

## FORWARD

The AVMA Emergency Preparedness and Response Guide provides information for preparing and responding to disasters, and for implementation of the AVMA Emergency Preparedness Plan. The AVMA Emergency Preparedness Plan identifies strategies that will enable veterinarians and animal health technicians<sup>1</sup> to respond to a broad range of emergencies, to integrate those strategies into the National Disaster Medical System as part of the Federal Response Plan, and to assist state and local veterinary medical associations in formulating their emergency preparedness plans. The AVMA Emergency Preparedness Plan provides the foundation for disaster response by the veterinary profession through the AVMA's organizational structure.

Natural or man-made disasters may create animal health emergencies that require extraordinary responses. After such disasters, affected local resources may need time to recover before they can resume complete responsibility. Depending on the severity or type of disaster, response to an emergency may be provided at the local, state, or federal level. In such events, the AVMA and its constituent organizations will assist in mobilizing needed resources under the direction of the National Disaster Medical System (NDMS).

It is obvious from the lessons learned in past disasters that the lack of communications, logistics, and a plan to establish health care for animals in disaster areas creates major problems for response personnel and veterinarians. Veterinarians perform vital tasks during disasters, but conflict and confusion result when functions of the veterinary profession are not integrated into the emergency plans of other responding agencies.

The AVMA Emergency Preparedness Plan is a flexible plan that is designed to deal with the worst case scenario and can be adapted to situations of lesser severity. The Plan assumes a disaster of a proportion that requires federal intervention, and it establishes a model strategy to respond to such a disaster.

To address local emergencies, the Guide provides model operations plans to assist state and county veterinary associations' emergency plans. The Guide also describes procedures to integrate veterinary services with animal care support that is provided by animal control and humane organizations. Each state veterinary medical association should work closely with the state emergency management agency and use the information in the Guide to develop a plan that is tailored to meet the needs of the state's populace in potential emergencies.

As much as possible, the organizational structure and procedures should be designed to parallel the organization of the National Disaster Medical System, so state and local activities can readily be integrated into the federal response system if it is activated.

The AVMA, through a staff Coordinator of Emergency Preparedness, will maintain liaison with and participate in the National Disaster Medical System (NDMS). The NDMS is a function of the U.S. Public Health Service, which operates under the Director of Emergency Preparedness in the Department of Health and Human Services.

The Guide describes the manner in which veterinarians and animal health technicians with support personnel will participate in the National Disaster Medical System as Veterinary Medical Assistance Teams.

In addition, the Guide is a source of information for veterinarians and support personnel who are preparing for and working in disaster areas. It provides resource information on a variety of disaster situations and fact sheets on animal care and handling for different types of animals.

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<sup>1</sup> The American Veterinary Medical Association prefers use of the term *veterinary technician*; however, the federal government uses the term *animal health technician*. To avoid confusion among personnel in federal agencies and departments, *animal health technician* will be used throughout this document.

The AVMA Emergency Preparedness and Response Guide was given to state veterinary medical associations, specialty veterinary associations, state disaster management offices, state veterinarians, state departments of health and agriculture, federal agencies and departments, humane societies/animal welfare organizations, and other interested groups. It is available for purchase by visiting our web site at <http://www.avma.org>.

Although caring for the medical needs of animals during a disaster response is often their most publicized activity, veterinarians also perform other essential functions. In catastrophic disasters, state and federal public health departments will experience a surge in food inspection requirements that will need immediate augmentation by qualified food inspection personnel. In disaster areas, the potential for disease transmission between animals and human beings is always present. In addition, veterinarians can make important contributions to society by evaluating the impact of environmental disasters on human health. Domestic animals frequently mirror the response of human beings in their exposure to environmental contamination. Animals may serve as sentinels and provide medical information that is of significant comparative value, but otherwise is unattainable for human beings. Clinical veterinarians should be aware of the importance of performing necropsies; preserving tissue samples; obtaining blood, serum, urine, cerebrospinal fluid, and fecal samples; and obtaining photographic documentation when there is a possibility of environmental contamination.

Veterinarians also play an important role in the human/animal bond seen during disasters. It is evident that the human/animal bond provides emotional and physiological support for disaster victims. Owners have difficulty abandoning their pets in times of emergency. Pet owners consider their animals as family members that are entitled to the same care and consideration that all family members will receive during emergency situations. It is not unusual for pet owners to suffer grief and other psychological trauma, including guilt feelings, if pets must be abandoned during disasters. Proper shelter, food, and water with available medical and surgical care for pets and livestock are important to the psychological welfare of humans displaced by disasters.

It is difficult to acknowledge adequately the guidance and assistance of AVMA's secretarial and editorial staff, and the contributions of so many veterinarians, state associations, and others who willingly shared their expertise. It would have been impossible to assemble this Guide without their help.

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  - \* American Academy of Veterinary Disaster Medicine
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  - \* American Association of Wildlife Veterinarians
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## **TAB A SECTION 1**

### **Concept of Veterinary Operations**

#### **Legal authority -**

The Department of Homeland Security has the authority to deploy Veterinary Medical Assistance Teams (VMAT) for delivery of healthcare to injured or abandoned animals and for performance of veterinary preventive medicine activities in the aftermath of significant disasters for which federal assistance has been requested by the affected state(s).

The National Response Plan is the mechanism by which the federal government mobilizes resources and conducts activities to augment state and local response efforts to save lives, protect public health, and protect property. The National Disaster Medical System (NDMS), part of the National Response Plan, was developed to provide supplemental medical care to victims of catastrophic disasters in the event state and local resources are overwhelmed and Federal assistance is required. Federal recognition of the need for animal care provided the framework for veterinary health professionals to be organized into VMAT which could respond to the needs of animals during a disaster, as part of NDMS, in the same way that Disaster Medical Assistance Teams (DMAT) provide medical aid to human casualties of disasters.

#### **Scenarios -**

As stated in the Executive Board approved *AVMA Emergency Management Program Strategic Plan*, the goal of the AVMA's emergency management program is to encourage and foster veterinary leadership and guidance in local, state and federal efforts within the United States in preparation for: disasters and emergencies involving animals, animal and public health, and other veterinary issues, and envisions the following scenarios:

*Scenario I* envisions a major disaster in which the National Response Plan and NDMS are activated. This scenario allows for the integration of veterinary personnel into the NDMS. The lead federal agency for the response is the Department of Health and Human Services operating under the Department of Homeland Security. Veterinary Medical Assistance Teams will be deployed to areas that need animal or public health assistance. The purpose of the VMAT is to augment, not supplant, state and local veterinary resources until such resources are self-sufficient and responsive to the veterinary needs within the disaster area.

*Scenario II* envisions an animal disease emergency, such as a foreign animal disease outbreak, for which the response is under the direction of the US Department of Agriculture (USDA). The Animal and Plant Health Inspection Service (APHIS) will search the credentials of the VMAT for veterinarians and technicians who have the skills and experience needed to deal with the prevailing emergency. Selected individuals will be activated as temporary federal employees of the USDA and will be under the direct supervision and authority of the USDA during the deployment.

**TAB A SECTION 2**  
**THE AMERICAN VETERINARY MEDICAL ASSOCIATION**  
**EMERGENCY PROGRAM STRATEGIC PLAN**

**GOAL**

The goal of the AVMA's Emergency Management Program is to encourage and foster veterinary leadership and guidance in local, state and federal efforts within the United States in preparation for: disasters and emergencies involving animals, animal and public health, and other veterinary issues.

**OBJECTIVES**

The objective of this program is to advocate for appropriate support for all veterinary aspects of disaster and emergency situations within the United States.

**RESPONSIBILITIES**

This program is operated by the AVMA staff with oversight and input by the Committee on Disaster and Emergency Issues. The AVMA's emergency preparedness staff is responsible for the compilation and distribution of educational materials, routine communication with membership and external customers and performance of all administrative actions. The Committee on Disaster and Emergency Issues is responsible for the creation of recommendations for consideration by the AVMA Executive Board concerning strategic guidance and fiscal and policy oversight.

**PROGRAM COMPONENTS**

PREVENTION

- Provide educational materials on mitigation to practitioners
- Educate emergency managers and state veterinary associations on appropriate plans and mitigation measures
- In cooperation with animal industry, deliver biosecurity education to practitioners and materials for their clients

DETECTION

- Provide education on Foreign Animal Disease (FAD) awareness and reporting protocols to membership
- Support efforts nationally to enhance the food safety, zoonotic disease and animal disease surveillance systems

PREPAREDNESS

GENERAL

- Support national coalitions of animal health emergency management stakeholders to provide a world-class animal emergency management system
- Coordinate with the United States Department of Agriculture (USDA) and Department of Homeland Security (DHS) to rapidly identify and communicate with practitioners willing to serve in animal emergency situations
- Explore the opportunity for AVMA PLIT to establish disaster coverage
- Assist Federal or State agencies in streamlining animal health resource utilization through the Emergency Management Assistance Compact or other mutual aid agreements
- Assist Federal or State agencies in ensuring that animal health, food safety and zoonotic disease issues are included in the National Response Plan and state-level emergency operations plans

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- Support a State and county-level infrastructure for response to incidents no matter the scope
- Foster cooperation with human medical counterparts for all phases of the program
- Represent the membership in national emergency management system development such as the National Animal Health Emergency Management System and other planning efforts
- Continue to maintain and update the AVMA Disaster Preparedness Series
- Support legislative efforts for government preparedness for animal emergencies and for funding of animal research relating to disasters

**COMMUNICATION**

- Communicate proactively with other animal welfare stakeholders to coordinate resource allocation, and create appropriate memoranda of understanding regarding emergency response efforts
- Disseminate information about the VMATs, National Animal Health Emergency Response Corps, State-level veterinary reserve corps, and other opportunities for veterinarians in the emergency response system
- Anticipate public affairs requirements during emergencies by preparing fact sheets for likely scenarios, and coordinate their review by veterinary specialty organizations or academia

**DISEASE OUTBREAKS**

- Support the development of mass euthanasia guidelines
- Support the development of carcass disposal guidelines

**VMAT SUPPORT**

- Assist in the recruitment, training, development, and oversight of the VMAT program
- Work with National Disaster Management System (NDMS) to develop and modify policy for VMATs that defines their mission, organization, training requirements, and utilization
- Explore with NDMS, the future of the VMAT program including which organization is best suited to provide what part of their oversight, their continued sponsorship through direct funding from AVMF/AVMA, and other funding opportunities that might be available

**RESPONSE**

- Provide assessment assistance to the veterinary community and the local communities following a disaster
- Guide States and other potential requesting organizations in VMAT request procedures and educate them about their capabilities
- Support and encourage DHS in deployment of the VMATs
- Assist DHS, USDA and Department of Health and Human Services (DHHS) in communications with veterinarians during emergency response efforts
- Provide educational material to private practitioners during an incident
- Provide information through appropriate media to the public during a real or perceived incident

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**EMERGENCY PROGRAM STRATEGIC PLAN**

RECOVERY

- Assist in providing information to veterinarians in the state on status of recovery
- Coordinate appropriate after action reviews, recommendations, and education on how to improve prevention, preparedness and response efforts

(Approved by Executive Board November 2004)



AVMA



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### **About the AVMA**

The American Veterinary Medical Association is a professional association of more than 75,000 member veterinarians. The mission of the AVMA is to advance the science and art of veterinary medicine, including its relationship to public health, biological science, and agriculture. The Association is the recognized national voice for veterinarians in presenting their views to government, academia, agriculture, pet owners, and other concerned members of the public.

### **Disaster Preparedness and Response Efforts**

The American Veterinary Medical Association (AVMA) disaster preparedness and response efforts resulted from an agreement between the AVMA and the Office of Emergency Preparedness of the U.S. Public Health Service. With the signing of a Memorandum of Understanding (MOU) in May 1993, veterinary services became incorporated into the Federal Response Plan, now known as the National Response Plan, for disaster relief as part of the National Disaster Medical System (NDMS). NDMS was developed to provide supplemental medical care to victims of catastrophic disasters in the event state and local resources are overwhelmed and Federal assistance is required. Such federal recognition of the need for animal care provided the framework for veterinary health professionals to be organized into Veterinary Medical Assistance Teams (VMAT) which could respond to the needs of animals during a disaster in the same way that Disaster Medical Assistance Teams (DMAT) provide medical aid to human casualties of disasters.

The completion, in August 1994, of a Memorandum of Understanding between the AVMA and the United States Department of Agriculture/Animal and Plant Health Inspection Service (USDA/APHIS) made it possible for the VMAT to assist the USDA in the control, treatment, and eradication of animal disease outbreaks. Such a response would occur under the direction of the United States Department of Agriculture (USDA). The 1994 MOU was approved for a five-year extension in June 1999, and updated in 2005.

On January 26, 1998, the AVMA and American Veterinary Medical Foundation (AVMF) signed a statement of understanding (SOU) with The American National Red Cross (ARC). In the SOU, the American Red Cross recognizes the American Veterinary Medical Association as the only national organizations representing the entire profession of licensed veterinarians solely responsible for the diagnosis, treatment, health and well-being of all animals, including during periods designated as disaster relief. During disasters, Red Cross volunteers will refer all animal medical questions and needs to veterinarians affiliated with the national, state, county, or local veterinary medical associations.

**TAB A SECTION 3**  
**VETERINARY MEDICAL ASSISTANCE TEAMS**

**Veterinary Medical Assistance Teams (VMAT)**

***VMAT Mission: to assist with the care of animals, animal related issues and public health during a disaster following a request from an appropriate agency***

VMAT is designed for response to large-scale disasters but has adequate flexibility to permit response to disasters of limited scope. Though the initial response to disasters occurs at the local level, resources within a disaster area may be inadequate to fully cope with the effects of a major disaster, or local resources may need time to recover before resuming complete responsibility. The VMAT provide assistance during those times when the local veterinary community is overwhelmed.

The VMAT are advanced trained teams of veterinarians from areas including private/public practice, toxicology, pathology, wildlife/exotic/aquatic medicine, surgery, emergency and critical care and various other fields, veterinary technicians, laboratorians, epidemiologists, wildlife experts, and other medical and academic professionals, and support personnel who respond under the Incident Command System. They provide nationwide coverage during times of disaster and can be deployed to any state or United States territory. VMAT members triage and stabilize patients at a disaster site and provide austere veterinary medical care. These teams are mobile units that can deploy within 24 hours. The members carry a 3-day supply of food, water, personal living necessities, and medical supplies and equipment, if needed. Each team is capable of establishing a veterinary field hospital and can provide any other veterinary services needed to support a complete disaster relief effort.

**VMAT Response Capabilities**

1. Liaison (1-2 members) in State Emergency Operations Center (EOC) pre or post disaster
2. Assessment of the animal care-giving infrastructure
3. Veterinary diagnosis, triage, treatment and stabilization
4. Establish veterinary field hospital
5. Mobile veterinary strike teams
6. Food and water safety
7. Multi-hazard assessment, risk reduction and response
8. Biological and chemical exposure surveillance
9. Animal decontamination
10. Medical supervision/treatment of response/service animals
11. Augmentation or surge capacity for an integrated medical response
12. Supervision of animal care and production facilities
13. Training Assistance for local and state assets assigned to animal issues in disasters
14. Provide supplemental veterinary care for overwhelmed local veterinarians
15. Epizootiology / Epidemiology
  - a. Animal disease surveillance
  - b. Zoonotic disease surveillance and public health assessment
16. Humane euthanasia or supervision thereof
17. Animal mortality management

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**VETERINARY MEDICAL ASSISTANCE TEAMS**

18. Animal capture, restraint and transport

The VMAT will supplement the relief efforts already underway by local veterinarians and emergency responders. The goal is a cooperative animal relief effort during times of disaster between VMAT, state and local officials, the state veterinarian, the local veterinary community, state and local veterinary medical associations, emergency management personnel, humane groups, the American Red Cross, and search and rescue groups. The desired result is for all of the entities involved in disaster response to work together cooperatively and efficiently for human and animal well-being.

Qualified applicants who are assigned to one of the VMAT are preprocessed for federal employment and issued identification cards. These persons can then be called to federal service as "special needs" employees of the U.S. Department of Health and Human Services. If activated, the personnel are paid a salary, covered by federal worker's compensation, protected under the Federal Tort Claims Act against personal liability within the scope of their temporary federal employment, and are exempt from licensure, certification, or registration requirements.

**National Response Plan**

The VMAT are response teams recognized in the National Response Plan that provide veterinary medical treatment and address animal related issues resulting from natural and man-made disasters. The VMAT mission is to provide veterinary medical care to injured animals and veterinary oversight concerning animal and public health issues when the local veterinary community is overwhelmed. Although some individuals on VMAT may be trained to do so, VMAT does not provide animal rescue or mass sheltering at this time.

A federal VMAT deployment requires an invitation from the state that is affected by the disaster. Once the state determines that its local veterinary community is overwhelmed, the state submits an Action Request Form (ARF) through the Federal Emergency Management Agency (FEMA) and, once approved, the request is forwarded to the NDMS for implementation. Once deployed, the VMAT are released by the AVMA and the members become temporary federal employees under the direction and guidance of the NDMS.

*AVMA Disaster Preparedness Series ([www.avma.org/disaster](http://www.avma.org/disaster))*

**AVMA Disaster Preparedness and Response Guide**

The AVMA publishes the AVMA Disaster Preparedness and Response Guide. The Guide contains disaster resource information including details about the AVMA Emergency Preparedness Plan, animal care and handling guidelines, disaster information for veterinary practice owners, disaster emergency fact sheets, an extensive directory of disaster related organizations and information resources, and models for state and county animal care annexes. All states are encouraged to develop an animal care annex to their current Emergency Operations Plan.

**Disaster Preparedness Booklet: Saving the Whole Family**

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Each year devastating disasters ravage our nation. "Saving the Whole family" provides detailed disaster preparedness information for owners of both small and large animals. Suggested contents for animal evacuation kits and first aid kits are also included in this booklet. As an added bonus, the back cover may be personalized with a hospital or clinic business card or other form of identification.

**Disaster Preparedness for Veterinary Practices**

Disasters can occur at any time, in any place. What would you do to continue practicing veterinary medicine, continue paying your staff, and communicate with your clients? Don't let a disaster dictate the outcome of your business -- or your life. Prepare now to safeguard those things you care about most. Disaster preparedness tips for veterinary practices – what you need to know to stay in business.

**Veterinary Medical Assistance Teams (VMAT)**

An informational brochure is now available from the AVMA. This brochure provides a detailed description of the VMAT program and their deployment capabilities.

**Order Forms**

Order forms for the AVMA *Disaster Preparedness Series* can be obtained from our Web site at [www.avma.org/disaster](http://www.avma.org/disaster). These publications are also available free of charge from our Web site.

**American Veterinary Medical Foundation Disaster Relief Emergency Fund**

The American Veterinary Medical Foundation is a 501c3 charity supporting VMAT and veterinary-related emergency preparedness, response, and recovery efforts for animals affected by disasters. The ultimate goal of the AVMF is to help as many states as possible be prepared for disasters affecting animals. Your support of the AVMF will enable the Foundation to achieve this goal.

Contributions to support AVMF work can be sent to:  
American Veterinary Medical Foundation  
Animal Disaster Response and Relief Fund (ADRR)  
1931 N. Meacham Road, Suite 100  
Schaumburg, IL 60173  
800/248-2862 x 6689

**Conclusions**

The AVMA has made significant progress on several fronts to mitigate the effects of future disasters, but substantial work remains. It is imperative that state and local organizations prepare an effective disaster response plan. Coordination of efforts is the key. The plan of each small group must fit into the plan of each larger group. For example, the plan formed by humane organizations must integrate with that formed by veterinarians and all must coordinate with local fire and police units, as well as with other emergency responders. The AVMA is working to make such coordination a reality at the national level. By working

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together, by putting aside our own personal agendas, we can find a way to provide for the emergency needs of animals.

For more information on planning for animals in disasters, please visit our website at [www.avma.org](http://www.avma.org).

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## TAB B            SECTION 1 INCIDENT COMMAND SYSTEM

All emergency response operations work under a defined command and control system, often referred to as an Incident Command System (ICS). Incident Command Systems are designed to coordinate the activities of responding agencies and ensure that all forces work toward the single goal of resolving the crisis as quickly and efficiently as possible. The Incident Command System is a model for organizing a chain of command. It is expandable and flexible to adapt to any type or size of emergency. It includes many different groups under one command. An effective ICS includes six major components that are established and incorporated into the total response program for any given incident.

- 1) **Integrated communications** using common terminology is the most important factor in the success of any operation. All units must be clearly understood, and every unit must be able to contact and communicate with every other unit, directly or indirectly, both verbally and in writing (For example: safety personnel must be able to alert all units of possible hazards, and veterinarians must be able to contact logistic personnel for supplies).
- 2) **Modular organization** allows the ICS to expand and contract as necessary. The modular organization of the ICS is divided into five functional areas: Command, Operations, Planning, Logistics, and Finance.
- 3) **Unified command structure** is necessary for situations that are multijurisdictional in nature. For example, an oil spill in coastal waters, which would be handled by both the US Coast Guard and state wildlife personnel, needs a central unified command structure to coordinate actions of the separate agencies.
- 4) **Consolidated action plans** are vital in the preparedness phase of any operation. The plans entail written actions that are designed to define and achieve all goals and objectives during the entire operation. Checklists are effective tools to assist agencies in responding in a predetermined fashion and to ensure that all functions are performed. Incorporating veterinarians in the recall process of written action plans of federal and local agencies will ensure that contact is made at the earliest possible time and will greatly enhance veterinarians' ability to provide the best possible care to injured animals.
- 5) **Span-of-control** deals with the effective management of personnel. Under the ICS, the number of personnel under any supervisor ranges from three to seven; five is optimal.
- 6) **Designated incident facilities** are critical locations for staging and command. The Command Post is the location from which all operations are directed. It is always located a safe distance from the disaster scene to ensure unhampered communications and access. Veterinarians would most likely be directed to incident bases or staging areas where supplies, equipment, and personnel are held until needed and from where they are dispatched or deployed.

The ICS chain of command structure consists of five groups of response personnel that are recalled and integrated as necessary. Not all groups are activated at all times. The ICS is similar to an "on-call" system, in which only the minimal number of personnel are mobilized for a given situation.

- 1) The Command group comprises the **Incident Command Staff**, which usually is based at the Command Post. The Command staff includes several representatives, each with specific responsibilities:
  - A. **Incident Commanders** are the designated individuals from the public agencies or other responsible parties who have the authority to act on behalf of their respective groups.

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**INCIDENT COMMAND SYSTEM**

- B. **Chiefs of Staff** are responsible for the internal management of the agencies that they represent. They may serve as agency Incident Commanders, in the absence of an Incident Commander.
  - C. **Safety Officers** assess safety hazards and unsafe situations, and they have the authority, when necessary, to bypass the chain of command to correct unsafe acts immediately.
  - D. **Liaison Officers** are the points of contact for assistance and to coordinate activities among agencies.
  - E. **Information Officers** are responsible for interfacing with the media.
  - F. **Legal Counsel** is appointed to represent the involved agencies and to ensure that legal issues do not impede response effectiveness.
  - G. **Investigations Officers** determine cause and responsibilities as required.
- 2) The **Planning** Section is responsible for collection, evaluation, dissemination, and use of information about the development of the incident and the status of resources. Effective planning ensures an aggressive, comprehensive approach to problems that may be encountered.
  - 3) The **Operations** Section and its various branches manage tactical operations at the incident scene. The Wildlife Operation Branch is important to veterinarians. It is responsible for the recovery and rehabilitation of wildlife that are affected by the disaster. Other branches include, but are not limited to, Staging, Air Operations, and Waste Handling.
  - 4) The **Logistics** Section is responsible for providing facilities, services, and materials for the response forces. Several logistics branches are of concern to veterinarians. They are the Communications Branch, Service Branch, and Support Branch. The Service Branch is further divided into Medical and Food Units, which provide medical care and meals for response personnel.
  - 5) The **Finance** Section monitors costs and weighs financial considerations, such as reimbursement for the use of private-sector resources. It is critical that all responding parties adopt consistent cost documentation for later recovery from federal and state funds or other responsible parties.

In the AVMA Emergency Response Plan, veterinarians will be integrated with the ICS. As a recognized component of the response force, veterinarians will receive early notification of disasters, and can provide a more timely response. There is a distinct probability that veterinarians who are not included in the ICS structure will be denied access to a disaster area.

To provide effective assistance to animals during disasters, veterinarians must design local/county and state emergency preparedness plans that are based on the ICS model. All of the major components of the ICS need to be in place: communications, action plans, organizational recall structure, and a manageable span-of-control. Most important in the Veterinary Incident Command System is a well-defined chain of command. The chain of command enables agencies that request veterinary assistance to know whom to contact and enables all parties to know who is empowered to act and to make decisions. The federal government will have a single point of contact within the veterinary profession who will be notified in case of a national or multi-state disaster. The Veterinary Incident Commander will then initiate a recall of the appropriate personnel and resources to respond to the disaster.

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**INCIDENT COMMAND SYSTEM**

Veterinarians have the opportunity to respond to the growing demand to address human-animal bond and animal welfare issues related to disasters. Veterinarians must be provided access to disaster scenes, supplies, and the support of the response force. This will only come about when veterinarians are able to demonstrate their ability to perform services that help to resolve the crisis. Disaster response is predicated on the desire to resolve the situation as quickly and efficiently as possible, which means that all responding personnel are expected to be trained in emergency response. A clear understanding of the ICS, its structure and components, enables veterinarians to work within the system. This is most valuable in obtaining needed support and resources.



# Statement of Understanding

*Between*

*The American National  
Red Cross and*

*The American Veterinary  
Medical Association,*

*The American Veterinary  
Medical Foundation*



**American  
Red Cross**

Statement of Understanding Between  
The American National Red Cross  
And The American Veterinary Medical Association,  
The American Veterinary Medical Foundation

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## **I. Purpose**

This statement of understanding reaffirms the relationship between the American Veterinary Medical Foundation, the American Veterinary Medical Association and the American National Red Cross (hereinafter referred to as American Red Cross) in preparing for and dealing with disaster situations.

## **II. Concept of Operations**

Each party to this statement of understanding is a separate and independent organization. As such, each organization retains its own identity in providing service and each organization is responsible for establishing its own policies and financing its own activities.

## **III. Definition of Disaster**

A disaster is a threatening or occurring event of such destructive magnitude and force as to dislocate people, separate family members, damage or destroy homes, and injure or kill people. A disaster produces a range and level of immediate suffering and basic human needs that cannot be promptly or adequately addressed by the affected people, and impedes them from initiating and proceeding with their recovery efforts.

Natural disasters include floods, tornadoes, hurricanes, typhoons, winter storms, tsunamis, hail storms, wildfires, windstorms, epidemics and earthquakes. Human caused disasters - whether intentional or unintentional - include residential fires, building collapses, transportation accidents, hazardous materials releases, explosions and domestic acts of terrorism.

## **IV. Authority of the American Red Cross**

In providing disaster relief, the American Red Cross has both a legal and a moral mandate that it has neither the authority nor the right to surrender. The Red Cross has both the capacity and the duty to act in disaster, and our prompt action is clearly expected and supported by the public.

The Red Cross authority to perform disaster services was formalized when the organization was chartered by the Congress of the United States in 1905. Among other provisions, this

charter charged the Red Cross to continue and carry on a system of national and international relief in time of peace and apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities, and to devise and carry on measures for preventing the same.

*-U.S. Congress, act of January 5, 1905, as amended, 36 U.S.C.*

Red Cross authority to provide disaster services was reaffirmed in federal law in the 1974 Disaster Relief Act (Public Law 93-288) and in 1988 in the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

## **V. Organization of the American Red Cross**

The national headquarters of the American Red Cross is located in Washington, D.C. National headquarters is responsible for implementing policies and regulations that govern the American Red Cross activities, and for giving administrative and technical supervision and guidance to the chartered units. Chartered units include chapters and Blood Services regions. The Board of Governors delegates to the duly constituted volunteer governing board of each chartered unit the authority and responsibility for.

- (a) governance of the chartered unit,
- (b) delivery of authorized services in the territorial jurisdiction of the chartered unit,
- (c) meeting corporate obligations, in conformity with and subject to the limitations stated in corporate regulations.

The American Red Cross provides the following: disaster services; emergency communication between the American public and their family members serving in the U.S. Armed Forces; biomedical services; health, safety, youth and community services, and international services.

Each chartered unit has the authority and responsibility for carrying out the purposes of the American Red Cross, for delivering local Red Cross services, and for meeting corporate obligations within the territorial jurisdiction assigned in conformity with corporate regulations. The chartered units coordinate their

work through voluntary state councils. There are over 900 chapters across the United States.

Each chapter is responsible for providing disaster planning, preparedness, education, mitigation and response. Each chapter has a disaster leadership team or committee. This leadership team or committee studies the disaster hazards of the locality and surveys local resources for personnel, equipment, supplies, transportation, emergency communications, and facilities available for disaster relief. The chapter disaster leadership also formulates cooperative plans and procedures with local government agencies and private organizations for carrying out relief operations should a disaster occur. Through its nationwide organization, the American Red Cross coordinates its total resources for use in large disasters. Services will be provided to those in need regardless of citizenship, race, religion, age, sex, or political affiliation.

#### **VI. Authority of the American Veterinary Medical Association**

A Memorandum of Understanding between the U.S. Public Health Service and the American Veterinary Medical Association was completed on May 6, 1993. The MOU effectively incorporated the American Veterinary Medical Association into the Federal Response Plan for disaster relief as part of the National Disaster Medical System which is managed by the U.S. Public Health Service. The MOU established procedures and policies that guide the PHS and AVMA in the development and use of Veterinary Medical Assistance Teams for joint disaster relief operations of the National Disaster Medical System (NDMS). The NDMS program is a joint effort of the Department of Health and Human Services, the Department of Defense, the Federal Emergency Management Agency, and the Department of Veteran's Affairs. The medical response component is established under the combined authorities of section 311(c) of the Public Health Service Act (42 U.S.C. 243 (c)), Executive Order 12656, and the Disaster Relief Act of 1974 (Public Law93-288) and is administered by PHS. The organization, personnel, and function of VMATs are described in the Disaster Medical Assistance Team Organization Guide, Report NDMS- 86/1.

On August 19,1994, A Memorandum of Understanding was completed that established the relationship and responsibilities of the American Veterinary Medical Association and the U.S. Department of Agriculture Animal and Plant Health Inspection Service regarding joint activities to combat outbreaks of animal diseases that cause the Secretary of Agriculture to declare a national emergency. The MOU makes the AVMA's VMAT's available to assist the USDA in the control, treatment, and eradication of animal disease outbreaks. USDA APHIS is authorized by 21 U.S.C. 114a to cooperate with states or political subdivisions thereof, farmers' associations, similar organizations, and individuals to control and eradicate any communicable disease of livestock or poultry.

#### **VII. Organization of the American Veterinary Medical Association**

The American Veterinary Medical Association is a nonprofit national association of veterinarians established in 1863. The headquarters of the association is in Schaumburg, Illinois. An office is maintained in Washington, DC.

The AVMA is a federation of 67 state, territorial, and allied veterinary medical groups. The AVMA's basic, overall purpose is to advance the science and art of veterinary medicine, including its relationship to public health, biologic science, and agriculture. In striving to develop and maintain the highest standards of professional competence and conduct, the Association, among other actions, seeks to promote and enhance service to clients, animal patients, and the general public.

As a consequence of the MOUs between AVMA and the USPHS and USDA APHIS, AVMA recruited veterinarians, veterinary technicians and others to volunteer as members of the AVMA's Emergency Response Force which includes the Veterinary Medical Assistance Teams (VMATs). The VMATs can deploy to respond to the needs of animals during a disaster or animal disease outbreak. When activated by the USPHS/NDMS, the VMATs are part of the federal system for disaster response. The VMATs are also available to assist state or local response efforts.

### **VIII. Authority of the American Veterinary Medical Foundation**

The provision for effective veterinary care of animals during disaster is crucial, not only to satisfy humane concerns for animal welfare, but for the well-being of people whose existence is so interdependent with that of animals. On June 2, 1994, in response to this crucial need, the American Veterinary Medical Foundation approved a fund to accept and disburse funds related to disaster preparedness (proactive) and relief (reactive).

Funds are used for three primary areas of need in order of priority:

- (1) Health care for animals - to provide for emergency aid for the health, safety, and welfare of animals affected by disaster through coordination with local or state veterinary medical associations, or the support of the AVMA Emergency Response Teams;
- (2) Response Teams - to fund the recruitment, organization, development, and equipping of the AVMA Emergency Response Teams so that they may assist in disasters for which federal assistance is not available; and
- (3) Emergency Preparedness - to educate veterinarians and animal owners on how to prepare for and respond to disasters so that effects will be minimized.

### **IX. Organization of the American Veterinary Medical Foundation**

The American Veterinary Medical Foundation (AVMF) fosters the health and well-being of all animals on a nationwide basis by: rewarding and encouraging innovative veterinary medical science; supporting veterinary medical education; supporting programs that provide veterinary expertise and resources to policy makers; informing the general public about issues related to animal well-being, and responding to other critical concerns among those who care for animals.

Formed in 1963 by the AVMA and established as a 501 (c) 3 not-for-profit organization, the AVMF works to advance the health and wellness of all animal species. By funding the study of new and improved treatments, sponsoring public education about animal

health, it is part of a network of veterinary health professionals and pet owners who provide compassionate care for animals nationwide.

Through partnerships with allied organizations other interested groups and individuals, the AVMF strives to reinforce and enhance the relationship between humans and animals. The special responsibility of the AVMF is to meet the needs of animals and of veterinary medicine that may not be fully addressed by other organizations.

The leaders of the AVMF and of the AVMA are committed to the scientific and educational goals of the Foundation. Together, the AVMF and the AVMA have a significant impact on the health and well-being of animals and people.

When disasters strike, the American Red Cross moves swiftly to assist people, but is not responsible for providing aid to affected animals. The AVMF responds to this need by supporting the AVMA's Emergency Response Teams and providing funds for treating animals hurt or endangered by floods, hurricanes, brush fires, earthquakes, and other disasters.

### **X. Recognition**

The American Veterinary Medical Foundation and the American Veterinary Medical Association recognize the American Red Cross as the agency chartered by Congress through which the American people voluntarily extend assistance to individuals and families in need as a result of disaster.

The American Red Cross recognizes the American Veterinary Medical Foundation and the American Veterinary Medical Association as the only national organizations representing the entire profession of licensed veterinarians, solely responsible for the diagnosis, treatment, health and well-being of all animals, including during periods designated as disaster relief.

Each organization in its voluntary capacity recognizes that federal, state, and local government responsibility, in time of disaster, remains the same as at other times, which is the protection of life, property, public health and welfare, and the maintenance and repair of public property. The occurrence of disaster

increases, but, in general, does not change these responsibilities. The American Red Cross and the American Veterinary Medical Association and the American Veterinary Medical Foundation support and assist the work of governmental authorities in alleviating the distress caused by disasters, but neither assumes responsibility for governmental functions.

#### **XI. Methods of Cooperation**

In order that the American Red Cross and the American Veterinary Medical Association (AVMA), and the American Veterinary Medical Foundation, (AVMF) may work in cooperation in rendering services during disaster relief efforts, all three organizations agree to the following:

1. Close liaison will be maintained between representatives of the AVMA/AVMF and the American Red Cross at the national level. Liaison at the state and local levels will be encouraged by all three organizations. This communication will include such information as disaster reports, changes in policy or personnel, and any additional information pertinent to disaster preparedness and response.
2. The American Red Cross will work with the AVMA/AVMF in emphasizing the need to incorporate veterinary oversight of all animal care and welfare operations in any disaster plans.
3. The American Red Cross will refer all concerns regarding animal health care, safety, or welfare to an AVMA/AVMF contact or contacts in the disaster area, as appropriate. These contact people will be veterinarians affiliated with national, state, county or local veterinary associations.
4. The AVMA will help facilitate and coordinate statements of understanding between local Red Cross chapters and the state and local veterinary community as well as local animal control agencies to establish standard and formal working agreements regarding the health care, sheltering and feeding of animals by appropriate entities in times of disaster.
5. The American Red Cross and the AVMF/AVMA may engage in joint training which addresses areas of complementary or mutual concern.
6. To the extent possible and appropriate, each organization will provide pertinent training and or educational activities and materials for the other. The AVMA/AVMF may be asked to serve as technical advisor on material submitted to the American Red Cross regarding any animal issues in time of disaster.
7. The use of the name and emblem of the American Red Cross by the AVMA/AVMF shall be allowed only in the case of particular projects undertaken pursuant to the prior express written consent of the American Red Cross and when such projects are in conformity with American Red Cross regulations. The use of the AVMA/AVMF logo by the American Red Cross will be allowed only with written consent for approved projects in conformity with AVMA and/or AVMF regulations.
8. Financial support for animal disaster relief expenditures will be sought by the AVMF. The American Red Cross will not assume any financial responsibility for animal disaster relief. In the event either organization receives funds for activities outside their area of responsibility, both agree to redirect such funds to the appropriate organization.
9. The American Red Cross will provide non-financial support, as requested, and to the extent of its capabilities within policy, for any disaster preparedness or response activities sponsored by the AVMA/AVMF, such as the development of regional or local response plans, training programs, workshops, and symposia.
10. Any problems concerning response of the AVMA/AVMF should be addressed to the AVMA Coordinator of Emergency Preparedness or the AVMF Executive Director at the national headquarters. The AVMA/AVMF will advise the American Red Cross Response Department at national headquarters when issues arise regarding the American Red Cross.
11. Recognizing the need for advising the public of the work of all three organizations, the American Red Cross and the AVMA/AVMF will make every effort through their public information offices during the time of disaster to keep the public informed of their cooperative efforts.

**XII. Periodic Review**

Representatives of the American Red Cross Response Department, its Partnership Management Unit, and the AVMA/AVMF will meet annually, on or around the anniversary date of this agreement, to evaluate progress in the implementation of the statement of understanding and to revise and develop new plans or goals as appropriate.

\_\_\_\_\_  
Jack O. Walther, D.V.M.  
President  
American Veterinary Medical Association

\_\_\_\_\_  
Date

**XIII. Term of Agreement**

This agreement shall be effective on December 1, 2003, and terminate on November 30, 2008. Six months prior to termination, the parties shall meet to review the progress and success of the agreement and determine whether the agreement shall be extended for an additional five years. In no event shall any extension of this agreement be for a period exceeding (5) five years.

\_\_\_\_\_  
Robert P. Gordon, D.V.M.  
Chair  
American Veterinary Medical Foundation

\_\_\_\_\_  
Date

**XIV. Termination Statement**

Termination of this statement of understanding by either party may be effected by the delivery of written notice to authorized personnel of either agency to be effective thirty days after receipt of such notice.

\_\_\_\_\_  
Marsha J. Evans  
President and Chief Executive Officer  
American National Red Cross

**XV. Miscellaneous**

This Agreement does not create a partnership or a joint venture, and no party has the authority to bind another, nor shall any party have liability for any other party.

\_\_\_\_\_  
Date

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN THE**  
**U.S. PUBLIC HEALTH SERVICE AND**  
**AMERICAN VETERINARY MEDICAL ASSOCIATION**

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PURPOSE

This Memorandum of Understanding (MOU) establishes procedures and policies that will guide the parties hereto in the development and use of Veterinary Medical Assistance Team (VMAT) response units for joint disaster relief operations of the National Disaster Medical System (NDMS). Specifically, it outlines the agreed activities by the American Veterinary Medical Association (AVMA), and the U. S. Public Health Service (PHS) to support the functions of the Veterinary Medical Assistance Teams (VMAT).

THE NATIONAL DISASTER MEDICAL SYSTEM

A national emergency, whether from earthquakes, tidal waves, volcanic eruptions, industrial accidents, terrorist attacks or a conventional military conflict, could rapidly overwhelm the health care resources of any particular area of the nation. The possibility of such a mass casualty emergency in the United States, no matter how remote, requires a coordinated response of the nation's health care system. For this reason the Federal government has established the NDMS to assist in the delivery of health care for victims of incidents that exceed the medical care capability of an affected State, region, or Federal health care system, and as necessary, the veterinary medical care for injured or abandoned animals, or veterinary preventive medicine as required.

The NDMS program is a joint effort of the Department of Health and Human Services (HHS), Department of Defense (DOD), Federal Emergency Management Agency (FEMA), and Department of Veterans Affairs (VA), and each manages a particular component of the System. The Department of Health and Human Services has the lead responsibility for NDMS.

The NDMS is designed to provide health, medical, and veterinary assistance in the form of response teams to provide the delivery of health care to injured or abandoned animals and for performance of veterinary preventive medicine activities in the aftermath of a significant disaster for which assistance has been requested.

The goal of the NDMS is to create a health, medical, and veterinary aid system that links existing resources in a national network of disaster relief. To this end, the NDMS plans to develop



mutual aid alliances with public and private sector organizations throughout the Nation in an effort to coordinate the development and use of disaster resources for national emergencies.

## PARTIES TO THE AGREEMENT

### U.S. Public Health Service

In major disasters or emergencies, the U.S. Public Health Service (PHS), a component of HHS, has the responsibility to provide Federal medical and public health, and veterinary assistance. On a day-to-day basis, PHS, through its agencies or Regional Offices, may provide technical advice and short-term assistance to State and local health officials upon request, regardless of the magnitude of the incident.

The PHS is the agency responsible for developing the health, medical, and veterinary response component of the NDMS.

### American Veterinary Medical Association

The American Veterinary Medical Association (AVMA) is the national professional association of veterinarians, the members of which are able and willing to provide emergency veterinary medical services, including veterinary disaster medical services in the event they are required.

The AVMA intends to enhance the development of a Veterinary Medical Assistance Team response capability and support the NDMS program in national emergencies.

## ROLES AND RESPONSIBILITIES

The American Veterinary Medical Association, as the team sponsor, agrees to:

1. Provide the necessary infrastructure (e.g., meeting and training support, management and personnel support) for the teams;
2. Support initiatives that ensure adequate training of team members prior to deployment;
3. Recruit and sustain an adequate number of personnel to ensure the availability for team deployment;
4. Participate as needed to support ad hoc NDMS VMAT program development activities;
5. Ensure that VMAT Team Commanders maintain adequate alert and notification procedures, equipment and pharmaceuticals to mobilize the teams for a disaster response;
6. Ensure that VMAT Team Commanders properly store, secure, and maintain all team and personal equipment necessary to meet response requirements; ensure that this equipment is accounted for and readily available for rapid deployment;

7. Ensure that VMAT Team Commanders provide a mechanism to locally obtain a pharmaceutical cache upon activation; and
8. Release the team(s) to PHS for Federal disaster service when requested.

The AVMA may delegate the daily operational responsibilities associated with any of these items to designated teams.

The team(s) will function under the day-to-day control and supervision of the AVMA. In the event of a major disaster or a national security emergency, the AVMA will automatically release the team(s) and its members to PHS for deployment at PHS discretion. At that time, the deployed team members will become Federal employees. The AVMA agrees that, at that time, the AVMA will have no control and will exercise no authority over the team(s) or its members during any period of temporary Federal service. Following such Federal service, the team(s) will be returned to the control and authority of the AVMA.

The U.S. Public Health Service agrees to:

1. Provide general guidance and assistance on the development, organization, and composition of the team(s), as appropriate;
2. Provide a personnel system to assist in the administration and management of the unit or team(s);
3. Assist in obtaining supplies and equipment from Federal and donor sources for training and use in disaster situations; and
4. When a team has been released from Sponsor control during an emergency:
  - Appoint members to a Federal Status as PHS employees and issue duty and travel orders as appropriate;
  - Compensate members for Federal service and reimburse members for expenses incurred while performing assigned tasks;
  - Provide transportation, food, shelter, and logistical support to the team(s); and
  - Return the team(s) and its members to the Sponsor following the emergency.

When disengaged from the AVMA and activated for temporary Federal service, all of the volunteer participants of the team(s) will function as PHS employees under the management and supervisory control of a designated Federal official. While in Federal service, team members will have the same protection against personal liability as other PHS employees for actions taken within the scope of their Federal employment.

REFERENCES

The medical response component is established under the combined authorities of Section 311(c) of the PHS Act (42 USC 243(c)), Executive Order 12656, as amended, and the Stafford Act (Pub. L. 93-288, as amended) and is administered by the PHS.

The organization, personnel, and function of the Veterinary Medical Assistance Teams are described in the NDMS/Disaster Medical Assistance Team Handbook, dated May 1999, (the "Handbook").

The organization, personnel, and function of the Veterinary Medical Assistance Teams are described in the AVMA Disaster Preparedness and Response Guide. (2001, Tab A – Tab C).

EFFECTIVE DATE, MODIFICATION, AND TERMINATION

This MOU becomes effective on the date of the last party signature. It may be amended by agreement of the parties or terminated by either party upon thirty days written notice to the other.

For the American Veterinary Medical Association    For the U.S. Public Health Service

\_\_\_\_\_  
Bruce W. Little, DVM  
Executive Vice President  
American Veterinary Medical Association

\_\_\_\_\_  
Robert F. Knouss, M.D.  
Director  
Office of Emergency Preparedness/  
National Disaster Medical System

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE AMERICAN VETERINARY MEDICAL ASSOCIATION (AVMA)  
AND  
UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)-  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)**

**Article 1**

**Purpose:**

This Memorandum of Understanding (MOU) establishes the relationship and responsibilities of the parties hereto in joint activities to prepare for, respond to and recover from natural disasters or outbreaks of animal diseases that are of interest or concern to USDA, APHIS and AVMA. These issues may be under a Stafford Act or non-Stafford Act incident.

**Article 2**

**Parties to the Agreement:**

The Animal and Plant Health Inspection Service (APHIS) is the operating Agency of the U.S. Department of Agriculture (USDA) that is responsible for monitoring the health of agricultural livestock and the prevention, containment, control, and eradication of animal disease outbreaks that may occur in the United States. USDA is the Primary Federal Agency responsible for Emergency Support Function 11 and APHIS is its representative for animal related issues.

The American Veterinary Medical Association (AVMA) is a national association of veterinarians, the volunteer members of which are able and willing, when called upon, to assist the Government in the prevention, containment, control, treatment, and eradication of animal disease outbreaks that may occur in the United States and to support APHIS in national emergencies.

**Article 3**

**Authority:**

APHIS is authorized by 21 USC 114a to cooperate with States or political subdivisions thereof, farmers' associations, similar organizations, and individuals to control and eradicate any communicable disease of livestock or poultry.

Authority also exists under 7 USC 426 for USDA, APHIS, Wildlife Services to cooperate and enter into agreements with States, local jurisdictions, individuals, public and private agencies, organizations, and institutions in the control of nuisance mammals and birds and those mammal and bird species that are reservoirs for zoonotic diseases.

**Article 4**

**Roles and Responsibilities: -**

The AVMA agrees to:

1. Provide to APHIS the name, title, address, and telephone number of the official who will serve as the AVMA representative to implement and coordinate responsibilities and actions pursuant to this MOU.

2. Help APHIS recruit and identify qualified veterinarians and veterinary technicians (both AVMA members and non-members) who are able and willing, when called upon, to be part of a National Animal Health Emergency Response Corps to assist APHIS personnel in the control and eradication of animal disease outbreaks or natural disasters.
3. Coordinate AVMA supported, Department of Homeland Security's Veterinary Medical Assistance Teams with APHIS and support the National Animal Health Emergency Response Corps (NAHERC) to ensure seamless integration of the membership to provide an effective and efficient response to a natural disaster or animal disease outbreak. This would include but not limited to joint exercises and training between National Response Plan's Emergency Support Function 8 and Emergency Support Function 11 veterinary resources.
4. Assist APHIS in efforts to notify AVMA members and non-members of available APHIS educational opportunities. And, encourage State Veterinary Boards to recognize deployment to and training for Emergency responses for continuing education credits.
5. Assist APHIS to further educate the veterinary or other animal health professions on foreign and emerging animal diseases. And, help identify experts as requested to help develop response plans and strategies before and during a response.
6. Assist APHIS in the deployment of the International Veterinary Reserve Corps by supporting the use of non-US veterinarians (currently including Australia, New Zealand, United Kingdom, Canada and Ireland) when US resources are overwhelmed and APHIS requests assistance from these countries. This assistance could include supporting temporary licensure under federal government supervision or providing veterinary practice act information necessary for the conducting of veterinary activities as temporary federal employees.

APHIS agrees to:

1. Provide to AVMA the name, title, address, and telephone number of the official who will serve as the APHIS representative to implement and coordinate responsibilities and actions pursuant to this MOU.
2. Provide logistical support, guidelines, directives, instructions, and related specialized information that may be required for the effective and efficient performance of veterinarians and veterinary technicians who are members of the NAHERC and for VMAT personnel when requested by APHIS.
3. Help to educate the veterinary or other animal health professions by using AVMA resources and communication channels.
4. Notify the AVMA of new USDA, APHIS educational materials available to the veterinary or other animal health professions on animal diseases and disaster preparedness and response.

The AVMA and APHIS mutually agree that:

1. This MOU defines the general terms by which each party concerned will cooperate. This document does not constitute a financial obligation to serve as a basis for any reimbursable expenditure. Under this MOU each party is to use and manage its own funds.
2. In the event that resources are needed under the provisions of 21 USC 114, APHIS and the AVMA will negotiate an agreement, when needed, to detail the obligations of the parties as appropriate under the circumstances of the incident.
3. AVMA agrees that VMAT members may be deployed directly under USDA APHIS control and not through DHS NDMS when the situation and APHIS determines such deployment is warranted. In such cases AVMA will coordinate VMAT members as either teams or individual assets under emergency conditions determined by the Administrator of APHIS. In such cases the VMAT will be released from AVMA control and will function under the general direction of a designated APHIS official as temporary federal employees with salaries, travel expenses, and other necessary expenses

as determined by and paid for by APHIS as applicable under federal law. The VMAT personnel assigned to the emergency will have the same protection as all temporary APHIS employees against personal liability for actions taken within the scope of their duties.

4. APHIS employees are subject to applicable Federal personnel laws, rules, and regulations. The VMAT will follow the same applicable laws, rules or regulations as any other federal employee.
5. Once the VMAT member's tour of duty has been completed and the member(s) returns home, the VMAT member(s) will be returned to the control of the AVMA. At this time, the VMAT member(s) is no longer subject to control or protection as a federal employee.
6. Both organizations should work in concert to educate the veterinary or other animal health professions about foreign and emerging animal diseases and animal issues in disasters.
7. Both organizations should work in concert to educate the public regarding animal disaster preparedness, response, and recovery.
8. Both organizations will communicate with each other through an internal representative during declared animal disease emergencies.
9. Both organizations will work together to coordinate training opportunities for VMAT, NAHERC and other identified personnel.
10. Both organizations will work together to develop approved humane mass euthanasia methods.

#### **Article 5**

**Member of Congress:**

Under 41 USC 22, no member of or delegate to Congress shall be admitted to any share or part of this MOU or to any benefit to arise therefrom.

#### **Article 6**

**Amendment Clause:**

This MOU may be amended at any time by mutual agreement of the parties in writing.

#### **Article 7**

**Termination Clause:**

This MOU will be in effect upon final signature of both parties. It may be terminated at any time by mutual agreement of the parties in writing, or by one party with sixty (60) days notice in writing to the other party.

**Memorandum of Understanding:**

This serves as an agreement between the United States Department of Agriculture/Animal and Plant Health Inspection Service and the American Veterinary Medical Association.

UNITED STATES DEPARTMENT  
OF AGRICULTURE  
ANIMAL AND PLANT HEALTH  
INSPECTION SERVICE

THE AMERICAN VETERINARY  
MEDICAL ASSOCIATION

NAME: W. Ron DeHaven, D.V.M.

NAME: Bruce W. Little, D.V.M.

TITLE: Administrator

TITLE: Executive Vice President

SIGNATURE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_3/1/2005\_\_\_\_\_

DATE: \_\_\_\_\_3/4/2005\_\_\_\_\_

**TAB D SECTION 1**  
**DEVELOPMENT OF STATE/LOCAL ANIMAL CARE PLANS**

By: Jacob Casper, DVM  
Coordinator of Disaster Services  
Maryland Department of Agriculture

I. Lobbying efforts

The state Veterinary Medical Association (VMA) should petition and lobby the proper state officials – whether it be the governor, county executive, state department of agriculture, director of emergency planning, or state legislators for inclusion of veterinary medicine in all phases of the state’s emergency management plan. Veterinarians should be included on state and local emergency advisory councils, in development of the emergency plans at all levels, and on the staff at the central and local emergency operating centers during actual emergency events.

The VMA should petition for a representative of the association to fill a position of Veterinary Liaison Officer in the state emergency management agency or state emergency planners’ office. If the assignment is to be made by political appointment, the organization may wish to suggest several names to the official so that they may ultimately choose one. County/local VMA’s should petition to have a representative in the county or local emergency planners’ office. Such appointments may come under the jurisdiction of the local board of health.

II. Establishment of a committee to assist in development of an emergency procedure

Once appointed, the Veterinary Liaison Officer should seek the formation of a Disaster Medicine Committee to assist in development of a suitable program for their localities. It is suggested that the committee consist of veterinarians representing all or some of the following aspects of veterinary medicine within the state:

1. Large animal practitioner
2. Small animal practitioner
3. Department of Agriculture veterinarian(s)  
State Animal Health Officials  
Meat & Poultry Inspection  
Diagnostic Laboratory Veterinarian
4. Department of Natural Resources – veterinarian or game warden
5. Zoo veterinarian
6. Veterinary school representative
7. Animal control veterinarian
8. Laboratory animal veterinarian
9. Animal welfare organizations/shelter representation

Once formed, the committee should meet as often as needed until the program is formulated and then meet a minimum of twice yearly thereafter.



**TAB D SECTION 1**  
**DEVELOPMENT OF STATE/LOCAL ANIMAL CARE PLANS**

The chair of the Disaster Medicine Committee may be the Veterinary Liaison Officer, the alternate Veterinary Liaison Officer, or another member. The chair is appointed by the president of the state VMA. The committee's duties are to determine the responsibilities and liability of veterinarians in emergency operations; coordinate with the emergency management agency in development and revision of the state emergency operations plan as it involves veterinarians and other animal care persons; coordinate veterinary services and animal care responsibilities with the Departments of Health, Agriculture, Wildlife, and Environmental Protection; and encourage and assist local veterinary associations in contributing to county emergency planning and operations.

III. Survey of existing laws

Certain agencies and groups often are designated by specific laws to handle certain situations in the state involving animals. (Example: Stray animal control may be the responsibility of county animal control agencies.) The committee should research existing laws to accurately determine the responsibilities of various agencies. If there is any overlapping of functions, a written memorandum of understanding should be developed that specifically identifies each agency's functions. Laws or regulations regarding foster/adoption of lost/abandoned pets and livestock as well as laws governing carcass disposal should be examined. Natural resources and wildlife agencies have legal responsibilities for wildlife; therefore, care of wildlife affected by disasters must be coordinated with these agencies.

IV. Funding

The issue of funding for equipment, drugs, feed, and supplies used during an event must be addressed in advance and included in the final plan. Needed items may be donated by vendors or funding may be accomplished by state support through special legislative funding, donations, grants, billing the individual animal owners, or by other methods. Specific guidelines for rapid distribution of emergency funds and persons authorized to release the funds should be established prior to any emergency. Guidelines for proper documentation of distributed funds and supplies should be determined. Accurate record keeping is important so that donations are securely handled and not misappropriated or misdirected.

V. Animal census

A statewide, countywide, and locality-wide census of the animal population should be taken. Included in the census should be the location, type, and numbers of livestock and poultry, and the location of private and public zoos, aquariums, laboratory animal facilities, aquaculture centers, and other similar operations, with an indication of the numbers and type of animals in each. The Department of Natural Resources should provide some estimate as to the location, type, and numbers of wild animals in the state, if possible. Lastly, some estimates of companion animals should be included. Once this information is assimilated, it should be keyed onto a map for easy reference, so that emergency responders will immediately know, for the area of emergency, the type, location, and number of animals involved. The state department of agriculture and USDA may already have this on file and can be helpful in providing this data for farm animals.

VI. Development of a personnel list

A list of individuals who can be consulted during an emergency and who can act as a responder at the emergency site to assist during the event should be developed. Veterinarians, veterinary technicians, livestock inspectors, state animal health officials, game wardens, animal control personnel, farmers, and kennel owners should be included (prime representative and at least one backup). Current phone numbers (cell phone, pager, home and work) should be included in the list

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along with a brief summary of the individual's expertise and reason for inclusion on the list, particularly if the individual will be responsible for hands-on care. Once the list is developed, it should be reviewed and updated at least twice yearly or more often as needed to ensure that individuals are still willing to serve and that their phone numbers are current. Once the list is complete, individuals should be advised of exactly what their responsibilities will be and how they will be directed to respond. The organization should be developed statewide, as well as by regions, so that all areas of the state are covered.

The success of any emergency operations plan depends on the effectiveness of the chain of command and control. The Veterinary Liaison Officer and the alternate, by nature of their appointment by the Board of Health or other responsible agency, have an obligation to coordinate local veterinary service and animal care activities. Their willingness to be nominated, however, and the participation of veterinary, humane society, and animal control personnel are on a voluntary basis. During emergencies, voluntary helpers usually are plentiful; coordination of their efforts is the challenge. Coordination of state agencies and volunteer activities with the incident commander at the disaster site is essential. It is through the Veterinary IC that local veterinary efforts can be coordinated and integrated with the National Disaster Medical System of the Federal Response Plan.

#### **VII. Communications**

As important as the chain of command is, it is ineffective without adequate communications. Phone lines often are down or access is restricted during times of disaster. Prior arrangements should be made with the local phone company for the provision of open lines between the Disaster Medicine Committees' office and the state and county emergency operations centers. In addition, a list of people willing to provide ham-radios, walkie-talkies, facsimile machines, portable satellite telephones, cellular phones, and expertise on their use should be obtained. Coordination of communications with other emergency responders, such as offices of fire, police, and rescue squads, as well as the emergency management center is important. A phone tree to organize the response to a disaster should be arranged to prevent unnecessary overloading of the phone lines.

#### **VIII. Supply List**

A list of supplies that might be needed for hands-on animal care during an emergency should be developed. Once the list is developed, sources of those supplies should be determined. The list should include food for large and small animals, medical supplies (including medical, necropsy, and restraint equipment), and record keeping supplies.

Depots at various locations throughout the state could be stocked with a minimal amount of supplies. Existing facilities such as feed mills, poison control depots, veterinary hospitals, and pharmaceutical distributors may be used as supply sources. A source list for selected items should be developed so that the emergency response coordinator will know where to obtain particular supplies. Included in the supply list should be a suggested cost of the items and how the individual vendor will be paid to avoid budgetary problems and actual release of the supplies by the vendor. The vendor or source list should also include normal work hours and after-hours phone numbers and the names of contact persons. The list should be updated periodically as phone numbers may change and vendors may go out of business. During an emergency, the coordinator should arrange for obtaining and shipping supplies to a central point at the emergency scene.

A list of facilities available for possible use as warehouses for donated supplies during times of disaster should be compiled. Most importantly, a list of volunteers willing to staff those warehouses during the disaster response is needed.

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IX. Evacuation location and shelter

During certain emergencies, it may be necessary to temporarily evacuate the areas. Public Service Announcements should be broadcast instructing owners that conditions unsafe for people are unsafe for animals. A list of shelters where animals can be taken should be developed. For farm animals, shelters could include sale barns, racetracks, or fairgrounds. For pets, it could include veterinary hospitals, boarding kennels, or fairgrounds. A plan for handling pets that arrive with their owners at mass care centers should be developed. A list of the sources and types of vehicles that could be used for animal evacuation should be organized. Routes for evacuation will have to be coordinated with the Department of Transportation at the time of the evacuation; however, the routes should be separate, if possible, from routes used to evacuate people so that the movement of animals does not interfere with the mass movement of people. If large animals cannot be evacuated, then instructions for owners should be developed. Consideration should be given to appointing farmers emergency workers to care for their own animals at the time they can be allowed back into the area. Workers that will handle animals should be issued badges or easily distinguishable armbands so that others will readily know of their identity and they will not inadvertently be excluded from the scene.

X. Transportation

Checklists of transportation resources should be developed. Transportation resources should be separated into those for cattle, horses, and small animals. (Horses should not be transported in stock trailers.) Dog clubs and breeder groups often can mobilize and transport dogs on short notice. They have the vehicles and cages to transport large numbers. The local chapter of the American Red Cross should be contacted to discuss transportation of animals from Red Cross shelters to animal hospitals or shelters. The American Red Cross has designated the American Humane Association and the Humane Society of the U.S. as the lead groups responsible for rescue, feeding, and sheltering of animals during a disaster response.

XI. Controlled slaughter, euthanasia, and disposal procedures

Depending on the nature of the disaster, animals may die or need to be euthanatized. Should laboratory analysis of carcasses be needed for disease control, a protocol for sample collection and submission must be developed prior to the emergency. If animals are to be euthanatized, accepted methods for individual or mass euthanasia should be documented, brief guidelines are provided in this guide. Guidelines for euthanasia of animals with absentee owners should be developed. Procedures for how carcasses will be disposed of also must be determined. Carcass disposal may be by burning, burial, or rendering. A list of renderers, crematoriums, and heavy earth-moving equipment suppliers should be developed to meet this need. If mass burial is to be done, consultations should be held with officials of the Department of the Environment to ensure that the burials will not cause contamination of water sources or harm other natural resources. In some instances, animals may be slaughtered for food purposes as a means of euthanasia. The slaughtered animal must be inspected for wholesomeness.

XII. Care of injured, sick, and stray animals

Care of sick or injured animals will depend on the condition at the emergency site. In some cases, normal veterinary procedures can be used. In others, a triage system will have to be developed, especially if mass casualties exist. Decisions on treatment versus euthanasia may have to be made. Stray animals need to be caught and confined or euthanatized by the appropriate officials. Plans need to be developed in advance but modified for each circumstance during an emergency. The prime concerns in handling sick, injured, or stray animals should be the normal treatment, if

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possible, and if not, to alleviate as best possible the animal's pain and suffering, and to minimize injury by the animal to human beings and prevent/control the spread of zoonotic diseases.

XIII. Integration with the master plan

The various resources, personnel, and census lists, along with any procedures and protocols developed, should be integrated into the state or subdivision's master plan. Many emergency management agencies are computerizing such information on maps. Because the prime function of all plans is the protection of life and property, priorities of animal care will have to be developed. Support agencies may not be willing to have their resources used to care for animals if human life is in danger. This should be discussed in advance of emergencies, thus, coordination should be made with state and local officials and FEMA representatives.

XIV. Education and public information

After lists are developed and a plan devised, all key personnel must be educated as to their responsibilities. This may be done by formal training sessions, brochures, telephone conversations, or videotapes. Prior to events and during emergencies, an individual (public information officer) that can provide information to the public should be designated and used as necessary.

XV. Practice exercises

At least twice yearly or more often if needed, a practice exercise should be conducted. Exercises may or may not be announced and should be held at different times of the day, night, and week. Exercises can be held in coordination with state planned exercises or independently. During these exercises all phases or only certain parts of the plan may be implemented. A script should be developed that would effectively challenge the responders. After the exercise is completed, a debriefing and critique must be held to determine whether any modifications to the plan are required.

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Tab \_\_\_\_\_ to Annex \_\_\_\_ (Public Health) of the \_\_\_\_\_ Emergency Operations Plan

Veterinary Service and Animal Care

I. PURPOSE

The purpose of this Veterinary Service and Animal Care Annex (tab) to the (state) Emergency Operations Plan is to provide guidelines for rapid response to disasters affecting the health, safety, and welfare of human beings and animals. Veterinary medicine and animal care resources in emergency preparedness, response, and recovery include, but are not limited to, small and large animal care, facility usage, and displaced pet/livestock assistance.

II. SITUATION AND ASSUMPTION

A. Situation

1. A disaster or major emergency is any occurrence, natural or man-made, that causes substantial suffering to human beings and animals, and catastrophic damage to property. Examples include hurricanes, earthquakes, tornadoes, floods, fires, snowstorms, drought, explosions, nuclear accidents, hazardous materials spills, structure collapse, riots, terrorism, transportation wrecks, and outbreaks of contagious disease.

B. Assumptions

1. The (state) Veterinary Medical Association (VMA) represents veterinarians of the state and maintains liaison with the emergency management and environmental protection agencies; Departments of Public Health, Agriculture, and Wildlife; and humane societies and animal control agencies. The Association's address and telephone number are:

\_\_\_\_\_

\_\_\_\_\_

2. The Disaster Medicine Committee consists of members representing the (state) veterinary medical association, state veterinarian's office, \_\_\_\_\_ College of Veterinary Medicine, (state) veterinary technician's association, State Department of Wildlife, (state) animal control association, humane organizations, and veterinarians representing large animals, small animals, and zoologic animals.
3. The Disaster Medicine Committee coordinates veterinary involvement with the State Emergency Management Agency in cooperation with the (state) Departments of Health, Agriculture, and Wildlife.
4. Memoranda of Understanding will be developed between the (state) Emergency Management Agency and transportation companies;

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communications equipment suppliers; manufacturers of cages, portable fences, pet foods, livestock foods; and pharmaceutical firms.

5. Veterinarians residing in each county are the first line for response to emergencies involving animals or animal food products in their communities.
6. If an emergency incapacitates local veterinary activities or if the magnitude of the emergency exceeds local veterinary resources, veterinary resources from adjacent counties may be requested in accordance with any pre-existing agreements.
7. The state Emergency Operations Plan is consistent with the Federal Response Plan.

**III. CONCEPT OF OPERATIONS**

**A. Mitigation**

1. Zoological and wildlife parks, marine animal aquariums, laboratory animal research facilities, animal shelters, and university veterinary medical and animal science centers will be (encouraged/required) to develop emergency procedures and evacuation plan for the animals in their care and to provide copies of the plans to the (state) Emergency Management Agency.
2. Permit applications to maintain a wild/exotic animal require applicants to file an emergency procedures and evacuation plan with the (state) Emergency Management Agency and to maintain possession of a suitable container to transport the animal during evacuations.

**B. Preparedness**

1. The state VMA provides an organizational structure, chain of command, and outline of the duties and responsibilities of veterinarians involved in implementation of the response to a disaster or major emergency.
2. The state VMA provides the names of current state and county Veterinary Liaison Officers to the Coordinator of Emergency Preparedness for the AVMA.
3. The state VMA provides a current directory of county Veterinary Liaison Officers (county veterinary coordinators) and member licensed veterinarians residing in the county/city to the local Emergency Management Agency (EMA) Coordinator.
4. Veterinary personnel participate in emergency exercises and training.
5. Directories of humane society and private animal control facilities are provided to the county.

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6. Humane society and animal control personnel participate in emergency exercises and training.
7. Veterinary services and animal care activities are incorporated into local Emergency Operations Plans (EOP).
8. Copies of animal-escape/evacuations plans for zoologic, wildlife, and aquarium parks; laboratory animal research facilities; animal shelters; and university veterinary medical and animal science centers are provided to the (state) Emergency Management Agency.

C. Response

1. Veterinarians involved in emergency management will:
  - a. Coordinate with governmental authorities in establishment of emergency aid stations and staging of emergency relief.
  - b. Coordinate with governmental authorities in matters of evacuation.
  - c. Cooperate with governmental authorities in matters of equipment use and provision of transportation.
  - d. Cooperate with mutual aid operatives.
  - e. Cooperate in matters of salvage and restoration of community order.
  - f. Maintain security of veterinary medical facilities and supplies.
  - g. Coordinate with public information operations to communicate alert status, volunteer mobilization, and casualty and damage information.
  - h. Temporarily arrange for or provide food, water, and shelter for small and large animals.
  - i. Provide care for sick/injured animals.
  - j. Assist in the coordination of efforts with animal control officials to apprehend animals that have escaped their confinement.
  - k. Recommend methods of proper disposal of dead animals; coordinate with (state) Departments of Agriculture, Health, Wildlife and (state) Environmental Protection Agency.
  - l. Recommend methods and supervise prevention and control of zoonotic diseases.
  - m. When medical facilities are unavailable, permit use of veterinary facilities and equipment for temporary human medical care during extreme emergencies involving mass casualties.

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D. Recovery

1. Provide documentation of injuries and deaths of animals for insurance purposes.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

- A. The (state) Veterinary Medical Association is the primary organization for coordinating voluntary veterinary services needed in emergencies.

1. President:

- a. Responsible for informative communications with constituent veterinarians and related organizations.
- b. Appoints the (state) Veterinary Liaison Officer.

2. Executive Director:

- a. Responsible for daily operation of VMA office in (location).
- b. Maintains frequent communication with the state Veterinary Liaison Officer.
- c. Coordinates disaster activities with the Coordinator of Emergency Preparedness for the AVMA.
- d. Coordinates multi-state disaster response with other state VMAs.
- e. Maintains a list of county Veterinary Liaison Officers (county veterinary coordinators) and their alternates.
- f. Activates the phone tree, when necessary.
- g. Coordinates press releases and public service announcements, assists (state) VMA spokespersons, establishes and manages a veterinary medical media liaison center, and coordinates with other professional media centers.
- h. Coordinates with the Dean of the (state) College of Veterinary Medicine for assistance and expertise in disaster relief.
- i. Coordinates efforts of national organizations involved in assisting veterinarians with insurance matters or practice management problems related to the disaster.
- j. Solicits and coordinates donations of food, supplies, and resources.



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- k. Maintains list of retired/volunteer veterinarians who are willing to assist in emergency response situations.
  - l. At the direction of the (state) VMA, establishes an emergency fund for supplies, food, reimbursement of veterinarians for supply costs, and to assist affected veterinarians to reestablish their practices.
  - m. Determines what special training (hazardous materials training) is necessary for veterinarians to enter disaster areas.
3. State Veterinary Liaison Officer:
- a. Serves in the state Emergency Operations Center (EOC) as a state level liaison between the (state) VMA and the (state) EMA; other representatives in the EOC; county Veterinary Liaison Officers (county veterinary coordinators); the (state) Departments of Public Health and Agriculture; National Animal Disaster Coalition (NADC) representative; and local emergency responders (veterinarians, humane society and animal control personnel) during disasters requiring veterinary services and animal care.
  - b. Establishes procedure for requesting Veterinary Medical Assistance Teams from the NDMS through communications with the Coordinator of Emergency Preparedness for the AVMA.
  - c. Establishes procedure for requesting military veterinary service assistance through the Federal Coordinating Officer at the state EOC.
  - d. Maintains liaison with regulatory agencies.
4. President of the (state) Federated Humane Societies:
- a. Appoints or serves as state-level liaison (state Humane Liaison Officer) between the VMA representative (state Veterinary Liaison Officer) and local humane organizations.
  - b. Coordinates all humane society animal relief/rescue efforts with the EOC and the state Veterinary Liaison Officer.
  - c. Serves as the in-state coordinator for all relief efforts of regional or national humane organizations.
5. Head of the (state) Animal Control Association or local Animal Control Department:
- a. Appoints or serves as state-level liaison between the VMA representative (state Veterinary Liaison Officer) and local animal control personnel.
  - b. Coordinates all animal rescue/control efforts with the EOC.

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V. DIRECTION AND CONTROL

- A. The initial point of contact is the Executive Director or President of the VMA who will contact the Chairperson or a member of the Disaster Medicine Committee who will contact the state Veterinary Liaison Officer who will coordinate activities with the county Veterinary Liaison Officers (county veterinary coordinators), the state Humane Liaison Officer, and the animal control association representative. The state Veterinary Liaison Officer will coordinate veterinary services and animal care with the (state) Department of Health or Agriculture representative at the state level.
- B. During times of federal assistance, the Veterinary Incident Commander is the liaison between local veterinary responders and Veterinary Medical Assistance Teams of the U.S. Public Health Service.
- C. Veterinarians, animal control, and humane society personnel will participate in emergency operations on a voluntary basis.

VI. CONTINUITY OF GOVERNMENT

- A. During emergencies, the line of succession for VMA Veterinary Liaison Officer will be the other members of the VMA Disaster Medicine Committee.

VII. ADMINISTRATION AND LOGISTICS

- A. The (state) Veterinary Liaison Officer serves on the staff of the (state) EOC.
- B. Reimbursement for use of facilities, supplies, and personnel will be negotiated on a situation-by-situation basis with the State EMA Coordinator.

VIII. PLAN DEVELOPMENT AND MAINTENANCE

- A. The Chairperson of the VMA Disaster Medicine Committee reviews this annex/tab to the (state) EOP to ensure that necessary updates and revisions are prepared and coordinated, based on deficiencies identified in exercises and emergencies.
- B. Changes to this annex/tab will be coordinated by the (state) EMA and distributed to all holders of the (state) Emergency Operations Plan (EOP).

IX. ATTACHMENTS

Attachment 1 – Map of VMA Districts

Attachment 2 – Key Contacts

Attachment 3 – Resource Lists

(Rev. 12/15/00)

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**ANNEX (TAB) FOR**  
**COUNTY EMERGENCY OPERATIONS PLANS**

**I. PURPOSE**

To establish the contribution of veterinary medicine and animal care resources in emergency preparedness, response, recovery, and mitigation management in \_\_\_\_\_ County.

**A. Situation**

1. A disaster or major emergency is any occurrence, natural or man-made, that causes substantial suffering to human beings and animals, and catastrophic damage to property. Examples include hurricanes, earthquakes, tornadoes, floods, fires, snowstorms, draught, explosions, nuclear accidents, hazardous materials spills, structure collapse, riots, terrorism, transportation wrecks, and outbreaks of contagious disease.

**B. Assumptions**

1. The county or regional veterinary medical association represents local veterinarians and maintains liaison with emergency management, public health, agriculture, humane society, and animal control agencies (names and telephone numbers are listed at Attachment 1).
2. The lead Association's address and telephone number are:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. A veterinarian (county Veterinary Liaison Officer or county veterinary coordinator), identified by the lead veterinary medical association and appointed by the local Board of Health, will coordinate veterinary, humane society, and animal control involvement in emergency management with the \_\_\_\_\_ County Health Department, \_\_\_\_\_ County Emergency Management Agency (County EMA), State Emergency Operations Center, state Veterinary Liaison Officer, other county Veterinary Liaison Officers, and the county/local Veterinary Medical Association (VMA).
4. A person identified as the county Humane Liaison Officer will be recommended by and will represent animal control agencies, humane organizations, and animal rescue groups residing in or acting within the county.
5. The veterinary, humane society, and animal control staffs residing in a county are the first line of response to emergencies involving animals in their communities.
6. If an emergency incapacitates local response capability, veterinary, humane society, and animal control resources from adjacent counties may be requested through the County EMA Coordinator.

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**II. RESPONSIBILITIES**

- A. The Association-identified veterinarian will be the county Veterinary Liaison Officer (county veterinary coordinator) in the County Emergency Operations Center (County EOC) and will be responsible to the Chief Executive Officer for all activities within the scope of this plan. The County EMA Coordinator will appoint a County EOC Veterinarian-in-charge, if more than one veterinarian is assigned to the EOC.

**III. CONCEPT OF OPERATION**

**A. Mitigation**

- 1. Arrange for emergency generators to provide electricity required for emergency heating, feeding, and watering of highly vulnerable animal populations.

**B. Preparedness**

- 1. Plan coordinated relief efforts with the county emergency preparedness office, local animal control department, humane organizations, local law enforcement agencies, local chapter of the American Red Cross, and others providing emergency services.
- 2. Determine which agencies/departments/organizations will be responsible for search and rescue efforts for injured, stray, or abandoned animals.
- 3. Determine which agencies/departments/organizations will be responsible for transportation of injured animals to veterinary facilities and back after treatment.
- 4. Determine which agencies/departments/organizations will provide feeding, sheltering, and routine care of stray or abandoned pets, livestock or exotics.
- 5. Coordinate with the American Red Cross in developing a plan to transport animals to animal care facilities when owners are evacuated to shelters.
- 6. Develop list of registered veterinary service volunteers.
- 7. Provide listing of animal clinics, shelters, and their supervisors to the County EMA Coordinator.
- 8. Provide maps of affected area and prepare overlays plotting locations of veterinary hospitals/clinics, animal shelters, animal control facilities, designated emergency animal holding facilities, livestock market facilities, fairgrounds, feedlots, and supply distribution points.
- 9. Establish work schedules.
- 10. Form mobile veterinary response teams and assign areas of responsibility. Response teams may be organized by city, county, or multi-county, depending

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on the extent of the disaster and the number of veterinary personnel participating.

11. Coordinate the veterinary logistical supply system: Determine requirements, identify supply sources, method of acquisition, fund requirements, shipping methods, storage, and method of distribution.
12. Identify communications equipment for use during a disaster.
13. Involve veterinary, humane society, and animal control personnel in emergency exercises and training.
14. Determine high-density animal populations at high risk in the event of a disaster.
15. Establish procedure for requesting Veterinary Medical Assistance Teams from the NDMS through communication with the Coordinator of Emergency Preparedness for the AVMA.
16. Establish procedures for requesting military veterinary service assistance through the Federal Coordinating Officer at the state EOC.
17. Develop a list of vehicles and trailers to provide transport of personnel and animals.
18. Develop a preventive health program for all housed animals.
19. Provide means for identification of lost or abandoned animals.
20. Agree on establishment of a uniform “hotline” number for animal retrieval and other animal-related information.
21. Develop a plan for rapid disposal of dead domestic animals and contaminated carcasses. (Plans for collection and disposal of dead wildlife must be coordinated with state departments of wildlife.)

C. Response

1. Assist in apprehension of animals that have escaped their confinement.
2. Establish a local animal retrieval plan in conjunction with animal control and humane society personnel.
3. Establish a foster/adoption procedure in the event that lost animals cannot be reclaimed by their owners in a reasonable period of time. Agreements must be legally written to protect the rights of the original animal owners. Ascertain that such procedures are in accordance with applicable state/county laws.

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4. Recommend methods of proper disposal of dead animals; coordinate with Departments of Agriculture, and/or Health, and/or Wildlife, and/or Environmental Protection.
5. Recommend methods and supervise prevention and control of zoonotic and food-borne diseases in coordination with the county Departments of Agriculture and Health.
6. Provide health care for injured animals, including search and rescue and police dogs.
7. Temporarily arrange for or provide food, water, and shelter for displaced animals.
8. Maintain frequent communications with (state) VMA.

D. Recovery

1. Provide documentation of injuries and deaths of animals for insurance purposes.
2. Establish methods and procedures for the appropriate use and accountability of donated funds.
3. Debrief participants and prepare after action reports

IV. ORGANIZATON AND ASSIGNMENT OF RESPONSIBILITIES

A. The city, county, or regional Veterinary Medical Association, designated as the lead Association in I.B.2. is the primary organization for coordinating veterinary services and animal care needs in emergencies. The lead Association's president is responsible for:

1. Informative communications with constituent veterinarians and related organizations.
2. Recommending to the local Board of Health a veterinarian, and an alternate, to serve as Veterinary Liaison Officer (county veterinary coordinator).

B. Board of Health

1. The Board of Health considers the recommendation of the president of the Lead Veterinary Medical Association and appoints the county Veterinary Liaison Officer.

C. County Veterinary Liaison Officer (VLO)

1. The VLO is responsible for coordination of veterinary, humane society, and animal control activities with the local health agency, the Emergency Operations Center (EOC) supervisor, and other appropriate local and state agencies.

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D. County Humane Liaison Officer (HLO)

1. The HLO is responsible for coordination of relief efforts by humane societies, animal control agencies, and animal rescue groups with the VLO and local law enforcement agencies.

V. DIRECTION AND CONTROL

- A. The VLO will coordinate veterinary, humane society, and animal control activities with the Health Department representative to the EOC.
- B. Veterinarians, humane societies, and animal control personnel participate in emergency operations on a voluntary basis.

VI. CONTINUITY OF GOVERNMENT

- A. During emergencies, the line of succession for the \_\_\_\_ county Veterinary Liaison Officer (VLO) will be the alternate VLO, followed by a veterinarian appointed by the Chief Executive Officer of the lead veterinary medical association and approved by the local Board of Health.

VII. ADMINISTRATION AND LOGISTICS

- A. The VLO works under the supervision of the local Board of Health.
- B. Reimbursement for use of facilities, supplies, and personnel will be negotiated on a situation-by-situation basis with the county EMA Director.

VIII. PLAN DEVELOPMENT AND MAINTENANCE

- A. The VLO reviews this tab to the county EOP to ensure that necessary updates and revisions are prepared and coordinated, based on deficiencies identified in exercises and emergencies.
- B. Changes to this tab will be coordinated by the county EMA Director and distributed to all holders of the county EOP.

(Rev. 12/00)

## **TAB D      SECTION 4**

### **PRIVATE VETERINARY PRACTICE**

#### **Strategic Disaster Business Planning –**

Veterinary practices are not immune to serious disruption resulting from natural disasters such as hurricanes, tornadoes, and floods. Serious damage or even the end of a practice can result from fires, riots, theft, litigation, or even a downturn in the economy. Any disruption of normal practice operation can be financially devastating. Although nothing can completely prepare the practice owner for these serious events, predisaster business planning could lessen the initial shock and strengthen the ability of practitioners to recover from their losses.

#### **Business Planning**

Few veterinary practices (probably <3%) have written business plans. The information in a well-written business plan is invaluable in coping with business disruption, in decision-making, and in the documentation of inventories and equipment in the event of losses. Advance preparation could alleviate some of the stress encountered during the recovery period.

The primary challenge in the recovery process of a disaster is to minimize the long-term financial losses. Risk management requires sound business planning, which will greatly aid the business decision-making process. A common business error of veterinary practice managers is procrastination of the planning process until after a disaster happens. The result is lost valuable time in the recovery process and poor quality business decision-making.

Business decision-making is difficult under ideal situations; it is more complicated during times of duress. Decisions such as whether to rebuild or to relocate often become monumental because of the shifting economics and demographics of the area. Even though it may be difficult to accurately project the outcome of specific disasters, business planning could dramatically assist in the recovery process.

#### **The Planning Process**

Planning should involve the entire staff. People are more likely to implement what they have helped develop. This is an effective tool in helping the staff take “ownership” as well as being a powerful internal force for motivating the practice team. The process of planning may be more important than the actual plan, because it forces the entire staff to work together in thinking through various aspects of the practice. This process has the side benefit of helping to build a cohesive team, which will strengthen the normal operations of the practice.

The first step of disaster planning is to prepare a well thought-out business plan. When a business plan is completed, many of the elements of the disaster plan will already be in place. Assign various parts of the planning process to each staff member and let them do some personal planning and research on their assignments. If this is the first business plan developed by the practice, it is wise to obtain the services of a planning facilitator.

#### **Resources Available**

Knowledge of the sources of available assistance is helpful in developing the business plan. Begin by checking the resources available in state and national disaster units. Valuable information may often be obtained from large bank planning departments, chambers of commerce, economic development units, small business development centers, state insurance and commerce departments, local Occupational Safety and Health Administration (OSHA) Offices, Senior Corp of Retired Executives (SCORE), private accountants, attorneys, and business consultants. The American Academy on Veterinary Disaster Medicine is also a valuable resource for disaster information.



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### Development of a Planning Outline

Developing a business plan outline will assist in making assignments to your staff for advance planning. A possible outline could look similar to this:

- **Executive Summary** (write this last)
- **History—Philosophy—& Services of the Practice** (Vision, Mission, Values)
- **Future Plans & Objectives** (Goals, Key Objectives, and Time Lines)
- **Practice Organization** (Who is responsible for what?)
- **Market Analysis & Strategy** (Marketing Plan)
- **Financial Planning**
  - **Working Capital**
  - **Budget**
  - **Break-Even Analysis**
  - **Cash Flow Projections**
  - **Proforma Income Statements** (Conservative, Probable, Optimistic)
- **Disaster Plan** (Risk Management & Contingency Plans)
- **Conclusions and Summary**
  - **Vitaes**
  - **Equipment lists**
  - **Amortization schedules**
  - **Personal financial statements**

### Disaster Planning

After the development of the business plan, the next step is to focus on the contingency plans in the event of a disaster. The staff should answer questions such as “What If?” —a fire—tornado—hurricane—flood—riot—depression—or other disaster should strike the practice? Using the business plan, ask these questions of the staff and develop several alternative plans and several possible solutions.

The answers to these questions will uncover the necessity of adequate insurance; financial reserves, drugs and supplies, as well as emergency plans for animal care, staffing, communications, and a plan of action for management.

Other important considerations will become apparent: alternative power sources; medical, financial, and client record storage; video tapes of premises, equipment, and furniture; emergency radio, lighting, and water supplies; protocol for evacuation; and protocol for emergency medical treatment of animals and staff, if required.

The next step is the training and retraining of the entire practice staff. Let each person be responsible for the leadership and training of the rest of the staff in their specific areas of responsibility. Staff turnover will require new staff members to be oriented and trained.

### Business Decisions

One of the most difficult decisions for an owner whose practice is destroyed in a disaster is, “should I rebuild or relocate?” “If I rebuild, will my client base still be viable?” “Can I financially survive while my practice is rebuilding?” These are important questions that require accurate diagnosis of the problem. The generation of several alternatives will be helpful in decision-making. The quality of decisions making will improve when problems are:

- identified and properly diagnosed;
- several possible solutions are generated and evaluated; and

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- best possible solutions are selected, implemented, and monitored.

#### Leadership

During a crisis, the need for leadership is crucial for a smooth recovery. Coordination of all the various aspects of the recovery process is very important. Planning prior to the disaster is the best way to be prepared to address these complex issues. Good leadership is evidenced by having a vision of the practice. The ability to coordinate, provide direction, and give encouragement is also essential. Without a written business plan, leaders will not be as prepared to effectively lead the practice team through a disaster.

#### Development of the Document

When all aspects of the planning process are completed, the last step is to put together a written document. This may seem like an overwhelming project. When it is broken down into segments, it is not as formidable as it might seem. It will all come together as a workable plan as each part is planned and developed. The proforma financial estimates of projected income and expenses is one of the most difficult parts of developing the business plan. There are various commercial software programs available to help with these financial projections and calculations. Keep in mind, it is not the document that is so important, it is the planning process itself. It is thinking through your business before problems arise.

#### Conclusion

Business and disaster planning is an important aspect of the successful practice of veterinary medicine. During times of disaster, this need is accentuated because of the resulting stress and chaos. Prior preparation, paying “due diligence,” regular training, and periodic updating of the plan, are all essential ingredients to ensure planned growth and continuity of the veterinary medical practice.

#### Suggested Reading and Resources

Cramer K, *Staying on Top When Your World Turns Upside Down*, Viking, 1990.

Flach F, *Resilience*, Fawcett, NY, 1988.

Jenkins, Michael D, *Small Business Advisor Software*, Issaquah, WA, 1993.

Jian Venture Partners, *BizPlanBuilder Software*, Los Altos, CA, 1993.

Kaufman R, Stone B, *Planning for Organizational Success*, Wiley Press, 1983.

Peters T, *Liberation Management*, Knopf Inc., 1983.

Peters T, *Thriving on Chaos*, Knopf Inc., 1987.

Emergency Management Guide for Business & Industry, <http://www.fema.gov/library>

#### **Record Keeping**—

Veterinarians should make a list of essential records and prepare duplicate copies to be maintained off premises in a safe place. A periodic review of these items should be built into future business practice and the records updated or culled as necessary.

A minimal set of duplicates might include family health records; a record of insurance policies (include the company, the number of policies, a memo of riders, and proof of current premiums); tax records; real estate ownership records (list location of deed, pertinent facts regarding dates of acquisition, purchase, and building costs); copies of major notes and accounts payable; a record of satisfied notes; partnership, lease, or purchase agreements; and building plans and construction permits. If computerized

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patient/client records are maintained, a copy is valuable. The above list is suggestive; individual needs may dictate additional ones.

Veterinarians also can take steps to protect hard copy office records when there is a warning of problems. Well built secure file cabinets that can be covered with plastic and sealed with waterproof tape will provide a degree of protection from damaged roofs and ceilings and subsequent rain. Records maintained at floor level should be elevated.

**Insurance needs**—

Property and casualty coverages that veterinarians should consider when insuring their practice to protect against disasters include property liability, general liability, professional liability, professional extension, automobile liability, umbrella liability, and workers' compensation. Major medical and life insurance also should be considered because of the risk of disasters causing bodily harm to veterinarians on staff.

A package policy is an insurance contract that includes property and general liability coverages, which prior to 1970, were written separately. The property section of a package should cover:

- \* buildings (at replacement cost)
- \* contents (at replacement cost)
- \* business interruption
- \* accounts receivable
- \* valuable papers
- \* building glass
- \* theft or destruction of money
- \* employee dishonesty
- \* property away from your premises and in transit
- \* debris removal

The liability section should cover claims in which veterinarians become legally obligated to pay because of:

- \* premises liability (slips and falls)
- \* personal injury (libel, slander, defamation of character)
- \* operations (damage to property or injury to persons away from the veterinarian's premises)
- \* products liability (damage to property or injury to persons by a product manufactured or sold by a veterinarian after it has left the veterinarian's premises, other than those products that are directly related to the provision of a professional service.)

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No standard package policy exists in the insurance industry. All of the coverages mentioned are subject to extensions, limitations, and exclusions that vary by insurer. Some policies, therefore, are much broader than others, which is why it is important for veterinarians to base their selection of an insurer on more than price.

The type of package policy most often used to insure veterinary practices is called a Business Owner's Policy. These policies are usually composite-rated rather than being rated by each coverage provided in the policy. For example, an insurer files rates for buildings and contents. The premium includes most of the ancillary property coverages listed and all of the general liability coverage.

Beyond the basic coverages described, practice owners should be aware of coverage available for damage to outdoor signs, computers, and software; losses resulting from off-premises power interruption, breakdown of heating and air conditioning equipment, and problems with the sewer system.

Another important coverage for a veterinary practice is Animal Bailee coverage, referred to as Professional Extension. Extension coverage protects the practice in claims arising from the injury, death, or loss of animals at the practice during boarding or hospitalization, and claims arising from perils unrelated to professional treatment. These perils include fire, theft, escape, or injury caused by other animals.

One of the most important coverages for a veterinarian is professional liability (malpractice) insurance. This is a highly specialized type of insurance that requires experienced claims adjusters, attorneys, and a network of credible expert witnesses. Because a veterinarian's reputation is on the line when an allegation of malpractice is made, an insurer should not be able to settle a claim without the veterinarian's consent. Except for the AVMA Professional Liability Insurance Trust (PLIT), many carriers have little or no experience in adjusting claims or defending veterinary malpractice suits but are willing to offer professional liability insurance as an add-on to a package to reduce costs. Because all professional liability insurers are not alike, veterinarians should look beyond cost when choosing this insurance.

If vehicles are owned in the practice's name, automobile insurance should be secured. If the practice does not own automobiles, non-owned and hired auto liability coverage should be purchased. This protects the practice from claims arising from an employee's use of his or her own vehicles for business purposes, such as running an errand. (It does not cover bodily injury to the employee).

An umbrella liability policy is available to provide higher limits for premises liability coverages, products liability, automobile liability, and employers' liability (excess of employers' liability provided in the practice's workers' compensation policy). An umbrella policy enables a veterinarian to carry \$5,000,000 or more of liability coverage.

Workers' compensation insurance is required by law in almost every state. Stiff penalties exist for failing to provide coverage to employees. In addition, the practice owner is liable for the medical and disability payments due to injured employees as required by the state's workers' compensations laws.

Individual veterinary practices may require coverages not described, which is why veterinarians should work with an agent who is experienced in the needs of a veterinary practice.

**Safety procedures/disaster exercises**—

Personal protection is primary. Steps should be taken to provide basic needs of water, food, and protection. A supply of canned or bottled water and fruit juices should be prepared and canned and dried food (in protective containers) should be maintained in a protective area. A supply of matches, cigarette

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lighter, sterno, and a bottled gas stove also are important. Flashlights, portable radio, and a supply of fresh batteries should be obtained in preparation for a disaster. Insulated blankets and one or more plastic tarps should also be available.

After steps have been taken to protect oneself and family, veterinarians should carry the exercise further. The next steps would be to review office and hospital operations with a goal of providing additional protection. Primary consideration should be given to provide essential protection to animals. Consider installing an emergency generator (as with other steps in the preparation exercise, it should be run periodically to ensure that it will be ready when necessary); develop alternate water sources; be sure that food is kept in a protected area; and be absolutely certain that animals are effectively identified in case they are killed, accidentally released, or if cage or stall identification is destroyed, or case records are damaged.

There are additional steps that may be taken. These include having building plans and construction records examined by an engineer to determine whether structures were built to code. Changes in construction and operations may be considered. Doors may be examined and changed if necessary to help guarantee easy exit. Roofs may be repaired or improved, walls may be reinforced, and window protection may be considered.

Exercises in self-preservation have a secondary benefit. As with all good exercises, they make you feel better. Veterinarians are urged to consider studying this exercise and maintaining it by periodic review.

(Rev. 04/01)

## TAB D SECTION 5 MITIGATING DISASTERS IN VETERINARY PRACTICES AND HUMANE SHELTERS

Sebastian E. Heath VetMB, MPVM, Dipl. ACVIM, ACVPM  
“S. E. Heath, Animal Management in Disasters, Mosby, 1999”  
<http://www.animaldisasters.com>

Disasters are always costly. Frequently people think of highly popularized large scale disasters seen on television as the costliest disasters. However, the common costs associated with “every day” disasters are by far the greatest disaster related costs every year in the US. Examples of the common losses are: loss of adequate animal care and health expertise, loss of income, and family support to employees. Clients may have to seek advice from a neighboring practice while their regular veterinarian’s practice is not open and being restored. Clients will be confused, as they will have to reschedule elective appointments, or seek alternate advise mid-way through therapy (this could be very difficult for a patient undergoing chemo cancer therapy where the records of the original veterinarian cannot be found). Business disruption may also affect client loyalty and a practices reputation. Accumulation or killing of animals that may have otherwise been adopted, may also result.

### **Examples of common local disasters**

- Even with diligent daily back-up of records, one day the computer could fail. A replacement cannot be installed for 3 days. A new system is needed, but will generate an error rate of 5% in retrieved data.
- The municipal water supply has a main burst supplying the practice or shelter.
- A car hits a utility pole carrying the power to the practice or shelter. The phone and security system are no longer functional.
- A transient is found dead close to business, drug related crime is suspected. The police establish a security ring around the site, which includes the access to your business. Clients are deterred for two days and the local television news covers the story.
- A fire breaks out in a neighboring dry cleaning business. Your business is evacuated.
- A technician accidentally drops and breaks a bottle of halothane. All staff are evacuated, but nobody takes the MSDS with them. The fire department does not know how to deal with the problem and evacuates the area.
- The manager of a practice or shelter is injured by a dog and is hospitalized for 3 days.

Large scale disasters may also affect the socio demographics of the area where a flourishing practice once stood. For example, after Hurricane Andrew the client base changed sufficiently for veterinarians to have to revisit their clientele base before resuming work or making a major financial commitment for future plans.

### **Getting Involved in Disaster Preparedness**

There are three levels of disaster preparedness which businesses (veterinary practices, veterinary accessory stores, and animal shelters) in the animal care industry can become involved:

1. Personal preparedness at work through Emergency Contingency Planning in accordance with the guidelines of OSHA.
2. Business preparedness through business resumption planning in the case of a major disaster. Veterinary practices and humane shelters should be considered “critical facilities”.
3. Community preparedness as community leaders in veterinary emergency management for the care of animals and their owners in disasters. These programs can only be developed correctly under the guidance of the local Emergency Management Agency.

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These three areas should be seen as sequential steps for becoming involved in disaster management programs. In particular the types of problems that will occur in a veterinary practice, humane shelter, or pet and feed store in a disaster are likely to be the same as in every day operations, they just occur on a larger scale.

Disasters do not create new conditions, they merely exacerbate existing ones. Therefore, learning to deal with common problems that occur frequently and locally, and are dealt with through local resources is the best way for groups to prepare themselves and their communities for disasters. Local disaster preparedness is also best because it follows the priorities of those who are permanently vested in the local community.

**OSHA and disaster preparedness**

Meeting the legal requirements for a business to be compliant with OSHA is a good starting point for becoming involved in disaster management programs at all levels, because the vast majority of issues that arise in disasters are the same as those that occur during every day business. The OSHA requires that all business with more than 10 employees have a written Emergency Contingency Plan (ECP). For businesses with 10 or less employees a written plan is not mandated, but highly recommended. The purpose of an ECP is to prevent accidents, and if they do occur to be able to effectively control them and reduce their impact.

To some, OSHA regulations may seem like an imposition, however, they have evolved from the experience that disasters and emergencies are a common cause of human injury in the work place, and that many of these can be prevented. OSHA requires a systematic approach to disaster preparedness for businesses. Complying with the regulations set out by OSHA are generally beneficial to companies in that compliance results in lower number of injuries to staff, decreased severity of injury when accidents occur, and decreased losses due to business disruption and the consequences of litigation when procedures have not been followed. These are the identical goals of any business or community disaster preparedness program. Adaptation of the principles of human safety in emergencies, such as evacuations, can be readily adapted by animal health professionals to the care of animals.

**Business disruption and disaster preparedness**

***Typical losses suffered by businesses in disasters***

In a study of business disruption after the Northridge earthquake business owners described the extent of damages and costs to their businesses. The most common damages are summarized in the following table.

<b>Extent of damage (%)</b>	<b>Likelihood of occurrence (%)</b>	<b>Average cost (\$) of damage per sq.ft.</b>	<b>Average total cost (\$)</b>	<b>Average days interrupted</b>
Extensive (50)	14	25.21	50,833	17
Moderate (15)	21	18.50	28,125	7.2
Slight (1-5)	57	1.83	13,408	5
None	8	0	8,375	2

***Repair costs***

In this study the average repair costs were over \$15,000 per business. The effect of not being adequately prepared is reflected in the amount of damage that was paid for by the owner of the business: 38% of owners paid for all of the repairs themselves, and an additional 29% of owners paid for part of the repairs

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out of their personal savings. Only 17% had adequate insurance for the insurance company to pay for all of the repair costs. Most insurance claims were settled within 6 weeks. Only 19% of businesses applied for a small business loan from the Small Business Association to help finance the cost of repairs. The range of time to payment on these loans was 56 to 300 days.

***Correlation between damage cost and business interruption***

As much as 90% of damages to businesses were estimated to be non-structural or contents related damage. Therefore, structural data may not be the best indicator of the cost of damages to businesses. Long term consequences of business disruption also included changes in the clientele base. 35% of businesses reported a decrease in the number of clients/customers in the 14 months following the earthquake. The owners of these businesses estimated that this loss of clientele resulted in an overall loss to their business by 23%. Although some businesses reported no change in clientele or even an increase in the number of customers, the 2 medical related businesses in this study both reported losses due to decreased numbers of clients. Five out of six businesses that reported extensive damages also had to lay off employees permanently. Other businesses reported temporary layoffs for 7-60 days.

***Reopening costs***

The cost of reopening differed primarily between who owned the business. Businesses that were part of national chains had their costs of reopening usually covered by the head office. By comparison, 88% of local businesses paid for the cost of reopening out of their own resources.

***The impact of floods on businesses***

In another study of 1079 businesses after the floods of 1993 in Iowa common causes of business disruption were identified. Flooded businesses tended to be older businesses. The median number of hours businesses were closed by type of business are summarized in the following:

<b>Economic sector</b>	<b>Percent closed</b>	<b>Median hours closed</b>
Wholesale and retail trade	42.5	72
Manufacturing and construction	51.1	72
<i>Business and professional service</i>	45.6	120
Finance, insurance and real estate	39.9	72

***Disaster mitigation through insurance***

The single most important advice of over 40% of business owners whose businesses had been affected by disasters was to increase insurance coverage. This was supported by the finding that nearly 30% of all business owners, whether they had insurance or not, had to pay for some or all of the costs of damage themselves. Insurance payments were also made much quicker than SBA loans. Adequate insurance may be difficult to obtain in some areas where premiums for likely hazards can be prohibitively high to remain profitable. However, many very effective types of insurance are obtainable at a reasonable cost and contribute significantly to the future success of a disaster struck business.

Poorly insured businesses have a very low chance of returning to normal function. Some estimates suggest that small businesses affected by major disaster have a less than 10% chance of returning to function within three years of the disaster. Insurance should cover all aspects of business: property, facilities, equipment, liability, and protection against losses from interruption. Employers who cannot pay their staff to help clean up the mess after a fire will be out of business for much longer and at much greater expense than if they were able to continue to pay their staff.



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The two most common causes of under insurance and problems with filing claims are not updating insurance as new equipment is purchased and filing claims late. Late claims, especially if they are submitted after repair work has been carried out, are frequently associated with the insured finding out that certain aspects of the cost were not covered in the way they were handled, but could have been handled more cost effectively if a claim had been file early.

Examples of the type of insurance that businesses should consider are:

- Property
- Liability
- Workman's compensation
- Disability
- Life
- Personal accident
- Loss of earnings
- Business interruption (current and future)
- Hazard specific: fire, flood, sewer back flow, earthquake
- Endorsements: valuable papers and documents, breakdown of equipment, software, cost of equipment rental or lease

However, insurance is by no means a substitute for good plans. Effective plans are what prevent disasters in the first place or, if they do occur, reduce damages to a minimum.

### **Community plans**

It should always be remembered that the planning process is just as, if not more, important than the final plan itself. During the planning process, people and organizations learn to work as a team. Remember it will be local people and local resources that will have to carry the greatest responsibilities and burdens when a disaster occurs. There are three circumstances under which plans will be developed:

1. **The preferred method:** in the absence of immediate or recent threat from disaster
2. **The common method:** immediately following a disaster
3. **The necessary method:** at the time of a disaster

The latter two should be avoided.

### ***What is needed?***

Some communities may not have Emergency Operation Plans (EOP's) that address animal related issues in disasters. Therefore, to begin with persons interested in developing a local EOP should first determine if their local government has an EOP. If there is an EOP it should be determined to what extent the care of animals and their owners are addressed. To create a plan, a commitment needs to be made at the very outset. Persons/positions who can provide that commitment are: the director of Emergency Management Agency (EMA) (or in rare cases the governor or county commissioners), the state veterinarian or state public health veterinarian (state EOP) or Director of Animal Care and Control (local EOP). Only once there is a commitment by these persons should the development of a formal EOP proceed.

### ***Planning team***

Just like responding to a disaster, developing a plan is a team effort. Start by forming a committee of individuals who can contribute. The committee should be co-chaired by emergency management personnel and a representative from the animal care community. Veterinarians, county extension agents, and directors of humane shelters or animal control are examples of suitable animal care industry representatives. Members of this committee should ideally possess the following credentials:

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- authority to represent
- control over resources that can be used in an disaster
- experience or knowledge of disasters.

True representation of groups by appropriate individuals is critical. This must be determined by either formal recognition by the groups being represented or appointment to the position. If formal representation is not assured, then the contribution and the availability of promised resources that a group will be able to make must be questioned. Participation of Animal Control is essential in all plans that intend to deal with stray animals in disasters.

***Sources of information***

There is wealth of material available from federal and state emergency management agencies on how to develop disaster preparedness plans. Materials from FEMA should be used as much as possible. FEMA has provided guidance to local emergency operations planners for developing Emergency Operations Plans (EOPs) under its Integrated Emergency Management System (IEMS). This guide, CPG 1-8, describes a recommended form, content, and development process of EOP. It sets forth FEMA's policy concerning plans produced with federal assistance. The State and Local Guide for All Hazard Emergency Operations Planning, SLG (101), details plan development, responsibilities and tasking, including the responsibilities for the care of animals. FEMA publishes the "Animals in Disasters" independent study guide, which is available from the Emergency Management Institute, 16825 South Seton Avenue, Emmitsburg, MD 21727.8998.

The American Red Cross, emergency management agencies, and other groups also have many educational materials on how to develop personal and family disaster preparedness plans. Familiarity with these materials is essential before developing plans for a community. The best results have resulted when interested groups have coordinated their efforts with the appropriate level EMA from the outset. The development of plans for the care of animals should proceed as for any other annex or tab for an EOP. There is nothing magical or unusual about the care of animal owners and their animals. Animal owners should simply be viewed as another group with special needs. With that there is an existing industry that is available to help identify needs, resources, and coordinate care.

## TAB D SECTION 6 PREPARING YOUR PRACTICE FOR EMERGENCIES

(Reprinted from the *Journal of the AVMA*, 204:5, pp732-734)

When it comes to preparing for emergencies, most veterinarians immediately think about fire prevention. Although smoke detectors and fire extinguishers are vital components of a hospital's emergency plans, they are, by no means, the only elements that must be considered. There are many hazards, common to veterinary hospitals, that have the potential to cause serious injury to workers or serious damage to equipment or facilities, and veterinary hospitals must prepare for accidents and emergencies. This article will identify some of the dangers in veterinary hospitals and outline the types of emergency action and fire prevention plans required by the Occupational Safety and Health Administration (OSHA).

Each business that has 11 or more employees must have a written emergency action plan.<sup>1</sup> Businesses with 10 or fewer employees must also have emergency action plans; however, these plans do not necessarily have to be written down. Owners of these small businesses should be careful about exercising their right to have verbal emergency action plans. Without documentation, it may be almost impossible to prove that all OSHA requirements have been adequately satisfied.

An important part of any emergency action plan is assigning duties to specific staff members. Make sure that staff members understand the tasks they have been assigned and are competent to perform them. Making these duties part of each staff member's job description is not adequate. As leader of the team, the veterinary hospital's owner is responsible for providing adequate training for all workers.

### **Components of an Emergency Action Plan**

The purposes of an emergency action plan are, first, to prevent accidents and, second, to control and respond to the accidents that inevitably happen. The emergency action plan must address all potential emergencies, no matter how remote the possibility that a particular emergency will arise. Hospitals may choose to write a separate plan for each type of emergency or a master plan that will cover several similar emergencies. Remember that the plan needs to be comprehensive, but simple enough that it can be easily understood. Do not attempt to cover all emergencies in one master plan if the final plan is just going to confuse the readers.

According to the OSHA, certain elements, intended to prevent or reduce the extent of injuries or damages, must be included in all emergency action plans.<sup>2</sup>

- Emergency escape procedures and emergency escape route assignments. Workers should be informed of what actions are expected of them during an emergency. When animals are to be evacuated, there must be plans for controlling the animals during evacuation and for where they are to be taken. The emergency action plan should include a floor plan or diagram that clearly shows the location of all fire extinguishers, control valves, dangerous areas, and escape routes.
- Procedures to be followed by workers who remain behind to perform or shut down critical operations before they evacuate. Clearly defined, step-by-step details of the procedures that must be performed prior to final evacuation must be developed. Some of these procedures might include disabling the central oxygen system or the utilities, when practical. A specific individual must be assigned to perform each procedure. Because the hospital owner cannot be on the premises every minute of the day, identifying the owner as the individual to perform all these functions is clearly not adequate.
- Procedures to account for all employees after emergency evacuation. Designating a central place for everyone to assemble after an emergency will make accounting for all employees fast and easy. Designate one person to take charge of the scene until emergency personnel arrive.

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- If professional rescue or medical personnel could be delayed in responding, assign rescue and medical duties to those workers who are able to perform them. For most veterinary hospitals, this will not be a concern, but it could be important for hospitals that are physically remote. In those hospitals, an adequate number of workers on each shift should be trained in basic first aid for people. Training and certification is available through organizations like the American Red Cross or through the local fire department.
- Outline the preferred means of reporting fires and other emergencies. Don't assume that everyone knows to call 9-1-1 during an emergency: post emergency phone numbers near each phone. Appoint one individual to call emergency personnel. Sometimes, during an emergency, everyone assumes that someone else has called for help. Make sure that there is a procedure for calling for emergency assistance if the building has to be evacuated before a phone call can be made. Is there another telephone nearby? If you have a central alarm system, make sure all employees know how to manually activate it.
- List the name or regular job titles of persons to be contacted for further information about or for explanation of duties in the plan. As with all plans, someone must be responsible for developing, updating, and explaining the plan. Make sure that this person keeps the plan current.

#### **Training for Emergencies**

As with all other OSHA programs, training of employees is of paramount importance. In all instances, employees must receive training when they are initially hired, before they are exposed to the danger, or when the plan is first developed. Usually, additional training is necessary only when the plan changes or when new hazards are introduced into the workplace.

It is recommended that at least one trial run of the emergency plan be conducted. Although assigned duties may have been discussed during staff meetings, workers will usually fail to recall their assigned duties during a real or staged emergency. Remember to keep records of all training and practice exercises that are conducted.

#### **Specific Emergency Action Plans**

Fire prevention plan: In addition to the general emergency action plan, businesses are required to prepare and implement a specific fire prevention plan. The fire prevention plan outlines the things that a hospital does to prevent the occurrence of a fire, and should include the following.<sup>3</sup>

- Major fire hazards in the workplace, and their proper handling and storage procedures, should be listed.
- Potential ignition sources (e.g., open flames and electrical sparks) and procedures for control of those sources should be identified.
- Types of fire protection equipment and systems to control fires should be listed.
- Housekeeping procedures designed to control hazards that could contribute to a fire should be outlined.

The aforementioned evacuation diagram is a good start for a fire prevention plan. Use different colored inks or symbols to mark the location of each fire hazard. For each fire hazard identified (e.g., oxygen tanks, hazardous chemicals), attach a simple protocol detailing when regular checks of the area should be

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performed and what special fire protection or suppression methods are necessary. Also, mark the location of smoke detectors and fire extinguishers, and indicate when they were last inspected.

If portable fire extinguishers are a part of the fire defense system, employees must be trained to use them properly. Make sure that fire extinguishers are in place, functional, and have the proper rating for the conditions.

Provide a copy of your fire prevention plan to your local fire department. They will need this information in case of an emergency.

### Emergency plan for hazardous chemical spills:

The OSHA's Human Carcinogen Policy<sup>4</sup> is very strict, and any hospital that exposes its workers to agents known to cause cancer must have specific safeguards in place. Ethylene oxide and formaldehyde are human carcinogens and, therefore, pose serious dangers to employees of veterinary hospitals that use these agents. These hospitals must have a written plan outlining the steps to be taken in case of an emergency involving these agents. This plan should include the following elements:

- The method of notifying employees to immediately evacuate an area or the building in the event of an accidental discharge or spill.
- Identification of the person responsible for inactivating air handling systems to prevent dispersion of gas throughout the hospital.
- The location and use of an approved respirator and cleanup kit.
- The method of testing the area after a cleanup to determine if the levels of airborne contamination are less than acceptable levels for safe return of workers to the area. Some hospitals obtain bulk quantities (> 20 gallons) of other hazardous chemicals, such as alcohol or sodium hypochlorite. These hospitals should contact their local fire department for assistance in developing an emergency action plan. The location and quantity of these chemicals should be noted on the hospital diagram, and special precautions for spill containment and fire prevention must be detailed. In some instances, special signs must be posted on the exterior of the building, so that emergency personnel will be alerted to the presence of these chemicals.

### **Other Safety Considerations**

#### Evacuation routes:

Evacuation routes are important in today's workplace. (See the article in the February 1, 1994 issue of the *Journal of the AVMA* for minimum requirements for safe evacuation routes.) Often, veterinary hospitals are tight on space and use basements and attics as offices, kennels, and grooming areas and for other nonmedical functions. For a basement, usually two exits, separate from each other, are necessary, and for an attic, at least one window or escape opening must be available. Sometimes, this will mean that a contractor will have to install an exit or window. Even though this could be expensive, if a hospital requires workers to perform duties in one of these areas, then the hospital must ensure that there are safe exits that can be used during an emergency.

#### Emergency lighting:

Power outages may be rare, especially in certain parts of the country; however, they do occur. Veterinary hospitals must provide emergency lighting for areas if someone working in that area would have a difficult time finding an exit or completing a hazardous procedure if the power went out. Even areas with

## **TAB D SECTION 6**

### **PREPARING YOUR PRACTICE FOR EMERGENCIES**

exterior windows must have provisions for emergency lighting. Remember that there is not much light coming in a window when it is dark outside.

Hand-held flashlights or other lights that must be activated manually are not appropriate emergency lights, because it may be difficult to locate the switch in the dark. Emergency lights should come on automatically when the flow of power to the main lights is interrupted. There are several styles of emergency lights, ranging from plug-in types to separate emergency lighting fixtures. If in doubt, consult a lighting specialist.

One of the most effective and affordable emergency lighting systems consists of a battery-powered ballast that can be installed directly into existing fluorescent fixtures. These ballasts will light half the bulbs in a fluorescent fixture for up to 90 minutes during a power failure and will recharge themselves when the electricity comes back on. These battery-powered ballasts are available at most professional electrical supply stores, but are usually not available at home centers.

#### Crime prevention:

Although the OSHA does not specifically mandate steps to be taken to prevent robberies or assaults, veterinary hospitals should consider instituting crime prevention programs. Like all other businesses, veterinary hospitals take in money and, therefore, are not immune to robbery. Many hospitals have extended their hours or operate around the clock, and employees leaving these practices may be victims of assault.

Hospital owners and directors should include a robbery prevention and response training session in their hospital's training schedules. Contact the local police department for advice. Often, they will send a special officer to conduct training at the hospital and can usually provide robbery prevention and security checklists. Emergency practices and 24-hour practices, especially, should make safety of personnel a number-one concern. Install buzzers to control access from the front door and one-way locks on the remaining doors. Remember that although the door should be locked to outsiders, employees should still be able to exit quickly in the event of an emergency. Consider adding panic buttons that tie into a central alarm system at strategic locations throughout the hospital. If staff members ever go outside to help with injured patients, a personal panic button-it looks like a beeper-would be a wise investment.

#### Animal handling:

The unpredictability of some animals means that performing even simple procedures on these animals can sometimes be dangerous. Although the OSHA may not directly address the issue of animal handling, hospital owners should make sure that all employees, including volunteers, are properly trained in restraint procedures. There should be a mechanism for workers to summon assistance when they get into trouble. Could someone yelling for help from the kennels be heard in the front of your hospital over a chorus of barking dogs? Are there times during the weekends or late at night that there is only one person in the building? How would this person get help in an emergency?

#### **Expertise Assistance**

Remember, the purposes of an emergency action plan are, first, to prevent accidents and, second, to control or respond to them when they do occur. When developing a fire or emergency action plan, use the expert resources that are available. Start with your local fire marshall or fire station. They will usually conduct a complimentary fire safety inspection and recommend specific actions for circumstances in your individual hospital. Often, they will even conduct training classes on fire safety and proper fire extinguisher operation.

These OSHA standards were developed from the National Fire Protection Association's codes. The National Fire Protection Association can be contacted directly for written references and helpful

**TAB D SECTION 6**  
**PREPARING YOUR PRACTICE FOR EMERGENCIES**

information.<sup>a</sup> In addition, the National Safety Council<sup>b</sup> offers periodicals and reference sources and provides training and consulting services.

**References**

1. Title 29, Code of Federal Regulations, section 1910.38.
2. Title 29, Code of Federal Regulations, section 1910.38 (a) (2).
3. Title 29, Code of Federal Regulations, section 1910.38 (b).
4. Title 29, Code of Federal Regulations, section 1990.

**Footnotes**

<sup>a</sup>National Fire Protection Association, 1 Battyermarch Park, P.O. Box 9101, Quincy, MA 02269.

<sup>b</sup>National Safety Council, 1121 Spring Lake, Itasca, IL 60143-3201.

# **NATIONAL EMERGENCY MANAGEMENT ASSOCIATION**



## **MODEL EMERGENCY SUPPORT FUNCTION FOR PRODUCTION AGRICULTURE, ANIMAL AND ANIMAL INDUSTRY**

**SEPTEMBER 2002**

**Produced by: The National Emergency Management Association**

**Funded by: The United States Department of Agriculture**



## **STATEMENT OF NEED FOR MODEL PLAN**

Time is of the essence.

Since 1997, efforts have been underway to develop a national response capability to an animal health emergency such as recently seen in the United Kingdom with foot and mouth disease. Much has been accomplished but much is left to do.

The events of September 11, 2001, and the realization of the potential for agroterrorism have put the need for uniformity of response on a fast track. The United States Department of Agriculture (USDA) and the Federal Emergency Management Agency (FEMA) have done much in this area in recent months in the form of detailed operational procedures. However, these plans have a place in less than half of the state and local emergency operations plans. Currently, no federal program for outreach or development is in place to assist state emergency management agencies to develop such plans needed for appropriate response.

National Emergency Management Association (NEMA) received a grant from USDA in September of 2001 to write a model plan that would bridge the current gap. The enclosed document is a draft of that model.

The following model or example plan is intended to be a guide for those states developing a state plan for production agriculture, animal and animal industry and as a source of information on national trends for those already having such plans. This plan is written in a comprehensive emergency management format as provided by the Federal Emergency Management Agency, Emergency Management Institute, and National Emergency Management Training Center. Recognizing the differences in format that is seen in the various state plans, (emergency support function [ESF], Annex, etc.) the comprehensive emergency management format was chosen for the model to provide for a generally recognized format that is easily adapted to any state plan regardless of its structure.

This model is general in content so as to allow for inclusion in a State Emergency Operations Plan. Such plans are supported by more detailed and more voluminous Concepts of Operations and Standard Operating Procedures written by the identified primary and support agencies. USDA in collaboration with State Departments of Agriculture and State Boards of Animal Health has already produced such Concepts of Operation in most cases. Recognizing that mutual aid is a key component to a successful regional or national response to catastrophe, it is only safe to assume that mutual aid will play an enormous role in response to an animal health emergency or act of agroterrorism. Uniformity of plans is a necessary component in dovetailing mutual aid from one state to another.

Comment has already been heard recognizing the need for consistent local plans for counties or jurisdictions. It is not the intent of this current initiative to address how a

state deals with local plans within the state. Most state plans are mirrored at the local level as a prerequisite for federal funds. The state will support local program development. State primary and support agencies will write and coordinate more detailed standard operating procedures based on state response structure and available resources.

This model plan is not intended to create a “cookie cutter” approach to state emergency management planning for production agriculture, animals and animal industry in catastrophic events. It is intended to provide a format for addressing certain key elements for an adequate state response while at the same time providing for a seamless regional and national response.

Plans are written to be edited, modified and changed as operating such plans may require. This is a start. Time is of the essence.

## **ASSUMPTIONS**

The Stafford Act has as a primary mission to protect human life and property.

Disasters in the past decade have shown that damage to production agriculture can be not only an economic crisis to individuals and communities but, especially in animal production agriculture, can prove to be an environmental and public health challenge.

Foreign animal disease can wreak havoc on the economy of not only a region but on the entire United States.

Foreign animal disease can be used as a weapon of mass destruction, causing enormous economic damage, but may also pose as a vehicle or reservoir for zoonotic disease that may threaten human life and the ability to feed the nation.

Disasters of the past decade have illuminated the existence of a human animal bond that has time and again affected the behavior of large segments of the population and how they behave in disaster situations.

People with companion animals frequently will choose not to evacuate rather than leave animals behind.

People will frequently try to reenter an area to retrieve animals before an all clear is given.

People will frequently live in the streets rather than abandon animals so that they may enter evacuation shelters.

This type of population behavior puts the animal owners and emergency responders at risk.

Integrated emergency management has for the past 23 years dealt with similar life, safety and property issues by utilizing federal, state, local and private sector agencies and resources.

Federal and state emergency operation plans based on statutory authority and executive order authority assigned to various agencies can through emergency support functions accommodate all areas of emergency response.

Private sector agencies, whether through Congressional mandate as with the American Red Cross (ARC) or missions assigned through Voluntary Organizations Active in Disaster (VOAD), play an enormous role in disaster response.

For issues not addressed in other extraordinary disaster declarations for production agriculture and animal issues, this same methodology of integrated emergency management can be used to solve such issues.

The following enclosure is presented as a model plan that addresses only the key elements that should be present in a state plan to provide for the compatibility necessary for successful mutual aid.

Generic in scope, this plan can be applied to any statutory government structure. The generalities in this document are to allow for flexibility to adapt to any statutory format while at the same time addressing the necessary authority to accomplish the task.

The document is based on the emergency management emergency support function structure and the Federal Emergency Management Institute Comprehensive Emergency Management format.

## I. INTRODUCTION

This Emergency Support Function (ESF) is not currently applicable to any ESF in the Federal Response Plan. A state agency or agencies with the statutory authority for animal and animal industry issues will be the primary agency. This may be either the State Department of Agriculture and/or a State Board of Animal Health, or Animal Health Commission. An ESF may have more than one primary agency where overlapping authority may occur. The primary agency will be responsible for but not limited to coordinating the disposition of abandoned, diseased, disabled or dead animals, animal protection, animal health emergency management and agroterrorism. This ESF will recognize certain catastrophic events related to animals, animal and production agriculture as events requiring activation of the state emergency operations plan. This ESF will coordinate with and support ESF 8 in zoonotic disease or toxicosis where the public health may be affected. This ESF will support ESF 8 in acts of terrorism where animal industry and or production agriculture is the vehicle for dissemination of a chemical or biologic agent.

## II. PURPOSE

To coordinate application of state resources in mitigation, planning, training, response and recovery to assist animals and production and animal agriculture in an animal health emergency, natural disaster or other catastrophic event whether natural or man-made and, where necessary, provide for a seamless integration of county, state and federal response.

## III. RESPONSIBILITY

### A. Primary Agency

State Department of Agriculture and/or Board of Animal Health or Animal Health Commission.

### B. Support Agencies

<b>RESOURCE NEEDED</b>	<b>EXAMPLE AGENCY</b>
Procurement, emergency contracts etc.	State Procurement office
General Equipment, Personnel, Aircraft and Vehicles	Department of Corrections
Specialized Equipment, Personnel, Aircraft, Vehicles, Tents, Supplies, Herd Depopulation and Biosecurity.	Department of Defense, National Guard
Specialized Facilities, Personnel and Training	Department of Education

<b>RESOURCE NEEDED</b>	<b>EXAMPLE AGENCY</b>
Health and Medical, Animal Friendly Shelter Site Planning, Training and Information Sharing (zoonotic disease)	Department of Human Resources, Health Department, American Red Cross (ARC), Voluntary Organizations Active in Disaster (VOAD), Veterinary Medical Assistant Teams (VMAT)
General Personnel	Department of Labor
Wildlife and Wild Animals Surveillance and Management	Department of Natural Resources, Wildlife Management
Quarantine Enforcement, Traffic Control, Law Enforcement, Communications, Equipment, Aircraft and Escort	State and Local Law Enforcement, Department of Public Safety, Department of Transportation
Heavy Equipment, Construction, Technical Assistance, Decontamination and Hazardous Materials	Department of Transportation
Specialized Consultation, Equipment, Laboratories, Facilities, Research and Development, Standardization of Training and Training	Board of Regents, University System
Specialized Communications, Intelligence and Laboratories.	State Bureau of Investigation, Veterinary Diagnostics Labs
Communications, State and Local Operations Centers, Staging Areas, Coordination of All State Resources for Mitigation, Planning, Training, Response and Recovery	Emergency Management
Fire Services, Specialized Equipment and Aircraft, Facilities, Decontamination and Hazardous Materials.	Forest Service
Volunteer Groups for Personnel, Equipment, Technical Assistance, Mutual Aid, Rescue, Sheltering, Planning, Training, animal medical care and public health issues.	VOAD (i.e. state Veterinary Medical Association, humane groups), National Disaster Medical System (NDMS), VMAT
Equipment, Personnel and Tech Support	Agribusiness and Industry
Hazardous Materials, Decontamination	Department of Natural Resources, Environmental Protection

#### IV. CONCEPT OF OPERATIONS

- A. The primary agency will coordinate with appropriate agencies and organizations to ensure operational readiness. The primary and support agencies will develop and maintain standard operating procedures (SOP) for surveillance and response to include, but not limited to, poultry, cattle, swine, dairy, sheep, goats, equine and companion animal industries as well as wildlife and exotic animals. Such SOPs will be developed for surveillance and response to pests of crops and horticulture. These procedures will relate to catastrophic disaster and disease that pose a significant impact on human life, property or the economy.
- B. The primary agency will coordinate and support the appropriate agencies to protect the public from disease or injury from animals, animal industry or production agriculture which have been negatively impacted by an emergency or disaster. This function will also include, but not be limited to, facilitating the evacuation of animals.
- C. The primary agency's emergency management coordinator will facilitate and coordinate with support agencies and organizations such as the state and local veterinary medical organizations, humane organizations, animal rescue groups and private sector entities to meet emergency responsibilities.
- D. The primary agency's offices, divisions and districts will provide personnel, supplies, equipment and facilities at the request of the primary agency's emergency coordinator.
- E. Emergency operations necessary for the performance of this function include, but are not limited to:
  - 1. Mitigation and Preparedness
    - a. Develop mutual aid agreements with government agencies, professional associations and private agencies and organizations. Provide for surveillance for foreign animal disease or an animal disease, syndrome, chemical, poison or toxin that may pose a substantial threat to the animal industries, economy or public health of the state. Provide for surveillance of every plant pest of unknown or questionable origin which may pose a potential or substantial threat to agriculture, horticulture, economy or public health of the state.
    - b. Conduct training sessions and workshops to assist local communities and support agencies and organizations.

- c. Coordinate with the Department of Human Resources and ARC (ESF 6) in identifying animal friendly shelter sites near approved emergency ARC shelters.
- d. Participate in and/or conduct exercises and tests.
- e. Work to develop county and local plans and resources.

## 2. Response and Recovery

- a. Support the disaster response and recovery with all available resources.
- b. The primary agency must have access to or the authority to restrict movement, detain in one location or move to another, animals, equipment, products and personnel for the purpose of control and eradication of disease. Such authority or access to authority must be both interstate and intrastate.
- c. Coordinate local emergency response teams with the statewide support network and support both intrastate and interstate mutual aid such as the Emergency Management Assistance Compact (EMAC).
- d. Manage and direct evacuation of animals from risk areas and provide technical assistance to prevent animal injury and disease dissemination.
- e. Requisition personnel and equipment to triage and shelter facilities.
- f. Secure supplies, equipment, personnel and technical assistance from support agencies, organizations and other resources to carry out the response plans associated with animal health emergency management or any act of agroterrorism that may pose a substantial threat to the state.
- g. Provide assistance to the established pet shelters and/or other areas.
- h. Continue to augment services to effect rapid recovery.
- i. Restore equipment and supplies to normal state of readiness.
- j. Coordinate public information and provide updates for ESF 5, Information and Planning.



k. Maintain financial records on personnel, supplies and other resources utilized and report to the emergency management agency, upon request.

l. Resume day-to-day operations.

## V. SUCCESSION OF AUTHORITY AND POLICY

The commissioner or director of the primary agency shall provide an emergency coordinator and at least one alternate to meet the emergency responsibilities of that agency.

The primary agency's designees will represent the agency in time of an emergency or disaster, provide for operational support in the SOC when requested by the state emergency management agency to meet the obligations of this ESF.

The primary agency, in the event of an animal health emergency, may request activation of the state emergency operations plan in support of such an emergency. This may or may not occur in concert with an extraordinary declaration of emergency by the United States Secretary of Agriculture. The primary agency will respond to meet responsibilities of the ESF or Annex in a declaration of disaster for any catastrophic or "all hazard" event.

In an extraordinary state of emergency declared by the Secretary of the USDA, authority will proceed according to United States Code of Federal Regulations and the uniform methods pertaining to the specific event. Other state laws and regulations may also apply.

Funding for extraordinary declarations of emergency will follow existing policy for such events while other collateral consequences and costs of activation and operations of the emergency management system will follow the policy of state and local support provided in the Stafford Act. Recognizing the severe economic consequences of such events and the damage to part of the nation's critical infrastructure, including the ability to feed the nation, such measures to control and eradicate the events responsible for the extraordinary declaration will receive the highest priority.

Acts of terrorism may be directed to the nation's food supply, either as the target or as a vehicle of chemical and biologic weapons of mass destruction. Acts of terrorism are a federal crime, and the response to such events are authorized and outlined in the United States Government Interagency Domestic Terrorism Concept of Operations (the CONPLAN). The Federal Bureau of Investigation (FBI) is recognized as the primary federal agency in acts of terrorism. All other activities will proceed as consequences of such an event as described in the CONPLAN. At such time as the Attorney General of the United States relieves

the FBI of the primary federal agency status, the event will proceed according to the Federal Emergency Operations Plan, the extraordinary state of emergency and uniform methods for the specific events, state emergency operations plans and this ESF.

All other events whether an emergency or catastrophic event will follow the guidelines of the federal and state emergency operations plans. All emergency and catastrophic events related to animal health emergency management will be guided by such policy adopted by USDA, the state department of agriculture or board of animal health and the United States Animal Health Association.

Recognizing that the ability to respond to and recover from such events is a result of mitigation, planning, training and exercise, all primary and support agencies will participate in such activities to maintain a state of readiness of this ESF.

**TAB E SECTION 1  
DISASTER ASSISTANCE FOR HOMEOWNERS, RENTERS,  
AND BUSINESS OWNERS**

Homeowners, renters, and business owners who suffered damages or losses as a result of the disaster may be eligible for assistance from a variety of state, federal, and voluntary agencies. Types of assistance include:

<b>Program/Agency</b>	<b>Assistance</b>	<b>Eligibility</b>	<b>Specific Criteria</b>
<b>Emergency Assistance</b> Coordinated by the American Red Cross and Voluntary agencies active in disaster.	Emergency food, clothing, shelter, and medical assistance.	Available to individuals and families with disaster related emergency needs.	Also makes referrals to church groups and other voluntary agencies
<b>Home/Personal Property Disaster Loans</b> Small Business Administration (SBA) <a href="http://www.sba.gov/disaster">http://www.sba.gov/disaster</a>	Low-interest loans for restoring or replacing uninsured or underinsured disaster-damaged real and personal property.	For individuals located in counties included in the presidential-declared disaster.	Loans limited to amount of uninsured, SBA-verified losses. Maximum loans: \$200,000 real property \$40,000 personal property
<b>Disaster Housing Assistance</b> Administered and funded by FEMA <a href="http://www.fema.gov">http://www.fema.gov</a>	Provides grants for temporary housing or for emergency repairs needed to make a residence livable until more permanent repairs can be made.	Available to homeowners and renters whose permanent homes are uninhabitable because of the disaster.	Housing assistance grants are coordinated with any insurance coverage an individual might have.
		Homeowners	Grants made to homeowners who can return to their homes with minimal repairs.  Homeowners with more substantial property damage may qualify for temporary housing grants for rent.  Mobile homes provided if no rental resources available.
		Renters	Renters may qualify for rental assistance.  Mobile homes provided if no rental resources available.
<b>Individual and Family Grant Program</b> Administered by state. Funded by FEMA.	Grants to meet serious disaster related needs and necessary expenses not covered by insurance or other federal, state, or voluntary agencies.	Persons with serious unmet needs who do not qualify for a SBA disaster loan.	Maximum grant of \$13,900 depending upon family composition and needs. Average grant = \$2000 - \$4000.
<b>Business Disaster Loans</b> Small Business Administration	Loans for the repair or replacement of destroyed or damaged business facilities, inventory, machinery or equipment.	Businesses located in counties included in the presidential-disaster declaration.	\$1,500,000 loan limit to repair or replace damaged real and personal property.
	Economic Injury Disaster Loans also may be available for working capital to assist small businesses during the disaster recovery period.	Small businesses located in the disaster area.	

**TAB E SECTION 1**  
**DISASTER ASSISTANCE FOR HOMEOWNERS, RENTERS,**  
**AND BUSINESS OWNERS**

<b>Program/Agency</b>	<b>Assistance</b>	<b>Eligibility</b>	<b>Specific Criteria</b>
<b>Tax Assistance</b> Internal Revenue Service <a href="http://www.irs.ustreas.gov/prod/hot/fema.html">http://www.irs.ustreas.gov/prod/hot/fema.html</a>	Expedited federal tax deductions for casualty losses to home, personal property, or household goods.  Assistance and information on state income tax returns can also be obtained from the State Dept. of Revenue	Individuals and families with disaster-related losses that exceed 10% of the adjusted gross income for the tax year by at least \$100.	Under certain circumstances the IRS allows certain casualty losses to be deducted on Federal income tax returns for the year of the loss or through an immediate amendment to the previous year's return.
<b>Disaster Unemployment Assistance</b> May be available through the state unemployment office and supported by the U.S. Department of Labor.	Benefits available to individuals out of work because of the disaster.	Available to individuals out of work because of the disaster, including self-employed persons, farm owners, and others not covered under regular unemployment insurance.	Maximum 26 weeks benefits.  Proof of income required.  Must register with state's employment services office.
<b>Farm Assistance</b> Farm Service Agency <a href="http://www.fsa.usda.gov/pas/disaster/default.htm">http://www.fsa.usda.gov/pas/disaster/default.htm</a>	Emergency loans for physical or production losses.	Available to farmers who were operating and managing a farm at the time of the disaster.	Loans limited to the amount necessary to compensate for actual losses to essential property and/or production capacity.
<b>Insurance Information</b> State Insurance Commissioner, American Insurance Association, FEMA, and National Flood Insurance Program	Assistance and/or counseling regarding ways to obtain copies of lost policies, file claims, expedite settlements, etc.	Individuals and families with disaster-related losses.	
<b>Legal Assistance</b> Coordinated by FEMA, Young Lawyers Division of the American Bar Association	Free legal advice, counseling, and representation for low-income disaster victims.	Individuals and families with disaster-related legal issues.	Applicable to such matters as replacing legal documents, transferring titles, contracting problems, will probates, insurance problems, and certain landlord-related problems.
<b>Social Security Benefits</b> Social Security Administration <a href="http://www.ssa.gov">http://www.ssa.gov</a>	Assistance expediting delivery of checks delayed by the disaster  Assistance in applying for Social Security disability and survivor benefits.	Individuals eligible for Social Security.	
<b>Veterans Benefits</b> Department of Veterans Affairs <a href="http://www.va.gov">http://www.va.gov</a>	Assistance with information about benefits, pensions, insurance settlements, and VA mortgages.	Help in applying for VA death benefits, pensions, and adjustments to VA-insured home mortgages.	

**TAB E SECTION 1  
DISASTER ASSISTANCE FOR HOMEOWNERS, RENTERS,  
AND BUSINESS OWNERS**

Program/Agency	Assistance	Eligibility	Specific Criteria
<b>Consumer Services</b>	Counseling on consumer problems such as product shortages, price gouging, and disreputable business practices.		
<b>Aging Services</b>	Services to the elderly such as meals, home care, and transportation.	Individuals covered by the Older Americans Act.	
<b>Crisis Counseling</b>	Referrals and short-term counseling for mental health problems caused by the disaster.		
<b>Reducing Future Losses</b> Project Impact Administered by FEMA <a href="http://www.fema.gov">http://www.fema.gov</a>	Guidelines for mitigating the effects of future disasters such as roof repairs, hurricane shutters, care for damaged vegetation, working with construction contractors, the building permit process, etc.		
<b>Aid to Persons Facing Mortgage Foreclosure</b> Administered and funded by FEMA	Amount of actual rental or mortgage payments	Individuals who have lost their jobs or businesses because of a major disaster.	Affected individuals who: - Are unable to make mortgage or rental payments as a result of disaster-related financial hardship. - Have received written notice of foreclosure or eviction from mortgage lender or landlord.

## **TAB E SECTION 3 WORKING WITH THE NEWS MEDIA**

It is the nature of the beast. The news business is highly competitive and getting more so everyday. Media pursue the stories that attract viewers/listeners/readers...and advertising dollars. They want what sells: the drama, the conflict, the tragedy; the unique and emotional images, the colorful and compelling quotes, the poignant human-interest angle.

- **View the media as an ally, not an adversary**

Use the news media to your advantage, as a tool to inform, educate and enlist. Media can help convey your message to a very large audience; they can activate a disaster response and mobilize volunteers; they can stimulate disaster relief.

Media relations should be an integral part of your emergency response plan. Get to know your local reporters and assignment editors, their needs, deadlines (and personal styles). Find out how they respond during natural disasters and how they would handle something like an animal rescue. Tell them about your program. Invite them to your drills.

Develop a fact book or background material to familiarize reporters with animal issues and terms.

- **Try to include the media in your planning efforts**

Making a media representative a part of your disaster response planning team will work wonders when you call on them for help in most situations. If you use prepositioned news releases, ask the media for input when updating them. This will make them feel needed, while actually helping you to come up with something easier for the public to understand. Make sure the media has a thorough understanding of the time frame under which you operate in advance of any emergencies.

- **Never forego a media opportunity**

Use every media opportunity presented to you. The more exposure you get, the greater your name recognition among those in the public sector. If the general public does not know you, they will not be inclined to place much credibility in what you say during an emergency situation, when getting them to take quick action could mean the difference between living and dying.

Take advantage of all forms of media, no matter what the situation. Do not take a defensive posture with the media. Make periodic phone calls to your media outlets, checking on staff changes and simply letting them know you are aware of their existence. If you play your cards right, you will always get what you want out of the media to advance your program, while still satisfying their need for information.

- **Always return phone calls from the media promptly**

This is not to say that you must jump on the phone immediately; however, you should never disregard a call or dismiss it as unimportant. It may be something that will promote your program. Also do not ever make the mistake of telling them not to call you at home.

**TAB E SECTION 3  
WORKING WITH THE NEWS MEDIA**

- **At the site of a disaster**

Designate one person as your media liaison and make certain all personnel know whom that contact is. A well-informed spokesperson can greatly reduce demands on other key personnel and explain activities or actions that otherwise might be misinterpreted by reporters (and other observers).

Remember that detaining or excluding the news media is always counter-productive. If reporters or camera operators are in your way, find a better place for them as close to the action as possible. If danger exists, tell them about it and suggest a safer location, but never use danger as an excuse for keeping reporters at bay. You are not responsible for their safety!

- **Always maintain control of an interview situation**

You must be the one to set the ground rules when agreeing to be the subject of any interview. The topic(s) to be discussed should be mutually agreed upon at the outset. If you are not prepared to discuss a certain subject, do not attempt it just for the sake of the interview. Do not be afraid to ask questions of your interviewer. Find out where the reporter stands in terms of subject knowledge. This will allow you to determine what direction the interview will take. Never make a habit of doing “off-the-cuff” interviews.

- **If you are being interviewed**

- **Know who you are talking to and establish how the information is going to be used.**
- **Know your subject and be clear on the message you are trying to convey.**
- **Say the “important stuff” first.**
- **Anticipate questions. In addition to the usual who, what, when, where, why, what are the toughest questions the reporter is likely to ask? Think about your answers. Is there possible controversy?**
- **Fill in the background if you think there are gaps in the reporter’s knowledge/understanding of the situation.**
- **Be prepared to provide expert opinion to a non-expert. Make your information concise and understandable. Use plain talk. Avoid technical jargon.**
- **Be open and friendly, but be careful with humor.**
- **Stick to the facts. Avoid speculation.**
- **Don’t be afraid to say, “I don’t know” but, always get back to them with the answer.**
- **Never say “no comment.” (Do you have something to hide?)**

**TAB E SECTION 3  
WORKING WITH THE NEWS MEDIA**

- **Never ask to speak “off the record”, always assume that you are speaking for the record.**
  - **Document your contacts with the media: date, time, reporter’s name, place, subject.**
  - **Mistakes will be made in media coverage; don’t make a big deal out of minor glitches. Choose your battles!**
  - **Remember that while there are big egos in every profession, most reporters you encounter will be: 1) regular human beings; 2) eager to do their job in a professional manner; 3) perhaps a bit anxious because they are on unfamiliar turf—your turf. Be empathetic.**
- **For a print interview**

Print media can address complex subjects better than electronic media. Reporters generally want detailed information and lots of it.

- **Respond to questions in simple concise sentences.**
  - **Repeat yourself if necessary to make certain the reporter is getting all the information.**
  - **Newspaper photographers must have excellent photos in order to compete with television, so try to be accommodating.**
- **For a television interview**

Television leans toward action, entertainment, and emotion. Stories usually run about 30 seconds. Your quote or “sound byte” may be no longer than 15 seconds so you need to get your message across quickly, clearly, and concisely. Most interviews are taped for future broadcast, but you could be asked to do a “live remote”.

- **If you are standing for your interview, put one foot slightly in front of the other so that you don’t sway. If you are seated, lean forward slightly so you don’t look like you are slouching.**
- **Maintain eye contact with the reporter, not the camera lens. The slightest movement (up/down, sideways) will be exaggerated on camera and could make you look nervous or unreliable, limit head and arm movement.**
- **Try to breathe normally; keep your voice slow and steady.**
- **If you make a mistake, say so right away and try again. (Hooray for editing!)**



**TAB E SECTION 3  
WORKING WITH THE NEWS MEDIA**

- **Fight the urge to fill “dead air”, that is the reporter’s problem not yours. Avoid “yes”/”no” answers.**
- **Act as if you are on camera until you are absolutely certain that you aren’t!**
- **Don’t forget about the radio station**

Because they are not visual and don’t provide a glamour image, the radio folks are often forgotten until such a time as we really need them to disseminate an emergency message. Make sure you know which of your market stations have local news and maintain a relationship with these people. Track staff changes as best you can in order to establish a rapport with these reporters.

- **For a radio interview**

Radio wants to be first and they want their information fast. You may be asked to do a radio interview from the scene or over the telephone. Most interviews are taped for later broadcast.

- **Find out if you are to give a straight report or respond to a series of questions. Keep your responses clear and concise (try for 10 second sound bytes).**
- **If during a taped interview, you flub an answer or get tangled up in a long response, stop talking and tell the reporter you want to start over. If it’s a live interview, correct your information immediately.**
- **In summary**

Work toward a strong, positive relationship with your local news media. Make their needs an integral part of your emergency response plan. Enlist their help in educating and informing your community. *Help them reach their goals and you will find it easier to reach yours!*

**Guidelines for Working with Media in a Crisis Situation**

- I. **Spokesperson**
  - a. Determine the person to speak for the organization.
  - b. This person must be available at all times for comments and statements.
- II. **Evaluate the situation**
  - a. Assess the opposition.
  - b. Assess your organization.
- III. **Establish association position and action**
  - a. Develop fact sheets.
  - b. Inform appropriate people: staff, board, leadership, committees, etc.
  - c. Determine “others” to be informed.

**TAB E SECTION 3**  
**WORKING WITH THE NEWS MEDIA**

- d. Prepare a written statement for the press, and if necessary clear it with your attorney, and stick with it.

**IV. Working with the media**

- a. Don't shoot from the hip.
- b. Be truthful—don't cover up facts, don't avoid or mislead the press or public.
- c. Do not allow the spokesperson or anyone else to be quoted, except on known facts.
- d. Consider a news conference—perhaps the number of media requests for information will warrant a conference—or a conference to give the facts first before the opposition gets to the press. Remember, they already have contacts.
- e. Be cooperative and tactful—let them know who to contact, who is your spokesperson. Don't avoid media—if information is not available, tell them.
- f. Emphasize the positive.
- g. Be prepared for a difficult time—do not lose your temper. An outburst or angry reply can undo years of good will with the press and public.

**V. Options to consider with media**

- a. Write a press release to summarize your positions and actions.
- b. Meet with important individual reporters to outline your positions and actions.
- c. Hold a press conference, *if* you have real news about a controversial situation.
- d. Prepare to demonstrate your positions and actions.
- e. Respond to every media query with the best information you can get as quickly as is possible.
- f. NEVER LIE. Once you lie, your reputation as a publicist is gone, and no media person will trust you again.
- g. Stay on top of the situation. Be sure you know about every policy decision, every speech, every charge and counter-charge, so that you can prepare responses.
- h. Confirm every bit of information you get so that nobody can accuse you of misrepresenting the situation.
- i. Phone a reporter to correct misinformation or an error in a story and offer new spokespersons or angles.
- j. Have someone who was misquoted call the reporter with a correction.
- k. Prepare positive stories about your organization to show how effective you are in general without belaboring the crisis.

**TAB E            SECTION 4**  
**EMERGENCY FACT SHEETS**  
**EARTHQUAKES**

Earthquakes strike suddenly, violently and without warning. Earthquakes can occur at anytime of the day or night and at any time of the year. Forty-one states and the territories in the United States are at moderate to high risk from earthquakes. Identifying potential hazards ahead of time and advance planning can reduce the dangers of serious injury or loss of life from an earthquake.

Earthquake Insurance

Earthquake insurance is usually an “add-on” to a standard homeowners insurance policy. Separate deductibles may apply to contents and structure. When purchasing earthquake insurance, consider the need for coverage of temporary living expenses in case it is necessary to evacuate the home.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

**TAB E            SECTION 4**  
**EMERGENCY FACT SHEETS**  
**EARTHQUAKES**

❖ **Check for hazards in the home.**

- ◆ Fasten shelves securely to the walls.
- ◆ Place large or heavy objects on lower shelves
- ◆ Store breakable items in low, closed cabinets with latches.
- ◆ Hang heavy items such as pictures and mirrors away from beds, couches and any place where people or animals sit or lay.
- ◆ Brace overhead light fixtures.
- ◆ Repair defective electrical wiring and leaky gas connections. These are potential fire risks.
- ◆ Secure water heater by strapping it to the wall studs and bolting it to the floor.
- ◆ Repair any deep cracks in ceilings or foundations.
- ◆ Store weed killers, pesticides and flammable products securely in closed cabinets with latches and on bottom shelves.

❖ **Identify safe spots in each room.**

Under sturdy furniture, such as a heavy desk or table against an inside wall or solid heavy-framed doorway away from where glass could shatter – around windows, mirrors, pictures or where bookcases or other heavy furniture could fall over.

❖ **Locate safe spots outdoors.**

Find a clear spot out in the open, away from buildings, trees, telephone and electrical lines, overpasses or elevated expressways.

❖ **Make sure all family members know how to respond after an earthquake.**

- ◆ Teach all family members how and when to turn off electricity, water, and gas, if instructed to do so by authorities or if a gas leak is suspected. Everyone in your home should know what to do, including guests, babysitters, and caregivers.
- ◆ Teach children how and when to call 911, police, and fire and which radio station to tune to for emergency information.

**TAB E            SECTION 4**  
**EMERGENCY FACT SHEETS**  
**EARTHQUAKES**

**DURING**

❖ **If indoors**

- ◆ Take cover under a piece of heavy furniture, against an inside wall or solid heavy framed doorway and hold on.
- ◆ Stay inside.
- ◆ Don't dash for exits and never use elevators.

❖ **If outdoors**

- ◆ Move into the open, away from buildings, streetlights and utility wires.
- ◆ Once in the open, drop to the ground and stay there until the shaking stops.

❖ **If in a moving vehicle**

- ◆ Pull over to a clear location; don't stop near or under buildings, trees, overpasses, or utility wires.
- ◆ Stop quickly and stay in the vehicle with your seatbelt fastened until the shaking has stopped.
- ◆ Once the shaking has stopped, proceed with caution. Avoid bridges or ramps that might have been damaged by the quake.

**AFTER**

❖ **Be prepared for after shocks.**

Although smaller than the main shock, after shocks can be large enough to cause additional damage and bring down weakened structures. After shocks can occur in the first hours, days, weeks or even months after the quake.

❖ **Check yourself for injuries.**

People often tend to others without checking their own injuries first. People will be better able to care for others if they are not injured or have received first aid for their injuries.

❖ **Help injured or trapped persons.**

Call 911 and then give first aid where appropriate. Do not move the seriously injured unless they are in immediate danger of further injury.

**TAB E            SECTION 4  
EMERGENCY FACT SHEETS  
EARTHQUAKES**

- ❖ Turn on battery-operated radio or television to get the latest emergency information.
- ❖ Use the telephone only for emergency calls.
- ❖ Watch out for fallen power lines or broken gas lines.
- ❖ When entering buildings, use extreme caution. Stay out of severely damaged buildings. Return home only when authorities say it is safe.
- ❖ Clean up spilled medicines, bleaches, gasoline or other flammable liquids immediately. Leave the area if you smell gas or fumes from other chemicals.
- ❖ Open closet and cupboard doors cautiously.
- ❖ Inspect the entire length of chimneys carefully for damage. Unnoticed damage could lead to a fire.
- ❖ Check the gas, electrical, and water lines for damage. When inspecting utilities, wear heavy shoes and work gloves as protection against debris and broken glass.
- ❖ Open windows and leave the building if you smell gas. Report gas leakage to the authorities.
- ❖ Check utility lines and appliances for damage. If electrical wiring appears damaged, turn off the current at the main meter box.
- ❖ If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and do not use water from the tap. Obtain emergency water from hot water tanks, toilet tanks (not bowls) and melted ice cubes.

**DO NOT SHUT OFF UTILITIES UNLESS INSTRUCTED TO DO SO BY LOCAL OFFICIALS, OR UNLESS YOU ARE IN IMMINENT DANGER FROM SOMETHING LIKE AN OBVIOUS GAS LEAK. REMEMBER THAT YOUR GAS SUPPLY MUST BE TURNED BACK ON BY A PROFESSIONAL.**

**ANIMALS AFTER AN EARTHQUAKE**

The behavior of animals may change dramatically after an earthquake. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal

**TAB E            SECTION 4**  
**EMERGENCY FACT SHEETS**  
**EARTHQUAKES**

shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in “Saving the Whole Family”, AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

**TAB E SECTION 5  
EMERGENCY FACT SHEETS  
FLOODS AND FLASH FLOODS**

Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss. A peaceful stream or river can dramatically change into turbulent floodwaters in a matter of minutes. Knowing what to do before disaster strikes is the key to surviving and coping during a flood.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Find out if you live in a flood-prone area from your local public works or emergency management office.**

- ◆ Ask whether your property is above or below the flood plain water level.
- ◆ Learn about the history of flooding for your region.

❖ **Familiarize yourself with the flood warning signs and your community alert signals.**

- ◆ A **flood watch** indicates that the rainfall is heavy enough to cause a slow-rising flood. A **flood warning** indicates the expected severity of flooding (minor, moderate or major) and forecasts when and where additional flooding will begin.
- ◆ A **flash flood watch** indicates that heavy rains are occurring or are expected to occur and that they may cause flash flooding in specific areas. A **flash flood warning** is announced when flash flooding is occurring or is expected to occur in certain streams and designated areas and immediate danger is imminent.



**TAB E SECTION 5  
EMERGENCY FACT SHEETS  
FLOODS AND FLASH FLOODS**

- ❖ **If you live in a frequently flooded area, stockpile emergency building materials such as sandbags, plywood, plastic sheeting, lumber, nails, hammer and saw, pry bar, shovels and strong filament tape.**
- ❖ **Install check valves in building sewer traps to prevent floodwaters from backing up in sewer drains. As an alternative to check valves, use large corks or stoppers to plug showers, tubs or basins.**
- ❖ **Plan a flood-free evacuation route.**
  - ◆ Contact the local emergency management or civil defense office or local American Red Cross chapter for a copy of the community flood evacuation plan. This plan should include information on the safest routes to shelters.
  - ◆ Individuals living in flash flood areas should have several alternate routes.
- ❖ **Develop an emergency communication plan.**
  - ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
  - ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.
- ❖ **Make sure that all family members know how to respond after a flood or flash flood.**
  - ◆ Teach all family members how and when to turn off electricity, water and gas, if instructed to do so by authorities. Everyone in your home should know what to do, including guests, babysitters, and caregivers.
  - ◆ Teach children how and when to call 911, police, and fire and which radio station to tune to for emergency information.
- ❖ **Learn about the National Flood Insurance Program.**
  - ◆ The National Flood Insurance Program is a Federal Emergency Management Agency program designed to provide flood protection seldom found in standard homeowners’ insurance policies. Thus insurance is available to residents of communities that have agreed to adopt and enforce sound flood plain management practices. Further information is available through local insurance agents and emergency services offices. Information can also be found on the FEMA website at <http://www.fema.gov>.

**DURING**

**A Flood Watch**

- ❖ **Fill bathtubs, sinks, and jugs with clean water.**

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EMERGENCY FACT SHEETS  
FLOODS AND FLASH FLOODS**

- ❖ **Bring outdoor belongings such as patio furniture indoors.**
- ❖ **Move valuable household possessions to the upper floors or to safe ground if time permits.**
- ❖ **If you are instructed to do so by local authorities, turn off all utilities at the main power switch and close the main gas valve. REMEMBER THAT YOUR GAS SUPPLY MUST BE TURNED BACK ON BY A PROFESSIONAL.**
- ❖ **Join with neighbors and volunteers to place sandbags or other protection in place. Stack sandbags away from the outside walls of houses to prevent floodwaters from entering.**

**A Deep Flooding**

- ❖ **When deep flooding is expected, let floodwaters flow freely into the basement (or, flood it yourself with clean water). This will prevent structural damage to the basement foundation by equalizing the water pressure inside and outside.**
- ❖ **Contact local emergency management authorities for guidance.**

**A Flood**

- ❖ **If indoors**
  - ◆ Turn on battery-operated radio or television to get the latest emergency information.
  - ◆ Get your emergency supplies.
  - ◆ Move to the second floor or roof.
  - ◆ Wait for help. Do not attempt to drive on a flooded roadway.
- ❖ **If outdoors**
  - ◆ Climb to high ground and stay there.
  - ◆ Do not attempt to walk through even slow-moving floodwaters. If they are moving swiftly, water one foot deep can sweep you off your feet.
- ❖ **If in a car**
  - ◆ Do not drive over a flooded road. Turn around and go another way.
  - ◆ If car stalls, abandon it immediately and climb to higher ground. Many deaths have resulted from attempts to move stalled vehicles.

**TAB E SECTION 5  
EMERGENCY FACT SHEETS  
FLOODS AND FLASH FLOODS**

**An Evacuation**

- ❖ **If advised to evacuate, do so immediately.**
  - ◆ Evacuation is much simpler and safer *before* floodwaters become too deep for ordinary vehicles to drive through.
  - ◆ Evacuate early and take your animals with you. If conditions are unsafe for people, they are also unsafe for animals.
- ❖ **Monitor a battery-operated radio for evacuation instructions.**
- ❖ **Follow recommended evacuation routes -- shortcuts may be blocked.**
- ❖ **Leave early enough to avoid being marooned by flooded roads.**

**AFTER**

- ❖ **Flood dangers do not end when the water begins to recede. Listen to a radio or television and do not return home until the authorities have indicated it is safe to do so.**
- ❖ **Check yourself for injuries.**

People often tend to others without checking their own injuries first. People will be better able to care for others if they are not injured or have received first aid for their injuries.
- ❖ **Help injured or trapped persons.**

Call 911 and then give first aid where appropriate. Do not move the seriously injured unless they are in immediate danger of further injury.
- ❖ **Do not enter buildings if floodwaters are higher than the first floor.**
- ❖ **When entering buildings, use extreme caution.**
  - ◆ Wear sturdy shoes and use battery-powered lantern or flashlights when examining buildings.
  - ◆ Inspect foundations for setting or cracking.
  - ◆ Examine walls, floors, doors, and windows to determine that the building is not in danger of collapsing.
  - ◆ Watch for loose plaster and ceilings that could fall.
- ❖ **Watch for fire hazards.**
  - ◆ Broken or leaking gas lines.

**TAB E SECTION 5  
EMERGENCY FACT SHEETS  
FLOODS AND FLASH FLOODS**

- ◆ Flooded electrical circuits.
- ◆ Submerged furnaces or electrical appliances.
- ◆ Flammable or explosive materials coming from upstream.
- ❖ **Do not use water or eat food that has come in contact with floodwaters.**
- ❖ **Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage.**
- ❖ **Damaged sewage systems are health hazards. Service damaged septic tanks, cesspools, pits and leaching systems as soon as possible.**
- ❖ **Check the gas, electrical and water lines for damage. When inspecting utilities, wear heavy shoes and work gloves as protection against debris and broken glass.**
- ❖ **Open windows and leave the building if you smell gas. Report gas leakage to the authorities.**
- ❖ **Check utility lines and appliances for damage. If electrical wiring appears damaged, turn off the current at the main meter box.**
- ❖ **If you suspect sewage lines are damaged, avoid using the toilets and call a plumber.**
- ❖ **If water pipes are damaged, contact the water company and do not use water from the tap. Obtain emergency water from hot water tanks, toilet tanks (not bowls) and melted ice cubes.**

**DO NOT SHUT OFF UTILITIES UNLESS INSTRUCTED TO DO SO BY LOCAL OFFICIALS, OR UNLESS YOU ARE IN IMMINENT DANGER FROM SOMETHING LIKE AN OBVIOUS GAS LEAK. REMEMBER THAT YOUR GAS SUPPLY MUST BE TURNED BACK ON BY A PROFESSIONAL.**

**ANIMALS AFTER A FLOOD AND FLASH FLOOD**

The behavior of animals may change dramatically after a flood or flash flood. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

**TAB E SECTION 6**  
**EMERGENCY FACT SHEETS**  
**THUNDERSTORMS AND LIGHTNING**

In most cases, an approaching thunderstorm can be seen for a half an hour in advance. However, thunderstorms can hit without warning. Learning to recognize the danger signs, and advanced planning are the keys to lessening the damage caused by thunderstorms and lightning.

All thunderstorms are dangerous. Every thunderstorm produces lightning, which kills more people each year than tornadoes. Heavy rain from thunderstorms can lead to flash flooding. Strong winds, hail, and tornadoes are also dangers associated with some thunderstorms.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it is often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number

❖ **Learn the thunderstorm danger signs.**

- ◆ Dark, towering or threatening clouds
- ◆ Distant lightning and thunder

❖ **Check for hazards in the yard.**

**TAB E SECTION 6  
EMERGENCY FACT SHEETS  
THUNDERSTORMS AND LIGHTNING**

Dead or rotting trees and branches can fall during a severe thunderstorm and cause injury or damage.

❖ **Learn how to respond to a tornado and flash flood.**

Tornadoes are spawned by thunderstorms and flash flooding can occur with thunderstorms. When a “severe thunderstorm warning” is issued, review what actions to take under a “tornado warning” or a “flash flood warning”.

❖ **Familiarize yourself with thunderstorm warning signs and your community alert signals.**

- ◆ A **severe thunderstorm watch** is issued by the National Weather Service when the weather conditions are such that a severe thunderstorm (damaging winds 58 miles per hour or more, or hail three-fourths of an inch in diameter or greater) is likely to develop. This is the time to locate a safe place in the home and tell family members to listen to the radio or television for more information.
- ◆ A **severe thunderstorm warning** is issued when a severe thunderstorm has been sighted or indicated by weather radar. At this point the danger is very serious and everyone should go to a safe place, turn on a battery-operated radio or television and wait for the “all clear” by the authorities.

**DURING**

**If indoors**

- ❖ **Secure outdoor objects such as lawn furniture that could blow away or cause damage or injury. Take light objects inside.**
- ❖ **Shutter windows securely and brace outside doors.**
- ❖ **Turn on the battery-operated radio or television to get the latest storm information.**
- ❖ **Do not handle any electrical equipment or telephones because lightning could follow the wire. Television sets are particularly dangerous at this time.**
- ❖ **Avoid bathtubs, water faucets, and sinks because metal pipes can transmit electricity.**

**If outdoors**

- ❖ **Attempt to get into a building or car.**
- ❖ **If no structure is available, get to an open space, preferably low to the ground as quickly as possible. (If in the woods, find an area protected by a low clump of trees – never stand underneath a single large tree in the open.)**
- ❖ **Avoid tall structures such as towers, tall trees, fences, telephone lines or power lines.**

**TAB E SECTION 6  
EMERGENCY FACT SHEETS  
THUNDERSTORMS AND LIGHTNING**

- ❖ **Stay away from natural lightning rods such as golf clubs, tractors, fishing rods, bicycles or camping equipment.**
- ❖ **Kneel or crouch on balls of feet with hands on knees. The least amount of contact with the ground, the best.**
- ❖ **Stay away from rivers, lakes or other bodies of water.**

**If in a car**

- ❖ **Pull safely onto the shoulder of the road and stop, making sure you are away from any trees or other tall objects that could fall on the vehicle. Stay in the car and turn on the emergency flashers until the heavy rains subside.**
- ❖ **Avoid contact with metal or conducting surfaces outside or inside the vehicle.**
- ❖ **Avoid flooded roadways.**

**Estimating the Distance from a Thunderstorm**

Because light travels so much faster than sound, lightning flashes can be seen long before the resulting thunder is heard. Estimate the number of miles you are from a thunderstorm by counting the number of seconds between a flash of lightning and the next clap of thunder. Divide this number by five for the resulting distance in miles.

**Hail**

Hail is produced by many strong thunderstorms. Hail can be smaller than a pea or as large as a baseball and can be very destructive. In a hailstorm, take cover immediately. Pets and livestock are particularly vulnerable to hail, so always provide animals with shelter.

**AFTER**

- ❖ **Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions.**
- ❖ **Check for injuries. (See WHAT TO DO IF SOMEONE IS STRUCK BY LIGHTNING)**
- ❖ **Help a neighbor who may require special assistance – infants, elderly people, and people with disabilities.**
- ❖ **Stay away from storm-damaged areas.**
- ❖ **Watch out for fallen power lines and report them immediately. Drive only if necessary. Debris and washed-out roads may make driving dangerous.**

**TAB E SECTION 6  
EMERGENCY FACT SHEETS  
THUNDERSTORMS AND LIGHTNING**

**WHAT TO DO IF SOMEONE IS STRUCK BY LIGHTNING**

❖ **Call for help.**

Call 911 or your local Emergency Medical Services (EMS) number. Medical attention is needed as quickly as possible.

❖ **Give first aid.**

If breathing has stopped, begin rescue breathing. If the heart has stopped beating, a trained person should give CPR. If the person has a pulse and is breathing, look and care for other possible injuries.

❖ **Check for burns in two places. The injured person has received an electrical shock and may be burned, both where they were struck and where the electricity left their body.**

Being struck by lightning can also cause nervous system damage, broken bones, and loss of hearing or eyesight. People struck by lightning carry no electrical charge that can shock other people, and they can be handled safely.

**ANIMALS AFTER A THUNDERSTORM**

The behavior of animals may change dramatically after a thunderstorm. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.



**TAB E SECTION 7  
EMERGENCY FACT SHEETS  
FIRES**

A small fire can engulf a home in a matter of minutes. Roughly 80 percent of all fire deaths occur where people sleep, such as in homes, dormitories, barracks, or hotels. The majority of fatal fires occur when people are likely to be less alert, such as nighttime sleeping hours. Nearly all home and other building fires are preventable. Understanding the basic characteristics of fire and learning the proper safety practices can be the key to surviving a house or building fire.

**BEFORE/PREVENTION**

- ❖ **Learn more about fire safety by contacting your local fire department.**
- ❖ **Develop and practice an escape plan.**
  - ◆ Draw a floor plan of your home; mark two fire escape routes for each room.
  - ◆ Learn the local fire department's emergency number and post the number near telephones.
  - ◆ Select a safe outside meeting place for everyone to meet after escaping from a fire. Gathering in a specific meeting place in front of the home will quickly let you know who is out, and allow you to advise firefighters of who may need help and their probable location inside.
  - ◆ Conduct a home fire drill at least twice a year with all members of your household. Practicing your plan makes the actual response more of an appropriate reaction, requiring less thinking during an emergency situation.
    - Practice alerting other household members. Blowing a whistle or screaming "Fire!" several times during your escape will alert other household members.
    - Practice a stay-low to the ground escape, as if you were crawling under a layer of smoke.
    - Practice evacuating the building blindfolded. During a fire, smoke may make it impossible to see.
    - Practice getting out of your home during the day and night.
    - Teach family members to get out of the fire first, go to the meeting place, and then send one person to call the fire department from a neighbor's house or outside phone. **Once you are out, stay out!** Many people are overcome by smoke and poisonous gases while trying to rescue others or possessions. **No one should go into a burning or smoking building except a trained firefighter who has proper breathing apparatus or protective clothing.**

**TAB E SECTION 7**  
**EMERGENCY FACT SHEETS**  
**FIRES**

- Practice the “stop, drop, and roll”. This is very important in case your clothes catch on fire. Stop what you are doing, drop to the ground, cover your face, and roll back and forth until the flames go out. Running will only make the fire burn faster.
  
- ❖ **Install smoke detectors.** You may wish to contact your local fire department and ask if someone would come to your home or building to assist you in determining the best locations to actually place your smoke detectors. Most fire departments will be glad to accommodate you and make sure they are installed in accordance with local codes.
  - ◆ Purchase smoke detectors labeled by the Underwriter’s Laboratories (UL) or Factory Mutual.
  - ◆ Vacuum cobwebs and dust from your smoke alarms once a month.
  - ◆ Use the test button to test your smoke alarms once a month.
  - ◆ If you have battery-powered smoke alarms, replace batteries at least once a year! It has also been recommended you replace batteries when the time changes from standard daylight savings each spring and again in the fall. “Change your clock, change your batteries,” has become a common and positive theme.
  - ◆ Replace your smoke alarms every 10 years. This is a joint recommendation by the National Fire Protection Association and the U.S. Consumer Products Safety Commission.
  
- ❖ **Install one or more working fire extinguishers.** An extinguisher rated A-B-C is recommended for home use. You may wish to contact your local fire department and ask if someone would come to your home or building to assist you in determining the best locations to actually place your fire extinguishers. Most fire departments will be glad to accommodate you and make sure they are installed in accordance with local codes.
  - ◆ Get training from the fire department or a fire extinguisher manufacturer on how to use your fire extinguisher. Unless you know how to use your extinguisher, you may not be able to use it effectively.
  - ◆ Regularly check your fire extinguisher to ensure it is properly charged. Follow manufacturer’s instruction for replacement or recharging fire extinguishers. If the unit is low on pressure, damaged, or corroded, replace it or have it professionally serviced.
  
- ❖ **Purchase escape ladders for sleeping areas on the second or third floor.**
  
- ❖ **Consider installing an automatic fire sprinkler system in your home.** Although smoke detectors are essential in every household, they’re designed to detect, not control, a fire. Home sprinklers complement the alarms’ work, providing a way to fight flames immediately.

**TAB E SECTION 7  
EMERGENCY FACT SHEETS  
FIRES**

- ❖ **Avoid smoking in bed, or when drowsy or medicated.**
- ❖ **Provide smokers with deep, sturdy ashtrays. Douse cigarette and cigar butts with water before disposal.**
- ❖ **Keep matches and lighters away from children, preferably in a locked cabinet.**
- ❖ **Make sure your home heating source is clean and in working order.**
- ❖ **Use portable heaters in well-ventilated rooms only.**
- ❖ **Use kerosene heaters only if permitted by law in your area. Refuel kerosene heaters outdoors only, after they have cooled.**
- ❖ **Have chimneys, fireplaces, dryer vents, and wood stoves inspected annually and cleaned if necessary.**
- ❖ **Keep stove area clean and clear of combustibles, such as towels, clothing, curtains, bags, boxes, and other appliances.**
- ❖ **Cook with short or restrained sleeves.**
- ❖ **Conduct a home hazard check.**
  - ◆ Check electrical wiring in your home. Fix frayed extension cords, exposed wires, or loose plugs.
  - ◆ Make sure wiring is not under rugs, over nails, or in high traffic areas.
  - ◆ Outlets should have cover plates and no exposed wiring.
  - ◆ Avoid overloading outlets or extension cords.
  - ◆ Only purchase appliances and electrical devices that bear the label of a testing laboratory such as Underwriter's Laboratories (UL), Factory Mutual (FM), etc.
  - ◆ Store combustible materials in open areas away from heat.
  - ◆ Place rags used to apply household chemicals in metal containers with tight-fitting lids.
- ❖ **Buy only tested laboratory-labeled heaters and follow manufacturer's directions.**

**TAB E SECTION 7  
EMERGENCY FACT SHEETS  
FIRES**

**DURING**

- ❖ **Blow whistle or scream to alert other household members.**
- ❖ **Get out as quickly and as safely as possible, helping those who can't help themselves to escape.**
- ❖ **Never use elevators.**
- ❖ **When evacuating, stay low to the ground. If possible, cover mouth with a cloth to avoid inhaling smoke and gases.**
- ❖ **Close doors in each room that you escape, to delay the spread of the fire.**
- ❖ **If you are escaping through a closed door, feel the door, cracks, and doorknob with the back of your hand before opening the door.**
  - ◆ **If smoke is pouring in around the bottom of the door or it feels hot, keep the door closed. Open a window for escape or fresh air.**
  - ◆ **If there is no smoke at the bottom or top and the door is not hot, then open the door slowly. Slam the door shut, if there is too much smoke or fire in the hall. Open a window for escape or fresh air.**
- ❖ **If you see smoke or fire in your first escape route, use your second way out. The less time you are exposed to poisonous gases or flames, the safer you are.**
- ❖ **If smoke, heat, or flames block your exit routes and you cannot get outside, stay in the room with the door closed. Open the window for ventilation, and hang a sheet outside the window so firefighters can find you.**
- ❖ **If a stove fire starts, slide a lid over the burning pan, or use a fire extinguisher, and turn off the burner. Leave the lid in place until the pan is completely cool. Be careful! NEVER POUR WATER ON GREASE FIRES.**
- ❖ **If you try to use a fire extinguisher on a fire and the fire does not immediately die down, drop the extinguisher and get out.**
- ❖ **If your clothes catch on fire, “stop, drop, and roll”! Stop what you are doing, drop to the ground, cover your face, and roll back and forth until the flames go out. Running will only make the fire burn faster.**

**TAB E SECTION 7  
EMERGENCY FACT SHEETS  
FIRES**

- ❖ **Once you are out, stay out! Remember firefighters are trained and equipped to enter burning buildings. If someone is still inside, direct the firefighter to that person's probable location.**
- ❖ **Get out of the house or building safely first, go to the meeting place, then have one person call the fire department from a neighbor's home or from an outside phone.**

**AFTER**

- ❖ **Call 911 or your local emergency number, and then give first aid where needed. Seriously injured or burned victims should receive professional medical attention immediately.**
- ❖ **Stay out of fire-damaged homes until local fire authorities say it is safe to re-enter.**
- ❖ **Look for structural damage.**
- ❖ **Check that all wiring and utilities are safe.**
- ❖ **Discard food that has been exposed to heat, smoke, or soot.**
- ❖ **Contact your insurance agent.**

**TAB E SECTION 8  
EMERGENCY FACT SHEETS  
WILDLAND FIRES**

The threat of wildland fires for people living near wildland areas or using recreational facilities in wilderness areas is real. Advanced planning and knowing how to protect buildings in these areas can lessen the devastation of wildland fires.

**BEFORE/PREVENTION**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ Portable gasoline-powered pump
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Learn about your area’s wildfire risk.**

Contact your local fire department, forestry service or other emergency response agencies for information on fire laws and wildfire risk.

❖ **Familiarize yourself with the three different classes of wildfires.**

◆ **surface fire**

This is the most common type of wildfire. It burns along the floor of a forest, moving slowly and killing or damaging trees.

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EMERGENCY FACT SHEETS  
WILDLAND FIRES**

◆ **ground fire**

This type of wildland fire is usually started by lightning and burns on or below the forest floor in the humus layer down to the mineral soil.

◆ **crown fire**

This wildland fire spreads rapidly by wind and moves quickly by jumping along the tops of trees.

❖ **Learn and teach safe fire practices.**

❖ **Obtain building codes and weed abatement ordinances from local officials for structures built near wooded areas.**

❖ **Check for fire hazards around the home.**

- ◆ Fire-resistant materials should be used when building or retrofitting structures.
- ◆ Create a safety zone that separates the home from combustible plants and vegetation. Stonewalls can act as heat shields and deflect flames. Swimming pools, decks, and patios can be a safety zone.
- ◆ Keep all tree and shrub limbs trimmed so they do not come in contact with wires. Install electrical lines underground, if possible.
- ◆ Prune all branches around the residence to a height of eight to ten feet. Keep trees adjacent to buildings free of dead or dying wood and moss.
- ◆ Remove all dead limbs, needles and debris from rain gutters.
- ◆ Do not store combustible or flammable materials near the home.
- ◆ Keep chimneys clean.
- ◆ Avoid open burning during dry season.

❖ **Make evacuation plans for family and all animals under your care.**

Plan several routes in case the fire blocks your primary escape route.

❖ **Have emergency supplies on hand for your whole family, including animals.**

❖ **Install smoke detectors.**

❖ **Have a fire extinguisher and get training from the fire department on how to use it.**

❖ **Consider installing protective shutters or heavy fire-resistant drapes.**

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EMERGENCY FACT SHEETS  
WILDLAND FIRES**

- ❖ **Keep a ladder handy that will reach the roof.**
- ❖ **Keep household items handy that can be used as fire tools: a rake, ax, handsaw or chainsaw, bucket, and shovel.**
- ❖ **Build fires away from nearby trees or bushes.**
- ❖ **Never leave a fire – even a cigarette – burning unattended.**

**DURING**

- ❖ **Turn on a battery-operated radio, and listen to local radio or television stations for updated emergency information. Follow the instructions of local officials.**
- ❖ **Arrange temporary housing at a friend or relative's home outside the threatened area.**
- ❖ **Gather pets. Review animal evacuation plans.**
- ❖ **If you are sure you have time, take steps to reduce the chance of your home catching fire or lessen the amount of damage from a nearby fire.**

**Inside your home**

- ❖ **Shut off gas at the meter.**
- ❖ **Open fireplace damper. Close fireplace screens.**
- ❖ **Close windows, vents, doors, venetian blinds or noncombustible window coverings, and heavy drapes. Remove flammable drapes and curtains.**
- ❖ **Move flammable furniture into the center of the home away from windows and sliding-glass doors.**
- ❖ **Close all doors and windows inside your home to prevent draft.**

**Outside your home**

- ❖ **If hoses and adequate water are available, place sprinklers on roofs and on anything that might be damaged by fire. Leave sprinklers running on roofs and anything that might be damaged by fire.**
- ❖ **Seal attic and ground vents with precut plywood or commercial seals.**
- ❖ **Remove combustible items from around the house, lawn and poolside furniture, umbrellas, tarp coverings, and firewood.**
- ❖ **Connect the garden hose to outside taps.**
- ❖ **Set up the portable gasoline-powered pump.**
- ❖ **Gather fire tools.**



**TAB E SECTION 8  
EMERGENCY FACT SHEETS  
WILDLAND FIRES**

- ❖ **Be ready to evacuate all family members and animals when the fire nears or when instructed to do so by local officials.**

**IF EVACUATION IS NECESSARY**

- ❖ **If advised to evacuate, do so immediately.**
- ❖ **Wear protective clothing – sturdy shoes, cotton or woolen clothing, long pants, a long-sleeved shirt, gloves, and a handkerchief to protect you face.**
- ❖ **Take your emergency supplies with you.**
- ❖ **Lock your home.**
- ❖ **Tell your out-of-state contact person where you are going.**
- ❖ **Choose a route away from fire hazards.**

**AFTER**

- ❖ **Take care when re-entering a burned area. Hot spots can flare up without warning.**
- ❖ **Avoid damaged or fallen power poles or lines, and downed wires. Immediately report electrical damage to authorities.**
- ❖ **Be careful around burned trees and power poles.**
- ❖ **Watch out for ash pits and mark them for safety.**
- ❖ **Check the roof immediately and extinguish any sparks or embers.**
- ❖ **Check the attic for hidden burning sparks.**
- ❖ **For several hours afterward, re-check for smoke and sparks throughout the house.**
- ❖ **Take precautions while cleaning your property. You may be exposed to potential health risks from hazardous materials.**
  - ◆ Debris should be wet down to minimize health impacts from breathing dust particles.
  - ◆ Use a two-strap dust particulate mask with nose clip and coveralls for the best minimal protection.
  - ◆ Wear leather gloves to protect hands from sharp objects while removing debris.
  - ◆ Wear rubber gloves when working with outhouse remnants, plumbing fixtures, and sewer piping.

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EMERGENCY FACT SHEETS  
WILDLAND FIRES**

- ◆ Hazardous materials such as kitchen and bathroom cleaning products, paint, batteries, contaminated fuel and damaged fuel containers need to be properly handled to avoid risk.
- ❖ **If you have a propane tank system, contact a propane supplier, turn off valves on the system, and leave valves closed until the supplier inspects your system.**
- ❖ **If you have a heating oil tank system, contact a heating oil supplier for an inspection of your system before using.**
- ❖ **Visually check the stability of trees.**
  - ◆ Look for burns on the tree trunk. If the bark on the trunk has been burned off or scorched by very high temperatures completely around the circumference, the tree will not survive. Where fire has burnt deep into the trunk, the tree should be considered unstable.
  - ◆ Look for burnt roots by probing the ground with a rod around the base of the tree and several feet away from the base. Roots are generally six to eight inches below the surface. If the roots have been burned, you should consider this tree very unstable, and it may be toppled by wind.
  - ◆ A scorched tree is one that has lost part or all of its leaves or needles. Healthy trees are resilient and may produce new branches and leaves as well as sprouts at the base of the tree. Evergreen trees may survive when partially scorched. An evergreen tree that has been damaged by fire is subject to bark beetle attack. Please seek professional assistance from the forestry service concerning measures for protecting evergreens from bark beetle attack.
- ❖ **Wells at undamaged homes should be safe, unless affected by a fuel spill.**
- ❖ **If your house was damaged, disinfect and test water before consumption.**
- ❖ **If you use water from a public well, have a water sample collected and tested before allowing the water to be consumed.**

**IF TRAPPED IN A WILDLAND FIRE**

- ❖ **Do not try to outrun a fire.**
- ❖ **Crouch in a nearby pond or river.**
- ❖ **Cover head and upper body with wet clothing.**
- ❖ **If water is not around, look for shelter in a cleared area or among a bed of rocks. Lie flat and cover body with wet clothing or soil.**
- ❖ **Breathe the air close to the ground through a wet cloth to avoid scorching lungs or inhaling smoke.**

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WILDLAND FIRES**

- ❖ **Oxygen may be in short supply, so avoid heavy exertion.**

**ANIMALS AFTER WILDLAND FIRES**

The behavior of animals may change dramatically after any disruption in their routine. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in “Saving the Whole Family”, AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

**TAB E SECTION 9  
EMERGENCY FACT SHEETS  
TORNADOES**

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. They are capable of causing extreme destruction, including uprooting trees and structures, and turning normally harmless objects into deadly flying debris.

Tornadoes have been reported in every state, and though they generally occur during spring and summer, they can happen any time of the year. There are no areas immune to tornadoes; they have been reported in mountains and valleys, over deserts and swamps, from the Gulf Coast into Canada, in Hawaii and even Alaska. Regardless of the location or time of year, if conditions are right, a tornado can happen.

When a tornado is coming, there is only a short amount of time to make life-or-death decisions. Advanced planning and a quick response are the keys to surviving a tornado.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Learn about your tornado risk.**

- ◆ While severe tornadoes are more frequent in the Plains States, tornadoes can happen in every state.
- ◆ Contact your local emergency management office, local National Weather Service office, or American Red Cross chapter for more information on tornadoes.

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.

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EMERGENCY FACT SHEETS  
TORNADOES**

- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Familiarize yourself with the tornado warning signs and your community alert signals.**

- ◆ A **tornado watch** is issued by the National Weather Service when the weather conditions are such that tornadoes are likely to develop. This is the time to determine a safe place in the home and to watch the sky and listen to the radio or television for further information.
- ◆ A **tornado warning** is issued when a tornado has been sighted or indicated by radar. At this point, the danger is very serious and everyone should go to a safe place, turn on a battery-operated radio or television and wait for the “all clear” by the authorities.
- ◆ Different communities have different ways of providing warnings. Many communities have sirens intended for outdoor warning purposes. Use a NOAA Weather Radio with a tone-alert feature to keep you aware of watches and warnings while you are indoors.

❖ **Learn Tornado Danger Signs.**

◆ **Large hail**

Tornadoes are spawned from powerful thunderstorms and the most powerful thunderstorms produce large hail. Tornadoes frequently emerge from near the hail-producing portion of the storm.

◆ **Calm before the storm**

Before a tornado hits, the wind may die down and the air become very still.

◆ **Cloud of debris**

An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.

◆ **Funnel Cloud**

A visible rotating extension of the cloud base is a sign that a tornado may develop. A tornado is evident when one or more of the clouds turns a greenish hue (a phenomenon caused by hail) and a dark funnel descends.

◆ **Roaring noise**

The high winds of a tornado can cause a roar that is often compared to the sound of a freight train.

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TORNADOES**

◆ **Calm behind the storm**

Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

❖ **Pick a safe place in your home for family members to gather during a tornado.**

- ◆ The safest place to be is underground, or as low to the ground as possible. If you have a basement, make it your safe place.
- ◆ If you do not have a basement, consider an interior hallway or room on the lowest floor.
- ◆ Make sure there are no windows or glass doors in your safe place and keep this place uncluttered.
- ◆ If you live or are in a high-rise building, pick a place in a hallway in the center of the building.
- ◆ If you live in a mobile home, choose a safe place in a nearby sturdy building.

❖ **Conduct periodic tornado drills, so everyone remembers what to do when a tornado is approaching.**

❖ **Make a list of items to bring inside in the event of an approaching thunderstorm.**

Having a list will help you remember things that may be broken or blown away in strong winds.

❖ **Keep trees and shrubbery trimmed.**

Dead and rotting trees and branches can fall and cause injury or damage.

❖ **If you live in a single-family home in a tornado-prone area, find out how to reinforce an interior room on the lowest level of your home (such as the basement, storm cellar, bathroom or closet) to use as shelter.**

**DURING**

**If at home**

- ❖ **Evacuate to a safe place.**
- ❖ **Get away from windows.**
- ❖ **Move to the basement, storm cellar or the lowest level of the building.**
- ❖ **Go to the *center* of the room. Stay away from corners because they tend to attract debris.**

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TORNADOES**

- ❖ **If there is no basement, go to an inner hallway or a small inner room without windows, such as a bathroom or closet.**
- ❖ **Get under a piece of sturdy furniture such as a workbench or heavy table and hold on to it.**
- ❖ **Use arms to protect head and neck.**

**If at work or school**

- ❖ **Go to the basement or to an inside hallway at the lowest level.**
- ❖ **Avoid wide rooms such as auditoriums, cafeterias or large hallways.**
- ❖ **Get under a piece of sturdy furniture such as a workbench or heavy table or desk and hold on to it.**
- ❖ **Use arms to protect head and neck.**

**If in a mobile home**

Mobile homes are particularly vulnerable to the intense winds of a tornado. A mobile home can overturn very easily even if precautions have been taken to tie down the unit. When a tornado warning is issued, take shelter in a building with a strong foundation. If shelter is not available, lie in a ditch or low-lying area a safe distance away from the unit.

**If outside**

- ❖ **If possible, get inside a building.**
- ❖ **If shelter is not available or there is no time to get indoors, lie in a ditch or low-lying area or crouch near a strong building.**
- ❖ **Use arms to protect head and neck.**

**If in a car**

- ❖ ***Never* try to out drive a tornado in a car or truck. Tornadoes can change direction quickly and can pick up a car or truck and toss it through the air.**
- ❖ **Get out of the car immediately and take shelter in a nearby building.**
- ❖ **If there is no time to get indoors, get out of the car and lie in a ditch or low-lying area away from the vehicle.**

**“OPEN WINDOW” MYTH**

Many people mistakenly believe they should open a window when a tornado is coming. They believe that since houses are airtight, the change in air pressure during a tornado could cause a home to explode. Actually, buildings are not airtight. They leak, equalizing air pressure naturally. Opening a window allows the strong winds to enter, causing damage and increases the possibility of injury.

**TAB E SECTION 9  
EMERGENCY FACT SHEETS  
TORNADOES**

**AFTER**

- ❖ **Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions.**
- ❖ **Check yourself for injuries.**

People often tend to others without checking their own injuries first. People will be better able to care for others if they have received first aid for their injuries.

- ❖ **If you evacuated, return home when local officials tell you it is safe.**
- ❖ **Help injured or trapped persons.**

Call 911 and then give first aid where appropriate. Do not move the seriously injured unless they are in immediate danger of further injury.

- ❖ **Do not enter damaged buildings.**
- ❖ **When entering buildings, use extreme caution.**

- ◆ Wear sturdy shoes and use battery-powered lanterns or flashlights when examining buildings.
- ◆ Inspect foundations for setting or cracking.
- ◆ Examine walls, floors, doors, and windows to determine that the building is not in danger of collapsing.
- ◆ Watch for loose plaster and ceilings that could fall.
- ◆ Watch for submerged furnaces or electrical appliances.

- ❖ **Check the gas, electrical and water lines for damage. When inspecting utilities, wear heavy shoes and work gloves as protection against debris and broken glass.**
- ❖ **Open windows and leave the building if you smell gas. Report gas leakage to the authorities.**
- ❖ **Check utility lines and appliances for damage. If electrical wiring appears damaged, turn off the current at the main meter box.**
- ❖ **If you suspect sewage lines are damaged, avoid using the toilets and call a plumber.**
- ❖ **If water pipes are damaged, contact the water company and do not use water from the tap. Obtain emergency water from hot water tanks, toilet tanks (not bowls) and melted ice cubes.**
- ❖ **Use the telephone only for emergency calls.**



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EMERGENCY FACT SHEETS  
TORNADOES**

Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.

**DO NOT SHUT OFF UTILITIES UNLESS INSTRUCTED TO DO SO BY LOCAL OFFICIALS, OR UNLESS YOU ARE IN IMMINENT DANGER FROM SOMETHING LIKE AN OBVIOUS GAS LEAK. REMEMBER THAT YOUR GAS SUPPLY MUST BE TURNED BACK ON BY A PROFESSIONAL.**

**ANIMALS AFTER A TORNADO**

The behavior of animals may change dramatically after a tornado. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

**TAB E SECTION 10  
EMERGENCY FACT SHEETS  
WINTER STORM**

A major winter storm can be lethal. A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. People can become trapped at home, without utilities or other services. Heavy snowfall and blizzards can trap motorists in their cars. Attempting to walk for help in a blizzard can be a deadly decision.

Winter storms are considered deceptive killers because most deaths are indirectly related to the storm. The leading cause of death during winter storms is from automobile or other transportation accidents. Exhaustion and heart attacks caused by overexertion are the two most likely causes of winter storm-related deaths.

House fires occur more frequently in the winter due to lack of proper safety precautions when using alternate heating sources. Fire during winter storms presents a great danger because water supplies may freeze and it may be difficult for firefighting equipment to get to the fire.

Preparing for all types of cold weather conditions and disasters, and responding to them effectively can reduce the dangers caused by winter storms.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, warm coat and hat, gloves or mittens, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Extra blankets and warm clothing
- ◆ Non-clumping kitty litter to generate traction on icy surfaces
- ◆ Rock salt to melt ice on walkways
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

**TAB E SECTION 10  
EMERGENCY FACT SHEETS  
WINTER STORM**

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Learn about winter storm risk in your area.**

Contact your local emergency management office, National Weather Service office, or American Red Cross chapter for information.

❖ **Familiarize yourself with winter storm and blizzard WATCHES and WARNINGS.**

- ◆ A National Weather Service (NWS) **winter storm watch** means a winter storm is possible in your area.
- ◆ A NWS **winter storm warning** means a winter storm is occurring, or will soon occur, in your area.
- ◆ A NWS **blizzard warning** means sustained winds or frequent gusts to 35 miles per hour or greater and considerable falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.

❖ **Understand the hazards of wind chill, which combines the cooling effect of wind and cold temperatures on exposed skin.**

As the wind increases, heat is carried away from a person’s body at an accelerated rate, driving down the body temperature. “Wind chill” is a calculation of how cold it feels when the effects of wind speed and temperature are combined. A strong wind combined with a temperature of just below freezing can have the same effect as a still air temperature about 35 degrees colder.

❖ **Service snow removal equipment before winter storm season.**

❖ **Keep your car’s gas tank full for emergency use and to keep the fuel line from freezing.**

❖ **Make sure you have sufficient heating fuel; regular fuel sources may be cut off.**

❖ **Take an American Red Cross first aid course to learn how to treat exposure to the cold, frostbite, and hypothermia.**

◆ **Frostbite**

Frostbite is a severe reaction to cold exposure that can cause permanent damage. Symptoms of frostbite are the loss of feeling and a white or pale appearance in fingers, toes, nose, and ear lobes.

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EMERGENCY FACT SHEETS  
WINTER STORM**

◆ **Hypothermia**

Hypothermia is a condition brought on when the body temperature drops below normal due to prolonged exposure to temperatures less than 55 degrees Fahrenheit. Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness, and exhaustion.

◆ **If frostbite or hypothermia is suspected**

Warm the victim and seek immediate medical assistance. Never give a frostbite or hypothermia victim something with caffeine in it (like coffee) or alcohol. Caffeine, a stimulant, can cause the heart to beat faster and hasten the effects the cold has on the body. Alcohol, a depressant can slow the heart and also hasten the ill effects of cold body temperatures.

❖ **Winterize your home.**

- ◆ Insulate walls and attic.
- ◆ Caulk and weather-strip doors and windows.
- ◆ Install window covers or cover windows with plastic from the inside.

❖ **Have some type of *safe*, emergency heating equipment available.**

Fireplace with ample supply of wood; small, well vented wood, coal or camp stove with fuel; portable space heaters, or kerosene heater. **Note:** Check with your local fire department on the legality of using kerosene heaters in your community. If kerosene heaters are used, maintain ventilation to avoid build-up of toxic fumes. **Also, always refuel kerosene heaters outside and keep them at least three feet away from flammable objects.**

❖ **Install and check smoke detectors.**

❖ **Keep pipes from freezing.**

- ◆ Wrap pipes in insulation or layers of old newspapers.
- ◆ Cover the newspapers with plastic to keep out moisture.
- ◆ Let faucets drip a little to avoid freezing.
- ◆ Know how to shut off water valve.

❖ **Install snow fences in rural areas to reduce drifting in roads and paths, which could block access to homes, barns, and animals' feed and water.**

**TAB E SECTION 10  
EMERGENCY FACT SHEETS  
WINTER STORM**

- ❖ **If you live in a flood-prone area, consider purchasing flood insurance to cover possible flood damage that may occur during the spring thaw. Remember homeowners' policies do not cover damage from floods. Ask your insurance agent about the National Flood Insurance Program.**
- ❖ **Use a NOAA Weather Radio with a tone-alert feature to keep you informed of watches and warnings issued in your area.**
- ❖ **Contact your local emergency management office or American Red Cross for information on designated public shelters in case you lose power or heat.**

**DURING**

- ❖ **Listen to a battery-powered NOAA Weather Radio, or local radio or television stations for updated information.**
- ❖ **Be aware of changing weather conditions.**
- ❖ **Move animals to sheltered areas.**
- ❖ **Avoid unnecessary travel. Stay indoors and dress warmly during the storm.**
- ❖ **Conserve fuel.**
- ❖ **If you must go outside, protect yourself from winter storm hazards.**
  - ◆ **Wear layered clothing, mittens or gloves, and a hat.**
  - ◆ **Cover your mouth to protect your lungs from extremely cold air.**
  - ◆ **Watch for signs of hypothermia and frostbite. It is best to use the buddy system in case your senses become impaired.**
  - ◆ **Avoid overexertion, such as shoveling heavy snow, pushing a car or walking in deep snow.**
  - ◆ **Use public transportation if possible.**
- ❖ **If you have a cell phone or two-way radio available for your use, keep the battery charged and keep it with you whenever traveling in winter weather.**
- ❖ **Keep a windshield scraper and small broom in your car for ice and snow removal.**
- ❖ **Put together a separate disaster supplies kit for the trunk of each car used by members of your household.**
- ❖ **If you need to drive, let someone know your destination, your route, and when you expect to arrive.**

**TAB E SECTION 10  
EMERGENCY FACT SHEETS  
WINTER STORM**

- ❖ **Be aware of sleet, freezing rain, freezing drizzle, and dense fog, which can make driving very hazardous.**

**IF YOU GET STRANDED IN YOUR VEHICLE**

- ❖ **Stay with your vehicle.**
- ❖ **Display a trouble sign to indicate you need help. A white flag, towel, shirt, etc. is one possible option.**
- ❖ **Occasionally run engine to keep warm.**
- ❖ **Leave the overhead light on when the engine is running so that you can be seen.**
- ❖ **Do minor exercises to keep up circulation.**
- ❖ **If more than one person is in the car, take turns sleeping.**
- ❖ **Huddle together for warmth.**
- ❖ **Use newspapers, maps, and even the removable car mats for added insulation.**
- ❖ **Keep a window that is away from the blowing wind slightly open to let in air.**
- ❖ **Watch for signs of frostbite and hypothermia.**
- ❖ **Drink fluids to avoid dehydration.**
- ❖ **Avoid overexertion.**

**AFTER**

- ❖ **Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions.**
- ❖ **Help neighbors who may require special assistance.**
- ❖ **Avoid driving and other travel until conditions have improved.**
- ❖ **Avoid overexertion.**
- ❖ **Follow forecasts and be prepared when venturing outside.**

**TAB E SECTION 10  
EMERGENCY FACT SHEETS  
WINTER STORM**

**ANIMALS AFTER A WINTER STORM**

The behavior of animals may change dramatically after any disruption in their routine. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

**TAB E SECTION 11  
EMERGENCY FACT SHEETS  
EXTREME HEAT**

Doing too much on a hot day, spending too much time in the sun or staying too long in an overheated place can cause heat-related illnesses. Recognizing the symptoms of heat disorders and knowing the first aid treatment can reduce the dangers of the sun.

**BEFORE/PREVENTION**

- ❖ **Learn about the risk of extreme heat in your area and how to plan for it by contacting your local emergency management office, National Weather Service office, or American Red Cross chapter.**
- ❖ **Extreme heat-specific supplies should include additional water, basic disaster supplies, people first aid kit and manual, and pet first aid kit – see “Saving the Whole Family”, AVMA 2000.**
- ❖ **Familiarize yourself with heat terms.**

- ◆ **A heat wave** is a prolonged period of excessive heat, often combined with excessive humidity. The National Weather Service steps up its procedures to alert the public during these periods when it anticipates an increase in human heat-related illnesses.
- ◆ **A heat index** is a number in degrees Fahrenheit (F) that tells how hot it really feels when relative humidity is added to the actual air temperature. Exposure to full sunshine can increase the heat index by 15 degrees.

- ❖ **Discuss extreme heat with your family.**

Everyone should know what to do in the places where they spend time. Some places may not be air conditioned or safe during a heat wave, so plan alternatives. Discussing extreme heat ahead of time will help reduce fear and anxiety, and lets everyone know how to respond.

- ❖ **Get training.**

Take an American Red Cross first aid course to learn how to treat heat emergencies and other emergencies. Everyone should know how to respond, because the effects of heat can happen very quickly.

- ❖ **Learn the types of heat disorders, the symptoms associated with each, and the first aid treatment for each these disorders.**

- ◆ **Sunburn:** Sunburn is an inflammation of the skin caused by overexposure to sunlight.
  - **Symptoms:** Skin redness and pain, possible swelling, blisters, fever, headaches.
  - **First Aid Treatment:** Apply ointment to unbroken blisters. Apply dry sterile dressing if broken. A physician should see serious cases.
- ◆ **Heat Cramps:** Heat cramps are muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with the heat.



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**EMERGENCY FACT SHEETS**  
**EXTREME HEAT**

- **Symptoms:** Painful spasms usually in leg and abdominal muscles. Heavy sweating.
  - **First Aid Treatment:** Get the person to a cooler place and have him or her rest in a comfortable position. Lightly stretch the affected muscle and replenish fluids. Give a half glass of cool water every 15 minutes. Do not give liquids with alcohol or caffeine in them, as they can cause further dehydration, making conditions worse.
  - ◆ **Heat Exhaustion:** Heat Exhaustion typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.
    - **Symptoms:** Cool, moist, pale, or flushed skin; heavy sweating; headache; nausea or vomiting; dizziness; and exhaustion. Body temperature may be normal, or is likely to be rising.
    - **First Aid Treatment:** Get the person out of the heat and into a cooler place. Remove or loosen tight clothing and apply cool, wet cloths, such as towels or sheets. If the person is conscious, give cool water to drink. Make sure the person drinks slowly. Give a half glass of cool water every 15 minutes. Let the victim rest in a comfortable position, and watch carefully for changes in his or her condition.
  - ◆ **Heat Stroke (Sunstroke):** Heat stroke or Sunstroke is life threatening. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.
    - **Symptoms:** Hot, red skin; changes in consciousness; rapid, weak pulse; and rapid, shallow breathing. Body temperature can be very high – sometimes as high as 105 degrees F. If the person was sweating from heavy work or exercise, skin may be wet; otherwise, it will feel dry.
    - **First Aid Treatment:** Heat stroke is a life-threatening situation. Help is needed fast. Call 911 or your local emergency number. Move the person to a cooler place. Quickly cool the body. Immerse victim in a cool bath, or wrap wet sheets around the body and fan it. Watch for signals of breathing problems. Keep the person lying down and continue to cool the body any way you can. If the victim refuses water, is vomiting, or there are changes in the level of consciousness, do not give anything to eat or drink.
- ❖ **Install window air conditioners snugly.**
- ◆ Close any floor heat registers nearby.
  - ◆ Insulate spaces around air conditioner for a tighter fit.

**TAB E SECTION 11  
EMERGENCY FACT SHEETS  
EXTREME HEAT**

- ◆ Use a circulating or box fan to spread cool air.

- ❖ **Consider keeping storm windows up all year.**

Storm windows can keep the heat out of a house in the summer the same way they keep the cold out in the winter.

- ❖ **Check air-conditioning ducts for proper insulation.**

Insulation around ducts prevents cool air from leaking and keeps it directed through the vents.

- ❖ **Make sure your home is properly insulated.**

This will help you to conserve electricity and reduce your home's power demands for air conditioning. Weather-strip doors and windowsills to keep cool air inside, allowing the inside temperature to stay cooler longer.

- ❖ **Protect windows.**

Hang shades, draperies, awnings, or louvers on windows that receive morning or afternoon sun. Outdoor awnings or louvers can reduce the heat entering the house by as much as 80 percent.

- ❖ **Use attic fans.**

If you have a fan installed to vent warm air out of your attic, use the fan to help keep your home cool.

## **DURING**

- ❖ **Dress in loose-fitting clothes that cover as much skin as possible.**

Lightweight, light-colored clothing reflects heat and sunlight and helps maintain normal body temperature.

- ❖ **Protect face by wearing a wide-brimmed hat.**

A hat will keep direct sunlight off your head and face. Sunlight can burn and warm the inner core of your body.

- ❖ **Avoid too much sunshine.**

Sunburn slows the skin's ability to cool itself. The sun will also heat the inner core of your body, resulting in dehydration. Use a sunscreen lotion with a high sun protection factor (SPF) rating.

- ❖ **Drink plenty of water and fluids even if you do not feel thirsty.**

Your body needs water to keep cool. Water is the safest liquid to drink during heat emergencies. Injury and death can occur from dehydration, which can happen quickly and unnoticed. Symptoms of dehydration are often confused with other causes. Persons who have epilepsy or heart, kidney, or liver disease; who are on fluid-restricted diets; or who have a problem with fluid retention should consult a doctor before increasing liquid intake.

**TAB E SECTION 11  
EMERGENCY FACT SHEETS  
EXTREME HEAT**

Avoid drinks with alcohol or caffeine in them. They can make you feel good briefly, but make the heat's effects on your body worse. This is especially true about beer, which actually dehydrates the body.

❖ **Avoid extreme temperature changes.**

A cool shower immediately after coming in from hot temperatures can result in hypothermia, particularly for elderly and very young people.

❖ **Eat small meals and eat more often.**

Large, heavy meals are more difficult to digest and cause your body to increase internal heat to aid digestion, worsening overall conditions. Avoid foods that are high in protein, such as meats and nuts, which increase metabolic heat.

❖ **Avoid using salt tablets unless directed to do so by a physician.**

❖ **NEVER leave children or pets alone in closed vehicles.**

Temperatures inside a closed vehicle can reach over 140 degrees F within minutes. Exposure to such high temperatures can kill in minutes.

❖ **Stay inside as much as possible. If your home does not have air conditioning, choose other places you can go to get relief from the heat during the warmest part of the day.**

Schools, libraries, theaters and other community facilities often provide air-conditioned refuge on the hottest day. Air conditioning provides the safest escape from extreme heat.

❖ **Slow down. Avoid strenuous activity. Plan changes in your daily activities to avoid strenuous work during the warmest part of the day.**

Postpone outdoor games and activities. Ill effects of heat can quickly overcome the healthiest people, if they perform strenuous work during the warmest parts of the day. Symptoms of dehydration are not easily recognized and are often confused with other causes. Dehydration occurs fast and makes you ill very quickly.

❖ **Take frequent breaks and use a buddy system if you must work outdoors.**

Frequent breaks, especially in a cool area or to drink fluids, can help people tolerate heat better.

Partners can keep an eye on each other and can assist each other when needed. Sometimes exposure to heat can cloud judgment. Chances are if you work alone, you may not notice this.

❖ **Plan to check on family, friends, and neighbors who do not have air conditioning or who spend much of their time alone.**

❖ **Keep heat outside and cool air inside.**

**TAB E SECTION 11  
EMERGENCY FACT SHEETS  
EXTREME HEAT**

Close any registers that may allow heat inside. Install temporary reflectors, such as aluminum foil covered cardboard, in windows and skylights to reflect heat back outside.

❖ **Conserve electricity.**

During periods of extreme heat, people tend to use a lot more power for air conditioning. Conserve electricity not used to keep you cool so power can remain available and reduce the chance of a community wide outage.

❖ **Vacuum air conditioner filters weekly during periods of high use.**

Air conditioner filters can become clogged or filled with dirt, making them less efficient. Keeping them clean will allow your air conditioner to provide more cool air.

**DURING A DROUGHT**

Curtail all water uses. Watering the lawn and washing the car are wasteful. When possible reuse water. Place a brick, or another large solid object, in your toilet tank to reduce the amount of water used in flushing. Farmers should contact the county Farmers Home Administration Office for disaster assistance information.

**TAB E SECTION 12**  
**EMERGENCY FACT SHEETS**  
**LANDSLIDE AND DEBRIS FLOW (MUDSLIDE)**

Landslides are a serious geologic hazard common to almost every state in the United States. Globally, landslides cause billions of dollars in damage and thousands of deaths and injuries each year. Landslides are typically associated with periods of heavy rainfall or rapid snow melt and tend to worsen the effects of flooding that often accompanies these events. In areas burned by forest and brush fires, a lower threshold of precipitation may initiate landslides. Debris flows, sometimes referred to as mudslides, mudflows, lahars, or debris avalanches, are common types of fast-moving landslides.

Areas that are generally prone to landslide hazards include existing old landslides; the bases of steep slopes; the bases of drainage channels; and developed hillsides where leach-field septic systems are used.

Areas that are typically considered safe from landslides include areas that have not moved in the past; relatively flat-lying areas away from sudden changes in slope; and areas at the top or along ridges, set back from the tops of slopes.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

**Learn whether landslides and debris flows have occurred in your area by contacting local officials, state geological surveys or departments of natural resources, and university departments of geology.**

**Look for patterns of storm-water drainage on slopes near your home, noting especially the places where runoff water converges, increasing flow over-soil-covered slopes.**

**Check hillsides around your home for any signs of land movement, such as small landslides or debris flows or progressively tilting trees.**

**TAB E SECTION 12  
EMERGENCY FACT SHEETS  
LANDSLIDE AND DEBRIS FLOW (MUDSLIDE)**

❖ **Develop an emergency communication plan.**

In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.

Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Make sure that all family members know how to respond after landslides and debris flows.**

Teach all family members how and when to turn off electricity, water, and gas, if instructed to do so by authorities. Everyone in your home should know what to do, including guests, babysitters, and caregivers.

Teach children how and when to call 911, police, and fire and which radio station to tune to for emergency information.

❖ **Talk to your insurance agent. Debris flow may be covered by flood insurance policies from the National Flood Insurance Program (NFIP).**

The National Flood Insurance Program is a Federal Emergency Management Agency program designed to provide flood protection seldom found in standard homeowners’ insurance policies. Thus insurance is available to residents of communities that have agreed to adopt and enforce sound flood plain management practices. Further information is available through local insurance agents and emergency services offices. Information can also be found on the FEMA website at <http://www.fema.gov>.

❖ **If your property is in a landslide-prone area, contract with a private consulting company specializing in earth movement for opinions and advice on landslide problems and on corrective measures you can take.**

❖ **Install flexible pipe fittings to avoid gas or water leaks.**

**DURING**

**Intense Storms**

❖ **Listen to a NOAA Weather Radio or portable, battery-operated radio or television for warnings of intense rainfall.**

Many debris-flow fatalities occur when people are sleeping.

Intense, short bursts of rain may be particularly dangerous, especially after longer periods of heavy rainfall and damp weather.

❖ **If you are in areas susceptible to landslides and debris flows, consider leaving if it is safe to do so.**

Driving during an intense storm can be hazardous. If you remain at home, move to a second story if possible. Staying out of the path of a landslide or debris flow saves lives.

**TAB E SECTION 12  
EMERGENCY FACT SHEETS  
LANDSLIDE AND DEBRIS FLOW (MUDSLIDE)**

- ❖ **Listen for any unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together.**
- ❖ **If you are near a stream or channel, be alert for any sudden increase or decrease in water flow and for a change from clear to muddy water.**
- ❖ **Be especially alert when driving.**

**Imminent Landslide Danger**

**Contact your local fire, police, or public works department. Local officials are the best persons able to assess potential danger.**

**Inform affected neighbors.**

Your neighbors may not be aware of potential hazards. Advising them of a potential threat may help save lives.

Help neighbors who may need assistance to evacuate.

**Evacuate. Getting out of the path of a landslide or debris flow is your best protection.**

**Landslide**

**Quickly move out of the path of the landslide or debris flow.**

**If escape is not possible, curl into a tight ball and protect your head.**

**AFTER**

**Stay away from the slide area.**

**Listen to local radio or television stations for the latest emergency information.**

**Check for injured and trapped persons near the slide, without entering the direct slide area. Direct rescuers to their locations.**

**Help a neighbor who may require special assistance – infants, elderly people, and people with disabilities.**

**Watch for flooding, which may occur after a landslide or debris flow.**

**Look for and report broken utility lines to appropriate authorities.**

**Check the building foundation, chimney, and surrounding land for damage.**

**Replant damaged ground as soon as possible since erosion caused by loss of ground cover can lead to flash flooding.**

**TAB E SECTION 12**  
**EMERGENCY FACT SHEETS**  
**LANDSLIDE AND DEBRIS FLOW (MUDSLIDE)**

**Seek the advice of a geotechnical expert for evaluation of landslide hazards or designing corrective techniques to reduce landslide risk.**

**ANIMALS AFTER LANDSLIDES AND DEBRIS FLOWS**

The behavior of animals may change dramatically after landslides and debris flows. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.



**TAB E SECTION 13**  
**EMERGENCY FACT SHEETS**  
**VOLCANO**

A volcano is a vent through which molten rock escapes to the earth's surface. Unlike other mountains, which are pushed up from below, volcanoes are built by surface accumulation of their eruptive products – layers of lava, ash-flows, and ash. When pressure from gases within the molten rock becomes too great, an eruption occurs. Explosive eruptions can shoot columns of gases and rock fragments tens of miles into the atmosphere, spreading ash hundreds of miles downwind.

Lava flows are streams of molten rock that either pour from a vent quietly or explosively by lava fountains. Because of their intense heat, lava flows are also great fire hazards. Lava flows destroy everything in their path, but most move slowly enough that people can move out of the way. The speed at which lava moves across the ground depends on several factors, including the type of lava erupted, the steepness of the ground, and the rate of lava production vent.

Volcanic hazards include gases, lava and pyroclastic flows, landslides, earthquakes, and explosive eruptions.

Volcanoes usually give warning that they will erupt. The U. S. Geological Survey scientists have developed a forecasting system to alert public officials and the general public to the fact that a volcano may erupt.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ A pair of goggles and throw-away breathing mask for each member of the household in case of ashfall.
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.

**TAB E SECTION 13  
EMERGENCY FACT SHEETS  
VOLCANO**

- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Learn about volcanic activity in your community.**

- ◆ Contact your local emergency management office or American Red Cross chapter, or state geological survey or department of natural resources.
- ◆ Find out if your home, school, workplace or other frequently visited locations are in volcanic hazard areas.

❖ **Learn about your community warning systems and emergency plans.**

- ◆ Different communities have different ways of providing warnings and different responses.
- ◆ Discuss volcanic activity. Many communities have sirens intended for outdoor warning purposes.
- ◆ Use a NOAA Weather Radio with a tone-alert feature to keep you aware of watches and warnings while you are indoors.

❖ **Develop an evacuation plan.**

Everyone in your family should know where to go if they have to leave. Trying to make plans at the last minute can be upsetting and create confusion.

❖ **Talk to your insurance agent.**

Find out what your homeowner’s policy will or won’t cover in the event of a volcanic eruption.

❖ **If you are visiting an area at risk of volcanic eruption, check with the hotel, motel, or campground operators for volcano evacuation information and how you would be warned.**

**DURING**

❖ **Be prepared for the hazards that can accompany volcanic eruptions, and know how to respond to reduce risks. Hazards include:**

- ◆ Mudflows and flash floods

Mudflows are powerful “rivers” of mud that can move 20 to 40 miles per hour. Hot ash or lava from a volcanic eruption can rapidly melt snow and ice at the summit of a volcano. The melted water quickly mixes with falling ash, with soil cover on lower slopes, and with debris in its path. This turbulent mixture is dangerous in stream channels and can travel more than 50 miles away from a volcano. Intense rainfall can erode fresh volcanic deposits to form large mudflows. If you see the water level

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of a stream begin to rise, quickly move to high ground. If a mudflow is approaching or passes a bridge, stay away from the bridge.

- ◆ Landslides and rockfalls
- ◆ Earthquakes
- ◆ Ashfall and acid rain
  
- ❖ **Follow the evacuation order issued by authorities and put your disaster plan into action.**
- ❖ **Avoid areas downwind and river valleys downstream of the volcano.**
- ❖ **Stay out of the area defined as a restricted zone by government officials.**
- ❖ **Avoid river valleys and low-lying areas.**
- ❖ **Listen to a portable, battery-operated radio or television for updated emergency information and instructions.**

**If caught indoors**

- ❖ **Close all windows, doors, and dampers to keep volcanic ash from entering.**
- ❖ **Put all machinery inside a garage or barn to protect it from volcanic ash. If buildings are not available, cover machinery with large tarps.**
- ❖ **Bring animals and livestock into closed shelters to protect them from breathing volcanic ash.**

**If trapped outdoors**

- ❖ **Seek shelter indoors. Your safest place is indoors, away from various hazards.**
- ❖ **If caught in a rockfall, roll into a ball to protect your head and neck.**
- ❖ **If caught near a stream, be aware of mudflows, especially if you hear the roar of an approaching mudslide. See “Landslides”.**

**PROTECT YOURSELF DURING ASHFALL**

Volcanic ash is actually fine, glassy fragments and particles that can cause severe injury to breathing passages, eyes, and open wounds, and irritation to skin.

- ❖ **Wear long-sleeved shirts and long pants.**
- ❖ **Use goggles to protect your eyes.**
- ❖ **Wear eyeglasses instead of contact lenses.**

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- ❖ **Use a dust mask or hold a damp cloth over your nose and mouth to help breathing.**
- ❖ **Keep car or truck engines off.**

**AFTER**

- ❖ **Continue to listen to a portable, battery-operated radio or television for updated emergency information and instructions.**
- ❖ **Check yourself for injuries.**

People often tend to others without checking their own injuries first. People will be better able to care for others if they have received first aid for their injuries.

- ❖ **If you evacuated, return home when local officials tell you it is safe.**
- ❖ **Help injured or trapped persons.**

Call 911 and then give first aid where appropriate. Do not move the seriously injured unless they are in immediate danger of further injury.

- ❖ **If possible, stay away from volcanic ashfall areas.**
- ❖ **When outside, protect yourself from the fine, glassy particles of volcanic ash.**
- ❖ **Clear roofs of ashfall.**
- ❖ **Avoid driving in heavy ashfall.**
- ❖ **If you have a respiratory ailment, avoid contact with any amount of ash. Stay indoors until local health officials advise it is safe to go outside.**

**ANIMALS AFTER A VOLCANO**

The behavior of animals may change dramatically after a volcano. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

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**TSUNAMI**

Tsunamis are ocean waves most often generated by earthquake-induced movement of the ocean floor. Landslides, volcanic eruptions, and even meteorites can also generate a tsunami.

Twenty-four tsunamis have caused damage in the United States and its territories during the last 204 years. Just since 1946, six tsunamis have killed more than 350 people and caused a half billion dollars of property damage in Hawaii, Alaska, and the West Coast.

All tsunamis are potentially dangerous, even though they may not damage every coastline they strike. Damaging tsunamis are very rare. Our coastlines are vulnerable, but tsunamis are infrequent. Understand the hazard and learn how to protect yourself, but don't let the threat of tsunamis ruin your enjoyment of the beach.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it's often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Learn about tsunami risk in your community.**

- ◆ Contact your local emergency management office or American Red Cross chapter.

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- ◆ Find out if your home, school, workplace or other frequently visited locations are in tsunami hazard areas.
- ◆ Know the height of your street above sea level and the distance of your street from the coast or other high-risk waters. Evacuation orders may be based on these numbers.
- ❖ **If you are visiting an area at risk of tsunamis, check with the hotel, motel, or campground operators for tsunami evacuation information and how you would be warned.**
- ❖ **Familiarize yourself with tsunami warnings.**
  - ◆ **Warning**

A tsunami was or may have been generated, which could cause damage; therefore, people in warned areas are strongly advised to evacuate.
  - ◆ **Watch**

A tsunami was or may have been generated, but is at least two hours travel time to the area in watch status. Local officials should prepare for possible evacuation if their area is upgraded to a warning.
  - ◆ **Advisory**

An earthquake has occurred in the Pacific basin, which might generate a tsunami. The West Coast/Alaska Tsunami Warning Center and the Pacific Tsunami Warning Center will issue hourly bulletins advising of the information.
  - ◆ **Information**

A message with information about an earthquake that is not expected to generate a tsunami. Usually only one bulletin is issued.
- ❖ **Familiarize yourself with the tsunami warning signs.**
  - ◆ A strong earthquake lasting 20 seconds or more near the coast may generate a tsunami.
  - ◆ A noticeable rapid rise or fall in coastal waters is also a sign that a tsunami is approaching.
  - ◆ Tsunamis most frequently come onshore as a rapid rising turbulent surge of water choked with debris. They are not V-shaped or rolling waves, and are not “surfable.”
  - ◆ Tsunamis may be locally generated or from a distant source.
- ❖ **If you are at risk from tsunamis, do the following:**
  - ◆ Plan an evacuation route from your home, school, workplace, or any other place you’ll be where tsunamis present a risk.
  - ◆ Practice your evacuation route.

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- ◆ Use a NOAA Weather Radio with a tone-alert feature to keep you informed of local watches and warnings.
- ◆ Talk to your insurance agent. Homeowners' policies do not cover flooding from a tsunami. Ask about the National Flood Insurance Program.
- ❖ **Avoid building or living in buildings within several hundred feet of the coastline.**
- ❖ **Make a list of items to bring inside in the event of a tsunami watch or warning.**
- ❖ **Elevate coastal homes.**
- ❖ **Follow flood preparedness precautions.**
- ❖ **Have an engineer check your home and advise about ways to make it more resistant to a tsunami or flood.**

**DURING**

**A strong coastal earthquake**

- ❖ **Drop, cover, and hold on.**
- ❖ **When the shaking stops, gather your family members and pets and evacuate quickly.**
  - ◆ Leave everything else behind. A tsunami may be coming within minutes.
  - ◆ Move quickly to higher ground away from the coast.
  - ◆ Be careful to avoid downed power lines and stay away from buildings and bridges from which heavy objects might fall during an aftershock.

**A tsunami WATCH**

- ❖ **Listen to a NOAA Weather Radio, Coast Guard emergency frequency station, or other reliable source for updated emergency information.**

As the energy of a tsunami is transferred through open water, it is not detectable. Seismic action may be the only advance warning before the tsunami approaches the coastline.

- ❖ **Check your disaster emergency supplies.**
- ❖ **Review evacuation plans with family members.**
- ❖ **If you have special evacuation needs (small children, elderly people, persons with disabilities, or animals) consider early evacuation.**
- ❖ **If time permits, secure unanchored objects around your home or business.**
- ❖ **Be ready to evacuate.**

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**A tsunami WARNING**

- ❖ **Listen to a NOAA Weather Radio, Coast Guard emergency frequency station, or other reliable source for updated emergency information.**

Authorities will issue a warning only if they believe there is a real threat of a tsunami.

- ❖ **Follow instructions issued by local authorities.**

Recommended evacuation routes may be different from the one you use, or you may be advised to relocate higher.

- ❖ **If you hear an official tsunami warning or detect signs of a tsunami, evacuate at once.**
- ❖ **Take your emergency supplies.**
- ❖ **Get to higher ground as far inland as possible.**
- ❖ **Return home only after local officials tell you it is safe.**

**AFTER**

- ❖ **Continue listening to a NOAA Weather Radio, Coast Guard emergency frequency station, or other reliable source for emergency information.**

The tsunami may have damaged roads, bridges, or other places that may be unsafe.

- ❖ **Check yourself for injuries.**

People often tend to others without checking their own injuries first. People will be better able to care for others if they have received first aid for their injuries.

- ❖ **If you evacuated, return home when local officials tell you it is safe.**
- ❖ **Stay away from floodwaters.**
- ❖ **If you come upon a barricade, follow detour signs and turn around and go another way.**
- ❖ **Help injured or trapped persons.**

Call 911 and then give first aid where appropriate. Do not move the seriously injured unless they are in immediate danger of further injury.

- ❖ **Do not enter flooded buildings.**
- ❖ **When entering buildings, use extreme caution.**

- ◆ **Wear sturdy shoes and use battery-powered lanterns or flashlights when examining buildings.**



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- ◆ Watch out for wildlife, especially poisonous snakes that may have come into buildings with floodwaters. Use a stick to poke through debris.
- ◆ Inspect foundations for setting or cracking.
- ◆ Examine walls, floors, doors, and windows to determine that the building is not in danger of collapsing.
- ◆ Watch for loose plaster and ceilings that could fall.
- ❖ **Watch for fire hazards.**
  - ◆ Broken or leaking gas lines.
  - ◆ Flooded electrical circuits.
  - ◆ Submerged furnaces or electrical appliances.
  - ◆ Flammable or explosive materials coming from upstream.
- ❖ **Do not use water or eat food that has come in contact with floodwaters.**
- ❖ **Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage.**
- ❖ **Damaged sewage systems are health hazards. Service damaged septic tanks, cesspools, pits and leaching systems as soon as possible.**
- ❖ **Check the gas, electrical, and water lines for damage. When inspecting utilities, wear heavy shoes and work gloves as protection against debris and broken glass.**
- ❖ **Open windows and leave the building if you smell gas. Report gas leakage to the authorities.**
- ❖ **Check utility lines and appliances for damage. If electrical wiring appears damaged, turn off the current at the main meter box.**
- ❖ **If you suspect sewage lines are damaged, avoid using the toilets and call a plumber.**
- ❖ **If water pipes are damaged, contact the water company and do not use water from the tap. Obtain emergency water from hot water tanks, toilet tanks (not bowls) and melted ice cubes.**
- ❖ **Use the telephone only for emergency calls.**

Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.

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TSUNAMI**

**DO NOT SHUT OFF UTILITIES UNLESS INSTRUCTED TO DO SO BY LOCAL OFFICIALS, OR UNLESS YOU ARE IN IMMINENT DANGER FROM SOMETHING LIKE AN OBVIOUS GAS LEAK. REMEMBER THAT YOUR GAS SUPPLY MUST BE TURNED BACK ON BY A PROFESSIONAL.**

**ANIMALS AFTER TSUNAMIS**

The behavior of animals may change dramatically after a tsunami. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in “Saving the Whole Family”, AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

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There are no other storms like hurricanes on Earth. Each year, on average, 10 tropical storms (of which six become hurricanes) develop over the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico. Many of these storms remain over the ocean, however, an average of five hurricanes strike the United States coastline every three years. Of these five, two will be major hurricanes, which are storms of category 3 or higher.

Over the past several years, U.S. hurricane warning systems have provided adequate time for people on barrier islands and the immediate coastline to move inland when hurricanes threaten. However, due to rapid population growth, it is becoming more difficult to evacuate people from the barrier islands and other coastal areas because roads have not kept pace with the expansion. The problem is further compounded by the fact that 80 to 90 percent of the population now living in hurricane prone areas has never experienced the core of a major hurricane. Many of these people have been through weaker storms. The result is a false impression of a hurricane's damage potential. This often leads to complacency and delayed actions, which could result in the loss of many lives.

**BEFORE**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three-day supply of water and non-perishable food for each person in your household. An additional week's supply of food and water should be kept during this type of disaster.
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Learn about your community's risk from hurricanes.**

- ◆ Contact your local emergency management office, local National Weather Service office, or local chapter of the American Red Cross for more information on hurricanes and how to prepare for them.

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- ◆ If you live in a risk area, learn what types of supplies should be stored to protect your home from floodwaters. Knowing the elevation of your property in relation to nearby streams and dams will let you know if forecasted flood levels will affect your home.

❖ **Familiarize yourself with the hurricane warning signs and your community alert signals.**

- ◆ A National Weather Service **Watch** is a message indicating that conditions favor the occurrence of a certain type of hazardous weather. A **Hurricane Watch** is issued when there is a threat of hurricane conditions within 24 to 36 hours.
- ◆ A National Weather Service **Warning** indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. A **Hurricane Warning** is issued when hurricane conditions are expected in 24 hours.

❖ **Learn about the National Flood Insurance Program.**

The National Flood Insurance Program is a Federal Emergency Management Agency program designed to provide flood protection seldom found in standard homeowners' insurance policies. Thus insurance is available to residents of communities that have agreed to adopt and enforce sound flood plain management practices. Further information is available through local insurance agents and emergency services offices. Information can also be found on the FEMA website at <http://www.fema.gov>.

❖ **Ask about your community's hurricane preparedness plan.**

The local emergency management office or local chapter of the American Red Cross should be able to provide you with details of this plan, including information on the safest evacuation routes, nearby shelters, advice on when schools would be closed and what conditions are necessary for recommended evacuation of certain areas.

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the "family contact." After a disaster, it's often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.
- ◆ Review flood safety and preparedness measures with your family.
- ◆ Teach all family members how and when to turn off electricity, water and gas, if instructed to do so by authorities. Everyone in your home should know what to do, including guests, babysitters, and caregivers.

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- ◆ Teach children how and when to call 911, police, and fire and which radio station to tune to for emergency information.

- ❖ **Fill your car's gas tank.**

- ❖ **Stock up on prescription medications.**

- ❖ **Make a list of items to bring inside in the event of a storm.**

A list will help you remember anything that can be broken or picked up by strong winds. Hurricane winds, often in excess of 100 miles per hour, can turn unanchored items into deadly flying objects, causing damage or injury when they hit.

- ❖ **Keep trees and shrubbery trimmed.**

Make trees more wind resistant by removing diseased or damaged limbs. Hurricane winds frequently break weak limbs and hurl them at great speed, causing great damage when they hit property. Debris collection services may not be operating just before a storm, so it is best to do this well in advance of approaching storms.

- ❖ **Remove any debris or loose items in your yard.**

- ❖ **Clear loose and clogged rain gutters and downspouts.**

Hurricanes often bring long periods of heavy rain. Providing clear drainage will help prevent misdirected flooding.

- ❖ **Install permanent hurricane shutters.**

Hurricane shutters provide the best protection for your windows and doors. Taping windows could take critical time from more effective preparedness measures. All tape does is help prevent glass from broken windows from scattering all over inside. Tape does not prevent windows from breaking. Cover the outside of windows with shutters or plywood.

- ❖ **If you do not have permanent hurricane shutters, install anchors for plywood (marine plywood is best) and predrill holes in precut half-inch outdoor plywood boards so that you can cover the windows of your home quickly.**

- ❖ **Install protection to the outside areas of sliding glass doors.**

- ❖ **Buy any other items needed to board up windows and protect your home well ahead of time.**

- ❖ **Strengthen garage doors.**

- ❖ **Have an engineer check your home and advise about ways to make it more resistant to hurricane winds.**

- ❖ **Elevate coastal homes.**

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- ◆ Raising houses to a certain height will make them more resistant to hurricane-driven waters. There may be many local codes affecting how and where homes can be elevated.
- ◆ Meet with your emergency manager or planning and zoning official for a description of the process to have your home elevated. There may also be community funds available for such measures.
- ❖ **If you live in a flood plain or are prone to flooding, also follow flood preparedness precautions.**

**DURING**

**A Hurricane Watch**

- ❖ **Listen regularly to a NOAA Weather Radio or local radio or television stations for updated information.**
- ❖ **Listen to the advice of local officials, and evacuate if they tell you to do so.**
  - ◆ Evacuate immediately and take your animals with you. If conditions are unsafe for people, they are also unsafe for animals.
  - ◆ Following the advice of your local authorities is your safest protection. Local officials may close down certain roads, especially near the coast, when the outer effects of increasing wind and rain from a hurricane reach the coast.
- ❖ **Prepare your property for high winds.**
  - ◆ Bring lawn furniture inside, as well as outdoor decorations or ornaments, trashcans, hanging plants, or anything else that can be picked up by the wind.
  - ◆ Make trees more wind resistant by removing diseased and damaged limbs.
  - ◆ Secure building by closing and boarding up each window of your home. Remove outside antennas.
  - ◆ If you own a boat, moor it securely or move it to a designated safe place. Use rope or chain to secure boat to trailer. Use tie-downs to anchor trailer to the ground or house.
- ❖ **If you are instructed to do so by local authorities, turn off all utilities at the main power switch and close the main gas valve. REMEMBER THAT A PROFESSIONAL MUST TURN YOUR GAS SUPPLY BACK ON.**
- ❖ **Turn off propane tanks.**
- ❖ **Unplug small appliances.**

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- ❖ **Review evacuation plan.**
- ❖ **Stay away from floodwaters.**

**A Hurricane Warning**

- ❖ **Listen to a NOAA Weather Radio, or portable, battery-powered radio or television for updated information and official instructions.**
- ❖ **If officials announce a hurricane warning, they may ask you to leave your home as soon as possible to be safe. Take your Emergency Supplies and go to a shelter or your pre-determined evacuation site. Be sure to notify your out-of-state contact of your whereabouts.**
- ❖ **If you are not advised to evacuate, stay indoors, on the first floor away from windows, skylights and glass doors, even if they are covered.**
- ❖ **Close all interior doors. Secure and brace external doors.**
- ❖ **Have a supply of flashlights and extra batteries handy.**
- ❖ **Store drinking water in clean bathtubs, sinks, and plastic containers.**
- ❖ **If power is lost, turn off major appliances to reduce the power “surge” when electricity is restored.**
- ❖ **If in a mobile home, check tie-downs and evacuate immediately.**
- ❖ **Be aware that the calm “eye” is deceptive; the storm is not over.**
- ❖ **Watch out for flooding.**
- ❖ **Be alert for tornadoes.**

**An Evacuation**

- ❖ **If advised to evacuate, do so immediately.**
  - ◆ **Avoid flooded roads and watch for washed-out bridges.**
  - ◆ **Roads and bridges frequently become crowded and traffic moves slowly. Evacuation will probably take longer than expected. Give yourself plenty of time.**
  - ◆ **Evacuate early and take your animals with you. If conditions are unsafe for people, they are also unsafe for animals.**
- ❖ **Monitor a battery-operated radio for evacuation instructions.**
- ❖ **Follow recommended evacuation routes -- shortcuts may be blocked.**

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- ❖ **Secure your home by unplugging appliances and turning off electricity and the main water valve. This will reduce potential damage to your appliances (from power surges) and to your home.**
- ❖ **Tell your out-of-state contact where you are going.**
- ❖ **If time permits, and you live in an identified surge zone or area prone to flooding, move furniture to a higher floor.**
- ❖ **Bring preassembled emergency supplies and warm protective clothing.**
- ❖ **Lock your home and leave.**

**AFTER**

- ❖ **The danger is not necessarily over after the hurricane ends. Listen to a radio or television and do not return home until the authorities have indicated it is safe to do so.**
- ❖ **Check yourself for injuries.**

People often tend to others without checking their own injuries first. People will be better able to care for others if they are not injured or have received first aid for their injuries.

- ❖ **If you evacuated, return home when local officials tell you it is safe.**
- ❖ **Stay alert for extended rainfall and subsequent flooding, even after the hurricane or tropical storm has weakened.**

Hurricanes may stall or change direction when they make landfall, or they may bring a lot of rain upriver, causing additional flood hazards for hours or days after the storm.

- ❖ **Stay away from floodwaters.**
- ❖ **If you come upon a barricade, follow detour signs and turn around and go another way.**
- ❖ **Help injured or trapped persons.**

Call 911 and then give first aid where appropriate. Do not move the seriously injured unless they are in immediate danger of further injury.

- ❖ **Do not enter buildings if floodwaters are higher than the first floor.**
- ❖ **When entering buildings, use extreme caution.**
  - ◆ **Wear sturdy shoes and use battery-powered lantern or flashlights when examining buildings.**



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- ◆ Watch out for displaced wildlife, especially poisonous snakes that may have come into buildings with floodwaters. Use a stick to poke through debris.
- ◆ Inspect foundations for settling or cracking.
- ◆ Examine walls, floors, doors, and windows to determine that the building is not in danger of collapsing.
- ◆ Watch for loose plaster and ceilings that could fall.
- ❖ **Watch for fire hazards.**
  - ◆ Broken or leaking gas lines.
  - ◆ Flooded electrical circuits.
  - ◆ Submerged furnaces or electrical appliances.
  - ◆ Flammable or explosive materials coming from upstream.
- ❖ **Do not use water or eat food that has come in contact with floodwaters.**
- ❖ **Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage.**
- ❖ **Damaged sewage systems are health hazards. Service damaged septic tanks, cesspools, pits and leaching systems as soon as possible.**
- ❖ **Check the gas, electrical and water lines for damage. When inspecting utilities, wear heavy shoes and work gloves as protection against debris and broken glass.**
- ❖ **Open windows and leave the building if you smell gas. Report gas leakage to the authorities.**
- ❖ **Check utility lines and appliances for damage. If electrical wiring appears damaged, turn off the current at the main meter box.**
- ❖ **If you suspect sewage lines are damaged, avoid using the toilets and call a plumber.**
- ❖ **If water pipes are damaged, contact the water company and do not use water from the tap. Obtain emergency water from hot water tanks, toilet tanks (not bowls) and melted ice cubes.**
- ❖ **Use the telephone only for emergency calls.**

Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.

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HURRICANE**

**DO NOT SHUT OFF UTILITIES UNLESS INSTRUCTED TO DO SO BY LOCAL OFFICIALS, OR UNLESS YOU ARE IN IMMINENT DANGER FROM SOMETHING LIKE AN OBVIOUS GAS LEAK. REMEMBER THAT YOUR GAS SUPPLY MUST BE TURNED BACK ON BY A PROFESSIONAL.**

**ANIMALS AFTER A HURRICANE**

The behavior of animals may change dramatically after a hurricane. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in "Saving the Whole Family", AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.

**TAB E SECTION 16**  
**EMERGENCY FACT SHEETS**  
**HAZARDOUS MATERIALS ACCIDENTS**

A hazardous materials accident can occur anywhere. Hazardous materials are substances that, because of their chemical, biological or physical nature, pose a potential risk to life, health or property if released. Potential hazards can occur during any stage of use from production, storage, transportation, use or disposal. Communities located near chemical manufacturing plants are particularly at risk. However, because hazardous materials are transported on our roadways, railways, and waterways daily, any area is considered vulnerable to an accident.

**BEFORE/PREVENTION**

❖ **Have emergency supplies on hand:**

- ◆ Flashlight and extra batteries
- ◆ Portable battery-operated radio and extra batteries
- ◆ First aid kit and manual
- ◆ Emergency food and water – at least a three day supply of water and non-perishable food for each person in your household
- ◆ Manual can opener
- ◆ Essential medicines
- ◆ Cash and credit cards
- ◆ Important family documents and veterinary records
- ◆ At least one complete change of clothing and footwear per person. (Include sturdy shoes and work boots, hats and gloves, rain gear, thermal underwear, blankets or sleeping bag)
- ◆ Animal Evacuation Kit – see “Saving the Whole Family”, AVMA 2000

*Suggestions and Reminders: Store your supplies in a convenient place known to all family members. Keep a smaller version of the emergency supplies in the trunk of your car. Keep items in air-tight plastic bags. Change your stored water supply every six months so it stays fresh. Rotate your stored food every six months. Re-think your Emergency Supplies and family needs at least once a year. Replace batteries, update clothes, etc. Ask your physician or pharmacist about storing prescription medications, and your veterinarian about veterinary medications.*

❖ **Develop an emergency communication plan.**

- ◆ In case family members are separated during a disaster (this is a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.
- ◆ Ask an out-of state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure **everyone** in the family knows the name and location of the contact person and his or her phone number.

❖ **Contact Local Emergency Planning Committee (LEPC) or local civil defense/emergency management office.**

- ◆ Obtain information about the community hazardous materials response plans if there is a hazardous materials accident at a plant or facility, or a hazardous materials transportation accident.
- ◆ Find out where reportable quantities of extremely hazardous materials are stored and used in your area.

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**HAZARDOUS MATERIALS ACCIDENTS**

- ◆ Obtain a copy of the community evacuation plan. This plan should include information on the safest routes to shelters.
- ❖ **Plan several evacuation routes in case an evacuation order is issued following a hazardous material accident.**
- ❖ **Be familiar with local public warning systems.**
- ❖ **Be familiar with evacuation plans for workplace and schools.**
- ❖ **Check your home for hazardous materials.**
  - ◆ Some cleaners can cause an explosion or fire if they come in contact with each other, water, heat, or flames.
  - ◆ Make a list of hazardous products in your home. List the product name and emergency care information.
  - ◆ Store hazardous household products according to safety recommendations.
    - Store hazardous materials in a safe, dry location.
    - Be sure containers are closed to avoid spills and escaping vapors.
    - Store flammable products and corrosive products in separate locations. The label will indicate if the product is corrosive or flammable.
    - Place oily polishing rags or waste in covered metal cans.
    - Never store aerosols on or near fireplaces, radiators, space heaters, wood stoves, pilot lights, furnaces, and kitchen appliances.
    - Keep herbicides and pesticides away from any heat source.
    - Store herbicides separately from pesticides. Herbicide vapors can contaminate other products.
    - Store pesticides and herbicides away from fertilizer. Their vapors can contaminate fertilizers.
    - Periodically check hazardous product containers for deterioration and possible leaks.
    - Periodically check to be sure that labels on hazardous products are secure and readable.
    - Store hazardous products on high shelves or in locked cabinets to prevent poisoning of children and pets.

**TAB E SECTION 16**  
**EMERGENCY FACT SHEETS**  
**HAZARDOUS MATERIALS ACCIDENTS**

- Do not store flammable liquids such as gasoline and kerosene in a garage or utility room attached to the house.
  - Never store flammable liquids or even a lawn mower filled with gasoline near a heat source such as gas water heaters, furnaces, radiators, space heaters, etc. Spontaneous combustion can occur if the flammable liquid vapors escape.
- ❖ **Prevent household hazardous materials from being spilled during a disaster such as a flood, fire, or earthquake, by taking the following preventive measures:**
- ◆ Securely fasten shelves where hazardous materials are stored.
  - ◆ Store incompatible products in separate locations so they will not come in contact with each other.
  - ◆ Label the shelves where flammable products are stored.
  - ◆ Store hazardous materials in a metal cabinet to protect them from fire.
  - ◆ Dry off containers that get wet in a flood. Move them off damp shelves until the shelf material has dried thoroughly.
  - ◆ Check labels on wet containers and reglue or tape them securely before they come off completely.
- ❖ Be aware of how different chemicals may react during mixed spills. Some common chemicals and their dangers are:
- ◆ Kitchen
    - Cleansers (reactive)
    - Detergents (reactive)
    - Cooking oil (flammable)
    - Aerosols (explosive in fire)
  - ◆ Bathroom
    - Aerosols (explosive in fire)
    - Alcohol (flammable)
    - Nail polish remover (flammable)
    - Medicines (see label)
  - ◆ Bedrooms
    - Aerosols (explosive in fire)
    - Gun ammunition (explosive in fire)
    - Medicines (see label)
  - ◆ Workshops
    - Paints (toxic)
    - Paint thinner (toxic, flammable)
    - Adhesives (toxic, flammable)

**TAB E SECTION 16**  
**EMERGENCY FACT SHEETS**  
**HAZARDOUS MATERIALS ACCIDENTS**

- ◆ Garage
  - Gasoline (toxic, flammable)
  - Antifreeze (toxic, flammable)
  - Transmission fluid (toxic, flammable)
  - Oil (flammable)
  
- ◆ Laundry Room
  - Detergents (reactive)
  - Cleansers (reactive)
  - Bleach (reactive)
  
- ◆ Gardening
  - Pesticides (toxic, reactive)
  - Fertilizers (toxic, reactive, most flammable or explosive when mixed with gasoline)
  
- ◆ General
  - Natural gas (flammable, explosive)
  - Sewer Gases from broken sewer pipes (toxic, explosive)

**DURING**

- ❖ **If a warning signal is sounded, turn on a radio or television for further emergency information.**
  
- ❖ **If caught at the Scene of an Accident:**
  - ◆ Witnesses to a hazardous materials accident should dial 911 (or the local emergency notification number) or the fire department to report the nature and location of the accident as soon as possible.
  
  - ◆ Move away from the accident scene and help keep others away.
  
  - ◆ Do not walk into or touch any of the spilled substance. Try not to inhale gases, fumes, and smoke. If possible, cover mouth with a cloth while leaving the area.
  
  - ◆ Do not go near accident victims until the hazardous material has been identified.
  
  - ◆ Try to stay upstream, uphill, and upwind of the accident to stay out of the way of hazardous materials that may be carried by water or wind.
  
- ❖ **Assisting Accident Victims:**
  - ◆ Do not attempt to assist a victim of a hazardous materials accident until the substance has been identified and authorities indicate it is safe to go near victims.
  
  - ◆ When it is considered safe, move victims to fresh air and call 911 for emergency medical care.
  
  - ◆ Remove contaminated clothing and shoes and place them in a clean plastic bag.

**TAB E SECTION 16**  
**EMERGENCY FACT SHEETS**  
**HAZARDOUS MATERIALS ACCIDENTS**

- ◆ Cleanse victims that have come in contact with chemicals by immediately flushing the skin or eyes with running water for at least 15 minutes.

❖ **“In-Sheltering” (If asked to stay indoors):**

- ◆ Seal house so contaminants cannot enter.
  - Close and lock windows and doors.
  - Seal gaps under doorways and windows with wet towels and duct tape.
  - Seal gaps around window and air conditioning units, bathroom and kitchen exhaust fans, and stove and dryer vents with duct tape and plastic sheeting, wax paper or aluminum wrap.
  - Close fireplace dampers.
  - Close off non-essential rooms such as storage areas, laundry rooms and extra bedrooms.
  - Turn off ventilation systems.
- ◆ Bring pets inside.
- ◆ Immediately after the “in-sheltering” announcement is issued, fill up bathtubs or large containers for an additional water supply and turn off the intake valve to the house.
- ◆ If gas or vapors may have entered the building, take breaths through a cloth or a towel.
- ◆ Avoid eating or drinking any food or water that may be contaminated.
- ◆ Monitor the local Emergency Broadcast System station for further updates and remain in shelter until authorities indicate it is safe to come out.

❖ **If Asked to Evacuate:**

- ◆ Evacuate family and animals to pre-determined site.
- ◆ Monitor a radio or television for information on evacuation routes, temporary shelters, and procedures.
- ◆ Follow the routes recommended by the authorities – shortcuts may not be safe. Leave immediately.
- ◆ Minimize contamination in house by closing all windows, shutting all vents, and turning off attic fans.
- ◆ Take emergency supplies for family and animals.

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EMERGENCY FACT SHEETS  
HAZARDOUS MATERIALS ACCIDENTS**

- ◆ Check on neighbors who are elderly or disabled and my need assistance.

❖ **Evacuation**

Authorities will decide if evacuation is necessary based primarily on the type and amount of chemical released and how long it is expected to affect an area. Other considerations are the length of time it should take to evacuate the area, weather conditions, and the time of day.

**ANIMALS AFTER HAZARDOUS MATERIALS ACCIDENTS**

The behavior of animals may change dramatically after any disruption in their routine. Normally quiet and friendly animals may become fractious. Monitor animals closely and only release them in safe and secure enclosures.

Animals may not be allowed into Red Cross shelters for health and space reasons. Prepare an emergency plan and know where you will take all of your animals in the event of a disaster. Temporary animal shelters may be set-up; however, these will fill rapidly. An ideal situation during disasters is to have a pre-determined friend or family member that will provide a living space for your whole family, including your animals. Additional information on preparing for animals during disasters can be found in “Saving the Whole Family”, AVMA 2000.

Make sure all animals have a current identification tag, license, and vaccinations.



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EMERGENCY FACT SHEETS  
HAZARDOUS MATERIALS ACCIDENTS**

**ACCIDENTAL PETROLEUM DISCHARGE**

Oil spills may occur from ships far out at sea or at dockside, from land-based or off shore wells, from pipelines, from storage tanks, or from vehicles transporting oil on land. Consequently, nearly every type of environment and many species of wildlife are subject to accidental oil contamination.

Wildlife response to oil spills is a complex challenge requiring a teamwork approach between trustees, the responsible party (RP), a contracted qualified wildlife responder (QWR) and carefully trained volunteers. All wildlife actions must be coordinated with the On Scene Coordinator (OSC).

**Trustees:** Trustees are governmental officials designated to act on the public's interest concerning wildlife. Trustees are authorized to act on behalf of the public's interest in the protection of natural resources. The Department of Interior (DOI) has trustee responsibility for migratory birds under the Migratory Bird Treaty Act (16-USC 703-722) and for threatened and endangered species under the Endangered Species Act (16 USC 1531-1544). The DOI also has trustee responsibility for sea otters, dugong, walrus, and manatee under the Marine Mammal Protection Act (16 USC 1361-1407). Trustee responsibility for other marine mammals (whales and seals) falls to the Department of Commerce. The Department of Commerce and Department of Interior share trustee responsibility for anadromous fish under the Anadromous Fish Conservation Act (16 USC 7571-757f). State agencies have trustee responsibilities for other game and non-game species not listed above. States also may possess co-trustee responsibility for above-mentioned species.

**BEFORE**

❖ **Identify areas at risk.**

Some areas are more susceptible to oil discharge, such as docks where oil is off-loaded or transferred, exposed pipelines, or areas surrounding oil terminals. Some environments and the wildlife living there are impacted more heavily by oil than others; e.g., wetlands and marshes absorb and hold oil and contain more fragile plant and animal life than do swift moving rivers.

❖ **Identify potential wildlife in the area (seasonal).**

A variety of wildlife species are at risk to oil spills, depending on the spill location and time of year. These different species have individual treatment, handling, housing, and nutritional requirements. Plans should be in place to meet the needs of each of the area species that may be impacted by the spill.

❖ **Become familiar with local Area Contingency Plans.**

U.S. Coast Guard and U.S. Environmental Protection Agency (EPA) agencies have regional plans for responding to oil spills. These plans are required to contain arrangements for the care of impacted wildlife.

❖ **Attend Regional Response Team meetings.**

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**EMERGENCY FACT SHEETS**  
**HAZARDOUS MATERIALS ACCIDENTS**

Area Coast Guard and EPA agencies hold regular meetings to discuss changes in the Area Contingency Plans and to identify areas where more planning is required.

❖ **Receive oiled wildlife response training.**

Wildlife response training is available through Tri-State Bird Rescue & Research, Inc. or International Bird Rescue Research Center. Prior training will result in a more rapid and efficient response.

❖ **Arrange for training of local volunteers.**

Citizens with prior training will be of great asset in the early stages of a response. Records of trained individuals are retained for use when needed. Other volunteers can be trained during the first 24-48 hours following the disaster.

❖ **Obtain OSHA training.**

A minimum of 24 hours of Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training is required for anyone in a management position of an oil spill response (including oversight of animal care). Four to six hours of the Occupational Safety and Health Administration (OSHA) training are required for all volunteers assisting with the wildlife portion of a response.

❖ **Identify a response facility.**

A good response requires a suitable facility, and prior identification will help to expedite the response.

❖ **Equip facility and/or stockpile supplies.**

❖ **Identify a team to manage the wildlife response.**

Most Area Contingency Plans require the presence of a Qualified Wildlife Responder (QWR) to manage the wildlife aspect of an oil spill response. The experience and expertise of a QWR is the single most important factor in a successful response to a large spill.

❖ **Obtain the proper state and federal permits.**

Federal permits are required to care for any threatened or endangered species or for any migratory birds. Individual state permits are required in addition to the federal permits to care for any protected wildlife species within a specific state. Additional permits are often required to care for oiled wildlife, depending on the requirements of the individual states.

**DURING**

Effective wildlife response to oil spills requires a team approach as specialists in government and the private sector lend their skills to the response efforts. Oversight of the response, however, rests with the trustees.

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**EMERGENCY FACT SHEETS**  
**HAZARDOUS MATERIALS ACCIDENTS**

❖ **Identify the spilled product and all health-associated risks**

Obtain product analysis and material safety data sheets (MSDS) and obtain the appropriate protective equipment.

❖ **Field Assessment of Wildlife at Risk**

- ◆ Assess the location, numbers, and species of wildlife at risk.
- ◆ Assess and document the degree of oil contamination of animals and habitat.
- ◆ Provide thorough field notes for Natural Resources Damage Assessment (NRDA).

❖ **Preventing Wildlife Contamination**

Set up and implement a hazing program for uncontaminated animals.

❖ **Search & Rescue**

- ◆ Retrieve oil contaminated animals for rehabilitation and carcasses for federal evidence.
- ◆ Perform necropsies on all deceased animals and record all findings. The United States Fish and Wildlife Service (USFWS) Law Enforcement and the National Wildlife Health Center in Madison, Wisconsin will oversee this process.
- ◆ Arrange for timely and appropriate transportation.

❖ **Site Safety Plan**

Develop and implement a site safety plan for the response facility to meet OSHA requirements.

❖ **Record-keeping**

Accurate records must be maintained on all animals, including site captured, all treatments, and release information (for NRDA purposes).

❖ **Provide medical care for impacted wildlife**

- ◆ Animals may need to be stabilized prior to transportation.
  - Flush eyes
  - Clean mouth and nares/nostrils
  - Treat for shock and traumatic injuries, if present
  - Restore normal body temperature
  - Restore normal fluid balance
  - Reduce stress

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**EMERGENCY FACT SHEETS**  
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- ◆ Because of the harm from the internal and external effects of the oil, all efforts should be made to stabilize and wash the oiled animals within 24-48 hours.
  
- ❖ **Remove oil from feathers/fur**
  - ◆ Large (10 – 15 gallon) tubs of water at 103 – 105 degrees F.
  - ◆ Dawn® dishwashing liquid (1% - 8% solution)
  - ◆ Mammals will need to be sedated.
  - ◆ Agitate detergent through feathers/fur.
  - ◆ Proceed through series of tubs until animal is clean.
  
- ❖ **Remove cleaning agent**
  - ◆ Large amounts of water at 103 – 105 degrees F.
  - ◆ Water hardness of 2.5 – 3.5 grains/gallon
  - ◆ Spray hoses, systematic head-to-tail approach
  - ◆ Water must roll off feathers/fur in droplets
  - ◆ Feathers/fur must be rinsed until appear dry
  
- ❖ **Restore feather structure and/or water-proofing**
  - ◆ Dry under free access to heat lamps in draft-free area.
  - ◆ Quiet, private housing – keep people away.
  - ◆ Present food and allow easy access to clean swimming water.
  
- ❖ **Provide proper husbandry**
  - ◆ Caging, diet, and other husbandry needs must all meet the *Minimum Standards for Wildlife Rehabilitation* (published by the National Wildlife Rehabilitators Association and International Wildlife Rehabilitation Council, 1994).
  - ◆ All housing must be cleaned at least twice daily. Cages/housing should be disinfected between uses by different animals.
  - ◆ Other husbandry considerations include ventilation, swimming opportunities, nutritionally complete diets, the role of salt water in seabirds, and secondary (captive-related) problems.
  
- ❖ **Evaluate for release**

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- ◆ Each animal should receive a pre-release physical to assure that the following criteria are met:
  - normal weight range
  - good body condition
  - adequate waterproofing
  - absence of infectious disease
  - resolution of all injuries
  - blood values which are within the normal range
  
- ◆ A USFWS band should be placed on all birds prior to release.

❖ **Identify release site**

Releases must take place in suitable habitat free from contamination, with adequate natural food sources for that species.

❖ **Transport and release**

Release should take place in the first part of the day (for diurnal species) to allow the animal time to adjust to the location before nightfall.

**AFTER**

❖ **Post-release monitoring**

The release team should observe the animals after release to determine that the animals are behaving normally. The site should be revisited after 24-72 hours to monitor released birds.

❖ **Reporting**

Accurate records must be kept on all animals treated as a result of an oil spill. These records may be federal evidence and must be kept for a minimum of seven (7) years following the incident. Annual reports must also be filed with the Federal and State offices issuing the rehabilitation permits.

**TAB F SECTION 2**  
**GUIDELINES FOR HORSES DURING DISASTERS**  
**Information for Veterinarians**

By  
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**Containment**

Free roaming horses will naturally group together and move as a group. Many horses will allow themselves to be caught, especially if they are encouraged with grain. Catching a horse can be done by first placing a rope loosely around its neck, and then fitting on a halter. If a large group of horses will not allow themselves to be caught, they should be rounded up in small groups and corralled into smaller confinements. If the horses cannot be caught at all and have not suffered any obvious injuries, they may be kept fenced in and fed without further human contact. When moving horses into unfamiliar environments, the handler should allow them time to investigate their new surroundings. Not all horses are familiar with being tied to a stationary object. If horses must be tied, use a quick-release knot. Many horses have only been kept in wooden fenced paddocks. If wire fencing is all that is available, tie clearly visible cloth to the top wire every 6-10 feet.

**Identification**

Many horses are permanently identified with a tattoo on the inside of their upper lip, freeze brands under the mane, and brands on the outsides of their hind limbs. These are helpful in recording the identification of a horse. Other methods for identification that can be used include neck banding, microchip injection, painting or etching the hooves, and describing all whorls of the horses' coats. Photographs of the right and left sides of the body, medial and lateral aspects of the lower legs, and the face of a horse are helpful in matching owners' descriptions when trying to locate misplaced animals.

**Behavior**

Most horses are familiar with people and are used to being handled. When new horses are grouped together, they will seek to establish a hierarchy. If this occurs under confined conditions horses may become violent, resulting in serious injuries to each other and to persons handling them. Horses show signs of aggression toward people by pinning their ears back, extending their necks to bite, or turning their hind ends toward an approaching person. Special care should be taken to avoid standing between mares and their foals.

**Methods of Restraint**

Most horses will cooperate once they have a halter and lead rope on. Persons unfamiliar with horses' behavior should always work in pairs. Both persons should always stand on the same side of the horse.

Apprehensive horses can be twitched on the nose, or by grabbing a handful of skin on the lower side of the neck. Alternatively, sedatives can be used (see medications chart). Sedated horses should not be worked on until they are fully sedated. This usually takes 5-10 minutes after intravenous injection. Sedated horses may still kick if abrupt movements or sounds startle them.

**Health Concerns**

Changes in diets predispose horses to colic, laminitis, and hyperlipemia. Mixing of horses from various sources predisposes them to contagious respiratory disease. The spread of contagious disease can be minimized by vaccinating all horses against Equine Herpes Virus, Equine Influenza, Eastern and Western Equine Encephalitis, and tetanus. Any horse that will be spending more than a few days grazing on shared pasture should be dewormed with a paste dewormer.

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**GUIDELINES FOR HORSES DURING DISASTERS**  
**Information for Veterinarians**

**Typical Weights**

Horses are measured in “hands”. One hand is equal to 4 inches. Horse’s heights are measured at the highest point of the shoulder (withers). Typical weights and sizes of horses are:

	<b>ADULT WEIGHT (lb.)</b>	<b>NEWBORN WEIGHT (lb.)</b>	<b>APPROX.HEIGHT (HANDS)</b>
<b>Giant Breeds</b>	1,500 – 2,000	150 – 200	>17
<b>Full Size</b>	750 – 1,200	75 – 100	15-17
<b>Pony</b>	500-750	50 – 75	<15
<b>Miniature</b>	200-400	20 – 40	<40 inches

**Typical Feeding Requirements of Horses**

Ideally horses should be fed individually or in small groups. They should be fed twice a day at regular intervals. If horses are fed in groups, the most aggressive ones should be fed first.

If that is not possible, observation at feeding time should ensure that all horses allow each other access to feed and water.

Under resting conditions and when ambient temperatures are >40° F, horses should consume about 2% of their body weight per day in dry matter. About 75% of this should be derived from forages (hay) and 25% from grain. Oats and sweetfeed are the preferred grains. Total feed intake depends on body size. For example, a 1,000 lb. Horse will require 7.5 lb. (approximately 1/5 of a rectangular bale) of hay and 2.5 lb. of grain at each feeding. This amount should be fed in the morning and in the evening.

In addition, horses require about 2% of their body weight in fresh water per day, and 1 - 2 oz. of loose salt. All of the feeding requirements should be doubled for lactating mares and increased if ambient temperatures fall below 40° F.

Estimating the amount of feed required for a group of horses starts with estimating the biomass of horses. To determine the biomass of a population the approximate weight of all horses should be estimated and added together. Using this figure it is possible to calculate the amount of hay, grain, water, and salt needed for all horses.

**Shelter and Housing**

Ideally, horses should be kept in small groups at pasture or in individual stalls. The amount of bedding required depends on the type of flooring. Porous flooring with plenty of lime mixed into it requires the least additional bedding. Concrete flooring requires the most. The approximate amount of bedding that will be required is one bale of straw per 12X12 ft. stall. Straw is the preferred bedding under emergency conditions, as it is likely to be available, is space efficient, and is most degradable. Alternatively, 2 bales per stall of conifer wood shavings or shredded newspapers can be used. Black walnut and exotic wood shavings cannot be used.

Paddocks for horses should be surrounded by fencing materials that are free of projections. Barbed wire is not a suitable material for fencing horses. Electric wire fencing can be used, but it must be made visible to the horses by ribbons at frequent intervals.

**TAB F SECTION 2**  
**GUIDELINES FOR HORSES DURING DISASTERS**  
**Information for Veterinarians**

**Sanitation**

Horses will produce 0.5% of their body weight per day of manure. Manure should be removed from stalls at least once a day. For horses at pasture, manure should be collected once a week if possible. Manure should be stacked in neat piles, with minimal surface area, as this promotes composting and reduces fly hatching. To further reduce fly burdens, the manure pile can be sprayed every 3 days with fly spray.

Horses void about 0.5% of their body weight as urine each day. Urine is a major attractant for stable flies. To counteract this the stall bedding should be completely removed at least every third day.

The total amount of manure and bedding that will accumulate can be calculated from the number of horses, the average amount of manure produced, plus the number of bales of straw used. Manure piles should be located at least 200 yards from the stabling facilities.

**Zoonoses**

Salmonella is endemic in many horse populations. Stressed horses, such as those surviving a major disaster, are most likely to suffer from clinical salmonellosis and develop fulminant diarrhea. Horses that develop diarrhea may have a guarded to poor prognosis and are a potential source of infection to other horses and personnel. For these reasons, serious consideration should be given to euthanasia, especially if the horse can only be maintained by compromising the level of care to other horses.

**Methods of Euthanasia**

Prior to euthanasia, disposal must be considered. If at all possible, it is easiest to walk the horse to the site where the carcass will be disposed of, rather than transport a dead horse to a disposal site. The preferred method for euthanasia is by lethal intravenous injection of sodium pentobarbital. Alternatively, 500 ml of a 23% solution of magnesium sulfate can be infused intravenously. Carcasses of horses that were killed using chemical methods must be disposed of quickly and thoroughly, as the meat is heavily contaminated and poisonous to any animal that eats it. To kill a horse by gunshot, the bullet must enter the horse's skull just above the cross over point of imaginary lines between the medial canthus of the eyes and the opposite base of the ears. The bullet should be directed toward the center of the neck. Horses may thrust themselves forward when this method is used. If adequate restraint can be assured the use of captive bolts may be considered. Per rectal aortic laceration is not a suitable method of euthanasia.

**Useful Drugs and Common Dosages<sup>1</sup>**

For a full-size horse, drug administration sites are: jugular vein for intravenous compounds, lower neck or pectorals for single intramuscular injections not exceeding 10 ml (e.g., vaccines, sedatives), and gluteal muscles and hamstrings for intramuscular volumes exceeding 10 ml (i.e., most antibiotics). Smaller horses have lower thresholds for maximal volumes. Subcutaneous drugs can be given under the skin of the neck. Inexperienced handlers should always work in pairs when administering drugs to horses.

(01/22/01)



**TAB F SECTION 2**  
**GUIDELINES FOR HORSES DURING DISASTERS**  
**Information for Veterinarians**

**Common Drugs used in Equine Emergency Medicine<sup>1</sup>**

**ANTIBIOTICS**

DRUG	COMMON TRADE NAME	DOSE PER LB.	TYPICAL DOSE PER 100 LB.	ADMINISTRATION	THERAPEUTIC SAFETY MARGIN	POTENTIAL COMPLICATIONS
Procaine Penicillin	Many names	10,000 units	3 ml	BID; IM	high	score injection site, "procaine seizure"
Potassium Penicillin	Many names	10,000 units	depends on concentration	QID; IV	high	none
Tetracycline	Oxybiotic 100	3 mg	3 ml	SID; IV	moderate	diarrhea
Trimethoprim Sulfas	SMZ/TMP, Tribissen 960	15 mg (combined products)	1+1/2 960 mg tablet	BID; PO	high	diarrhea
Gentamicin	Gentocin (100 mg/ml)	1.5 mg	1.5 ml	BID; IV, IM	low	renal failure
Ceftiofur	Naxcel	1 mg	2 ml	BID; IV, IM	high	none

**ANTI-INFLAMMATORIES**

Phenylbutazone	Butazolidin, Phenylzone	1-2 mg	Tablets/Paste: 200 mg; Inject.: 1 ml	SID, BID, available as PO and IV preparations	low	GI ulceration, renal failure
Flunixin meglumine	Banamine	0.5 mg	1 ml	BID; IV, IM	moderate	GI ulceration
Meclofenamic Acid	Ketophen	1 mg	1 ml	SID; IV	moderate	GI ulceration
Prednisone	Prednisone (tablets)	<0.5 mg		SID; PO	high	GI ulceration
Dexamethasone	Azium 4 mg/ml	<0.1 mg	2.5 ml	SID; IV, IM	moderate	laminitis

**SEDATIVES**

Xylazine	Rompun (100 mg/ml)	<0.5 mg	0.2 ml	IV, IM	high	hypotension
Acepromazine	PromAce	0.025 mg	0.25 ml	IV, IM, SC	high	paraphimosis

**MISCELLANEOUS**

Butorphanol (analgesia) <sup>2</sup>	Torbagesic	0.05 mg	0.5 ml	IV, IM	moderate	anxiety
Ketamine (general anesthetic) <sup>2</sup>	Ketaset	1 mg	1 ml	IV bolus only	high	anxiety
Furosemide (diuretic)	Lasix	1 mg	2 ml	SID; IV, IM	moderate	dehydration
Pentobarbitone (euthanasia solution) <sup>2</sup>	Uthol	50 mg	10 ml	IV only	low	death
Ivermectin (dewormer)	Ivomec	0.02 mg	see calibration	PO only	high	none
Tetanus antitoxin	Tetanus antitoxin	1,500 units	5 ml	SID; IV, IM, SC	high	hepatitis

**Sedation**

After administering sedatives to horses, one should wait until the sedative has had full effect before performing any procedures. Combining sedatives and narcotics such as Rompun, Acepromazine, and Torbagesic in a volumetric ratio of 3:2:1 can be given to effect to a fractious horse for profound sedation.

**General Anesthesia**

General anesthesia can be achieved for 20 to 30 minutes by use of a combination of xylazine and ketamine. After giving the xylazine, one should wait until the horse holds its head lower than its withers before giving the ketamine.

1. **Drugs and dosages were recommended by authors. Veterinarians should consult the manufacturer's literature prior to use. Not all of the drugs have been approved for use in horses.**
2. **Controlled substance**

**TAB F SECTION 3**  
**EMERGENCY PROCEDURES IN EQUINE FIELD SERVICE**

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This paper is written as a review of, and guide to the management of some emergency situations in an equine field service. It can be used as an organizing guide for a veterinarian and the staff members of a practice, and to unite their ways of dealing with these situations. It is not a detailed document describing the most extensive ways to handle every practice emergency. Some of the medications used in emergencies are not used frequently. Therefore, the drugs and their dosages described or referenced in this paper should be examined thoroughly by the administering veterinarians, and used after applying careful judgment in each clinical situation. Preparation for an emergency situation is the primary way an emergency can become less stressful for the equine practitioner, the practice's employees, clients, and the surrounding public. A monthly review of emergency materials, new medications, and procedures will help reduce the denial of reality that an emergency will not happen in the practice.

Group Emergencies (R. A. Mansmann)

I. Community Emergency Preparedness

A model for a community equine assistance and evacuation team has been published.<sup>1</sup> This volunteer group is an extension of the County Office of Emergency Services, operating under the auspices of the County Animal Control, with significant assistance from the local humane society. The goals are to provide help to horse owners and veterinarians for individual disasters such as trailer accidents and horses stuck in various precarious situations. It can also provide for disaster planning for all major types of disasters, including earthquakes, fires, hurricanes, etc. The basis of the organization is three committees: first, the Organizing Committee which provides communication, continuing education, and interaction with County officials; second, the Trailing Committee which organizes and trains volunteers with their trucks and trailers; and third, the Billeting Committee which identifies central emergency facilities and manages these facilities during a disaster. Another group in San Diego affiliated with their Humane Society, has been in existence since 1972, and operates in a military-like format with volunteers.<sup>2</sup> Continued stimulation of volunteer organizations between disasters is important to keep preparation ready.<sup>3</sup>

II. Herd Emergencies

When a horse or foal is first observed sick or dead, it becomes difficult to determine whether this is the onset of a herd situation or a single occurrence. Will the problem affect other horses on the farm, the neighboring horses, or become a serious problem for all the horses in the practice? Besides microorganism-caused contagious problems, there are lists of both naturally occurring and man-made herd emergencies.<sup>4,5,6</sup>

In any potential herd problem you need to discuss your medical information carefully and thoroughly with the owners and their professional help. Be particularly careful of information given to boarders, visitors, and the media, especially without consultation with the owners. Involving veterinary expertise to help in these situations is better sooner than later.

Consider the following in herd emergencies:

- 1) Identify monitoring signs (temperature, depression, discharge, etc.) and set up a chart for each normal horse. Give attendants times when to observe and record.
- 2) At minimum, obtain sera and freeze from any suspect horse.
- 3) Reduce stressful activity for all well horses.
- 4) Stop all horses from moving on and off the facility.
- 5) Reduce human traffic on farm.
- 6) Examine paddocks, pastures, and feed closely.
- 7) Stop all feeding of present stores of hay and grain. Keep samples for future testing. Obtain new temporary feeds from a different source.

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- 8) Stop all medications and supplements, and save samples. Obtain new ones from a different source.
- 9) Examine water sources thoroughly. Save samples.
- 10) Photographs may be helpful.

Isolation of infected horses when contagion is suspected should be accomplished after the above considerations have occurred. Isolation within the herd can be quite difficult for a truly contagious organism. A thorough evaluation of an epidemic of neonatal Salmonella ohio diarrhea demonstrates how in-depth studies may be needed to control a contagion.<sup>7</sup>

Trauma Emergencies and Procedures (J.S. Jorgensen)

I. Sudden Death

One of the most alarming experiences for a horse owner is watching a horse die suddenly, or finding a horse dead in a stall or pasture with no previous warning. Veterinarians are often called with the hope that a specific etiology can be found, especially if more than one horse is involved or foul play is suspected. It is important to convey to clients at the outset that a cause may not be found even with a thorough and expensive investigation. A complete history and a thorough examination of the immediate environment are necessary. Usually a necropsy is required. Sampling should include fixed tissues for histopathology, sterile samples for culture or microbiology, and frozen tissues for toxicology. Samples should be submitted as soon as possible for optimal results. In addition, body fluids such as pericardial fluid, peritoneal fluid, pleural fluid, cerebrospinal fluid, and urine should be collected and submitted. Serve hemorrhage or acute toxicity are the most common causes of sudden death. The most common sources of hemorrhage include: pulmonary, gastrointestinal, CNS, renal, and arterial. If toxic substances are suspected, submit samples of liver, kidney, urine blood, fat and stomach contents as well as any suspicious environmental sources.<sup>8,9</sup>

II. Fracture First Aid

A limiting factor in fracture repair is the condition of the soft tissue surrounding the fracture site at initial presentation to the surgical repair center. This may be more important than the fracture itself. Therefore it is of utmost importance to protect the surrounding soft tissues from further damage when splinting the fracture for transport to a hospital.<sup>10</sup>

Splinting Techniques<sup>10-13</sup>

Forelimb:

Phalangeal and distal metacarpal fractures, and distal tendon ruptures: align dorsal cortices of the distal phalanges in a vertical position (flexed hoof) by taping the limb to a splint applied to the dorsal or plantar surface of the limb (e.g. rasp, PVC pipe) before cast application.

Midforelimb:

Robert-Jones bandage, using plenty of cotton, with rigid external splints such as strips of PVC pipe or wood placed at ninety-degree angles to each other (i.e. cranial and lateral or medial). The total bandage diameter should be three times the leg diameter.

Mid and Proximal Radius:

Counteract abducting forces at site of fracture with a full-limb Robert-Jones bandage, incorporating a splint (e.g. PVC pipe) that extends up lateral side of shoulder.

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Proximal to elbow joint:

There is substantial muscle coverage, and splinting the limb may actually contribute to destabilization of the fracture. However, applying a full-limb Robert-Jones bandage may facilitate locomotion and comfort sufficiently to enable transportation.

Hindlimb:

Distal hindlimb same as distal forelimb.

Mid and proximal metatarsus:

Same for metacarpus, although the splint is best applied along the caudal surface of the metatarsus, because of the shape of the hindlimb.

Fracture of tibia and tarsus:

Need to counteract abduction with a full-limb Robert-Jones bandage, incorporating a lateral splint that extends up to the hip; this may be very difficult to construct in order to fit to the leg.

Femur requires no splinting.

Always apply an adequate support bandage on the opposite leg.

Transport: Horses with forelimb fractures should be placed in the trailer facing backwards, whereas horses with hindlimb fractures should be facing forward in order to alleviate concussion on the affected leg during acceleration and deceleration. Judicious use of xylazine is recommended in fracture transport since it has bone analgesic as well as sedative effects.<sup>10</sup> Larger doses may cause clinically damaging ataxia.

### III. Emergency Kit

An emergency kit is an essential item for a field service truck. It needs to be easily accessible and properly identified so that anyone could find it and bring it to the attending veterinarian when needed. It should be kept in the same area as the orthopedic splint material. The following list is an example of what an emergency kit could contain, and it should be modified to suit a particular practice's needs. The inventory list and drug dosages with conversion to volumes should be taped in the kit. Also, a list of phone numbers including poison control, state veterinarian, local police, and fire department should be attached to your kit.

Emergency Kit Contents:

Extra Stethoscope

Catheter Kit: variety of catheters, needles and syringes, surgical scrub material, clippers, extension sets, IV caps, administration sets, suture material or super glue, adhesive tape, heparinized saline solution (2-4 units/ml for heparin flush), scissors, scalpel blades.

Tracheal Tube Kit: Clippers, surgical scrub, sterile #10 blades, and 2 sterile tracheal tubes (1 for an adult and 1 for a foal), adhesive tape.

Drugs: See Table 1.

Splint Material: PVC pipe pieces (at least 3 and 6 foot long that can be cut down to size), hack saw, sheet cotton, roll gauze, and adhesive tape.

### IV. Catheterization

Each practitioner has a preferred method of placing intravenous catheters. In many emergency situations having easy access to a peripheral vein for quick drug administration can be important. Placing the catheter with aseptic technique is very important. If haste in the emergency situation

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prevented adequate aseptic preparation, when time permits the catheter should be resituated aseptically. Thrombophlebitis is a common complication of catheterization and catheter-related sepsis should be considered in the event of unexplained fever or deterioration of the clinical condition as patient care proceeds.<sup>14</sup>

Either attach a catheter cap or extension set to the catheter, and flush the system with heparinized saline. Secure the catheter and extension set in place with suture material or glue.

### Medical Emergencies (C. King)

#### I. Anaphylaxis and Drug Reactions

Anaphylaxis is a severe hypersensitivity reaction which can rapidly result in death, even with prompt and appropriate therapy. The immunologic event is complex, with the reaction being either localized or generalized. The target organs in the horse are the lungs and the gastrointestinal tract.<sup>15-17</sup> Several pharmaceutical agents have been reported to cause anaphylactic and anaphylactoid reactions in horses, including trimethoprim/sulfonamide antibiotics, vaccines, sera, thiamine, vitamin E/selenium preparations, anthelmintics, penicillin, halothane, thiamylal and guaifenesin.<sup>16,17</sup> Onset of clinical signs may occur within 1-2 minutes or as long as 30 minutes following exposure to the antigen.

Treatment recommendations include the administration of epinephrine at a dose rate of 0.01- 0.02 mg/kg ( $\cong$  4-9 ml of 1:1000 solution for a 450 kg horse)<sup>18</sup> given intravenously, intramuscularly, or into the trachea if venous access is difficult. Epinephrine should not be given subcutaneously in an emergency situation because the marked vasoconstriction which results reduces systemic absorption of the drug. Epinephrine may be repeated at 3-5 minute intervals as required.

Glucocorticoids should also be administered to prevent further production of chemical mediators. However, dose rates for anaphylactic shock in horses remain empirical. The recommended dose rate in horses for dexamethasone is 0.1-0.2 mg/kg intravenously or intramuscularly,<sup>18</sup> although texts covering the treatment of shock in other species advocate doses of up to 10 mg/kg. Antihistamines are of limited use in anaphylactic shock in horses. Fluid therapy may be beneficial in protracted cases of anaphylaxis, particularly if diarrhea is present.

*Procaine penicillin* can cause acute and often spectacular reactions, despite careful administration. These reactions are generally not fatal, and are more characteristic of acute procaine toxicity<sup>19</sup> or accidental intravascular injection<sup>17</sup> than anaphylaxis. Often the self-trauma which occurs when the horse runs into a fence or other surrounding structures is more damaging than the reaction itself. Clinical signs may begin during or within 30 seconds of drug administration, and include agitation, sweating, hyperemic mucous membranes, muscle tremors, ataxia, fear and escape behaviors, reckless galloping, and collapse.<sup>19</sup> The reaction usually lasts less than 10 minutes, and most horses are relatively normal by 30 minutes post-injection, even without treatment. Planning ahead for such a reaction by holding the horse properly in a safe enclosed place may be helpful. However, as soon as the first signs begin, try to confine the horse in a safe area, such as a closed, dark stable. Restraint of the horse is unwise, and sedation is often difficult. Diazepam (50-100 mg for a 450 kg horse) or xylazine (200-500 mg for a 450 kg horse) may be useful if administration can be achieved safely. If the horse collapses in apparent respiratory distress or cardiovascular compromise, administer epinephrine and glucocorticoids as detailed above. Once the acute signs abate, leave the horse in a quiet, dark, or familiar environment for 4-6 hours.

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### II. Ophthalmic Emergencies

Many conditions affecting the eye carry a better prognosis if early, aggressive medical or surgical therapy is instituted. Even in cases of acute trauma, careful examination of all of the ocular structures of both eyes is essential in order to determine the nature and extent of the lesions(s). Thorough examination may require sedation of the horse (for example, xylazine 0.5 mg/kg, detomidine 0.02 mg/kg or butorphanol 0.02 mg/kg, I/v or I/m) and regional sensory or motor anesthesia such as an auriculopalpebral nerve block.<sup>20</sup>

Wounds or foreign bodies which penetrate or perforate the eye should be treated immediately with NSAID's (for example, flunixin 1.1 mg/kg, phenylbutazone 4.4 mg/kg or ketoprofen 2.2 mg/kg, iv), topical atropine (1% ointment or solution every 1-2 hours until mydriasis occurs), topical and systemic antibiotics, and tetanus toxoid (im).<sup>21</sup> Corticosteroids are generally contraindicated if deep corneal lacerations are present or if infection is likely. If the foreign body is still present in the eye, it is sometimes best to leave it in place until the horse is hospitalized, and general anesthesia, specialized equipment, and expertise are available to prevent or manage rupture of the eye. Temporary tarsorrhaphy or a third eyelid flap may help protect the eye during transport. Both of these procedures may be possible in the standing horse with adequate chemical restraint and local anesthesia.

### III. Neurologic Emergencies

Emergency situations involving CNS manifestations generally fall into two categories: seizures and coma. Whether the cause is intra- or extra-cranial, the immediate goals are to minimize further trauma to the patient and handlers, and to sustain vital functions until further evaluation enables diagnostic and prognostic decisions to be reached.

*Seizures* present several management difficulties because of the size and strength of the adult horse. Control of the seizures is necessary to minimize self-induced trauma and to allow examination of the patient, but physical restraint is generally unsafe and futile. Anticonvulsant drug dose rates for adult horses are tabulated below (Table 2).<sup>22</sup> Repeated doses are often necessary, although a single dose should enable further evaluation of the patient. If general anesthesia is induced, ensure that the airway is patent and that the animal is breathing on its own. It is important to note that acetyl promazine actually lowers the seizure threshold, and is therefore an unsuitable drug for seizure control.<sup>22</sup>

*Comatose* horses may need both airway and cardiovascular support. If assisted ventilation is required, the prognosis is generally poor. Drugs which aid in reducing intracranial pressure are tabulated below (Table 3).<sup>23</sup>

*Spinal cord trauma* may produce various degrees of ataxia, paresis and paralysis, depending upon the extent and the site of the lesions(s). Dexamethasone and DMSO are both recommended for management of these cases.<sup>24</sup> *Behavioral abnormalities* such as circling, head pressing, aggression, disorientation, etc., may be caused by a wide variety of conditions, and their diagnosis and management have been covered elsewhere.

### IV. Upper Airway Obstruction

In cases where nasal edema such as venomous snake bite or facial paralysis cause occlusion of the airway at the nares, simply installing short intubation bilaterally such as smoothed opened syringe cases or suturing the nostrils open may be life saving. If airway obstruction is more

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extensive, whether due to laryngeal edema, or other obstructive conditions of the nasal, pharyngeal and laryngeal regions and trachea, it will be essential to restore a patent airway immediately if the horse is in severe respiratory distress. A large bore nasogastric tube, inserted transnasally into the trachea, may be sufficient in foals, ponies, and small horses. However, a tracheotomy may be necessary when this is not successful or not possible in cases of upper airway obstruction.

Whilst sterility is important, restoring a patent airway is the priority. Cleanse the skin and infiltrate local anesthetic if time permits over the middle third of the ventral portion of the neck, and palpate the tracheal rings. Make a 6-8 cm longitudinal incision through the skin, cutaneous muscle, and the raphe of the sterno thyrohyoid muscle to expose the trachea.<sup>25</sup> Make a transverse incision between two cartilage rings and insert a tracheotomy tube into the trachea. Be careful if extending the incision laterally, and do not incise greater than one third of the circumference of the trachea.<sup>25</sup> If no tracheotomy tube is available, use a clean, large bore nasogastric tube, a 60 ml syringe case with the end cut off, or some other hollow, cylindrical, minimally compressible item. When the tube is in place and the patient is breathing more comfortably, stabilize the tube with sutures or adhesive tape to prevent aspiration into the trachea or dislodgement. Administer broad-spectrum antibiotics, NSAID's and tetanus toxoid following the procedure.

When dyspnea is due to broncho-constriction as in hypersensitivity reactions, bronchodilation may be achieved by the administration of epinephrine, atropine, or xylazine. Tracheostomy will not help and furthermore, will be a complicating factor in successful treatment.

### V. Hemorrhage

Hemorrhage can be dramatic but most bleeding wounds are not life threatening. Often, confining the horse, and applying pressure or cold packs to the wound, and ligating any exposed blood vessels are sufficient to stop or slow bleeding. Cold hosing directly onto a freely bleeding wound is not recommended, as it will prevent an adequate clot from forming. Post-castration hemorrhage is best treated by ligating the vessel(s) if possible, or firmly packing the inguinal canal and scrotum with clean gauze bandages. Anecdotally, cold hosing over the loins has sometimes helped reduce bleeding from a castration wound.

Epistaxis may be self-limiting if traumatic in origin or due to other mild inflammatory cause. However it may result in fatal hemorrhage in cases of guttural pouch mycosis. Cold hosing over the paranasal sinuses and applying pressure and cold packs over the external carotid arteries sometimes helps slow bleeding from the nasal cavities.

If internal hemorrhage is suspected, or if blood loss cannot be controlled with pressure, vasoconstrictive drugs may be considered. Oxytocin and naloxone have been used to control hemorrhage, although the dose rates for hemorrhagic shock in horses are not known. While epinephrine is a very potent vasoconstrictor, its effects on cardiac output and systemic blood pressure may actually exacerbate hemorrhage. Sedatives which cause vasodilatation (acepromazine and alpha-2 agonists such as xylazine and detomidine) should be avoided or used with extreme caution.

Circulatory support with intravenous fluids is very important when blood loss has been severe. Crystalline solutions such as normal saline or lactated ringers will help to restore plasma volume, although colloid solutions or plasma provide more substantial volume expansion. Cross-matched whole blood is the ideal replacement therapy, although this is often not available and may require considerable volumes. Hypertonic saline has been used with some success in hypovolemic shock in the horse and other species. This must be followed by isotonic solutions in sufficient volumes to maintain cardiac output and tissue perfusion (often at least 20-30 litres).

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There are wounds in areas of the horse's body that may or may not be related to excessive hemorrhage but require significant careful attention in an emergency situation. They include complex wounds such as punctures near joints, occipitus, sinuses, thoracic inlet, chest and abdominal cavities. Area cleansing, debridement, direct pressure, antibiotics, and potential surgery all need to be considered. A current review of thorough wound management is available.<sup>26</sup>

### Breeding and Peri-Parturient Emergencies (A.R. Abdullahi)

#### I. Rectal Tears

Rectal tears are most commonly encountered in the Quarter horse (63%) and the Arabian (20%).<sup>27</sup> It is most often anticipated with rectal palpation for reproductive evaluation or for other diagnostic purposes. Other cases of tears include accidental damage during breeding, or injury during parturition. It is also seen in foals during attempt to remove impacted meconium.<sup>28</sup> Most rectal tears occur dorsally 25-30 cm cranial to the anus in the peritoneal portion of the rectum. Classification of rectal tears varies according to the layers of the rectum disrupted. Grade I tears are restricted to only the mucosa, Grade 2 tears involve only the muscularis. Grade 3 involves all layers except the serosa, while Grade 4 tears involve all layers and perforation of the rectum. Rectal tears should be suspected 1) when blood is observed in palpator's sleeve; 2) the palpator feels a sudden release of rectal wall resistance; or 3) blood on feces after palpation.<sup>29</sup>

Treatment depends on the extent of tear, but initial evaluation must be done immediately with great caution to prevent further damage and peritonitis. If a rectal tear is suspected, the horse should be given a sedative and/or epidural anesthetic. Initial careful evaluation of the area by bare handed examination or by a 30 cm long, 5 cm diameter, smooth edged circular speculum can be used to determine the grade of tear.

Grade 1 or 2 tears are usually treated conservatively with a good prognosis. When a Grade 3 or 4 tear has been diagnosed all posterior fecal material should be removed. A tube made by conforming 1 pound of moist cotton inside a 3" stockinette can be inserted up to 10 cm proximal to the tear. A purse string suture at the anus will hold the pack in place during transport to the surgical center.<sup>29</sup> The owners of their agents should be informed immediately. If the decision is made to treat, vigorous antibiotics and fluid therapy should be given. Several complex surgical procedures can be considered as options for ultimate rectal tear repair such as direct suture per rectum, through abdominal approach, indwelling temporary liners, or colostomy.<sup>28,30</sup>

#### II. Dystocia

The most common causes include premature parturition, the long limbs of the equine fetus which predispose them to postural abnormalities, uterine torsion and placental hydrops. Infections that result in fetal death prevent the fetus from partaking in the parturition process and may lead to dystocia.<sup>31-33</sup>

The aim of treatment is to maximize the chances of saving both the mare and the foal, if the latter is alive and viable. Abnormal fetal posture and position are best diagnosed and corrected with the mare in standing position. This increases the abdominal space and causes the fetus to gravitate into the abdomen allowing room for manipulation. The abdominal straining is also diminished in the standing position and may be abolished with an epidural anesthesia (1.0-1.25 ml 2% lidocaine per 100 kg bwt administered into the epidural space). Procedures lasting more than an hour may require general anesthesia. A combination of 1.0-1.5 mg/kg xylazine IV and 2.0 mg/kg IV ketamine is suitable for shorter procedures.



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Another possibility of correcting a dystocia with considerable straining is to give a general anesthesia and mechanically hoisting the two hobbled hind legs with hindquarters just off the ground. This positioning shifts abdominal organs towards the diaphragm thereby relieving the pressure they would normally exert on the uterus and also creating more room for correction of dystocia.<sup>34</sup>

### III. Uterine Torsion

Uterine torsion accounts for about 5% - 10% of serious cases of dystocia in mares.<sup>35</sup> The exact causes are unknown but sudden falls, vigorous fetal movement, and a large fetus in a relatively small volume of fetal fluid are among the predisposing factors. Clinical signs include abdominal pain that is unresponsive to analgesia, restlessness, anorexia and sweating. Several attempts to urinate may also be observed. These signs can be severe depending on degree of torsion, gestational age and vascular derangement.<sup>36</sup> Torsion of less than 180 degrees generally requires correction, and greater rotation may compromise vascular flow to and from the uterus and the fetal viability. Vaginal involvement is infrequent and direction of the torsion may be ascertained by the direction of spiraling of the vaginal folds. The degree of rotation at the uterus can be confirmed by rectal palpation and/or speculum examination.

Surgical and non-surgical methods of correction have been used in term and pre-term torsion of the uterus.<sup>36</sup> Reposition of the fetus per vagina can be attempted with the aid of epidural analgesia and elevation of the hind quarters to reduce straining.<sup>37</sup> Semi-circular movement of the hand and arm, together with fetal movements, may correct the torsion. Cesarean section should be considered when the cervix cannot be penetrated.<sup>37</sup>

### IV. Uterine Hemorrhage

Rupture of the uterine and umbilical arteries can occur within 24 hours to one week of parturition. Vessels of the lining of the uterus and vagina may also be ruptured during birth. The incidence is higher with advancing age, and the condition can be fatal. The condition is not necessarily associated with dystocia. The risk to the life of the mare is less if the hematoma forms in the intact ligament of the uterus. However, if the hematoma ruptures into the peritoneum, chances of survival are reduced. Low blood copper has been associated with the condition but the enlarged vessels at full term and the considerable parturient hypertension may predispose the vessels to rupture.<sup>32,38,39</sup>

Clinical signs include abdominal pain, sweating, pale mucous membranes and elevated pulse rate, usually after the placenta has been passed. Shock and death may occur. The hematocrit may initially be elevated but later fall considerably. Rectal palpation may reveal a large swelling on the side of the hemorrhage extending below the ovary to the cervix. Blood transfusion, plasma extenders, and fluid therapy do not usually alter the course. Intravenous administration of Naloxone (8 mg) has produced encouraging results in some mares.<sup>38</sup> Oxytocin, pain relievers, tranquilizers, and corticosteroids may have some use depending on the blood loss. Mineral oil, given via nasogastric tube to keep the stools soft, can be helpful.<sup>32</sup>

### V. Uterine Prolapse

Uterine prolapse can occur after normal or difficult parturition and retention of fetal membranes. One horn may prolapse first and the attendant pain and straining may cause the second horn to prolapse. Management of the condition involves control of straining by epidural anesthesia or tranquilizers, cleaning and replacing the uterus, and preventing recurrence by suturing of the vulval labia. Tetanus toxoid, oxytoxin, and antibiotics, both parenterally and intra-uterine are indicated. Intravenous fluid therapy to maintain normal hydration is important to help reduce complications such as laminitis. If no systemic signs are seen, intrauterine antibiotic therapy for a few days is suggested.

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Prognosis for future breeding is good if replacement is uncomplicated. Recurrence is possible but rare. Complications of prolapse include rupture of the uterus and its vessels, and prolapse of intestines.

### VI. Penile Lacerations and Abrasions

These conditions usually occur during breeding when the penis is erect and turgid. Tail hairs from the mare, poor phantom and artificial vagina design, and poorly placed breeding stitches can cause severe damage to the stallion's penis.<sup>40</sup> The stallion's penis can also be injured when kicked by an uncooperative mare.

Severe edema and congestion usually accompany these injuries, causing prolapse of the penis or paraphimosis if unattended, and the prepuce and scrotum can also be involved.

Treatment is directed at controlling the acute edema and inflammation. Gentle and steady massage of the penis, with demulcents and cold packs give encouraging results.<sup>40</sup> Anti-inflammatory agents, diuretics, and parenteral antibiotics can be useful adjuncts to topical therapy. Complete sexual rest should be enforced until healing is complete. Scar tissue may develop and interfere with the ability of the penis to have complete erection. Superficial penile lacerations heal well without compromising the integrity of the penis. Severe and deep penile injuries may require the amputation of the penis.

### Medical Emergencies in the Foal (A. Benamou)

#### I. Sedation

“One of the most important characteristics (for the veterinarian to understand) is the tendency for the foal's condition to change dramatically, for better or for worse, very quickly; and usually with only subtle advance notice. Once a problem is identified or suspected, there is no room for the let's wait and see philosophy.”<sup>41</sup>

Even more so than in the adult, the management of foal emergencies does not offer time for error or delay in treatment. Emergency situations are numerous; but in this paper we chose to address only a few of them for their life-threatening nature. Most foals in these situations are in, or will be undergoing shock, and it may be useful to establish direct venous access via an indwelling catheter.

Because foals are so resistant to physical restraint, veterinary intervention in certain emergency situations (i.e.: fractured limb, trailer accident, hemorrhage, convulsions) will require the use of sedation to minimize further injury/stress. Since foals are especially neonates are very prone to hypotension, sedating a compromised animal should be done only if other means of restraint (tailing, ear-twitching) have failed, and moderate drug dosages should be used.

Sedatives such as acetyl promazine should be avoided because of their marked hypotensive action. In acute injuries with shock, alpha-2 adrenergic agonists such as xylazine (0.3-0.5 mg/kg IV or 20-30 mg/50 kg foal) or detomidine (5-10 ug/kg IV or 0.03 ml/50 kg foal) are a better choice: they can provide both good sedation and analgesia in a short time and can be used intravenously or intramuscularly. Analgesia can be improved if these drugs are combined with butorphanol (0.02 mg/kg or 1 mg/50 kg foal).<sup>42</sup>

Sedation from the alpha-2 agonist drugs can be reversed with yohimbine (0.12 mg/kg) intravenously. Drugs capable of raising the arterial blood pressure and improving cardiac output should be readily available in case the foal exhibits severe drug-induced bradycardia/hypotension.

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Dobutamine (1-5 ug/kg IV slowly; 250 ug/50 kg foal to be repeated if necessary) will increase blood pressure and heart rate within a couple of minutes.

Epinephrine (0.5 ml/50 kg foal of 1:1000, slow IV) which is generally reserved for acute cardiovascular collapse or cardiac arrest, can be used to increase arterial blood pressure, but should probably be left as a last resort, as it can cause hypertension and significant cardiac arrhythmias.<sup>43</sup>

The administration of fluid can also be used to prevent or at least palliate hypotension especially in conditions where there is volume depletion.

Anaphylactic reactions can occur in foals; however, drug induced reactions are rare compared with adult horses. Treatment of anaphylaxis should include epinephrine. Other treatments of anaphylaxis have been detailed above.

### II. Acute Respiratory Distress

A rapid overall assessment of the compromised foal allows the clinician to establish the need for immediate intervention. The following factors should be closely monitored: respiratory rate and effort, color of mucous membranes, pulse and heart rate, and peripheral perfusion.

Most cases of acute respiratory distress are pulmonary, but occasionally trauma to the cervical area or hypersensitivity reactions can produce local swelling to severe that the upper airway can be significantly narrowed or obstructed. If possible, placement of a nasotracheal or endotracheal tube can maintain patency of the upper airway. If a tracheal tube cannot be introduced, and if respiratory compromise is life threatening, a tracheotomy may need to be performed. A method for temporary tracheotomy has been described above. This procedure can be more difficult in foals than in adult horses since the trachea of foals is very flexible and great care must be taken not to damage subcutaneous tissues or tracheal rings.

If the respiratory compromise (elevated respiratory rate, restlessness, labored breathing, cyanotic mucous membranes) arises from the lower respiratory tract (bacterial pneumonia; aspiration pneumonia), intranasal or endotracheal supplementation of oxygen (5-10 L/min), may be very beneficial during the acute phase of the respiratory crisis and can easily be provided via portable oxygen tank. Sternal positioning of the foal enables it to ventilate more efficiently; if this position cannot be maintained, the foal should be turned from one side to the other every hour or so.

If necessary, and in addition to the oxygen supplementation, some drugs can be used to support the foal's breathing efforts. Bronchodilators such as aminophylline (5-7 mg/kg IV slowly or diluted in a 100 ml bag of sterile saline; 10-12 ml IV/50 kg foal) have also been shown to improve the contractility of a fatigued diaphragm. Respiratory stimulants such as Doxapram should be used only if ventilation is impaired. Doxapram 0.2 mg/kg IV; can be given in an IV drip at a dose of 0.05 mg/kg/min by adding 20 ml of Doxapram to 500 ml 5% dextrose at a rate of one drop per second.<sup>44</sup> In these cases the foal may need to be referred to an intensive care unit after first providing emergency care.

### III. Seizures

Neonates appear to have low seizure threshold compared to the adult, presumably because of cortical immaturity. Signs of seizure activity may be difficult to recognize and can be confused with restlessness. Seizures in foals are associated with a variety of problems, such as cranial trauma, hypoxia from asphyxia, septicemia, and bacterial meningoencephalitis. Primary epilepsy

## TAB F SECTION 3 EMERGENCY PROCEDURES IN EQUINE FIELD SERVICE

is very rare in the horse. An attempt should be made at correcting the initiating cause as promptly as possible.<sup>45</sup>

Control of convulsions is an urgent necessity, firstly to prevent self-inflicted trauma, and secondly because of the life-threatening consequences of the negative energy balance in these foals. Diazepam (Valium) is most often used since it is a tranquilizer, anticonvulsant and muscle relaxant, at a dose rate of 5-20 mg administered slowly to a 50 kg foal. Diazepam has a rapid effect but repeated dosages may be necessary to stop recurrent seizures. However, diazepam can be responsible for causing respiratory depression. Barbiturates (Phenobarbital 5-10 mg/kg IV or per os, BID or TID) may be more reliable for long-term seizure control.

Supportive therapy of convulsive foals should include:

- feeding through a naso-gastic tube and maintaining adequate glucose levels, electrolytes, and hydration
- protecting from trauma with padding and bedding
- maintaining adequate body temperature
- maintaining adequate ventilation
- short-acting corticosteroids such as prednisolone sodium (5-10mg/kg IV) can be given in an attempt to control cerebral edema. Dexamethasone is also used but should be avoided if the seizures are caused by meningitis or encephalitis.
- DMSO has also been used pragmatically to reduce cerebral edema. Its role is controversial. (Dose: 1 gm/kg in a 20% intravenous or oral solution, SID or BID for 3-4 days).

#### IV. Neonatal Isoerythrolysis (N.I.)

This may be the most common cause of anemia in the foal. It can occur from 8 to 96 hours after birth, and its severity will vary according to the amount of anti-RBC antibodies ingested; generally, the earlier the signs, the more severe the condition. Hemoglobinuria may not be present; the foal is suddenly weak, pale (+/- icteric) and the heart rate and respiratory rate are elevated.

In the field, the "jaundice agglutination test" should be run to establish a diagnosis of NI: the foal's blood (in anticoagulant) and different dilutions of the colostrums are mixed and the agglutination assessed after centrifugation (3 minutes).<sup>46</sup> The foal should be prevented from nursing any further, and if the hematocrit falls below 15%, a blood transfusion should be given. "Washed" red blood cells from the dam can be used; and if available, the sire's blood can be used. Plan to give 1 ml/kg of body weight of whole blood in order to raise the hematocrit of 1%.

Pre-sampling the mare in the last month of pregnancy for a panel of hemolysins can be helpful in predicting potential NI cases. Colostrum or serum substitution can then be instituted along with denying suckling of the dam for 36 hours. The mare's colostrum should be stripped out during this time.

#### V. Hemorrhage

Cardiovascular collapse can rapidly result from internal or external hemorrhage; a 50 kg foal has only 3-5 liters of circulating blood. Acute blood loss may be associated with diverse clinical signs such as seizures, abnormal behavior, coma, weakness, rapid pulse, and depressed limb reflexes, depending on the location of the bleeding. Treatment should be directed towards arresting hemorrhage and restoring blood volume. Therapy includes blood transfusion and fluid and electrolyte therapy.

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Hematocrit and total serum protein should be monitored frequently, where possible. If the plasma protein falls below 3.5 g/dl, fluid therapy should be reduced or discontinued, and plasma should be administered instead. If the hematocrit falls below 12-13% or the hemoglobin concentration below 5 g/dl, whole blood should be given.

Broad-spectrum antibiotics should be given because the natural barriers to infection may be depressed or destroyed in these foals. Tranquilization with hypotensive agents should be avoided in these animals.

**TABLE 1**

Drug, concentration	Uses & Indications	Dosage & Route of administration	Volume for 50 kg neonate	Volume for 450kg horse
Atropine sulfate 15 mg/ml	severe bradycardia, AV block; bronchoconstriction	0.01-0.1 mg/kg IV, IM, SC	Dilute 1:10, give 0.7-1.3 ml	0.3-3.0 ml
Calcium gluconate 22 mg/L	cardiac stimulation	0.2-0.4 ml/kg Iv in 1-2 L 5% Dextrose	10-20 ml in dextrose	90-180 ml in dextrose
Dexamethasone 4 mg/ml	anaphylactic shock, CNS trauma	0.5-2.0 mg/kg IV 0.1-0.2 mg/kg IV	1.3-2.5 ml	56-225 ml 11-22 ml
Diazepam 5 mg/ml	sedative, anticonulsant	0.05-0.5 mg/kg slowly IV, repeat q 30 min as needed	0.5-4.0 ml	4.5-45 ml
Doxapram 20 mg/ml	central respiratory stimulant for perinatal apnea; xylazine overdose	0.5-1.0 mg/kg IV, repeat q 5 min. as needed; not > 2 mg/kg total in foals	1.3-2.5 ml; do not exceed 5 ml total	11-23 ml
Epinephrine 1:1,000 (1 mg/ml)	anaphylaxis, severe hypotension, dyspnea; cardiac resuscitation	0.01-0.02 mg/kg IV, IM, SC, IT, IC repeat q 3-5 min as needed	0.5 ml, dilute in sterile saline and give slowly	4-9 ml
Pentobarbital 5 g vial	general anesthesia, seizure control	2-20 mg/kg IV as a 5% solution, give slowly to effect	dilute, give slowly to effect	give slowly to effect
Sodium bicarbonate 7.5% (75 mg/ml, 89.5 mmol/dL)	metabolic acidosis	1.6 mmol/kg IV initially, dilute in LRS or NaCl	*Do not give to foals in respiratory distress	Up to 800 ml over first 6 hrs., diluted

**TABLE 2: Initial therapy for seizures in adult horses**

Drug	Dosage & Route of Administration	Volume for a 450 kg horse
Diazepam	0.05-0.5 mg/kg IV, q 30 min.	5-45 ml (5 mg/ml)
Xylazine	0.5-1.0 mg/kg IV	3-5 ml (100 mg/ml)
Guaifenesin	10% solution IV to effect	40-60 g
Thiopentone	4-6 mg/kg IV, 10% solution	2-3 g
Chloral hydrate	IV to effect	15-60 g

**TABLE 3: Initial therapy for CNS trauma in adult horses**

Drug	Dosage & Route of Administration	Volume for a 450 kg horse
Dexamethasone	0.1-0.2 mg/kg IV	11-22 ml (4 mg/ml)
Dimethyl sulfoxide (DMSO)	1 g/kg IV as a 10% solution	450 ml DMSO in 5 L
Furosemide	1 mg/kg IV	5 ml (100 mg/ml)
Mannitol	0.25-2 g/kg IV as a 20% solution	***

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References

1. Mannsmann, R.A., McCurdy, B., O'Connor, K., et al: Disaster Planning Model for an Equine Assistance and Evacuation Team. *J.Eq. Vet.Sci.* 12: 268-271, 1992.
2. Conant, M. San Diego Humane Society Animal Rescue Reserve. *J.Eq. Vet.Sci* 13: 283-284, 1993.
3. Mansmann, R.A. and Collins, T., Maintenance of an Equine Assistance and Evacuation Team. *J.Eq. Vet.Sci* 13: 284-286, 1993.
4. Brown, C.M. and Mullaney, T.P. Sudden and Unexpected Death in Problems in Equine Medicine. Lea and Febiger, Philadelphia 1989, 245-255.
5. Haliburton, J.C. and Edwards, W.C. Toxicologic Implications of Sudden, Unexplained Death in Current Therapy in Equine Medicine –3. W.B. Saunders Co. Philadelphia. 1992, 340-345.
6. Buergelt, C.D. Sudden Death in Equine Medicine and Surgery 4<sup>th</sup> Edition. Vol 1 American Veterinary Publications, Inc. Goleta, CA 1991, 40-42.
7. Madigan, J.E.; Walker, R.L.; Hird, D.W. et al: Equine Neonatal Salmonellosis: Clinical Observations and Control Measures (A Case Report) *Proc 36<sup>th</sup> Ann Conv Am Assoc Eq. Pract.* 1990, 371-375.
8. Brown, C.M., Taylor, R.F.: Sudden and Unexpected Death in Adult Horses, *Compend. Contin. Educ. Pract. Vet* 9(1): 78-86, 1987.
9. Brown, C.M., Kaneene, J.B., Taylor, R.F.: Sudden and Unexpected Death in Horses and Ponies: An Analysis of 200 Cases, *Equine Vet. J.* 20(2): 99-103, 1988.
10. Bramlage, L.R.: Current Concepts of First Aid and Transportation of the Equine Fracture Patient, *Comp. Contin. Educ. Pract. Vet* 5: S564-S573; 1983.
11. Bramlage, L.R.: Emergency First Aid Treatment and Transportation of Equine Fracture Patients, in Aver, Equine Surgery, WB Saunders Co., Philadelphia, 1983, 807-811.
12. Adams, O.R.: Lameness in Horses, Lea and Febiger, Philadelphia, (3) 1974, 43.
13. Walmsley, J.P.: First Aid Splinting for the Equine Fracture Patient, *Eq. Vet. Educ.* 5(1): 61-63, 1993.
14. Spurlock, S.L., Spurlock, G.H.: Risk Factors of Catheter-Related Complications, *Compend. Contin. Educ. Pract. Vet* 12(2): 241-249, 1990.
15. Tizard, I., Type I Hypersensitivity in Veterinary Immunology – An Introduction 4<sup>th</sup> ed, WB Saunders, Philadelphia, 1992, 335-350.
16. Hormanski, CE: Management of Anaphylactic Reactions in the Horse, *Proc 37<sup>th</sup> Ann Conv Am Assoc Eq. Pract.* 1991, 61-69.
17. Mansmann, RA: Equine Drug Reactions, *Proc 36<sup>th</sup> Ann Conv Am Assoc Eq. Pract.* 1990, 155-160.
18. Robinson, NE: Table of Common Drugs: Approximate Doses in Current Therapy in Equine Medicine II, Robinson, NE (ed), WB Saunders, Philadelphia, 1987, 730-734.

**TAB F SECTION 3**  
**EMERGENCY PROCEDURES IN EQUINE FIELD SERVICE**

19. Chapman, CB, Courage, P, Nielsen, IL, Sitram, BR and Huntington, PJ: The Role of Procaine in Adverse Reactions to Procaine Penicillin in Horses, *Aust Vet J* 69,(6): 129-133, 1992.
20. Millichamp, NJ: Ocular Trauma in Veterinary Clinics of North America – Equine Practice: Ophthalmology 8(3), 1992, 521-536.
21. Blogg, JR and Stanley, RG: Selected Drugs and Approximate Dose Rates in “Common Eye Diseases” *Proc 158, PGCVSc University of Sydney*, 1991, 237-260.
22. Mayhew, I: Seizure Disorders in “Current Therapy in Equine Medicine” Robinson, NE (ed), WB Saunders, Philadelphia, 1983, 344-349.
23. Reed, S: Intracranial Trauma in Current Therapy in Equine Medicine II, Robinson, NE (ed), WB Saunders, Philadelphia, 377-380, 1987.
24. Reed, S: Spinal Cord Trauma in Current Therapy in Equine Medicine II, Robinson, NE (ed), WB Saunders, Philadelphia, 1987, 374-376.
25. Pascoe, JR Tracheotomy and Tracheostomy in Current Practice of Equine Surgery, White, NA and Moore, JN (eds), JB Lippincott, Philadelphia, 1990, 261-264.
26. Baxter, G.M. Wounds and Wound Healing in Equine Medicine and Surgery Vol II, 4<sup>th</sup> ed. Amer. Vet. Publications, Inc. Goleta, CA, 1991, 1584-1630.
27. Watkins J.P., Taylor T.S., Schumacher J., et al Rectal Tears in Horses: An Analysis of 35 Cases, *Equine Vet J* 21: 186-199, 1989.
28. Patrick T.C., Ian G.M., Alfred M.M., et al Diseases with Physical Causes In: Equine Medicine and Surgery, Published by Amer Vet. Publications, Inc., Goleta, CA, 1991, 664-666.
29. Baird, A.N. Emergency First Aid for Equine Rectal Tears. *Proc. 36<sup>th</sup> Ann. Conv Am Assoc Eq Pract.* 1990, 609-611.
30. Shires, G.M.H. Rectal Tears in Current Therapy in Equine Medicine 2<sup>nd</sup> Ed, W.B. Saunders, Philadelphia, 1987m 75-79.
31. Duncan, I.F.: Complications of Dystocia in a Mare, *Aust Vet J*; 69:260-261, 1992.
32. Rossdale P.D., Ricketts, S.W. In: Equine Stud Farm Medicine 2<sup>nd</sup> Ed, Lea and Febiger, Philadelphia; 1980, 220-276.
33. Blanchard, T.L., Martin, M.T., Varner, D.D. et al, Management of Dystocia in Mares: Examination, Obstetrical Equipment, and Vaginal Delivery. *Continuing Education Article #5*, 11:745-753, 1989.
34. Forfa, R.J. and Zukosky, E: “Mare in the Air” Technique Preserves Breeding Soundness. *Mod. Horse Breeding*, 22-24, 1986.
35. Vandeplassche, M., Some Aspects of Equine Obstetrics, *Equine Vet. J.*, 4:105-109, 1972.
36. Taylor S.T., Blanchard T.L., Varner, D.D., et al: Management of Dystocia in Mares: Uterine Torsion and Cesarean Section. *Continuing Education Article #6*, 11:1265-1271, 1989.

**TAB F SECTION 3**  
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37. Vandeplassche, M., Parturition Complications and Dystocia In: Current Therapy in Equine Medicine 2<sup>nd</sup> Ed, W.B. Saunders, Philadelphia, 1987, 537-543.
38. Zent, W.W., Vandeplassche, M: Current Therapy in Equine Medicine 2<sup>nd</sup> Ed, W.B. Saunders, 1987, 537-541.
39. Cran, H.R., Uterine Rupture in the Mare, Vet Record. 116:550, 1985.
40. Varner, D.D., Schumacher, J., Blanchard, et al: Diseases and Management of Breeding Stallions, American Vet Publications, Goleta, CA, 1991, 278-293.
41. A.M. Koterba: Diagnosis and Management of the Abnormal Neonatal Foal, General Considerations. In: Koterba, Drummond, Kosch: Equine Clinical Neonatology. Lea & Febiger, Philadelphia, 1990, 3-15.
42. J.A. Hubbell, W.W. Muir, R. Skarda: Handbook of Veterinary Anesthesia, C.V. Mosby Company, St. Louis, 1989, 21.
43. W.W. Muir: Cardiopulmonary Resuscitation and the Prevention of Hypotensive Emergencies in Horses, Proc 30<sup>th</sup> Ann Conv Am Assoc Eq Pract, 1984, 117-125.
44. A.I. Webb: Neonatal Resuscitation. In: A.M. Koterba: Equine Clinical Neonatology; Lea & Febiger, Philadelphia, 1990, 137-150.
45. P.D. Rossdale: Neonatal Maladjustment Syndrome. In: N.E. Robinson; Current Therapy in Equine Medicine. W.B. Saunders, Philadelphia, 1987, 219-222.
46. W.E. Vaala: Neonatal Anemia. In: Koterba, Drummond, Kosch; Equine Clinical Neonatology. Lea & Febiger, Philadelphia, 1990, 570-588



**TAB F SECTION 4**  
**DISASTER PREPAREDNESS FOR SMALL HOOFSTOCK:**  
**SHEEP, GOATS, SMALL ANTELOPE AND CERVIDS,**  
**SOUTH AMERICAN CAMELIDS**

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**Background**

Small ruminants are grazers and browsers with herding tendencies. While at large they are at risk of injury from predators (including dogs), vehicles, humans, and from digestive disorders that result from overeating or ingestion of toxic plants or foreign material.

**Behavior During the Disaster Event**

These animals may become disoriented during the disaster. They will flee from perceived threats and are at risk of injuries during flight. Neonates and juveniles are at higher risk of trampling, exposure, exhaustion, or maternal rejection.

**Behavior During the Immediate Aftermath**

Small ruminants will attempt to re-group after the disaster, and may form mixed species groups. Males of most species are territorial and should be considered dangerous, both to other males and to humans who enter their perceived territory.

**Directed Movements of Small Ruminants**

Domesticated small ruminants can often be lead to holding areas by shaking a bucket of feed or by a feed trail. A group of animals may be herded to the holding area by manipulation of a visual barrier such as opaque plastic sheeting or baffle boards. The key is to move SLOWLY and quietly.

**Care of Small Ruminants after a Disaster**

Perimeter fence height is dependent on species contained and the desire of the animal to flee; 8 feet would be adequate for most species. Exotic goats are very agile and can scale most barriers. Visual barriers around the fence may help the animals feel secure. Burlap is often used, but anything attached to the fence should be on the outside to prevent ingestion. Visual barriers should also be placed within the enclosures (bales of straw or hay, large boxes, etc.). Fresh water and adequate shade for all members of the herd should be provided. Multiple feeding stations are needed to allow subordinate animals access to feed. Grass hay is adequate for short term nutrition. Legumes should be avoided or used sparingly. Small ruminants will usually consume 2 – 4% of body weight daily. Twice daily or ad lib feedings are recommended.

**Health Risks for Small Ruminants after a Disaster**

Unsanitary conditions may develop with time. Enteropathogens (bacteria, especially Salmonella, viruses, and parasites) can be a problem. Since inadequate ventilation can lead to respiratory problems, totally enclosed environments are not recommended. Most small ruminants can tolerate low temperatures if adequate bedding and shelter from wind, rain, and snow are provided. These animals, especially South American camelids are at risk from hyperthermia in hot or humid environments. A shower in the corner of the enclosure may help, if drainage is adequate to prevent entire yard from getting muddy.

**Goals**

- 1) Provide safekeeping, adequate nutrition, and water.
- 2) Attend injured or ill animals as circumstances permit.

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- 3) Humanely destroy and dispose of animals that are moribund, have intractably painful injuries, or that endanger persons or other animals.
- 4) Return animals to original facilities if intact or arrange for transfer to facilities outside the disaster area.

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**TAB F SECTION 5**  
**DISASTER PREPAREDNESS FOR LARGE HOOFSTOCK:**  
**ELEPHANTS, RHINO, WILD CATTLE**

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**Background**

This group of animals tends to be grazers and browsers, cattle and elephants have herding tendencies. Some elephants are trained and tractable under controlled conditions but can be unpredictable when stressed. All large hoofstock should be considered dangerous. While at large, they are at risk of injury from vehicles and humans.

**Behavior During the Disaster**

Large hoofstock may become disoriented and panic during the disaster. They will flee from perceived threats, disregarding obstacles, and are at risk of injuries during flight. Neonatal and geriatric animals are at higher risk of trampling and exhaustion.

**Behavior During the Immediate Aftermath**

Social hoofstock will attempt to regroup after the disaster. As the environment becomes less threatening, they will seek water and food.

**Directed Movements of Large Hoofstock**

Only experienced handlers should attempt to control trained elephants in unfamiliar surroundings. An attempt may be made to direct movement of any hoofstock with the manipulation of visual barriers (such as opaque plastic sheeting) and vehicles. Great caution should be used and all extraneous people should be kept away from the area. These animals have a long flight distance and easily panic and stampede. Chemical immobilization may need to be used.

**Firearms and Ammunition**

Firearms and ammunition should be readily available at all times. Recapturing large hoofstock should not be attempted without an armed response present. The recommended choice of crisis situations that involve dangerous animals is the bolt action rifle. Rifles should be chambered in a heavy caliber such as .30-06 Spr., .300 H&H, .338 Win. Mag., .375 H&H, or .458 Win. and the ammunition should be of a controlled-expansion or solid design. Shotguns are not recommended. An attempt to kill large hoofstock should only be undertaken by skilled marksmen. If stressed or cornered these animals will charge with little if any warning. Extreme caution is recommended when attempting to kill an elephant, as precision marksmanship is required to place the bullet properly.

**Care of Large Hoofstock After a Disaster**

Areas such as stadiums or heavily roped off large stands of trees with visual barriers may be used as temporary enclosures. Loud noises, sudden movements and unfamiliar human presence can easily stress large hoofstock. They should be kept in quiet areas away from traffic, noise (such as heavy machinery), and inquisitive humans.

Potable water should be available at all times. Grass hays can be used for short term nutrition. Legumes and grains should only be used in limited amounts if at all. Produce may supplement the diet but is not necessary. Adequate shade and ventilation are critical. Shelter from wind, rain, and snow and bedding should be used in cold weather.

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**DISASTER PREPAREDNESS FOR LARGE HOOFSTOCK:**  
**ELEPHANTS, RHINO, WILD CATTLE**

**Health Risks for Large Hoofstock**

Unsanitary conditions may develop. Enteropathogens, especially Salmonella, can be a problem. Hyperthermia can be a problem. Inadequate ventilation or cold, damp weather can increase the risk of pneumonia.

**Goals**

- 1) Provide secure environment, potable water, and adequate nutrition.
- 2) Attend ill or injured animals as circumstances permit.
- 3) Humanely destroy and dispose of animals that are moribund, have intractable injuries, or that endanger people.
- 4) Return animals to original facilities if intact or arrange for transfer to adequate facilities outside the disaster area.

02/02

## **TAB F SECTION 6**

### **PREPARING THE FARM AND FARM ANIMALS FOR DISASTERS**

(Reprinted from the *AWIC* Newsletter, Oct.-Dec. 1993, Vol. 4, No. 4)

#### **Introduction**

Disasters such as hurricanes, tornadoes, floods, earthquakes, severe winter weather, hazardous material spills, or nuclear power plant accidents can occur any time. The event may occur suddenly or be anticipated for several days, such as an approaching hurricane or flood. The time to prepare for these events is long before they occur. Even at the farm level, procedures should be written. They should be kept in a safe, fireproof, quickly accessible place with other important documents. (These and any other important documents should be taken along if it becomes necessary to evacuate the farm.) Each member of the farm family and herd personnel should know of, and practice the plan so that action may be taken even in the absence of key management personnel.

The first step in planning for a disaster is to determine what type of disaster could occur on the farm and how often. It would be useless to spend time and money, for example, to plan for severe winter weather if the farm is located in a tropical environment. If the premises are near a nuclear power plant, even though the risk of an accident occurring is slim, the owners would want to consider how to protect their animals from radioactive fallout. If the farm is near a major highway, one might want to consider a hazardous material spill from a road accident in their planning. Living next to a river or stream would put planning for flooding or a barge accident in the forefront.

Only after each individual farm owner has considered their risks can they decide what priority of planning, money, and resources they wish to allocate to each. An all hazards plan is most desirable, however, plans should also be customized for specific situations. Once the risks are known, decisions can be made about what actions can be done in advance, and what actions would be required when the disaster occurs. Generally avoiding the disaster, mitigating its effect if it cannot be avoided, and sheltering the animals lessens the effects of a disaster on livestock. The approach taken would depend upon the type of disaster anticipated. Sometimes only one approach may be appropriate such as sheltering. In some instances combined approaches such as mitigation and sheltering may be required. In other events such as floods or firestorms sheltering may be the wrong thing to do.

#### **Mitigation**

Hazard mitigation is defined as any action taken to eliminate or reduce the long-term risk to life and property from natural or technological hazards. Some examples of hazard mitigation might be hurricane seeding to reduce the intensity of a storm, tying down homes or barns with ground anchors to withstand wind damage, redirecting the impact away from a vulnerable location by the digging of water channels or planting vegetation to absorb water, the establishment of setback regulations so building is not allowed close to the water's edge, and the construction of levees or permanent barriers to control flooding.

The farm and farm buildings should be surveyed to figure out what mitigation procedures should be followed based on the hazard risk. Barns and buildings can be built or repaired so they exceed building codes. Construction or moving of the buildings to higher ground could be done. Glass windows and doors could be replaced or boarded with sturdier material. Drainage furrows could be kept sodded. Trash piles and burial sites could be cleaned and moved. (Many farms contain burial sites contaminated with lead based paints, machinery grease, motor oil, lead lined tanks, batteries, roofing nails, asphalt, shingles, caulking compounds, linoleum, and plumbing lead. During flooding this material may leech into the crops or feed supply or be moved to a more accessible area where animals could consume them.) Toxic chemicals, pesticides, herbicides, and rodenticides could be moved or stored in secured areas to prevent their washing onto pastures where animals may be exposed. Loose items could be secured. Ponds that could cause flooding could be drained or have levees constructed around their perimeter.

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### **PREPARING THE FARM AND FARM ANIMALS FOR DISASTERS**

A list of resources and people should be developed by the farmer and kept with important papers. This list should contain emergency phone numbers, suppliers, truckers, and people that can help with the animals especially if normal working conditions are disrupted.

Suppliers that may be needed during or after the disaster should be obtained. Many of these items may not be obtainable after the disaster. Also, by obtaining them in advance more reasonable prices will be paid. Unfortunately disasters attract individuals who gouge and prey on the misfortunes of victims. Items that could be obtained are portable radios and TV's, extra batteries, flashlights, candles, portable generators, salt, gravel, litter, fuel, antifreeze, stored feed such as hay (The amount to store would depend on the hazard. After the Washington state flood most producers vowed never to inventory large amounts of hay due to excessive flood damage and spoilage.), ropes, halters, animal restraint equipment, and medical supplies. Once obtained, they should be stored in such a manner so that they will be usable after the disaster. While in storage they should be checked at regular intervals – i.e.: Once a week to assure that they do not spoil and that electrical or mechanical appliances are still working. They should also be rechecked and evaluated after the event to assure they are still usable. A log should be kept to remember when and how often the items were monitored. Animals should be kept current on all appropriate vaccinations and booster shots before the disaster. Keep a written record of the products given and the date of injection. The stress of the event and the disruption of the environment could cause an increase in infectious disease spread. Proper vaccination could protect the animals.

#### **Representation to Governmental Agency Managing the Disaster Response**

As the disaster approaches or after it arrives the most important thing the farmer needs are truthful, accurate, and current information. A county, state, or federal emergency management agency coordinates government's response to most disasters. Representation to this agency for the farmer is critical. In most instances, a member of the division's Department of Agriculture competently does this. It is strongly suggested that farm organizations lobby for veterinary representation either through the Department of Agriculture or separately to this agency. Often, the needs of animals during disasters are given low priority. Veterinarians, who are aware of these needs and can also verify the validity of requests for help, are most suited to bring animal problems to the forefront. Often actions required protecting animals such as sheltering or evacuation must be done before a similar action is taken for people. (To move animals to shelter from pasture or evacuate them to other locations takes considerable time and many workers.) Governmental agencies will not issue such directives for animals before similar instructions are issued for people. They fear that a panic situation would occur and people might be critical about why the animals are being protected before them. (Animals can always be released from the shelter or returned from their point of evacuation if the disaster does not materialize.) What they do not consider is that it must be done while it is still safe for people to do the task since animals cannot shelter or evacuate themselves. After the disaster, government usually limits access to the disaster area. Animals will have to be fed, watered, and milked. Who is better suited to do this than the owner? Designation of farmers as emergency workers by government solves the problem of who will be responsible for this task. A veterinarian located in the emergency operating center can get these messages across.

#### **Evacuation**

If evacuation of the animals is being considered (which may not be practical) to avoid the hazard then evacuation procedures, places, and routes should be planned. Since all animals may not be able to be evacuated, owners should decide ahead of time which are the most important ones to save. Various decision criteria can be used such as sale value, breeding quality, stage of pregnancy, stage of production, or simply sentimental preference. These animals should be identified ahead of time and a written list

## **TAB F SECTION 6**

### **PREPARING THE FARM AND FARM ANIMALS FOR DISASTERS**

kept. If the owner were not home when the disaster threatens, others would then know which animals to save. Routes must not interfere with human evacuation routes. Alternate routes should be found in case the planned route is not accessible. Places where animals are to be taken should be decided in advance and arrangements made with the owners of these places to accept the animals. Trucks, trailers, and other vehicles should be obtained in advance. Acclimate the animals to them so they will not be frightened when they have to be used. Restraint equipment, food and water supplies should be available to use and move with the animals. Sufficient people should be on hand to help move the animals. The animals should be photographed and permanently identified by metal eartag, tattoo, brand, registration papers, or microchip. A permanent record of the identification must be kept. This information will be useful to resolve arguments of ownership in case the animal gets loose. Papers documenting the identification should be kept with other important papers. Ultimately the decision to evacuate will depend on the distance to be traveled, the amount of time available before the disaster is due to impact on the farm, and whether there is any advantage to moving the animals to the place selected. Sometimes, evacuation may be done after the disaster providing the roads are passable, and the equipment needed for travel usable. If this is the case, the accepting location must be contacted to find out its condition.

#### **Sheltering**

Whether to move farm animals to shelter or leave them outside will depend on the integrity and location of the shelter being used and the type of disaster. During Hurricane Andrew, some horses left outside suffered less injury than those placed in shelters. This was because some shelters selected did not withstand the high winds. Horses were injured by collapsing structures and flying objects that may have been avoided on the outside. Another reason for possibly leaving animals unsheltered is because floodwaters that inundate around a barn could trap animals inside causing their drowning. During severe winter weather shelter animals from icy wind, rain, and snow. Generally, if the structure is sound, the animal should be placed indoors. Once they are inside, secure all openings to the outside. As mentioned previously, the sheltering should be ordered and completed before similar action is taken for humans.

Farm cats and dogs should either be placed in a disaster proof place or turned loose, as they generally will stay close to their home in the immediate period following a disaster. If they are loose, however, attempts must be made to immediately catch them again after the threat is over, to prevent these animals from becoming feral and a public health hazard. Some farm dogs are dangerously aggressive, and under normal circumstances should be kept chained. These dogs cannot be kept chained or turned loose during a disaster. If an inside shelter cannot be found then the only safe and humane thing to do is to euthanize these dogs as a last measure before evacuation.

#### **Human evacuation**

What can be done with the animals if there is a need to evacuate the premises, and the animals have to be left unattended? There is always the risk that animals left unattended for extended periods could die or suffer injury. Sometimes, this may be the only option to protect human life. Protecting human life should always take priority in planning. Regardless, after the animals are secured in appropriate shelters food and water should be left for them, which they can obtain on their own. The amount necessary for survival is considerably less than for other purposes. If the animals survive, then the decision can be made after the disaster whether it is worth the time and expense to bring them back to their previous condition.

Consult the table on the next page as a guide to the amount of food and water to leave.

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PREPARING THE FARM AND FARM ANIMALS FOR DISASTERS**

<b>ANIMALS</b>	<b>WATER/DAY</b>	<b>FEED/DAY</b>
<b>DAIRY COWS</b>		
IN PRODUCTION	9 GALLONS SUMMER	20 POUNDS HAY
	7 GALLONS WINTER	
DRY COWS	9 GALLONS SUMMER	20 POUNDS HAY
	7 GALLONS WINTER	
WEANING COWS	6 GALLONS SUMMER	8-12 POUNDS HAY
	3 GALLONS WINTER	
COW (PREGNANT)	7 GALLONS SUMMER	10-15 POUNDS LEGUME
	6 GALLONS WINTER	
COW WITH CALF	9 GALLONS SUMMER	12-18 POUNDS LEGUME
	8 GALLONS WINTER	
CALF (400 POUNDS)	6 GALLONS SUMMER	8-12 POUNDS LEGUME HAY
	4 GALLONS WINTER	
<b>SWINE</b>		
BROOD SOW WITH LITTER	3-7 GALLONS	8 POUNDS GRAIN
BROOD SOW (PREGNANT)	3-6 GALLONS	2 POUNDS GRAIN
150 POUND GILT OR BOAR	3-5 GALLONS	3 POUNDS GRAIN
<b>SHEEP</b>		
EWE WITH LAMB	4 QUARTS	5 POUNDS HAY
EWE, DRY	3 QUARTS	3 POUNDS HAY
WEANING LAMB	2 QUARTS	3 POUNDS HAY
<b>POULTRY</b>		
LAYERS	5 GALLONS/100 BIRDS	17 LB./100 BIRDS
BOILERS	5 GALLONS/100 BIRDS	10 LB./100 BIRDS
TURKEYS	12 GALLONS/100 BIRDS	40 LB./100 BIRDS
<b>HORSES</b>		
ALL BREEDS	5 GALLONS/1000 LB.	20 LB. HAY/1000 LB.
<b>DOGS AND CATS</b>		
LEAVE 1-QUART WATER/DAY/ANIMAL. LEAVE DRY FOOD FREE CHOICE		

Every practical effort should be made to leave animals with sufficient food and water for their survival. Enough for 48 hours should be left. Usually within that time the initial effects of the disaster will be over. During the recovery phase the decision can then be made as to the best way to mount a rescue effort.

**Special Considerations**

Some practices that may be followed in planning for disasters especially during the winter require a special alert. During winter weather it is common to use portable heaters, gritty substances on the floor to prevent slipping, and antifreeze. When using these heaters, be sure they are working properly in an area where there is adequate ventilation. Heaters not working correctly could be a source of carbon monoxide, a deadly odorless colorless poison. Antifreeze used in vehicles is a deadly poison. Animals seem attracted to it and will readily consume it because of its sweet taste. Take care to properly label all containers. Do not use containers previously filled with antifreeze for other purposes especially feed and water. Promptly clean up all leaks and spills. Water supplies should be checked for freezing. Many animals have died of thirst during the winter even with abundant water sources, because they could not



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drink the water as it was frozen solid. If gritty material is spread on floors to prevent slipping, use only approved non-toxic materials. Recently a farmer mistakenly used Furadan, a fungicide for this purpose by mistake. Several cows that had licked it off the floor died.

Farms can be insured against catastrophic events. Insurance policies are available for replacement of materials damaged, repair work for recovery, boarding of occupants and animals if evacuated, lost production, and relocation. These should be investigated and purchased before the disaster threatens. For a farmer to claim compensation for lost production, which in many cases is the largest economic cost during a disaster, the farmer must have substantial records that document the level of production his/her herd has achieved in previous years. This is generally only successful in herds with recognized herd monitoring programs, such as Dairy Herd Improvement or other programs that are available for various species. To verify the validity of these records a herd health program should be in place, which is based on a valid veterinarian-client-animal relationship. A copy of all production records should be kept in a secure place that the details are not lost during the disaster. Many veterinarians are willing to keep copies of their clients' production records, if these are computerized and space efficient.

**Conclusion**

Depending upon the event, disaster preparation may or may not be successful. It is known that proper planning lessens effects of disasters. Economically it is cheaper to prevent the problem or lessen its effect than to pay the costs of recovery. The time to do this is **NOW**, before the disaster occurs.

# TAB F SECTION 7 HURRICANE ACTION GUIDELINES FOR COUNTRY PROPERTY

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## The Lessons Of Hurricane Andrew

### The leading causes of death in large animals were:

1. **Collapsed barns**, owners thought their animals were safer inside, but confinement takes away the animals ability to protect themselves.
2. **Kidney failure due to dehydration**, wandering animals were deprived of food and water for days.
3. **Electrocution**, horses seek the lowest areas, in many cases this was a drainage ditch. Power lines are strung over drainage ditches and were blown down during the storm.
4. **Fencing failure**, wandering animals, although unharmed during the storm, were hit and killed on the roadways.

### Debris caused the most severe injuries...

1. Many horses required euthanization due to entanglement in barbed wire and the resultant severe injuries.
2. Debris injuries were found most often in the hindquarters, as horses turned their tails to the storm.
3. Don't keep your animals in the barn to prevent debris injury. Debris injuries were severe, but in most cases treatable. If your barn collapses – and there is no way to insure that it won't – large animals have no chance to save themselves and are likely to panic if they can't follow their instincts.

## Guidelines for Disaster Preparedness

### Develop a Written Plan...

The first step is to develop a written plan. The first question to answer is whether or not your property is located in a storm surge flood plain. This information may be obtained from your local government.

Even if you are not in an area subject to flooding, you may want to consider evacuating horses if they are maintained in stables or in pastures of less than one acre, as this will not give sufficient area for them to avoid debris and collapsing buildings.

If you decide you must evacuate.... **DO NOT TRY TO EVACUATE WITH YOUR LIVESTOCK TRAILER UNLESS THERE IS SUFFICIENT TIME!**

If you cannot **BE ON THE ROAD 72 HOURS BEFORE THE STORM IS DUE TO HIT**, you could easily be caught in traffic and high winds. Traffic on the highways will be moving very slowly, if at all. A livestock trailer is a very unstable vehicle in high winds and high winds will arrive 8-10 hours or more before the storm. **REMEMBER**, a fire engine loaded with water – a very stable emergency vehicle – is

## **TAB F SECTION 7 HURRICANE ACTION GUIDELINES FOR COUNTRY PROPERTY**

considered “out of service” when sustained winds have reached 40 mph. Therefore, long distance evacuation is not recommended as the storm may move faster than you anticipate.

Evacuating your animals out of the area may be too dangerous, but there are alternatives. **MAKE PLANS NOW** to move your animals to a safer area that is relatively near your home. Before hurricane season begins make sure all animals have current immunizations and Coggins tests and take the necessary papers with you if you must evacuate. Locate safe areas within your county and make arrangements now to move your animals to this location – then assist the receiving property owner in developing a disaster plan!

A written **DISASTER PLAN** will help you and your animals survive.

### **Develop a Specific Disaster Plan for Your Country Property**

**Start with the farthest point of your property and move in toward the house**, listing all the things that need to be done. When you write your plan, consider the following guidelines:

- Install a hand pump on your well **NOW**. You will never make a better investment. Well water will not become contaminated unless your well is submerged by floodwaters.
- As you landscape your property use native plants. Nature has evolved these species to weather hurricanes. They will be much less likely to uproot and become debris.
- **THINK DEBRIS!** Take down and secure everything you can. Turn over and tie down picnic tables and benches or anything else too large to store.
- Get mobile home tie downs (spikes and ratcheting straps) for your livestock trailer and other vehicles. Move vehicles, livestock trailer, etc. into the middle of the largest open areas away from trees and tie them down over the top of the vehicle.
- Have on hand a box packed with halters, leads, tape, rope, tarps and plastic, fly spray and animal medical supplies including bandages and medicines. Bring it into the house.
- Keep a supply of plastic neckbands with permanent markings to put on your animals for identification and put metal I.D. plates on halters. Animals should be haltered before the storm.
- Have on hand in the house: Several flashlights, hurricane lamps, lamp oil or kerosene, fire extinguishers, batteries, battery operated radio, matches, gasoline, chlorine bleach.
- Keep 2-liter soda bottles filled with water frozen in the freezer. They can be thawed in the refrigerator when electricity fails and keep the refrigerator cold. They can be used as a source of water as they thaw.
- City water becomes contaminated because purification systems are inoperable. To purify water, add 2 drops of chlorine bleach per quart and let stand for half an hour.
- Fill any large, outside vessels (row boats, canoes, feed troughs, etc.) with water. This keeps vessels from becoming debris and provides a source of water for animals after the storm. Pool water and collected water should be kept chlorinated so it remains usable.
- Shut off main electrical breakers and close gas and water valves. Unplug appliances and turn off air conditioning.
- Chain your propane tank to the ground with tie down stakes and label it “propane”. Label any hazardous material containers on your property.
- Bring chain saw, ladder, axe, shovel, pry bar, come-along, metal cable, block and tackle, wire cutters, toolbox, grill, charcoal and fluid into the house.
- A two-week supply of animal feed and medications should be brought into the house and stored in waterproof containers or wrapped in plastic.
- Contact out-of-town friends and relatives and keep them informed of your plans. It will be easier for you to contact them than for them to contact you.
- Make sure your insurance is adequate. Photograph or video all property and animals and take these with you if you must evacuate.

## **TAB F SECTION 7 HURRICANE ACTION GUIDELINES FOR COUNTRY PROPERTY**

- Remember that after the storm all transactions will have to be made in cash and that banks and gas stations will be closed.

**Close barn and/or stall doors. Open all interior pasture gates. Put I.D. on all animals and TURN YOUR LARGE ANIMALS OUT!!** They may suffer debris injuries, but at least this way they have a chance.

**DON'T GO OUT DURING THE STORM!!** If you are dead or injured, you can't help your animals. **When any storm is named**, everyone should take it seriously, watch it closely and begin implementation of their prewritten Disaster Plans.

Review and update your disaster plan with your family on a regular basis.

### **The Safest Place for Large Animals to Weather a Storm is in a Large Pasture**

**It should meet as many of the following guidelines as possible:**

- It should be free of exotic trees.
- It should have no overhead power lines.
- It should be well away from areas that might generate wind driven debris.
- It should have both low areas that animals can shelter in during the storm, (preferably a pond), and higher areas that will not be flooded after the storm.
- It should have woven wire fencing.

### **Long Range Disaster Planning**

#### **Fencing...**

- The clear winner is woven wire. It acts like volleyball net; in many cases falling trees don't even take it down. It doesn't pull apart in high winds. Animals are less likely to get caught or tangled in it.
- Board fencing blows down and becomes debris. If you use it, back it with woven wire.
- Avoid using barbed wire. It cuts horses to ribbons and is easily torn down by flying debris.
- Lay out your fence lines to keep animals away from power lines.
- Each year in May, replace rotten fence posts and make fencing repairs so your fences are as strong as possible for the start of Atlantic Hurricane Season on June 1.

#### **Building Construction....**

- Having a well-built barn keeps it from becoming debris. Never think it is safe enough to protect your animals.
- A simple, well strapped, open pole barn with a flat, properly secured metal roof or a hurricane reinforced concrete barn is least likely to blow down.
- Prefab trusses may not hold up. If you use them, make sure they have hurricane straps and are properly braced.
- Roofing construction should be metal or roll roofing. Shingles and tile become small lethal weapons which pastured animals cannot avoid, large sheets of anything are more easily avoided by animals.
- Consider some form of hurricane shutters for all glass windows and doors. Taping may prevent shattered glass from flying, but it will not prevent wind entering through broken windows and destroying everything inside.

# **TAB F SECTION 8**

## **GUIDELINES FOR CATTLE DURING EMERGENCIES**

### **Information for Veterinarians**

#### **Background**

Cattle are grazers and browsers by nature and are easily adaptable to new environments. They are gregarious animals that follow herd instincts, but may be excited and frightened by new persons, predators, and dogs in their midst. Because of their gregarious nature, individuals become anxious in situations that lead to their isolation from the herd. They have keen eyesight and hearing and can detect something unusual at a distance of several hundred yards.

#### **Behavior During the Disaster Event**

Cattle normally will move away from fire and flood, but in an excited state they may actually move into such a disaster. Herding and driving cattle during a disaster is made more difficult because herding instinct is overridden by survival reaction. Injuries, especially to the neonates, are much more probable during a disaster.

#### **Behavior During the Immediate Aftermath**

Most cattle, if given hay, water, and a space to stand or lie down, will acclimate well with their surroundings. The more antisocial animals, especially bulls, may not become content as quickly and may attempt escape. Bulls should always be approached with caution, particularly under stressful conditions. There is also a problem with the establishment of social dominance within a group if new members are added. This is particularly true with bulls, and though cows usually settle down soon, the bulls may continue the struggle for dominance for a protracted period.

#### **Capture, Containment, and Restraint**

Dairy cattle are used to caretakers, are socialized to human beings, and are easily penned. Beef cattle commonly are fed hay and grain in or around a barn or corral, which can aid in penning. Those not routinely cared for and those under range conditions should be driven with minimal excitement to a corral accessible by truck. Range cattle are not easily driven and may be dangerous to persons on foot, making it desirable to have horses available. If a preexisting structure is not in place, a temporary corral can be built with portable gate panels. Fencing, such as barbed wire and woven wire, should be avoided because of the danger of injury to excited animals and animals unfamiliar with fences. The portable corral also lends itself to the development of runways and chutes for restraint.

In cases where it is not possible to corral the animals, it may be necessary to chemically immobilize them through use of a capture gun. Most drugs used for this purpose in cattle are not approved for this use, and it should be remembered that such products (e.g., xylazine) are potent and toxic to human beings.

The most common and available method of restraint is the lariat and halter. This type of restraint is dependent on having something to which the animal can be secured. For particularly fractious animals, application of a nose lead in combination with a rope halter provides additional distraction and approved restraint. A properly applied tail jack will immobilize the rear quarters for the purpose of examination or other minor procedures.

The most desirable restraint device is the portable cattle chute with a head restraint. With this equipment, diagnosis and treatment is much easier and safer. In situations requiring maximal restraint, tranquilization or sedation may be necessary. Xylazine is an effective sedative in cattle. The recommended dosage for intravenous use ranges from 0.02 to 0.15 mg/kg of body weight. Intramuscularly, dosages of 0.05 to 0.3 mg/kg are advised. At these dosages, xylazine is relatively safe, conferring sedation and strong analgesic properties for 30 minutes to 2 hours or more. Disadvantages include decreased heart and respiratory rates and bloat, resulting from depressed gastrointestinal tract motility. Xylazine should be avoided in cattle that appear debilitated. The recommended antidote for xylazine-induced sedation is tolazoline (1.1 to 4.0 mg/kg, IV).

## TAB F SECTION 8 GUIDELINES FOR CATTLE DURING EMERGENCIES

If evacuation from the home premise is necessary, bumper-pull or fifth-wheel type stock trailers, 12' X 16' or larger and without compartments, should be used. The low bed with a low center of gravity allows easier loading and unloading and is more stable in winds and water.

### **Methods of Animal Identification**

Permanent identification of dairy cattle is usually numerical by means of an ear tag, ear tattoo, brand, microchip, or numbered neck chain. Animals may be temporarily identified through use of livestock marking crayons.

### **Typical Weights**

**Dairy cattle-** Holsteins are the largest of the 5 major breeds of dairy cattle. Cows weigh an average of 1,500 lb, with mature bulls tipping the scales at more than a ton. Jersey dairy cattle are the smallest, with mature cows weighing approximately 1,000 lb and bulls near 1,500 lb. Weigh tapes for measuring heart girth provide a fairly accurate estimate of weight in dairy cattle.

**Beef cattle-** There are wide variations among and within beef breeds. Weights can range from an 850-lb. British crossbred female to a 2,500-lb. Chianina male. A weight tape for beef cattle, which measures heart girth, is fairly accurate.

### **Nutritional Requirements**

Cattle are grazing animals and can be maintained adequately on a variety of native grasses. Care should be taken in selecting the site to pen cattle, because ornamental plants, which may be appealing to hungry ruminants, can be extremely toxic if consumed by cattle. Milk production in dairy cattle will raise or lower according to nutrient intake. Grass hay can be fed to dairy cattle for several days and they will suffer only temporary milk production loss when put back on their full production level ration. By reducing the caloric intake, a cow will reduce its milk production. For the very high milk-producing cow, the milk reduction may not be rapid enough to prevent mastitis. If the disaster causes electric power outages or if the cattle are moved to a location without milking facilities, milking even a small number of cows becomes an unrewarding and difficult task.

Beef cattle and yearling cattle require only grass hay and water for survival. If grass for pasturing cattle is not available, baled hay, fed at the rate of 20 to 25 lb/head/day is the best alternative. Calves < 3 months old will require milk or milk replacer along with grass hay. The amount of hay that is required daily is 10 kg for adult cattle (weighing 500 kg or more) and 6 kg for calves (weighing 60 to 499 kg). Clean water should be provided at the rate of 28 L (7.4 gal) for cattle > 350 kg and 20 L (5.3 gal) for those < 350 kg. In moderate weather conditions, mature dairy cattle will consume 12 to 15 gallons of water per head per day. Because contaminated water may contain pathogenic organisms, it can be treated with chlorine to make it safer. Sodium hypochlorite (household bleach) at the rate of 2 gal per 100 gal water will be beneficial. Ideally, the water should be tested, but during a disaster this may not be possible.

### **Health Concerns**

Emergency conditions that lead to the gathering of animals from various operations increases the risk of infectious diseases caused by a multitude of enteric and respiratory disease pathogens. In light of the difficulty imposed by attempting individual treatment, mass medication through the drinking water may be considered for treatment and control of infection. Large ruminants are frequently affected with bloat, diarrhea, and pneumonia during prolonged unusual events. Prevention of most bloat and diarrhea can be accomplished through nutritional management. Pneumonia can be partially prevented through vaccination against respiratory pathogens and providing rest and fresh air during the disaster. Even the best managed cattle will have some stress-related pneumonia and a treatment center should be set up for care of sick cattle. Severe traumatic injuries will require individual examination and treatment. Lacerations and fractured bones may be detected in cattle during the aftermath of a disaster. The lacerations can be treated but fractures are difficult to manage in cattle and euthanasia may be required. Materials for wound repair and bandaging

## TAB F SECTION 8 GUIDELINES FOR CATTLE DURING EMERGENCIES

should be available. Aspirin, given orally at the rate of 3 to 4 boluses (240 mg) every 8 hours or flunixin meglumine (50 mg, IM or IV), can be used to provide analgesia.

### Housing and Sanitation

Unless the disaster occurs during the coldest winter months, housing for beef cattle should be avoided. Dairy cattle should be kept clean, dry, and comfortable. Avoid total enclosure, but shelter animals (shade cloth, plastic tarp) from the extremes of heat or cold stress. The comfortable range in temperature for dairy cattle is between 41 and 78°F. Beef cattle requiring medical care might be housed in a confined area to expedite treatment, but healthy cattle do better in pastures or paddocks, and they tend to settle down quicker when put in an environment similar to where they had been maintained prior to the disaster. In addition, the open air will help disperse respiratory pathogens.

Provision for removal of manure is important. Cattle excrete about 5% of their body weight in manure and urine daily. Straw should be used for bedding, when required, because it probably will be easier to obtain and dispose of during times of disaster. If the disaster occurs during the hot and humid season, shade must be provided if it does not exist in the area of confinement. Cattle should be moved with care if the ambient temperature exceeds 30°C (86°F) in order to avoid heat stress.

### Zoonoses Concerns

The greatest risk is enteric pathogens such as salmonellosis, cryptosporidiosis, campylobacteriosis, and giardiasis. Adult cattle maintained in questionable sanitary conditions can transfer these diseases without becoming clinically ill. Calves and yearlings will usually become sick and require treatment. Contaminated water can be a source of pathogens for the cattle; therefore caretakers should use caution in handling diarrheic cattle and never consume water from an unapproved source.

### Euthanasia and Disposal

The recommended method of euthanasia is with an appropriate chemical injection. Beuthanasia-D Special, labeled for euthanasia of dogs, can be used to euthanize cattle. An intravenous dose of 40 to 50 ml will usually induce anesthesia, leading to cerebral death in mature animals. Because of the mass injuries that can occur, the volume of chemical euthanasia solution on hand can be exhausted early. An alternative to chemical euthanasia is firing a bullet into the skull at a point intersected by 2 lines drawn from the horn to the opposite lateral canthus of the eye. A steel jacket bullet no less than 30 calibre is recommended. Disposal of dead cattle can create a problem due to the potential health hazard and great volume of carcasses. Methods such as deep burial or burning can be done if local air and water quality regulations permit. A good alternative is composting the dead animals with straw and urea added on top. The existing bacteria in the animal's body will digest the carcass, without causing much odor.

### Common Drugs and Dosages<sup>1</sup>

	<u>Dose/100lb</u>	<u>Route</u>	<u>Frequency</u>	<u>Purpose</u>
Oxytetracycline (200mg/ml)	5 ml	IM	every 3 days	antibiotic
Ceftiofur	1-2ml	IM	daily	antibiotic
Sulfadimethoxine	6 ml	IV	first dose	chemotherapeutic
	3 ml	IV	subsequent daily	
Procaine Penicillin	1 ml	IM	daily	antibiotic
Acepromazine (10mg/ml)	0.25-0.5 ml	IM	as needed	tranquilizer
Xylazine (100 mg/ml)	0.02-0.15 ml	IM	as needed	chemical restraint
	0.01-0.07 ml	IV	as needed	chemical restraint
Phenylbutazone (200mg/ml)	1 ml	IV	as needed	anti-inflammatory
	1 1-gram tab	PO	as needed	anti-inflammatory

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**GUIDELINES FOR CATTLE DURING EMERGENCIES**

	<u>Dose/100lb</u>	<u>Route</u>	<u>Frequency</u>	<u>Purpose</u>
Flunixin meglumine	1 ml	IM, IV	as needed	anti-inflammatory
Lidocaine 2% solution	as needed		as needed	local anesthetic
Aspirin (240 gr)	0.25 bolus	PO	as needed	anti-inflammatory
(60 gr)	1 bolus	PO	as needed	anti-inflammatory

<sup>1</sup>The drugs and dosages provided were recommended by authors. Veterinarians should consult the manufacturer's literature prior to use. Not all of the drugs have been approved for use in cattle.

**Livestock Behavior**

Many people and animals are injured because of a lack of understanding of animal behavior. Police and other emergency personnel often make the mistake of chasing cattle. This results in excited, stressed cattle running through city streets, charging people, and getting hit by cars. Chasing the cattle makes the situation very stressful for the animals and increases hazards to people. Sometimes the best course of action is to sit and wait. Cattle are herd animals and if they can see other cattle they will seek their company. All types of livestock can become agitated and excited within a few seconds, but up to 30 minutes is required for an excited animal to calm down. An excited lone bovine animal can be very dangerous and may charge at people. A steer or cow that is separated from its herdmates may become scared and charge at people if it feels cornered. A basic principle is to avoid chasing and keep the animal calm.

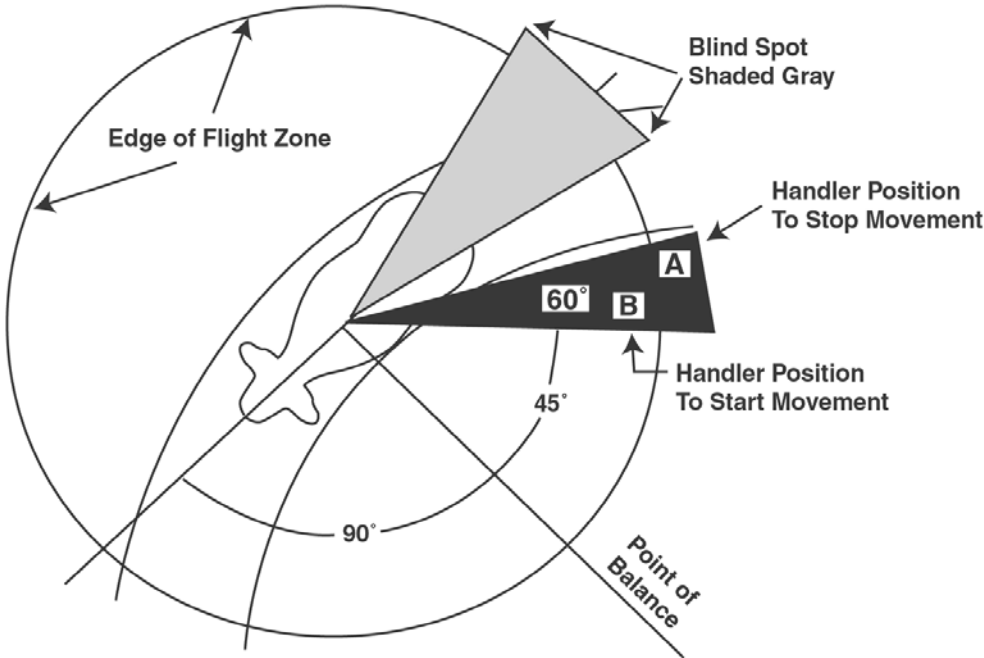
Calm animals can be easily herded and moved by people who have an understanding of the principles of flight zone and point of balance. Livestock can be moved easily by a handler who works on the edge of the flight zone. The flight zone is the animal's personal space. A completely tame animal will have no flight zone and can be touched. Most cattle and sheep will have a flight zone and they will move away when approached. The size of the flight zone is determined by both tameness and the degree of excitement and agitation.

When a person is outside the flight zone, the animals will turn and face the person. When the flight zone is entered the animals will turn around and move away. The handler must avoid deep penetration of the flight zone. Deep invasion of the flight zone may cause an animal to panic. In an attempt to escape, it may run away or turn back and possibly charge the handler.

To make the animal move forward, the handler must be behind the point of balance at the shoulder, but outside the blind spot behind the animal's hindend. The ideal location for the handler is positions A and B on the edge of the flight zone. To make an animal move backwards, the handler must move in front of the point of balance. An animal will usually move forward if the handler moves from the head toward the rear. When the point of balance is crossed, the animal will move forward. Handlers who understand these principles can quietly move cattle and other livestock off of roads and other dangerous places.



**TAB F SECTION 8**  
**GUIDELINES FOR CATTLE DURING EMERGENCIES**



Handler positions for moving livestock. To make an animal move forward, the handler must be behind the point of balance at the animal's shoulder.

Last Updated April 29, 2005

# **TAB F SECTION 9 GUIDELINES FOR SWINE DURING DISASTERS**

Contributions by: Dr. Tom Burkgren, Executive Director  
American Association of Swine Veterinarians

## **General Information**

### **Background**

Swine may be raised in commercial production units, be kept as household pets, or be found as feral swine in southern climates. Their behavior will be dictated, in part, by their source. Commercial and feral swine will not be readily tractable and will generally congregate in groups to forage. Pet pigs are more likely to be found individually and are likely to be reasonably responsive to human handling. All swine are at risk from larger carnivores (e.g., dogs, coyotes) and from vehicular accidents. Adult commercial and feral swine are capable of inflicting injury to human beings if cornered. Pet pigs are more likely to be injured by predators, other swine, and vehicles. Swine may be aggressive toward other animals and will kill them. They should be held separate from other animals.

### **Behavior During and After a Disaster**

Groups of swine can be expected to begin foraging for food quickly after release. They are intelligent and curious animals, with an acute sense of smell. Swine possess a strong snout, which enables them to rook extensively during their scavenging. Swine will not congregate with other animals, but will maintain loosely defined foraging groups. Mature male swine (boars) are capable of immediate and severe damage to animals and to human beings by use of their tusk teeth. Swine are not territorial by nature, thus, danger primarily arises when swine are attacked, cornered, or disturbed during feeding. With the exception of household pets, swine cannot be led or enticed to approach human beings. Swine are deceptively elusive and will attempt to run under or through barricades toward open spaces. Groups of swine are more tractable than individuals. Swine can be driven to desired locations by slowly moving toward them from the sides and rear of the intended direction. Use of gates or panels to block view of open spaces will help direct swine movement. Move slowly without excitement or they will bolt and scatter in all directions. They should be driven slowly to an enclosure with a single open entrance. Food placed on the ground within the enclosure will encourage entry.

### **Care of Swine After the Disaster**

An appropriate gathering location should have a rigid perimeter fence at least 5 ft. high and be solid surface (e.g., tennis courts). A sleeping area of 2.5 ft.<sup>2</sup> and a minimum of 5 ft.<sup>2</sup> general space/100 lbs. of body weight is appropriate. Access to larger areas will reduce stress and fighting. Swine are clean animals if the environment allows. Perinatal and young pigs need shelter. Sleeping and feeding areas should be provided away from the low spots in the enclosure. Swine held in a grassy area or where the perimeter fence is not secured into the ground will root under a fence to escape, and will chew and root around any structures available. An electric fence, properly installed 6 to 8 inches off the ground and equal distance within the perimeter fence, will reduce perimeter rooting. Parks and yards with valuable vegetation or structures should be used as last resorts. Fresh water should be made readily available. Adequate drinking space should be provided. One drinking place per 8 pigs at least. Swine will drink approximately 8% of body weight/day (more in warm weather). A sunshade should be provided during warm weather (i.e., ambient temperatures > 85°F) and bedding in cold weather (< 50°F). Piles of used newspaper may be used as bedding. Feed may be thrown on the floor of the enclosure from outside. Handlers should not enter the enclosure without assistance. Where possible, swine should be separated by size and not commingled, which will minimize fighting and injury. Boars should be kept separate from one another. Pet swine must be kept away from larger pigs to avoid fighting and death.

**TAB F SECTION 9**  
**GUIDELINES FOR SWINE DURING DISASTERS**

Swine are omnivorous and can survive on a wide range of foodstuffs. Cereal grains (corn, wheat, barley, oats) are the preferred food, but vegetables and fruits can be used. Uncooked meats or garbage should not be fed to swine. Food should be spread over a wide area to enable all swine access. A daily grain allowance of approximately 0.5lb/100 lbs of body weight will maintain life for several weeks. For longer periods, a complete swine feed is necessary. Levels over 1.5 lb/100 lbs of body weight may result in weight gain. To reduce fighting and increase satiety, fibrous materials (hay or straw) may be provided daily to effect.

**Health Risks for Swine**

Unsanitary conditions will result in a poor environment. Manure should be scraped daily from the floor, and bedding should be added in the dry area to improve the conditions. Neonates and weanlings are most at risk of disease. Respiratory and diarrheal diseases (bacterial, protozoan, viral) are most likely increased under these stressful conditions. Extremes of temperature and wind should be moderated as possible. Perinatal and young swine need shelter. Young swine, under 60 lbs, are more susceptible to chilling from winds, cold rain, or snow. Plastic or plywood barriers outside the fence in prevailing winds may provide temporary windbreaks. Adults and hogs greater than 160 pounds are susceptible to heat stress. An overhead tarp or larger vehicle (transport or flatbed trailer) will provide adequate shade for all ages. Sick or injured swine should be separated to reduce further injury or death. Dead animals should be removed immediately to reduce cannibalism.

**Goals**

1. Remove swine from human environment to avoid unnecessary injuries.
2. Provide emergency shelter and food for swine.
3. Treat injured or sick animals, as resources are available.
4. Humanely destroy seriously injured, ill, or intractable swine.
5. Properly dispose of dead swine by burial or incineration.
6. Return animals to rightful owners once owners are identified and are able to care for the swine properly.

(Rev. 04/19/01)

**TAB F SECTION 9**  
**GUIDELINES FOR SWINE DURING DISASTERS**

Swine Care Handbook  
National Pork Producers Council  
© 2001 National Pork Board  
Des Moines, IA USA

<b>TABLE 1. Recommended Thermal Conditions for Swine</b>			
<b>Type and weight</b>	<b>Preferred range<sup>a</sup></b>	<b>Lower intervention<sup>b</sup></b>	<b>Upper intervention<sup>c</sup></b>
Lactating sow and litter	60-80°F for sow; piglets have 90°F creep area	50°F for sow	90°F for sow
Prenursery, 10 to 30 lb	80 to 90°F	60°F	95°F
Nursery, 30 to 75 lb	65 to 80°F	40°F	95°F
Growing, 75 to 150 lb	60 to 75°F	25°F	95°F
Finishing, 150 to 220 lb	50 to 75°F	5°F	95°
Sows or Boars	60 to 75°F	5°F	90°

<sup>a</sup>Adapted from NRC (1981); DeShazer and Overhults (1982); Hahn (1985).  
<sup>b</sup>Bedding, supplemental heat, or other environmental modification is recommended when air temperatures approach the lower intervention points.  
<sup>c</sup>Except for brief periods above these air temperatures, some form of cooling should be provided when temperatures approach upper intervention points.

<b>TABLE 2. Floor Area Recommended for Swine in Totally Enclosed Housing<sup>a,b</sup></b>	
<b>Stage of production</b>	<b>Square feet<sup>c</sup></b>
Litter and lactating sow, pen (depending on sow size and age of litter)	31-34/pen
Litter and lactating sow, sow portion of staff <sup>d</sup>	9.2-14/stall
Growing pigs	
12-30 lb	1.7-2.5/pig
30-60 lb	3-4/pig
60-100 lb	5/pig
100-150 lb	6/pig
150-Market <sup>e</sup>	8/pig
Adults <sup>f</sup>	14-16/adult

<sup>a</sup> Adapted from MWPS (1983) and Fritschen and Muehling (1987).  
<sup>b</sup> Close observation and professional judgment in modern facilities may allow higher stocking densities without interfering with the pigs' welfare. Production practices, such as group size, ventilation equipment and rate, and type of floors (partial versus total slates), have an effect on proper stocking densities. Research is ongoing to study space requirements for different production systems.  
<sup>c</sup> Group area allowances for growing pigs.  
<sup>d</sup> Stall size: minimum width 22 inches; minimum length 7 feet. Young adult females may be housed in stalls 6.5 feet in length.  
<sup>e</sup> Based on market weight of 240 pounds. Additional space may be required for heavier pigs.  
<sup>f</sup> For larger boars or sows, more floor area is needed.

**TAB F SECTION 9**  
**GUIDELINES FOR SWINE DURING DISASTERS**

Swine Care Handbook  
National Pork Producers Council  
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<b>TABLE 3. Space Recommendations for Pigs in Buildings with Outside Apron<sup>a</sup></b>		
<b>Stage of Production</b>	<b>Space per pig</b>	
	<b>Inside</b>	<b>Outside</b>
Growing-finishing pigs	6 sq. ft.	6 sq. ft.
Sows	11-12 sq. ft.	11-12 sq. ft.
Boars	40 sq. ft.	40 sq. ft.

<sup>a</sup> Adapted from Fritschen and Muehling (1987)

<b>TABLE 4. Space and Shade or Shelter Recommendations for Pigs on Pasture<sup>a,b</sup></b>		
<b>Stage of production</b>	<b>Pasture</b>	<b>Shade or shelter</b>
Growing-finishing pigs	50-100 pigs/acre	4 sq. ft./pig to 100 lb. 6 sq. ft/pig over 100 lb.
Sows	10 sows/acre	15-20 sq. ft./sow
Sows and litters	7 sows with litters/acre	20-30 sq. ft./sow and litter
Boars	4 boars/acre	40-60 sq. ft./boar

<sup>a</sup> Adapted from MWPS (1983) and Fritschen and Muehling (1987)

<sup>b</sup> Space needs for pigs in outside dirt lots may be less than for pigs on pasture.

<b>TABLE 5. Water requirements of pigs. Values (liters/day or gallons/dry) indicate the range of requirements as presented in the literature.<sup>a</sup></b>		
<b>Class of Pig</b>	<b>Liters/pig/day</b>	<b>Gallons/pig/day</b>
Nursery pigs (up to 60 lbs BW)	2.8 2.5-3.0 L/kg of feed consumed	0.7 0.3 gal/lb of feed consumed
Grower Pigs (60-100 lbs BW)	12-20 2.5-3.0 L/kg of feed consumed	2-3 0.3 gal/lb of feed consumed
Finishing Pigs (100-250 lbs BW)	12-20 2.5-3.0 L/kg of feed consumed	3-5 0.3 gal/lb of feed consumed
Non-pregnant gilts	12	3
Pregnant sows	12-25	3-6
Lactating sows	10-30	2.5-7
Boars	20	5

<sup>a</sup> Adapted from Almond (1995)

**TAB F SECTION 10**  
**DISASTER PREPAREDNESS FOR LABORATORY ANIMALS**

Contributions by: Dr. Charles P. Raflo, Secretary-Treasurer  
American Society of Laboratory Animal Practitioners

**General Information**

**Background**

Laboratory animals include a variety of species, ranging from mice and small rodents to large primates and even ruminants. Over 90% of laboratory animals are mice and other small rodents, and many are immunocompromised and need special environmental conditions to survive. One common characteristic of laboratory animals is their acclimation to standard temperature and humidity (70° F +/- 2° and 50% relative humidity +/- 10%) and their dependence on being provided commercial food and water. Most are not accustomed to local climatic conditions and will not forage for food or know how to seek shelter. Most laboratory animal facilities have emergency preparedness plans in place and will most likely have provisions for how to handle released animals during a major catastrophe. Attempts should be made immediately to contact personnel from research institutions in the area if laboratory animals are observed at large.

**Behavior During a Disaster Event**

Most laboratory animals are accustomed to human beings and other animals are much more docile than their wild counterparts. Many will approach human beings in a way that may be perceived as unusual behavior for a wild animal of the same species. Others, such as large primates or carnivores, may, when severely frightened, be dangerous to people in the immediate area.

Depending on the research facility and the procedures being conducted, laboratory animals may be used for a variety of purposes, ranging from noninvasive behavioral studies to major surgical procedures such as organ transplantation or orthopedic surgery. Various species of laboratory animals are used for infectious disease studies, which may pose risks to human beings and animals in the immediate area. Efforts to contact personnel from laboratory animal facilities in the area should be of highest priority in the event that laboratory animals are released during an emergency.

**Care of Animals after a Disaster**

Laboratory animals require specific care depending on the species of animal and the type of study in which it was participating before the disaster. Special knowledge is required for some of the more unusual species and special food, care, and environmental requirements should be understood. In the event that knowledgeable individuals from laboratory animal facilities in the area cannot be contacted, the advice of laboratory animal medicine specialists should be sought. Several sources of such advice might be the central offices of the American Society of Laboratory Animal Practitioners (ASLAP) and the American College of Laboratory Animal Medicine (ACLAM). The names and addresses of these offices are provided.

ASLAP Administrative Office  
11300 Rockville Pike, Suite 1211  
Rockville, MD 20852-3035  
Phone: 301-231-6349  
Fax: 301-231-6071  
Website: <http://www.aslap.org/>

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**DISASTER PREPAREDNESS FOR LABORATORY ANIMALS**

ACLAM  
Melvin W. Balk, DVM  
Executive Director  
96 Chester Street  
Chester, NH 03036  
Phone: 603-887-2467  
Fax: 603-887-0096  
Website: <http://www.aclam.org/>

In an emergency, a local university or industrial firm might be contacted for similar expert advice. These organizations have, or should have, response plans to disasters, natural or man-made. These organizations have the knowledge, skills, and personnel to handle the specialized animal species and disease status to which these animals may have been exposed.

Most laboratory animals have special identification that identifies the type of project from which they came. Ear tags are used for a variety of species; tattoos are used for dogs, nonhuman primates, and rabbits; and collars or neck chains are used for cats, dogs, primates, and some other species. Implanted computerized chips, which can be read with special reading devices, also may be used to identify laboratory animals.

Special hazards are encountered if laboratory animals have been used for infectious disease or toxicologic studies. These studies may include zoonotic agents or dangerous infectious agents for which the laboratory animals may be immunized against but for which human beings and other animals are susceptible. Extreme caution should be taken if laboratory animals are suspected to have come from infectious disease research institutes or toxicologic research centers.

Although it is highly unlikely that laboratory animals would be roaming free after a major catastrophe or natural disaster, extreme care should be taken if such an event should occur. Laboratory animal species might be incompatible with one another, (e.g., cats and mice), might be extremely dangerous to human beings in the area (e.g., large primates, dogs), might require special environmental conditions for survival (e.g., immunocompromised rodents, desert reptiles), or might require intensive care (organ transplant patients, orthopedic patients).

(Rev. 04/19/01)

**TAB F SECTION 11**  
**DISASTER PREPAREDNESS FOR SMALL MAMMALS**

*Dr. Robyn Barbiers*

*Director of Veterinary Services/Associate General Curator  
Lincoln Park Zoo, Chicago, Illinois*

**Background**

Small mammals are primarily nocturnal or crepuscular animals. This group includes insectivorous, omnivorous, and herbivorous animals. They are primarily solitary and most are very susceptible to stress and flight injuries, with high mortality after capture. While at large, these animals are at risk from dogs and other predators, vehicles, and malicious persons.

**Behavior During the Disaster Event**

These animals will tend to flee and find the first available “safe” hiding spot.

**Behavior During the Immediate Aftermath**

These animals will remain hidden until hunger and thirst become driving forces. They will venture out during periods of decreasing light and outside activity to begin foraging or hunting for food.

**Directed Movements of Small Mammals**

These animals will rarely be seen. Setting baited live traps is probably the best method of capture. You may be able to net an animal if spotted. These animals are not aggressive unless threatened and unable to flee.

**Care of Small Mammals after a Disaster**

Most of these animals should be individually housed in small sky kennels or crates. Many of these animals dig or gnaw so crate material should be impenetrable and inspected frequently for damage. Mortality will be high after capture. Animals should be kept in a quiet darkened area, away from loud noises, traffic, and inquisitive people to minimize injuries.

Diets are varied. Insectivores can survive on a chopped meat, hard-boiled egg, milk, and produce diet. Herbivores should be given pellets (rodent or rabbit chow), produce, and good quality hay. Potable water should be available at all times. Good sanitation is essential.

**Health Risks for Small Mammals after a Disaster**

Unsanitary conditions may develop because of the difficulty of cleaning crates. Bacterial diseases, especially enteric, can be fatal. Leptospirosis, enteropathies, pseudotuberculosis, and pasteurellosis are common. The zoonotic disease potential must be considered, and proper hygiene of personnel is critical.

Many small mammals are susceptible to intestinal microfloral disturbance with antibiotic use. Antibiotics that significantly reduce gram-positive organisms, such as penicillin, bacitracin, tetracycline, and erythromycin, may be fatal if used in some species, especially rodents. Broad-spectrum antibiotics, such as sulfonamides or sulfonamide/trimethoprim combinations may be useful.

Tropical small mammals are not acclimated to cooler climates, and supplemental heat should be provided for these species if the temperature falls below 56°F. Shade and adequate ventilation should be provided for all species.

**Goals**

- 1) Provide safekeeping, adequate nutrition, and water.
- 2) Attend injured or ill animals as circumstances permit.



**TAB F SECTION 11**  
**DISASTER PREPAREDNESS FOR SMALL MAMMALS**

- 3) Humanely destroy and dispose of animals that are moribund or have intractably painful injuries.
- 4) Return animals to original facilities if intact or arrange for transfer to facilities outside the disaster area.

01/01

## **TAB F SECTION 12 DISASTER PREPAREDNESS FOR SMALL CARNIVORES**

*By Dr. Robyn Barbiers*

*Director of Veterinary Services/Associate General Curator  
Lincoln Park Zoo, Chicago, Illinois*

### **Background**

Most small carnivores are solitary and territorial, except the wolf which is social. Many of these animals are agile climbers. These animals can be aggressive and dangerous when threatened, hungry or injured. While at large, they are at risk from larger predators, vehicles, and human beings. The initial response may be to shoot these animals because of a perceived threat; however, most of these animals will avoid human contact.

### **Behavior During the Disaster Event**

Carnivores may become disoriented during the disaster. They will flee and attempt to find a secure hiding spot.

### **Behavior During the Immediate Aftermath**

Initially, carnivores are likely to remain near familiar surroundings. They will seek secure hiding spots and as the environment becomes less threatening, will begin cautious exploratory behavior. Most of these animals will become active as light decreases. Most will move independently, except the wolf and similar canids which will tend to form groups. Any of the carnivores are potentially dangerous to human beings approaching or attempting to trap them. Injured and hungry animals are less predictable and usually exhibit more aggressive behavior.

### **Direct Movements of Small Carnivores**

Live trapping can be attempted with the smaller carnivores. Directed movement of carnivores can be accomplished to some degree by providing directed escape routes. Chemical immobilization may be the preferred option.

### **Care of Small Carnivores After a Disaster**

Captured animals should be housed individually, unless the social structure is definitively known. Sky kennels or portable dog kennels can be used if a secure locking mechanism is available.

Fresh water, adequate ventilation and shade are necessary. Most of these animals will consume fresh meat such as mice, rabbits, and chicken. Some will consume canned cat or dog food and some will eat dry food if more preferred feed is not available. Many of these animals can tolerate cold temperatures if bedding is available and they are sheltered from wind. They should be kept in a quiet, darkened area away from traffic, noises, and inquisitive people.

### **Health Risks for Small Carnivores After a Disaster**

Hyperthermia due to hot, humid environments or exhaustion after capture is a principal risk for carnivores. Shade, free air movement, and rest will alleviate this problem. These animals are susceptible to most domestic canine and feline infectious diseases, thus they should be kept separate from domestic carnivores.

Unsanitary conditions or feed items containing high levels of bacteria may result in enteritis, particularly salmonellosis. Secondly, diarrhea, dehydration, and septicemia may develop.

### **Goals**

- 1) Provide secure confinement.
- 2) Provide adequate nutrition and water.
- 3) Attend sick or injured animals as circumstances permit.

**TAB F SECTION 12**  
**DISASTER PREPAREDNESS FOR SMALL CARNIVORES**

- 4) Humanely destroy and dispose of animals that are moribund, have intractable injuries, or that demonstrate a risk to humans.
- 5) Return animals to original facilities if intact or arrange for transfer to facilities outside the disaster area.

01/01

**TAB F SECTION 13**  
**DISASTER PREPAREDNESS FOR LARGE CARNIVORES:**  
**BEARS AND CATS**

*By Senior Author, Dr. Robyn Barbiers*  
*Director of Veterinary Services/Associate General Curator*  
*Lincoln Park Zoo, Chicago, Illinois*  
*and*  
*William K. Baker, Jr., Curator*  
*Little Rock Zoo*  
*Little Rock, Arkansas*

**Background**

Large carnivores are solitary and territorial, with the exception of lions which are social. Large cats and polar bears are carnivorous, while other bears are omnivorous. Most are agile climbers. Bears are great diggers and curious. Cats tend to be secretive and nocturnal. All should be considered dangerous, especially if wounded or cornered. While at large, carnivores are at risk of injury from vehicles and humans.

**Behavior During the Disaster Event**

Carnivores may be disoriented during the disaster. They will flee from perceived threats if possible and may attack if no escape route is available. Neonatal juveniles and geriatric animals are at greater risk of injury due to exposure or exhaustion.

**Behavior During the Immediate Aftermath**

Initially, large carnivores may remain near a familiar environment. They will seek a secure hiding place and begin cautious exploration when the environment becomes less threatening. Cats will usually begin searching for food at night. Bears will begin exploring sooner and during the day. All carnivores are a threat to approaching humans, especially if no escape route is available.

**Directed Movements of Large Carnivores**

Carnivores may return to familiar holding areas if baited with food and the area is kept quiet and free of humans. Directed movement by providing directed escape routes is difficult at best but can be tried by experienced personnel if animals present no immediate danger to people. The key is to keep human presence to a minimum. Chemical immobilization is considered the best option to move these animals.

**Firearms and Ammunition**

Firearms and ammunition should be readily available at all times. Recapturing a carnivore(s) should not be attempted without an armed response present. The recommended choice of crisis situations that involve dangerous animals is the bolt action rifle. Rifles should be chambered in a heavy caliber such as .30-06 Spr., .300 H&H, .338 Win. Mag., .375 H&H, or .458 Win. and the ammunition should be of a controlled-expansion or solid design. Shotguns can be moderately effective at close range. The recommended choice is the defensive pump action shotgun. It should be chambered in 12 gauge and the ammunition should be either 00 buckshot or slugs depending on the circumstances. An attempt to kill a carnivore should only be undertaken by skilled marksmen, as wounded carnivores are extremely dangerous.

**Care of Large Carnivores After a Disaster**

Carnivores should be individually housed unless compatibility in small enclosures is a certainty. Large metal-lined crates (4' x 5' x 10') [1.2m x 1.5m x 3.0m] with approximately 25% surface area of bars or mesh for ventilation can be used. Bear traps made of steel or concrete culverts can also be used. Heavy chain link or ¼" (6.4mm) welded wire topped enclosures can hold most cats except lions and tigers.

Portable water should be available at all times. Cats require fresh meat or a commercial frozen diet daily at approximately 5% of body weight. If fresh meat is used long term, vitamin supplementation will be

**TAB F SECTION 13**  
**DISASTER PREPAREDNESS FOR LARGE CARNIVORES:**  
**BEARS AND CATS**

required to correct the Ca:P imbalance. Bears are more adaptable and will usually consume dog chow fed at 3-5% of body weight daily. Their diet can be supplemented with meat, fish, and produce.

Large carnivores are susceptible to hyperthermia – shade and water should be provided at all times. Misting the crates may also provide relief. Most species are fairly cold tolerant if shelter from wind is provided.

These animals are easily stressed by loud noises and human presence. They should be kept in quiet areas away from traffic, noises, and inquisitive people.

**Health Risks for Large Carnivores Following a Disaster**

Unsanitary conditions, contaminated food, and improper food handling may result in gastrointestinal disease. *Salmonella* is a likely problem and because of its zoonotic potential, personal hygiene is critical.

**Goals**

- 1) Provide secure environmental, potable water and adequate nutrition.
- 2) Attend ill or injured animals as circumstances permit.
- 3) Humanely destroy and dispose of animals that are moribund, have intractable injuries, or that endanger people.
- 4) Return animals to original facilities if intact or arrange for transfer to adequate facilities outside the disaster area.

02/02

# TAB F SECTION 14 DISASTER PREPAREDNESS FOR SMALL PRIMATES

By Dr. Robyn Barbiers

Director of Veterinary Services/Associate General Curator  
Lincoln Park Zoo, Chicago, Illinois

## **Background**

Most small primates are arboreal and diurnal. All primates are very agile and curious. These animals may be human-oriented if they were hand-raised as pets or housed in a facility that handled them frequently or used them for shows. Others will avoid human beings. All primates will bite when threatened and unable to flee. While at large, they are at risk from predators, vehicles, and human beings.

## **Behavior During the Disaster Event**

These animals may become disoriented during the disaster. They will flee from perceived threats and are at risk of injuries during flight. Neonates and juveniles are at higher risk of trampling, exposure, exhaustion, and maternal rejection.

## **Behavior During the Immediate Aftermath**

Social primates initially will hide and attempt to regroup after the disaster; non-social primates will hide. They will often remain near familiar surroundings. As the environment becomes less threatening, these animals will begin exploratory behavior and search for food.

## **Directed Movements of Small Primates**

Primates may be able to be moved by providing directed escape routes. Baiting enclosures with a preferred food item (such as fruit) may be used if the animals are human-oriented. Netting these animals in the open areas is difficult at best due to their agility and their climbing abilities. Cornering a primate in a tree and using chemical immobilization is another option.

## **Care of Small Primates after a Disaster**

Unless the social status of individuals is known, primates should be individually housed in sky kennels or crates. Because of their dexterity and intelligence, locks should be used to secure primate cages. Animals should be kept in quiet surroundings and away from inquisitive humans.

Potable water and adequate nutrition must be provided. Primate chow and produce are adequate for most species short-term. Adequate ventilation and shade are necessary. Most species are not acclimated to cold environments so bedding, windbreaks, and supplemental heat may be necessary if temperatures fall below 55°F.

## **Health risks for Small Primates after a Disaster**

Unsanitary conditions may develop in holding cages. Enteric pathogens (*Salmonella*, *Shigella*, *Campylobacter*) will take a toll, especially on neonates and weanlings. Many primate diseases are zoonotic, thus, proper personal hygiene of caretakers is crucial. Masks, protective clothing, and gloves should be used when servicing macaques, and all bite and scratch wounds should be treated according to the Centers for Disease Control recommendations.

## **Goals**

- 1) Provide safekeeping, adequate nutrition, and water.
- 2) Attend injured or ill animals as circumstances permit.
- 3) Humanely destroy and dispose of animals that are moribund or have intractably painful injuries.
- 4) Return animals to original facilities if intact or arrange for transfer to facilities outside of the disaster area.

01/01

**TAB F            SECTION 15**  
**DISASTER PREPAREDNESS FOR LARGE PRIMATES**

*By Dr. Robyn Barbiers*

*Director of Veterinary Services/Associate General Curator  
Lincoln Park Zoo, Chicago, Illinois*

**Background**

Large primates tend to be diurnal, primarily social, although there are exceptions (orangutans, gibbons, siamangs), and can be terrestrial or arboreal. Most will resort to trees or other high places when stressed. All should be considered dangerous and unpredictable. While at large, they are at risk from vehicles and humans.

**Behavior During the Disaster Event**

As with all animals, large primates may become disoriented during the disaster. They will attempt to flee from perceived threats, but will attack if no escape route available. Neonates, juveniles, and geriatrics are at higher risk of exposure, exhaustion, or maternal rejection.

**Behavior During the Immediate Aftermath**

Initially, social primates will hide (often high in trees, roof, etc.) and attempt to regroup after the disaster – vocalizations and aggressive interactions are common during this phase. Non-social primates will hide. They will often remain close to familiar surroundings. As the environment becomes less threatening, primates will begin exploratory behavior and search for food.

**Directed Movements of Large Primates**

Large primates may be able to be moved by providing directed escape routes. Baiting enclosures with a preferred food item (i.e. fruit) may be used if the animals are human oriented. Cornering an animal in a tree and chemical immobilization is also an option.

**Care of Large Primates After a Disaster**

Unless the social status of individuals is known and the animals are monitored closely, primates should be individually housed. Since large primates can be very destructive and are extremely manipulative and intelligent, cages must be sturdy and locked at all times. Animals should be kept in quiet surroundings and away from inquisitive humans.

Potable water and adequate nutrition must be provided. Primate chow and produce are sufficient. Adequate ventilation and shade are necessary. In hot environments, misting may be needed to cool the area. In cold climates, bedding, windbreaks, and supplemental heat may be needed.

**Health Risks for Large Primates**

Unsanitary conditions may develop in holding cages. Enteric pathogens (Salmonella, Shigella, Campylobacter, Balantidium) will take a toll, especially on neonates, weanlings, and geriatrics. Stress and inadequate ventilation may lead to pneumonia, colds, and flu. Many primate diseases are zoonotic, so proper hygiene of caretakers is critical. Masks and gloves are recommended when servicing these animals.

**Goals**

- 1) Provide safekeeping, adequate nutrition, and water.
- 2) Attend injured or ill animals as circumstances permit.
- 3) Humanely destroy and dispose of animals that are moribund or have intractably painful injuries.
- 4) Return animals to original facilities if intact or arrange for transfer to facilities outside the disaster area.

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## **TAB F SECTION 16 EMERGENCY PREPAREDNESS FOR BIRDS**

*By Diana Guerrero, Consultant  
Ark Animals, Inc., Escondido, CA*

### **Background**

Due to the diversity of this group, birds present one of the most challenging groups to try and address in a simple format. With twenty-eight or so different orders, the diversity in behavior, feeding, and housing requirements is highly variable. It is recommended that each facility clearly delineate avian needs according to the specific collection needs.

### **Behavior During the Disaster Event**

Birds will vary in behavior if they are wild caught versus captive reared. Most will be nervous in a crisis situation or when removed from their normal surroundings; some will be disoriented.

### **Behavior During the Immediate Aftermath**

The tendency overall will be to flee. Territorial animals that have escaped may stay in close proximity, while colony animals will return to be with their flock members. Food seeking activity will begin almost immediately in many species.

### **Directed Movements of Free Ranging Animals**

Fitness and conditioning will have bearing on the distance these animals travel. Leaving food and water out is essential for many of these creatures, but the risk of loss to predators is high. Using the lure of conspecifics can work well with some of these animals, baited traps, and mist nets are recommended if capture is necessary. Taking advantage of the nocturnal resting habits of many species may be necessary to successful capture.

### **Care of Birds after a Disaster**

It is best to keep these animals in their repaired cages, or in temporary enclosures. Filtered light or covered housing areas will help to keep these creatures calm. In some cases, caging should be kept covered and the animals isolated from noise and high traffic. Avian species should have housing at some distance away from predator animals. Perching and wire cages are important for many species. Some of the more delicate animals will suffer from stress if they remain on the caging floor without perching options. Ratites will require pens and extra caution should be taken when working in close proximity. Shields or barriers are advised as a precaution. Care should be taken with parrot types since they have a tendency to chew and escape by opening latches.

Food options will vary greatly according to species. Pelleted foods, seeds, nectar, and insectivorous or carnivorous dietary needs should be addressed. Both food and potable water need to be changed and provided fresh daily. A thorough needs assessment is advised for each collection since each species may require a different diet; mixed seed diets, pellets, commercial chow, canned substitutes for protein, vegetables, fruit and other related products should also be considered as emergency provisions.

Seed should be stored in water and airtight containers to prevent mold and contamination. Food and water dishes should be changed daily. If available, fresh fruits and vegetables are recommended for applicable species however they must be properly cleaned since insecticides can pose serious health risks.

### **Health Risks for Birds after a Disaster**

No specific recommendations. Stress related complications are the biggest risk. Care should be taken to splint broken wings or other appendages. A bird specific coagulant should be included for blood feathers, broken toenails, or related use.

Risks can include enteropathogens, *Aspergillosis*, and sometimes *Salmonella*, or Psittacosis. Other dangers include conjunctivitis or the ingestion of strange objects. When housing avian species, separate quarters away from mammals are recommended.



## **TAB F SECTION 16 EMERGENCY PREPAREDNESS FOR BIRDS**

Avian diversity is a challenge. Tropical birds require warm temperatures so keeping cages out of drafts and other adjustments may be essential to survival. Waterfowl, highly aquatic species such as penguins, and flamingos will require additional adaptations in housing and care.

As a general notation, if a bird is traumatized or ill, lower perches (if applicable) and put food and water dishes on floor of caging for easy access. Cage bottoms, food and water dishes should be cleaned daily to minimize vectors and disease. Newspaper or scrap paper is highly suggested to monitor droppings.

Toxicity in the environment is a hazard to avian species. Care should be taken with cleaning solutions since their fumes can be toxic to birds. Floor substrates should be used with caution since some print inks are toxic; other items could pose a threat if ingested. Galvanized wire, bowls, or other articles containing lead can be fatal to this group.

### **Goals**

- 1) Provide for safekeeping, adequate nutrition and water of avian specimens held.
- 2) Attend injured or ill animals as circumstances require and resources permit using zoological triage parameters.
- 3) Humanely destroy and provide appropriate disposition for avian specimens that are moribund, have intractably painful injuries, or that demonstrably endanger humans or other animals.
- 4) Return animals to their exhibits or facility when appropriate, or arrange for transfer to facilities outside the disaster area.

### **Disaster Kits & Transport Housing Ideas**

You can obtain a kit already made or devise one yourself. For birds there are several important items that can be included (**See Bird Collection Checklist**). Check with your Avian Veterinarian to see if there may be anything else to add.

One of the biggest concerns if you have a large collection is how do you move them and where do you find the space to store the supplies you'll need? Holding crates and vehicles are big priorities. Try buying some of the collapsible wire dog crates and lining them with mesh (on the outside) attached with wire crimps. They can be stored without taking up lots of space and will have ample ventilation and room for several birds. If you are creative you could probably think of how to design partitions.

For softbills try some of the collapsible cardboard cat carriers. The vents can be adapted or you can obtain the carriers without the holes and design them yourself. The new portable kennels for cats and dogs that make mobile tents with mesh for air are great. They require little storage space, weigh very little, and spring into shape without fuss providing tremendous space once they are expanded. They are light, compact, and easily cleaned and that sounds good to me! Brainstorm with other groups and see what you come up with. One company has recently designed handles for the wire crates from input showing they were needed!

### **Disaster Preparation Checklist**

1. Evacuation plan designed. Posted in various visible locations. Practice drills held with employees and volunteers for different scenarios. Time them.

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**EMERGENCY PREPAREDNESS FOR BIRDS**

2. Emergency numbers on disaster plan. Activation procedures if communication lines are down. Also include procedures for road closures.
3. Emergency supply cache. Emergency equipment and supplies need to be compiled into an easily accessible location. **Hands Off This Stash!!**
4. Human kits with supplies for employees and volunteers. Invest in a good prepackaged kit and add to it for your own needs. This will save space.
5. Other items to consider: light sticks, flashlights with batteries/solar chargers, extension cords, three prong adapters, rope medications, extra glasses, solar charged/crank power radio, hand-held CB, cellular phone, sunglasses, hats or visors, Avon Skin So Soft® products: lotion, suntan lotion, dry mist (great for bug repellent).
6. Vehicle needs. Include 4X4's and trailers, boats, etc.

**Bird Collection Kit Checklist**

Penlight/Small flashlight	Syringes (1,3,6,12 cc.)
Q-tips®/Swabs	Pedialite®
Hot Water Bottle	Lactated Ringers Solution
KY Jelly® (not oily)	Towels (Restraint/Other)
Nail Trimmers/Clippers	Scissors
Hydrogen Peroxide	Iodine Scrub (can stain)
Gauze	Nolvasan® (will not stain)
Panty Hose (restraint)	Needle Nose Pliers (Blood Feathers)
Ice Cream Sticks (Splints)	Care Fresh® or Flooring Material
Ophthalmic Drops/Ointment	Topical Ointment (Burns/Injury)
Antibiotics (Oral/Injectable)	Dexamethazone®
Sheets or other cage covers (smoke/visual barrier/heat/conservation/calming)	
Saline Solution (Flushing Wounds)	
Alcohol (Used to wet feather to inspect injuries, dries with feathers left clean and in good shape)	
Styptic Powder (Cornstarch/Flower to stop bleeding)	
Transparent Tape/Masking Tape (to hold back feather)	
Plastic bags (for soiled flooring material)	
Emergency Food/Water Bowls (Paper for daily disposal/Hygiene)	
Copies of Important Records (Veterinary/ID/Breeding/Etc.)	

Update Monthly

**Tips for Injured Birds**

Keep Warm (85-90 degrees F)  
Lower perches (to prevent further injury by falls)  
Lower food and water for easy access  
Monitor droppings  
Remove grit  
Isolate from others  
Place in quiet environment  
Avoid drafts

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**Veterinary Transport**

If you have to transport to the veterinarian remember to:

- Leave the food and water dish in the cage or bring them.
- Empty the water dish before transport, so splashing does not ruin a droppings assessment.
- Remove grit to prevent over use and impaction under stress.
- Bring any medications given for the veterinarian to see.
- Bring the bird in its own cage if possible. If not, bag the flooring for the veterinarian to check.
- Do not clean the cage before visiting the veterinarian since it is important to the assessment, especially the droppings.

**Other Considerations**

- Plastic and fiberglass in your facility can give off toxic fumes in a fire situation. Replace them with metal.
- Super glue, styptic sticks, and commercial heat/cold packs can be toxic to birds.
- Most ointments are too oily for feathers.
- In earthquake areas, cages should be secured. Careful placement of toys is also important to prevent injury.
- Birds should have identification bands, tattoos, microchips, or DNA fingerprinting to help identify them if they escape.
- Include equipment for tube (gavage) feeding in your kit in case you have babies.
- Generators are critical if you have incubators, brooders, or isolettes. Don't forget the gas/fuel for the generator!
- Include dried fruit/baby food in the bird kit. Don't forget the scoops and stress vitamins! (Both for yourself and the birds.)

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**Help Sources**

Network with other professional breeders in your area, involved bird clubs, and other hobbyists in setting up a community plan. There is a great shortage of Bird Disaster Rescue Specialists, so if you know of some that are not included in the list send them to Ark Animals.

Ark Animals  
PO Box 1154  
Escondido, CA 92033  
Booklet on Animal Disaster Preparedness \$5.00  
Checks payable to Diana Guerrero

Animal Red Cross  
Route 2 Box 285p  
San Antonio, TX 78256  
National training & animal rescue

Tri-State Bird Rescue & Research  
PO Box 289  
Wilmington, DE 19899  
Guide for establishing & operating a treatment facility for oiled birds.  
Book on the effects of oil spills on wildlife. \$20 – Checks payable to TSBRR

International Bird Rescue & Research  
699 Potter Street  
Berkeley, CA 94710  
Field manual on rehabilitating oiled birds

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# TAB F SECTION 17

## GUIDELINES FOR POULTRY DURING DISASTERS

*By Authors:*

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### **Background**

Poultry refers primarily to chickens and turkeys. Minor species include ducks, geese, and game birds. All of these may be raised commercially or as pets or “backyard” flocks. Commercial chickens are further subdivided into broiler chickens (raised for meat and slaughtered between 5 and 9 weeks of age), layer chickens (leghorn type for table egg production as adults), and breeder chickens (either layer or broiler breeders, adults whose progeny are the two previous types). Young breeders prior to sexual maturity are referred to as pullets. Turkeys can be either breeder turkeys (adults 30 to 65 weeks of age) or meat type turkeys (slaughtered at 13-18 weeks). Most poultry are kept confined to some degree, whether in small pens or coops for yard birds, fenced ranges for turkeys in some areas, or large-scale commercial housing. Most broilers, breeders, and turkeys are now kept in large houses, loose on the floor, while layers are caged.

Poultry are flock animals; therefore, they are more comfortable being together in groups. They have a brittle bone structure due to their ancestry for flight, and any handling should be done with care to avoid bone fractures. The legs are the strongest bones so capture and gentle handling should be by the legs. Poultry, especially young birds, are not adept at regulating temperature (both high and low); therefore, it is necessary to avoid temperature extremes. They have very good eyesight and will fly or attempt to fly whenever approached by non-familiar persons or objects. Even familiar people in different clothing, i.e. white coveralls, will cause flight behavior.

### **Behavior During a Disaster**

Poultry are very uncomfortable whenever there is a change in the daily routine or surroundings. Therefore, they will become extremely agitated and try to fly away from the unusual. They will hide under objects especially in dark or shaded locations. Adult birds can go several days without eating but will quickly dehydrate without water. Chicks or young turkeys (referred to as poults) between the ages of 1-3 days can go without eating or drinking but must have both soon. Placing birds in a quiet area of low light intensity together in a group will help to calm them. Chickens can fly and will fly out of any enclosure without a top. Turkeys are less likely to fly but can at a young age (less than 20 weeks). Moving slowly and not making sudden movements that will startle them will keep them calm and will make handling easier.

# TAB F SECTION 17 GUIDELINES FOR POULTRY DURING DISASTERS

## GUIDELINES FOR BROILERS AND BROILER BREEDERS DURING DISASTERS

### **Behavior During and After a Disaster**

Broilers and breeders are very uncomfortable with changes in the daily routine or surroundings. They will attempt to flee from unusual disturbances. In pens or buildings, fleeing birds may pile up to great depths and smother large numbers of birds. After a disturbance, the frightened birds will tend to hide under objects and in dark or shaded areas. Individual broilers and breeders usually remain in a very localized area of their pens or housing. If a poultry house is purposefully opened or severely damaged, the birds will leave the house only very gradually, and disperse only very locally over a number of days. Retrieval of large numbers of remaining dead, injured, and uninjured birds from under collapsed structures, without injury to the rescuers and remaining birds, can be a difficult and dangerous problem. In many cases, the safest, most practical, and most humane solution is to seal the structure with tarps and euthanize the remaining birds with a gas such as argon, carbon monoxide, or carbon dioxide.

Commercial meat birds do not develop oily feathers like wild birds, and are susceptible to wetting. Severe wetting can lead to hypothermia and death, even in moderate temperatures, especially in younger birds. Meat birds do not fly well and are not conditioned for extreme exertion. They are consequently very susceptible to predation if released. Chickens, especially breeders, develop stable social structures. Disturbance of this structure can result in fighting, feather picking, cannibalism, and other vices. Mixing of groups, even from different parts of the same house, is best avoided if possible. Placing groups together in a quiet area of low light intensity will help calm the birds.

### **Capture, Containment, Restraint, and Transport**

Some broilers and breeders are curious and will approach people to investigate, but they are generally quite wary and cannot be enticed or led. They can be driven with difficulty. Several people are needed, to the sides and rear of the intended direction. Most poultry companies will have large nets that can be strategically placed to direct or capture groups. All movements should be slow and deliberate, or the group will scatter. Meat chickens can fly to a limited extent, and may escape low enclosures without a top. Care must be taken to avoid crowding and piling within pens or enclosures. Loose birds should be caught by driving into a secure pen, building, or corner, and catching by hand or with nets or catching hooks. Broilers and breeders are best caught and carried upside down by both legs, with no more than 3 per hand. Alternatively, a bird may be carried by pinning both wings over the back by the proximal humerus. Carrying birds by one leg or wing or by the distal wings may result in struggling and severe damage. When practical, it is much easier to catch commercial birds after dark or with house lights off as they become much less mobile. To catch the birds, personnel may wear headlamps with a red filter.

Transport of broilers or breeders is best accomplished in commercial wire or plastic coops designed for that purpose. These usually should be available around any poultry operation. Alternatively, boxes, crates, and so forth, with holes cut for ventilation, can be used. Density is the main consideration in transport, and is dictated mainly by the size of bird and weather conditions. As a guideline, commercial Bright coops measure (internal dimensions) about 30 x 45 inches (9.4 ft<sup>2</sup>) (76 x 114 cm, about .9 m<sup>2</sup>) and will accommodate about 20, 5-pound (2.27 kg) broilers in cool weather, or about 10 pounds per ft<sup>2</sup> (50 kg/m<sup>2</sup>). Bigger birds require more space, and density must be decreased considerably in warm or hot weather. Boxes with holes will not provide the airflow of coops, and care must be taken not to crowd or overheat birds in boxes or other transport enclosures. Birds also must be protected from extreme cold or wetting during transport.

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**Care of Broilers and Breeders after a Disaster**  
**Feed and Water**

Newly hatched chicks can survive 3 days without food or water, but must have both immediately thereafter. Older birds can survive a number of days without feed, but will dehydrate rapidly without water, especially in warm weather. Cannibalism may result from feed deprivation. Also, re-feeding after even a short period of deprivation may result in piling, scratches, and smothering if the feed is not distributed widely enough to a large group. Broilers and breeders become accustomed to the style of feeders and drinkers with which they are supplied, and it is best to duplicate those systems in emergency quarters if possible. Commercial birds retain their foraging instincts and will locate feed and water presented by alternative means, however. In emergencies, feed can be scattered on the ground and water can be presented in open containers. Optimally, pullets and breeders need about 6 inches (15cm) of chain feeder per bird or 1 pan feeder per 10 birds, and 1 bell drinker per 80 birds, 1 nipple drinker per 10 birds, or 1-cup drinker per 25 birds. Broilers need at least 2 inches (5cm) of chain feeder per bird or 1 pan feeder per 50 birds, and 3/4 inch (2 cm) of linear drinker space per bird, 1 bell drinker per 100 birds, 1 cup drinker per 28 birds, or 1 nipple per 15 birds. If possible, birds should be supplied with a standard balanced poultry diet, or a close approximation. Major constituents of average diets are presented in Table 1.

Table 1. Dietary constituents of typical broiler diets:

Age (days)	Cal /lb.	% Protein	% Sulfur AA	% Avail. Phos	% Ca	% Na
0-18	1400	22.0	1.0	0.43	0.90	0.21
18-35	1430	19.5	0.88	0.39	0.82	0.22
35-market	1465	16.5	0.72	0.31	0.71	0.21
Pullets	1300	15.3	0.61	0.39	0.91	0.22
Breeders	1325	15.4	0.63	0.37	3.20	0.20

Most poultry diets are composed of about 60% corn and 25% soybean meal, with the remaining 15% consisting of fat, protein meals, minerals, and vitamins. In an emergency situation, cracked or coarsely ground grains such as cracked corn can support the birds for 7-10 days. In such a situation, supplemental vitamins via the water are advisable. Commercial poultry operations and suppliers maintain multiple vitamin packages for water administration. Breeders in lay would need extra calcium, such as 2 lbs. of feed grade limestone or oyster shell per 100 birds, mixed with the grain. Broilers and breeders would typically consume the amounts of feed in tables 2 and 3. Reduced rations may be necessary during emergencies. If breeders go out of lay due to the stress, feed consumption should be reduced accordingly.

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Table 2. Typical daily broiler feed consumption

Age (days)	Lbs/1000	Age (days)	Lbs/1000	Age (days)	Lbs/1000
1	15	20	160	39	305
2	25	21	170	40	310
3	35	22	180	41	315
4	45	23	190	42	320
5	50	24	200	43	325
6	55	25	210	44	330
7	60	26	225	45	335
8	65	27	235	46	340
9	70	28	250	47	345
10	80	29	255	48	348
11	85	30	260	49	350
12	90	31	265	50	360
13	100	32	270	51	365
14	110	33	275	52	370
15	120	34	280	53	375
16	120	35	285	54	380
17	130	36	290	55	380
18	140	37	295	56	390
19	150	38	300		

Table 3. Typical daily broiler breeder chicken feed consumption

Age (wk.)	Lbs./100	Age (wk.)	Lbs./100	Age (wk.)	Lbs./100
1	3.7	13	15.3	25	27.2
2	5.4	14	16.0	26	28.0
3	7.9	15	16.6	27	29.3
4	8.8	16	17.8	28-35	35.1
5	9.3	17	19.2	36	34.6
6	10.2	18	20.1	40	34.2
7	11.0	19	20.9	44	33.7
8	11.8	20	21.8	48	33.3
9	12.5	21	22.6	52	32.8
10	13.3	22	23.4	56	32.4
11	14.0	23	24.8	60	32.0
12	14.7	24	25.7	65	31.4

Water should be cool and potable. If water quality is doubtful, add 1 oz of household bleach (5.25 % sodium hypochlorite) per 50 gallons of drinking water. Expected consumption is given in table 4.



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Table 4. Daily water consumption of meat-type birds.

Gallons/1000		
Age (weeks)	Broilers	Pullets / Hens
1	18	18
2	28	28
3	40	40
4	50	42
5	60	
6	70	42
7	80	
8		47
10		53
12		59
14		64
16		71
18		80
20		87
22		94
24		103
26		112
28 on		140

Birds can survive on smaller amounts of water, especially if rations are decreased and production (growth, eggs) declines. This chart is based on usual production and normal brooding and ambient temperatures; very hot conditions will increase water requirements by 6.5% per 1.8 °F (1 °C) rise in temperature.

**Shelter**

Commercial meat chickens (broilers) are susceptible to overheating, chilling, wetting, and predation. They should be provided with a secure enclosure that contains the birds, excludes predators, and allows easy feeding, watering, and examination of the birds. The enclosure should provide an area of complete shelter from precipitation for all birds. Shade should be provided in hot weather, and protection from wind and temperature extremes in winter. Optimally, displaced birds would be placed in another serviceable commercial facility. If none is available, in mild weather, an outdoor chicken-wire pen of sufficient height (6 feet or more) with some shade and rain shelter may suffice for short periods. In more severe weather, some sort of enclosure will usually be necessary, especially for younger birds. Table 5 gives the target temperature for various ages of broilers.

Age (weeks)	Target Temperature	
	F	C
1	90	32
2	85	29
3	80	27
4	75	24
5 and beyond	70	21

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# GUIDELINES FOR POULTRY DURING DISASTERS

The first 3-4 weeks of age are critical; temperatures much below those listed will result in stress, illness, or even death. Adult birds with good feathering, proper acclimation, and shelter from wind and rain can survive outdoors during a typical southern US winter, and can withstand short periods of subfreezing temperatures, but non-acclimated adults would be severely stressed by sudden exposure to cold. Conversely, adult birds become increasingly uncomfortable as temperatures exceed 90<sup>0</sup>F (32<sup>0</sup>C) and deaths may begin to occur as temperatures climb over 100<sup>0</sup>F (38<sup>0</sup>C) in commercial meat-type flocks.

Density in emergency housing is important. Commercial broilers are housed to yield about 6 pounds per square foot at slaughter age. Depending on slaughter weights, this translates into initial placement densities of anywhere from approximately 0.65 to 1.0 ft<sup>2</sup> per bird with an average of 0.78 ft<sup>2</sup> for 5-pound birds. Bear in mind that commercial structures are designed to accommodate these densities. Even in these purpose-built buildings, loss of the ventilation system (such as in a power outage) with market-age birds in warm weather can result in loss of the entire flock in as little as 30-45 minutes, due to massive heat buildup. Use of alternative structure such as barns or sheds must take into account the ventilation and heat control requirements, and much lower densities are needed. Breeders are given about 1.9 ft<sup>2</sup> per bird.

Dim light will help calm the birds. Broilers usually benefit from a period of darkness at night, but if they have been reared under continuous light, they should be gradually introduced to darkness unless, of course, light is not available. Developing pullets should be kept on their lighting schedule if possible, or their reproductive development will be impaired. Hens in lay are generally provided with about 16 or 17 hours of reasonably bright lights (at least 3 foot-candles).

If birds were to be maintained in a temporary enclosure for more than a few days, some sort of absorbent bedding would be desirable. Commercial producers prefer softwood shavings, sawdust, rice hulls, or pulverized paper. In an emergency, pine straw, chopped wheat straw, chopped leaves, ground peanut hulls, or similar fibrous plant residues could be used. Deep bedding will help birds withstand cold weather as well.

### Health Concerns

Respiratory and enteric diseases are the most common problems in broilers, and the disruptions in care associated with disasters would greatly increase the probability of disease. Different commercial producers may use different vaccination programs, and mixing of birds from different sources further increases the chances of disease and should be avoided if possible. Chickens are almost always mass medicated via feed or water when treatment is needed.

Respiratory diseases usually begin with a viral component, most commonly Infectious Bronchitis Virus or lentogenic Newcastle Disease Virus. Secondary bacterial infection of the air sacs, usually with *E. coli*, causes the more severe clinical signs and mortality. The tetracyclines (tetracycline, oxytetracycline, or chlortetracycline) at 25 mg/pound of body weight via the water, or 500 gm/ton of feed, are commonly used for air sacculitis. Sulfonamides, such as sulfadimethoxine at 1.875 gm/gallon of drinking water (0.05%), or sulfadimethoxine and ormetoprim at 113.5 gm and 68.1 gm respectively per ton of feed may be more effective. An additional drug is enrofloxacin at 25 to 50 ppm of drinking water.

Most broilers are continuously medicated with preventative medications for coccidiosis. Disruption of feeding programs could lead to outbreaks of coccidiosis and its common sequel, necrotic enteritis, a clostridial enteric disease. Coccidiosis is treated with amprolium at 0.012 to 0.024% in the drinking water, or sulfonamides such as sulfadimethoxine at 0.05% or sulfaquinoxalene at 0.04%. These are typically administered for 3 days, followed by a 3-day break, and then another course of 3-5 days at half the original dose. Necrotic enteritis can be treated with bacitracin at 200-400 mg/gallon of drinking water, or lincomycin at 64 mg/gallon, usually for 5 days.

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Wounds may lead to outbreaks of gangrenous dermatitis, a clostridial skin infection. Lincomycin or tetracyclines can be used as above. The disruptions associated with disasters also seem to increase the likelihood of more serious endemic diseases such as mycoplasmosis and laryngotracheitis, and even exotic disease such as avian influenza and velogenic Newcastle Disease.

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**GUIDELINES FOR POULTRY DURING DISASTERS**

**GUIDELINES FOR EGG-TYPE POULTRY DURING DISASTERS**

**Background**

Egg-type birds in general are relatively resistant to environmental diversity. Young pullets (day-old to 4 weeks) are the most susceptible to environmental conditions and should receive first priority in case of a disaster and be placed in a new facility within 24 hours after the disaster. If birds are out in the open, temporary arrangements should be made for penning the birds and a means of reducing wind and rain exposure if at all possible.

**Behavior During a Disaster Event**

Egg-type birds are, by nature, very distrusting of humans and will attempt to run or fly away if loose. Once loose, the birds may need to be cornered by more than one person and caught in a corner or against a wall. Catching hooks or nets on long poles are very useful tools in catching loose birds. If the birds are still in their cages, the birds can be removed by grabbing both legs and gently pulling them out. Be certain to not allow the free birds to fly out of the cage while the door is open.

**Transport**

Transport of poultry to the temporary housing facility can be boxes such as egg cases reinforced with fiber egg flats in the bottom and air holes in the cardboard for smaller birds up to 3 kgs or plastic or wooden coops designed for poultry use for larger birds. Birds should be carried by their legs, both legs in a hand, upside down. Birds can also be temporarily restrained by tying several birds' legs (both legs) with twine or rope.

**Euthanasia**

Euthanasia may be needed if facilities cannot be located for placement or birds may be sufficiently injured and need to be put out of their misery. The two most commonly used, humane methods of euthanasia are cervical dislocation or CO<sub>2</sub> asphyxiation. Cervical dislocation can be done without any special equipment while CO<sub>2</sub> asphyxiation requires a CO<sub>2</sub> tank with a hose and a receptacle such as a large trash can (with lid) or dumpster with tarp or gas-proof cover.

**Environment Requirements – Shelter**

A shelter is needed that will provide the birds protection from wind, rain, predators, and the sun. Some sort of litter, such as shavings, straw, or rice hulls, will be needed for bedding on the floor. If cages can be obtained, no bedding will be required.

**Environment Requirements – Space**

Up to 8 weeks of age, pullets need the following space allotments per bird: Water - 0.5 in. trough, 150 birds per fount, or 1 nipple for 20 birds. Feed - 1.0 in. feeder trough or 60 birds per pan or tube feeder. Floor - 22 sq. in. cage or 0.5 sq. ft. litter floor.

Pullets from 8 to 18 weeks need the following space allotments per bird: Water - 1.0 in. trough, 100 birds per fount, or 1 nipple for 10 birds. Feed – 2 in. feeder trough or 30 birds per pan or tube feeder. Floor – 44 sq. in. cage or 1.0 sq. ft. litter floor.

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### **GUIDELINES FOR POULTRY DURING DISASTERS**

Layers older than 18 weeks need the following space allotments per bird: Water – 1.0 in. trough, 75 birds per fount, or 1 nipple for 8 birds. Feed – 3 to 4 in. feeder trough or 25 birds per pan or tube feeder. Floor – 60 sq. in. cage or 1.5 sq. ft. litter floor. Nests (floor birds) – 5 birds per individual bird nest or 1 in. linear frontal space per bird with colony-type nests.

#### **Environment Requirements – Feed**

If at all possible, obtain complete rations that contain the needed protein, energy, calcium phosphorus, sodium, trace minerals, and vitamins needed for growth and/or egg production. Young pullets are normally fed a 20 % protein, 1 % calcium complete Starter ration to 4 to 6 weeks of age. Growing pullets are fed a complete 16 % protein, 1 % calcium Grower ration from 6 weeks to 16 to 18 weeks of age when a high calcium (4 %), 18 % protein complete Layer ration is fed.

Approximate daily feed consumption per 1000 birds at different ages is as follows: 1 week – 25 lbs. 5 weeks – 65 lbs. 10 weeks – 120 lbs. 15 weeks – 150 lbs. 20 weeks – 180 lbs. 25 weeks and over - 230 lbs.

Any class of birds can temporarily be fed cracked grains for up to a week if there is nothing else available. Layer birds on all grain rations also will need an additional source of calcium if laying eggs. Giving 2.25 lbs. of feed grade limestone or oyster shell per 100 birds on top of the grain mixture per day should satisfy this need. Birds receiving only grain rations should also receive daily vitamin supplementation in the water using a commercially available, complete vitamin pack for water use according to the recommendations on the packet.

#### **Environment Requirements – Water**

Water should be supplied before feed. Clean, potable water in clean troughs or round founts are desired. Clean out the troughs daily. Maintain a low water level (a 0.5 inch depth is enough) in the trough to reduce wastage and wet litter. If the potability of the water is questioned, Clorox can be added to give 1 to 2 ppm chlorine (2 tsp. per 5 gallons drinking water or, if using a medicator, add 1 ounce Clorox per gallon stock metered at 1 ounce per gallon of water). Remember that water consumption will increase dramatically (up to 50 % more) when house temperatures increase to over 80F. Approximate daily water consumption per 1000 birds @ 70 F at different ages is 5 gallons @ 1 week, 15 gallons @ 5 weeks, 25 gallons @ 10 weeks, 33 gallons @ 15 weeks, and 50 gallons during lay (after 18 weeks).

#### **Environment Requirements – Temperature/Ventilation**

Young pullets need a relatively high temperature starting at 90 F for the first 3 days and declining to 70 F by 21 days of age. Thereafter, a 70 F house temperature is ideal but can vary down to 55 F or up to 90 F. In hot weather, fans may be needed to blow cooling air over the birds. If the shelter is tightly enclosed, an exhaust fan run on a timer (so many minutes out of ten) may be needed to remove CO<sub>2</sub>, ammonia, and other waste gases. Litter moisture is the most useful guideline as to how to ventilate and heat a house. If litter sticks together when squeezed in the hand, it is too moist.

#### **Environment Requirements – Light**

Light is desired to give the pullets and layers greater visibility of food and water. Also, light is used to control the reproductive cycles of the birds. Pullets are kept on 22 hours of day length during the first week then can be dropped to a 14-hour day until maturity. A simple household lamp timer can be used to control the day length. At maturity, usually around 16 to 18 weeks of age, depending on weight gains and strain of bird, the day length is increased at the rate of 30 minutes per week until a final day length of 16 to 17 hours is reached.

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**GUIDELINES FOR POULTRY DURING DISASTERS**

As egg-type birds are light sensitive, a low intensity light can be used giving approximately 0.2 to 0.3 foot candles at the feeder trough.

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**GUIDELINES FOR POULTRY DURING DISASTERS**

**GUIDELINES FOR COMMERCIAL TURKEYS DURING DISASTERS**

**Background**

Turkeys in general are relatively resistant to environmental diversity. Poults (day-old to 4 weeks), being the most susceptible to adverse environmental conditions, should receive first priority in case of a disaster and be placed in a new facility within 24 hours after the disaster. If birds are out in the open, temporary arrangements should be made for penning the birds and a means of reducing wind and rain exposure if at all possible.

**Behavior During a Disaster Event**

Turkeys are, by nature, very curious and inquisitive animals. If humans are in their environment, they will flock to them and follow them, but shy away from being handled. Several people working together can move small groups of birds by “herding” them, waving plastic bags to steer the birds. This technique is more efficient than trying to catch individual birds. If individual birds need to be carried, they should be carried by their legs, both legs in one hand, upside down.

**Care of Turkeys After the Disaster**

**Poults (0 – 4 weeks of age)**

Poults should be provided with shelter from the elements or, preferably, a temporary housing facility. Transport of poults to the temporary housing facility can be by boxes such as egg cases with air holes large enough to allow air movement but not so large as to allow the poults to escape. The temporary housing will need some sort of bedding. Shavings, rice hulls, straw are some commonly used bedding but anything absorbent will do.

**Adult Birds (> 4 weeks of age)**

Older turkeys can be temporarily penned outdoors using chicken wire and fence posts. However, this is only temporary as they are at risk from predatory animals. Turkeys will generally not fly over fencing, especially if adequate space, flock mates, feed, and water are available within the enclosure. A shelter that will provide the birds protection from wind, rain, predators, and the sun is preferred. Plastic or plywood barriers outside a fence in prevailing winds may provide temporary windbreaks. Once the birds are put in a temporary housing, some sort of litter, such as shavings, straw, or rice hulls, will be needed for bedding on the floor.

**Euthanasia**

Euthanasia may be needed if adequate shelter cannot be provided or if the birds are sufficiently injured to require a humane death. The two most commonly used, humane methods of euthanasia are cervical dislocation or CO<sub>2</sub> asphyxiation. Cervical dislocation can be done without any special equipment but is only appropriate for small numbers of animals (<50). CO<sub>2</sub> asphyxiation requires a CO<sub>2</sub> tank with a hose and an enclosed area such as a tarp laid on top of the birds with the edges buried to hold the tarp to the ground.

## **TAB F SECTION 17**

### **GUIDELINES FOR POULTRY DURING DISASTERS**

#### **Environment Requirements – Feed**

If at all possible, obtain complete rations that contain the needed protein, energy, calcium phosphorus, sodium, trace minerals, and vitamins needed for growth. Young poults are normally fed a 28 % protein, 1.5 % calcium and .8% available phosphorus Starter ration to 9 weeks of age. Growing turkeys are fed a 24 % protein, 1.5 % calcium and .7% available phosphorus ration from 9 weeks to 12 weeks of age for hens and 14 weeks of age for toms. Finishing hen turkeys are fed an 18% protein, 1.0% calcium, and .5% available phosphorus from 12 weeks to market. Finishing tom turkeys are fed 16% protein, 1.1% calcium, and .55% available phosphorus.

Approximate daily feed consumption per 100 birds at different ages is as follows: 1 week – .8 lbs. 9 weeks – 50 lbs. 12 weeks – 600 lbs. for hens and 1000 lbs for toms.

Any class of birds can temporarily be fed cracked grains for up to a week if there is nothing else available. Birds on all grain rations also will need an additional source of calcium and phosphorus. Top dress cracked corn with a calcium source, i.e. dicalcium phosphate or oyster shell, etc. Birds receiving only grain rations should also receive daily vitamin supplementation in the water using a commercially available, complete vitamin pack for water use according to the recommendations on the packet.

#### **Environment Requirements – Water**

Water should be supplied before feed. Clean, potable water in clean troughs or round founts are desired. Clean out the troughs daily. Maintaining a low water level (a 0.5 inch depth is enough) in the trough will reduce wastage and wet litter. If the potability of the water is questioned, Clorox can be added to give 1 to 2 ppm chlorine (2 tsp. per 5 gallons drinking water or, if using a medicator, add 1 ounce Clorox per gallon stock metered at 1 ounce per gallon of water). Water consumption increases dramatically as temperatures increase (Table 1).

Caution: Turkeys often have difficulty in locating the water if drinker type is changed. Therefore, be sure the birds have found the new water sources.

#### **Environment Requirements – Temperature/Ventilation**

Young poults need to be able to move within a range of temperatures from 80 to 90 F for the first 3 days and declining to a constant 75 F by 21 days of age. Thereafter, a 70 F house temperature is ideal but can vary down to 55 F or up to 90 F. If the temporary housing is tightly enclosed, fans may be needed to blow cooling air over the birds in hot weather and exhaust fans run on a timer (so many minutes out of ten) may be needed to remove CO<sub>2</sub>, ammonia, and other waste gases. Litter moisture is the most useful guideline as to how to ventilate and heat a house. If litter sticks together when squeezed in the hand, it is too moist. If the birds are penned outside, an area with shade (cloth or tarp) will be needed in the summer and an area to shield the birds from snow/freezing rain/blowing wind (wall, overhead cover) will be necessary.

#### **Health Risks for Turkeys**

Unsanitary conditions will result in a poor environment. If the bedding becomes wet, more should be added to provide clean, sanitary living conditions for the birds. Respiratory and diarrheal diseases are most likely increased under stressful conditions. Extremes of temperature and wind should be moderated as much as possible. Sick or injured turkeys should be humanely euthanized. Dead animals should be removed immediately to reduce cannibalism.



**TAB F SECTION 17**  
**GUIDELINES FOR POULTRY DURING DISASTERS**

**Goals**

- Remove turkeys from human environment to avoid stressing the animals.
- Provide emergency shelter and food for turkeys.
- Treat injured or sick animals, as resources are available.
- Humanely euthanize seriously injured or ill turkeys.
- Properly dispose of dead turkeys by burial, composting, or incineration.
- Return animals to rightful owners once owners are identified and are able to care for the turkeys properly.

<b>Table 1. Water Requirements per 1000 Turkeys</b>		
Weeks of Age	<b>50-70 F</b>	<b>95+ F</b>
1	10 Gallons	10 Gallons
5	60 Gallons	110 Gallons
10	155 Gallons	265 Gallons
15 +	215 Gallons	360 Gallons

<b>Table 2. Environmental Needs for Turkeys</b>			
Weeks of Age	Birds/6' Drinker	Birds/Feed Pan	Sq Ft/Bird Floor Space
0 – 6	200	25	1
6 – 12	150	60	2
13 – 17	150	60	3
17	150	60	4

# TAB F SECTION 18

## REPTILES – CRISIS MANAGEMENT PROTOCOLS

*By Kevin M. Wright, DVM  
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### **Background**

Reptiles are ectothermic vertebrates that rely on the temperature of the environment for regulation of their body temperature. As a rule, reptiles are solitary creatures but may aggregate in areas with appropriate environmental conditions. Reptiles tend to be secretive. They typically hide or flee to avoid interactions with human beings and other large vertebrates such as domestic dogs.

Many people have a phobia about reptiles, especially snakes, and even harmless reptiles may be perceived as a threat to the community if unaccounted for in the wake of a crisis. Some reptiles are truly dangerous to people, and can provoke even greater concern if they are not properly contained after a disaster. Reptiles that can inflict grievous bodily harm include, but are necessarily limited to, crocodylians (alligators, caimans, crocodiles, and gavials), large monitor lizards (e.g., water monitors, Komodo dragons, Nile monitors, and any other species or specimen in excess of 2 ft snout-vent length), large tegu lizards, large iguanas (green iguanas and rock iguanas), large constricting snakes (e.g., anacondas, reticulated pythons, Burmese pythons, African rock pythons, or any other species or specimens in excess of 8 ft SVL), venomous snakes (e.g., elapids, viperids, and rear-fanged colubrids) and large aquatic turtles (e.g., snapping turtles, alligator snapping turtles, softshell turtles).

### **Behavior During a Crisis**

Snakes, lizards and turtles are likely to leave their enclosures if a suitably sized opening occurs. Crocodylians are likely to remain in their enclosures unless a serious breach of the enclosure's perimeter has occurred, or conditions within the enclosure become intolerable.

### **Behavior After a Crisis**

Most escaped reptiles will seek cover immediately. The immediate path of an escaped reptile is unpredictable, but once a reptile has reached a suitable hiding spot it may remain there for a considerable length of time. For this reason, escaped reptiles are unlikely to be obvious in the immediate aftermath of a crisis.

Some reptiles become aggressive when approached, and some may attack human beings if they perceive that they are being confined. Normally placid specimens may become aggressive when removed from their normal environment, and each animal should be treated as if it is a "wild" specimen. Crocodylians are extremely dangerous due to their unpredictable nature, size, strength, and speed. Even small specimens can deliver substantial wounds if not handled properly. Monitors, tegu lizards and iguanas may attack and pursue a human if cornered, biting and whipping with their tails. All snakes are likely to strike and bite if provoked. Turtles will attempt to bite if picked up or handled.

Some crocodylians, such as the Cuban crocodile, are so aggressive that they may attack a human walking nearby. If crocodylians are at large, human workers should be alerted and told to stay at least 20 feet away from any crocodylians unless they are equipped and trained to recapture the animal. It is highly recommended that at least four trained people are present whenever recapture of a large crocodylian is attempted.

If dangerous reptiles are loose, it is highly recommended that human workers have a buddy system to ensure that assistance is immediately available if a dangerous reptile is encountered.

The recapture rate of small specimens is likely to be low, especially of snakes. Snakes and lizards are most likely to be encountered by workers removing debris from an area.

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### **REPTILES – CRISIS MANAGEMENT PROTOCOLS**

All snakes should be treated as venomous unless a positive identification can be made otherwise. Rakes, stump-rippers, tongs, or snake hooks should be used to turn over or pick up pieces of debris to reduce accidental contact with hidden reptiles.

Venomous snakes may strike without warning. Human workers should wear high leather boots and long pants if a venomous snake is suspected of being at large.

A bite from an unidentified snake is extremely serious because it cannot be treated appropriately unless the correct antivenom is known. It is imperative that any snake involved in a bite be identified. The snake should be secured by any safe means possible, up to and including killing the snake.

Aquatic specimens such as crocodilians, aquatic turtles, some snakes and lizards will seek out a body of water for refuge. It is extremely difficult to recapture most animals that reach rivers or other flowing bodies of water.

#### **Recapture of Reptiles**

If a dangerous reptile cannot be captured without inordinant risk to the human workers, it should be killed in as humane a manner as possible. The policy towards “harmless” nonindigenous species must be decided by the individual institution, but this author strongly supports efforts to reduce introductions of foreign animals. Therefore if a specimen cannot be recaptured, it should be killed.

Crocodilians – Crocodilians should be handled with extreme caution. Crocodilians can move extremely fast. In addition to a strong bite, a crocodilian may attack by whipping its tail. The tail is strong enough to knock down and stun a human. A deck brush or broom may be used to restrain a small crocodilian’s head or deflect blows from the tail. A standard approach for manual restraint of larger specimens is to lasso the crocodilian around the neck with two different ropes. A noose pole may be needed for proper placement of the lassos. Crocodilians typically roll and thrash when the first lasso tightens, and may slip the lasso off if it is not placed over the neck and one arm. Once two lassos are secured, the hold ropes are stretched tightly in opposite directions to restrict side-to-side movement of the animal. A third handler gains control of the head and jaws, and holds the jaws closed while a fourth handler wraps duct tape around the snout several times to immobilize the jaws. The eyes are then covered with a piece of cloth which is taped into place. Small crocodilians can be placed inside a large mailbag for transport. Some people prefer to take or tie the crocodilian to a length of board planking for restraint during transport. A corrugated metal sewer pipe is a better containment device of large crocodilians. Once the crocodilian has been secured with its eyes and jaws taped, the neck ropes are passed through the pipe and the animal is pulled forward into the pipe. Chemical restraint may be used to immobilize a crocodilian, and can be administered by dart gun or polo syringe. There are few drugs that are both commonly available and effective in crocodilians (succinylcholine can be used at 0.1 to 1.0 mg/kg IM), and all of the readily available chemicals are slow to take effect and have a low margin of safety. Appropriate equipment to provide respiratory support should be available if any chemical restraint is used.

Snakes and lizards – All snakes should be handled with extreme caution until they are identified by an expert as “harmless” or “non-venomous”. A snake hook should be used to maneuver the snake, and whenever possible to lift and direct the snake. Many snakes can be encouraged to enter a dark cloth bag or garbage can turned on its side. Smaller snakes may be placed in a pillowcase or suitably sized cloth bag. These snake bags should in turn be placed inside a solid containment device (e.g., wooden box, garbage can with its lid duct-taped into place). Mail bags, garbage cans and large dog transport kennels can be used to restrain larger snakes.

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**REPTILES – CRISIS MANAGEMENT PROTOCOLS**

If a venomous snake or lizard cannot be captured and contained safely, it should be killed. All personnel attempting to recapture known venomous or unidentified snakes or lizards should be trained in venomous snakebite first aid.

Pinning a snake behind the neck to pick it up puts the handler at risk of a bite. It is important to remember that even “harmless” snakes (and lizards) may have components in their saliva that can evoke an anaphylactic response in humans, a potentially life-threatening allergic reaction. For this reason, all workers should be trained in recognition and treatment of anaphylactic shock, and each should have an Epi-Pen, ANA-Kit or other anaphylaxis treatment immediately available whenever snakes or lizards must be manually restrained.

Large lizards may be approached in the same manner as crocodylians (i.e., a noose pole and/or lasso), or can be manually grabbed about the neck by an experienced handler. A deck brush or broom may be used to restrain a specimen’s head or deflect blows from the tail. Mailbag or other sturdy cloth bags can be used as short term containment devices for large lizards, but transfer to sturdy container (e.g., garbage can with taped lid, dog transport kennel, or wooden box) is recommended.

Small lizards may be recaptured using a noose pole. A three to four foot length of waxed dental floss or monofilament line is tied to a six foot length of thin bamboo pole or other thin pole, and a slip knot is tied at the other end for the noose. Waxed dental floss makes an excellent noose line since it retains the shape of the loop. The lizard is cautiously approached until within reach of the noose pole, and then the noose is dangled and carefully maneuvered over the lizard’s head. A quick upward jerk on the pole should tighten the noose, and tension is kept on the noose until the lizard can be grabbed by hand. Many smaller lizards will shed their tail when captured, and some species have skin which tears when handled.

The two recognized species of venomous lizards, the gila monster and beaded lizard, are easily identified by the orange-pink and black or yellow and black patterns on their pebbled skin. Neither is likely to bite unless severely provoked, and neither species is dangerously venomous. It is best to use hooks to direct the movement of these lizards, and manual capture used only as a last resort.

Snakes and lizards can sometimes be trapped. Artificial refugia, such as large sheets of plywood, sheet metal, and other flat debris may be left in place and checked daily to capture any reptiles that may seek shelter there. Rodent glue boards placed along walls or exit points from buildings may catch some specimens. Stuck specimens can be removed by gently massaging mineral oil onto the board and the skin of the reptiles.

Turtles – Large turtles may bite if handled. A turtle should be held from the side of its shell with the hands placed far enough back on the shell to evade bites. Various traps can be built to capture aquatic turtles, and are described in detail in the readily available book, Peterson’s Field Guide to Reptiles and Amphibians of Eastern North America. Cloth bags or garbage cans are suitable short term holding containers for turtles.

**Crisis Care of Reptiles**

Allow reptiles access to clean potable water in a manner that encourages drinking. Shallow pans of water are suitable for most reptiles, but some lizards and snakes will only drink when spray-misted or showered with droplets of water. Crocodylians and aquatic turtles should be provided with enough water so that they can partially or fully submerge, but there should be easy access out of the pool so that they do not drown.

The temperature range should be between 80 and 85°F during the day for most reptiles. A hotter basking spot (around 95°F) should be provided during the day if possible. Nighttime temperatures should not drop below 75°F for most species.

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**REPTILES – CRISIS MANAGEMENT PROTOCOLS**

Small insectivorous lizards and snakes need to be feed two to three times a week. If food is not readily available, euthanasia of these specimens may be required.

Herbivorous reptiles should be offered produce or fresh grass clippings or browse three times weekly, but they may survive for several weeks on an inappropriate diet.

Most other reptiles can go without food for several days to several weeks without incurring serious health problems.

Most reptiles are solitary and should be housed individually. Cannibalism may occur if small individuals are housed with larger individuals.

**Goals During and After a Crisis**

- 1) Provide for the safety of human workers and human inhabitants of the surrounding area.
- 2) Contain, capture or destroy escaped dangerous animals immediately.
- 3) Attend injured or ill animals as circumstances afford and resources allow.
- 4) Humanely destroy moribund animals, animals with intractable painful injuries, and dangerous animals that cannot be housed safely.
- 5) Place animals into suitable conditions under the care of responsible herpetoculturists as quickly as possible. Zoos, regional herpetological societies and universities in nearby unaffected areas are possible sources of temporary housing. Humane shelters are likely to be overwhelmed with domestic pets and usually do not have the equipment or trained personnel to maintain reptiles.

**Closing Comments**

Each institution has a unique collection of reptiles. It is essential to maintain accurate inventories of animals so that all specimens can be accounted for during a crisis. It is important to identify “dangerous” reptiles as such, and to disseminate that information within the institution so that all staff are prepared should they encounter a “dangerous” reptile during a crisis. Each institution should formulate response plans prior to a crisis, and determine their policy toward escaped reptiles.

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**TAB F SECTION 19**  
**Summary of the National Contingency Plan**  
**for Response to Unusual Marine Mammal Mortality Events**

(Wilkinson, Dean M., 1996, U.S. Dept. of Commerce, NOAA Tech. Memo, NMFS-OPR-9, 118p.)

The Marine Mammal Health and Stranding Response Act required the preparation of a contingency plan for response to unusual marine mammal mortality events. The contingency plan includes all coastal regions of the United States and the adjacent waters under United States jurisdiction. It addresses all species of marine mammals. With the exceptions noted below, the National Marine Fisheries Service (NMFS) is primarily responsible for response to mortality events involving cetaceans and pinnipeds (excluding walrus), and the U.S. Fish and Wildlife Service (FWS) is primarily responsible for sea otters, walrus, manatees, and polar bears. Depending on the circumstances, other units of government may have responsibilities. As an example, if a mortality event should create a serious public health problem, a variety of other local, state, and Federal agencies would have responsibilities. Because approaches for determining the cause of an event—collecting, preserving, and analyzing tissues—are likely to be similar among the range of species, the contingency plan provides a general outline, with species differences highlighted only when appropriate. The species-specific approach is most appropriate for rehabilitating live animals (Dierauf, 1990). For example, the physical facilities needed to care for pinnipeds are less complicated than those needed for cetaceans or polar bears.

**Unusual Mortality Events**

The Act characterizes an unusual mortality event as having the following characteristics: (1) it is unexpected; (2) it involves a significant die-off of any marine mammal population; and (3) it demands an immediate response. In addition to the obvious circumstances involving significant numbers of marine mammal deaths within a short period of time, there are two other instances when a response would be justified—when there is a mass stranding of unusual species of cetaceans and when even small numbers of a severely endangered marine mammal species appear to be affected. Although steady declines of a population over time warrant investigation, such occurrences are part of each agency's more general charge.

Factors that can cause an unusual mortality event include, but are not limited to:

1. Impacts including toxicity and fouling caused by oil discharges or chemical releases or toxic runoff of anthropogenic chemicals or other impacts, such as immunological dysfunction, caused by chronic exposure to pollutants that may become apparent in an acute mortality event;
2. Naturally occurring biotoxins;
3. Changes in environmental conditions such as El Niño or a sudden change in water temperature;
4. Parasitic or infectious disease agents; or
5. Mortalities caused by direct human interactions such as bycatch in fisheries or deliberate taking.

The contingency plan includes provisions for detecting and responding to each of these conditions. The response priorities will vary depending on whether or not the cause of the event is known, the number and species of animals involved, or if the event poses a threat to public health and safety.

**TAB F SECTION 19**  
**Summary of the National Contingency Plan**  
**for Response to Unusual Marine Mammal Mortality Events**

To respond to marine mammal strandings, networks of volunteers have been authorized by NMFS for cetaceans and pinnipeds and by FWS for manatees and sea otters. Members of the Stranding Networks are issued Letters of Authorization by the NMFS Regional Offices. NMFS Regions are listed in Addendum A. Most of the volunteers are professionals with marine mammal experience. They may be researchers affiliated with State agencies or universities, individuals associated with public display facilities, or individuals with animal rehabilitation experience. The members of the Networks rehabilitate sick and injured marine mammals, and collect basic biological data and tissues from dead marine mammals.

Network members are the first line of response to any marine mammal strandings. They have capabilities to treat animals and collect tissues for analyses. Therefore, they are likely to be heavily involved in any response to an unusual mortality event.

**Objectives of Contingency Plan**

The purpose of the contingency plan is to outline actions that can/should be taken to:

1. Protect the public health and welfare;
2. Investigate and identify the cause(s) of a mortality event;
3. Minimize or mitigate the effects of a mortality event on the affected population(s) and provide for the rehabilitation of individual animals; and
4. Determine the impact of a mortality event on the affected population(s).

Achieving these goals is the responsibility of the Onsite Coordinator. The Onsite Coordinator will be either a National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Service (FWS) Regional Director or an individual designated by the Regional Director. The primary purpose of the plan is to provide a blueprint to the Onsite Coordinator for the response to mortality events. It provides guidance to Regional Directors of NMFS and FWS on: steps to be taken to protect the public health and welfare; advance planning for such events; steps to identify the cause(s) of an event; and measures to determine the biological significance of an event. The plan contains lists of contacts for response, facilities that are capable of holding live animals, tissue collection and preparation, and analyses that may be necessary to determine causes of death and the effects that physical, chemical, or biological factors may have on marine mammal populations.

The plan is divided into several sections corresponding to different activities that may be required in a response to an unusual mortality event. Because public health and welfare is of paramount concern in any mortality event, a short section on this issue precedes all other substantive sections.

The success of a response may be dependent on having necessary equipment in place, well trained personnel, and general protocols for tissue collection. In preparation for unusual marine mammal mortality events, materials and information need to be generated in advance. The plan provides

**TAB F SECTION 19**  
**Summary of the National Contingency Plan**  
**for Response to Unusual Marine Mammal Mortality Events**

guidelines for doing that. Other sections deal with procedures in responding to an unusual mortality event. It should be noted that under certain circumstances, another entity may be responsible for response. In the case of a known oil discharge or release of a hazardous substance, either the Coast Guard or the Environmental Protection Agency will assume responsibility for a response. When the reason for a mortality event is determined to be a direct human interaction, e.g., incidental mortality in fisheries or animals being deliberately killed, the appropriate actions should be taken by either the management or enforcement sections of the two agencies and are outside the context of this plan.

Another section details analyses that might be required, lists individuals with the skills necessary to conduct necropsies and collect tissues for detailed analysis, and locations where specific analyses may be performed. Although additional analyses may be required depending on the nature of the event, basic information is contained on the following: blood from live animals; histopathology; life history; biotoxins; heavy metals/organic contaminants; and virology/bacteriology/mycology.

There are special circumstances that may require additional actions such as the possibility of litigation; live capture to gain information not available from stranded animals; requests from independent researchers for materials; and mass strandings. Information is provided for dealing with these situations.

**Discharges of Oil and Hazardous Chemicals**

There is one type of unusual mortality event during which procedures laid out in the Act including responsibilities, appointment of Onsite Coordinators, and funding will not be followed. Responses to oil discharges or releases of hazardous substances are governed by either the Clean Water Act, as amended, the Oil Pollution Act of 1990, or the Comprehensive Environmental Response Compensation and Liability Act. The U.S. Coast Guard has primary responsibility for response to spills and releases within or threatening the coastal zone.

Many of the resources identified for response under the Marine Mammal Health and Stranding Response Act also will be utilized in spill emergencies. An effort has been made to help those developing regional and state oil spill contingency plans to identify those individuals and facilities that can provide treatment for impacted marine mammals and collect tissues for analyses. In the northeast, California, and Alaska, oil spill response procedures and personnel to be utilized closely parallel those set out in the contingency plan.

There are nine Coast Guard Districts (<http://www.uscg.mil>) in two marine areas. These are:

**Atlantic Area**  
**Portsmouth, VA**  
**(757) 398-6287**

First Coast Guard District (<http://uscg.mil/d1>)  
(CT, ME, NH, NJ, MA, NY, RI, VT)  
Coast Guard Building  
408 Atlantic Avenue  
Boston, MA 02110-3350  
(617) 223-8480



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Fifth Coast Guard District (<http://www.uscg.mil/d5>)  
(DE, MD, NC, NJ, PA, VA)  
Federal Building  
431 Crawford St.  
Portsmouth, VA 23704-5004  
(757) 398-6287

Seventh Coast Guard District (<http://www.uscg.mil/d7>)  
(GA, Peninsular FL, SC)  
909 SE First Avenue  
Brickell Plaza Federal Bldg.  
Miami, FL 33131-3050  
(305) 536-5654

Eighth Coast Guard District (<http://www.uscg.mil/d8>)  
(AL, AR, CO, FL Panhandle, IA, IN, KY, KS, LA, MO, MS, ND, NE, NM, OH, OK, TN, TX, SD, WI, WY, WV)  
Hale Boggs Federal Bldg.  
501 Magazine St.  
New Orleans, LA 70130-3396  
(504) 589-6298

Ninth Coastal Guard District (<http://www.uscg.mil/d9>)  
(IL, IN, MI, MN, OH, PA, NY, WI)  
1240 East 9<sup>th</sup> St.  
Cleveland, OH 44199-2060  
(216) 902-6001

**Pacific Area**  
**Alameda, CA**  
**(510) 437-3324/25**

Eleventh Coast Guard District (<http://www.uscg.mil/d11>)  
(AZ, CA, NV, UT)  
Coast Guard Island  
Alameda, CA 94501-5100  
(510) 437-3324/25

Thirteenth Coast Guard District (<http://www.uscg.mil/d13>)  
(ID, MT, OR, WA)  
Jackson Federal Bldg.  
915 Second Ave.  
Seattle, WA 98174-1067  
(206) 220-7237

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Fourteenth Coast Guard District (<http://www.uscg.mil/d14>)  
(Hawaii)  
Prince Kalaniana'ole Federal Bldg.  
300 Ala Moana Bldg., 9<sup>th</sup> Floor  
Honolulu, HI 96850-4982  
(808) 541-2121

Seventeenth Coast Guard District (<http://www.uscg.mil/d17>)  
(Alaska)  
PO Box 25517  
Juneau, AK 99802-5517  
(907) 463-2065

**RESPONSE**

The basic steps in responding to an event include:

1. Based on specific criteria, the Working Group on Unusual Marine Mammal Mortality Events is responsible for determining when an unusual mortality event is occurring.
2. When notified by the Working Group that an unusual mortality event is occurring, the Assistant Administrator for Fisheries or, when species under FWS jurisdiction are involved, the Director of the U.S. Fish and Wildlife Service will appoint the appropriate Regional Director as Onsite Coordinator. The Regional Director may designate another qualified individual to serve in this capacity.
3. To accelerate response, the Onsite Coordinator will provide notification and instruction to:
  - a. Stranding Network members;
  - b. Federal beachfront agencies;
  - c. State wildlife resource agencies;
  - d. Coast Guard District Headquarters;
  - e. Public health agencies (if necessary);
  - f. Appropriate local governmental units;
  - g. NMFS, FWS, and National Biological Service laboratories;
  - h. Native American groups (as appropriate).
4. The Onsite Coordinator shall assess basic needs for response including: adequacy of response network in terms of coverage, ability to conduct necropsies, and ability to collect tissue samples; available equipment; and, if live animals are involved in the mortality event, the capacity and capabilities of rehabilitation facilities. If any of these is less than adequate, steps shall be taken to supplement existing resources.

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5. If the cause(s) of an event is known, the Onsite Coordinator will make provisions for:
  - a. Adequate care of live animals;
  - b. Collection, preparation, analysis, and archiving of tissues and voucher specimens. If litigation is possible, provisions for maintaining a proper chain of custody are necessary;
  - c. Assessing the impact of the mortality event on wild populations; and
  - d. If feasible, put mitigation measures in place.
  
6. If the cause(s) of an event is unknown, all of the previous steps are necessary. In addition, in consultation with the Working Group, the Onsite Coordinator will put investigative measures in place including:
  - a. Making provision for aerial surveys, if necessary, to locate fresh carcasses and/or determine the extent of a mortality event;
  - b. Defining specific tissue collection and preparation protocols. Making arrangements for specific analyses to be performed and for shipment of samples to facilities performing analyses;
  - c. Compiling and analyzing results.

**PUBLIC HEALTH AND WELFARE**

The first priority in responding to an Unusual Marine Mammal Mortality Event is public health and welfare. There are several ways in which a marine mammal mortality event could have an impact on public health or safety.

**Safety and Hygienic Precautions**

Although not common, if basic safety and hygienic precautions are not observed, stranded animals can cause physical injury or transmit disease to humans. Participants in a response to oil discharges or releases of hazardous chemicals are required to have OSHA training. Most of the individuals responding to mortality events under the Marine Mammal Health and Stranding Response Act will have previous experience in handling stranded animals. If less experienced personnel are utilized, the Onsite Coordinator will ensure that they are informed of safety measures. When the cause of an event is unknown, extra precautions will be taken.

**Carcass Disposal**

Carcasses of dead animals could be a source of either pathogens or toxins that might affect wildlife and domestic animals. Steps should be taken to avoid such possibilities, including proper isolation and disposal of carcasses. In normal circumstances, carcasses sometimes are left on the beach to decompose naturally. If there is the possibility of a transmissible pathogen or serious toxin, unused portions of carcasses should be buried, taken to a sanitary landfill, or fully destroyed by incineration. If carcasses are buried, they should be in an area where fluids will not leach into groundwater and deep enough so that they will not be dug up by scavengers or uncovered by wave action.

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**LIVE ANIMALS**

The initial decision involving live stranded animals takes place on the beach. An expert assessment of an animal's condition is necessary before making a decision to take an animal in for rehabilitation, to euthanize it, or to treat it and release it on site. With the exception of mass strandings, the third of these options will be inappropriate in most instances. Such decisions shall only be made by competent professionals.

**Available Facilities and Requirements**

A list of facilities with experience in treating stranded marine mammals is included in the plan. The procedures in the contingency plan are predicated on the assumption that those with previous experience in treating marine mammals are most competent to treat live animals.

Precautions should be taken to ensure that animals being treated are quarantined from healthy captive animals and that personnel take measures to avoid cross-contamination within the facility.

Although some facilities can accommodate relatively large numbers of pinnipeds and/or sea otters, the physical facility requirements for maintenance of cetaceans are such that only limited numbers of small cetaceans can be treated during a mortality event. Cetaceans and manatees require, at a minimum, pools large enough to accommodate them. Pools should be on a separate water system so that disease cannot be spread to healthy animals within the facility. In the case of an emergency, sea otters and pinnipeds are not totally dependent on pools, and in past epizootics, pinnipeds have been accommodated in dry areas with access to fresh drinking water and saltwater baths. Even in such circumstances facilities must have the ability to isolate animals from display animals and terrestrial animals that may either transmit or be exposed to pathogens. The facilities that are authorized to provide treatment for marine mammals and have veterinary services (except for those designated as short-term) are listed in the plan.

The list has been provided to the agencies responsible for developing oil spill contingency plans. The Northeast, California, Washington, Oregon, and Alaska have provisions in oil spill contingency plans for involving Stranding Network members in the recovery of carcasses and the rescue and rehabilitation of live animals. In Florida, provisions are in place for manatees, but no arrangements have been made for cetaceans in any of the southeastern states.

Each facility has resources for activities such as live animal retrieval, medical diagnostic analyses, and food and pharmaceutical provisions.

It should be recognized, however, that even under the best of circumstances, a facility's physical capacity for treatment of live animals is limited. In the case of cetaceans, few facilities can manage more than an animal or tow at a time. Even in the case of pinnipeds, facilities can be filled to capacity in a relatively short time. Therefore, attention should be given to methods by which capacity can be expanded in the event of an epizootic. In the case of cetaceans, live stranded animals have occasionally been accommodated in open ocean net pens. In the case of pinnipeds, manatees, and sea otters, advance procurement of materials for temporary pools and fencing will help expand capacity.

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**Release Conditions**

To safeguard wild populations of marine mammals, no rehabilitated animals will be released that do not meet the guidelines for release of rehabilitated animals under § 402(b) of the Marine Mammal Protection Act (MMPA). In addition, the Working Group will be consulted to determine if there should be event-specific release standards. The release standards should give priority to the health of the wild population over the health of an individual animal. Provision should be made to monitor at least a representative subset animals to determine if they survive and resume being functional components of the affected population.

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**MANATEES**

A toll-free number has been set up in Florida to report manatee strandings. It is 1-800-342-5367.

The Manatee Coordinator for U.S. Fish and Wildlife Service is in the Jacksonville, FL, office, (904) 232-2580. Other FWS offices in the Region are:

Endangered Species Division  
U.S. Fish and Wildlife Service  
1875 Century Blvd, Suite 200  
Atlanta, GA 30345  
(404) 679-4000

Chassahowitzka National Wildlife Refuge  
1502 SE Kings Bay Drive  
Crystal River, FL 34429  
(352) 563-2088

**SEA OTTERS IN CALIFORNIA**

The Sea Otter Hotline Number is (831) 648-4829. The U.S. Fish and Wildlife Office in Ventura, CA, is responsible for administration, (805) 644-1766.

**Network Members—Live Sea Otters**

Marine Mammal Center (Sausalito) (415) 289-7325

Monterey Bay Aquarium (Monterey) (831) 648-4829 or (831) 649-4840

Sea World of California (San Diego) (619) 226-3830 or (619) 222-6362

**POLAR BEARS, SEA OTTERS, AND WALRUS IN ALASKA**

Marine Mammals Management  
U.S. Fish and Wildlife Service  
1011 East Tudor Road  
Anchorage, AK 99503-6199  
(907) 786-3800

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**NMFS REGIONAL STRANDING COORDINATORS**

Northeast (Maine, Massachusetts, Connecticut, New Hampshire, New York, New Jersey, Delaware, Maryland, Rhode Island, Virginia)

NMFS Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543

Phone: (508) 495-2090

E-mail: [dana.hartley@noaa.gov](mailto:dana.hartley@noaa.gov)

Southeast (North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas)

NMFS Southeast Fisheries Science Center, 75 Virginia Beach Dr., Miami, FL 33149

Phone: (306) 361-4586

E-mail: [blair.mase@noaa.gov](mailto:blair.mase@noaa.gov)

Southwest (California)

NMFS Regional Office, 501 West Ocean Blvd., Long Beach, CA 90802

Phone: (562) 980-4017

E-mail: [joe.cordaro@noaa.gov](mailto:joe.cordaro@noaa.gov)

Northwest (Oregon, Washington)

NMFS Regional Office, 7600 Sand Point Way, NE, Bldg 1, Seattle, WA 98115-0070

Phone: (206) 526-6733

E-mail: [brent.norberg@noaa.gov](mailto:brent.norberg@noaa.gov)

Alaska NMFS Regional Office, PO Box 21668, Juneau, AK 99802-1668

Phone: (907) 586-7235

E-mail: [kaja.brix@noaa.gov](mailto:kaja.brix@noaa.gov)

Hawaii NMFS Pacific Area Islands Office, 1601 Kapiolani Blvd, Ste 1110, Honolulu, HI 96814-4700

Phone: (808) 973-2935

E-mail: [margaret.dupree@noaa.gov](mailto:margaret.dupree@noaa.gov)

For more information about the National Contingency Plan for Response to Unusual Marine Mammal Mortality Events, contact the:

National Marine Fisheries Service, NOAA

Office of Protected Resources

1315 East-West Highway, 13<sup>th</sup> Floor

Silver Spring, MD 20910

Phone: (301) 713-2322; Toll-free: (800) 494-2989

Fax: (301) 713-0376

**TAB F SECTION 20**  
**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

Information from the 2000 Report of the AVMA Panel on Euthanasia  
Excerpted from the *Journal of the American Veterinary Medical Association*,  
Vol. 218, No. 5, Pages 669-696 ©American Veterinary Medical Association, 2001. All Rights Reserved.

**INTRODUCTION**

The practice of veterinary medicine is complex and involves diverse animal species. Whenever possible, a veterinarian experienced with the species in question should be consulted when selecting the method of euthanasia, particularly when little species-specific euthanasia research has been done.

The recommendations in this report are intended to serve as guidelines for veterinarians who must then use professional judgment in applying them to the various settings where animals are to be euthanized.

In the context of this report, euthanasia is the act of inducing humane death in an animal. It is our responsibility as veterinarians and human beings to ensure that if an animal's life is to be taken, it is done with the highest degree of respect, and with an emphasis on making the death as painless and distress free as possible. Euthanasia techniques should result in rapid loss of consciousness followed by cardiac or respiratory arrest and the ultimate loss of brain function. In addition, the technique should minimize distress and anxiety experienced by the animal prior to loss of consciousness. The absence of pain and distress cannot always be achieved. This report attempts to balance the ideal of minimal pain and distress with the reality of the many environments in which euthanasia is performed.

It is imperative that death be verified after euthanasia and before disposal of the animal. An animal in deep narcosis following administration of an injectable or inhalant agent may appear dead, but might eventually recover. Death must be confirmed by examining the animal for cessation of vital signs, and consideration given to the animal species and method of euthanasia when determining the criteria for confirming death.

**GENERAL CONSIDERATIONS**

In evaluating methods of euthanasia, the 2000 AVMA panel on euthanasia used the following criteria: (1) ability to induce loss of consciousness and death without causing pain, distress, anxiety, or apprehension; (2) time required to induce loss of consciousness; (3) reliability; (4) safety of personnel; (5) irreversibility; (6) compatibility with requirement and purpose; (7) emotional effect on observers or operators; (8) compatibility with subsequent evaluation, examination, or use of tissue; (9) drug availability and human abuse potential; (10) compatibility with species, age, and health status; (11) ability to maintain equipment in proper working order; and (12) safety for predators/scavengers should the carcass be consumed.

**PHYSICAL METHODS**

Physical methods of euthanasia include captive bolt, gunshot, cervical dislocation, decapitation, electrocution, microwave irradiation, kill traps, thoracic compression, exsanguination, stunning, and pithing. When properly used by skilled personnel with well-maintained equipment, physical methods of euthanasia may result in less fear and anxiety and be more rapid, painless, humane, and practical than other forms of euthanasia. Exsanguination, stunning, and pithing are not recommended as a sole means of euthanasia, but should be considered adjuncts to other agents or methods.

Some consider physical methods of euthanasia aesthetically displeasing. There are occasions, however, when what is perceived as aesthetic and what is most humane are in conflict. Physical methods may be the most appropriate method for euthanasia and rapid relief of pain and suffering in certain situations. Personnel performing physical methods of euthanasia must be well trained and monitored for each type of physical technique performed. That person must also be sensitive to the aesthetic implications of the method and inform onlookers about what they should expect when possible.



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Since most physical methods involve trauma, there is inherent risk for animals and humans. Extreme care and caution should be used. Skill and experience of personnel is essential. If the method is not performed correctly, animals and personnel may be injured. Inexperienced persons should be trained by experienced persons and should practice on carcasses or anesthetized animals to be euthanized until they are proficient in performing the method properly and humanely. When done appropriately, the panel considers most physical methods conditionally acceptable for euthanasia.

### **Penetrating captive bolt**

A penetrating captive bolt is used for euthanasia of ruminants, horses, swine, rabbits, and dogs.<sup>8</sup> Its mode of action is concussion and trauma to the cerebral hemisphere and brainstem.<sup>9,10</sup> Captive bolt guns are powered by gunpowder or compressed air and must provide sufficient energy to penetrate the skull of the species on which they are being used.<sup>9</sup> Adequate restraint is important to ensure proper placement of the captive bolt. A cerebral hemisphere and the brainstem must be sufficiently disrupted by the projectile to induce sudden loss of consciousness and subsequent death. Accurate placement of captive bolts for various species has been described.<sup>9-12</sup> A multiple projectile has been suggested as a more effective technique, especially for large cattle.<sup>9</sup>

A nonpenetrating captive bolt only stuns animals and should not be used as a sole means of euthanasia.

*Advantage*—The penetrating captive bolt is an effective method of euthanasia for use on the farm when use of drugs is inappropriate.

*Disadvantages*—(1) It is aesthetically displeasing. (2) Death may not occur if equipment is not maintained and used properly.

*Recommendations*—Use of the penetrating captive bolt is an acceptable and practical method of euthanasia for horses, ruminants, and swine. It is conditionally acceptable in other appropriate species. The nonpenetrating captive bolt must not be used as a sole method of euthanasia.

### **Gunshot**

A properly placed gunshot can cause immediate insensibility and humane death. In some circumstances, a gunshot may be the only practical method of euthanasia. Shooting should only be performed by highly skilled personnel trained in the use of firearms and only in jurisdictions that allow for legal firearm use. Personnel, public, and nearby animal safety should be considered. The procedure should be performed outdoors and away from public access.

For use of a gunshot to the head as a method of euthanasia in captive animals, the firearm should be aimed so that the projectile enters the brain, causing instant loss of consciousness.<sup>3,12-14</sup> This must take into account differences in brain position and skull conformation between species, as well as the energy requirement for skull bone and sinus penetration.<sup>9,15</sup> Accurate targeting for a gunshot to the head in various species has been described.<sup>14,16-19</sup> For wildlife and other freely roaming animals, the preferred target area should be the head. The appropriate firearm should be selected for the situation, with the goal being penetration and destruction of brain tissue without emergence from the contralateral side of the head.<sup>20</sup> A gunshot to the heart or neck does not immediately render animals unconscious and thus is not considered to meet the panel's definition of euthanasia.<sup>21</sup>

*Advantages*—(1) Loss of consciousness is instantaneous if the projectile destroys most of the brain. (2) Given the need to minimize stress induced by handling and human contact, gunshot may at times be the most practical and logical method of euthanasia of wild or free-ranging species.

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*Disadvantages*—(1) Gunshot may be dangerous to personnel. (2) It is aesthetically unpleasant. (3) Under field conditions, it may be difficult to hit the vital target area. (4) Brain tissue may not be able to be examined for evidence of rabies infection or chronic wasting disease when the head is targeted.

*Recommendations*—When other methods cannot be used, an accurately delivered gunshot is a conditionally acceptable method of euthanasia.<sup>14,22-25</sup> When an animal can be appropriately restrained, the penetrating captive bolt is preferred to a gunshot. Prior to shooting, animals accustomed to the presence of humans should be treated in a calm and reassuring manner to minimize anxiety. In the case of wild animals, gunshots should be delivered with the least amount of prior human contact necessary. Gunshot should not be used for routine euthanasia of animals in animal control situations, such as municipal pounds or shelters.

### **Cervical dislocation**

Cervical dislocation is a technique that has been used for many years and, when performed by well-trained individuals, appears to be humane. However, there are few scientific studies to confirm this observation. This technique is used to euthanize poultry, other small birds, mice, and immature rats and rabbits. For mice and rats, the thumb and index finger are placed on either side of the neck at the base of the skull or, alternatively, a rod is pressed at the base of the skull. With the other hand, the base of the tail or the hind limbs are quickly pulled, causing separation of the cervical vertebrae from the skull. For immature rabbits, the head is held in one hand and the hind limbs in the other. The animal is stretched and the neck is hyperextended and dorsally twisted to separate the first cervical vertebra from the skull.<sup>4,11</sup> For poultry, cervical dislocation by stretching is a common method for mass euthanasia, but loss of consciousness may not be instantaneous.<sup>32</sup>

Data suggest that electrical activity in the brain persists for 13 seconds following cervical dislocation,<sup>26</sup> and unlike decapitation, rapid exsanguination does not contribute to loss of consciousness.<sup>27,28</sup>

*Advantages*—(1) Cervical dislocation is a technique that may induce rapid loss of consciousness.<sup>6,26</sup> (2) It does not chemically contaminate tissue. (3) It is rapidly accomplished.

*Disadvantages*—(1) Cervical dislocation may be aesthetically displeasing to personnel. (2) Cervical dislocation requires mastering technical skills to ensure loss of consciousness is rapidly induced. (3) Its use is limited to poultry, other small birds, mice, and immature rats and rabbits.

*Recommendations*—Manual cervical dislocation is a humane technique for euthanasia of poultry, other small birds, mice, rats weighing < 200 g, and rabbits weighing < 1 kg when performed by individuals with a demonstrated high degree of technical proficiency. In lieu of demonstrated technical competency, animals must be sedated or anesthetized prior to cervical dislocation. The need for technical competency is greater in heavy rats and rabbits, in which the large muscle mass in the cervical region makes manual cervical dislocation physically more difficult.<sup>29</sup>

Those responsible for the use of this technique must ensure that personnel performing cervical dislocation techniques have been properly trained and consistently apply it humanely and effectively.

### **Decapitation**

Decapitation can be used to euthanize rodents and small rabbits. It provides a means to recover tissues and body fluids that are chemically uncontaminated. It also provides a means of obtaining anatomically undamaged brain tissue for study.<sup>30</sup>

Although it has been demonstrated that electrical activity in the brain persists for 13 to 14 seconds following decapitation,<sup>31</sup> more recent studies and reports indicate that this activity does not infer the ability to perceive pain, and in fact conclude that loss of consciousness develops rapidly.<sup>26-28</sup>

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Guillotines that are designed to accomplish decapitation in adult rodents and small rabbits in a uniformly instantaneous manner are commercially available. Guillotines are not commercially available for neonatal rodents, but sharp blades can be used for this purpose.

*Advantages*—(1) Decapitation is a technique that appears to induce rapid loss of consciousness.<sup>26-28</sup> (2) It does not chemically contaminate tissues. (3) It is rapidly accomplished.

*Disadvantages*—(1) Handling and restraint required to perform this technique may be distressful to animals.<sup>5</sup> (2) The interpretation of the presence of electrical activity in the brain following decapitation has created controversy and its importance may still be open to debate.<sup>26-28,31</sup> (3) Personnel performing this technique should recognize the inherent danger of the guillotine and take adequate precautions to prevent personal injury. (4) Decapitation may be aesthetically displeasing to personnel performing or observing the technique.

*Recommendations*—The equipment used to perform decapitation should be maintained in good working order and serviced on a regular basis to ensure sharpness of blades. The use of plastic cones to restrain animals appears to reduce distress from handling, minimizes the chance of injury to personnel, and improves positioning of the animal in the guillotine.

Those responsible for the use of this technique must ensure that personnel who perform decapitation techniques have been properly trained to do so.

### SPECIAL CONSIDERATIONS

#### **Equine euthanasia**

Pentobarbital or a pentobarbital combination is the best choice for equine euthanasia. Because a large volume of solution must be injected, use of an intravenous catheter placed in the jugular vein will facilitate the procedure. To facilitate catheterization of an excitable or fractious animal, a tranquilizer such as acepromazine, or an alpha-2 adrenergic agonist can be administered, but these drugs may prolong time to loss of consciousness because of their effect on circulation and may result in varying degrees of muscular activity and agonal gasping. Opioid agonists or agonist/antagonists in conjunction with alpha-2 adrenergic agonists may further facilitate restraint.

In certain emergency circumstances, it may be difficult to restrain a dangerous horse or other large animal for intravenous injection. The animal might cause injury to itself or to bystanders before a sedative could take effect. In such cases, the animal can be given a neuromuscular blocking agent such as succinylcholine, but the animal must be euthanatized with an appropriate technique as soon as the animal can be controlled. Succinylcholine alone or without sufficient anesthetic must not be used for euthanasia.

Physical methods, including gunshot, are considered conditionally acceptable techniques for equine euthanasia. The penetrating captive bolt is acceptable with appropriate restraint.

#### **Animals intended for human or animal food**

In euthanasia of animals intended for human or animal food, chemical agents that result in tissue residues cannot be used, unless they are approved by the US Food and Drug Administration.<sup>33</sup> Carbon dioxide is the only chemical currently used for euthanasia of food animals (primarily swine) that does not result in tissue residues. Physical techniques are commonly used for this reason. Carcasses of animals euthanatized by barbituric acid derivatives or other chemical agents may contain potentially harmful residues. These carcasses should be disposed of in a manner that will prevent them from being consumed by human beings or animals.

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Selection of a proper euthanasia technique for free-ranging wildlife must take into account the possibility of consumption of the carcass of the euthanatized animal by nontarget predatory or scavenger species. Numerous cases of toxicosis and death attributable to ingestion of pharmaceutically contaminated carcasses in predators and scavengers have been reported.<sup>7</sup> Proper carcass disposal must be a part of any euthanasia procedure under free-range conditions where there is potential for consumption toxicity. When carcasses are to be left in the field, a gunshot to the head, penetrating captive bolt, or injectable agents that are nontoxic (potassium chloride in combination with a nontoxic general anesthetic) should be used so that the potential for scavenger or predator toxicity is lessened.

### **Euthanasia of nonconventional species: zoo, wild, aquatic, and ectothermic animals**

Compared with objective information on companion, farm, and laboratory animals, euthanasia of species such as zoo, wild, aquatic, and ectothermic animals has been studied less, and guidelines are more limited. Irrespective of the unique or unusual features of some species, whenever it becomes necessary to euthanatize an animal, death must be induced as painlessly and quickly as possible.

When selecting a means of euthanasia for these species, factors and criteria in addition to those previously discussed must be considered. The means selected will depend on the species, size, safety aspects, location of the animals to be euthanatized, and experience of personnel. Whether the animal to be euthanatized is in the wild, in captivity, or free-roaming are major considerations. Anatomic differences must be considered. For example, amphibians, fish, reptiles, and marine mammals differ anatomically from domestic species. Veins may be difficult to locate. Some species have a carapace or other defensive anatomic adaptations (eg, quills, scales, spines). For physical methods, access to the central nervous system may be difficult because the brain may be small and difficult to locate by inexperienced persons.

### **ZOO ANIMALS**

For captive zoo mammals and birds with related domestic counterparts, many of the means described previously are appropriate. However, to minimize injury to persons or animals, additional precautions such as handling and physical or chemical restraint are important considerations.<sup>2</sup>

### **WILDLIFE**

For wild and feral animals, many recommended means of euthanasia for captive animals are not feasible. The panel recognizes there are situations involving free-ranging wildlife when euthanasia is not possible from the animal or human safety standpoint, and killing may be necessary. Conditions found in the field, although more challenging than those that are controlled, do not in any way reduce or minimize the ethical obligation of the responsible individual to reduce pain and distress to the greatest extent possible during the taking of an animal's life. Because euthanasia of wildlife is often performed by lay personnel in remote settings, guidelines are needed to assist veterinarians, wildlife biologists, and wildlife health professionals in developing humane protocols for euthanasia of wildlife.

In the case of free-ranging wildlife, personnel may not be trained in the proper use of remote anesthesia, proper delivery equipment may not be available, personnel may be working alone in remote areas where accidental exposure to potent anesthetic medications used in wildlife capture would present a risk to human safety, or approaching the animal within a practical darting distance may not be possible. In these cases, the only practical means of animal collection may be gunshot and kill trapping.<sup>1,34-38</sup> Under these conditions, specific methods chosen must be as age-, species-, or taxonomic/class-specific as possible. The firearm and ammunition should be appropriate for the species and purpose. Personnel should be sufficiently skilled to be accurate, and they should be experienced in the proper and safe use of firearms, complying with laws and regulations governing their possession and use.

Behavioral responses of wildlife or captive nontraditional species (zoo) in close human contact are very different from those of domestic animals. These animals are usually frightened and distressed. Thus,

**TAB F SECTION 20**  
**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

minimizing the amount, degree, and/or cognition of human contact during procedures that require handling is of utmost importance. Handling these animals often requires general anesthesia, which provides loss of consciousness and which relieves distress, anxiety, apprehension, and perception of pain. Even though the animal is under general anesthesia, minimizing auditory, visual, and tactile stimulation will help ensure the most stress-free euthanasia possible. With use of general anesthesia, there are more methods for euthanasia available.

A 2-stage euthanasia process involving general anesthesia, tranquilization, or use of analgesics, followed by intravenous injectable pharmaceuticals, although preferred, is often not practical. Injectable anesthetics are not always legally or readily available to those working in nuisance animal control, and the distress to the animal induced by live capture, transport to a veterinary facility, and confinement in a veterinary hospital prior to euthanasia must be considered in choosing the most humane technique for the situation at hand. Veterinarians providing support to those working with injured or live-trapped, free-ranging animals should take capture, transport, handling distress, and possible carcass consumption into consideration when asked to assist with euthanasia. Alternatives to 2-stage euthanasia using anesthesia include a squeeze cage with intraperitoneal injection of sodium pentobarbital, inhalant agents (CO<sub>2</sub> chamber, CO chamber), and gunshot. In cases where pre-euthanasia anesthetics are not available, intraperitoneal injections of sodium pentobarbital, although slower in producing loss of consciousness, should be considered preferable over intravenous injection, if restraint will cause increased distress to the animal or danger to the operator.

Wildlife species may be encountered under a variety of situations. Euthanasia of the same species under different conditions may require different techniques. Even in a controlled setting, an extremely fractious large animal may threaten the safety of the practitioner, bystanders, and itself. When safety is in question and the fractious large animal, whether wild, feral, or domestic, is in close confinement, neuromuscular blocking agents may be used immediately prior to the use of an acceptable form of euthanasia. For this technique to be humane, the operator must ensure they will gain control over the animal and perform euthanasia before distress develops. Succinylcholine is not acceptable as a method of restraint for use in free-ranging wildlife because animals may not be retrieved rapidly enough to prevent neuromuscular blocking agent-induced respiratory distress or arrest.<sup>39</sup>

**DISEASED, INJURED, OR LIVE-CAPTURED WILDLIFE OR FERAL SPECIES**

Euthanasia of diseased, injured, or live-trapped wildlife should be performed by qualified professionals. Certain cases of wildlife injury (eg, acute, severe trauma from automobiles) may require immediate action, and pain and suffering in the animal may be best relieved most rapidly by physical methods including gunshot or penetrating captive bolt followed by exsanguination.

**BIRDS**

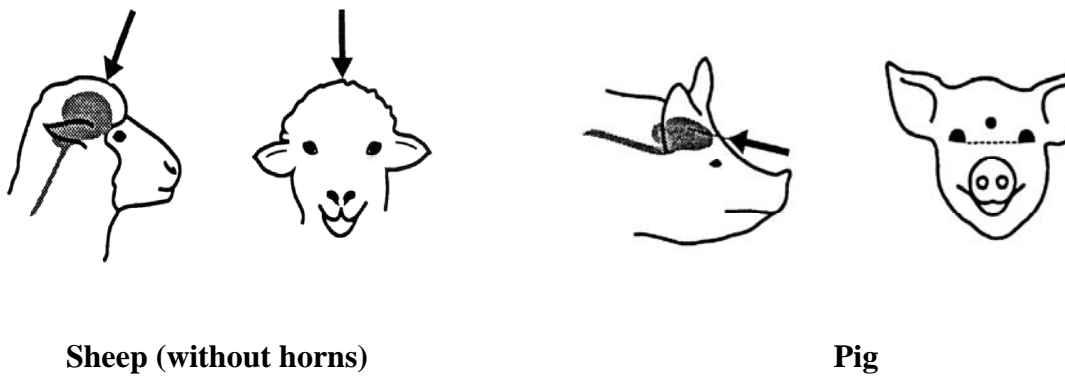
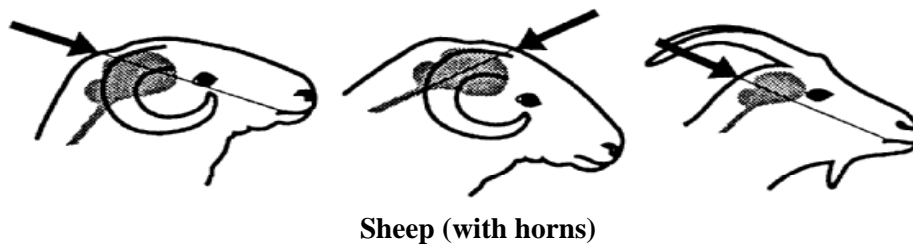
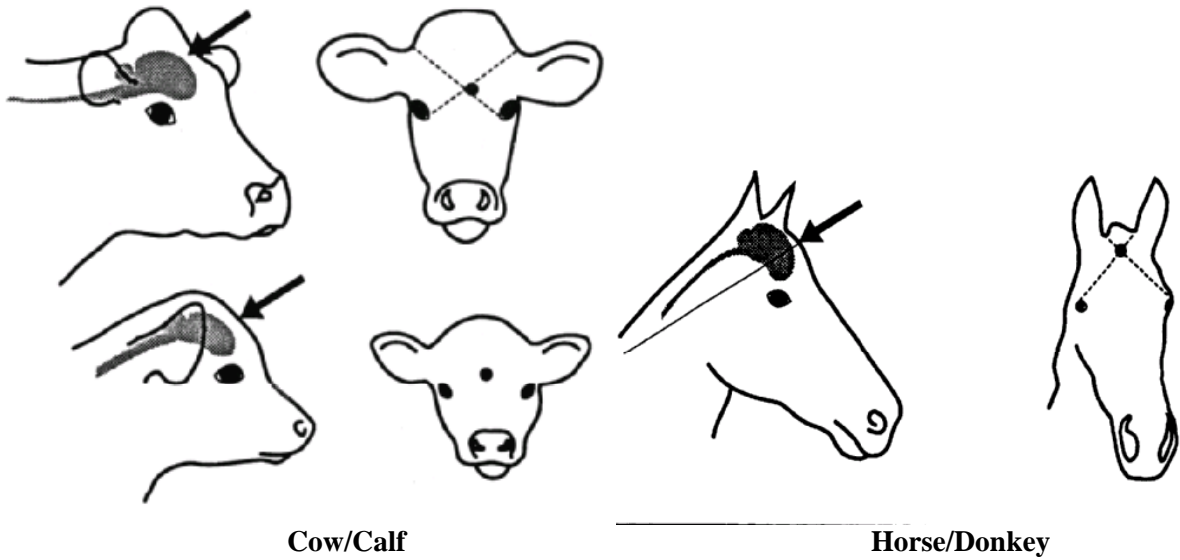
Many techniques discussed previously in this report are suitable for euthanasia of captive birds accustomed to human contact. Free-ranging birds may be collected by a number of methods, including nets and live traps, with subsequent euthanasia. For collection by firearm, shotguns are recommended. The bird should be killed outright by use of ammunition loads appropriate for the species to be collected. Wounded birds should be killed quickly by appropriate techniques previously described. Large birds should be anesthetized prior to euthanasia, using general anesthetics.

**Mass euthanasia**

Under unusual conditions, such as disease eradication and natural disasters, euthanasia options may be limited. In these situations, the most appropriate technique that minimizes human and animal health concerns must be used. These options include, but are not limited to, CO<sub>2</sub> and physical methods such as gunshot, penetrating captive bolt, and cervical dislocation.

**TAB F SECTION 20**  
**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

**CORRECT LOCATION FOR EUTHANASIA OF LIVESTOCK WITH A FIREARM OR CAPTIVE BOLT GUN**  
(Figures reprinted from Can Vet J 1991; 32: 724-726 with the permission of the  
Canadian Veterinary Medical Association)



**TAB F SECTION 20**  
**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

**References**

1. Cooper JE, Ewbank R, Platt C, et al. *Euthanasia of amphibians and reptiles*. London: UFAW/WSPA, 1989.
2. Fowler ME, Miller RE, eds. *Zoo and wild animal medicine: current therapy 4*. Philadelphia: WB Saunders Co, 1999;1-747.
3. *Humane killing of animals*. Preprint of 4th ed. South Mimms, Potters Bar, Herts, England: Universities Federation for Animal Welfare, 1988;16-22.
4. Hughes HC. Euthanasia of laboratory animals. In: Melby EC, Altman NH, eds. *Handbook of laboratory animal science*. Vol 3. Cleveland, Ohio: CRC Press, 1976;553-559.
5. Urbanski HF, Kelly SF. Sedation by exposure to gaseous carbon dioxide-oxygen mixture: application to studies involving small laboratory animal species. *Lab Anim Sci* 1991;41:80-82.
6. Iwarsson K, Reh binder C. A study of different euthanasia techniques in guinea pigs, rats, and mice. Animal response and postmortem findings. *Scand J Lab Anim Sci* 1993;20:191-205.
7. Barbiturates. In: Ciganovich E, ed. *Field manual of wildlife diseases*. US Department of the Interior/US Geological Survey, Biological Resources Division, Information and Technical Report 1999-2001.
8. Dennis MB, Dong WK, Weisbrod KA, et al. Use of captive bolt as a method of euthanasia in larger laboratory animal species. *Lab Anim Sci* 1988;38:459-462.
9. Blackmore DK. Energy requirements for the penetration of heads of domestic stock and the development of a multiple projectile. *Vet Rec* 1985;116:36-40.
10. Daly CC, Whittington PE. Investigation into the principal determinants of effective captive bolt stunning of sheep. *Res Vet Sci* 1989;46:406-408.
11. Clifford DH. Preanesthesia, anesthesia, analgesia, and euthanasia. In: Fox JG, Cohen BJ, Loew FM, eds. *Laboratory animal medicine*. New York: Academic Press Inc, 1984;528-563.
12. Australian Veterinary Association. Guidelines on humane slaughter and euthanasia. *Aust Vet J* 1987;64:4-7.
13. Carding T. Euthanasia of dogs and cats. *Anim Reg Stud* 1977;1:5-21.
14. Longair JA, Finley GG, Laniel M-A, et al. Guidelines for euthanasia of domestic animals by firearms. *Can Vet J* 1991;32: 724-726.
15. Finnie JW. Neuroradiological aspects of experimental traumatic missile injury in sheep. *N Z Vet J* 1994;42:54-57.
16. Blackmore DK, Madie P, Bowling MC, et al. The use of a shotgun for euthanasia of stranded cetaceans. *N Z Vet J* 1995; 43:158-159.
17. Blackmore DK, Bowling MC, Madie, P, et al. The use of a shotgun for emergency slaughter or euthanasia of large mature pigs. *N Z Vet J* 1995;43:134-137.
18. Denicola AJ. Non-traditional techniques for management of overabundant deer populations. *Wildl Soc Bull* 1997;25:496-499.
19. McAninch JB, ed. Urban deer: a manageable resource? in *Proceedings*. Symp 55th Midwest Fish Wildl Conf 1993;1-175.
20. Finnie JW. Traumatic head injury in ruminant livestock. *Aust Vet J* 1997;75:204-208.
21. Blackmore DK, Daly CC, Cook CJ. Electroencephalographic studies on the nape shooting of sheep. *N Z Vet J* 1995;43:160-163.
22. *On-farm euthanasia of swine—options for the producer*. Perry, Iowa: American Association of Swine Practitioners and Des Moines, Iowa: National Pork Producers, 1997.
23. *Practical euthanasia of cattle: considerations for the producer, livestock market operator, livestock transporter, and veterinarian*. Rome, Ga: American Association of Bovine Practitioners, 1999.
24. *The emergency euthanasia of horses*. Sacramento: California Department of Food and Agriculture and Davis, Calif: University of California's Veterinary Medical Extension, 1999.
25. *The emergency euthanasia of sheep and goats*. Sacramento: California Department of Food and Agriculture and Davis, Calif: University of California's Veterinary Medical Extension, 1999.
26. Vanderwolf CH, Buzak DP, Cain RK, et al. Neocortical and hippocampal electrical activity following decapitation in the rat. *Brain Res* 1988;451:340-344.
27. Derr RF. Pain perception in decapitated rat brain. *Life Sci* 1991;49:1399-1402.
28. Holson RR. Euthanasia by decapitation: evidence that this technique produces prompt, painless unconsciousness in laboratory rodents. *Neurotoxicol Teratol* 1992;14:253-257.
29. Keller GL. Physical euthanasia methods. *Lab Anim* 1982;11:20-26.
30. Feldman DB, Gupta BN. Histopathologic changes in laboratory animals resulting from various methods of euthanasia. *Lab Anim Sci* 1976;26:218-221.
31. Mikeska JA, Klemm WR. EEG evaluation of humaneness of asphyxia and decapitation euthanasia of the laboratory rat. *Lab Anim Sci* 1975;25:175-179.
32. Lambooy E, van Voorst N. Electrocution of pigs with notifiable diseases. *Vet Q* 1986;8:80-82.
33. Booth NH. Drug and chemical residues in the edible tissues of animals. In: Booth NH, McDonald LE, eds. *Veterinary pharmacology and therapeutics*. 6th ed. Ames, Iowa: Iowa State University Press, 1988;1149-1205.
34. Acceptable field methods in mammalogy: preliminary guidelines approved by the American Society of Mammalogists. *J Mammal* 1987;68(Suppl 4):1-18.
35. American Ornithologists' Union. Report of committee on use of wild birds in research. *Auk* 1988;105(Suppl):1A-41A.

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**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

36. American Society of Ichthyologists and Herpetologists, Herpetologist League, Society for the Study of Amphibians and Reptiles. Guidelines for the use of live amphibians and reptiles in field research. *J Herpetol* 1987;21(suppl 4):1-14.

37. American Society of Ichthyologists and Herpetologists, American Fisheries Society, American Institute of Fisheries Research Biologists. Guidelines for use of fishes in field research. *Copeia Suppl* 1987;1-12.

38. Cailliet GM. *Fishes: a field guide and laboratory manual on their structure, identification, and natural history*. Belmont, Calif: Wadsworth, 1986.

39. Schwartz JA, Warren R, Henderson D, et al. Captive and field tests of a method for immobilization and euthanasia of urban deer. *Wildl Soc Bull* 1997;25:532-541.



**TAB F SECTION 20**  
**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

**Appendix 1**

Agents and methods of euthanasia by species

Species	Acceptable*	Conditionally acceptable†
Amphibians	Barbiturates, inhalant anesthetics (in appropriate species), CO <sub>2</sub> , CO, tricaine methane sulfonate (TMS, MS 222), benzocaine hydrochloride, double pithing	Penetrating captive bolt, gunshot, stunning and decapitation, decapitation and pithing.
Birds	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , CO, gunshot (free-ranging only)	N <sub>2</sub> , Ar, cervical dislocation, decapitation, thoracic compression (small, free-ranging only)
Cats	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , CO, potassium chloride in conjunction with general anesthesia	N <sub>2</sub> , Ar
Dogs	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , CO, potassium chloride in conjunction with general anesthesia	N <sub>2</sub> , Ar, penetrating captive bolt, electrocution
Fish	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , tricaine methane sulfonate (TMS, MS 222), benzocaine hydrochloride, 2-phenoxyethanol	Decapitation and pithing, stunning and decapitation/pithing
Horses	Barbiturates, potassium chloride in conjunction with general anesthesia, penetrating captive bolt	Chloral hydrate (IV, after sedation), gunshot, electrocution
Marine mammals	Barbiturates, etorphine hydrochloride	Gunshot (cetaceans < 4 meters long)
Mink, fox, and other mammals produced for fur	Barbiturates, inhalant anesthetics, CO <sub>2</sub> (mink require high concentrations for euthanasia without supplemental agents), CO, potassium chloride in conjunction with general anesthesia	N <sub>2</sub> , Ar, electrocution followed by cervical dislocation
Nonhuman primates	Barbiturates	Inhalant anesthetics, CO <sub>2</sub> , CO, N <sub>2</sub> , Ar
Rabbits	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , CO, potassium chloride in conjunction with general anesthesia	N <sub>2</sub> , Ar, cervical dislocation (< 1 kg), decapitation, penetrating captive bolt
Reptiles	Barbiturates, inhalant anesthetics (in appropriate species), CO <sub>2</sub> (in appropriate species)	Penetrating captive bolt, gunshot, decapitation and pithing, stunning and decapitation
Rodents and other small mammals	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , CO, potassium chloride in conjunction with general anesthesia, microwave irradiation	Methoxyflurane, ether, N <sub>2</sub> , Ar, cervical dislocation (rats < 200 g), decapitation
Ruminants	Barbiturates, potassium chloride in conjunction with general anesthesia, penetrating captive bolt	Chloral hydrate (IV, after sedation), gunshot, electrocution
Swine	Barbiturates, CO <sub>2</sub> , potassium chloride in conjunction with general anesthesia, penetrating captive bolt	Inhalant anesthetics, CO, chloral hydrate (IV, after sedation), gunshot, electrocution, blow to the head (< 3 weeks of age)
Zoo animals	Barbiturates, inhalant anesthetics, CO <sub>2</sub> , CO, potassium chloride in conjunction with general anesthesia	N <sub>2</sub> , Ar, penetrating captive bolt, gunshot
Free-ranging wildlife	Barbiturates IV or IP, inhalant anesthetics, potassium chloride in conjunction with general anesthesia	CO <sub>2</sub> , CO, N <sub>2</sub> , Ar, penetrating captive bolt, gunshot, kill traps (scientifically tested)

\*Acceptable methods are those that consistently produce a humane death when used as the sole means of euthanasia.

†Conditionally acceptable methods are those techniques that by the nature of the technique or because of greater potential for operator error or safety hazards might not consistently produce humane death or are methods not well documented in the scientific literature.

**TAB F SECTION 20**  
**GUIDELINES FOR HUMANE EUTHANASIA OF ANIMALS**

**Appendix 2**  
Some **unacceptable** agents and methods of euthanasia

AGENT OR METHOD	COMMENTS
Air embolism	Air embolism may be accompanied by convulsions, opisthotonos and vocalization. If used, it should be done only in anesthetized animals.
Blow to the head	Unacceptable for most species.
Burning	Chemical or thermal burning of an animal is not an acceptable method of euthanasia.
Chloral hydrate	Unacceptable in dogs, cats, and small mammals.
Chloroform	Chloroform is a known hepatotoxin and suspected carcinogen, and therefore extremely hazardous to personnel.
Cyanide	Cyanide poses an extreme danger to personnel and the manner of death is aesthetically objectionable.
Decompression	Decompression is unacceptable for euthanasia because of numerous disadvantages. (1) Many chambers are designed to produce decompression at a rate 15 to 60 times faster than that recommended as optimum for animals, resulting in pain and distress attributable to expanding gases trapped in body cavities. (2) Immature animals are tolerant of hypoxia, and longer periods of decompression are required before respiration ceases. (3) Accidental recompression, with recovery of injured animals can occur. (4) Bloating, bleeding, vomiting, convulsions, urination, and defecation, which are aesthetically unpleasant, may develop in unconscious animals.
Drowning	Drowning is not a means of euthanasia and is inhumane.
Exsanguination	Because of the anxiety associated with extreme hypovolemia, exsanguination should be done only in sedated, stunned, or anesthetized animals.
Formalin	Direct immersion of an animal into formalin, as a means of euthanasia, is inhumane.
Household Products and Solvents	Acetone, quaternary compounds (including CCl <sub>4</sub> ), laxatives, clove oil, dimethylketone, quaternary ammonium products, <sup>a</sup> acids, and other commercial and household products or solvents are not acceptable agents for euthanasia.
Hypothermia	Hypothermia is not an appropriate method of euthanasia.
Neuromuscular blocking agents (nicotine, magnesium sulfate, potassium chloride, all curariform agents)	When used alone, these drugs all cause respiratory arrest before unconsciousness, so the animal may perceive pain and distress after it is immobilized.
Rapid freezing	Rapid freezing as a sole means of euthanasia is not considered to be humane. If used, animals should be anesthetized prior to freezing.
Strychnine	Strychnine causes violent convulsions and painful muscle contractions.
Stunning	Stunning may render an animal unconscious, but it is not a method of euthanasia (except for neonatal animals with thin craniums). If used, it must be immediately followed by a method that ensures death.
Tricaine methane sulfonate (TMS, MS 222)	Should not be used for euthanasia of animals intended as food.

\*Roccal D Plus, Pharmacia & Upjohn, Kalamazoo, Michigan



# NDMS

## Veterinary Treatment Log

Date: \_\_\_\_\_ Veterinary Team ID: \_\_\_\_\_ Location: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

Patient ID#	Animal Name	Animal Owner	Age or DOB	Presentation Circumstance	Admission Code	Topographic Code	Etiologic Code	Disposition Code	Disposition Recipient	Reportable Disease Code	Other Info: Use Code or Write In

Presentation Circumstances	Admission Code	Topographic Code	Etiologic Code	Animal Disposition Code	Reportable Disease Codes:	Other Info Codes:
A. Healthy exam		A. Generalized	A. Genetic or prenatal	A. Owner / Handler		A. _____
B. Captured	Green: Non-serious	B. Integumentary	B. Bacterial	B. Held on Site		B. _____
C. Unconscious		C. Musculoskeletal	C. Fungal	C. Local Veterinarian	A. _____	C. _____
D. Traumatic injury	Yellow: Serious	D. Respiratory	D. Protozoal	D. Incl. Recipient Name	B. _____	D. _____
E. Self inflicted injury		E. Cardiovascular	E. Parasitic	E. Animal Care / Control	C. _____	E. _____
F. Infection associated	Red: Critical	F. Haeme / Lymph	F. Viral	F. Incl. Recipient Name	D. _____	F. _____
G. Perinatal / Obstetric		G. Digestive	G. Toxicity	F. Medical Referral	E. _____	G. _____
H. Environmental exposure	Black: Died	H. Urinary	H. Trauma	G. Euthanized	F. _____	H. _____
I. Toxin exposure	Euthanized	I. Endocrine	I. Mechanical abnormality	H. Died		I. _____
J. Behavioral abnormality		J. Nervous	J. Nutrition / Hydration	I. Carcass Disposed		J. _____
K. Other / unknown	Birth	K. Reproductive	K. Neoplasia	J. Carcass to Owner		K. _____
		L. Other / Unknown	L. Metabolic	K. Other / Unknown		
			M. Other / Unknown			

## Standard Medical Record

Date \_\_\_\_\_ Disaster Name/Location \_\_\_\_\_

Name of animal (if known) \_\_\_\_\_

Breed \_\_\_\_\_ Sex \_\_\_\_\_ Age \_\_\_\_\_ Actual or Est. (circle) Weight \_\_\_\_\_

Description (size, markings, color) \_\_\_\_\_

Owner's name (if known) \_\_\_\_\_

Address \_\_\_\_\_

Phone No. \_\_\_\_\_

### If owner unknown, provide:

Date found \_\_\_\_\_

Location found (address or detailed description) \_\_\_\_\_

### Transportation to hospital

Vehicle \_\_\_\_\_

Driver/Sponsor \_\_\_\_\_

### Holding facility or Veterinary hospital

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone No. \_\_\_\_\_ Pager No. \_\_\_\_\_

*I certify that I am the owner/agent of the above listed animal and authorize veterinary care as indicated. I understand that if I have not claimed my pet within 30 days that it will be considered abandoned.*

Signature \_\_\_\_\_ Date \_\_\_\_\_



# ANIMAL CARE AND HOLDING SURVEY

Facility \_\_\_\_\_

Owner's name \_\_\_\_\_

Facility address \_\_\_\_\_

Facility phone No. \_\_\_\_\_ Back line \_\_\_\_\_

Owner's home phone No. \_\_\_\_\_ Cellular phone No. \_\_\_\_\_

Owner's pager No. \_\_\_\_\_ Ham radio \_\_\_\_\_

## What species of animal will you accept?

\_\_\_\_\_ Canine \_\_\_\_\_ Feline \_\_\_\_\_ Equine \_\_\_\_\_ Avian \_\_\_\_\_ Other (specify)

## How many cages or stalls do you have available?

\_\_\_\_\_ Cages \_\_\_\_\_ Runs \_\_\_\_\_ Large animal stalls \_\_\_\_\_ Corrals

## Are you willing to provide services during a disaster? (check one)

\_\_\_\_\_ Pro bono \_\_\_\_\_ Reduced fee \_\_\_\_\_ Standard fee

## What are your minimal entry requirements for animals to your facility?

\_\_\_\_\_ Not applicable \_\_\_\_\_ Rabies vaccination \_\_\_\_\_ Other vaccinations \_\_\_\_\_ Parasite control

## Do you have isolation facilities that could be used if needed?

\_\_\_\_\_ Yes \_\_\_\_\_ No

## Would your facility and/or support staff be available for disasters outside normal hours of operation?

\_\_\_\_\_ Yes \_\_\_\_\_ No

**Release:** (to be signed by person to commit facility)

Print Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

**Each animal care and holding facility should complete this log and send a copy to your Veterinary Response Historian (VRH).**

<b>Date Admitted</b>	<b>Description of Animal</b>	<b>Condition &amp; Treatment</b>	<b>Disposition</b>	<b>Date Released</b>

**NOTE: Please copy as many extra blank pages as needed.**



# VETERINARY RESPONSE HISTORIAN CHECKLIST:

## INTRODUCTION

To preface the raw data, the VRH should complete this checklist as a minimum of data required. Please carry a journal and keep extensive notes on any information related to veterinary care during the disaster. Record successes as well as failures and suggestions for improvement as appropriate. *Do not discard field notes.*

## General Information

1. Type of Disaster (e.g., earthquake, fire, oil spill, etc.)

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2. Date and Duration of Disaster

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3. Geographical Boundaries (e.g., address, county, area)

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## Animal Information

4. Species of Animals Involved in Disaster

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5. Number of Animals Involved in Disaster (by species)

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6. Extent of Injuries to Animals (descriptions)

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7. Number of Animals Dead (by species)

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8. Number of Unclaimed Animals (by species)

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9. Number of Claimed Animals (by species)

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**Veterinary Care**

10. Number of Veterinarians Providing Support

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11. Number of Veterinary Technicians/AHTs Providing Support

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12. Number of Veterinary Hospitals Used

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13. Approximate Total Veterinary Hours

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14. Approximate Total Technician/AHT Hours

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15. Approximate Veterinary Supply Cost

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16. List of Contributors: (to be used for acknowledgements)

Name \_\_\_\_\_

Address \_\_\_\_\_

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**TAB I SECTION 1**  
**RESOURCES - DISASTER PREPAREDNESS OFFICIALS**

**Disaster Preparedness Officials**

Coordinators of Emergency Preparedness for the AVMA (CEP/AVMA)

AVMA website: [www.avma.org](http://www.avma.org); (800)248-2862

Dr. Cindy S. Lovern, ext. 6632

Dr. Lyle P. Vogel, ext. 6685

Department of Homeland Security, National Disaster Medical System Section, 500 C Street SW, Suite 713

Washington, DC 20472; 800-USA-NDMS (800-872-6367); Fax: (202) 646-4618;

NDMS website: <http://www.ndms.dhhs.gov/>

Office of Emergency Preparedness, U.S. Public Health Service

Director

Director, Division of Emergency Readiness & Operations

Deputy Director

NDMS Personnel Manager

Asst. Chief of Field Operations

Federal Emergency Management Agency; 500 C. Street S.W., Washington, DC 20472

Ph: (202) 566-1600

FEMA website: [www.fema.gov](http://www.fema.gov)

**Regional Offices:**

<b>Region I</b> (CT, MA, ME, NH, RI, VT)	Boston, MA	(617) 223-9540
<b>Region II</b> (NJ, NY, PR, VI)	New York, NY	(212) 680-3609
<b>Region III</b> (DC, DE, MD, PA, VA, WV)	Philadelphia, PA	(215) 931-5608
<b>Region IV</b> (AL, FL, GA, KY, MS, NC, SC, TN)	Atlanta, GA	(770) 220-5200
<b>Region V</b> (IL, IN, MI, MN, OH, WI)	Chicago, IL	(312) 408-5500
<b>Region VI</b> (AR, LA, NM, OK, TX)	Denton, TX	(940) 898-5399
<b>Region VII</b> (IA, KS, MO, NE)	Kansas City, MO	(816) 283-7061
<b>Region VIII</b> (CO, MT, ND, SD, UT, WY)	Denver, CO	(303) 235-4800
<b>Region IX</b> (AZ, CA, GUAM, HI, NV, CNMI, FSM, American Samoa)	Oakdale, CA	(510) 627-7100
<b>Region X</b> (AK, ID, OR, WA)	Bothell, WA	(425) 487-4600

Foreign animal disease outbreak:

USDA, APHIS, Veterinary Services, Domestic Programs (301) 734-8073

APHIS website: [www.aphis.usda.gov](http://www.aphis.usda.gov)

American Red Cross, National Headquarters – American Red Cross website: [www.redcross.org](http://www.redcross.org)

8111 Gatehouse Road

(703) 206-8636 or (703) 206-8565

Falls Church, VA 22042

Fax: (703) 206-8833

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**American Academy on Veterinary Disaster Medicine**

c/o Dr. Patrice Klein, Secretary/Treasurer  
PO Box 1366  
Washington Grove, MD 20880  
Ph: (301) 977-8985  
Fax: (301) 436-2632  
E-mail: [patriceklein@hotmail.com](mailto:patriceklein@hotmail.com)  
Website: <http://www.aavdm.org>

**American Humane Association, The**

Animal Protection Services  
63 Inverness Drive East  
Englewood, CO 80112-5117  
Ph: (303) 792-9900  
Fax: (303) 792-5333  
E-mail: [apinfo@americanhumane.org](mailto:apinfo@americanhumane.org)  
Website: <http://www.americanhumane.org>

The mission of the American Humane Association, as a network of individuals and organizations, is to prevent cruelty, abuse, neglect and exploitation of children and animals and to assure that their interests and well-being are fully, effectively, and humanely guaranteed by an aware and caring society.

**Caribbean Disaster Emergency Response Agency**

Building #1, Manor Lodge  
Lodge Hill, St. Michael, Barbados  
Ph: (246) 425-0386  
Fax: (246) 425-8854  
E-mail: [CDERA@Caribsurf.com](mailto:CDERA@Caribsurf.com)  
Website: <http://www.cdera.org>

The Caribbean Disaster Emergency Response Agency (CDERA) is an inter-governmental regional disaster management organization established in 1991 by an Agreement of Heads of Government of the Caribbean Community. Its main function is to make an immediate and coordinated response to any disastrous event affecting any Participating State, once the state requests such assistance.

**Emergency Management Australia (EMA)**

PO Box 1020 Dickson  
Australian Capital Territory 2602  
Australia  
Ph: +61 (0) 2 6256 4600  
Fax: +61 (0) 2 6256 4653  
E-mail: [ema@ema.gov.au](mailto:ema@ema.gov.au)  
Website: <http://www.ema.gov.au>

The Emergency Management Australia's mission is to reduce the impact of disasters and emergencies in Australia and its region.

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**Emergency Preparedness Canada**

Office of Critical Infrastructure Protection & Emergency Preparedness

Communication Division

340 Laurier Avenue West

Ottawa, Ontario

Canada K1A 0P8

Ph: (613) 994-4875 (general inquiries) (613) 991-7000 (Emergency Calls Only)

(800) 830-3118 (general inquiries)

Fax: (613) 998-9589

E-mail: [communications@psepc-sppcc.gc.ca](mailto:communications@psepc-sppcc.gc.ca)

Website: <http://www.ocipep.gc.ca>

This Office will develop and implement a comprehensive approach to protecting Canada's critical infrastructure. It will provide national leadership to help ensure the protection of this infrastructure, in both its physical and cyber dimensions regardless of the source of threats and vulnerabilities. It will also be the government's primary agency for ensuring national civil emergency preparedness.

**Federal Emergency Management Agency (FEMA)**

500 C Street, SW

Washington, DC 20472

Ph: (202) 566-1600

Website: <http://www.fema.gov>

Advising on building codes and flood plain management...teaching people how to get through a disaster...helping equip local and state emergency preparedness...coordinating the federal response to a disaster...making disaster assistance available to states, communities, businesses and individuals...training emergency managers...supporting the nation's fire service...administering the national flood and crime insurance programs...the range of FEMA's activities is broad indeed.

**Humane Society International (HSI)**

2100 L Street, NW

Washington, DC 20037

Ph: (301) 258-3010

Fax: (301) 258-3082

E-mail: [hsi@hsihsus.org](mailto:hsi@hsihsus.org)

Website: <http://www.hsus.org/international>

Humane Society International (HSI) is a global presence. It has worked for nearly a decade with governments, humane organizations, and individual animal protectionists to find practical, long-term solutions to common animal humane-related problems.

**Humane Society of the United States (HSUS)**

National Headquarters

2100 L St., NW

Washington, DC 20037

Ph: (202) 452-1100

Fax: (202) 778-6132

Email: [webmaster@hsus.org](mailto:webmaster@hsus.org)

Website: <http://www.hsus.org>

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It is the mission of the Humane Society of the United States, an official disaster-relief agency for animals, to promote the safety and well-being of all animals adversely affected during a disaster.

**International Committee of the Red Cross (ICRC)**

Public Information Centre

19 Avenue de la Paix

CH 1202 Genève

Ph: ++41 (22) 734 60 01

Fax: ++41 (22) 733 20 57 (ICRC general)

++41 (22) 730 20 82 (Public Information Centre)

E-mail: [webmaster.gva@icrc.org](mailto:webmaster.gva@icrc.org)

Website: <http://www.icrc.org>

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and international violence and to provide them with assistance. Established in 1863, the ICRC is at the origin of the International Red Cross and Red Crescent Movement.

**International Fund for Animal Welfare (IFAW)**

IFAW US

PO Box 193

411 Main Street

Yarmouth Port, MA 02675

Ph: (508) 744-2000

Fax: (508) 744-2009

E-mail: [info@ifaw.org](mailto:info@ifaw.org)

Website: <http://www.ifaw.org>

The International Fund for Animal Welfare (IFAW) works to improve the welfare of wild and domestic animals throughout the world by reducing commercial exploitation of animals, protecting wildlife habitats, and assisting animals in distress. IFAW seeks to motivate the public to prevent cruelty to animals and to promote animal welfare and conservation policies that advance the well being of both animals and people.

**The National Disaster Education Coalition (NDEC)**

Director, Public Health and Emergency Preparedness

American Red Cross

8111 Gatehouse Rd, Falls Church, VA 22032

Ph: (703) 206-6707

Fax: (703) 206-7754

E-mail: [cde@usa.redcross.org](mailto:cde@usa.redcross.org)

Website: <http://www.disastereducation.org>

The National Disaster Education Coalition (NDEC) is composed of federal government agencies and national not-for-profit organizations that work together to develop and disseminate consistent educational information for the public about disaster preparedness. The Goal of the NDEC is to formulate information and advise the public about how to prepare and respond appropriately to natural and human-caused



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disasters. NDEC member agencies ensure that disaster safety messages are appropriate, accurate, research-based, and crafted appropriately for the audience by using understandable language.

**Pan American Health Organization (PAHO)**

Pan American Sanitary Bureau  
Regional Office of the World Health Organization  
525 Twenty-third Street, N.W.  
Washington, DC 20037  
Ph: (202) 974-3000  
Fax: (202) 974-3663  
Website: <http://www.paho.org>

The Pan American Health Organization (PAHO) is an international public health agency with more than 90 years of experience in working to improve health and living standards of the countries of the Americas.

**United Animal Nations (UAN)**

PO Box 188890  
Sacramento, CA 95818  
Ph: (916) 429-2457  
Fax: (916) 429-2456  
E-mail: [info@uan.org](mailto:info@uan.org)  
Website: <http://www.uan.org>

Founded in 1987, United Animal Nations (UAN) is recognized as North America's leading provider of emergency animal sheltering and disaster relief services and a key advocate for the critical needs of companion animals. UAN assists animals by helping to prevent, mitigate and resolve crises. We accomplish this by sharing expertise, resources and information to empower others to help more animals.

**U. S. Department of Agriculture (USDA)**

Animal and Plant Health Inspection Service (APHIS)  
Washington, DC 20250  
Website: <http://www.aphis.usda.gov>

The mission of the APHIS is to provide leadership in ensuring the health and care of animals and plants, improving agricultural productivity and competitiveness, and contributing to the national economy and the public health.

**Veterinary Emergency & Critical Care Society**

6335 Camp Bullis Rd., Suite 23  
San Antonio, TX 78257  
Ph: (210) 698-5575  
Fax: (210) 698-7138  
E-mail: [veccsadmin@veccs.org](mailto:veccsadmin@veccs.org)  
Website: <http://www.veccs.org>

The objective of the Veterinary Emergency & Critical Care Society is to raise the level of patient care for seriously ill or injured animals through quality education and communication programs.

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**The World Health Organization**

Regional Office for the Americas/Pan American Health Organization (AMRO/PAHO)

525, 23<sup>rd</sup> Street, NW

Washington, DC 20037

Ph: (202) 974-3000

Fax: (202) 974-3663

E-mail: [postmaster@paho.org](mailto:postmaster@paho.org)

Website: <http://www.paho.org>

The objective of WHO is the attainment by all peoples of the highest possible level of health.

**World Society for the Protection of Animals (WSPA)**

Headquarters:

89 Albert Embankment

London, England, SE1 7TP

Ph: 44 (0) 20 7587 5000

Fax: 44 (0) 20 7793 0208

E-mail: [wspa@wspa.org.uk](mailto:wspa@wspa.org.uk)

Website: <http://www.wspa.org.uk>

USA:

34 Deloss Street

Framingham, MA 01702

Ph: (508) 879-8350 or 800-883-WSPA

Fax: (508) 620-0786

E-mail: [wspa@wspausa.com](mailto:wspa@wspausa.com)

Website: [www.wspa-usa.org](http://www.wspa-usa.org)

WSPA's origins go back more than forty five years. The society's present structure was created in 1981 through the merger of the World Federation for the Protection of Animals (WFPA), founded in 1953, and the International Society for the Protection of Animals (ISPA), founded in 1959. WFPA and ISPA were the first organizations to campaign internationally on animal welfare issues.

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State	Address	Phone	Fax	Website
Alabama	Alabama Emergency Management Agency 5898 County Road 41 PO Box 2160 Clanton, AL 35046-2160	205-280-2200	205-280-2495	<a href="http://www.ema.alabama.gov">www.ema.alabama.gov</a>
Alaska	Alaska Div. Of Emergency Service PO Box 5750 Fort Richardson, AK 99505-5750	907-428-7039 800-478-2337	907-428-7009	<a href="mailto:dhs&amp;em_emergency_mgmt@ak-prepared.com">dhs&amp;em_emergency_mgmt@ak-prepared.com</a>  <a href="http://www.ak-prepared.com">www.ak-prepared.com</a>
American Samoa	Territorial Emergency Management Coordinator American Samoa Government, PO Box 1086 Pago Pago, AS 96799	011-684-699-6415	011-684-699-6414	
Arizona	Arizona Div. of Emergency Service 5636 East McDowell Road Phoenix, AZ 85008	602-244-0504 800-411-2336	602-392-7519	<a href="mailto:azserc@azdema.gov">azserc@azdema.gov</a>  <a href="http://www.dema.state.az.us">www.dema.state.az.us</a>
Arkansas	Arkansas Dept. of Emergency Mgmt. PO Box 758 Conway, AR 72032	501-730-9750	501-730-9754	<a href="http://www.adem.state.ar.us">www.adem.state.ar.us</a>
California	Governor's Office of Emergency Services 3650 Schriever Avenue Mather, CA 95655	916-845-8911	916-845-8910	<a href="http://www.oes.ca.gov">www.oes.ca.gov</a>
Colorado	Office of Emergency Management Dept of Local Affairs 15075 S. Golden Road Golden, CO 80401-3979	303-273-1622	303-273-1795	<a href="http://www.dola.state.co.us/oem/oemindex.htm">www.dola.state.co.us/oem/oemindex.htm</a>
Connecticut	Office of Emergency Management Military Department 360 Broad Street Hartford, CT 06105	860-566-3180	860-247-0664	<a href="http://www.mil.state.ct.us/oem.htm">www.mil.state.ct.us/oem.htm</a>
Delaware	Delaware Emergency Management Agency 165 Brick Store Landing Road Smyrna, DE 19977	302-659-3362	302-659-6855	<a href="http://www.state.de.us/dema/default.shtml">www.state.de.us/dema/default.shtml</a>
District of Columbia	District of Columbia Emergency Mgmt. Agency 2000 14 <sup>th</sup> Street, N.W., 8 <sup>th</sup> Floor Washington, DC 20009	202-727-6161	202-673-2290	<a href="http://dcema.dc.gov">http://dcema.dc.gov</a>
Florida	Division of Emergency Management 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100	850-413-9969	850-488-1016	<a href="http://www.floridadisaster.org">www.floridadisaster.org</a>

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State	Address	Phone	Fax	Website
Georgia	Georgia Emergency Management Agency PO Box 18055 Atlanta, GA 30316-0055	404-635-7000	404-635-7205	<a href="http://www.state.ga.us/gema">www.state.ga.us/gema</a>
Guam	Guam Emergency Management Office of Civil Defense, PO Box 2877 Hagatna, Guam 96932	011-671-475-9600	011-671-477-3727	<a href="http://ns.gov.gu/">http://ns.gov.gu/</a>
Hawaii	Dept. of Civil Defense 3949 Diamond Head Road Honolulu, HI 96816-4495	808-733-4300	808-733-4287	<a href="http://www.scd.state.hi.us">www.scd.state.hi.us</a>
Idaho	Bur. of Disaster Service, Military Div. 4040 Guard St., Bldg. 600 Boise, ID 83705-5004	208-334-3460	208-334-2322	<a href="http://www.bhs.idaho.gov">www.bhs.idaho.gov</a>
Illinois	Illinois Emergency Mgmt. Agency 110 East Adams Street Springfield, IL 62701	217-782-2700	217-524-7967	<a href="http://www.state.il.us/iema">www.state.il.us/iema</a>
Indiana	Indiana State Emergency Mgmt Agency Indiana Government Center Center South, Suite E-208 A 302 West Washington Street Indianapolis, IN 46204	317-232-3986	317-232-3895	<a href="http://www.ai.org/sema/index.html">www.ai.org/sema/index.html</a>
Iowa	Iowa Emergency Mgmt. Div. Department of Public Defense Hoover State Office Building Level A, Room 29 Des Moines, IA 50319	515-281-3231	515-281-7539	<a href="http://www.iowahomelandsecurity.org">www.iowahomelandsecurity.org</a>
Kansas	Kansas Div. of Emergency Preparedness 2800 S. W. Topeka Blvd. Topeka, KS 66611-1287	785-274-1401	785-274-1426	<a href="http://www.ink.org/public/kdem">www.ink.org/public/kdem</a>
Kentucky	Kentucky Disaster and Emergency Service EOC Building 100 Minuteman Parkway Bldg. 100 Frankfort, KY 40601-6168	502-607-1682	502-607-1614	<a href="http://www.kyem.dma.state.ky.us">www.kyem.dma.state.ky.us</a>
Louisiana	Louisiana Military Office of Emergency Preparedness 7667 Independence Blvd Baton Rouge, LA 70804-4217	225-925-7500	225-925-7501	<a href="http://www.loep.state.la.us">www.loep.state.la.us</a>

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State	Address	Phone	Fax	Website
Maine	Maine Emergency Management Agency 72 State House Station August, ME 04333-0072	207-626-4503	207-626-4499	<a href="http://www.state.me.us/mema/memahome.htm">www.state.me.us/mema/memahome.htm</a>
Mariana Islands	CNMI Emergency Management Agency Office of the Governor Commonwealth of the Northern Mariana Islands PO Box 10007 Saipan, Mariana Islands 96950	011-670-322-9529	011-670-322-7743	<a href="http://www.cnmiemo.org">www.cnmiemo.org</a>
Marshall Islands, Republic of	National Disaster Management Office Office of the Chief Secretary PO Box 15 Majuro, Republic of the Marshall Isl 96960-0015	011-692-625-5181	011-692-625-6896	
Maryland	Maryland Emergency Management Agency Camp Fretterd Military Reservation 5401 Rue Saint Lo Drive Reistertown, MD 21136	410-517-3600 877-636-2872	410-517-3610	<a href="http://www.mema.state.md.us">www.mema.state.md.us</a>
Massachusetts	Massachusetts Emergency Management Agency 400 Worcester Road, PO Box 1496 Framingham, MA 01701	508-820-2000	508-820-2030	<a href="http://www.state.ma.us/mema">www.state.ma.us/mema</a>
Michigan	Michigan Department of State Police Emergency Management Division 4000 Collins Road PO Box 30636 Lansing, MI 48909-8136	517-333-5042	517-333-4987	<a href="http://www.michigan.gov/msp/0,1607,7-123-1593_3507---,00.html">http://www.michigan.gov/msp/0,1607,7-123-1593_3507---,00.html</a>
Micronesia, Federated States of	National Disaster Control Officer PO Box PS-53 Kolonias, Pohnpei, Micronesia 96941	011-691-320-8815	011-691-320-2785	
Minnesota	Division of Emergency Management Department of Public Safety 444 Cedar Street, Suite 223 St. Paul, MN 55101-6223	651-296-0450	651-296-0459	<a href="http://www.hsem.state.mn.us/">http://www.hsem.state.mn.us/</a>
Mississippi	Mississippi Emergency Management Agency PO Box 4501, Fondren Station Jackson, MS 39296-4501	601-352-9100 800-442-6362	601-352-8314	<a href="http://www.mema.state.ms.us">www.mema.state.ms.us</a> <a href="http://www.msema.org/mitigate/mssaferoominit.htm">www.msema.org/mitigate/mssaferoominit.htm</a>

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State	Address	Phone	Fax	Website
Missouri	State Emergency Management Agency 2302 Militia Drive PO Box 116 Jefferson City, MO 65102	573-526-9100	573-634-7966	<a href="http://www.sema.state.mo.us/semepage.htm">www.sema.state.mo.us/semepage.htm</a>
Montana	Division of Disaster & Emergency Services PO Box 4789, 1100 North Main Helena, MT 59604-4789	406-841-3911	406-444-3965	<a href="http://www.state.mt.us/dma/des/index.shtml">www.state.mt.us/dma/des/index.shtml</a>
Nebraska	Nebraska Emergency Mgmt. Agency 1300 Military Road Lincoln, NE 68508-1090	402-471-7410	402-471-7433	<a href="http://www.nebema.org">www.nebema.org</a>
Nevada	Division of Emergency Management 2525 S. Carson Street Carson City, NV 89711	775-687-4240	775-687-6788	<a href="http://www.dem.state.nv.us">www.dem.state.nv.us</a>
New Hampshire	Governor's Office of Emergency Mgmt. State Office Park South 107 Pleasant Street Concord, NH 03301-3809	603-271-2231	603-225-7341	<a href="http://www.nhoem.state.nh.us">www.nhoem.state.nh.us</a>
New Jersey	Office of Emergency Management New Jersey State Police, PO Box 7068 West Trenton, NJ 08628-0068	609-538-6050 609-882-2000 x6311 (24/7)	609-538-0345	<a href="http://www.state.nj.us/njoem/index.html">http://www.state.nj.us/njoem/index.html</a>
New Mexico	Office of Emergency Management 13 Bataan Blvd., PO Box 1628 Santa Fe, NM 87504-1628	505-476-9600 505-476-9635 (Emergency)	505-476-9695	<a href="http://www.dps.nm.org/emergency/index.htm">www.dps.nm.org/emergency/index.htm</a>
New York	New York State Emergency Mgmt. Office State Campus, Building 22, Suite 101 1220 Washington Avenue Albany, NY 12226-5000	518-457-2222	518-457-9995	<a href="http://www.nysemo.state.ny.us">www.nysemo.state.ny.us</a>
North Carolina	Division of Emergency Management 116 W. Jones Street Raleigh, NC 27603-1335	919-733-3867	919-733-5406	<a href="http://www.dem.dcc.state.nc.us">www.dem.dcc.state.nc.us</a>
North Dakota	North Dakota Div. of Emergency PO Box 5511 Bismarck, ND 58506-5511	701-328-8100	701-328-8181	<a href="http://www.state.nd.us/dem">www.state.nd.us/dem</a>

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State	Address	Phone	Fax	Website
Ohio	Ohio Emergency Mgmt. Agency 2855 W. Dublin Granville Road Columbus, OH 43235-2206	614-889-7150	614-889-7183	<a href="http://www.state.oh.us/odps/division/ema">www.state.oh.us/odps/division/ema</a>
Oklahoma	Oklahoma Department of Civil Emergency Management Will Rogers Sequoia Tunnel, 2401 N. Lincoln PO Box 533654 Oklahoma City, OK 73152	405-521-2481	405-521-4053	<a href="http://www.odcem.state.ok.us/">www.odcem.state.ok.us/</a>
Oregon	Oregon Emergency Management. Division Department of State Police PO Box 14370 Salem, OR 97309-5062	503-378-2911	503-373-7833	<a href="http://www.osp.state.or.us/oem">www.osp.state.or.us/oem</a>
Palau, Republic of	Palau NEMO Coordinator Office of the Vice President PO Box 100 Koror, Republic of Palau 96940	011-680-488-2422	011-680-488-3312	
Pennsylvania	Pennsylvania Emergency Mgmt. Agency 2605 Interstate Drive Harrisburg, PA 17110-9463	717-651-2001	717-651-2040	<a href="http://www.pema.state.pa.us">www.pema.state.pa.us</a>
Puerto Rico	State Civil Defense Agency Office of the Governor PO Box 966597 San Juan, PR 00906-6597	787-724-0124	787-725-4244	
Rhode Island	Rhode Island Emergency Mgmt. Agency 645 New London Avenue Cranston, RI 02920-3003	401-946-9996	401-944-1891	<a href="http://www.state.ri.us/riema/riemaaa.html">www.state.ri.us/riema/riemaaa.html</a>
South Carolina	South Carolina Emergency Preparedness Div. 1100 Fish Hatchery Road West Columbia, SC 29172	803-737-8500	803-737-8570	<a href="http://www.state.sc.us/epd">www.state.sc.us/epd</a>
South Dakota	Division of Emergency Management 118 East Capitol Pierre, SD 57501-5070	605-773-3231	605-773-3580	<a href="http://www.state.sd.us/dps/sddem/home.htm">http://www.state.sd.us/dps/sddem/home.htm</a>
Tennessee	Tennessee Emergency Mgmt. Agency PO Box 41502 3041 Sidco Drive Nashville, TN 37204-1502	615-741-4332	615-242-9635	<a href="http://www.tnema.org">www.tnema.org</a>

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State	Address	Phone	Fax	Website
Texas	Div. of Emergency Management Texas Department of Public Safety PO Box 4087, 5805 N. Lamar Austin, TX 78773-0001	512-424-2138	512-424-2444 or 7160	<a href="http://www.txdps.state.tx.us/dem">www.txdps.state.tx.us/dem</a>
Utah	Utah Division of Comprehensive Emergency Mgmt. 1110 State Office Building, PO Box 141710 Salt Lake City, UT 84114-1710	801-538-3400	801-538-3770	<a href="http://www.des.utah.gov">www.des.utah.gov</a>
Vermont	Vermont Emergency Management Waterbury State Complex 103 S. Main Street Waterbury, VT 05671-2101	802-244-8721	802-244-8655	<a href="http://www.dps.state.vt.us">www.dps.state.vt.us</a>
Virginia	State Coordinator Virginia Dept. of Emergency Services 10501 Trade Court Richmond, VA 23236-3713	804-897-6502	804-897-6506	<a href="http://www.vdem.state.va.us">www.vdem.state.va.us</a>
Virgin Islands	Virgin Islands Territorial Emergency Management 2-C Contant, A-Q Building St. Croix, Virgin Islands 00820	340-774-2244	340-774-1491	
Washington	Emergency Management Division Washington Military Department Building 20, M/S: TA-20 Camp Murray, WA 98430-5122	253-512-7000	253-512-7200	<a href="http://www.emd.wa.gov">www.emd.wa.gov</a>
West Virginia	West Virginia Office of Emerg. Services State Capitol Complex, Bldg. 1, RM EB-80 1900 Kanawha Blvd. East Charleston, WV 25305-0360	304-558-5380	304-344-4538	<a href="http://www.state.wv.us/wvoes">www.state.wv.us/wvoes</a>
Wisconsin	Wisconsin Emergency Management 2400 Wright Street, PO Box 7865 Madison, WI 53707-7865	608-242-3232	608-242-3247	<a href="http://emergencymanagement.wi.gov">http://emergencymanagement.wi.gov</a>
Wyoming	Wyoming Office of Homeland Security 122 W 25 <sup>th</sup> Street Cheyenne, WY 82002	307-777-4920	307-635-6017	<a href="http://wyohomelandsecurity.state.wy.us">http://wyohomelandsecurity.state.wy.us</a>



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Website: [www.state.sd.us/doh](http://www.state.sd.us/doh)

## Tennessee

John R. Dunn, DVM, PhD (acting)  
Tennessee Department of Health  
Communicable & Environmental Disease Services  
Cordell Hull Bldg., 4th Floor  
Nashville, TN 37247-4911  
Phone: 615-741-7247  
615-741-3857(Fax)  
E-mail: [John.dunn@state.tn.us](mailto:John.dunn@state.tn.us)

## Texas

Tom J. Sidwa, DVM  
State Public Health Veterinarian  
Manager, Zoonosis Control Group  
Department of State Health Services  
1100 W. 49th St.  
Austin, TX 78756  
Phone: 512-458-7255  
512-458-7454(Fax)  
E-mail: [eric.fonken@dshs.state.tx.us](mailto:eric.fonken@dshs.state.tx.us)  
Website: [www.dshs.state.tx.us/idcu/health/zoonosis](http://www.dshs.state.tx.us/idcu/health/zoonosis)

## Utah

Dr. Michael R. Marshall  
Public Health Veterinarian  
Utah Department of Agriculture and Food  
PO Box 14650  
Salt Lake City, UT 84114-6500  
Phone: 801-538-7160  
801-538-7169(Fax)  
E-mail: [mmarshall@utah.gov](mailto:mmarshall@utah.gov)  
Website: [www.ag.utah.gov](http://www.ag.utah.gov)

## Vermont

Robert H. Johnson, DVM  
State Public Health Veterinarian  
Vermont Department of Health  
Epidemiology and Disease Prevention  
108 Cherry St., Drawer 37  
PO Box 70  
Burlington, VT 05402  
Phone: 802-863-7240  
802-865-7701(Fax)  
E-mail: [rjohnso@vdh.state.vt.us](mailto:rjohnso@vdh.state.vt.us)

## Virginia

Julia Murphy, DVM  
State Public Health Veterinarian  
Virginia Department of Health  
Office of Epidemiology  
PO Box 2448, Room 522  
Richmond, VA 23219  
Phone: 804-864-8141  
804-864-8139(Fax)  
Website: [www.vdh.virginia.gov](http://www.vdh.virginia.gov)

## STATE PUBLIC HEALTH VETERINARIANS

### Washington

Mira J. Leslie, DVM, MPH  
State Public Health Veterinarian  
Washington State Department of Health  
Communicable Disease Epidemiology  
1610 NE 150th St.  
Shoreline, WA 98155  
Phone: 206-418-5500  
206-418-5515(Fax)  
E-mail: [mira.leslie@doh.wa.gov](mailto:mira.leslie@doh.wa.gov)  
Website: [www.doh.wa.gov](http://www.doh.wa.gov)

### West Virginia

State Public Health Veterinarian  
Department of Health/Human Resources  
Division of Surveillance & Disease Control  
350 Capitol St., Room 125  
Charleston, WV 25301-3715  
Phone: 304-558-5358  
304-558-6335(Fax)  
Website: [www.wvdhhr.org/idep/](http://www.wvdhhr.org/idep/)

### Wisconsin

James Kazmierczak, DVM, MS  
State Public Health Veterinarian  
Wisconsin Division of Public Health  
1 W. Wilson St., Room 318  
PO Box 2659  
Madison, WI 53701-2659  
Phone: 608-266-2154  
608-261-4976(Fax)  
E-mail: [kazmijj@dhs.state.wi.us](mailto:kazmijj@dhs.state.wi.us)

### Wyoming

Jamie Snow, DVM, MPH  
State Public Health Veterinarian  
Wyoming Department of Health/Epidemiology  
6101 Yellowstone Rd.  
Suite 510  
Cheyenne, WY 82002  
Phone: 307-777-5825  
307-777-5573(Fax)  
E-mail: [jsnow@state.wy.us](mailto:jsnow@state.wy.us)  
Website: <http://wdh.state.wy.us/main/index.asp>

**TAB I SECTION 7  
RESOURCES - GOVERNMENT AGENCIES**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

200 Independence Avenue, S.W.  
Washington, D.C. 20201  
(202) 619-0257  
Tollfree: 877-696-6775  
E-mail: [hhs@mail@os.dhhs.gov](mailto:hhs@mail.os.dhhs.gov)  
Website: <http://www.os.dhhs.gov/>

**Department of Homeland Security**

National Disaster Medical System Section  
500 C Street SW, Suite 713  
Washington, DC 20472  
800-USA-NDMS (800-872-6367)  
Fax: (202) 646-4618  
Website: <http://ndms.dhhs.gov>

**Centers for Disease Control and Prevention**

1600 Clifton Road, N.E.  
Atlanta, GA 30333  
404-639-3311 or 800-311-3435  
Website: <http://www.cdc.gov/>

**CDC Emergency Response (24-hr.  
assistance during emergencies)**

404-639-2888

**TAB I SECTION 7  
RESOURCES - GOVERNMENT AGENCIES**

**U.S. DEPARTMENT OF AGRICULTURE**

**Jamie L. Whitten Building**  
14th & Independence Ave., S.W.,  
Washington, DC 20250  
202-720-7025  
202-690-4437 (Fax)  
Website: <http://www.usda.gov/>

<b>Animal and Plant Health Inspection Service</b> - Website: <a href="http://www.aphis.usda.gov/">http://www.aphis.usda.gov/</a>	
Administrator	202-720-3668
Associate Administrator	202-720-3861
<b>Veterinary Services</b> - Website: <a href="http://www.aphis.usda.gov/vs/">http://www.aphis.usda.gov/vs/</a>	
Deputy Administrator	202-720-5193
Emergency Programs	301-734-8073
National Veterinary Services Laboratory	515-663-7202
Eastern Region	919-856-4504
Central Region	817-885-6910
Western Region	916-857-6205
<b>Food Safety and Inspection Service</b> - Website: <a href="http://www.fsis.usda.gov/">http://www.fsis.usda.gov/</a>	
Administrator	202-720-7025
Office of Public Health and Science	202-720-2644
Food Safety Education	301-504-9605
Food Security and Emergency Preparedness	202-720-5643
Hotline (USDA Meat & Poultry)	800-535-4555
Office of Field Operations	202-720-8803
<b>Agriculture Research Service</b> – Website: <a href="http://www.ars.usda.gov">http://www.ars.usda.gov</a>	
Administrator	202-720-3656
Associate Administrator	202-720-3658
Plum Island Animal Disease Center	631-323-3207
National Animal Disease Center	515-663-7201

**TAB I SECTION 7**  
**RESOURCES - GOVERNMENT AGENCIES**

**U.S. DEPARTMENT OF DEFENSE**

**Department of The Army**

United States Army Veterinary Corps  
Chief, U.S. Army Veterinary Corps  
Director, DOD Veterinary Service Activity NQDA (DODVSA)  
5109 Leesburg Pike  
Falls Church, VA 22041-3258  
Phone: 703-681-3056  
Fax: 703-681-3059

Assistant Chief, U.S. Army Veterinary Corp/Corps Specific Branch Proponent Officer AMEDDC&S,  
Attn: MCCS-CV Ste 287, 2250 Stanley Rd., Fort Sam Houston, TX 78234-6100; 210-221-6564 (Office);  
210-221-8360 (Fax)

US Army Veterinary Command,  
Fort Sam Houston, TX 78234-6000

**Department of the Air Force**

HQ U.S. Air Force/SGW  
110 Luke Avenue Suite 360  
Bolling AFB, DC 20032-7050  
Director, Medical Force Management and Chief, Biomedical Sciences Corps  
(202) 767-4563 (Office); (202) 404-7366 (Fax)

HQ Air Force Medical Operations Agency/SGOP  
110 Luke Avenue Suite 405  
Bolling AFB DC 20032-7050  
Consultant to the Air Force Surgeon General for Public Health-  
202-767-4331 (Office) 202-404-8089 (Fax)



**TAB I SECTION 8**  
**RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

**U. S. Department of Labor**  
**Office of Public Affairs**  
**200 Constitution Avenue**  
**Washington, DC 20210**  
**(202) 693-1999**

**Website: [www.osha.gov](http://www.osha.gov)**

In case of emergency call: 1-800-321-OSHA

**REGION 1**

**Regional Office**  
**JFK Federal Building, Room E-340**  
**Boston, MA 02203**  
**Phone: (617) 565-9860**  
**Fax: (617) 565-9827**

**AREA OFFICES**

<b>Connecticut</b>	Bridgeport	(203) 579-5581
	Hartford	(860) 240-3152
<b>Maine</b>	Agusta	(207) 626-9160
	Bangor	(207) 941-8177
<b>Massachusetts</b>	Methuen	(617) 565-8110
	Braintree	(617) 565-6924
	Springfield	(413) 785-0123
<b>New Hampshire</b>	Concord	(603) 225-1629
<b>Rhode Island</b>	Providence	(401) 528-4669
<b>Vermont</b>	(Operates its own OSHA program under plan approved by the U.S. Dept. of Labor)	
	Montpelier	(802) 828-2765

**TAB I SECTION 8  
RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

**REGION 2**

**Regional Office**

**201 Varick Street, Room 670  
New York, NY 10014  
Phone: (212) 337-2378  
Fax: (212) 337-2371**

**AREA OFFICES**

<b>New Jersey</b>	Avenel	(732) 750-3270
	Hasbrouck Heights	(201) 288-1700
	Marlton	(856) 757-5181
	Parsippany	(973) 263-1003
<b>New York</b>	Albany	(518) 464-4338
	Bayside	(718) 279-9060
	Bowmansville	(716) 684-3891
	Westbury	(516) 334-3344
	New York	(212) 620-3200
	North Syracuse	(315) 451-0808
Tarrytown	(914) 524-7510	
<b>Puerto Rico</b>	Guaynabo	(787) 277-1560
<b>Virgin Islands</b> (Operates its own OSHA and health program under a plan approved by the U.S. Department of Labor)	St. Croix	(340) 772-1315

**REGION 3**

**Regional Office**

**U. S. Department of Labor/OSHA  
The Curtis Center-Suite 740 West  
170 S. Independence Mall West  
Philadelphia, PA 19106-3309  
Phone: (215) 861-4900  
Fax: (215) 861-4904**

**AREA OFFICES**

<b>District of Columbia</b>	Linthicum	(410) 865-2055/2056
<b>Delaware</b>	Wilmington	(302) 573-6518
<b>Maryland</b>	Linthicum	(410) 865-2055/2056

**TAB I SECTION 8**  
**RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

<b>Pennsylvania</b>	Allentown	(610) 776-0592
	Erie	(814) 833-5758
	Harrisburg	(717) 782-3902
	Philadelphia	(215) 597-4955
	Pittsburgh	(412) 395-4903
	Wilkes-Barre	(570) 826-6538
<b>Virginia</b>	Norfolk	(757) 441-3820
<b>West Virginia</b>	Charleston	(304) 347-5937

**REGION 4**  
**Regional Office**  
**61 Forsyth Street, SW**  
**Atlanta, GA 30303**  
**Phone: (404) 562-2300**  
**Fax: (404) 562-2295**

**AREA OFFICES**

<b>Alabama</b>	Birmingham	(205) 731-1534
	Mobile	(334) 441-6131
<b>Florida</b>	Fort Lauderdale	(954) 424-0242
	Jacksonville	(904) 232-2895
	Tampa	(813) 626-1177
<b>Georgia</b>	Tucker	(770) 493-6644
	Smyrna	(770) 984-8700
	Savannah	(912) 652-4393
<b>Kentucky</b>	Frankfort	(502) 227-7024
<b>Mississippi</b>	Jackson	(601) 965-4606
<b>North Carolina</b>	Raleigh	(919) 790-8096
<b>South Carolina</b>	Columbia	(803) 765-5904
<b>Tennessee</b>	Nashville	(615) 781-5423

**TAB I SECTION 8  
RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

**REGION 5  
Regional Office  
230 South Dearborn Street, Room 3244  
Chicago, IL 60604  
Phone: (312) 353-2220  
Fax: (312) 353-7774**

**AREA OFFICES**

<b>Illinois</b>	Calumet City	(708) 891-3800
	Des Plaines	(847) 803-4800
	Fairview Heights	(618) 632-8612
	North Aurora	(630) 896-8700
	Peoria	(309) 671-7033
<b>Indiana</b>	Indianapolis	(317) 226-7290
<b>Michigan</b>	Lansing	(517) 487-4996
<b>Minnesota</b>	Minneapolis	(612) 664-5460
<b>Ohio</b>	Cincinnati	(513) 841-4132
	Cleveland	(216) 522-3818
	Columbus	(614) 469-5582
	Toledo	(419) 259-7542
<b>Wisconsin</b>	Appleton	(920) 734-4521
	Eau Claire	(715) 832-9019
	Madison	(608) 441-5388
	Milwaukee	(414) 297-3315

**REGION 6  
Regional Office  
525 Griffin Street, Room 602  
Dallas, TX 75202  
Phone: (214) 767-4731  
Fax: (214) 767-4137**

**AREA OFFICES**

<b>Arkansas</b>	Little Rock	(501) 324-6291
<b>Louisiana</b>	Baton Rouge	(225) 298-5458
<b>New Mexico</b>	Lubbock, TX	(806) 472-7681 (7685)

**TAB I SECTION 8**  
**RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

<b>Oklahoma</b>	Oklahoma City	(405) 278-9560
<b>Texas</b>	Austin	(512) 374-0271
	Corpus Christi	(361) 888-3420
	Dallas	(214) 320-2400
	El Paso	(915) 534-6251 (6252)
	Fort Worth	(817) 428-2470
	Houston (North)	(281) 591-2438
	Houston (South)	(281) 286-0583 (0584)
	Lubbock	(806) 472-7681 (7685)
San Antonio	(210) 472-5040	

**REGION 7**  
**Regional Office**  
**City Center Square**  
**1100 Main Street, Suite 800**  
**Kansas City, MO 64105**  
**Phone: (816) 426-5861**  
**Fax: (816) 426-2750**

**AREA OFFICES**

<b>Iowa</b>	Des Moines	(515) 284-4794
<b>Kansas</b>	Wichita	(316) 269-6644
<b>Missouri</b>	Kansas City	(816) 483-9531
	St. Louis	(314) 425-4249
<b>Nebraska</b>	Omaha	(402) 221-3182

**REGION 8**  
**Regional Office**  
**1999 Broadway, Suite 1690**  
**PO Box 46550**  
**Denver, CO 80201-6550**  
**Phone: (720) 264-6550**  
**Fax: (720) 264-6585**

**AREA OFFICES**

<b>Colorado</b>	Denver	(303) 844-5285
	Englewood	(303) 843-4500

**TAB I SECTION 8**  
**RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

<b>Montana</b>	Billings	(406) 247-7494
<b>North Dakota</b>	Bismarck	(701) 250-4521
<b>South Dakota</b>	There are no Area Offices located in South Dakota. Contact the <u>Region 8 Regional Office</u> for assistance.	
<b>Utah</b>	Salt Lake City	(801) 233-4900
<b>Wyoming</b>	There are no Area Offices located in Wyoming. Contact the <u>Region 8 Regional Office</u> for assistance.	

**REGION 9**

**Region IX Federal Contact Numbers**  
**71 Stevenson Street, Room 420**  
**San Francisco, CA 94105**

**Phone: (414) 975-4310 (Main Public 8:00 a.m – 4:30 p.m. Pacific)**

**Phone: (800) 475-4019 (for technical assistance)**

**Phone: (800) 475-4020 (for complaints – accidents/fatalities)**

**Phone: (800) 475-4022 (for publication requests)**

**Fax: (415) 975-4319**

For issues involving federal agencies or private companies working for federal agencies in **Arizona, California, Guam, Hawaii, and Nevada**, call the numbers listed above. For issues involving **private** or **state government** employers in these states, refer to the appropriate **state office** in **Arizona, California, Hawaii, and Nevada**.

**State Office**

<b>Arizona</b>	Phoenix	(602) 542-4411
<b>California</b>	San Francisco	(415) 703-5050
<b>Hawaii</b>	Honolulu	(808) 586-8844
<b>Nevada</b>	Carson City	(775) 687-7260

**TAB I SECTION 8  
RESOURCES - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)**

**REGION 10  
Regional Office  
1111 Third Avenue, Suite 715  
Seattle, WA 98101-3212  
Phone: (206) 553-5930  
Fax: (206) 553-6499**

**AREA OFFICES**

<b>Alaska</b>	Anchorage	(907) 271-5152
<b>Idaho</b>	Boise	(208) 321-2960
<b>Oregon</b>	Portland	(503) 326-2251
<b>Washington</b>	Bellevue	(425) 450-5480

(Rev 05/05)

**TAB I SECTION 9**  
**RESOURCES - STATE EMERGENCY MEDICAL SERVICES (EMS) OFFICES**  
(See individual state websites for updated information)

**Alabama**

EMS Division  
Alabama Department of Health, EMS Division  
The RSA Tower, 201 Monroe Street, Ste 750  
PO Box 303017  
Montgomery, AL 36130-3017  
Phone: 334-206-5383 Fax: 334-206-5260  
<http://www.adph.org/>

**Alaska**

Community Health & EMS Section  
DHSS/Public Health  
PO Box 110616  
410 Willoughby, Rm 109  
Juneau, AK 99811-0616  
Phone: 907-465-3027 Fax: 907-465-4101  
<http://www.chems.alaska.gov>

**American Samoa**

EMS Coordinator  
Dept. Health American Samoa Gov't  
LBJ Tropical Medical Center  
Pago Pago, American Samoa 96799  
Phone: 011-684-633-5003 Fax: 011-684-633-5112

**Arizona**

Bureau of EMS  
Arizona Department of Health Services  
150 N 18<sup>th</sup> Avenue, Ste 540  
Phoenix, AZ 85007-3248  
Phone: 602-364-3150 Fax: 602-364-3566  
<http://www.azdhs.gov/bems>

**Arkansas**

Director  
Div. of EMS & Trauma Systems  
Arkansas Department of Health  
4815 W. Markham Street, Slot 38  
Little Rock, AR 72205-3867  
Phone: 501-661-2262 Fax: 501-280-4901  
<http://www.healthyarkansas.com/ems/>

**California**

Emergency Medical Svcs. Authority  
1930 9<sup>th</sup> Street, Suite 100  
Sacramento, CA 95814  
Phone: 916-322-4336 Fax: 916-324-2875  
<http://www.emsa.ca.gov/>

**Colorado**

Colorado Dept. of Health  
EMS Division, EMSD-ADM-A2  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530  
Phone: 303-692-2980 Fax: 303-691-7720  
<http://www.cdphe.state.co.us/em/emhom.html>

**Connecticut**

Office of EMS; Department of Public Health  
410 Capital Avenue, MS#12EMS  
PO Box 340308  
Hartford, CT 06134-0308  
Phone: 860-509-7975 Fax: 860-509-7987  
<http://www.dph.state.ct.us>

**Delaware**

Office of Emergency Medical Services  
Blue Hen Corporate Center  
655 Bay Road, Suite 4H  
Dover, DE 19901  
Phone: 302-739-6637 Fax: 302-739-6659  
<http://www.dhss.delaware.gov/dhss/dph/ems/ems.html>

**District of Columbia**

Emergency Health & Medical Services  
864 New York NE, Ste 5000  
Washington, DC 20001  
Phone: 202-671-4222  
<http://fems.dc.gov/fems/site/default.asp>

**Florida**

Florida Department of Health  
Emergency Medical Services  
4052 Bald Cypress Way, Bin #C18  
Tallahassee, FL 32399-1738  
Phone: 850-245-4073 Fax: 850-245-4385  
<http://www.fl-ems.com/>

**Georgia**

Georgia Office of Emergency Medical Services  
Division of Public Health  
Two Peachtree St, NW  
Atlanta, GA 30303  
Phone: 404-657-2594 Fax: 404-651-8036  
<http://health.state.ga.us/programs/ems/index.asp>



**TAB I SECTION 9**  
**RESOURCES - STATE EMERGENCY MEDICAL SERVICES (EMS) OFFICES**  
(See individual state websites for updated information)

**Guam**

Administrator, EMS  
Guam Dept. of Public Health and Social Services  
PO Box 2816  
Agana, GU 96932  
Phone: 011-671-735-7303 Fax: 011-671-734-2066  
<http://www.dphss.govguam.net>

**Hawaii**

State of Hawaii  
Department of Health  
Emergency Medical Services & Injury Prevention  
3627 Kilauea Avenue, Room 102  
Honolulu, HI 96816  
Phone: 808-733-9210 Fax: 808-733-8332  
<http://hawaii.gov/doh/resource/ems/index.html>

**Idaho**

EMS Bureau Chief  
ID Emergency Medical Services  
590 W. Washington Street (83702)  
PO Box 83720  
Boise, ID 83720-0036  
Phone: 208-334-4000 Fax: 208-334-4015  
E-mail: [gainord@idhw.state.id.us](mailto:gainord@idhw.state.id.us)  
<http://www.idahoems.org>

**Illinois**

Division of Emergency Medical Services  
IL Department of Public Health  
525 W. Jefferson  
Springfield, IL 62761  
Phone: 217-785-2080 Fax: 271-524-0966  
E-mail: [lstein@idph.state.il.us](mailto:lstein@idph.state.il.us)  
<http://www.idph.state.il.us>

**Indiana**

State EMS Medical Director  
Indiana EMS Commission  
302 W. Washington, Room E208 IGCS  
Indianapolis, IN 46204-2258  
Phone: 317-232-3980 Fax: 317-232-3895  
E-mail: [pralston@sema.state.in.us](mailto:pralston@sema.state.in.us)  
<http://www.in.gov/sema/ems>

**Iowa**

Bureau Chief of EMS  
Iowa Department of Public Health  
401 SW 7<sup>th</sup> Street, Suite D  
Des Moines, IA 50309

Phone: 515-725-0319 Fax: 515-725-0318  
E-mail: [rjones@health.state.ia.us](mailto:rjones@health.state.ia.us)  
<http://www.idph.state.ia.us/ems>

**Kansas**

State EMS Medical Director  
Board of Emergency Medical Services  
900 SW Jackson, Rm 1031  
Topeka, KS 66612  
Phone: 785-296-7296 Fax: 785-296-6212  
E-mail: [emslake@aol.com](mailto:emslake@aol.com)  
<http://www.ksbems.org/>

**Kentucky**

State EMS Medical Director  
Kentucky Board of EMS  
2545 Lawrenceburg Road  
Frankfort, KY 40601  
Phone: 502-564-8963 Fax: 502-564-4687  
E-mail: [brian.bishop@mail.state.ky.us](mailto:brian.bishop@mail.state.ky.us)  
<http://www.kbems.org>

**Louisiana**

State EMS Medical Directors  
Bureau of Emergency Medical Services  
PO Box 94215  
Baton Rouge, LA 70804  
Phone: 225-763-5700 Fax: 225-763-5702  
E-mail: [nbourgeo@dhh.state.la.us](mailto:nbourgeo@dhh.state.la.us)  
<http://oph.dhh.state.la.us/emergencymedical/>

**Maine**

State EMS Medical Director  
Maine Emergency Medical Services  
16 Edison Drive  
Augusta, ME 04330  
Phone: 207-287-3953 Fax: 207-287-6251  
E-mail: [jay.bradshaw@maine.gov](mailto:jay.bradshaw@maine.gov)  
<http://www.state.me.us/dps/ems>

**Maryland**

State EMS Medical Director  
The Maryland Institute for Emergency Medical  
Services Systems  
653 W. Pratt Street  
Baltimore, MD 21201-1536  
Phone: 410-706-5074 Fax: 410-706-4768  
E-mail: [rbass@miemss.org](mailto:rbass@miemss.org)  
<http://miemss.umaryland.edu>

**TAB I SECTION 9**  
**RESOURCES - STATE EMERGENCY MEDICAL SERVICES (EMS) OFFICES**  
(See individual state websites for updated information)

**Massachusetts**

State EMS Medical Director  
MDPH/OEMS  
2 Boylston St., 3<sup>rd</sup> Floor  
Boston, MA 02116  
Phone: 617-753-7300 Fax: 617-753-7320  
E-mail: [louise.goyette@state.ma.us](mailto:louise.goyette@state.ma.us)  
<http://www.state.ma.us/dph/oems>

**Michigan**

Director of Emergency Medical Services  
Dept. of Consumer & Industry Svcs.  
PO Box 30664  
Lansing, MI 48909  
Phone: 517-241-3020 Fax: 517-241-3423  
E-mail: [jfhubin@michigan.gov](mailto:jfhubin@michigan.gov)  
<http://www.michigan.gov/cis>

**Minnesota**

State EMS Medical Director  
MN EMS Regulatory Board  
2829 University Avenue SE, Suite 310  
Minneapolis, MN 55414-3222  
Phone: 612-627-5424; 800-747-2011  
Fax: 612-627-5442  
E-mail: [mary.hedges@state.mn.us](mailto:mary.hedges@state.mn.us)  
<http://www.emsrb.state.mn.us>

**Mississippi**

State EMS Medical Director  
EMS/Trauma Care System  
MS State Department of Health  
570 E. Woodrow Wilson, Annex, 3<sup>rd</sup> Floor  
Jackson, MS 39215  
Phone: 601-576-7366 Fax: 601-576-7373  
E-mail: [james.craig@ohr.doh.ms.gov](mailto:james.craig@ohr.doh.ms.gov)  
<http://www.msdh.state.ms.us/ems/index.htm>

**Missouri**

Director  
Bureau of Emergency Medical Services  
MO Department of Health  
PO Box 570  
Jefferson City, MO 65102-6348  
Phone: 573-751-6356 Fax: 573-751-6348  
E-mail: [kempfp@dhss.state.mo.us](mailto:kempfp@dhss.state.mo.us)  
<http://www.health.state.mo.us>

**Montana**

Emergency Medical Services & Injury Prevention  
Section  
Mt. Dept. of Public Health & Human Svcs  
PO Box 202951  
1400 Broadway, Cogswell Bldg, Rm C204  
Helena, MT 59620-2951  
Phone: 406-444-2724 Fax: 406-444-1814  
E-mail: [kleighton-boster@state.mt.us](mailto:kleighton-boster@state.mt.us)  
<http://www.emsip.state.mt.us>

**Nebraska**

Division of Emergency Medical Services  
NE Dept. of HHS Regulations & Licensure  
Box 95007  
301 Centennial Mall South, 3<sup>rd</sup> Floor  
Lincoln, NE 68509-5007  
Phone: 402-471-0124 Fax: 402-471-0169  
E-mail: [dean.cole@hhs.state.ne.us](mailto:dean.cole@hhs.state.ne.us)  
<http://www.hhs.state.ne.us/ems/emsindex.htm>

**Nevada**

Emergency Medical Services  
Nevada State Health Division  
Bureau of Licensure & Certification  
1550 E. College Parkway, #158  
Carson City, NV 89706  
Phone: 775-687-3065 Fax: 775-684-5313  
E-mail: [flaughridge@ems.state.nv.us](mailto:flaughridge@ems.state.nv.us)  
<http://health2k.state.nv.us/ems/index.htm>

**New Hampshire**

State EMS Medical Director  
NH Department of Safety  
Division of Emergency Medical Services  
33 Hazen Drive  
Concord, NH 03305  
Phone: 603-271-4568 Fax: 603-271-4567  
E-mail: [sprentiss@safety.state.nh.us](mailto:sprentiss@safety.state.nh.us)  
<http://www.state.nh.us/safety/ems/index.html>

**New Jersey**

State EMS Medical Director  
NJ Dept. of Health & Senior Svcs  
Office of EMS  
CN-360; 50 E State St., 6<sup>th</sup> Floor  
Trenton, NJ 08625-0360  
Phone: 609-633-7777 Fax: 609-633-7954  
E-mail: [karen.halupke@doh.state.nj.us](mailto:karen.halupke@doh.state.nj.us)  
<http://www.state.nj.us/health/ems>

**TAB I SECTION 9**  
**RESOURCES - STATE EMERGENCY MEDICAL SERVICES (EMS) OFFICES**  
(See individual state websites for updated information)

**New Mexico**

State EMS Medical Director  
Injury Prevention & EMS Bureau  
2500 Cerrillos Road  
Santa Fe, NM 87505  
Phone: 505-476-7810 Fax: 505-476-7810  
E-mail: [jjmd@doh.state.nm.us](mailto:jjmd@doh.state.nm.us)

**New York**

State EMS Medical Director  
Bureau of EMS  
New York State Health Department  
Hedley Park Place  
433 River Street, Ste 303  
Troy, NY 12180-2299  
Phone: 518-402-0996 Fax: 518-402-0985  
E-mail: [egw02@health.state.ny.us](mailto:egw02@health.state.ny.us)  
<http://www.health.state.ny.us/nysdoh/ems/main.htm>

**North Carolina**

State EMS Medical Director  
NC Office of EMS  
2707 Mail Service Center  
Raleigh, NC 27699-2707  
Phone: 919-855-3935 Fax: 919-733-7021  
E-mail: [drexdal.pratt@ncmail.net](mailto:drexdal.pratt@ncmail.net)  
<http://www.ncems.org>

**North Dakota**

Division of Emergency Health Services  
ND Department of Health  
600 E. Boulevard Avenue; Dept. 301  
Bismarck, ND 58505-0200  
Phone: 701-328-2388 Fax: 701-328-1890  
E-mail: [tmmeyer@state.nd.us](mailto:tmmeyer@state.nd.us)  
<http://www.health.state.nd.us/ndhd/resource/dehs/>

**Northern Mariana Islands**

EMS Manger  
Department of Public Safety  
Office of EMS/Rescue Section  
PMB 915, PO Box 10001  
Saipan, MP 96950  
Phone: 011-670-664-9135 Fax: 011-670-664-9015  
Email: [tmanglona@hotmail.com](mailto:tmanglona@hotmail.com)

**Ohio**

State EMS Medical Director  
Ohio Department of Public Safety  
Emergency Medical Services Division  
PO Box 182073  
Columbus, OH 43218-2073  
Phone: 614-466-9447  
800-233-0785  
Fax: 614-466-9461  
E-mail: [mrucker@dps.state.oh.us](mailto:mrucker@dps.state.oh.us)  
<http://www.ohiopublicsafety.com>

**Oklahoma**

EMS Division  
OK State Department of Health  
1000 NE 10<sup>th</sup> Street, Room 1104  
Oklahoma City, OK 73117  
Phone: 405-271-4027 Fax: 405-271-4240  
E-mail: [shawnr@health.state.ok.us](mailto:shawnr@health.state.ok.us)  
<http://www.health.state.ok.us/program/ems/index.htm>  
1

**Oregon**

Director  
Emergency Medical Services & Trauma Systems  
Health Services  
800 NE Oregon, Suite 607  
Portland, OR 97232  
Phone: 503-731-4011 Fax: 503-872-5400  
E-mail: [j.chin@state.or.us](mailto:j.chin@state.or.us)  
<http://www.dhs.state.or.us/publichealth/ems>

**Pennsylvania**

State EMS Medical Director  
Pennsylvania Department of Health  
PO Box 90  
Harrisburg, PA 17108  
Phone: 717-787-8740 Fax: 717-772-0910  
E-mail: [mtrimble@state.pa.us](mailto:mtrimble@state.pa.us)  
<http://www.health.state.pa.us/ems>

**Puerto Rico**

EMS Medical Director  
Department of Health  
Bo. Monacillos  
Carr. 21 – Km. 1 Hm. 6  
Centro Medico frente al Dept. de Salud  
Rio Piedras, PR 00922  
Phone: 787-766-1733 Fax: 787-765-5085  
E-mail: [wvelazquez@cem.gobierno.pr](mailto:wvelazquez@cem.gobierno.pr)  
[gmorales@cem.gobierno.pr](mailto:gmorales@cem.gobierno.pr)

**TAB I SECTION 9**  
**RESOURCES - STATE EMERGENCY MEDICAL SERVICES (EMS) OFFICES**  
(See individual state websites for updated information)

**Rhode Island**

State EMS Medical Director  
EMS Division  
Department of Health, Room 105  
3 Capitol Hill, Room 105  
Providence, RI 02908-5097  
Phone: 401-222-2401 Fax: 401-222-3352  
E-mail: [petrel@doh.state.ri.us](mailto:petrel@doh.state.ri.us)  
<http://www.health.state.ri.us>

**South Carolina**

State EMS Medical Director  
SC DHEC, Division of EMS  
2600 Bull St.  
Columbia, SC 29201  
Phone: 803-545-4204 Fax: 803-545-4989  
E-mail: [smithaw2@dhec.sc.us](mailto:smithaw2@dhec.sc.us)  
<http://www.scdhec.net/hr/ems>

**South Dakota**

Emergency Medical Services  
SD Department of Public Safety  
118 W Capitol Avenue  
Pierre, SD 57501-2036  
Phone: 605-773-4031 Fax: 605-773-2680  
E-mail: [bob.graff@state.sd.us](mailto:bob.graff@state.sd.us)  
<http://www.state.sd.us/dps/ems>

**Tennessee**

State EMS Medical Director  
Division of EMS  
TN Department of Health  
Cordell Hull Bldg., First Floor  
424 Fifth Avenue, North  
Nashville, TN 37247-0701  
Phone: 615-741-2584 Fax: 615-741-4217  
E-mail: [joe.phillips@state.tn.us](mailto:joe.phillips@state.tn.us)  
<http://www2.state.tn.us/health/ems>

**Texas**

Chief  
Bureau of Emergency Management  
Texas Department of Health  
1100 49<sup>th</sup> Street  
Austin, TX 78756-3199  
Phone: 512-834-6740 Fax: 512-834-6736  
E-mail: [jim.arnold@tdh.state.tx.us](mailto:jim.arnold@tdh.state.tx.us)  
<http://www.tdh.state.tx.us/hcqs/ems>

**Utah**

Director  
Bureau of EMS  
UT Department of Health  
288 N 1460 West  
Salt Lake City, UT 84114-2004  
Phone: 801-538-6435 Fax: 801-538-6808  
E-mail: [jbuttrey@utah.gov](mailto:jbuttrey@utah.gov)  
<http://www.health.state.ut.us/ems>

**Vermont**

State EMS Medical Director  
VT Department of Health  
108 Cherry Street, Room 201  
Burlington, VT 05402  
Phone: 802-863-7310 Fax: 802-863-7754  
E-mail: [dmanz@vdh.state.vt.us](mailto:dmanz@vdh.state.vt.us)  
<http://www.healthyvermonters.info/hp/ems/emshome.shtml>

**Virgin Islands**

Emergency Medical Services  
DOH  
3012 Vitracco Est. Goldenrock  
Christiansted, St. Croix, VI 00820  
Phone: 340-713-9924  
E-mail: [vimchstx@viaaccess.net](mailto:vimchstx@viaaccess.net)

**Virginia**

State EMS Medical Director  
Virginia Department of Health  
1538 E. Parham Road  
Richmond, VA 23228  
Phone: 804-371-3500 Fax: 804-371-3543  
E-mail: [gbrown@vdh.state.va.us](mailto:gbrown@vdh.state.va.us)  
<http://www.vdh.state.va.us/oems/>

**Washington**

Director  
Office of Emergency Medical & Trauma Prevention  
WA State Department of Health  
PO Box 47853  
Olympia, WA 98504-7853  
Phone: 360-236-2828 Fax: 360-236-2829  
E-mail: [janet.griffith@doh.wa.gov](mailto:janet.griffith@doh.wa.gov)  
<http://www.doh.wa.gov/hsqa/emtp/>

**TAB I SECTION 9**  
**RESOURCES - STATE EMERGENCY MEDICAL SERVICES (EMS) OFFICES**  
(See individual state websites for updated information)

**West Virginia**

State EMS Medical Director  
WV Office of EMS  
WV Department of Health & Human Resources  
350 Capitol Street, Rm 515  
Charleston, WV 25301  
Phone: 304-558-3956 Fax: 304-558-1437  
E-mail: [markking@wvdhhr.org](mailto:markking@wvdhhr.org)  
<http://www.wvoems.org>

**Wisconsin**

State EMS Medical Director  
Bureau of EMS & Injury Prevention  
DHFS/P.H.  
PO Box 2659  
Madison, WI 53701-2659  
Phone: 608-261-6870 Fax: 608-261-6392  
E-mail: [turnena@dhfs.state.wi.us](mailto:turnena@dhfs.state.wi.us)  
<http://dhfs.wisconsin.gov/ems/>

**Wyoming**

State EMS Medical Director  
WY Department of Health  
Hathaway Building, Room 446  
Cheyenne, WY 82002  
Phone: 307-777-7955 Fax: 307-777-5639  
E-mail: [jmaybe@state.wy.us](mailto:jmaybe@state.wy.us)  
<http://wdhfs.state.wy.us/ems>

Last Updated: May 18, 2005

**TAB I SECTION 10**  
**RESOURCES - ENVIRONMENTAL PROTECTION AGENCY**

Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW.  
Washington, Dc 20460  
Phone: (202) 272-0167  
TTY (speech-and hearing-impaired) (202) 272-0165  
Website: <http://www.epa.gov/epahome>

**Region 1** (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)

Environmental Protection Agency  
1 Congress St., Suite 1100  
Boston, MA 02114-2023  
Website: <http://www.epa.gov/region01/>  
Phone: (617) 918-1111  
Fax: (617) 565-3660  
Toll free within Region 1: (888) 372-7341

**Region 2** (New Jersey, New York, Puerto Rico and the U. S. Virgin Islands)

Environmental Protection Agency  
290 Broadway  
New York, NY 10007-1866  
Website: <http://www.epa.gov/region02/>  
Phone: (212) 637-3000  
Fax: (212) 637-3526

**Region 3** (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia)

Environmental Protection Agency  
1650 Arch Street  
Philadelphia, PA 19103-2029  
Website: <http://www.epa.gov/region03/>  
Phone: (215) 814-5000  
Fax: (215) 814-5103  
Toll free: (800) 438-2474  
E-mail: [r3public@epa.gov](mailto:r3public@epa.gov)

**Region 4** (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee)

Environmental Protection Agency  
Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, GA 30303-3104  
Website: <http://www.epa.gov/region04/>  
Phone: (404) 562-9900

**TAB I SECTION 10**  
**RESOURCES - ENVIRONMENTAL PROTECTION AGENCY**

Fax: (404) 562-8174  
Toll free: (800) 241-1754

**Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin)**

Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, IL 60604-3507  
Website: <http://www.epa.gov/region05/>  
Phone: (312) 353-2000  
Fax: (312) 353-4135  
Toll free within Region 5: (800) 621-8431

**Region 6 (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas)**

Environmental Protection Agency  
Fountain Place 12<sup>th</sup> Floor, Suite 1200  
1445 Rose Avenue  
Dallas, TX 75202-2733  
Website: <http://www.epa.gov/region06/>  
Phone: (214) 665-2200  
Fax: (214) 665-7113  
Toll free within Region 6: (800) 887-6063

**Region 7 (Iowa, Kansas, Missouri, and Nebraska)**

Environmental Protection Agency  
901 North 5<sup>th</sup> Street  
Kansas City, KS 66101  
Website: <http://www.epa.gov/region07/>  
Phone: (913) 551-7003  
Toll free: (800) 223-0425  
Fax: (913) 551-7066

**Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming)**

Environmental Protection Agency  
999 18<sup>th</sup> Street Suite 500  
Denver, CO 80202-2466  
Website: <http://www.epa.gov/region08/>  
Phone: (303) 312-6312  
Fax: (303) 312-6339  
Toll free: (800) 227-8917  
E-mail: [r8eisc@epa.gov](mailto:r8eisc@epa.gov)

**Region 9 (Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa)**

**TAB I SECTION 10**  
**RESOURCES - ENVIRONMENTAL PROTECTION AGENCY**

Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105  
Website: <http://www.epa.gov/region09/>  
Phone: (415) 947-8000  
Toll Free in Region 9: (866) EPA-WEST (372-9378)  
Fax: (415) 947-3553  
E-mail: [r9.info@epa.gov](mailto:r9.info@epa.gov)

**Region 10 (Alaska, Idaho, Oregon, and Washington)**

Environmental Protection Agency  
1200 Sixth Avenue  
Seattle, WA 98101  
Website: <http://www.epa.gov/region10/>  
Phone: (206) 553-1200  
Fax: (206) 553-0149  
Toll fee: (800) 424-4372

(Rev 05/05)



**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**Alliance of Veterinarians for the Environment**

AVE President  
836 W. Hillwood Dr.  
Nashville, TN 37205  
Phone: 615-353-0272  
Fax: 615-353-8904  
E-mail: [avegwen@aol.com](mailto:avegwen@aol.com)  
Website: <http://www.AVEweb.org>

**American Academy of Veterinary and Comparative Toxicology**

AAVCT Secretary/Treasurer  
North Dakota State University  
Veterinary Diagnostic Laboratory  
PO Box 5406  
Fargo, ND 58105-5406  
Phone: 701-231-7529  
Fax: 701-231-7514  
E-mail: [michelle.mostrom@ndsu.nodak.edu](mailto:michelle.mostrom@ndsu.nodak.edu)

**American Academy of Veterinary Pharmacology and Therapeutics**

AAVPT Secretary/Treasurer  
410 Evergreen Ct West  
Urbana, IL 61801  
Phone: 217-384-2860  
Fax: 217-384-4636  
E-mail: [cdavis2@insightbb.com](mailto:cdavis2@insightbb.com)  
Website: <http://www.aavpt.org>

**American Academy on Veterinary Disaster Medicine**

AAVDM Secretary/Treasurer  
PO Box 1366  
Washington Grove, MD 20880  
Phone: 301-977-8985  
Fax: 301-436-2632  
E-mail: [patriceklein@hotmail.com](mailto:patriceklein@hotmail.com)  
Website: [www.aavdm.org](http://www.aavdm.org)

**American Animal Hospital Association**

(Street Address) 12575 West Bayaud Avenue  
Lakewood, CO 80228  
(Mail Address) PO Box 150899  
Denver, CO 80215-0899  
Phone: 303-986-2800  
Fax: 303-986-1700  
E-Mail: [john.albers@aahanet.org](mailto:john.albers@aahanet.org)  
Website: <http://www.aahanet.org>

**American Association of Avian Pathologists**

Secretary/Treasurer  
University of Georgia  
953 College Station Road  
Athens, GA 30602-4875  
Phone: 706-542-5645  
Fax: 706-542-0249  
E-mail: [aaap@uga.edu](mailto:aaap@uga.edu)  
Website: <http://www.aaap.info>

**American Association of Bovine Practitioners**

Executive Vice President  
PO Box 3610  
Auburn, AL 36831-3610  
Phone: 334-821-0442  
Fax: 334-821-9532  
E-mail: [aabphq@aabp.org](mailto:aabphq@aabp.org)  
Website: <http://www.aabp.org>

**American Association of Equine Practitioners**

Executive Director  
4075 Iron Works Pike  
Lexington, KY 40511  
Phone: 859-233-0147  
Fax: 859-233-1968  
E-mail: [dfoley@aaep.org](mailto:dfoley@aaep.org) or  
[aaepoffice@aaep.org](mailto:aaepoffice@aaep.org)  
Website: <http://www.aaep.org>

**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**American Association of Extension Veterinarians**

AAEV President  
North Dakota State University  
Department of Animal and Range Sciences  
Hultz Hall, Rm 165  
Fargo, ND 58105  
Phone: 701-231-7522  
Fax: 701-231-7590  
E-mail: [cstolten@ndsuxt.nodak.edu](mailto:cstolten@ndsuxt.nodak.edu)

**American Association of Feline Practitioners**

Executive Director  
66 Morris Avenue, Suite 2A  
Springfield, NJ 07081  
Phone: 973-379-1100  
Fax: 973-379-6507  
E-mail: [rickaaamc@earthlink.net](mailto:rickaaamc@earthlink.net)  
Website: <http://www.aafponline.org>

**American Association of Food Hygiene Veterinarians**

Executive Vice President  
4910 Magdalene Court  
Annandale, VA 22003-4363  
Phone: 703-323-0003  
Fax: 703-323-9327  
E-mail: [joelblair@erols.com](mailto:joelblair@erols.com)  
Website: <http://www.avma.org/aafhv/>

**American Association of Human-Animal Bond Veterinarians**

Secretary  
Atlantic Veterinary College  
University of Prince Edward Island  
550 University Avenue  
Charlottetown, PE, Canada C1A 4\_3  
Phone: 902-566-0831  
Fax: 902-566-0832  
E-mail: [ewalshaw@upe.ca](mailto:ewalshaw@upe.ca)  
Website: <http://aahabv.org>

**American Association of Industrial Veterinarians**

CAE, CMP  
Bobrow & Associates  
6060 Sunrise Vista Drive, Suite 1300  
Citrus Heights, CA 95610  
Phone: 916-722-8168  
Fax: 916-722-8149  
E-mail: [maryann@bobrowassociates.com](mailto:maryann@bobrowassociates.com)  
Website: <http://www.bobrowassociates.com>

**American Association for Laboratory Animal Science**

Executive Director  
9190 Crestwyn Hills Drive  
Memphis, TN 38125  
Phone: 901-754-8620  
Fax: 901-753-0046  
E-mail: [ann.turner@aalas.org](mailto:ann.turner@aalas.org)  
Website: <http://www.aalas.org>

**American Association of Public Health Veterinarians**

President, Hugh Mainzer  
CDC-NCEHS  
Division of EEHS  
4770 Buford Hwy NE, Mailstop: F-28  
Atlanta, GA 30341  
Phone: 770-488-3138  
Fax: 770-488-7310  
E-mail: [hmainzer@cdc.gov](mailto:hmainzer@cdc.gov)  
Website:  
<http://www.acvpm.org/html/html0s/00195.1.347886745516644261>

**American Association of Small Ruminant Practitioners**

2413 Nashville Rd., Suite 112  
MS-C13  
Bowling Green, KY 42101  
Phone: 270.793.0781  
Fax: 502-413-6625  
Email: [aasrp@aasrp.org](mailto:aasrp@aasrp.org)

**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**American Association of Swine Veterinarians**

Executive Director  
902 1<sup>st</sup> Street  
Perry, IA 50220  
Phone: 515-465-5255  
Fax: 515-465-3832  
E-mail: [aasv@aasv.org](mailto:aasv@aasv.org)  
Website: <http://www.aasv.org>

**American Association of Wildlife Veterinarians**

AAWV President, Dr. Dave Jessup  
1451 Shafer Rd  
Santa Cruz, CA 95060  
Phone: 831-469-1726  
Fax: 831-469-1723  
E-mail: [djessup@ospr.dfg.ca.gov](mailto:djessup@ospr.dfg.ca.gov)  
Website: <http://www.aawv.net>

**American Association of Veterinary Clinicians**

37 W. Broad St., Ste 480  
Columbus, OH 43215  
Phone: 614-358-0417  
Fax: 614-241-2215  
E-mail: [tking@craiggroup.com](mailto:tking@craiggroup.com)  
Website: <http://www.craiggroup.com/aavc.htm>

**American Association of Zoo Veterinarians**

Executive Director  
6 N. Pennell Road  
Media, PA 19063  
Phone: 610-892-4812  
Fax: 610-892-4813  
E-mail: [aazv@aol.com](mailto:aazv@aol.com)  
Website: <http://www.aazv.org>

**American Association of Veterinary  
Laboratory Diagnosticians**

Secretary/Treasurer  
California Animal Health & Food Safety  
Laboratory System  
UC Davis, PO Box 1770  
Davis, CA 95617-1770  
Phone: 530-754-9719  
Fax: 530-752-5680  
E-mail: [aavld@email.com](mailto:aavld@email.com)  
Website: <http://www.aavld.org>

**American Board of Veterinary Toxicology**

ABVT Secretary-Treasurer  
University of Idaho, DFST  
Holm Research Center  
2222 Sixth Street  
Moscow, ID 83844-2201  
Phone: 208-885-6109  
Fax: 208-885-8937  
E-mail: [ptalcott@uidaho.edu](mailto:ptalcott@uidaho.edu)  
Website: <http://www.abvt.org>

**American Association of Veterinary  
Parasitologists**

Executive Secretary Treasurer  
c/o Elanco Animal Health  
2001 W Main, Mail Drop GL52  
PO Box 708  
Greenfield, IN 46140  
Phone: 317-277-4439  
Fax: 317-277-4288  
E-mail: [snyder\\_daniel\\_e@lilly.com](mailto:snyder_daniel_e@lilly.com)  
Website: <http://www.aavp.org>

**American Boarding Kennels Association**

Executive Director  
1702 E. Pikes Peak Avenue  
Colorado Springs, CO 80909  
Phone: 719-667-1600  
877-570-7788 (Toll Free)  
Fax: 719-667-0116  
E-mail: [info@abka.com](mailto:info@abka.com)  
Website: <http://www.abka.com>

**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**American College of Veterinary Emergency  
and Critical Care**

Executive Secretary  
Department of Clinical Sciences  
School of Veterinary Medicine, Tufts University  
200 Westboro Road  
North Grafton, MA 01536  
Phone: 508-887-4633  
Fax: 508-839-7922  
E-mail: [james.ross@tufts.edu](mailto:james.ross@tufts.edu)  
Website: <http://www.acvecc.org>

**American Heartworm Society**

Administrator  
PO Box 667  
Batavia, IL 60510-0667  
Phone: 630-262-1997  
Fax: 630-208-8398  
E-mail: [heartwormsociety@earthlink.net](mailto:heartwormsociety@earthlink.net)  
Website: <http://www.heartwormsociety.org>

**American Horse Council**

President  
1616 H Street NW, 7<sup>th</sup> Floor  
Washington, DC 20006  
Phone: 202-296-4031  
Fax: 202-296-1970  
E-mail: [ahc@horsecouncil.org](mailto:ahc@horsecouncil.org)  
Website: <http://www.horsecouncil.org>

**American Horse Shows Association (US  
Equestrian)**

Office of the AHSA  
Drugs & Medications Program  
3760 Ridge Mill Drive  
Hilliard, OH 43026  
Phone: 800-633-2472  
Fax: 614-771-7706  
E-mail: [medequestrian@aol.com](mailto:medequestrian@aol.com)

**American Humane Association  
Animal Protection Services**

63 Inverness Drive East  
Englewood, CO 80112-5117  
Phone: 303-792-9900  
Fax: 303-792-5333  
E-mail: [animal@americanhumane.org](mailto:animal@americanhumane.org)  
Website: <http://www.americanhumane.org>

**American Kennel Club**

President & CEO  
260 Madison Avenue  
New York, NY 10016  
Phone: 212-696-8200  
Fax: 212-696-8329  
E-mail: [dbs@akc.org](mailto:dbs@akc.org)  
Website: <http://www.akc.org>

**American Society of Laboratory Animal  
Practitioners**

ASLAP Coordinator  
11300 Rockville Pike, Ste 1211  
Rockville, MD 20852-3035  
Phone: 301-231-6349  
Fax: 301-231-6071  
E-mail: [aslap@aaalac.org](mailto:aslap@aaalac.org)  
Website: <http://www.aslap.org>

**ASPCA National Animal Poison Control  
Center**

1717 S. Philo Road, Suite 36  
Urbana, IL 61802  
Hotline: 888-426-4435  
Phone: 217-337-5030 (Administrative calls only)  
Fax: 217-334-3586  
E-mail: [dfarbman@apcc.aspc.org](mailto:dfarbman@apcc.aspc.org)  
Website: <http://www.apcc.aspc.org>

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(Please check individual websites or current AVMA Directory for updated information.)

**American Society for the Prevention of Cruelty  
to Animals**

424 East 92<sup>nd</sup> Street  
New York, NY 10128-6804  
Phone: 212-876-7700  
Fax: 212-876-2835  
E-mail: [napcc@aspc.org](mailto:napcc@aspc.org)  
Website: <http://www.aspc.org>

**American Veterinary Epidemiology Society**

Secretary-Treasurer, Dr. Albert Ahn  
The Hartz Mountain Corporation  
400 Plaza Drive  
Secaucus, NJ 07094  
Phone: 201-271-4800 x7270  
Fax: 201-271-0134  
E-mail: [aahn@hartz.com](mailto:aahn@hartz.com)

**American Zoo & Aquarium Association**

8403 Colesville Road, Ste 710  
Silver Spring, MD 20910  
Phone: 301-562-0777  
Fax: 301-562-0888  
E-mail: [generalinquiry@aza.org](mailto:generalinquiry@aza.org)  
Website: <http://www.aza.org>

**Animal Health Institute**

1325 G Street NW, Ste 700  
Washington, DC 20005  
Phone: 202-637-2440  
Fax: 202-393-1667  
E-mail: [mgilmore@ahi.org](mailto:mgilmore@ahi.org)  
Website: <http://www.ahi.org>

**Animal Transportation Association**

111 East Loop North  
Houston, TX 77029  
Phone: 713-532-2177  
Fax: 713-432-2166  
E-mail: [info@aata-animaltransport.org](mailto:info@aata-animaltransport.org)  
Website: <http://www.aata-animaltransport.org>

**Association of Avian Veterinarians**

PO Box 811720  
Boca Raton, FL 33481  
Phone: 561-393-8901  
Fax: 561-393-8902  
E-mail: [aavctrlofc@aol.com](mailto:aavctrlofc@aol.com)  
Website: <http://www.aav.org>

**Association of Primate Veterinarians**

Unit of Research Resources  
Tulane National Primate Research Center  
18703 Three Rivers Rd  
Covington, LA 70433  
Phone: 985-871-6278  
Fax: 985-871-6231  
E-mail: [ratt@tulane.edu](mailto:ratt@tulane.edu)  
Website: <http://www.primatetvets.org>

**Association of Reptilian and Amphibian  
Veterinarians**

Executive Director  
PO Box 605  
Chester Heights, PA 19017  
Phone: 610-358-9530  
Fax: 610-892-4813  
E-mail: [aravets@aol.com](mailto:aravets@aol.com)  
Website: <http://www.arav.org>

**Cat Fanciers' Association, Inc.**

1805 Atlantic Avenue, PO Box 1005  
Manasquan, NJ 08736-0805  
Phone: 732-528-9797  
Fax: 732-528-7391  
E-mail: [cfa@cfa.org](mailto:cfa@cfa.org)  
Website: <http://www.cfa.org>

**Christian Veterinary Mission**

19303 Fremont Avenue N.  
Seattle, WA 98133  
Phone: 206-546-7226  
Fax: 206-546-7458  
E-mail: [rkf@cvmusa.org](mailto:rkf@cvmusa.org)  
Website: <http://www.christianvetmission.org>

**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**Doris Day Animal League**

227 Massachusetts Ave., NE, Suite 100  
Washington, DC 20002  
Phone: 202-546-1761  
Fax: 202-546-2193  
E-mail: [info@ddal.org](mailto:info@ddal.org)  
Website: <http://www.ddal.org>

**Hooved Animal Humane Society, The**

10804 McConnell Road  
Woodstock, IL 60098  
Phone: 815-337-5563  
Fax: 815-337-5569  
E-mail: [info@hahs.org](mailto:info@hahs.org)  
Website: <http://www.hahs.org>

**Humane Society of the United States, The**

2100 L Street, NW  
Washington, DC 20037  
Phone: 202-452-1100  
Fax: 202-778-6132  
Website: <http://www.hsus.org>

**National Animal Control Association**

PO Box 480851  
Kansas City, MO 64148-0851  
Phone: 913-768-1319  
Fax: 913-768-1378  
E-mail: [naca@interserv.com](mailto:naca@interserv.com)  
Website: <http://www.nacenet.org>

**National Assembly of State Animal Health Officials**

Secretary-Treasurer  
8249 Mossy Oak Drive  
Montgomery, AL 36117  
Phone: 334-277-7788  
Fax: 334-277-7788 (call first)  
E-mail: [jalleyealley@knology.net](mailto:jalleyealley@knology.net)  
Website: <http://www.usaha.org>

**National Association of Federal Veterinarians**

Executive Vice President  
1100 Vermont Street NW, Ste 710  
Washington, DC 20005-6308  
Phone: 202-289-6334  
Fax: 202-842-4360  
E-mail: [dboyle@nafv.org](mailto:dboyle@nafv.org)  
Website: <http://users.erols.com/nafv/>

**National Association of State Departments of Agriculture**

Executive Vice President/CEO  
1156 15<sup>th</sup> Street NW, Ste 1020  
Washington, DC 20005  
Phone: 202-296-9680  
Fax: 202-296-9686  
E-mail: [nasda@nasda.org](mailto:nasda@nasda.org)  
Website: <http://www.nasda.org>

**National Association of State Public Health Veterinarians**

President  
Kansas Department of Health & Environment  
1000 SW Jackson, Suite 210  
Topeka, KS 66612  
Phone: 785-296-1127  
Fax: 785-291-3775  
E-mail: [ghansen@kdhe.state.ks.us](mailto:ghansen@kdhe.state.ks.us)  
Website: <http://www.nasphv.org>

**National Association of Veterinary Technicians in America**

PO Box 224  
Battle Ground, IN 47920  
Phone: 765-742-2216  
E-mail: [navta@navta.net](mailto:navta@navta.net)  
Website: <http://www.navta.net>

**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**National Environment Health Association**

720 South Colorado Blvd., Suite 970-S  
Denver, CO 80246  
Phone: 303-756-9090  
Fax: 303-691-9490  
E-mail: [staff@neha.com](mailto:staff@neha.com)  
Website: <http://www.neha.org>

**National Institute for Animal Agriculture**

President and CEO  
1910 Lyda Avenue  
Bowling Green, KY 42104-5809  
Phone: 270-782-9798  
Fax: 270-782-0188  
E-mail: [niaa@animalagriculture.org](mailto:niaa@animalagriculture.org)  
Website: <http://www.animalagriculture.org>

**National Wildlife Rehabilitators Association**

14 North 7<sup>th</sup> Avenue  
St. Cloud, MN 56303-4766  
Phone: 320-259-4086  
E-mail: [nwra@nwrwildlife.org](mailto:nwra@nwrwildlife.org)  
Website: <http://www.nwrwildlife.org>

**People for the Ethical Treatment of Animals**

501 Front Street  
Norfolk, VA 23510  
Phone: 757-622-7382  
Fax: 757-622-0457  
E-mail: [info@peta.org](mailto:info@peta.org)  
Website: <http://www.peta.org/>

**Society of Aquatic Veterinary Medicine**

Secretary  
14161 Oliver St  
Chesterfield, MO 63017  
Phone: 314-469-1700  
Fax: 314-469-1701  
E-mail: [jjflaser@aol.com](mailto:jjflaser@aol.com)  
Website: <http://www.savm.org>

**Society for Theriogenology**

Executive Director  
PO Box 3007  
Montgomery, AL 36109-3007  
Phone: 334-395-4666  
Fax: 334-270-3399  
E-mail: [charles@franzmgt.com](mailto:charles@franzmgt.com)  
Website: <http://www.therio.org>

**United Animal Nations**

5892A South Land Park Drive  
PO Box 188890  
Sacramento, CA 95818  
Phone: 916-429-2457  
Fax: 916-429-2456  
E-mail: [info@uan.org](mailto:info@uan.org)  
Website: <http://www.uan.org>

**United States Animal Health Association**

8100 Three Chopt Road, Ste 203  
PO Box K227  
Richmond, VA 23288  
Phone: 804-285-3210  
Fax: 804-285-3367  
E-mail: [usaha@usaha.org](mailto:usaha@usaha.org)  
Website: <http://www.usaha.org>

**United States Army Veterinary Corps**

Brigadier General Michael B. Cates  
Chief, U. S. Army  
Veterinary Corps  
Commander, USACHPPM  
5158 Blackhawk Rd  
Aberdeen Proving Ground, MD 21010-5403  
Phone: 410-436-4311  
Fax: 410-436-8513

**TAB I SECTION 11**  
**RESOURCES – OTHER ORGANIZATIONS/ASSOCIATIONS**  
**RELATED TO VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**United States Public Health Service Chief  
Veterinarian**

Capt. William S. Stokes, DVM, DACLAM  
National Institute of Environmental Health Svcs  
National Institutes of Health  
Dept of Health & Human Services  
PO Box 12233, Mail Code EC-17  
Research Triangle Park, NC 27709  
Phone: 919-541-7997  
Fax: 919-541-0947  
E-mail: [stokes@niehs.nih.gov](mailto:stokes@niehs.nih.gov)  
Website: [http://www.usphs.gov/html/vet\\_cpo.html](http://www.usphs.gov/html/vet_cpo.html)

**Veterinary Amateur Radio Operators**

Dr. Richard J. Rossman  
330 Waukegan Road  
Glenview, IL 60025  
Phone: 847-729-5200  
Fax: 847-729-5214  
E-mail: [richige@aol.com](mailto:richige@aol.com)

**Veterinary Emergency & Critical Care Society**

Executive Director  
6335 Camp Bullis Road, Ste 14  
San Antonio, TX 78257  
Phone: 210-698-5575  
Fax: 210-698-7138  
E-mail: [stamp@veccs.org](mailto:stamp@veccs.org)  
Website: <http://www.veccs.org>

**World Health Organization**

Team Coordinator  
Animal and Food Related Public Health Risks  
(APH)  
Dept. of Communicable Disease Surveillance and  
Response (CSR)  
Avenue Appia 20  
1211 Geneva 27  
Switzerland  
Phone: 41-22-791-21 11  
Fax: 41-22-791-31 11  
E-mail: [infor@who.int](mailto:infor@who.int)  
Website: <http://www.who.int>

**World Society for the Protection of Animals**

Chief Executive  
89 Albert Embankment  
London, England SE1 7TP  
Phone: 44-20-7587-5000  
Fax: 44-20-7793-0208  
E-mail: [wspa@wspa.org.uk](mailto:wspa@wspa.org.uk)  
Website: <http://www.wspa-international.org>

**World Veterinary Association**

Executive Secretary  
Rosenlunds Alle 8  
DK-2720 Vanløse, Denmark  
Phone: 45-387-10156  
Fax: 45-387-10322  
E-mail: [wva@ddd.dk](mailto:wva@ddd.dk)  
Website: <http://www.worldvet.org>

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**TAB I SECTION 12**  
**RESOURCES - OTHER IMPORTANT CONTACTS**

**Registry of Veterinary Pathology – Armed Forces Institute of Pathology**

VC, USA, Registrar  
Registry of Veterinary Pathology  
Armed Forces Institute of Pathology  
6825 16<sup>th</sup> Street, NW  
Washington, DC 20306-6000  
Phone: 202-782-2600  
Fax: 202-782-9150  
E-mail: [afipvet@afip.osd.mil](mailto:afipvet@afip.osd.mil)  
Website: <http://www.afip.org/vetpath/index.html>

**ASPCA National Animal Poison Control Center**

1717 S. Philo Road, Suite 36  
Urbana, IL 61802  
Hotline: 888-426-4435  
Phone: 217-337-5030 (Administrative calls only)  
Fax: 217-334-3586  
E-mail: [dfarbman@apcc.aspc.org](mailto:dfarbman@apcc.aspc.org)  
Website: <http://www.apcc.aspc.org>

**National Association for Search and Rescue (NASAR)**

PO Box 232020  
Chantilly, VA 20120-2020  
Phone: 703-222-6277; Toll Free: 877-893-0702  
Fax: 703-222-6277  
E-mail: [info@nasar.org](mailto:info@nasar.org) (information)  
Website: <http://www.nasar.org>

**National Renderers Association, Inc.**

HRA Headquarters Office  
801 North Fairfax Street, Ste. 207  
Alexandria, VA 22314  
Phone: 703-683-0155  
Fax: 703-683-2626  
E-mail: [renderers@nationalrenderers.com](mailto:renderers@nationalrenderers.com)  
Website: <http://www.renderers.org>

**Pet loss support hotlines (grief counseling):**

**530-752-4200 or 800-565-1526** – Staffed by University of California Davis veterinary students  
**630-325-1600** – Staffed by Chicago VMA veterinarians and staffs  
**607-253-3932** – Staffed by Cornell University veterinary students  
**217-244-2273(CARE) or 877-394-2273(CARE)** – Staffed by University of Illinois veterinary students  
**888-ISU-PLSH (888-478-7574)** – Staffed by Iowa State University veterinary students and community volunteers  
**517-432-2696** – Staffed by Michigan State University veterinary students  
**614-292-1823; e-mail, [petloss@osu.edu](mailto:petloss@osu.edu)** - Staffed by The Ohio State University veterinary students

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**RESOURCES - OTHER IMPORTANT CONTACTS**

**508-839-7966** – Staffed by Tufts University veterinary students

**540-231-8038** – Staffed by Virginia-Maryland Regional College of Veterinary Medicine

**509-335-5704** – Staffed by Washington State University veterinary students

**Southeastern Cooperative of Wildlife Disease Study (SCWDS)**

Wildlife Health Building

College of Veterinary Medicine, The University of Georgia

Athens, GA 30602

Phone: 706-542-1741

Fax: 706-542-5865

Website: <http://www.uga.edu/scwds/index.htm>

**Small Business Administration – Disaster Area Offices**

Website: [http://www.sba.gov/disaster\\_recov/index.html](http://www.sba.gov/disaster_recov/index.html)

**Disaster Area 1 Office**

**360 Rainbow Blvd. S., 3<sup>rd</sup> Floor**

**Niagara Falls, NY 14303**

**Phone: 800-659-2955**

<http://www.sba.gov/disasterarea1/>

Serves: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Puerto Rico, Rhode Island, Vermont, Virgin Islands, Virginia, and West Virginia

**Disaster Area 2 Office**

**One Baltimore Place, Ste. 300**

**Atlanta, GA 30308**

**Phone: 800-359-2227**

<http://www.sba.gov/disasterarea2/>

Serves: Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Michigan, Minnesota, Mississippi, North Carolina, Ohio, South Carolina, Tennessee, and Wisconsin

**Disaster Area 3 Office**

**14925 Kingsport Road**

**Fort Worth, TX 76155-2243**

**Phone: 800-366-6303**

<http://www.sba.gov/disasterarea3/>

Serves: Arkansas, Colorado, Iowa, Kansas, Louisiana, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming

**Disaster Area 4 Office**

**PO Box 419004**

**Sacramento, CA 95841-9004**

**Phone: 800-488-5323**

<http://www.sba.gov/disasterarea4/>

Serves: Alaska, American Samoa, Arizona, California, Guam, Hawaii, Idaho, Nevada, Oregon,

**TAB I SECTION 12**  
**RESOURCES - OTHER IMPORTANT CONTACTS**

Washington, the Federated States of Micronesia, the Republic of the Marshall Islands, and the Commonwealth of the Northern Mariana Islands

**USDA Missing Pet Network:** Website: <http://www.missingpet.net/>

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**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**ALLERGY**

**Academy of Veterinary Allergy and Clinical Immunology (AVACI)**

Dr. Michael Groh  
612 SW 3<sup>rd</sup> Street, Suite F  
Lee's Summit, MO 64063  
Ph: 816-525-6262  
Fax: 816-246-9554  
Website: <http://www.avaci.org>

The Academy of Veterinary Allergy and Clinical Immunology (AVACI) is an association of veterinarians with a special interest in clinical allergy and applied immunology in small and large animals. The purpose of the Academy is to promote research of allergic diseases and other related diseases of animals and to disseminate information concerning this research.

**ANATOMY**

**American Association of Veterinary Anatomists (AAVA)**

c/o Dr. Dennis Duffield, Associate Professor  
Veterinary Anatomy & Cell Biology  
Louisiana State University  
School of Veterinary Medicine  
Baton Rouge, LA 70803  
Ph: 225-578-9900  
E-mail: [dduffield@mail.vetmed.lsu.edu](mailto:dduffield@mail.vetmed.lsu.edu)  
Website: <http://www.civic.bev.net/aava>

The American Association of Veterinary Anatomists (AAVA) is a membership organization with the stated goal of the advancement of veterinary anatomical science. The AAVA was founded in 1949 and has several hundred members.

**AQUATIC**

**Aquaculture Association of Canada**

16 Lobster Lane  
St. Andrews, NB  
Canada E5B 3T6  
Ph: 506-529-4766  
Fax: 506-529-4609  
E-mail: [aac@mar.dfo-mpo.gc.ca](mailto:aac@mar.dfo-mpo.gc.ca)  
Website: <http://www.aquacultureassociation.ca/>

The Aquaculture Association of Canada (AAC) fosters an aquaculture industry in Canada, to promote the study of aquaculture and related science in Canada, to gather and disseminate information relating to aquaculture, and to create public awareness and understanding of aquaculture.

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(Please check individual websites or current AVMA Directory for updated information.)

**European Aquaculture Society (EAS)**

Slijkensesteenweg 4

B-8400 Oostende

Belgium

Ph: +32 59 32 38 59

Fax: +32 59 32 10 05

E-mail: [eas@aquaculture.cc](mailto:eas@aquaculture.cc)

Website: <http://www.easonline.org>

The European Aquaculture Society (EAS) was established on April 30, 1976 as an international, non-profit association, with the principal objective of being the European forum for contacts and information exchange between all within the aquaculture industry. EAS currently has members in 59 countries worldwide, working in all fields related to aquaculture.

**International Association for Aquatic Animal Medicine (IAAAM)**

Lisa Mazzaro, PhD, Secretary

55 Cogan Blvd

Mystic, CT 06355

Ph: 860-572-5955 ext. 109

Fax: 860-572-5969

E-mail: [lmazzaro@mysticaquarium.org](mailto:lmazzaro@mysticaquarium.org)

Website: <http://www.iaaam.org>

The International Association for Aquatic Animal Medicine (IAAAM) is an organization of individuals who are professionally interested in and devote a significant amount of time to the practice of aquatic animal medicine, teaching and research in aquatic animal medicine, or the husbandry and management of aquatic animals.

**International Center for Aquaculture and Aquatic Environments (ICAAE)**

Swing Hall

Auburn University

Auburn, AL 36849

Ph: 334-844-4786

Fax: 334-844-9208

E-mail: [bduncan@acesag.auburn.edu](mailto:bduncan@acesag.auburn.edu)

Website: <http://www.ag.auburn.edu/icaae/>

The mission of the International Center for Aquaculture and Aquatic Environments is to protect and conserve water and related environmental resources, to advance knowledge of water and environmental resources through education and research, and to enhance economic opportunities for people who depend upon water and environmental resources for their livelihoods and well being.

**Society of Aquatic Veterinary Medicine, The (SAVM)**

Dr. James Flaser, Secretary

14161 Oliver St

Chesterfield, MO 63017

Ph: 314-469-1700

Fax: 314-469-1701

E-mail: [jjflaser@aol.com](mailto:jjflaser@aol.com)

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

Website: <http://www.savm.org>

The Society of Aquatic Veterinary Medicine (SAVM) is a non-profit organization dedicated to Veterinary Continuing Education in Small Animal Medicine and Aquatic Medicine.

**World Aquaculture Society (WAS)**

E-mail: [wasmass@aol.com](mailto:wasmass@aol.com)

Website: <http://www.was.org/main/Default.asp>

The World Aquaculture Society (WAS) is an international non-profit society with over 4,000 members in 94 countries. Founded in 1970, the primary focus of WAS is to improve communication and information exchange within the diverse global aquaculture community.

**AVIAN**

**American Association of Avian Pathologists (AAAP)**

Secretary/Treasurer

University of Georgia

953 College Station Road

Athens, GA 30602-4875

Phone: 706-542-5645

Fax: 706-542-0249

E-mail: [aaap@uga.edu](mailto:aaap@uga.edu)

Website: <http://www.aaap.info>

The AAAP was launched as a national organization for veterinary practitioners, diagnosticians, researchers, and students interested in poultry health and performance. With annual meetings involving both national and international members, interested individuals come together to discuss poultry diseases and further the knowledge base of poultry medicine.

**Association of Avian Veterinarians (AAV)**

PO Box 811720

Boca Raton, FL 33481

Phone: 561-393-8901

Fax: 561-393-8902

E-mail: [aavctrlofc@aol.com](mailto:aavctrlofc@aol.com)

Website: <http://www.aav.org>

The AAV began with 175 veterinarians from the United States and Canada. Today, the AAV boasts an international membership of more than 3,300 members from 43 countries. One of the purposes of the AAV, as stated in its Articles of Organization, is to educate its members and the general public as to all aspects of avian medicine and surgery. Through conferences, practical labs, avicultural programs, client education brochures and a veterinary journal devoted to all aspects of avian medicine.

**CARDIOVASCULAR**

**American College of Veterinary Internal Medicine (ACVIM)**

1997 Wadsworth Blvd., Suite A

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(Please check individual websites or current AVMA Directory for updated information.)

Lakewood, CO 80215-3327  
Ph: 303-231-9933 or 800-245-9081  
Fax: 303-231-0880  
E-mail: [acvim@acvim.org](mailto:acvim@acvim.org)  
Website: <http://www.acvim.org>

Established in 1972, this 25+ years old organization is the recognized specialty college responsible for establishing training requirements, evaluating and accrediting training programs, and examining and certifying veterinarians in the veterinary specialties of Internal Medicine, Cardiology, Neurology, and Oncology.

**European Society of Veterinary Cardiology (ESVC)**

c/o Michelle Borgarelli, Secretary  
Via Conte Rosso 3  
Turin, I-10121, Italy  
E-mail: [mboresvc@tin.it](mailto:mboresvc@tin.it)  
Website: <http://www.esvc.net>

An objective of the European Society of Veterinary Cardiology (ESVC) is to promote the exchange of information and further scientific progress in Veterinary Cardiology and to develop and to spread the cardiology of domestic and exotic animals.

**Veterinary Heart Institute (VHI)**

Institute of Veterinary Specialists  
7520 W University Avenue  
Gainesville, FL 32607  
Ph: 352-331-4233  
Fax: 352-3331-5211  
E-mail: [jbayles@vetheart.com](mailto:jbayles@vetheart.com)  
Website: <http://www.vetheart.com>

The Veterinary Heart Institute is a cardiology referral and national consulting center for veterinarians. The VHI is committed to the care of animals with heart disease, clinical and basic cardiologic research, continuing education and the advancement of veterinary cardiology.

**DENTISTRY**

**Academy of Veterinary Dentistry (AVD)**

Dr. Gregg Dupont  
16037 Aurora North  
Seattle, WA 98933  
Phone: 206-542-2101  
Fax: 206-542-4290  
E-mail: [GatorGregg@aol.com](mailto:GatorGregg@aol.com)

In 1987 the Academy was formed in response to the need for recognition of those veterinarians who had advanced training and competency in animal dentistry. The Academy of Veterinary Dentistry is an international organization of veterinarians with a special interest in the dentistry of animals. Most of the members are practitioners, serving the oral health needs of the patients presented to them.

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(Please check individual websites or current AVMA Directory for updated information.)

**American Society of Veterinary Dental Technicians (ASVDT)**

PO Box 1636

Venice, FL 34284

Phone: 800-613-3647

Fax: 941-488-6937

Website: <http://www.asvdt.org>

The American Society of Veterinary Dental Technicians (ASVDT) was created in 1994 by a group of veterinary technicians who have dedicated the major part of their careers to veterinary dentistry.

**American Veterinary Dental College (AVDC)**

Secretary/Treasurer, Colin E. Harvey

VHUP 3113, 3900 Delancey Street, Philadelphia, PA 19104-6010

Phone: 215-898-5903

Fax: 215-898-9937

E-mail: [ceh@vet.upenn.edu](mailto:ceh@vet.upenn.edu)

Website: <http://www.avdc.org>

The AVDC promotes the advancement of high standards in the art of science of veterinary dentistry through the encouragement of all veterinary colleges to establish in-depth instruction and a high standard for training in veterinary dentistry. In addition the AVDC has established alternate training programs for veterinarians in practice.

**American Veterinary Dental Society (AVDS)**

618 Church Street, Ste 220

Nashville, TN 37219

Ph: 800-332-2837

Fax: 615-254-7047

E-mail: [avds@walkermgt.com](mailto:avds@walkermgt.com)

Website: [www.avds-online.org](http://www.avds-online.org)

The American Veterinary Dental Society (AVDS) was formed to educate and raise awareness about veterinary dentistry among veterinarians, veterinary students and the public.

**Australian Veterinary Dental Society**

2 Christies Rd

Leopold, VIC 324 Australia

Ph: 03 5250 3300

Fax: 03 5250 3525

E-mail: [webmaster@petdental.com.au](mailto:webmaster@petdental.com.au)

Website: <http://petdental.com.au/>

The mission statement of the Australian Veterinary Dental Society is to provide the best possible dental and oral health care by promoting the awareness of veterinary dentistry to the veterinary profession.

**DERMATOLOGY**



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(Please check individual websites or current AVMA Directory for updated information.)

**American Academy of Veterinary Dermatology**

Dr. James O. Noxon, DVM, ACVIM, President

ISU Veterinary Teaching Hospital

Dept. of Veterinary Clinical Hospital

Ames, IA 50011-1250

Phone: 515-294-4900

Fax: 515-294-9281

E-mail: [noxon@iastate.edu](mailto:noxon@iastate.edu)

**American College of Veterinary Dermatology, The (ACVD)**

Executive Secretary

5610 Kearny Mesa Rd, Suite 1B

San Diego, CA 92111

Ph: 858-560-9393

Fax: 858-560-0926

E-mail: [itchypet@aol.com](mailto:itchypet@aol.com)

Website: <http://www.acvd.org>

The American College of Veterinary Dermatology is an official specialty board organization, accredited by the American Veterinary Medical Association and charges with maintenance of high standards of postgraduate training in veterinary dermatology.

**GASTROENTEROLOGY**

**The Comparative Gastroenterology Society (CGS)**

Website: [http://www.vetmed.wsu.edu/org\\_cgs/](http://www.vetmed.wsu.edu/org_cgs/)

The purpose of the Comparative Gastroenterology Society is to encourage professional improvement and the interchange of knowledge and ideas among those persons interested in comparative gastroenterology.

**GENERAL**

**Advisory Board of Veterinary Specialties (ABVS)**

c/o American Veterinary Medical Association

1931 N. Meacham Road, Suite 100

Ph: 847-925-8070

Fax: 847-925-1329

E-mail: [avmainfo@avma.org](mailto:avmainfo@avma.org)

A board of the AVMA. Organization of veterinarians with advanced training in one or more specialty areas of veterinary practice, research, or study whose purpose is to recognize and supervise organizations that provide certification to qualified specialists. Acts as mediator upon request in appeals submitted to the AVMA. Seeks to provide advanced veterinary services to the public.

**American Animal Hospital Association (AAHA)**

Dr. John W. Albers, Executive Director

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(Please check individual websites or current AVMA Directory for updated information.)

(Street Address) 12575 West Bayaud Avenue  
Lakewood, CO 80228  
(Mail Address) PO Box 150899  
Denver, CO 80215-0899  
Phone: 303-986-2800  
Fax: 303-986-1700

E-Mail: [john.albers@aahanet.org](mailto:john.albers@aahanet.org)

Website: <http://www.aahanet.org>

The American Animal Hospital Association (AAHA) is an international association of more than 17,000 veterinary care providers who treat companion animals. Established in 1933, the AAHA is well known among veterinarians and pet owners for its standards for hospitals and pet health care. Over 2,800 veterinary hospitals voluntarily participate in the AAHA hospital evaluation program.

**American Association of Veterinary Laboratory Diagnosticians (AAVLD)**

Secretary/Treasurer

California Animal Health & Food Safety Laboratory System

UC Davis, PO Box 1770

Davis, CA 95617-1770

Phone: 530-754-9719

Fax: 530-752-5680

E-mail: [aavld@email.com](mailto:aavld@email.com)

Website: <http://www.aavld.org>

The American Association of Veterinary Laboratory Diagnosticians (AAVLD) disseminates information relating to the diagnosis of animal diseases. It also coordinates diagnostic activities of regulatory, research, and service laboratories.

**American Pre-Veterinary Medical Association (APVMA)**

Website: <http://www.stuorg.iastate.edu/pvc/apvma>

The American Pre-Veterinary Medical Association (APVMA) is a college-level national chapter organization dedicated to promote and stimulate interest in the field of veterinary medicine and provide its member clubs with sources of information regarding sister clubs and the field of veterinary medicine.

**ASPCA National Animal Poison Control Center**

1717 S. Philo Road, Suite 36

Urbana, IL 61802

Hotline: 888-426-4435

Phone: 217-337-5030 (Administrative calls only)

Fax: 217-334-3586

E-mail: [dfarbman@apcc.aspc.org](mailto:dfarbman@apcc.aspc.org)

Website: <http://www.apcc.aspc.org>

The ASPCA National Poison Control Center is dedicated to helping animals exposed to potentially hazardous substances by providing 24-hour veterinary diagnostic and treatment recommendations. The Center is committed to protecting and improving the lives of animals through toxicology educational programs and non-traditional research.

**American Veterinary Medical Association (AVMA)**

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(Please check individual websites or current AVMA Directory for updated information.)

1931 N. Meacham Road, Suite 100  
Schaumburg, IL 60173-4360  
Ph: 847-925-8070  
Fax: 847-925-1329  
E-mail: [avmainfo@avma.org](mailto:avmainfo@avma.org)  
Website: <http://www.avma.org>

The objective of the Association is to advance the science and art of veterinary medicine, including its relationship to public health, biological science, and agriculture. The Association provides a forum for the discussion of issues of importance to the veterinary profession, and for the development of official positions. The Association is the authorized voice for the profession in presenting its views to government, academia, agriculture, pet owners, the media, and other concerned publics. Conducts educational and research programs. Provides placement service, maintains library, and compiles statistics. Compiled and distributes the *AVMA Emergency Preparedness and Response Guide* and *Saving the Whole Family Booklet*. Annual directory.

**Animal Health Institute (AHI)**

1325 G Street, NW, Suite 700  
Washington, DC 20005-3104  
Ph: 202-637-2440  
Fax: 202-393-1667  
Website: <http://www.ahi.org>

The Animal Health Institute is the U.S. trade association that represents manufacturers of animal health care products -- the pharmaceuticals, vaccines and feed additives used to produce a safe supply of meat, milk, poultry and eggs, and the veterinary medicines that help pets live longer, healthier lives.

**Canadian Veterinary Medical Association (CVMA)**

339 Booth Street  
Ottawa, Ontario  
Canada K1R 7K1  
Ph: 613-236-1162  
E-mail: [infor@canadianveterinarians.net](mailto:infor@canadianveterinarians.net)  
Website: <http://canadianveterinarians.net/Index.aspx>

The Canadian Veterinary Medical Association (CVMA) is the national body serving the interests of over 8,000 Canadian veterinarians.

**National Assembly of State Animal Health Officials**

Dr. J. Lee Alley, Secretary-Treasurer  
8249 Mossy Oak Drive  
Montgomery, AL 36117  
Ph: 334-277-7788  
Fax: 334-277-7788 (call first)  
E-mail: [jalleyalley@knology.net](mailto:jalleyalley@knology.net)  
Website: <http://www.usaha.org>

**National Association of Federal Veterinarians (NAFV)**

Dr. Dale Boyle, Executive Vice President

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(Please check individual websites or current AVMA Directory for updated information.)

1100 Vermont Street NW, Ste 710  
Washington, DC 20005-6308  
Phone: 202-289-6334  
Fax: 202-842-4360  
E-mail: [dboyle@nafv.org](mailto:dboyle@nafv.org)  
Website: <http://users.erols.com/nafv/>

The NAFV has served federally employed veterinarians for more than 80 years. Formed in 1918 during a meeting of the American Veterinary Medical Association in Boston by a small group of veterinarians with USDA's Bureau of Animal Industry (BAI), it has grown to almost 1,300 active members. As an association of supervisors and managers, the NAFV has an official consultative relationship with both the Department of Agriculture and the Food and Drug Administration. It is recognized as the representative organization for veterinarians employed by the federal government.

**National Cattlemen's Beef Association (NCBA)**

Gary L. Cowman, PhD, Executive Director  
Technical Services  
9110 East Nichols Avenue  
Centennial, CO 80112  
Ph: 303-850-3375  
Fax: 303-683-7448  
E-mail: [glcowman@beefchat.com](mailto:glcowman@beefchat.com)  
Website: <http://www.beef.org>

Initiated in 1898, the National Cattlemen's Beef Association is the marketing organization and trade association for America's one million cattle farmers and ranchers. NCBA is a consumer-focused, producer-directed organization representing the largest segment of the nation's food and fiber industry.

**National Chicken Council (NCC)**

1015 15<sup>th</sup> Street, NW, Suite 930  
Washington, DC 20005  
Ph: 202-296-2622  
Fax: 202-293-4005  
E-mail: [gwatts@chickenusa.org](mailto:gwatts@chickenusa.org)  
Website: <http://www.nationalchickencouncil.com>

**Tri-State Bird Rescue & Research, Inc.**

Executive Director  
110 Possum Hollow Road  
Newark, DE 19711  
Ph: 302-737-9543  
Fax: 302-737-9562  
Website: <http://www.tristatebird.org>

The mission of the Tri-State Bird Rescue & Research, Inc. is to promote healthy populations of native wildlife.

**United States Animal Health Association**

8100 Three Chopt Road, Suite 203

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(Please check individual websites or current AVMA Directory for updated information.)

PO Box K227  
Richmond, VA 23288  
Ph: 804-285-3210  
Fax: 804-285-3367  
E-mail: [usaha@usaha.org](mailto:usaha@usaha.org)  
Website: <http://www.usaha.org>

The United States Animal Health Association (USAHA), a national non-profit organization, has about 1,400 members and works with state and federal animal health officials, veterinarians, livestock producers, national livestock and poultry organizations, research scientists, the extension service and seven foreign countries to control livestock diseases in the United States. The Association serves as an advisor to the U.S. Department of Agriculture. USAHA represents all 50 states, 7 foreign countries and 18 allied groups serving health, technical and consumer markets. The Association has 33 working committees concerned about all diseases affecting major domestic livestock.

**United States Army Veterinary Corps**

Brigadier General Michael B. Cates  
Chief, U. S. Army  
Veterinary Corps  
Commander, USACHPPM  
5158 Blackhawk Rd  
Aberdeen Proving Ground, MD 21010-5403  
Phone: 410-436-4311  
Fax: 410-436-8513

**World Veterinary Association**

Lars Holsaae, Executive Director  
Rosenlunds Allé 8,  
DK-2720 Vanlose Denmark  
Ph: 45-387-10156  
Fax: 45-387-10322  
E-mail: [wva@ddd.dk](mailto:wva@ddd.dk)  
Website: <http://www.worldvet.org>

The World Veterinary Association is a global non political, non religious and non profit-making association guarding veterinary interests in the world society. The Association is committed to unifying the veterinary profession world-wide.

**INTERNAL MEDICINE**

**American College of Veterinary Internal Medicine (ACVIM)**

Executive Director  
1997 Wadsworth Blvd., Suite A  
Lakewood, CO 80214  
Ph: 303-231-9933 or 800-245-9081  
Fax: 303-231-0880  
E-mail: [acvim@acvim.org](mailto:acvim@acvim.org)

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(Please check individual websites or current AVMA Directory for updated information.)

Website: <http://www.acvim.org>

Established in 1972, this 25+ years old organization is the recognized specialty college responsible for establishing training requirements, evaluating and accrediting training programs, and examining and certifying veterinarians in the veterinary specialties of Internal Medicine, Cardiology, Neurology, and Oncology.

### **NUTRITION**

#### **American Academy of Veterinary Nutrition (AAVN)**

Dr. Wilbur B. Amand, Executive Director

6 North Pennell Rd

Media, PA 19063-5520

Ph: 610-892-4812

Fax: 610-892-4813

E-mail: [wbamand@aol.com](mailto:wbamand@aol.com)

Website: <http://www.aavn.org>

The American Academy of Veterinary Nutrition is an international association of veterinarians and animal scientists with a common interest in animal nutrition as it relates to animal health.

#### **American College of Veterinary Nutrition (ACVN)**

Dr. Wilbur B. Amand, Executive Director

6 North Pennell Rd

Media, PA 19063-5520

Ph: 610-892-4812

Fax: 610-892-4813

E-mail: [wbamand@aol.com](mailto:wbamand@aol.com)

Website: <http://www.acvn.org>

The primary objective of the American College of Veterinary Nutrition is to advance the specialty area of veterinary nutrition and increase the competence of those who practice in this field by establishing requirements for certification in veterinary nutrition, encouraging continuing professional education, promoting research, and enhancing the dissemination of new knowledge of veterinary nutrition through didactic teaching and postgraduate programs.

#### **FDA Center for Food Safety & Applied Nutrition**

Website: <http://vm.cfsan.fda.gov>

The Center for Food Safety and Applied Nutrition is one of six centers within FDA. With a work force of about 800, the center promotes and protects the public health and economic interest by ensuring that: Food is safe, nutritious and wholesome, and cosmetics are safe. Food and cosmetics are honestly, accurately and informatively labeled.

### **OPHTHALMOLOGY**

#### **American College of Veterinary Ophthalmologists (ACVO)**

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

Ms. Stacey Daniel, Executive Director  
PO Box 1311  
Meridian, ID 83680  
Ph: 208-466-7624  
Fax: 208-466-7693  
E-mail: [acvo@mtgs-etc.com](mailto:acvo@mtgs-etc.com)  
Website: <http://www.acvo.com>

The American College of Veterinary Ophthalmologists is an association, not an actual physical location, that has established certifying criteria for ophthalmologists.

**American Society of Veterinary Ophthalmology**

c/o Dr. Virginia Schultz, Secretary Treasurer  
2001 Whispering Creek Dr  
Edmond, OK 73013  
Ph: 405-616-3937  
Fax: 405-631-3937  
Website: <http://www.asvo.org>

The principal aim of the American Society of Veterinary Ophthalmology (ASVO) is to promote scientific progress in veterinary ophthalmology. This involves efforts to facilitate the presentation of new information, to improve diagnostic and treatment procedures, and to encourage expanded training in ophthalmology at veterinary colleges.

**PARASITOLOGY**

**American Association of Veterinary Parasitologists (AAVP)**

Dr. Alan A. Marchiondo  
c/o Phoenix Scientific, Inc.  
3915 S. 48th St. Terrace  
St. Joseph, MO 64503-4711  
(816)364-3777, ext. 1375  
Fax: (816)364-6021  
email: [amarchiondo@psiqv.com](mailto:amarchiondo@psiqv.com)  
Website: <http://www.aavp.org>

The objectives of the organization shall be to provide for the association of persons interested in the advancement of veterinary parasitology, for the presentation and discussion of items of common interest, and to further scientific progress by education and research in veterinary parasitology.

**PATHOLOGY**

**American College of Veterinary Pathologists (ACVP)**

ACVP Executive Offices  
7600 Terrace Avenue, Ste 203  
Middleton, WI 53562  
Ph: 608-833-8725 ext 149

**TAB I SECTION 13**  
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(Please check individual websites or current AVMA Directory for updated information.)

Fax: 608-831-5122

E-mail: [info@acvp.org](mailto:info@acvp.org)

Website: <http://www.acvp.org>

The objectives of the American College of Veterinary Pathologists are: to further scientific progress in veterinary pathology; to establish standards of training, experience, and examination for qualification as specialists in veterinary pathology; and to further the recognition of such qualified specialists by suitable certification and other means.

**Charles Louis Davis Foundation for the Advancement of Veterinary & Comparative Pathology**

6245 Formoor Lane

Gurnee, IL 60031-4757

Ph: 847-367-4359

Fax: 847-247-1869

E-mail: [cldavisdvm@ameritech.net](mailto:cldavisdvm@ameritech.net)

Website: <http://www.afip.org/CLDavis/index.html>

The mission of The Foundation is to further the Advancement of Veterinary and Comparative Pathology. Through a variety of outreach educational programs The Foundation strives to advance the study of the diseases of animals (veterinary) and the comparison of diseases manifested by diverse species of animals. In the pursuit and dissemination of such knowledge, The Foundation, hopes to improve the health and well being of all animals in the world, including man.

**European College of Veterinary Pathologists**

Dr Christopher J. Clarke, Secretary

Pathology Department, Safety Assessment, Glaxo Smith Kline, Park Road

Ware Herts

SG 12 0DP

United Kingdom

Fax: +44 (0)192 088 2446

E-mail: [christopher.j.clarke@gsk.com](mailto:christopher.j.clarke@gsk.com)

Website: <http://www.bris.ac.uk/Depts/PathAndMicro/EuroVet/ecvpmain.html>

The European College of Veterinary Pathologists was established in 1995 to advance veterinary pathology and promote high standards within the specialty in Europe.

**European Society of Veterinary Pathology**

Honorary Secretary

Prof. Cinzia Benazzi

Dept. of Veterinary Public Health and Animal Pathology

Via Tolara di Sopra, 50, 40064 Ozzano Emilia (BO), Italy.

Tel: +39 051 2097955

Fax: +39 051 2097967

E-mail: [benazzi@vet.unibo.it](mailto:benazzi@vet.unibo.it)

Website: <http://www.bris.ac.uk/pathandmicro/eurovet/esvpmain.htm>

**Registry of Veterinary Pathology**

VC, USA, Registrar



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(Please check individual websites or current AVMA Directory for updated information.)

Department of Veterinary Pathology  
Armed Forces Institute of Pathology  
Washington, DC 20306-600  
E-mail: [afipvet@afip.osd.mil](mailto:afipvet@afip.osd.mil)  
Website: <http://www.afip.org/vetpath>

Offers expertise and diagnostic assistance for domestic, exotic, and marine mammal cases. Promotes the field of veterinary pathology by hosting numerous training courses, compiles study sets of domestic and exotic material and organizes the internationally recognized Wednesday Slide Conference.

**Society of Toxicologic Pathologists**

1821 Michael Faraday Dr, Ste 300  
Reston, VA 20190  
Ph: 703-438-7508  
Fax: 703-438-3116  
E-mail: [stp@toxpath.org](mailto:stp@toxpath.org)  
Website: <http://www.toxpath.org>

The Society of Toxicologic Pathologists is a non-profit association of pathologists, whose principal aim is the advancement of pathology as it pertains to changes elicited by pharmacological, chemical and environmental agents and factors that modify these responses.

**PHARMACOLOGY**

**American Academy of Veterinary Pharmacology and Therapeutics (AAVPT)**

c/o Secretary-Treasurer  
Carol A. Davis, MS, PhD  
410 Evergreen Ct West  
Urbana, IL 61801  
Ph: 217-384-2860  
Fax: 217-384-4636  
Email: [c.davis2@insightbb.com](mailto:c.davis2@insightbb.com)  
Website: <http://www.aavpt.org>

The purpose of the Academy is the promotion of the science of veterinary pharmacology and therapeutics.

**Association for Veterinary Clinical Pharmacology and Therapeutics (AVCPT)**

E-mail: [secretary@avcpt.org](mailto:secretary@avcpt.org)  
Website: <http://www.avcpt.org>

The Association for Veterinary Clinical Pharmacology and Therapeutics was founded in 1976. The aims of the Association broadly are to foster interest in and to disseminate knowledge of veterinary pharmacology and therapeutics.

**RADIOLOGY**

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

**American College of Veterinary Radiology (ACVR)**

Executive Director, Dr. M. Bernstein

777 E Park Drive

Harrisburg, PA 17105-8820

Ph: 717-558-7865

Fax: 717-558-7841

E-mail: [administration@acvr.info](mailto:administration@acvr.info)

Website: <http://www.acvr.org>

The American College of Veterinary Radiology (ACVR) was founded in 1961 to determine competence of voluntary candidates in veterinary radiology and to encourage the development of teaching personnel and training facilities in veterinary radiology.

**SPECIALTY VETERINARY ORGANIZATIONS**

**American Association of Bovine Practitioners (AABP)**

PO Box 3610

Auburn, AL 36831-3610

Phone: 334-821-0442

Fax: 334-821-9532

E-mail: [aabphq@aabp.org](mailto:aabphq@aabp.org)

Website: <http://www.aabp.org>

The American Association of Bovine Practitioners is an international association of veterinarians organized to enhance the professional lives of its members through relevant continuing education that will improve the well-being of cattle and the economic success of their owners, increase awareness and promote leadership for issues critical to cattle industries, and improve opportunities for careers in bovine medicine.

**American Association of Equine Practitioners (AAEP)**

4075 Iron Works Parkway

Lexington, KY 40511

Ph: 859-233-0147

Fax: 859-233-1968

E-mail: [aaepoffice@aol.com](mailto:aaepoffice@aol.com)

Website: <http://www.aaep.org>

The American Association of Equine Practitioners (AAEP) began in 1954 as a group of 12 charter members who saw that together they could direct the focus of equine veterinary medicine. The mission of the AAEP is to improve the health and welfare of the horse, to further the leadership for the benefit of the equine industry.

**American Association of Extension Veterinarians (AAEV)**

c/o Dr. Charles L. Stoltenow, President

North Dakota State University

Dept. of Animal and Range Sciences

Hultz Hall, RM 165

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(Please check individual websites or current AVMA Directory for updated information.)

Fargo, ND 58105  
Ph: 701-231-7522  
Fax: 701-231-7590  
E-mail: [cstolten@ndsuxext.nodak.edu](mailto:cstolten@ndsuxext.nodak.edu)

**American Association of Feline Practitioners (AAFP)**

Executive Director  
66 Morris Avenue, Ste 2A  
Springfield, NJ 07081  
Ph: 973-379-1100  
Fax: 973-379-6507  
E-mail: [rickaaamc@earthlink.net](mailto:rickaaamc@earthlink.net)  
Website: <http://www.aafponline.org>

The American Association of Feline Practitioners (AAFP) is a professional organization of veterinarians who share an interest in providing excellence in the care and treatment of cats.

**American Association of Food Hygiene Veterinarians (AAFHV)**

Executive Vice President  
Dr. Joseph L. Blair  
4910 Magdalene Court  
Annandale, VA 22003-4363  
Ph: 703-323-0003  
Fax: 703-323-9327  
E-mail: [joelblair@erols.com](mailto:joelblair@erols.com)  
Website: <http://www.avma.org/aafhv/default.htm>

The American Association of Food Hygiene Veterinarians (AAFHV) is an organization of veterinarians whose professional activities and interests encompass the many contributions of veterinary medicine to a hygienic food supply.

**American Association of Human-Animal Bond Veterinarians (AAHABV)**

Dr. Sally Walshaw, Secretary-Treasurer  
Atlantic Veterinary College  
University of Prince Edward Island  
550 University Avenue  
Charlottetown, PE, Canada, C1A 4P3  
Ph: 902-566-0831  
Fax: 902-566-0832  
E-mail: [swalshaw@upei.ca](mailto:swalshaw@upei.ca)  
Website: <http://aahabv.org>

The mission of the American Association of Human-Animal Bond Veterinarians is to further veterinary awareness, scientific progress, and educational opportunities in the area of the human-animal bond; to encourage veterinary participation in human-animal bond activities with related organizations and disciplines; and to explore the potential for establishing a veterinary specialty in the area of the human-animal bond.

**American Association for Laboratory Animal Sciences (AALAS)**

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

9190 Crestwyn Hills Drive  
Memphis, TN 38125  
Ph: 901-754-8620  
Fax: 901-753-0046

E-mail: [info@aalas.org](mailto:info@aalas.org)  
Website: <http://www.aalas.org>

The mission of the American Association for Laboratory Animal Science (AALAS) is to advance responsible care and use of laboratory animals to benefit people and animals.

**American Association of Public Health Veterinarians (AAPHV)**

Dr. Hugh Mainzer, President  
CDC-National Center in Environmental Health  
Division of Emergency & Environmental Health Services  
4770 Bufford Hwy NE; Mailstop F-28  
Atlanta, Ga 30341  
Ph: 770-488-3138  
Fax: 770-488-7310

E-mail: [hmainzer@cdc.gov](mailto:hmainzer@cdc.gov)

The mission of the American Association of Public Health Veterinarians is to promote the science and art of public health, Epidemiology, and preventive medicine by providing an expert forum for the discussion of public health issues of importance to the veterinary profession and the development of professional recommendations and public health resolutions. The Association consistently supports programs to promote and improve the professional education, communication and collaboration of public health veterinarians in order to reduce human illness, animal illness, and promote public health.

**American Association of Small Ruminant Practitioners (AASRP)**

NIAA/AASRP  
1910 Lyda Drive, Suite 200  
Bowling Green, KY 42104  
Ph: 270-793-0781  
Fax: 270-792-0188

E-mail: [aasrp@aasrp.org](mailto:aasrp@aasrp.org)  
Website: <http://www.aasrp.org>

The American Association of Small Ruminant Practitioners was organized in 1968 to further education and scientific programs for veterinarians working with small ruminants. AASRP encouraged education, training and research in veterinary medicine to promote good health and productivity in small ruminants.

**American Association of Swine Veterinarians (AASV)**

902 1<sup>st</sup> Avenue  
Perry, IA 50220-1703  
Ph: 515-465-5255  
Fax: 515-465-3832

E-mail: [aasv@aasv.org](mailto:aasv@aasv.org)  
Website: <http://www.aasv.org>

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(Please check individual websites or current AVMA Directory for updated information.)

The American Association of Swine Veterinarians is a nonprofit educational professional society organized to: increase the knowledge of veterinarians in the field of swine medicine; elevate the standards of swine practice; promote the relationship between swine practice, the swine industry, and the public interest; promote the interests of swine veterinarians; improve the public stature of swine veterinarians; cooperate with veterinary and agricultural organizations and regulatory agencies; and promote goodwill among AASV members.

**American Association of Wildlife Veterinarians (AAWV)**

Dr. Dave Jessup, President

1451 Shaffer Rd

Santa Cruz, Ca 95060

Ph: 831-469-1726

Fax: 831-469-1723

E-mail: [djessup@ospr.dfg.ca.gov](mailto:djessup@ospr.dfg.ca.gov)

Website: <http://www.aawv.net>

Founded in 1979, the American Association of Wildlife Veterinarians is a national organization of veterinarians interested in all aspects of wildlife health.

**American Association of Zoo Veterinarians (AAZV)**

Dr. Wilbur B. Amand, Executive Director

6 North Pennell Road

Media, PA 19063

Ph: 610-892-4812

Fax: 610-892-4813

E-mail: [aazv@aol.com](mailto:aazv@aol.com)

Website: <http://www.aazv.org>

As an advocate for the profession, the mission of the Association is to improve the health care and promote conservation of captive and free-ranging wildlife.

**American College of Laboratory Animal Medicine (ACLAM)**

Dr. Melvin W. Balk

Executive Director

96 Chester Street

Chester, NH 03036

Ph: 603-887-2467

Fax: 603-887-0096

E-mail: [mwbaclam@gsinet.net](mailto:mwbaclam@gsinet.net)

Website: <http://www.aclam.org>

The American College of Laboratory Animal Medicine (ACLAM) is an organization of board certified veterinary medical specialists who are experts in the humane, proper and safe care and use of laboratory animals.

**American College of Poultry Veterinarians (ACPV)**

c/o Dr. Sherrill Davison

University of Pennsylvania

382 W Street Road

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

Kennett Square, PA 19348

Ph: 610-444-4282

Fax: 610-925-8106

E-mail: [acpv@vet.upenn.edu](mailto:acpv@vet.upenn.edu)

Website: <http://www.acpv.info>

The objectives of the American College of Poultry Veterinarians are: To further educational and scientific progress in the field of poultry veterinary medicine. To promote the development of poultry veterinary medicine as a science; To improve and strengthen the instruction in poultry veterinary medicine; To establish publication, testing and continuing education requirements for the certification of poultry veterinarians to enhance the quality of poultry veterinary medicine and to provide an incentive for research, publication, improvement of residency and other educational programs, and continuing education in the field of poultry veterinary medicine; and To provide guidance on the quality of and desirable levels of pre- and post-professional training, experience and continuing education for potential and current students and specialists in poultry veterinary medicine.

**American College of Veterinary Emergency and Critical Care (ACVECC)**

Dr. James N. Ross, Jr.

Executive Secretary

Department of Clinical Sciences

School of Veterinary Medicine

Tufts University

200 Westboro Road

North Grafton, MA 01536

Ph: 508-887-4633

Fax: 508-839-7922

E-mail: [james.ross@tufts.edu](mailto:james.ross@tufts.edu)

Website: <http://www.acvecc.org>

The American College of Veterinary Emergency and Critical Care promotes advancement and high standards of practice for those individuals involved in veterinary emergency and critical care medicine.

**American Veterinary Epidemiology Society**

Dr. Albert Ahn, Secretary/Treasurer

The Hartz Mountain Corporation

400 Plaza Drive

Secaucus, NJ 07094

Ph: 201-271-4800 x7270

Fax: 201-271-0134

E-mail: [aahn@hartz.com](mailto:aahn@hartz.com)

**American Veterinary Medical Law Association (AVMLA)**

Dr. Karen M. Wernette, Executive Director

511 N County Ridge Ct

Lake Zurich, IL 60047-2824

Ph and Fax: 847-719-1810

E-mail: [info@avmla.org](mailto:info@avmla.org)

Website: <http://www.avmla.org>

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

The American Veterinary Medical Law Association (AVMLA) is a national association of attorneys, veterinarians, and other individuals and organizations with an interest in veterinary medical law and how it pertains to the veterinary profession and allied fields.

**Association of Primate Veterinarians**

Dr. Marion S. Ratterree, Head  
Unit of Research Resources  
Tulane National Primate Research Center  
18703 Three Rivers Rd  
Covington, LA 70433  
Ph: 985-871-6278  
Fax: 985-871-6231  
E-mail: [ratt@tulane.edu](mailto:ratt@tulane.edu)  
Website: <http://www.primat vets.org>

The Association of Primate Veterinarians (APV) is an international organization consisting of over 400 veterinarians concerned with the health, care, and welfare of nonhuman primates.

**Association of Reptilian and Amphibian Veterinarians (ARAV)**

Dr. Wilbur Amand  
Executive Director  
PO Box 605  
Chester Heights, PA 19017  
Ph: 610-358-9530  
Fax: 610-892-4813  
E-mail: [aravets@aol.com](mailto:aravets@aol.com)  
Website: <http://www.arav.org>

The Association of Reptilian and Amphibian Veterinarians (ARAV) is a non-profit international organization of veterinarians and herpetologists founded in 1991. The goal of the ARAV is to improve reptilian and amphibian veterinary care and husbandry through education, exchange of ideas and research. The ARAV promotes conservation and humane treatment of all reptilian and amphibian species through education, captive breeding and reptilian and amphibian habitat preservation.

**Association of Veterinarians for Animal Rights (AVAR)**

PO Box 208  
Davis, CA 95617-0208  
Ph: 530-759-8106  
Fax: 530-759-8116  
E-mail: [avar@igc.org](mailto:avar@igc.org)  
Website: <http://www.avar.org>

The AVAR actively works toward the acquisition of rights for all nonhuman animals by educating the public and the veterinary profession about a variety of issues concerning nonhuman animal use. The AVAR is actively seeking reformation of the way society treats all nonhumans and an increase in environmental awareness, as well.

**National Association of State Public Health Veterinarians (NASPHV)**

Dr. Gail Hansen, President

**TAB I SECTION 13**  
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(Please check individual websites or current AVMA Directory for updated information.)

Kansas Dept of Health and Environment  
1000 SW Jackson, Suite 210  
Topeka, KS 66612  
Ph: 785-296-1127  
Fax: 785-291-3775  
E-mail: [ghansen@kdhe.state.ks.us](mailto:ghansen@kdhe.state.ks.us)  
Website: [www.nasphv.org](http://www.nasphv.org)

**United States Public Health Service Chief Veterinarian**

Capt. William S. Stokes, DVM, DACLAM  
National Institute of Environmental Health Services  
National Institutes of Health  
Dept of Health and Human Services  
PO Box 12233, Mail Code EC-17  
Research Triangle Park, NC 27709  
Ph: 919-541-7997  
Fax: 919-541-0947  
E-mail: [stokes@niehs.nih.gov](mailto:stokes@niehs.nih.gov)  
Website: [http://www.usphs.gov/html/vet\\_cpo.html](http://www.usphs.gov/html/vet_cpo.html)

**SURGERY**

**The American College of Veterinary Surgeons (ACVS)**

Ann T. Loew, EdM, Executive Director  
11 N Washington St, Suite 720  
Rockville, MD 20850  
Ph: 301-610-2000  
Fax: 301-610-0371  
E-mail: [acvs@acvs.org](mailto:acvs@acvs.org)  
Website: <http://www.acvs.org>

Founded in 1965, the American College of Veterinary Surgeons is the American Veterinary Medical Association specialty board, which sets the standards for advanced professionalism in veterinary surgery.

**THERIOGENOLOGY**

**American College of Theriogenologists (ACT)**

Charles F. Franz, Administrator  
PO Box 3065  
Montgomery, AL 36109-3065  
Ph: 334-395-4666  
Fax: 334-270-3399  
E-mail: [charles@franzmgt.com](mailto:charles@franzmgt.com)



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(Please check individual websites or current AVMA Directory for updated information.)

Website: <http://www.theriogenology.org>

The purposes of the College shall be the advancement of knowledge; undergraduate, graduate and postgraduate education; research; and service in theriogenology by: 1) the establishment of a certifying agency to recognize veterinarians as specialists in theriogenology, 2) the encouragement of scientific investigation and research and the reporting of these, 3) the development of continuing education methods and programs for disseminating information to and increasing knowledge of all veterinarians, especially practitioners, 4) the development of graduate study and residency programs, and 5) the establishment of high standards and guidelines for professional attainment and specialization.

**Society for Theriogenology**

Charles F. Franz, Executive Director

PO Box 3065

Montgomery, AL 36109-3065

Ph: 334-395-4666

Fax: 334-270-3399

E-mail: [charles@franzmgt.com](mailto:charles@franzmgt.com)

Website: <http://www.therio.org>

The Society for Theriogenology is dedicated to furthering advances in the science and practice of animal reproduction. The Society members are veterinarians and veterinary students with a special interest in the reproduction of all domestic species.

**TOXICOLOGY**

**American Academy of Veterinary and Comparative Toxicology (AAVCT)**

Dr. Michelle S. Mostrom, Secretary-Treasurer

North Dakota State University

Veterinary Diagnostic Laboratory

PO Box 5406

Fargo, ND 58105-5406

Ph: 701-231-7529

Fax: 701-231-7514

E-mail: [michelle.mostrom@ndsu.nodak.edu](mailto:michelle.mostrom@ndsu.nodak.edu)

Veterinarians specializing in toxicology and others interested in veterinary comparative toxicology. Sponsors and encourages scientific and technical meetings and promotes discussion and interchange of information in veterinary toxicology, teaching, research and development, diagnosis, nomenclature, public health, and other areas.

**American Board of Veterinary Toxicology (ABVT)**

Dr. Patricia Talcott, Secretary/Treasurer

University of Idaho

Department of Food Science & Toxicology

Holm Research Center

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

2222 Sixth Street  
University of Idaho  
Moscow, ID 83844-2201  
Ph: 208-885-6109  
Fax: 208-885-8937

E-mail: [ptalcott@uidaho.edu](mailto:ptalcott@uidaho.edu)  
Website: <http://www.abvt.org>

The American Board of Veterinary Toxicology is a group of specially trained veterinarians that strive to inform and educate the public, private practice veterinarians and veterinary medical students about toxicologic hazards to pets, livestock and wildlife.

**Society of Toxicology**

1821 Michael Faraday Drive, Ste 300  
Reston, VA 20190  
Ph: 703-438-3115  
Fax: 703-438-3113

E-mail: [sothq@toxicology.org](mailto:sothq@toxicology.org)  
Website: <http://www.toxicology.org>

The Society of Toxicology is a professional and scholarly organization of scientists from academic institutions, government, and industry representing the great variety of scientists who practice toxicology in the U.S. and abroad. The Society promotes the acquisition and utilization of knowledge in toxicology, aids in the protection of public health, and facilitates disciplines.

**TROPICAL**

**Centre for Tropical Veterinary Medicine (CTVM)**

Ian Maudlin, Director of CTVM  
Royal (Dick) School of Veterinary Studies  
The University of Edinburgh  
Easter Bush  
Roslin  
Midlothian  
Scotland EH 25 9RG

Ph: 44 (0) 131 650 4347  
Fax: 44 (0) 131 650 7348

E-mail: [imaudlin@vet.ed.ac.uk](mailto:imaudlin@vet.ed.ac.uk)  
Website: <http://www.vet.ed.ac.uk/ctvm>

The Centre for Tropical Veterinary Medicine (CTVM) was established in 1970 as an integral Department of Tropical Animal Health in the Faculty of Veterinary Medicine of the University of Edinburgh. The mission statement of the CTVM is “promotion of animal health, welfare and production through research and training, to foster sustainable development, alleviate poverty and improve the quality of human life.”

**Society for Tropical Veterinary Medicine (STVM)**

c/o Edmour F. Blouin, President

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

Dept. of Veterinary Pathobiology  
CVM, Oklahoma State University, McElroy Hall  
Stillwater, OK 74078  
Ph: 405-744-6726  
Fax: 405-744-5275  
E-mail: [blouin@okstate.edu](mailto:blouin@okstate.edu)  
Website: <http://www.soctropvetmed.org>

The Society for Tropical Veterinary Medicine was first founded as the American Society for Tropical Veterinary Medicine in 1973. The aim of the STVM is to promote the international advancement of tropical veterinary medicine, hygiene and related disciplines.

**UROLOGY**

**Society of Veterinary Nephrology/Urology**

c/o Dr. David Polzin, Secretary-Treasurer  
College of Veterinary Medicine  
University of Minnesota  
1352 Boyd Avenue  
St. Paul, MN 55108  
Ph: 612-625-4254  
Fax: 612-624-0751  
E-mail: [polzi001@tc.umn.edu](mailto:polzi001@tc.umn.edu)  
Website: <http://www.umn.edu>

**WILDLIFE, EXOTIC AND ENDANGERED ANIMALS**

**American Association of Wildlife Veterinarians (AAWV)**

Dr. David Jessup, President  
1451 Shaffer Rd  
Santa Cruz, CA 95060  
Ph: 831-469-1726  
Fax: 831-469-1723  
E-mail: [djessup@ospr.dfg.ca.gov](mailto:djessup@ospr.dfg.ca.gov)  
Website: <http://www.aawv.net>

Founded in 1979, the American Association of Wildlife Veterinarians is a national organization of veterinarians interested in all aspects of wildlife health.

**American Association of Zoo Veterinarians (AAZV)**

Dr. Wilbur B. Amand  
Executive Director  
6 North Pennell Road  
Media, PA 19063

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

Ph: 610-892-4812

Fax: 610-892-4813

E-mail: [aazv@aol.com](mailto:aazv@aol.com)

Website: <http://www.aazv.org>

As an advocate for the profession, the mission of the Association is to improve the health care and promote conservation of captive and free-ranging wildlife.

**American Ornithologists' Union**

1313 Dolley Madison Blvd, Suite 402

McLean, VA 22101

Ph: 703-790-1745

Fax: 703-790-2672

E-mail: [aou@aou.org](mailto:aou@aou.org)

Website: <http://www.aou.org>

Founded in 1883, the American Ornithologists' Union is the oldest and largest organization in the New World devoted to the scientific study of birds.

**American Society of Mammalogists (ASM)**

Website: <http://www.mammalsociety.org>

The American Society of Mammalogists was established in 1919 for the purpose of promoting the study of mammals. Most members of ASM are professional scientists with a strong interest in the public good, which is reflected in their involvement in providing information for public policy, resources management, conservation, and education.

**American Society of Ichthyologists and Herpetologists (ASIH)**

Maureen Donnelly, Secretary

Dept. of Biological Sciences

Florida International University

Miami, FL 33199

Ph: 305-348-1235

Fax: 305-348-1986

E-mail: [asih@fiu.edu](mailto:asih@fiu.edu)

Website: <http://www.asih.org>

The American Society of Ichthyologists and Herpetologists is dedicated to the scientific study of fishes, amphibians and reptiles.

**Association of Primate Veterinarians**

Dr. Marion S. Ratterree, Head

Unit of Research Resources

Tulane National Primate Research Center

18703 Three Rivers Rd

Covington, LA 70433

Ph: 985-871-6278

Fax: 985-871-6231

E-mail: [ratt@tulane.edu](mailto:ratt@tulane.edu)

Website: <http://www.primatévets.org>

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

The Association of Primate Veterinarians (APV) is an international organization consisting of over 400 veterinarians concerned with the health, care, and welfare of nonhuman primates.

**Association of Reptilian and Amphibian Veterinarians (ARAV)**

Dr. Wilbur Amand, Executive Director

PO Box 605

Chester Heights, PA 19017

Ph: 610-358-9530

Fax: 610-892-4813

E-mail: [aravets@aol.com](mailto:aravets@aol.com)

Website: <http://www.arav.org>

The Association of Reptilian and Amphibian Veterinarians (ARAV) is a non-profit international organization of veterinarians and herpetologists founded in 1991. The goal of the ARAV is to improve reptilian and amphibian veterinary care and husbandry through education, exchange of ideas and research. The ARAV promotes conservation and humane treatment of all reptilian and amphibian species through education, captive breeding and reptilian and amphibian habitat preservation.

**Bat Conservation International**

PO Box 162603

Austin, TX 78716

Ph: 512-327-9721

Fax: 512-327-9724

E-mail: [batinfo@batcon.org](mailto:batinfo@batcon.org)

Website: <http://www.batcon.org>

The mission of Bat Conservation International is to protect and restore bats and their habitats worldwide.

**Conservation Breeding Specialist Group (CBSG)**

Species Survival Commission, IUCN

The World Conservation Union

U.S. Seal

CBSG Chairman

12101 Johnny Cake Ridge Road

Apple Valley, MN 55124-8151

Ph: 952-997-9800

Fax: 952-997-9803

E-mail: [office@cbsg.org](mailto:office@cbsg.org)

Website: <http://www.cbsg.org>

The Conservation Breeding Specialist Group (CBSG) is an international conservation organization whose mission is “to assist conservation of threatened animal and plant species through scientific management of small populations in wild habitats, with linkage to captive populations where needed.”

**International Association of Fish and Wildlife Agencies (IAFWA)**

444 North Capitol Street, NW, Suite 725

Washington, DC 20001

Ph: 202-624-7890

Fax: 202-624-7891

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

E-mail: [info@iafwa.org](mailto:info@iafwa.org)

Website: <http://www.iafwa.org>

The International Association of Fish and Wildlife Agencies was founded in 1902 as a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources.

**International Society for Endangered Cats, Inc. (ISEC)**

3070 Riverside Drive, Ste 160

Columbus, OH 43221

Ph: 614-487-8760 (voice)

Fax: 614-487-8769

E-mail: [felineinfo@isec.org](mailto:felineinfo@isec.org)

Website: <http://www.isec.org>

The International Society for Endangered Cats, Inc. (ISEC) is a non-for-profit organization dedicated to the conservation of wild cats throughout the world.

**International Wild Waterfowl Association (IWWA)**

c/o Paul & Lynn Dye

Northwest Wildfowl Farm

10114 54<sup>th</sup> Place N.E.

Everett, WA 98205

E-mail: [dye@greatnorthern.net](mailto:dye@greatnorthern.net)

Website: <http://www.wildwaterfowl.org>

Working to protect and conserve wild waterfowl and wetlands.

**National Wildlife Health Center**

Leslie A. Dierauf, V.M.D.

Center Director

USGS: National Wildlife Health Center

6006 Schroeder Road

Madison, WI 53711-6223

Ph: 608-270-2400

Fax: 608-270-2415

Website: <http://www.nwhc.usgs.gov>

The National Wildlife Health Center (NWHC) was established in 1975 as a biomedical laboratory dedicated to assessing the impact of disease on wildlife and to identifying the role of various pathogens in contributing to wildlife losses.

**National Wildlife Rehabilitators Association (NWRA)**

14 North 7<sup>th</sup> Avenue

St. Cloud, MN 56303-4766

Ph: 320-259-4086

E-mail: [nwra@nwrwildlife.org](mailto:nwra@nwrwildlife.org)

Website: <http://www.nwrwildlife.org>

**TAB I SECTION 13**  
**RESOURCES – VETERINARY MEDICINE**

(Please check individual websites or current AVMA Directory for updated information.)

The National Wildlife Rehabilitators Association (NWRA) is a nonprofit international membership organization committed to promoting and improving the integrity and professionalism of wildlife rehabilitation and contributing to the preservation of natural ecosystems.

**The Ocean Conservancy**

2029 K Street

Washington, DC 20006

Ph: 202-429-5609

E-mail: [info@oceanconservancy.org](mailto:info@oceanconservancy.org)

Website: <http://www.oceanconservancy.org/site/PageServer?pagename=home>

The Center for Marine Conservation (CMC) is committed to protecting ocean environments and conserving the global abundance of diversity of marine life.

**Simian Society of American**

E-mail: [info@simiansociety.org](mailto:info@simiansociety.org)

Website: <http://simiansociety.org>

The Simian Society of America is a non-profit organization founded in 1957 to improve the welfare of primates in captivity.

**Society for Integrative and Comparative Biology (SICB)**

1313 Dolley Madison Blvd, Suite 402

McLean, VA 22101

Ph: 703-790-1745 or 800-955-1236

Fax: 703-790-2672

E-mail: [SICB@BurkInc.com](mailto:SICB@BurkInc.com)

Website: <http://www.sicb.org>

The Society for Integrative and Comparative Biology (SICB) is one of the largest and most prestigious professional associations of its kind. Formed through a 1902 merger of two societies, the Central Naturalists and the American Morphological Society, its focus has remained to integrate the many fields of specialization which occur in the broad field of biology. The SICB is organized around eleven divisions, each relevant to a major segment of biology. The Society is dedicated to promoting the pursuit and public dissemination of important information relating to biology.

**Wildlife Conservation Society (WCS)**

2300 Southern Blvd.

Bronx, NY 10460

Ph: 718-220-5100

E-mail: [pr@wcs.org](mailto:pr@wcs.org)

Website: <http://www.wcs.org>

The Wildlife Conservation Society (WCS) works to wave wildlife and wild lands throughout the world.

**Wildlife Disease Association (WDA)**

Tracy Jones

PO Box 1897

Lawrence, KS 66044-8897

Ph: 785-843-1221

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(Please check individual websites or current AVMA Directory for updated information.)

Members and potential members may call: 800-627-0629

Fax: 785-843-1274

Website: <http://www.wildlifedisease.org>

The Wildlife Disease Association (WDA) is dedicated to wildlife conservation through the study and understanding of diseases in wildlife.

**World Association of Wildlife Veterinarians (WAWV)**

c/o Dr. A. W. English

University of Sydney

Department of Animal Health

Private Mailbag 3

Camden NSW 270

Australia

Ph: 61-29-351-1675

Fax: 61-29-351-1618

E-mail: [anthonye@camden.usyd.edu.au](mailto:anthonye@camden.usyd.edu.au)

The World Association of Wildlife Veterinarians (WAWV) was established to meet the needs of veterinarians involved in, or keenly interested in, non-domesticated species throughout the world. WAWV is an Associate of the World Veterinary Association (WVA).

(Rev 05/05)



**TAB I SECTION 14  
RESOURCES – EPIDEMIOLOGY**

**American College of Epidemiology (ACE)**

1500 Sunday Drive, Suite 102

Raleigh, NC 27607

Ph: (919) 861-5573; Fax: (919) 787-4916

E-mail: [fkenan@olsonmgmt.com](mailto:fkenan@olsonmgmt.com)

Website: <http://www.acepidemiology2.org>

The professional organization dedicated to continued education and advocacy for epidemiologists in their efforts to promote the public health.

**Association for Professionals in Infection Control and Epidemiology, Inc. (APIC)**

1275 K Street, NW, Suite 1000

Washington, DC 20005-4006

Ph: (202) 789-1890; Fax: (202) 789-1899

E-mail: [APICinfo@apic.org](mailto:APICinfo@apic.org)

Website: <http://www.apic.org>

The Association for Professionals in Infection Control and Epidemiology, Inc. (APIC) is a multi-disciplinary, voluntary, international organization. APIC promotes wellness and prevents illness and infection worldwide by advancing health care epidemiology through education, collaboration, research, practice, and credentialing.

**Canadian Society for Epidemiology and Biostatistics (CSEB)**

Dr. Kenneth C. Johnson, Secretary

Senior Epidemiologist

Surveillance and Risk Assessment Division

Centre for Chronic Disease Prevention and Control,

Public Health Agency of Canada

120 Colonnade Rd, PL 6702A

Ottawa, Ontario, K1A 0K9

Ph: 613-957-0339; Fax: 613-941-2057

E-mail: [Ken\\_LCDC\\_Johnson@phac-aspc.gc.ca](mailto:Ken_LCDC_Johnson@phac-aspc.gc.ca)

Website: <http://www.cseb.ca/en/>

The Canadian Society for Epidemiology and Biostatistics (CSEB) is a Canadian organization founded in 1990 for the purpose of fostering epidemiology and biostatistics research in Canada.

**The Council of State and Territorial Epidemiologists (CSTE)**

National Headquarters

2872 Woodcock Blvd, Suite 303

Atlanta, GA 30341

Ph: 770-458-3811; Fax: 770-458-8516

Website: <http://www.cste.org>

The Council of State and Territorial Epidemiologists (CSTE) is a professional association of public health epidemiologists in states and territories working together to detect, prevent, and control conditions of public health significance.

**TAB I SECTION 14  
RESOURCES – EPIDEMIOLOGY**

**International Clinical Epidemiology Network (INCLEN)**

Executive Office  
1420 Walnut St, Ste 411  
Philadelphia, PA 19102-4003  
Ph: 215-222-7700; Fax: 215-222-7741  
E-mail: [inclen@inclen.org](mailto:inclen@inclen.org)  
Website: <http://www.inclen.org>

The International Clinical Epidemiology Network (INCLEN) is dedicated to improving the health of the people by promoting clinical practice based on the best evidence of effectiveness and the efficient use of resources. INCLEN achieves this through a network of physicians, statisticians and social scientists throughout the world who work together to build and sustain institutional capacity for excellence and relevance in research and medical education.

**The International Epidemiological Association (IEA)**

Website: <http://www.IEAWeb.org>  
Website: <http://www.dundee.ac.uk/iea>

The aims of the International Epidemiological Association (IEA) are to facilitate communication among those engaged in research and teaching in epidemiology throughout the world, and to engage in the development and use of epidemiological methods in all fields of health including social, community and preventive medicine and health services administration.

**International Society for Environmental Epidemiology (ISEE)**

c/o JSI Research & Training Institute  
44 Farnsworth Street  
Boston, MA 02210-1211  
Ph: 617-482-9485; Fax: 617-482-0617  
E-mail: [iseepi@jsi.org](mailto:iseepi@jsi.org)  
Website: <http://www.iseepi.org>

The International Society for Environmental Epidemiology (ISEE) provides a forum for the discussion of problems unique to the study of health and the environment. Topics addressed by ISEE members include environmental exposures (e.g. air pollution, hazardous waste, metals, pesticides, radiation), health effects (e.g. cancer, cardiovascular disease, neurologic effects, reproductive effects), methodology (e.g. biomarkers, ecologic investigations, experimental design, exposure/dose assessment, meta-analysis, risk assessment, statistics), environment-gene interactions, and ethics and law.

**Society for Epidemiologic Research (SER)**

PO Box 990  
Clearfield, UT 84098  
Ph: 801-525-0231; Fax: 801-774-9211  
E-mail: [membership@epiresearch.org](mailto:membership@epiresearch.org)  
Website: <http://www.epiresearch.org/>

The Society for Epidemiologic Research (SER) was established in 1968 as a forum for sharing the latest in epidemiologic research.

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## **TAB I SECTION 15 RESOURCES – FORENSIC MEDICINE**

### **American Academy of Forensic Sciences (AAFS)**

(mailing address) PO Box 669, Colorado Springs, CO 80901-0669  
(street address) 410 North 21<sup>st</sup> Street, Suite 203, Colorado Springs, CO 80904-2798  
Ph: (719) 636-1100; Fax: (719) 636-1993  
Website: <http://www.aafs.org>

The American Academy of Forensic Sciences (AAFS) is a professional society dedicated to the application of science to the law.

### **American College of Forensic Examiners International (ACFEI)**

2750 East Sunshine; Springfield, MO 65804  
Ph: (417) 881-3818 or (800) 423-9737; Fax: (417) 881-4702  
Website: <http://www.acfei.com/main.php>

The American College of Forensic Examiners (ACFE) is an independent, scientific and professional society. Multi-disciplinary in its scope, the society actively promotes the dissemination of forensic information.

### **Canadian Society of Forensic Science (CSFS)**

PO Box 37040; 3332 McCarthy Rd  
Ottawa, Ontario, Canada K1V 0W)  
Ph: (613) 738-0001; Fax: (613) 738-1987  
E-mail: [csfs@bellnet.ca](mailto:csfs@bellnet.ca)  
Website: <http://www.csfs.ca>

The Canadian Society for Forensic Science (CSFS) is a non-profit professional organization incorporated to maintain professional standards, and to promote the study and enhance the stature of forensic science.

### **The Forensic Science Society**

Clarke House; 18A Mount Parade  
Harrogate, North Yorkshire HG1 1BX, United Kingdom  
Ph: +44(0)1423-506068; Fax: +44(0)1423-566391  
E-mail: [Michele@forensic-science-society.org.uk](mailto:Michele@forensic-science-society.org.uk)  
Website: <http://www.forensic-science-society.org.uk>

The Forensic Science Society was founded in 1959 with the aim, to advance the study, application and standing of forensic science and to facilitate cooperation among persons interested in forensic science and the administration of justice throughout the world.

### **The National Association of Medical Examiners (NAME)**

430 Pryor St SW; Atlanta, GA 30312  
Ph: (404) 730-4781; Fax: (404) 730-4420  
E-mail: [name@co.fulton.ga.us](mailto:name@co.fulton.ga.us)  
Website: <http://www.thename.org/>

The National Association of Medical Examiners (NAME) is the national professional organization of physician medical examiners, medical death investigators and death investigation system administrators who perform the official duties of the medicolegal investigation of deaths of public interest in the United States.

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**TAB I SECTION 16**  
**RESOURCES – HUMAN HEALTH AND THE ENVIRONMENT**  
(Please check individual websites for updated information)

**American College of Occupational and Environmental Medicine (ACOEM)**

1114 N. Arlington Heights Road  
Arlington Heights, IL 60004-4770  
Ph: (847) 818-1800; Fax: (847) 818-9266  
E-mail: [acoeminfo@acoem.org](mailto:acoeminfo@acoem.org)  
Website: <http://www.acoem.org>

The American College of Occupational & Environmental Medicine (ACOEM), established in 1916, is made up of physicians in industry, government, academia, private practice and the military, who promote the health of workers through preventive medicine, clinical care, research, and education.

**Centers for Disease Control and Prevention**

**Agency for Toxic Substances and Disease Registry (ATSDR)**

“Group Name”\*\*

1600 Clifton Road (“Mail Stop”)\*\*  
Atlanta, GA 30333  
Ph: (888) 422-8737 (toll-free)  
E-mail: [atscric@cdc.gov](mailto:atscric@cdc.gov)  
Website: <http://www.atsdr.cdc.gov>

(\*\* - listing of group names and mail stops can be found at website: <http://www.atsdr.cdc.gov/contacts>)

The mission of the Agency for Toxic Substances and Disease Registry (ATSDR), as an agency of the U.S. Department of Health and Human Services, is to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment.

**Centers for Disease Control and Prevention**

**Division of Laboratory Sciences (DLS)**

4770 Buford Hwy, NE  
Mailstop F-20  
Atlanta, GA 30341-3724  
Ph: (866) 670-6052 (toll free)  
E-mail: [ncehds@cdc.gov](mailto:ncehds@cdc.gov)  
Website: <http://www.cdc.gov/nceh/dls/>

The Division of Laboratory Sciences (DLS) develops and applies laboratory science to:

- prevent disease and death causes by exposure to toxic substances,
- assist disease-prevention programs requiring special laboratory expertise.

**TAB I SECTION 16**  
**RESOURCES – HUMAN HEALTH AND THE ENVIRONMENT**  
(Please check individual websites for updated information)

**Centers for Disease Control and Prevention**  
**National Center for Environmental Health (NCEH)**

Mail Stop F-29

4770 Buford Highway, NE

Atlanta, GA 30341-3724

Ph: (888) 232-6789 (toll free); Ph: (770) 488-7100

(for state and local health department assistance: CDC Emergency Response [24-hr. assistance during emergencies])

Website: <http://www.cdc.gov/nceh/default.htm>

The mission of the National Center for Environmental Health (NCEH) is to provide national leadership, through science and service, that promotes health and quality of life by preventing or controlling those diseases, birth defects, disabilities, or deaths that result from interactions between people and their environment.

**The Disaster Research Center**

87 East Main Street

Newark, DE 19716-2581

Ph: (302) 831-6618; Fax: (302) 831-2091

E-mail: [drc-mail@udel.edu](mailto:drc-mail@udel.edu)

Website: <http://www.udel.edu/DRC>

The Disaster Research Center, the first social science research center in the world devoted to the study of disasters, was established at Ohio State University in 1963 and moved to the University of Delaware in 1985. The Center conducts field and survey research on group, organizational and community preparation for, response to, and recovery from natural and technological disasters and other community-wide crises.

**Environmental Protection Agency**

**Center For Hazardous Materials Research (CHMR) Documents**

320 William Pitt Way

Pittsburgh, PA 15238

Ph: (800) 334-CHMR; (412) 826-5320

Website: <http://es.epa.gov/techinfo/facts/chmr/chmr.html>

**Environmental Protection Agency**

**Office of Research and Development (ORD)**

**National Center for Environmental Assessment (NCEA)**

Research Triangle Park, NC 27709

Website: <http://www.epa.gov/ncea>

The ORD's National Center for Environmental Assessment serves as the national resource center for the overall process of human health and ecological risk assessments; the integration of hazard, dose-response, and exposure data and models to produce risk characterizations.

**TAB I SECTION 16**  
**RESOURCES – HUMAN HEALTH AND THE ENVIRONMENT**  
(Please check individual websites for updated information)

**Environmental Protection Agency**  
**Office of Research and Development (ORD)**  
**National Exposure Research Laboratory (NERL)**

Research Triangle Park, NC 27709

Website: <http://www.epa.gov/nerl>

The ORD's National Exposure Research Laboratory (NERL) conducts research and development that leads to improved methods, measurements and models to assess and predict exposures of humans and ecosystems to harmful pollutants and other conditions in air, water, soil, and food.

**Environmental Protection Agency**  
**Office of Research and Development (ORD)**  
**The National Health and Environmental Effects Research Laboratory (NHEERL)**

Research Triangle Park, NC 27709

Website: <http://www.epa.gov/nheerl>

The ORD's National Health and Environmental Effects Research Laboratory (NHEERL) is the agency's focal point for scientific research on the effects of contaminants and environmental stressors on human health and ecosystem integrity.

**Environmental Protection Agency**  
**Office of Research and Development (ORD)**  
**National Risk Management Research Laboratory**

26 W Martin Luther King Drive

Cincinnati, OH 45268

Ph: (513) 569-7966

Website: <http://www.epa.gov/ORD/NRMRL>

The National Risk Management Laboratory (NRMRL) conducts research into ways to prevent and reduce risks from pollution that threaten human health and the environment.

**International Programme on Chemical Safety (IPCS)**

Division of Environmental Health

WHO Headquarters

20, avenue Appia

1211 GENEVA 27

Switzerland

Ph: 00 41 22 791 2111; Fax: 00 41 22 791 3111

E-mail: [info@who.int](mailto:info@who.int)

Website: <http://www.who.int/home-page/>

The International Programme on Chemical Safety (IPCS) established in 1980, is a joint programme of three Cooperation Organizations, ILO, UNEP, and WHO, implementing activities related to chemical safety. IPCS is an intersectoral coordinated and scientifically based programme. WHO is the Executing Agency of the IPCS.

**TAB I SECTION 16**  
**RESOURCES – HUMAN HEALTH AND THE ENVIRONMENT**  
(Please check individual websites for updated information)

**Natural Hazards Center at the University of Colorado, Boulder**

Campus Box 482

University of Colorado

Boulder, CO 80309-0482

Ph: (303) 492-6818; Fax: (303) 492-2151

E-mail: [hazctr@colorado.edu](mailto:hazctr@colorado.edu)

Website: <http://www.colorado.edu/hazards>

The Natural Hazards Center, located at the University of Colorado, Boulder, Colorado, USA, is a national and international clearinghouse for information on natural hazards and human adjustments to hazards and disasters. The Natural Hazards Center carries out its mission in four principal areas: information dissemination, an annual workshop, research, and library services. The center's prime goal is to increase communication among hazard/disaster researchers and those individuals, agencies, and organizations that are actively working to reduce disaster damage and suffering.

**The National Institute of Environmental Health Sciences (NIEHS)**

PO Box 12233

111 Alexander Drive

Research Triangle Park, NC 27709

Ph: (919) 541-3345

Website: <http://www.niehs.nih.gov>

The National Institute of Environmental Health Sciences (NIEHS) is one of 25 Institutes and Centers of the National Institutes of Health (NIH), which is a component of the Department of Health and Human Services (DHHS). The mission of the NIEHS is to reduce the burden of human illness and dysfunction from environmental causes by understanding each of these elements and how they interrelate.

**The National Toxicology Program (NTP) and the NTP archives**

The National Institute of Environmental Health Sciences

PO Box 12233

111 Alexander Drive

Research Triangle Park, NC 27709

Ph: (919) 541-3201

Fax: (919) 541-2260

Website: <http://ntp-server.niehs.nih.gov/>

The National Toxicology Program (NTP) was established in 1978 by the Secretary of Health and Human Services to coordinate toxicology research and testing activities within the Department, to provide information about potentially toxic chemicals to regulatory and research agencies and the public, and to strengthen the science base in toxicology.

**The National Registry of Emergency Medical Technicians (NREMT)**

Rocco V. Morando Building

6610 Busch Blvd.

PO Box 29233

Columbus, OH 43229

**TAB I SECTION 16**  
**RESOURCES – HUMAN HEALTH AND THE ENVIRONMENT**

(Please check individual websites for updated information)

Ph: (614) 888-4484; Fax: (614) 888-8920

Website: <http://www.nremt.org>

The National Registry of Emergency Medical Technicians (NREMT), registers emergency medical services providers from across the nation. The NREMT is a not-for-profit, non-governmental, free-standing agency led by a Board of Directors comprised of members from national Emergency Medical Services (EMS) organizations or with expertise in EMS systems.

**Society of Environmental Toxicology and Chemistry (SETAC)**

SETAC North America

1010 North 12<sup>th</sup> Avenue

Pensacola, FL 32501-3370

Ph: (850) 469-1500; Fax: (850) 469-9778

E-mail: [setac@setac.org](mailto:setac@setac.org)

Website: <http://www.setac.org>

The Society of Environmental Toxicology and Chemistry (SETAC) is an independent, nonprofit professional society that provides a forum for individuals and institutions engaged in: Study of environmental issues, Management and conservation of natural resources, Environmental education, and Environmental research and development.

**United Nations Environment Programme (UNEP)**

UNEP Regional Office for North America

1707 H Street, NW, Suite 300

Washington, D.C. 20006

Ph: (202) 785-0465; Fax: (202) 785-2096

Website: <http://www.unep.org/>

The United Nations Environment Programme (UNEP) aims to provide environmental policy leadership within the world community, and in particular the United Nations system, through: assessing environmental change, its relationship with socio-economic driving forces and its impact on human well-being and the integrity of natural systems, and identifying emerging issues of global significance; facilitating consensus-building on environmental issues and the development of policy options to support strategic decision-making to respond to these issues; catalyzing action by governments, intergovernmental bodies, scientific institutions, the private sector and community groups.

**The World Association for Disaster and Emergency Medicine (WADEM)**

PO Box 55158

Madison, WI 53705-8958

Ph: (608) 263-2069; Fax: (608) 265-3037

E-mail: [mlb@medicine.wisc.edu](mailto:mlb@medicine.wisc.edu)

Website: <http://wadem.medicine.wisc.edu>

The World Association for Disaster and Emergency Medicine is an international, humanitarian association dedicated to the improvement of disaster and emergency medicine. Fostering international collaboration, the organization is inclusive, culturally sensitive, unbiased, ethical and dynamic in its approach.

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**TAB I SECTION 17**  
**RESOURCES – THE LAW AND MEDICINE**

**American College of Legal Medicine (ACLM)**

1111 N. Plaza Drive, Suite 550  
Schaumburg, IL 60173-4950  
Ph: (847) 969-0283; Fax: (847) 517-7229  
E-mail: [info@aclm.org](mailto:info@aclm.org)  
Website: <http://www.aclm.org>

Founded in 1960, the American College of Legal Medicine is the official organization for professionals who focus on the important issues where law and medicine converge. ACLM is a professional community of physicians, attorneys, health care professionals, administrators, scientists, and others with a sustained interest in medical legal affairs.

**American Society of Law, Medicine & Ethics**

765 Commonwealth Avenue, Suite 1634  
Boston, MA 02215  
Ph: (617) 262-4990; Fax: (617) 437-7596  
E-mail: [info@aslme.org](mailto:info@aslme.org)  
Website: <http://www.aslme.org>

The mission of the American Society of Law, Medicine & Ethics is to provide high-quality scholarship, debate, and critical thought to the community of professionals at the nexus of law, health care, and ethics.

**The National Center for Complementary and Alternative Medicine Law (NCCAML)**

NCCAM Clearinghouse  
P.O. Box 7923  
Gaithersburg, Maryland 20898  
Toll Free: 1-888-644-6226  
International: 301-519-3153  
Ph: 1-866-464-3615 (Toll-Free)  
Fax: 1-866-464-3616  
Email: [info@nccam.nih.gov](mailto:info@nccam.nih.gov)  
Website: <http://nccam.nih.gov/index.htm>

As one of its mandates from Congress, NCCAM is charged with "the dissemination of health information... with respect to identifying, investigating, and validating complementary and alternative treatment, diagnostic, and prevention modalities, disciplines, and systems." (Public Law 105-277) The NCCAM Clearinghouse serves this mission. It is the public's point of contact for scientifically based information on complementary and alternative medicine (CAM) and for information about NCCAM. The NCCAM Clearinghouse does not provide medical advice or referrals to practitioners. Decisions about medical care and treatment should be made in consultation with a health care provider, based on the condition and needs of each person. NCCAM recommends discussing information on CAM with a health care provider before making any decisions about treatment or care.

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**TAB I SECTION 18**  
**RESOURCES – LOGISTICAL ASSISTANCE**

**The Air Care Alliance (ACA)**

1515 East 71<sup>st</sup> Street. Ste 312

Tulsa, OK 74176

Ph: (888) 260-9707 (toll free); Fax: (918) 745-0879

<http://www.aircareall.org/>

The Air Care Alliance is a nationwide league of humanitarian flying organizations whose volunteer pilots are dedicated to community service. This ACA site will introduce you to us and to all the groups we list whose volunteers perform public benefit flying for health care, patient transport, disaster relief, environmental support, and other missions of public service.

**Angel Flight America (AFA)**

National Headquarters

Gary L. McMahan, Executive Director

PO Box 17467

Memphis, TN 38187-0467

Ph: (877) 858-7788 (tollfree); (901) 685-5290; Fax: (901) 685-5299

E-mail: [gcmcmahan@angelflightamerica.org](mailto:gcmcmahan@angelflightamerica.org)

Website: <http://www.angelflightamerica.org/>

Angel Flight America (AFA) is a not-for-profit grassroots organization with a volunteer corps of more than 5,000 private pilots—divided into six regions covering the American continent—who fly under the banner of Angel Flight America. AFA provides flights of hope and healing by transporting patients and their families in private planes, free of charge, to hospitals for medical treatment. AFA also provides flights in a national crisis or whenever there is a compelling human need

**The Emergency Volunteer Air Corps (EVAC)**

San Diego County Chapter Office

3829 Cazador Lane

Fallbrook, California 92028

Ph: 760 723-4593

E-mail: [mail@evac.org](mailto:mail@evac.org)

Website: <http://www.evac.org/>

The Emergency Volunteer Air Corps promotes and coordinates effective and useful additional General Aviation volunteer participation in emergency relief efforts, especially following disasters.

**International Rescue and Emergency Care Association (IRECA)**

PO Box 431000

Minneapolis, MN 55443

Ph: (800) 854-7322

E-mail: [rescuer@ireca.org](mailto:rescuer@ireca.org)

Website: <http://www.ireca.org>

Organized volunteers and paid industrial rescue and emergency squads, ambulance, and first aid crews, military personnel, and other units equipped with rescue equipment and emergency care supplies which can be carried in mobile units.

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**TAB I SECTION 19**  
**RESOURCES – MICROBIOLOGY**

**American College of Veterinary Microbiologists**

c/o Dr. Chris Hayhow, Secretary-Treasurer

30705 West 84<sup>th</sup> Circle

DeSoto, KS 66018

Ph: (913) 894-0230

Fax: (913) 894-0236

E-mail: [chayhow@biomunecompany.com](mailto:chayhow@biomunecompany.com)

Website: <http://www.vetmed.iastate.edu/acvm/>

The American College of Veterinary Microbiologists developed from the former American Association of Veterinary Bacteriologists. Increasing awareness, among members of the AAVB, of the need for board certification of veterinary microbiologists resulted in formation of an organizing committee in 1962. The objectives of the ACVM are to further educational and scientific progress in the specialty of veterinary microbiology; to strengthen and improve instruction at the pre- and postdoctoral level in veterinary microbiology; to promote the highest professional standing of veterinary microbiologists; to establish standards of postdoctoral training and experience for qualification of specialists in veterinary microbiology; and to certify qualified and competent veterinary microbiologists in subspecialty areas of bacteriology and mycology, virology, and immunology.

**American Society for Microbiology (ASM)**

1752 N Street N.W.

Washington, DC 20036

Ph: (202) 737-3600

E-mail: [oad@asmusa.org](mailto:oad@asmusa.org)

Website: <http://www.asm.org/>

The American Society for Microbiology is the oldest and largest single life science membership organization in the world. Membership has grown from 59 scientists in 1899 to over 42,000 members today located throughout the world. ASM represents 25 disciplines of microbiological specialization plus a division for microbiology educators.

**Infectious Diseases Society of America (IDSA)**

66 Canal Center Plaza, Suite 600

Alexandria, VA 22314

Ph: (703) 299-0200

Fax: (703) 299-0204

E-mail: [info@idsociety.org](mailto:info@idsociety.org)

Website: <http://www.idsociety.org>

The Infectious Disease Society of American represents physicians, scientists and other health care professionals who specialize in infectious diseases.

**TAB I SECTION 19**  
**RESOURCES – MICROBIOLOGY**

**The International Society for Human and Animal Mycology (ISHAM)**

Dr Malcolm Richardson, The General Secretary of ISHAM

Department of Bacteriology and Immunology

Haartman Institute

University of Helsinki

Haartmaninkatu 3, PO Box 21, 00014 Helsinki, Finland.

Ph: +358 9 191 26894; Fax: +358 9 26382

Mobile: +358 44 5040888

Email: [malcolm.richardson@helsinki.fi](mailto:malcolm.richardson@helsinki.fi)

Website: <http://www.isham.org/>

The International Society for Human and Animal Mycology is a worldwide organization that represents all scientists and doctors with a special interest in fungal diseases. It exists solely to encourage and facilitate the study and practice of all aspects of medical and veterinary mycology.

**International Society for Infectious Diseases (ISID)**

181 Longwood Avenue

Boston, MA 02115

Ph: (617) 277-0551

Fax: (617) 731-1541

E-mail: [info@isid.org](mailto:info@isid.org)

Website: <http://www.isid.org>

The International Society for Infectious Diseases was created to bring together all individuals interested in infectious diseases, including infectious disease specialists, microbiologists, immunologists, epidemiologists, public health workers, parasitologists, virologists, mycologists, molecular biologists, and others with similar concerns.

**International Union of Microbiological Societies (IUMS)**

c/o Professor John S. Mackenzie

Secretary-General

Department of Microbiology

The University of Queensland

Brisbane, QLD 4072

Australia

Ph: +61 7 3365 4648

Fax: +61 7 3365 6265

E-mail: [jmac@biosci.uq.edu.au](mailto:jmac@biosci.uq.edu.au)

Website: <http://www.iums.org/>

The International Union of Microbiological Societies was founded in 1927 as the International Society for Microbiology. In 1970 the Executive Committee decided to create three sections covering the fields of Bacteriology, Virology, and Mycology.

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**TAB I SECTION 20**  
**RESOURCES – NEUROPATHOLOGY**

**American Association of Neuropathologists, Inc.**

George Perry, PhD  
Office of Secretary-Treasurer  
Institute of Pathology  
Case Western Reserve University  
2085 Adelbert Rd  
Cleveland, OH 44106  
Ph: (216) 368-2488  
Fax: (216) 368-8964  
Email: [aanp@cwru.edu](mailto:aanp@cwru.edu)  
Website: <http://www.aanp-jnen.com>

The American Association of Neuropathologists began around 1930 as a professional, educational organization representing American Neuropathologists. The purpose of the Association is to advance the science and practice of neuropathology.

**British Neuropathological Society (BNS)**

E-mail: [secretary@bns.org.uk](mailto:secretary@bns.org.uk)  
Website: <http://www.bns.org.uk/>

The British Neuropathological Society is a professional association. The objective of the Society is to further the study of neuropathology, to promote the exchange of scientific information by means of regular meetings, lectures and demonstrations, and to provide the opportunity for discussions between neuropathologists in Britain and overseas.

**Canadian Association of Neuropathologists (CANP)**

Secretary/Treasurer  
Dr. J. Woulfe  
Department of Pathology  
Ottawa Hospital, Civic Campus  
1053 Carling Ave., Ottawa ON  
K1Y 4E9  
Ph: 613 798 5555  
Fax: 613 761 4846  
E-mail: [jwoulfe@ottawahospital.on.ca](mailto:jwoulfe@ottawahospital.on.ca)  
Website: <http://canp.medical.org>

The Canadian Association of Neuropathologists is a non-profit professional organization with an international membership. The Association exists to promote the highest professional standards among neuropathologists and to act as a source of scientific communication and education in the field of neuropathology.

**TAB I SECTION 20**  
**RESOURCES – NEUROPATHOLOGY**

**The International Society of Neuropathology**

Vice President

Dr Stephen DeArmond

Department of Pathology (Neuropathology)

University of California, San Francisco

HSW 430

513 Parnassus Ave

San Francisco CA 94143-0511

Fax: (415) 476-7963

E-mail: [sdearm@itsa.ucsf.edu](mailto:sdearm@itsa.ucsf.edu)

Website: <http://brainpath.medsch.ucla.edu>

The International Committee of Neuropathology, founded in 1950, was re-formed in Copenhagen in 1967 as the International Society of Neuropathology, a non-profit making scientific organization. The aims of the Society are to further the science of neuropathology.

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## **TAB I SECTION 21 RESOURCES – PATHOLOGY**

### **The American Society of Clinical Pathologists (ASCP)**

2100 West Harrison Street

Chicago, IL 60612

Ph: (312) 738-1336

E-mail: [info@ascp.org](mailto:info@ascp.org)

Website: <http://www.ascp.org/general/about/>

The American Society of Clinical Pathologists is a not-for-profit medical society organized exclusively for educational, scientific, and charitable purposes. Its mission is to promote the public health and safety by the appropriate application of pathology and laboratory medicine and to serve as the national resource to enhance the quality of pathology and laboratory medicine, primarily by developing comprehensive educational programs and materials.

### **Armed Forces Institute of Pathology (AFIP)**

6825 16<sup>th</sup> Street, NW

Building 54

Washington, DC 20306

Ph: (202) 782-2100

E-mail: [draley@afip.osd.mil](mailto:draley@afip.osd.mil)

Website: <http://www.afip.org>

The Armed Forces Institute of Pathology provides pathology expertise to the U.S. military and civilians around the world through excellence in diagnostic consultation, education, and research. With a combined staff of more than 800 military, federal civilian, and contract employees, the Institute is an international resource in the field of diagnostic pathology in medicine, dentistry, and the veterinary sciences. It is the reference center in pathology for the Departments of Defense and Veterans Affairs.

### **Association of Clinical Pathologists**

General Administrator

189 Dyke Road

Hove, East Sussex BN3 1TL, United Kingdom

Ph: 01273 775700

Fax: 01273 773303

E-mail: [info@pathologists.org.uk](mailto:info@pathologists.org.uk)

Website: <http://www.pathologists.org.uk>

The Association of Clinical Pathologists was established in 1927, originally as the British Pathologists Association, and changed to its current name in 1930. The Association was established for four main reasons: (1) To improve the conditions of pathology practice and improve the status of clinical pathologists. (2) To secure clinical pathologists as being equal to other consultants. (3) To encourage and assist medical schools and postgraduate education so that suitably trained doctors could assume charge of hospital laboratories throughout the United Kingdom. (4) To establish where members could exchange views on work, research, etc.

### **The Canadian Association of Pathologists**

774 Echo Drive

Ottawa, Ontario

Canada K1S 5N8

Ph: (613) 730-6230

**TAB I SECTION 21  
RESOURCES – PATHOLOGY**

(800) 668-3740 ext. 230 (toll-free)

Fax: (613) 730-1116

E-mail: [cap@rcpsc.edu](mailto:cap@rcpsc.edu)

Website: <http://cap.medical.org>

The Canadian Association of Pathologists is an organization of laboratory physicians with educational and scientific goals, the purpose of which is to promote the health and safety of all Canadians.

**College of American Pathologists**

Headquarters

325 Waukegan Road

Northfield, IL 60093

Ph: (800) 323-4040

(847) 832-7000

Fax: (847) 832-8000

Website: <http://www.cap.org>

The College of American Pathologists is a medical society serving more than 15,000 physician members and the laboratory community throughout the world. It is the world's largest association composed exclusively of pathologists and is widely considered the leader in providing laboratory quality improvement programs.

**Society of Toxicology Pathologists**

STP Headquarters

1821 Michael Faraday

Drive, Suite 300

Reston, VA 20190

Ph: (703) 438-7508

Fax: (703) 438-3113

Email: [stp@toxpath.org](mailto:stp@toxpath.org).

Website: <http://toxpath.org>

The Society of Toxicology Pathologists is a non-profit association of pathologists, whose principal aim is the advancement of pathology as it pertains to changes elicited by pharmacological, chemical and environmental agents and factors that modify these responses.

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**TAB I SECTION 22**  
**RESOURCES – TROPICAL MEDICINE**

**American Society of Tropical Medicine and Hygiene (ASTMH)**

60 Revere Drive, Suite 500  
Northbrook, IL 60062  
Ph: (847) 480-9592; Fax: (847) 480-9282  
E-mail: [astmh@astmh.org](mailto:astmh@astmh.org)  
Website: <http://www.astmh.org>

The American Society of Tropical Medicine and Hygiene (ASTMH) is the principal organization in the United States representing scientists, clinicians and others with interests in the prevention and control of tropical diseases through research and education.

**Centre for Tropical Veterinary Medicine (CTVM)**

c/o Royal (Dick) School of Veterinary Studies, The University of Edinburgh  
Easter Bush, Roslin, Midlothian, Scotland EH25 9RG  
Ph: +44 (0) 131 650 6289; Fax: +44 (0) 131 650 6289/651 3903  
E-mail: [HOD-CTVM@ed.ac.uk](mailto:HOD-CTVM@ed.ac.uk)  
Website: <http://www.vet.ed.ac.uk/ctvm>

The Centre for Tropical Veterinary Medicine (CTVM) was established in 1970 as an integral Department of Tropical Animal Health in the Faculty of Veterinary Medicine of the University of Edinburgh. It has continued and expanded a tradition of research and training in tropical veterinary medicine.

**Royal Society of Tropical Medicine and Hygiene**

50 Bedford Square  
London, WC1B 3DP, United Kingdom  
Ph: +44 (0) 20 7580 2127; Fax: +44 (0) 20 7436 1389  
E-mail: [mail@rstmh.org](mailto:mail@rstmh.org)  
Website: <http://www.rstmh.org>

The objectives of the Society are to promote health and to advance the study, control, and prevention of disease in man and other animals in warm climates, to facilitate discussion and the exchange of information among those who are interested in tropical diseases, and generally to promote the work of those interested in these objectives.

**Tropical Medicine Fellowships**

c/o The Wellcome Trust  
215 Euston Road  
London NW1 2BE, United Kingdom  
Ph: +44 (0) 20 7611 8888  
E-mail: [contact@wellcome.ac.uk](mailto:contact@wellcome.ac.uk)  
Website: <http://www.wellcome.ac.uk/node2230.html>

The Wellcome Trust wishes to support research into health problems and disease relevant to developing countries and to develop research capacity in both the UK and developing countries. Tropical fellowship schemes provide funding for research to combat human or animal diseases of importance to developing countries, including infectious and non-communicable diseases. See website for further details.

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**TAB J SECTION 1  
OIL SPILL EMERGENCIES – KEY CONTACTS**

National Oil Spill Response Coordinator (703) 358-2148  
U.S. F&WS Div. of Environmental Quality E-mail: [contaminants@fws.gov](mailto:contaminants@fws.gov)  
Website: <http://contaminants.fws.gov/>

United States Coast Guard – Website: <http://www.uscg.mil> (202) 267-2229  
Washington, DC Headquarters

National Response Center (800) 424-8802  
Website: <http://www.nrc.uscg.mil> Fax (202-267-2165  
E-mail: [lst-nrcinfo@comdt.uscg.mil](mailto:lst-nrcinfo@comdt.uscg.mil)

NOAA – Website: <http://www.noaa.gov>  
E-mail: [answers@noaa.gov](mailto:answers@noaa.gov)

Contacts Website: <http://response.restoration.noaa.gov/intro/contacts.html>

Office of Response and Restoration – Main Office (301) 713-2989  
(formerly Hazardous Materials Response and Assessment Division) Fax (301) 713-4389

Office of Response and Restoration – Seattle Office (206) 526-6317  
Fax (206) 526-6329

Damage Assessment Center (301) 713-3038  
Fax (301) 713-4387

Tri-State Bird Rescue & Research, Inc. - Website: <http://www.tristatebird.org/>  
Main Phone: (302) 737-9543  
Main Fax: (302) 737-9562

For more information about response capabilities, contingency planning, or ongoing and planned research, call (302) 737-9543 or E-mail [oilprograms@tristatebird.org](mailto:oilprograms@tristatebird.org).

To report an oil spill, contact the National Response Center at 1-800 424-8802.

International Bird Rescue Research Center – Website: <http://www.ibrrc.org> (707) 207-0380  
Fax: (707) 207-0395  
E-mail: [info@ibrrc.org](mailto:info@ibrrc.org)

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**OIL SPILL EMERGENCIES – KEY CONTACTS**

**Other Key Contacts Involving Wildlife:**

National Wildlife Rehabilitators Association (320) 230-9920  
Website: <http://www.nwrawildlife.org>  
E-mail: [nwra@nwrawildlife.org](mailto:nwra@nwrawildlife.org)

International Wildlife Rehabilitation Council (408) 271-2685  
Website: <http://www.iwrc-online.org/>  
E-mail: [office@iwrc-online.org](mailto:office@iwrc-online.org)  
Fax: (408) 271-9285

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**TAB J SECTION 2**  
**Summary of the National Contingency Plan**  
**for Response to Unusual Marine Mammal Mortality Events**

(Wilkinson, Dean M., 1996, U.S. Dept. of Commerce, NOAA Tech. Memo, NMFS-OPR-9, 118p.)

The Marine Mammal Health and Stranding Response Act required the preparation of a contingency plan for response to unusual marine mammal mortality events. The contingency plan includes all coastal regions of the United States and the adjacent waters under United States jurisdiction. It addresses all species of marine mammals. With the exceptions noted below, the National Marine Fisheries Service (NMFS) is primarily responsible for response to mortality events involving cetaceans and pinnipeds (excluding walrus), and the U.S. Fish and Wildlife Service (FWS) is primarily responsible for sea otters, walrus, manatees, and polar bears. Depending on the circumstances, other units of government may have responsibilities. As an example, if a mortality event should create a serious public health problem, a variety of other local, state, and Federal agencies would have responsibilities. Because approaches for determining the cause of an event—collecting, preserving, and analyzing tissues—are likely to be similar among the range of species, the contingency plan provides a general outline, with species differences highlighted only when appropriate. The species-specific approach is most appropriate for rehabilitating live animals (Dierauf, 1990). For example, the physical facilities needed to care for pinnipeds are less complicated than those needed for cetaceans or polar bears.

**Unusual Mortality Events**

The Act characterizes an unusual mortality event as having the following characteristics: (1) it is unexpected; (2) it involves a significant die-off of any marine mammal population; and (3) it demands an immediate response. In addition to the obvious circumstances involving significant numbers of marine mammal deaths within a short period of time, there are two other instances when a response would be justified—when there is a mass stranding of unusual species of cetaceans and when even small numbers of a severely endangered marine mammal species appear to be affected. Although steady declines of a population over time warrant investigation, such occurrences are part of each agency's more general charge.

Factors that can cause an unusual mortality event include, but are not limited to:

1. Impacts including toxicity and fouling caused by oil discharges or chemical releases or toxic runoff of anthropogenic chemicals or other impacts, such as immunological dysfunction, caused by chronic exposure to pollutants that may become apparent in an acute mortality event;
2. Naturally occurring biotoxins;
3. Changes in environmental conditions such as El Niño or a sudden change in water temperature;
4. Parasitic or infectious disease agents; or
5. Mortalities caused by direct human interactions such as bycatch in fisheries or deliberate taking.

The contingency plan includes provisions for detecting and responding to each of these conditions. The response priorities will vary depending on whether or not the cause of the event is known, the number and species of animals involved, or if the event poses a threat to public health and safety.

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To respond to marine mammal strandings, networks of volunteers have been authorized by NMFS for cetaceans and pinnipeds and by FWS for manatees and sea otters. Members of the Stranding Networks are issued Letters of Authorization by the NMFS Regional Offices. NMFS Regions are listed in Addendum A. Most of the volunteers are professionals with marine mammal experience. They may be researchers affiliated with State agencies or universities, individuals associated with public display facilities, or individuals with animal rehabilitation experience. The members of the Networks rehabilitate sick and injured marine mammals, and collect basic biological data and tissues from dead marine mammals.

Network members are the first line of response to any marine mammal strandings. They have capabilities to treat animals and collect tissues for analyses. Therefore, they are likely to be heavily involved in any response to an unusual mortality event.

**Objectives of Contingency Plan**

The purpose of the contingency plan is to outline actions that can/should be taken to:

1. Protect the public health and welfare;
2. Investigate and identify the cause(s) of a mortality event;
3. Minimize or mitigate the effects of a mortality event on the affected population(s) and provide for the rehabilitation of individual animals; and
4. Determine the impact of a mortality event on the affected population(s).

Achieving these goals is the responsibility of the Onsite Coordinator. The Onsite Coordinator will be either a National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Service (FWS) Regional Director or an individual designated by the Regional Director. The primary purpose of the plan is to provide a blueprint to the Onsite Coordinator for the response to mortality events. It provides guidance to Regional Directors of NMFS and FWS on: steps to be taken to protect the public health and welfare; advance planning for such events; steps to identify the cause(s) of an event; and measures to determine the biological significance of an event. The plan contains lists of contacts for response, facilities that are capable of holding live animals, tissue collection and preparation, and analyses that may be necessary to determine causes of death and the effects that physical, chemical, or biological factors may have on marine mammal populations.

The plan is divided into several sections corresponding to different activities that may be required in a response to an unusual mortality event. Because public health and welfare is of paramount concern in any mortality event, a short section on this issue precedes all other substantive sections.

The success of a response may be dependent on having necessary equipment in place, well trained personnel, and general protocols for tissue collection. In preparation for unusual marine mammal mortality events, materials and information need to be generated in advance. The plan provides

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guidelines for doing that. Other sections deal with procedures in responding to an unusual mortality event. It should be noted that under certain circumstances, another entity may be responsible for response. In the case of a known oil discharge or release of a hazardous substance, either the Coast Guard or the Environmental Protection Agency will assume responsibility for a response. When the reason for a mortality event is determined to be a direct human interaction, e.g., incidental mortality in fisheries or animals being deliberately killed, the appropriate actions should be taken by either the management or enforcement sections of the two agencies and are outside the context of this plan.

Another section details analyses that might be required, lists individuals with the skills necessary to conduct necropsies and collect tissues for detailed analysis, and locations where specific analyses may be performed. Although additional analyses may be required depending on the nature of the event, basic information is contained on the following: blood from live animals; histopathology; life history; biotoxins; heavy metals/organic contaminants; and virology/bacteriology/mycology.

There are special circumstances that may require additional actions such as the possibility of litigation; live capture to gain information not available from stranded animals; requests from independent researchers for materials; and mass strandings. Information is provided for dealing with these situations.

**Discharges of Oil and Hazardous Chemicals**

There is one type of unusual mortality event during which procedures laid out in the Act including responsibilities, appointment of Onsite Coordinators, and funding will not be followed. Responses to oil discharges or releases of hazardous substances are governed by either the Clean Water Act, as amended, the Oil Pollution Act of 1990, or the Comprehensive Environmental Response Compensation and Liability Act. The U.S. Coast Guard has primary responsibility for response to spills and releases within or threatening the coastal zone.

Many of the resources identified for response under the Marine Mammal Health and Stranding Response Act also will be utilized in spill emergencies. An effort has been made to help those developing regional and state oil spill contingency plans to identify those individuals and facilities that can provide treatment for impacted marine mammals and collect tissues for analyses. In the northeast, California, and Alaska, oil spill response procedures and personnel to be utilized closely parallel those set out in the contingency plan.

For a list of Coast Guard Districts and contact information visit: <http://www.uscg.mil/USCG.shtm>.

**Coast Guard Headquarters**

Commandant, U.S. Coast Guard,  
2100 Second Street, SW,  
Arlington, VA 22203  
Telephone: 1-877-NOW-USCG

**SOS EMERGENCIES**

For Maritime Search and Rescue Emergencies please call the following numbers:

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For the Great Lakes, Gulf and East Coasts:

Atlantic Area Command Center - (757) 398-6390

For the Hawaiian, Alaskan and Pacific Coasts:

Pacific Area Command Center - (510) 437-3701

**RESPONSE**

The basic steps in responding to an event include:

1. Based on specific criteria, the Working Group on Unusual Marine Mammal Mortality Events is responsible for determining when an unusual mortality event is occurring.
2. When notified by the Working Group that an unusual mortality event is occurring, the Assistant Administrator for Fisheries or, when species under FWS jurisdiction are involved, the Director of the U.S. Fish and Wildlife Service will appoint the appropriate Regional Director as Onsite Coordinator. The Regional Director may designate another qualified individual to serve in this capacity.
3. To accelerate response, the Onsite Coordinator will provide notification and instruction to:
  - a. Stranding Network members;
  - b. Federal beachfront agencies;
  - c. State wildlife resource agencies;
  - d. Coast Guard District Headquarters;
  - e. Public health agencies (if necessary);
  - f. Appropriate local governmental units;
  - g. NMFS, FWS, and National Biological Service laboratories;
  - h. Native American groups (as appropriate).
4. The Onsite Coordinator shall assess basic needs for response including: adequacy of response network in terms of coverage, ability to conduct necropsies, and ability to collect tissue samples; available equipment; and, if live animals are involved in the mortality event, the capacity and capabilities of rehabilitation facilities. If any of these is less than adequate, steps shall be taken to supplement existing resources.
5. If the cause(s) of an event is known, the Onsite Coordinator will make provisions for:
  - a. Adequate care of live animals;
  - b. Collection, preparation, analysis, and archiving of tissues and voucher specimens. If litigation is possible, provisions for maintaining a proper chain of custody are necessary;
  - c. Assessing the impact of the mortality event on wild populations; and
  - d. If feasible, put mitigation measures in place.

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6. If the cause(s) of an event is unknown, all of the previous steps are necessary. In addition, in consultation with the Working Group, the Onsite Coordinator will put investigative measures in place including:
  - a. Making provision for aerial surveys, if necessary, to locate fresh carcasses and/or determine the extent of a mortality event;
  - b. Defining specific tissue collection and preparation protocols. Making arrangements for specific analyses to be performed and for shipment of samples to facilities performing analyses;
  - c. Compiling and analyzing results.

**PUBLIC HEALTH AND WELFARE**

The first priority in responding to an Unusual Marine Mammal Mortality Event is public health and welfare. There are several ways in which a marine mammal mortality event could have an impact on public health or safety.

**Safety and Hygienic Precautions**

Although not common, if basic safety and hygienic precautions are not observed, stranded animals can cause physical injury or transmit disease to humans. Participants in a response to oil discharges or releases of hazardous chemicals are required to have OSHA training. Most of the individuals responding to mortality events under the Marine Mammal Health and Stranding Response Act will have previous experience in handling stranded animals. If less experienced personnel are utilized, the Onsite Coordinator will ensure that they are informed of safety measures. When the cause of an event is unknown, extra precautions will be taken.

**Carcass Disposal**

Carcasses of dead animals could be a source of either pathogens or toxins that might affect wildlife and domestic animals. Steps should be taken to avoid such possibilities, including proper isolation and disposal of carcasses. In normal circumstances, carcasses sometimes are left on the beach to decompose naturally. If there is the possibility of a transmissible pathogen or serious toxin, unused portions of carcasses should be buried, taken to a sanitary landfill, or fully destroyed by incineration. If carcasses are buried, they should be in an area where fluids will not leach into groundwater and deep enough so that they will not be dug up by scavengers or uncovered by wave action.

**LIVE ANIMALS**

The initial decision involving live stranded animals takes place on the beach. An expert assessment of an animal's condition is necessary before making a decision to take an animal in for rehabilitation, to euthanize it, or to treat it and release it on site. With the exception of mass strandings, the third of these options will be inappropriate in most instances. Such decisions shall only be made by competent professionals.



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**Available Facilities and Requirements**

A list of facilities with experience in treating stranded marine mammals is included in the plan. The procedures in the contingency plan are predicated on the assumption that those with previous experience in treating marine mammals are most competent to treat live animals.

Precautions should be taken to ensure that animals being treated are quarantined from healthy captive animals and that personnel take measures to avoid cross-contamination within the facility.

Although some facilities can accommodate relatively large numbers of pinnipeds and/or sea otters, the physical facility requirements for maintenance of cetaceans are such that only limited numbers of small cetaceans can be treated during a mortality event. Cetaceans and manatees require, at a minimum, pools large enough to accommodate them. Pools should be on a separate water system so that disease cannot be spread to healthy animals within the facility. In the case of an emergency, sea otters and pinnipeds are not totally dependent on pools, and in past epizootics, pinnipeds have been accommodated in dry areas with access to fresh drinking water and saltwater baths. Even in such circumstances facilities must have the ability to isolate animals from display animals and terrestrial animals that may either transmit or be exposed to pathogens. The facilities that are authorized to provide treatment for marine mammals and have veterinary services (except for those designated as short-term) are listed in the plan.

The list has been provided to the agencies responsible for developing oil spill contingency plans. The Northeast, California, Washington, Oregon, and Alaska have provisions in oil spill contingency plans for involving Stranding Network members in the recovery of carcasses and the rescue and rehabilitation of live animals. In Florida, provisions are in place for manatees, but no arrangements have been made for cetaceans in any of the southeastern states.

Each facility has resources for activities such as live animal retrieval, medical diagnostic analyses, and food and pharmaceutical provisions.

It should be recognized, however, that even under the best of circumstances, a facility's physical capacity for treatment of live animals is limited. In the case of cetaceans, few facilities can manage more than an animal or two at a time. Even in the case of pinnipeds, facilities can be filled to capacity in a relatively short time. Therefore, attention should be given to methods by which capacity can be expanded in the event of an epizootic. In the case of cetaceans, live stranded animals have occasionally been accommodated in open ocean net pens. In the case of pinnipeds, manatees, and sea otters, advance procurement of materials for temporary pools and fencing will help expand capacity.

**Release Conditions**

To safeguard wild populations of marine mammals, no rehabilitated animals will be released that do not meet the guidelines for release of rehabilitated animals under § 402(b) of the Marine Mammal Protection Act (MMPA). In addition, the Working Group will be consulted to determine if there should be event-specific release standards. The release standards should give priority to the health of the wild population over the health of an individual animal. Provision should be made to monitor at least a representative

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subset animals to determine if they survive and resume being functional components of the affected population.

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For Marine Mammal Stranding Network participants visit:

[http://www.nmfs.noaa.gov/prot\\_res/PR2/Health\\_and\\_Stranding\\_Response\\_Program/mms\\_hotlines.htm](http://www.nmfs.noaa.gov/prot_res/PR2/Health_and_Stranding_Response_Program/mms_hotlines.htm)

**MANATEES**

The toll-free number at 1-800-342-5367 has been set up in Florida to report stranded manatee.

The Manatee Coordinator for U.S. Fish and Wildlife Service is in the Jacksonville, FL, office, (904) 232-2580. Other FWS offices in the Region are:

Endangered Species Division  
U.S. Fish and Wildlife Service  
1875 Century Blvd, Suite 200  
Atlanta, GA 30345  
Phone: (404) 679-4000  
Fax: (404) 679-4006  
E-mail: [southeast@fws.gov](mailto:southeast@fws.gov)  
Website: [www.fws.gov/southeast/index.html](http://www.fws.gov/southeast/index.html)

Chassahowitzka National Wildlife Refuge  
1502 SE Kings Bay Drive  
Crystal River, FL 34429  
Phone: (352) 563-2088  
Fax: (352) 795-7961  
Website: <http://www.fcnr.org>

**SEA OTTERS IN CALIFORNIA**

The Sea Otter Hotline Number is (831) 648-4829. The U.S. Fish and Wildlife Office in Ventura, CA, is responsible for administration, (805) 644-1766.

Friends of the Sea Otters – Website: [www.seaotters.org](http://www.seaotters.org)  
E-mail: [seaotter@seaotters.org](mailto:seaotter@seaotters.org)

**Live Otters**

Monterey Bay Aquarium Security Desk:  
(831) 648-4840 — (for otters in distress/injured)  
<http://www.mbayaq.org/>  
Marine Mammal Center:  
<http://www.tmmc.org/>  
(831) 633-3304 — Moss Landing  
(415) 289-7325 — Sausalito

**Dead Otters:**

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Monterey Bay Aquarium Security Desk:  
(831) 648-4840  
California Dept. of Fish and Game:  
(831) 469-1719

**Violations:**

**National Oceanic and Atmospheric Administration (NOAA):**

1 (877) 466-9155 (Violations — 24-hour #)

Carol Teraoka \* (831) 647-4203

*\*Special Agent handling all violations related to enforcement of the MMPA, ESA, and Monterey Bay National Marine Sanctuary regulations.*

**California Dept. of Fish and Game:**

(888) 334-2258

For otters being subjected to reported harassment and/or harm; this number is used for enforcement issues.

**National Marine Fisheries Hotline:**

(800) 853-1964

(831) 647-4220 — Roy Torres (Sea Otter Harassment after the fact)

**Network Members—Live Sea Otters**

Marine Mammal Center (Sausalito) – Website: <http://www.tmmc.org/>

Phone: (415) 289-7325

Monterey Bay Aquarium (Monterey) – Website: <http://www.mbayaq.org/>

Phone: (831) 648-4829 or (831) 649-4840

Sea World of California (San Diego) (619) 226-3830 or (619) 222-6362

**POLAR BEARS, SEA OTTERS, AND WALRUS IN ALASKA**

Marine Mammals Management  
U.S. Fish and Wildlife Service  
1011 East Tudor Road  
Anchorage, AK 99503-6199  
(907) 786-3800

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**NMFS REGIONAL STRANDING COORDINATORS**

[http://www.nmfs.noaa.gov/prot\\_res/PR2/Health\\_and\\_Stranding\\_Response\\_Program/mmhsrp.html](http://www.nmfs.noaa.gov/prot_res/PR2/Health_and_Stranding_Response_Program/mmhsrp.html)

**Alaska (AK)**

Aleria Jensen, Alaska Region  
National Marine Fisheries Service, NOAA  
P.O. Box 21668  
Juneau, AK 99802-1668  
Phone: (907) 586-7248; Fax (907) 586-7012; E-mail: [aleria.jensen@noaa.gov](mailto:aleria.jensen@noaa.gov)

**Northeast (CT, DE, IL, IN, ME, MD, MA, MI, MN, NH, NJ, NY, OH, PA, RI, VT, VA, WV, WI)**

Dana Hartley, Northeast Region  
National Marine Fisheries Service, NOAA  
166 Water Street  
Woods Hole, MA 02543  
Phone: (508) 495-2090; Fax (508) 495-2258; E-mail: [dana.hartley@noaa.gov](mailto:dana.hartley@noaa.gov)

**Northwest (CO, ID, MT, ND, OR, SD, UT, WA, WY)**

Brent Norberg, Northwest Region  
National Marine Fisheries Service, NOAA  
7600 Sand Point Way, NE, BIN C15700, Bldg. 1  
Seattle, WA 98115-0070  
Phone: (206) 526-6733; Fax (206) 526-6736; E-mail: [brent.norberg@noaa.gov](mailto:brent.norberg@noaa.gov)

**Southeast (AL, AR, AZ, FL, GA, IA, KS, KY, LA, MS, MO, NC, NE, NM, OK, PR, SC TN, TX, VI)**

Blair Mase-Guthrie, Southeast Region  
National Marine Fisheries Service, NOAA  
75 Virginia Beach Dr.  
Miami, FL 33149  
Phone: (305) 361-4586; Fax (305) 361-1462

**Southwest (CA, NV)**

Joseph Cordero, Southwest Region  
National Marine Fisheries Service, NOAA  
501 West Ocean Blvd., Suite 4200  
Long Beach, CA 90802-4213  
Phone: (562) 980-4017; Fax (562) 980-4018; E-mail: [joseph.cordero@noaa.gov](mailto:joseph.cordero@noaa.gov)

**Pacific Islands (HI, Guam)**

Pacific Islands (HI, Guam, American Samoa, Northern Mariana Islands)  
Stranding Coordinator, Pacific Islands Region  
1601 Kapiolani Blvd., Rm 1110  
Honolulu, HI 96814  
Phone: (808) 973-2937; Fax (808) 973-2941

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For more information about the National Contingency Plan for Response to Unusual Marine Mammal Mortality Events, contact the:

National Marine Fisheries Service, NOAA  
Office of Protected Resources  
1315 East-West Highway  
Silver Spring, MD 20910  
Phone: (301) 713-2322; Toll-free: (800) 494-2989  
Fax: (301) 713-4060  
E-mail: [janet.whaley@noaa.gov](mailto:janet.whaley@noaa.gov)

(Rev 05/05)

**TAB K**  
**PET AND LIVESTOCK FOOD**

American Feed Industry Association;                      Arlington, VA                      Phone: (703) 524-0810  
<http://www.afia.org/>                      Fax: (703) 524-1921  
Email: [afia@afia.org](mailto:afia@afia.org)

Del Monte Foods                      San Francisco, CA                      Phone: (415) 247-3000  
<http://www.delmonte.com/company>                      Pittsburgh, PA                      Phone: (412) 222-2200  
Consumer questions regarding Del Monte Pet Food Products                      Phone (800) 252-7022  
(9 Lives, Cycle, Gravy Train, Kibbles & Bits, Nature's Recipe, Reward, Skippy)

Evanger's Dog and Cat Food Company                      Wheeling, IL                      Phone: (847) 537-0102  
<http://www.evangersdogfood.com/>                      (800) 288-6796  
Email: [hsher@evangersdogfood.com](mailto:hsher@evangersdogfood.com)

Farmers Warehouse Company                      Keyes, CA                      Phone: (209) 632-2333  
<http://www.farmerswarehouse.com/>                      (800) 400-6377  
Fax: (209) 634-6341  
Email: [info@farmerswarehouse.com](mailto:info@farmerswarehouse.com)

Farmland Industries;                      Kansas City, MO                      Phone: (816) 713-7000

Hay Hotline Links and Information Sources:  
[http://wyorange.net/Drought/hay\\_hotline.html](http://wyorange.net/Drought/hay_hotline.html)  
<http://www.hayexchange.com/hay.htm>

USDA Farm Service Agency                      Washington, DC                      Phone: (202) 720-7807  
<http://www.fsa.usda.gov/haynet/>

Hay Hot Lines:

Illinois	Phone: (708) 256-8888
Iowa	Phone: (800) 255-0449
Nebraska	Phone: (800) 249-0366
Oklahoma	Phone: (800) 580-6543
South Dakota	Phone: (800) 228-5254
Texas	Phone: (800) 687-7564
Texas	Phone: (877) 429-1998

Hill's Pet Nutrition                      Topeka, KS                      Phone: (800) 445-5777

Iams Company                      Dayton, OH                      Phone: (800) 675-3849  
(800) 525-4267  
Fax: (937) 264-7264





# TAB M

## POSTDISASTER VACCINATION GUIDELINES

### Introduction

Four basic processes may occur independently or in combination and may create the conditions favoring development of a disease in a postdisaster environment. First, the disaster may transport the disease agent to a susceptible population. Second, changes in environmental conditions, subsequent to the disaster, may allow increased exposure of susceptible populations to the disease agent. Third, there may be increased interaction between reservoir animals and susceptible animal populations as a consequence of the disaster. Fourth, effects of the disaster may increase the susceptibility of the animal to the disease agent.

- Transportation of the disease agent by a disaster may occur anytime a vector or fomite is involved. An example would be the possible spread of African Horse Sickness from Africa to Europe via insects carried on strong wind currents.
  
- Environmental changes that allow propagation of an organism may be exemplified best by anthrax. The complex mix of environmental conditions required for the propagation of the organism accounts for the sporadic nature of anthrax cases. Another possible example of increased exposure to a vaccine-preventable disease after a disaster is *Clostridium chauvoei* infection (blackleg). Disruption of soil by disasters such as felling of trees or building of earthen dikes may increase spore ingestion by animals, which could lead to increased incidence of blackleg.
  
- Increased interaction between reservoir animals and susceptible animals may occur through displacement of animals by the disaster or through the evacuation of animals from affected areas. Rabies would be an example where an endemic reservoir (raccoons) could be displaced by flooding along a river and dispersed throughout domestic animal habitat. Another example of increased exposure might include displaced feral swine coming into contact with commercial swine who are not protected in confinement causing the potential spread of pseudorabies to a susceptible population.
  
- Disasters may directly or indirectly affect the susceptibility of the animal to the agent. Direct effects could include the radiomimetic effects of a disaster involving nuclear material that could cause immunosuppression in the animal. Indirect effects could involve an increase in susceptibility caused by starvation, exposure to the elements, or overall increase in stress level of the animal.

Major factors that impact on the decision of whether to vaccinate or not include the propensity of the disease agent for a propagated outbreak, the impact of the disease, and the risk aversion profile of decision-makers dealing with the disease.

- Propensity for a propagated outbreak relates to the contagious nature of the disease agent. If the disease agent or process gains a foothold in the population, will it behave as an outbreak or be sporadic? What type of peak incidence is likely to exist among the population at risk, and, over time, what proportion of the population is likely to become infected?
  
- Impact of the disease is directly related to the morbidity and mortality of the disease agent. The behavior of the disease in the population (and other species' populations) and the likely economic damage should be used to temper the decision to vaccinate. What are the effects at the county, state, regional, or national level? The mere existence of a vaccine for the disease agent, does not necessarily justify use of the vaccine?

**TAB M**  
**POSTDISASTER VACCINATION GUIDELINES**

- Risk aversion profile takes into account the mental status of the individual farmer or the local, regional, or national authorities. As an example taken from human public health, is it worth vaccinating the entire population of the Mississippi flood plain for tetanus because of the remote possibility of a case of tetanus in a human being after a flood? An appropriate question to ask would be what is the expected incidence of a disease in the population if the disaster did not occur?

Establishing vaccination guidelines for animals after disasters is not a simple matter of listing the disaster and vaccines that should be given. Preparing for and responding to disasters are dynamic activities. The disaster itself does not create the disease, but creates the conditions that favor expression of the disease in the animal population. Vaccination decisions are not based entirely on biological questions. Economics, political palatability, and societal pressures will certainly be taken into consideration in any vaccination decision.

**TAB N**  
**PARTICIPANTS AND SUPPORTERS**

**PARTICIPANTS**

**Veterinary Medical Associations**

American Veterinary Medical Association  
California Veterinary Medical Association  
Florida Veterinary Medical Association  
Indiana Veterinary Medical Association  
Kansas Veterinary Medical Association  
Maryland Veterinary Medical Association  
Michigan Veterinary Medical Association  
Ohio Veterinary Medical Association

**Allied Groups**

U.S. Public Health Service  
Federal Emergency Management Agency  
United States Department of Agriculture

American Academy on Veterinary Disaster Medicine  
Consortium on the Model Disaster Response for Animals

American Animal Hospital Association  
American Association of Zoo Veterinarians  
American Association of Wildlife Veterinarians

North American Veterinary Technicians Association

American Humane Association  
The Humane Association of the United States  
United Animal Nations – EARS  
International Fund for Animal Welfare  
Code-3 Associates  
National Animal Disaster Coalition

**FINANCIAL SUPPORTERS**

American Veterinary Medical Association

American Animal Hospital Association

American Veterinary Medical Foundation