introducido los conceptos de 'zonificación' y 'compartimentación' a efectos de control zoonosológico y comercio internacional. Estos términos vienen definidos con exactitud en el *Código sanitario para los animales terrestres* de la OIE. La compartimentación se basa principalmente en una separación funcional mediante medidas de seguridad biológica, mientras que la zonificación reposa en la separación geográfica. En ambos casos, las subpoblaciones animales en cuestión deben estar claramente delimitadas, ser reconocibles y rastreables y estar separadas, epidemiológicamente hablando, de las demás subpoblaciones. Las Autoridades Veterinarias y el sector privado tienen importantes responsabilidades a la hora de definir y mantener zonas y compartimentos.

Palabras clave

Comercio internacional – Compartimentación – Enfermedad de Newcastle – Influenza aviar – Normas de la OIE – Organización Mundial de Sanidad Animal – Zonificación.

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