

# Preparing for veterinary emergencies: disaster management and the Incident Command System

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## Summary

An important question that all veterinary schools should consider is whether veterinary students should be trained to deal with local or regional states of emergency or disasters, such as hurricanes, tornadoes, wildfires, hail and ice storms, wind storms, fires, earthquakes, tsunamis, floods and epidemics. When a large-scale emergency or disaster does strike, the consequences can be dire for the domestic and wild animals of the region and for the humans within the vicinity of seriously and painfully injured animals. The authors argue that emergency preparedness is essential for the veterinary profession to meet its obligations to both animals and humans. The four basic components of disaster management are: mitigation, preparedness, response/emergency relief and recovery.

## Keywords

Curriculum – Disaster management – Emergency preparedness education – Emergency relief – Incident Command System – Mitigation – Natural disaster – Preparedness – Recovery – Rehabilitation – Response.

## Introduction

The World Organisation for Animal Health (OIE) considers Veterinary Services to be part of what is termed 'a global public good'. In addition, it is recognised that Veterinary Services must involve the consideration of animal welfare. Many of the poorest communities of the world are totally reliant on animals for food, transport and their livelihoods. Additionally, domestic animals provide valued companionship, the world over. In considering the stated policies and animal welfare vision of the OIE, it is abundantly clear that large-scale emergencies and disasters affect not just people but animals. To participate in that 'global public good' and address animal welfare concerns, veterinary institutions must develop their training and curricula to allow veterinarians to effectively engage in these missions envisaged by the OIE.

Many countries now require the preparation of national and state disaster planning for animals, as well as people, by law. There is awareness that animals are part of the

suffering and loss of a large-scale disaster or emergency. Furthermore, there is recognition that animals in general and livestock in particular are essential components of economic life for humans affected by disaster; this makes it imperative that the veterinary profession plays its role in providing disaster relief. Indeed, failing to provide training and experience in this area compromises the animal welfare requirement of the veterinary oath. Veterinarians are an essential part of disaster assessment and response because of their knowledge and training in animal health, welfare (1) and husbandry. They are the only segment of society specifically licensed to be responsible for the provision of medical care to animals.

The question then becomes, what training is necessary for veterinarians to be able to effectively respond to an emergency or disaster? Moreover, what constitutes an emergency or natural disaster? The United Nations Office for the Co-ordination of Humanitarian Affairs defines a disaster as: 'an event that occurs unexpectedly, with destructive consequences'. The International Federation of Red Cross and Red Crescent Societies defines it as, 'a

calamitous event, resulting in loss of life, suffering and distress, and large-scale material damage' (2). All these definitions reflect an incident of such destructive magnitude that it results in dislocation of people and animals, separation of family members, damage and destruction of homes and farms, and injures or kills people and animals. Hence, the type of emergency or disaster that calls for veterinary assistance can involve a wide spectrum of potentially adverse events affecting the health and well-being of animals.

A further challenge is the fact that planning for such things as animal evacuations, shelter and the provision of veterinary care for injured or sick animals should reflect the normal standard of care given to animals in that society, which is a result of regional socio-economic realities and geographic factors (3).

## Preparing veterinary graduates to provide disaster relief

The essential components to prepare veterinary graduates for useful participation in a disaster include:

a) a core knowledge of the health and husbandry needs of a wide variety of species

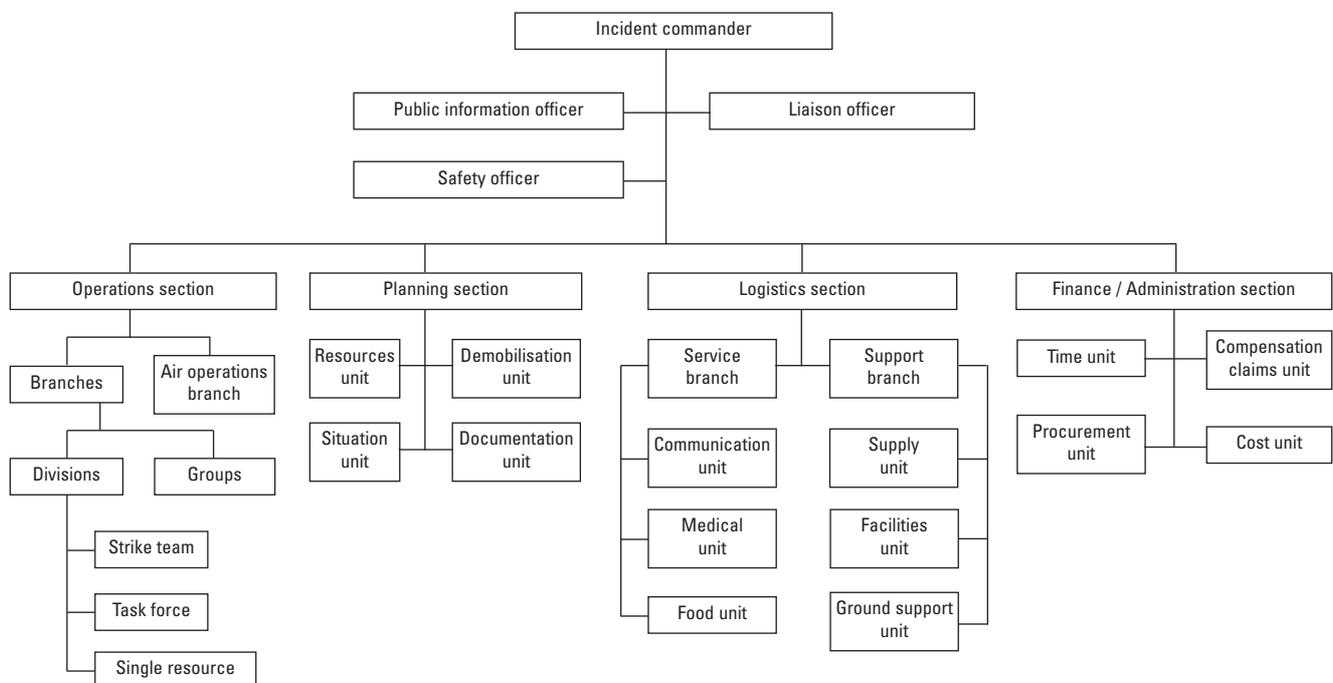
b) a comprehensive knowledge of emergency procedures, including:

- surgery
- medical management of infections, wounds, burns and shock
- the health consequences of floods
- treating exposure to toxic or hazardous substances
- the nutritional needs of animals
- the criteria for, and humane methods of, euthanasia
- training in the Incident Command System of operations (see Fig. 1).

The four basic components of disaster management are:

- mitigation
- preparedness
- response/emergency relief
- recovery.

Veterinarians, animal health technicians and veterinary support staff all have unique skills that can serve each of these four phases.



Source: Federal Emergency Management Agency ([www.training.fema.gov/EMIWeb/IS/ICSResource/assets/reviewMaterials.pdf](http://www.training.fema.gov/EMIWeb/IS/ICSResource/assets/reviewMaterials.pdf))

**Fig. 1**  
**Incident Command System**

## Mitigation

Actions taken before a disaster can reduce the impact on animals. Expected natural disasters should be planned for. For example, planning for floods should include:

- identifying locations to which animals may be evacuated, the means of transport, animal identification measures, access to restricted areas for transportation equipment and teams (these may require prior memorandums of understanding)
- vaccinating against expected water-borne diseases, such as leptospirosis
- planning for a possible prolonged loss of electrical power
- identifying sources of fresh feed and water, etc.

In addition, many predictable disasters, such as drought and famine, which build up over time, can be mitigated with timely actions to minimise the effects on animals and people. Reducing stocking density, enhancing rainfall water-storage systems for retaining seasonal rainfall and requests for emergency supplies of feedstuffs before they run out completely should be attempted. Other risk-reduction measures include:

- adequate storage and protection of food, water and medical supplies
- a means of identifying animals so they can be reunited with their owners
- strengthening and securing animal shelters for anticipated use
- the implementation of vaccination programmes.

## Response/emergency relief

This phase involves the traditional rescue and emergency services that are needed immediately after a disaster.

### Global relief

Several organisations, including the World Society for the Protection of Animals (WSPA), the Humane Society of the United States, and the International Fund for Animals, have response units which provide disaster relief teams, whose personnel supply emergency veterinary aid and feed.

### United States of America

The Federal Emergency Management Agency (FEMA) has mandated that emergency responses must include provision for companion animals. Several states have passed legislation requiring that plans be put into place for animal-related disaster needs. However, many of these

mandates are not funded at this time and the degree of organisation and effectiveness varies greatly from state to state.

Emergency veterinary care is often provided through static and mobile clinics, and includes fundamental needs such as arranging and co-ordinating the feeding of hungry animals and reuniting animals with their owners wherever possible. Depending on the infrastructure and scope of the disaster search-and-rescue activities, the following may also be involved:

- search and rescue of animals, including large-animal technical rescue (4)
- arranging temporary shelters for animals
- housing large animals which have been displaced
- treating individual animals for injury and infection
- providing preventive measures against disease.

Identifying sources of medications is an important part of an effective response and many organisations and states have caches of emergency veterinary supplies.

Training for large-animal work during an emergency involves technical rescue instruction, which teaches:

- knowledge of ropes, slings and animal skids
- the animal-handling skills needed to work safely with trapped or stranded animals
- loading and transportation of injured animals
- the housing requirements of stressed and injured animals.

Response training must also include the assessment of mass animal casualties and infectious disease outbreaks, which may require the euthanasia of animals that are suffering, with no chance of recovery. Graduates must be familiar with nutrition needs and rehabilitation methods for starving animals. Animal first aid, field surgery methods and wound management are also all part of the knowledge and experience required and should be part of the veterinary curriculum.

## Recovery/rehabilitation

The main aim of this effort is to restore living conditions to normal – or to improve them – for all affected animals. Important aspects of this are: restoring veterinary care, reuniting animals with their owners, and providing for the husbandry needs of animals.

## Preparedness

The preparedness phase is the most effective means of improving animal welfare in a disaster because, with established plans and effective preparedness measures, prevention is considered to be of maximum benefit.

Preparedness can cover many eventualities, including:

- training in emergency sheltering of animals
- evacuation plans that are put into place well before the risk is imminent
- ensuring that everyone is familiar with community warning systems
- earthquake preparedness, which includes the ability to stay safely 'in place' (i.e. at home) for seven days, with sufficient emergency supplies, until rescue or normal services are restored
- having alternative sources of power, e.g. for heating and light
- educating animal owners in companion-animal and large-animal disaster preparedness, which encourages self-reliance in an emergency.

Animal identification, predetermined locations for shelter and housing and the means for mobilising and transporting animals to a safe location, etc., are all part of disaster preparedness.

## Animal welfare

While many have attempted to define 'animal welfare', for the purposes of this discussion, it is simply the area of human awareness involved in preventing animal suffering

and improving animal wellbeing for the sake of animals themselves, as well as for the human beings who rely upon them for companionship or their livelihood. The human-animal bond takes many forms. When animals suffer, it causes human suffering because of the compassion and empathetic bond between animals and their owners/caretakers or because animals improve and assist in the lives of their owners, in some way. Disasters and emergencies have the potential for the most dramatic and catastrophic impacts on animal welfare. It is the expectation of society that the veterinary needs of animals should and will be met. It is paramount that veterinary education seizes the chance to create a series of compatible global education programmes and training opportunities in the four areas of disaster and emergency response:

- mitigation
- preparedness
- response
- recovery.

Templates for veterinary disaster education programmes and certification at various levels of emergency training should be standardised/harmonised, to assess capabilities at the county/regional, state and national level (5). Funding for international workshops is also essential (Box 1). These should involve curriculum and training modules, including 'train the trainer' programmes, which enable participants to take disaster and emergency preparedness back to their home region.

Box 1 briefly presents the essential training areas needed to meet these four areas of expectation.



**Box 1****Training areas for disaster and emergency response****Leadership**

Veterinary professionals may be able to contribute effectively to the leadership of local emergency responses and the co-ordination of resources. The ability to communicate and interact with existing governmental and non-governmental organisations in the geographic area of the disaster to co-ordinate efforts on behalf of animals is essential. It is essential that veterinary education includes training and experience in the Incident Command System (Fig. 1) as part of leadership training.

**Incident Command System**

The incident Command System (ICS) is an on-scene, all-hazard, incident management concept in the United States of America. It is a management protocol originally designed for emergency-management agencies.

The ICS is based upon a flexible, scalable response organisation, providing a common framework within which people can work together effectively. People may be drawn from multiple agencies that do not routinely work together. The ICS is designed to provide operational procedures that reduce problems and lessen the potential for miscommunication.

The ICS is described as a template for a 'first-on-scene' response structure. In this structure, the first responder to an incident takes charge of the scene until the incident has been declared resolved, or a superior-ranking responder arrives on the scene and takes command, or the incident commander appoints another individual as incident commander.

**Animal care**

Care of and services to companion animals and other animals at evacuation shelters, the local animal control facility and humane societies during disasters.

Large-animal, livestock and poultry support during disasters, including prevention measures against potential animal disease emergencies.

**Epidemiology**

Ability to identify and track disease patterns and identify the case definition of diseases unique to the geographic areas involved.

Knowledge of 'herd health' principles.

**Bioterrorism – zoonoses**

Knowledge of most bioterrorism agents, including modes of transmission, signs and symptoms, course and duration of disease and animal treatment protocols.

**Decontamination methods and principles**

Training in the ability to perform animal and human decontaminations as needed (including at hospitals and shelters, which are usually the 'first receivers').

**Search and rescue**

Training to enable assistance with the search-and-rescue component of response, including the unique requirements of animal handling, animal restraint, practical training in ropes, slings, extraction methods and concepts of sheltering 'in place' as well as in establishing triage areas. Methods of identifying animals and reuniting them with their owners are important components of a successful search-and-rescue operation for animals.

**Human care**

Under appropriate medical direction, veterinary assistance may be requested to help in caring for humans. Exposure to the concept of 'One medicine' and ability to perform support procedures to assist medical responders, if requested. ('One medicine' is the concept of the integration of human and animal medical principles and efforts to improve the care of humans and prevent human disease, such as veterinary assistance in mass immunisation efforts, etc.).

**Sources of veterinary medical equipment and supplies**

Drugs labelled for humans can be used for animals in an emergency. Veterinary equipment is largely the same as human medical equipment (bandages, syringes, surgical instruments).

Establishment of veterinary cache sources for immediate use.

Access to and inventory management and supply rotation of controlled substances.

**Community planning, outreach and education**

Disaster preparedness education for and interaction with the owners of companion animals, horses, livestock and exotic species.

**Animal vaccination methodologies**

Training in methods of vaccine storage, handling, and methods used in mass immunisation, including knowledge and skills for mass animal-handling requirements.

**Mental health**

Training in coping with widespread devastation, animal and human suffering and methods of self support for physical and mental well-being during disasters. Grief counselling for the stress of human and animal loss.

## La préparation aux urgences vétérinaires : la gestion des catastrophes et le système de commandement en cas d'incident

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### Résumé

Une question importante que toutes les facultés vétérinaires doivent se poser est celle de savoir s'il faut former les étudiants vétérinaires à la gestion des situations d'urgence et des catastrophes pouvant survenir au niveau local et régional, par exemple les ouragans, tornades, incendies de forêt, orages de grêle, tempêtes, tremblements de terre, tsunamis, inondations et épidémies. Lorsqu'une catastrophe se présente, ses conséquences peuvent être désastreuses pour les animaux domestiques et sauvages de la région, ainsi que pour les personnes se trouvant à proximité d'animaux souffrant de blessures graves et douloureuses. Les auteurs estiment que la préparation aux urgences est essentielle pour que les vétérinaires puissent remplir leur mission à l'égard des animaux et des humains. Les quatre composantes de la gestion des catastrophes sont l'atténuation, la préparation, la réaction et les secours d'urgence, et le rétablissement.

### Mots-clés

Atténuation – Catastrophe naturelle – Formation à la préparation aux urgences – Gestion des catastrophes – Préparation – Programme d'enseignement – Réaction – Rétablissement – Réhabilitation – Secours d'urgence – Système de commandement en cas d'incident.



## Preparación para emergencias veterinarias: gestión de desastres y el sistema de mando en caso de incidente

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### Resumen

Una cuestión importante que todas las facultades de veterinaria deberían plantearse es la conveniencia o no de impartir a los alumnos formación para afrontar estados de emergencia y desastres de dimensión local o regional, tales como huracanes, tornados, incendios forestales, tormentas de granizo, terremotos, *tsunamis*, inundaciones y epidemias. Cuando el desastre natural golpea puede tener consecuencias nefastas para la fauna salvaje y doméstica de una región, e incluso para cuantas personas vivan cerca de animales que sufren y pueden estar gravemente heridos. Los autores postulan que la preparación para emergencias es indispensable para que la profesión veterinaria cumpla sus obligaciones para con animales y seres humanos. Los cuatro componentes básicos de la gestión de desastres son: mitigación; preparación; respuesta-socorro de emergencia; y recuperación.

### Palabras clave

Catástrofe natural – Formación sobre preparación para emergencias – Gestión de desastres – Mitigación – Planes de estudios – Preparación – Recuperación – Rehabilitación – Respuesta – Sistema de mando en caso de incidentes – Socorro de emergencia.



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