

# Risk management of international trade: emergency preparedness

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## Summary

Emergency preparedness and management are among the most important and critical issues facing animal health in the world today. The goals of a country for an animal health emergency management (AHEM) system should include the following:

- being prepared to detect and manage an outbreak of a foreign animal disease
- preventing the introduction of foreign and emerging animal pathogens
- having an appropriate response system for control and eradication of the disease
- having a system for recovery from animal health emergencies, including natural disasters.

An AHEM system can no longer be limited to a single organisation within a country. In the event of a serious threat to the animal agriculture of a country, broader and more comprehensive participation is required. If not properly planned for, animal health emergencies can rapidly become national disasters. Therefore, it is essential that the central government of a country work towards these goals through partnerships with other Federal and State/Provincial/District organisations, academic institutions and national animal industries.

## Keywords

Animal health – Emergency management – Emergency preparedness – Emergency response – Exotic animal diseases – Foot and mouth disease – Trade.

## Introduction

Emergency preparedness and management are among the most important and critical issues facing animal health in the world today. The multiple outbreaks of foot and mouth disease (FMD) and emerging diseases have repeatedly shown the vulnerability of animal agriculture world-wide. Disease introductions have an impact on the food security and economic stability of many countries around the globe. Countries must be wary of such incursions and possess processes to respond to and manage such events. The occurrence of an exotic animal disease or of an emerging disease and its impact on the national economy,

particularly in countries with major livestock and poultry populations, can be significant. Proper contingency planning is essential to prevent such events from becoming national disasters. The goals of a country for an animal health emergency management (AHEM) system should include the following:

- a) being prepared to detect and manage an outbreak of a foreign animal disease
- b) preventing the introduction of foreign and emerging animal pathogens
- c) having an appropriate response system to control and eradicate the disease

d) having a system for recovery from animal health emergencies, including natural disasters.

The central government of a country should work towards these goals through partnerships with other Federal and State/Provincial/District organisations, academic institutions and national animal industries (4).

Over the past decade and continuing into this millennium, contingency planning for animal health emergencies has been, and will continue to be, very difficult. In many countries AHM organisations are required to respond to the impact of natural disasters on any animal population, including companion animals. Keeping pace with changes in the animal agricultural industry, responding to pet and livestock needs in either disease outbreaks or natural disasters, and guarding against the threat of deliberate introductions of biological agents require that a country prepare for various situations. These functions usually lie with the animal health unit of the ministry of agriculture or equivalent organisation.

## Functions of an animal health emergency management system

The primary functions of an AHM system are preparedness, prevention, response and recovery.

### Preparedness

Preparedness activities are directed at taking the necessary steps to sustain an effective rapid detection and response programme for animal health emergencies. These activities involve domestic monitoring and surveillance, developing and enhancing response plans, maintaining a network of experts and key contacts on emergency management, scientific knowledge of animal diseases, educating and training, and periodically conducting test exercises or simulations.

Domestic monitoring and surveillance for emerging and exotic diseases is predominantly a passive system. Veterinarians, diagnostic laboratories and others involved in animal agriculture must report unusual disease events to their local and/or central authorities. Such notification could initiate an investigation to assess the situation and, if appropriate, trigger a broader response.

Response plans for an AHM system must be continually tested due to changing vulnerability, threat assessments and disease and vaccination modelling. Given the variety of known and emerging disease threats, planning for response operations will always be a challenge. In countries such as the United States of America (USA), newer approaches to preparedness for animal health emergencies incorporate these factors as additional hazards in the planning process for local and State emergency management. These emergency management systems have the infrastructure and personnel with the appropriate training and expertise to deal with many contingencies and take an

all-hazards approach to the planning process. In the USA, at both the Federal and State levels, scenario development and analysis are used to try and predict the likelihood of disease introduction and exposure, and also to determine the impact of such introduction and exposure.

In many areas of the USA, emergency management systems designated to respond to natural disasters remain untapped resources for dealing with situations involving animal health. The plight of animals observed as a result of natural disasters over the past several years, and the recent outbreak of FMD in the United Kingdom, produced a groundswell of support to include animal issues in disaster planning.

Test exercises should be periodically conducted at local and national levels. These exercises may take the form of complete, multi-level exercises, incorporating all levels of the emergency response structure, or consist of table-top (i.e. planning) exercises. The goal of such exercises is to help maintain proficiency in disease eradication and an effective AHM system.

### Prevention

Prevention activities are those actions taken to reduce the likelihood of an incursion of a foreign animal disease or a foreign pest into a country. Such activities include monitoring disease events internationally, assessing risks, testing and inspecting animals at ports of entry, inspecting animal products at ports of entry, and implementing sound import policies. Inspection at ports of entry or prior to entry (i.e. pre-embarkation inspection) is essential to prevent the entry of diseased animals and contaminated animal products into a country. Veterinarians must conduct point-of-entry inspections and require the quarantine of live animals and birds offered for importation. The exporting country must provide official documentation certifying that the animals or animal products meet the health requirements of the importing country. Such port inspections and certification requirements reduce the chances that diseased animals or contaminated animal products could enter a country. Where possible, international assistance should be provided to support any disease eradication efforts and veterinary infrastructure development in countries that are important trading partners. These activities will help safeguard the health of national livestock, poultry, wildlife and human populations and help promote the safe trade of agricultural animal commodities.

### Response

Response activities are those that are designed to ensure control and elimination of the disease event. This includes an analysis of the situation to determine the level of response necessary to control the spread of the disease, and to implement the response.

The response phase is initiated when an unusual situation or a foreign or emerging animal disease agent is detected by the

surveillance system. This phase may also be initiated upon notification of some other adverse animal health event that requires attention. Assessment of the situation may trigger the deployment of a team to the area to assist with the investigation and with tracking the origin and dispersal of the agent (3). This team should be composed of select members of the veterinary force, including a microbiologist diagnostician, a pathologist and an epidemiologist. If required, the team will assess the impact of the disease on the farm and determine if a threat exists that would warrant a wider response, including the activation of a regional emergency animal disease eradication unit (2). In the USA, the United States Department of Agriculture (USDA) has the authority to develop co-operative agreements with States and other entities to respond to an animal health emergency. The declaration of an emergency by the Secretary of Agriculture releases the funds necessary to mount an appropriate response.

A severe incident will mobilise members of an activated emergency operations centre. The operations centre will assemble representatives from the national veterinary services, industry and other partners and co-operators. Policy is formulated at the centre and communicated nationally and internationally. An incident that is immediately identified as serious may bypass the need to despatch an early response team, and directly activate a regional emergency animal disease eradication unit. Response activities include quarantine, movement controls, appraisal and indemnity, depopulation and disposal and cleaning and disinfection. By using sound science to make good decisions, the disease can be effectively brought under control.

## Recovery

Recovery activities outline the process of recuperation that follows once an emergency is brought under control. In most countries, recovery activities represent a largely unexplored area of the AHEM systems. The issue of assistance to those affected by an emergency has typically revolved around the concept of indemnification for animals that were destroyed in the process of containing the outbreak. Recovery activities also include assurances to producers that premises have been adequately cleaned and disinfected, and that the disease-causing organism is no longer present in the environment. The use of sentinel animals brought into the premises and tested prior to authorising restocking of affected farms is highly recommended. During the recovery phase, export protocols may need to be renegotiated with trading partners, consumer expectations and reassurances will need to be reinforced, and the response activities should be evaluated.

## Structure of an animal health emergency management system

The specific structure of an AHEM system will vary from country to country, but should function at three basic levels: local, regional and national (1). The AHEM system must have

the capacity and resources to assist those areas where no local or State/Provincial/District system currently exists and be flexible enough to support and integrate itself into efforts of already well-developed systems. National industry groups and associations, State/Provincial/District agricultural agencies, academia, professional animal health organisations, veterinary diagnostic laboratories, the military and other Federal agencies must all participate in this effort.

An AHEM system should have at least two major components – a central policy-making component, and a field component. In most cases, the Chief Veterinary Officer (CVO) of a country will be the natural manager who will direct the response.

### Central structure

The central structure is the policy-making component of the AHEM system. Many countries already have an emergency or foreign animal disease investigation unit. In the USA, for example, the Emergency Programs Staff of Veterinary Services, a unit located in the central offices, is functionally organised into sections which manage all investigations of suspected cases of a foreign animal disease, co-ordinate field activities, co-ordinate disaster management, provide technical training, and manage special projects. An AHEM system should be co-ordinated by an 'emergency operations centre' that is located centrally within the ministry of agriculture. The function of this centre is to manage the events of a foreign or emerging animal disease incursion. This centre must co-ordinate information submitted from the field and other sources and disseminate this both nationally and internationally. Centralisation of the operations centre expedites national policy decisions that provide guidance to the field force. This centre also co-ordinates all government resources required to respond to animal emergencies caused by disease or technological and/or natural disasters. During an emergency in the USA, components of various staff and of other units at headquarters, such as Legislative and Public Affairs, Wildlife Services, Animal Care, Emergency Programs, Plant Protection and Quarantine, International Services and Import/Export all become part of the 'emergency operations centre', where the CVO has oversight for the combined operations. In addition to the Federal component, the operations centre also includes industry representatives, the military and disease experts. All these individuals come together to form the emergency response group.

### Field structure

The field structure is the operational component of the AHEM system. The field structure should include a regional Federal emergency animal disease eradication component to support the local and State/Provincial emergency management efforts. Functional areas within the Federal regional structure include administrative support, field operations and technical support. Local, State or Provincial veterinarians must collaborate with Federal veterinarians to form a local response team. In addition,

private licensed veterinarians may also perform various local and national animal health functions.

## Epidemiological support

Epidemiological support is critical for any effective and efficient disease control or eradication programme. The AHEM system should have good epidemiological support to continuously monitor animal health, track the disease event and assess the risk and impact of the event.

A thorough epidemiological investigation should be undertaken as soon as a foreign or emerging animal disease is suspected. The key to remaining in control of the disease and determining its source lies in the ability to effectively and rapidly trace the movements of animals, animal products, people and related materials. Identifying exposed herds before they develop the disease may prevent the dissemination of the disease agent and limit further spread. This includes movements of animals, milk, meat, manure, equipment, vehicles, feedstuffs, people or pets, within the past two incubation periods of the particular disease.

The investigation should characterise the outbreak by describing temporal, spatial and animal specific factors related to the event. Epidemiologists should conduct interviews with those responsible for animal care and management, including the private veterinarian. Information should be obtained through administration of a standardised questionnaire containing closed-ended questions (e.g. yes/no, multiple choice, etc.). Open-ended questions may also be asked to acquire additional information and opinion.

Maps should be produced to show the geographic distribution of the disease and the locations of susceptible host species populations. Graphs are useful to show disease incidence ('epicurves') and provide an overview of temporal relationships. Epidemiologists constantly evaluate all related information to modify disease control and eradication strategies if indicated.

## Laboratory support

The services provided by a national laboratory network system are an integral part of any AHEM system. Laboratory capabilities, whether private, local or State, are necessary to diagnose both domestic and selected foreign animal diseases. Official central laboratories act as reference laboratories for

other laboratories in the areas of pathology, virology and bacteriology. They are the laboratories that officially confirm a foreign or new emerging animal disease.

## Conclusion

Contingency planning for animal health emergencies will continue to be a very difficult and challenging task. Keeping pace with changes in the animal agricultural industry, responding to pet and livestock needs in either disease outbreaks or natural disasters, and guarding against the threat of deliberate introductions of biological agents require that a country prepare for many situations. The functions of preparing, preventing, responding and recovering from a foreign animal disease incursion or an emerging disease event usually lie with the animal health unit of the ministry of agriculture or equivalent organisation. However, these functions can no longer be borne by a single organisation within a country. A broader and more comprehensive participation is required. Other Federal agencies, local and State/Provincial governments, public health organisations and industry organisations must all collaborate to address the event.

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## Gestion des risques liés aux échanges internationaux : la préparation aux urgences

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### Résumé

La préparation aux urgences et leur gestion constituent un des principaux défis que les responsables de la santé animale dans le monde doivent relever. Les pays mettant en place un système de gestion des urgences zoonosaires doivent viser les objectifs suivants :

- être en mesure de détecter le moindre foyer de maladie animale exotique et de le gérer ;
- prévenir l'introduction d'agents pathogènes exotiques ou émergents affectant les animaux ;
- disposer d'un système de réponse adéquat en cas d'urgence, permettant de contrôler et d'éradiquer la maladie ;
- disposer d'un système de retour à la normale après une urgence zoonosaire, y compris celles dues à des catastrophes naturelles.

A l'avenir, les systèmes nationaux de gestion des urgences zoonosaires ne pourront plus reposer sur une seule organisation. En cas d'urgence pouvant menacer sérieusement la production animale du pays, il convient au contraire de prévoir la participation de tous les acteurs concernés. En l'absence de planification adéquate, les urgences zoonosaires peuvent rapidement évoluer en véritables catastrophes naturelles. Il est donc essentiel que chaque gouvernement central poursuive les objectifs cités précédemment en partenariat avec les instances fédérales, nationales, provinciales et locales, mais aussi avec les institutions de recherche et les représentants du secteur de l'élevage.

### Mots-clés

Dispositif de réponse à l'urgence – Échanges internationaux – Fièvre aphteuse – Gestion des urgences – Maladies animales exotiques – Préparation aux urgences – Santé animale.



## Gestión de los riesgos ligados al comercio internacional: preparación ante emergencias

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### Resumen

Actualmente, en materia de sanidad animal, hay pocos temas de mayor importancia en el mundo que el de la preparación ante emergencias y la gestión de las mismas. A la hora de definir un sistema de gestión de emergencias zoonosarias, un país debe fijarse cuanto menos los siguientes objetivos:

- estar preparado para detectar y controlar todo brote de enfermedad animal exótica;
- prevenir la penetración de patógenos exóticos o emergentes que afectan a los animales;
- disponer de un sistema de respuesta adecuado para controlar y erradicar la enfermedad;

– disponer de un sistema de recuperación de la emergencia zoonosaria, inclusive de emergencias causadas por desastres naturales.

Los sistemas nacionales de gestión de emergencias zoonosarias no pueden seguir reposando en un único organismo. En la eventualidad de que surgiera una grave amenaza para el sector agropecuario de un país, sería necesaria una participación más amplia y completa de otras muchas instancias. Las emergencias zoonosarias, si sorprenden a un país mal preparado o con escasa planificación, pueden fácilmente convertirse en catástrofe nacional. Por ello es fundamental que el gobierno central persiga los mencionados objetivos trabajando concertadamente con otros organismos de ámbito federal, estatal, provincial o local, además de instituciones académicas y representantes de la industria agropecuaria nacional.

#### **Palabras clave**

Comercio – Enfermedades exóticas de los animales – Fiebre aftosa – Gestión de emergencias – Medidas de emergencia – Preparación ante emergencias – Sanidad animal.



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