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National Animal Health Emergency Management System Guidelines

U.S. Department of Agriculture

2003

Facilities Guidelines

**Zoos: Foot-and-Mouth Disease
And Other Highly Contagious Diseases**

Prepared by

**American Association of Zoo Veterinarians
And
American Zoo and Aquarium Association**

The National Animal Health Emergency Management System Guidelines provide
an operational framework for use in dealing with an
animal health emergency in the United States

Disclaimer Statement

These guidelines are under ongoing review. Please send questions or comments to:

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These guidelines are designed to facilitate diagnosis and control of exotic animal diseases. Scientifically and technically, they represent the most recent and appropriate concepts available. However, they do not reflect current policies of the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS). Some of these procedures may also differ with prevailing local, State, and Federal laws and regulations. Requirements frequently change, especially in areas of waste disposal and environmental protection. APHIS animal emergency disease control programs must be conducted in compliance with applicable Federal, State, and local laws. Before these guidelines are implemented, APHIS personnel will confer with appropriate officials and modify the guidelines as necessary to ensure they are compatible with applicable legal requirements.

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Preface

This document represents the views of an ad hoc group of members from the AAZV and AZA, working in collaboration with USDA, APHIS, VS staff. The purpose of the “Emergency Guidelines for Zoos” is to provide information to the range of people who would be involved in managing an animal emergency disease, like foot-and-mouth disease (FMD), in zoos. This document provides the USDA, APHIS, VS, Emergency Programs (EP) staff with the framework for decision-making in a situation in which an emergency disease was to impact a zoo. In addition, these guidelines should serve as a set of operational procedures for AZA-accredited institutions in the event of an emergency disease outbreak. Individual zoological institutions should incorporate the proposed strategies into routine procedures as well as develop additional specific plans for their facility. It is highly recommended that institutions establish a working relationship and review their policies with the State and local officials that would be involved in an emergency disease outbreak.

“Emergency Guidelines for Zoos,” a component of the APHIS National Animal Health Emergency Management System (NAHEMS) guidelines, is designed for use in the event of an incursion of a foreign animal disease (FAD) or FAD arthropod vector into the United States. This material provides operational guidelines to be used by any Emergency Animal Disease Eradication Organization and integrated into the preparedness plans of other Federal agencies, State and local Governmental agencies, and additional groups involved in animal health emergency management activities.

The guidelines focus on:

- Disease eradication strategies and policies.
- Field investigations.
- Operational procedures.
- Site-specific strategies for various types of facilities.
- Resource management.
- Educational resources.

The guidelines provide a foundation for coordinated national, regional, State, and local response activities in an emergency situation. As such, it is meant to compliment, rather than substitute for, non-Federal preparedness activities. This resource is being reviewed and updated on an ongoing basis, and comments and suggestions are welcome.

Copies of the guidelines are available free of charge. For a list of available publications, visit the APHIS home page (www.aphis.usda.gov). To order, contact:

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The resources and materials of a number of organizations are gratefully acknowledged, including those of the Office International des Epizooties (OIE) and the AUSVETPLAN of the Agriculture and Resource Management Council of Australia and New Zealand. The AUSVETPLAN in particular provided a useful model for the development of the NAHEMS Guidelines.

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Foot-and-Mouth Disease and Other Highly Contagious Diseases of Livestock

Emergency Disease Guidelines for Zoos

Nature of the Enterprise

Exhibitors

The AWA was passed in 1966 and later amended in 1970, 1976, 1985, and 1990, to protect certain animals from inhumane treatment and neglect. The AWA requires that minimum standards of care and treatment be provided for most warm-blooded animals bred for commercial sale, used in research, transported commercially, or exhibited to the public.

Individuals or institutions that possess warm-blooded animals for public exhibition and affect interstate commerce must be licensed as exhibitors with USDA, APHIS. Examples of licensed exhibitors include:

Zoological Parks/Exhibits – Animal exhibits (even if only a single regulated animal is on exhibit) open to the public must be licensed whether they are owned by States, counties, or other local governments; corporations; foundations; or private individuals. Zoos run by agencies of the Federal government are not licensed or registered, but the animals in these zoos are inspected and are subject to these same USDA standards of animal care. Petting zoos with regulated animals, including rabbits, must be licensed and are subject to special regulations protecting animals and the public.

Marine Mammal Shows – Exhibits, shows, and acts with marine mammals must be licensed. This includes public aquariums, amusement parks, and zoos. However, exhibits in which free-living marine mammals are viewed in their natural state are exempt; examples are coastal seal rookeries or commercial whale sightseeing tours.

Animal Performances – Any owner exhibiting animals engaged in performances or shows must be licensed. This includes each person owning animals performing in circuses, marine mammal shows, amusement parks, carnivals, independent animal acts, television shows, movies, or educational exhibits.

Carnivals – Concessionaires who exhibit regulated animals must be licensed as exhibitors. Carnivals cannot be included in the exemption of an agricultural show, such as a fair with a midway.

Promotional Exhibits – Anyone who uses regulated animals to promote or advertise goods and services must be licensed.

Examples of exempted exhibitors include:

Private Collections – Anyone who collects animals but does not exhibit them to the public is exempt.

Farm Animal Exhibition – Anyone who arranges and takes part in showing farm animals at agricultural shows, fairs, and exhibits is exempt. However, anyone exhibiting farm animals for nonagricultural purposes (such as petting zoos) must be licensed. Exhibitors of foreign farm animals not commonly kept on American farms, including camels, must be licensed.

Animal Preserves – Game preserves, hunting preserves, and similar enterprises that keep animals in the wild state are exempt. “Wild state” means non-domesticated animals living in their original, natural condition.

Shows of Nonregulated Animals – Anyone with exhibits limited to species of animals not covered by law or regulated is exempt. Typical examples would be aviaries, reptile houses, and aquariums not showing marine mammals.

Zoological Parks and Aquariums

This document is only concerned with the activities of licensed zoological parks and aquariums, and more specifically, only those zoos and aquariums that are accredited by the AZA.

The AZA is a professional organization representing zoos and aquariums, predominantly in the United States. AZA is the leader in establishing and maintaining high professional standards for zoos and aquariums through its accreditation process. Accreditation is a detailed review and inspection process covering all aspects of an institution’s operation including animal collection, veterinary care, physical facilities, safety, biosecurity measures, security, finance, staff, governing authority, and support organizations. Accreditation also accords special attention to the use of the living collections and the nature of their management for conservation, education, scientific research, and recreational purposes.

For the purposes of AZA’s accreditation program, a zoological park or aquarium is defined as a permanent cultural institution which owns and maintains wildlife that represent more than a token collection and, under the direction of a professional staff, provides its collection with appropriate care and exhibits them in an aesthetic manner to the public on a regularly scheduled, predictable basis. Accreditation takes place every five years and is required for zoos and aquariums to be members of AZA. (For more details on AZA accreditation, consult <http://www.aza.org/dept/accred/intro.cfm>.)

In addition to accreditation, AZA also conducts a similar evaluation to certify membership for those facilities maintaining wildlife, which are not regularly open to the public.

As of June 2001, there were 196 AZA accredited zoos and aquariums.

Relevant Federal Legislation and Regulations

Animal Welfare Act

The AWA (7 USC 2131-2156) was passed in 1966 and later amended in 1970, 1976, 1985, and 1990, to protect certain animals from inhumane treatment and neglect. The AWA requires that minimum standards of care and treatment be provided for most warm-blooded animals bred for commercial sale, used in research, transported commercially, or exhibited to the public. Individuals who operate facilities in these venues must provide their animals with adequate care and treatment in the areas of housing, handling, sanitation, nutrition, water, veterinary care, and protection from extreme weather and temperatures.

USDA, APHIS administers the AWA, its standards, and its regulations. The USDA, APHIS, Animal Care program is responsible for ensuring zoo and aquarium compliance with the AWA through licensing requirements and periodic, unannounced inspections. (For more details on the AWA see www.nal.usda.gov/awic/legislat/usdaleg1.htm.)

Animal Welfare Act Regulations

In implementing the AWA, USDA, APHIS has promulgated numerous regulations and policies that guide the daily operation of AZA accredited zoos and aquariums. The regulations are found in the *Code of Federal Regulations (CFR) – Title 9: Animal and Animal Products; Chapter 1: Animal and Plant Health Inspection Service:*

Subchapter B – Cooperative Control and Eradication of Livestock or Poultry Diseases

Parts

- 50 Animals destroyed because of tuberculosis.
- 51 Animals destroyed because of brucellosis.
- 52 Swine destroyed because of pseudorabies.
- 53 Foot-and-mouth disease, pleuropneumonia, rinderpest, and certain other communicable diseases of livestock or poultry.
- 54 Control of scrapie.

Subchapter C – Interstate Transportation of Animals and Animal Products

Parts

- 72 Texas (splenic) fever in cattle.
- 73 Scabies in cattle.
- 74 Prohibition of interstate movement of land tortoises.
- 75 Communicable diseases in horses, asses, ponies, mules, and zebras.

- 76 Reserved.
- 77 Tuberculosis.
- 78 Brucellosis.
- 79 Scrapie in sheep and goats.
- 80 Johne's disease in domestic animals.
- 81 Reserved.
- 82 Exotic Newcastle Disease (END) and chlamydiosis; poultry disease caused by salmonella enteritidis serotype enteritidis.
- 83 Reserved.
- 84 Reserved.
- 85 Pseudorabies.
- 86 Reserved.
- 87 Reserved.
- 88 Reserved.
- 89 Statement of policy under the Twenty-Eight Hour Law.

Subchapter D – Exportation and Importation of Animals and Animal Products

Parts

- 91 Inspection and handling of livestock for exportation.
- 92 Importation of animals and animal products: Procedures for requesting recognition of regions.
- 93 Importation of certain animals, birds, and poultry, and certain animal, bird, and poultry products; requirements for means of conveyance and shipping containers.
- 94 Rinderpest, foot-and-mouth disease, fowl pest (fowl plague), exotic Newcastle disease, African swine fever, hog cholera, and bovine spongiform encephalopathy: Prohibited and restricted importations.
- 95 Sanitary control of animal byproducts (except casings), and hay and straw, offered for entry into the United States.
- 96 Restriction of importations of foreign animal casings offered for entry into the United States.
- 97 Overtime services relating to imports and exports.
- 98 Importation of certain animal embryos and animal semen.

Subchapter E – Viruses, Serums, Toxins and Analogous Products; Organisms and Vectors

Parts

- 102 Licenses for biological products.
- 103 Experimental production, distribution, and evaluation of biological products prior to licensing.
- 104 Permits for biological products.
- 105 Suspension, revocation, or termination of biological licenses or permits.
- 106 Exemption for biological products used in department programs or under department control or supervision.
- 107 Exemptions for preparation pursuant to an unsuspended and unrevoked license.

- 108 Facility requirements for licensed establishments.
- 109 Sterilization and pasteurization at licensed establishments.
- 110 Reserved.
- 111 Reserved.
- 112 Packaging and labeling.
- 113 Standard requirements.
- 114 Production requirements for biological products.
- 115 Inspections.
- 116 Records and reports.
- 117 Animals at licensed establishments.
- 118 Detention; seizure and condemnation.
- 119 Reserved.
- 120 Reserved.
- 121 Reserved.
- 122 Organisms and vectors.
- 123 Rules of practice governing proceedings under the Virus-Serum-Toxin Act.

Risk Reduction Techniques

Introduction

This section addresses the situation where a zoo does not have any clinical or suspected cases of FMD. The techniques described should be incorporated into the daily management of a zoological collection to minimize the risk of introduction of a FAD or any other emergency disease.

Management of Animal Acquisitions and Dispositions

In addition to the sound management of animal collections in zoos (in accordance with AZA accreditation standards), the implementation of the following management strategies will significantly reduce the risk of an emergency disease outbreak, maximize early detection, and assist in control measures. (For more details on AZA accreditation standards see <http://www.aza.org/dept/accred/intro.cfm>.)

- All newly acquired animals must be identified at all times and detailed records kept.
- The senior veterinarian and general curator should have available a current inventory along with origination/source of all imported animals held by the institution and updated on an annual basis.
- The senior veterinarian and general curator should be advised of the relocation within or between institutions of any imported animal.
- The senior veterinarian should be advised of the cause of death of any quarantined or imported animal as soon as possible after the postmortem examination. Disposal of the carcass should be performed to minimize potential transmission of pathogens to livestock, humans, other collection animals, or wildlife (see Section 2.7).
- Susceptible species imported from overseas institutions in FMD-endemic countries must remain within a post-entry quarantine (PEQ) facility. All requirements for record keeping and animal management for PEQ species must be met.
- During temporary quarantine, access to animals should be limited to essential staff (veterinary and designated animal care staff only). Biosecurity standards for quarantine should follow those outlined in the AZA accreditation standards.
- Waste material from animals in quarantine should be treated in a manner that limits access by all other fauna (including free-ranging animals/birds).

- Biological specimens from animals in quarantine should be handled, transported, and stored under conditions that will minimize the potential transmission of pathogens while preserving the integrity of the sample for diagnostic testing.
- There may be a need to consider the spatial requirements (distance) between animals in quarantine and those that have been cleared. For example, zoo quarantine areas for some species may include outdoor holding areas. Potential for aerosol or fomites transmission should be minimized using facility design, animal management procedures, and spatial arrangements.
- When animals are in quarantine, an all-in-all-out policy should be adopted (based on taxonomic and disease transmission considerations).
- All animals that are relocated from a zoo collection should have a current health assessment prior to movement. Detailed records of movement of the animals should be kept according to AZA accreditation standards. This will facilitate “trace-forward” and “trace-back” investigations.

Management of Resident Animal Collection

The level of biosecurity and record keeping required for each institution to comply with AZA accreditation standards will significantly reduce the risk of acquiring an exotic animal disease (see Section 1.1). These procedures should already be implemented in AZA accredited institutions.

- All animals are individually identified.
- Daily observation by animal care staff of each animal for clinical signs of disease and method of reporting abnormalities facilitates early veterinary investigation.
- Record keeping method should include current enclosure or location of each individual animal.
- Historical movements of individual animals between locations within an institution should be readily available in a manner that allows identification of potential contacts in an epidemiological investigation.
- FMD-susceptible species should be restricted from using public walkways where recent travelers to FMD countries may have access. Public contact areas containing susceptible species should have restricted access points. These should have adequate educational materials (i.e., signs, brochures, and/or verbal communication from staff) to inform visitors of the risk presented by recent travelers (see Section 2.10 and AZA/AAZV “Guidelines for Prevention of Foot and Mouth Disease in Zoos; also see www.aazv.org).
- Recent travelers (within 5 days) from countries with current FMD outbreaks, as listed by the OIE, should not be permitted to enter animal contact areas or animal

holding areas for susceptible species (see USDA Traveler's Information at www.aphis.usda.gov/oa/fmd/travinfo.html and OIE's website at www.oie.int/eng/maladies/fiches/A_A010.htm).

- Use of susceptible species in off-site events should be limited to minimize potential contact with other susceptible species and/or animal products capable of transmitting FMD.

Veterinary Services

Veterinary services provided to AZA-accredited institutions should include emergency disease preparedness plans. The attending veterinarian should be familiar with all relevant aspects of the institution's animal handling and management practices so as to enable more informed decisions if an exotic animal disease is suspected. The veterinarian should be aware of reportable diseases and procedures for reporting suspected cases. The veterinary health program is designed so that there is a reasonable chance of detecting disease should it be present. The veterinarian is involved in basic training of staff in procedures to recognize and minimize the spread of disease (see Section 2.3).

Training of Staff

The main objective of training (as it applies to these guidelines) is to prepare zoo staff for an emergency disease, including training for specific individual roles and information about and recognition of clinical signs of FMD. Emphasis should be placed on the need for staff to report promptly any abnormalities in animals under their care.

The AZA and AAZV produced a set of recommendations ("Guidelines for Prevention of Foot and Mouth Disease in Zoos") that were available to member institutions March 28, 2001. The following section is excerpted from the section on animal care staff training:

"Animal care staff should be made aware of the signs of FMD and species in the collection that are susceptible to disease. Susceptible animals include all cloven-hoofed animals (i.e., ruminants, swine, and camelids) as well as elephants, tapirs, and hedgehogs. See USDA's website for factsheets to use in training animal care staff. Animal care staff should be instructed to report animals with suspicious signs to the veterinary staff immediately. The veterinary staff should report susceptible animals with vesicular lesions to USDA, APHIS, EP and their State and local authorities.

Animal care staff and professional visitors traveling from FMD countries should be strict about following the "Instructions to Travelers" mentioned above.

Susceptible animals should be restricted from public walkways where recent travelers to FMD countries may have access. For similar reasons, it is inadvisable to use susceptible animals for off-site events."

For further information on training materials, see the AZA/AAZV “Guidelines for Prevention of FMD in Zoos” on the AAZV website (www.aazv.org) and the USDA, APHIS website for factsheets on vesicular diseases and travelers information (www.aphis.usda.gov/vs/ep/fad_training/bibpage.htm and www.aphis.usda.gov/oa/fmd/travinfo.html).

Early Detection of Diseases

Zoological institutions are well positioned to detect an emergency disease early in its course, since each animal is visually inspected daily, according to AZA accreditation standards. The use of pre-shipment examination and certification surrounding animal movements between institutions provides an additional opportunity for disease detection.

High Risk Species for FMD

The zoo animals that are most at risk of contracting FMD are all cloven hoofed animals (including exotic ruminants, swine, and camelids), elephants, tapirs, hedgehogs, and farmyard animals often maintained in a “children’s zoo” (i.e., domestic swine, sheep, goats, and cattle). Due to the existing biosecurity measures implemented in AZA-accredited institutions, the risk of exposing zoo animals in North America to FMD is very low.

Regular Sampling

Regular sampling of collection animals for a range of diseases by fecal, urine, or blood analyses is part of each institution’s routine preventive health program (see AZA Accreditation Standards). These opportunities to collect samples may include serological and other testing for diseases of concern and banking of samples. In the event of a suspected emergency disease, banked samples (i.e., serum) may assist in the diagnosis and evaluation of exposure of collection animals to FMD. Banked samples would permit a more thorough epidemiological assessment of disease in the collection, therefore, institutions are encouraged to collect and maintain banked samples from individual animals whenever possible.

Laboratory Submissions

Zoo veterinarians should be encouraged to include emergency diseases in their differential diagnoses and submit appropriate samples to the State veterinary laboratory for diagnosis (these may then be forwarded to the National Veterinary Services Laboratory (NVSL), or other designated diagnostic laboratories). Suspect vesicular diseases should be reported to the State veterinarian and Federal veterinarian-in-charge. During a field investigation, a trained foreign animal disease diagnostician (FADD) may direct additional diagnostic testing.

Routine Screening of Deaths

In accordance with AZA accreditation standards, all collection animals that die in a zoo should receive a complete necropsy. This provides a check on the disease status of the zoo's animal collection. If lesions consistent with vesicular diseases are present, appropriate samples for additional diagnostic testing should be collected (i.e., affected tissue, tissue fluid, and serum if possible). The State veterinarian and Federal veterinarian-in-charge should be notified of suspect cases.

Zoo Design

To reduce the risk of disease spread, it is strongly recommended that:

- Exhibit and holding facility designs prevent exotic animals from having direct contact with domestic livestock or wildlife.
- An effective pest management program is implemented and maintained.
- Exhibit and holding facilities are designed to minimize contamination of adjacent areas by waste materials or drainage.
- An isolation area and management plan is available to quarantine any suspect cases.

Work Practices and Staff Hygiene

It is recommended that the following routine practices be followed:

- Work clothes, including footwear, should be dedicated and worn only at work.
- Contact between animals kept at home and zoo animals should not occur. This includes indirect contact via footwear, equipment, and clothes as stated above. Hand-washing before and after work is an additional risk mitigation technique that should be mandatory.
- Close preventive health monitoring of personally owned animals; it is very important to follow-up on any suspect signs of clinical illness.

In the event of the zoo being in a declared surveillance or infected zone during an FMD outbreak, a number of other practices may become mandatory (see Section 3.0).

Disposal Systems Review

The possibility that a serious emergency disease could occur in a zoo, particularly among herbivorous mammals, underlines the need for strategically located disposal facilities to be designated well in advance of such an event. Burial, incineration, and rendering are possible options for carcass disposal. In addition to these methods, composting is an

option for waste materials. See the NAHERPS Disposal Manual for additional information.

Any disposal procedure that necessitates the transport of carcasses from inside a suspect or infected premise to a distant location increases the risk of spread and may require special measures (see Sections 3.3.4 and 4.4.1). This includes the occasional use of carcasses or portions of carcasses of animals from zoos for teaching purposes or as museum exhibits. It also applies to the transport of carcasses of animals too large to undergo necropsy examination or disposal at the zoo and which have to be transported to an outside facility.

If on-site facilities for carcass disposal are unavailable, commercial facilities provided by a private company responsible for disposing of infected medical waste can be utilized. All procedures for carcass disposal should comply with AZA accreditation standards and State and local regulations. These procedures should provide adequate biosecurity measures and traceable disposition of carcasses to prevent transmission of pathogens, including the FMD virus.

Disposal of feces is another consideration. In a mammalian emergency disease, feces, bedding, and used hay should be incinerated or buried on-site. Non-infective fecal material (i.e., from animals not infected or exposed to the FMD virus) may be composted under instructions from, and with the permission of the State veterinarian and/or Federal veterinarian-in-charge. Fecal waste from recently imported animals still in quarantine should be kept separate or sterilized before disposal.

Care must be routinely exercised to ensure all food (living or dead) brought into the zoo to feed zoo animals originates only from safe sources.

Creation of High Security Isolation Area

Isolation Premises for Small Animals

Isolation premises for small species must be indoors and bird, vermin, and insect-proof. Such premises should also have no wind currents (i.e., have static air); changing room facilities preferable with showering and washing facilities; footbaths; efficient waste collection and disposal; and dedicated utensils, instruments, and clothing. Isolation areas should meet requirements for quarantine facilities as outlined in the AZA accreditation standards.

Isolation Premises for Large Animals

Large animal isolation premises must be in a part of the property that permits as wide a buffer zone as possible from other stock or have solid walls that prevent aerosol transmission. The premises must also have change and washroom facilities; footbaths; dedicate utensils, instruments, and clothing; and be attended by staff that will not have further contact with any other collection animals that day.

Vaccination

Vaccination of susceptible zoo animals should be considered if an outbreak appears imminent. The decision to allow vaccination will be made by USDA, APHIS personnel along with the State veterinarian. Due to the individual value of rare or endangered species, authorization to vaccinate should be obtained early if the threat of an outbreak occurs. The vaccine should contain the appropriate subtype and serotype of FMD that has occurred during an outbreak. Production and measurement of safety and efficacy of FMD inactivated vaccines are under the control of USDA, APHIS.

In order to establish a satisfactory level of immunity, initial vaccination consists of two inoculations, 2-4 weeks apart, followed by revaccination every 4-12 months. The frequency of vaccination and duration of immunity will depend on the epidemiological aspects of the outbreak, type and quality of the vaccine used, and species vaccinated. Since these vaccines have not been validated for many of the species housed in zoo collections, each institution will need to develop a specific plan with their State veterinarian and Federal veterinarian-in-charge.

A specialist group of OIE has recommended that zoos be allowed to vaccinate susceptible species under certain conditions when an FMD outbreak occurs. The Field Operations Center (FOC) (see Section 3.1.2), in consultation with the State EOC and USDA, APHIS, Emergency Management Operations Center (EMOC) will determine the appropriate minimum distance from the zoo to the outbreak focus in which to vaccinate susceptible animals. This will depend on the individual circumstances including the density of susceptible livestock in the area and climatic and traffic conditions. All vaccinated animals would be subject to temporary transport restrictions post-vaccination according to OIE and as specified by the FOC. Vaccination of zoo animals should not change the FMD status of the country in which these animals reside; however, the Code of Animal Health has to be changed in order to safeguard the "FMD-free status" of the country. The effect of vaccination of domestic species on the country's FMD status and transport restrictions must be considered prior to including these animals.

In order to fully protect the zoo's collection, ALL exotic susceptible animals should be vaccinated. Logistics and risk involved with the process should be assessed by each individual institution in conjunction with the FOC. If vaccination is not going to be used nationally, either removal or request exemptions to allow vaccination of domestic farm/agricultural animals housed at AZA accredited institutions should be considered on a case-by-case basis. Since no data about the immune response after vaccination are available, zoos should be encouraged to perform serological studies to determine the efficacy of the vaccine in different species.

Public Relations and Education

In the event of an emergency disease, a zoological institution could be the target of intense media interest. In preparation for the event of an emergency disease outbreak,

every institution should formulate a plan for handling public relations. Someone should be designated as the zoo media officer (ZMO); this will usually be someone from the public relations or marketing office but must be a senior staff member. In the event of an outbreak, the ZMO should be advised immediately and kept up-to-date periodically.

Media and public relations activities relating to a zoological institution should ensure:

- Rapid and effective information flow and media operations in the event of an emergency disease affecting or threatening to affect a zoo;

- An up-to-date, constant flow of accurate information to:
 - Staff within the affected premises.
 - Staff at other zoos.
 - Media outlets and, via them, the general public.
 - All in concert with the Joint Information Center (JIC)

Part of the ZMO's responsibility is ensuring the cooperation of zoo staff by keeping them fully informed about animal management decisions and animal health status. Technical information regarding the situation should be explained in layman's terms and should be prepared in advance. Information available from the USDA, APHIS website can be a resource for public education materials. Guidelines for public education are also outlined in the AZA/AAZV "Guidelines for Prevention of Foot and Mouth Disease in Zoos" or on their websites. Signs, graphics, and brochures should be distributed, to communicate actions being taken to prevent and minimize the impact of FMD, to the public and zoo personnel. Film footage and photographs of pertinent animals should be available in the event of an emergency disease outbreak.

Response Plans in a Surveillance Zone

Introduction

This section addresses the situation where a zoo does not have any clinical or suspected cases of FMD itself, but is within a surveillance zone due to an outbreak on another property.

Surveillance/Quarantine Zones

The surveillance zone surrounds the infected zone; its area is defined by emergency managers of the State(s) in which the outbreak occurs, in conjunction with USDA. The exact boundary of the zone is variable and will be established with the goal of containing the outbreak. International guidelines for establishing surveillance areas are provided in the OIE animal health code (http://oie.int/eng/mormes/mcoda/a_summary.htm).

A surveillance/quarantine zone creates a buffer between the infected zone and areas free of disease; restrictions within this area will reduce the chance of the disease spreading further. The surveillance area should reduce in size as confidence about the extent of the outbreak becomes clearer (generally, to a minimum 10 km radius for an intensive livestock-raising region and 50 km for an extensive livestock-raising region). In principle, animals and specified products will only be able to be moved out of the surveillance/quarantine area into the free area by permit.

Field Operations Center

In the event of an outbreak of FMD, each State is initially responsible for their own disease control activities. A FOC will be established and will be responsible for all activities within the quarantine area (made up of the infected zone and the surveillance zone), including disease investigation, collection of specimens, quarantine of properties, valuation, and slaughtering and disposal of livestock, and decontamination of properties.

Senior zoo officials should be in contact with the FOC and all support staff must be made fully aware of FOC requirements and of all arrangements made to control and eradicate the disease.

Can the Enterprise Continue to Operate in a Declared Surveillance Zone?

Zoos generally have a higher level of security than most other livestock enterprises with the exception of some intensively managed species. They are characterized by fencing constructed to exclude both livestock and feral animals. Gate entry is usually under close supervision by staff during opening hours and key operated after hours. Automatic or mechanically operated gates are used in some zoos. Service entrances are usually similarly secure. Regular fence inspections are routine in accredited zoos.

Zoos in surveillance areas can be quickly contained since the physical and management barriers required are already in place. Emergency procedures are readily available since many of these are applicable to animal escapes and can be quickly applied to, or modified for, disease control purposes. There are also established “chains of command” and communication procedures ensuring adherence to emergency procedures. Frozen or perishable food is generally held in sufficient quantities for weeks, except in the case of fresh fruits or vegetables.

Animal keepers generally have training in the principles of disinfection and sanitation. Daily records are available to supervising veterinarians and are regularly reviewed thus allowing for early recognition of any suspected emergency disease.

It is important to recognize that the ability of a zoo to feed and maintain its animal collection often depends heavily on cash flow generated by daily visitation. It is essential that, whenever possible, control measures allow operations to continue. Therefore, it will be possible to continue operations when the institution is in a surveillance/quarantine area if the following restrictions on staff and public entry are observed.

Staff Entry

In the event of an outbreak, staff entry onto zoo grounds will be necessary in order to maintain care of animals in the collection. They will perform routine disinfection, plus any others required by the FOC, upon entering and leaving the surveillance area; dedicated work clothes and area for changing must also be ensured for all personnel. For information on disinfection and decontamination, see the Decontamination Manual.

Public Entry

Entry of visitors may be permitted only after a screening process including investigation of risk of recent exposure to FMD. Those in close contact with susceptible animals in high-risk areas within the previous 5 days should not be allowed to have contact with susceptible animals. Routine disinfection of visitors’ shoes should be done in all cases upon entry; visitor parking should also be located in an area, which minimized potential contact with animals. Facilities for routine disinfection are required for all people and vehicles (including feed trucks, etc.) coming into contact with zoo grounds or animal areas as specified by the FOC (see the Decontamination Manual).

Minimization of Risks Associated With Maintaining Operations

Each institution should designate a person (zoo FMD liaison) to communicate directly with the FOC. The liaison would preferable be a veterinarian, but may be a high level person from the animal management staff in close communication with a veterinarian. Each area of the zoo should have a coordinator that works with the zoo FMD liaison to ensure that biosecurity measures are in place and adhered to. Senior or supervising curators, or designated keepers, should be placed in charge of controlling staff and

visitors coming into their area of the zoo and be in close communication with the zoo FMD liaison. Important areas of biosecurity include, but are not limited to:

- Preventing movement of susceptible stock into the zoo except with FOC coordinator's permission; non-susceptible animal traffic should be minimized as well, due to the possibility of mechanical transmission.
- Enforcement of decontamination procedures of staff and vehicles moving into and out of the zoo.
- Organizing and prioritizing staff duties and movements, with high-risk animals being dealt with last.
- Decontamination/disinfection of zoo vehicles and other equipment.
- Proper training for the recognition of clinical signs and prompt reporting of any unusual signs in collection animals.

For highly virulent diseases such as FMD, which is spread by numerous fomites, visitors should be denied access unless they can demonstrate they have not come from an infected or dangerous area or can be decontaminated (see Section 3.2.2). The period of this level of control should be decided by consultation between senior zoo managers, veterinary staff, and the FOC. Automatic gates should be converted to manual operation, and unattended gates should be attended, while the zoo is in a restricted area.

Animals

The curator and zoo veterinarian should prepare a list of all the potentially susceptible animals within the zoo divided into high and low risk groups. The high-risk group should consist of animals that have proven to be highly susceptible to FMD (i.e., hoof stock); the low-risk group should consist of non high-risk animals that have been either naturally or experimentally infected. A schedule of regular surveillance for the presence of FMD should be developed for both low and high-risk groups. The methods and frequency should be appropriate for the species involved. Instructions should then be given to relevant staff, such as keepers, to carry out these surveillance procedures and report the results to the veterinary section. It is desirable to withdraw any high-risk or high value susceptible species from public display while in a quarantine/surveillance area. Susceptible animals should be kept indoors (if possible) to reduce the risk of long distant airborne infections.

Animal Movement Controls

All movements of susceptible species within and into the zoo should cease; exceptions may be made only by permission of the senior veterinarian and the FOC. Any highly endangered or valuable susceptible species should be immediately moved to the most secure facilities available within the zoo and kept there in isolation from all other susceptible species. Zoo staff should not have contact with other susceptible species

within the surveillance zone or any other high-risk area as determined by the FOC during an FMD outbreak. If animals are already in transit and have to be admitted to the zoo for lack of other suitable holding facilities, they should be held in isolation from other susceptible species until it is clear that there is no risk of disease transmission.

Animal Feeds

Recent food introductions should be traced immediately. If the source of food is within the surveillance zone, it should not be fed to susceptible species. If the risk of previous cross contamination is considered significant, the food should be destroyed following the procedures specified by the FOC (for details, see the Disposal Manual).

Further food brought into the zoo should only be sourced from outside the surveillance and infected areas; if not feasible, special arrangements should be made with the FOC.

By-Products

As a matter of priority, the FOC should determine the conditions of disposal of zoo organic products. If they cannot be disposed of normally then they must either be stockpiled in the zoo or removed and transported (in a manner approved by the FOC) to a suitable disposal site. For non-organic product or materials leaving the zoo, advice should also be sought from the FOC as to the need for any disinfection or restriction on movement of such products (see the Disposal Manual). All movements of products out of the zoo should be minimized.

Vehicles

Any recent vehicle movements into the zoo proper (not just into visitor parking areas) should be traced. Where such vehicles are still within the zoo and there is any risk of contamination, they should be withdrawn from use until decontaminated. A checkpoint should be set up for all future vehicle entries into the zoo property. Only vehicles that have not originated from, or passed through, the infected zone and have appropriate permits from the FOC should be allowed entry. It may be desirable to set up a vehicle disinfection point at the entry to the zoo to allow any essential vehicles to be disinfected (see the Decontamination Manual).

Equipment and Materials

Tracing of all recently introduced equipment and materials should be carried out. Where there is any uncertainty as to whether it may have been in contact with the infectious agent then it must be immediately decontaminated, along with sites where it has been held and people who have handled it, following the procedures outlined by the FOC (see the Decontamination Manual.) If decontamination cannot be effectively performed than such material should be destroyed (with likely compensation) following the appropriate procedures in the above manual. All routine entry of equipment and materials from other

parts of the quarantine/surveillance area should cease, except where the FOC has approved movement on a case-by-case basis.

Personnel

An initial joint briefing by a senior zoo officer (zoo FMD liaison) and a representative of the FOC should be given to the staff. This should concentrate on eliminating contact between people and susceptible species outside the zoo. Staff who must have contact with susceptible species in the surveillance zone outside the zoo should not have direct contact with susceptible species within the zoo. Staff should be advised to keep direct contact between susceptible species and other staff visitors to a minimum. They should also pay particular attention to hygiene in food preparation; it may be desirable for a separate area to be set up for food preparation during the outbreak. Dedicated personnel should be divided into segregated groups of susceptible animals to help minimize the risk of disease spread should it occur. Staff working with susceptible animals should shower, change clothes, or undergo personal disinfection before and after handling these animals. The following precautions are also recommended:

- All keepers should shower when entering and leaving the premises.
- Eliminate contact between keepers and non-zoo susceptible animals, either directly or indirectly (including clothing).
- Launder of dedicated work clothes on site.
- Relocate vehicle parking from within the zoo grounds.

Vermin and Feral Animals

Immediate action should be taken to control any vermin or feral animals that could spread the disease agents. These animals may include rodents, wild birds, and a variety of wild mammals. For control of insects, an entomologist with USDA or Public Health should be consulted. In addition, attention should be paid to the security of boundary fencing and enclosures to prevent the entry of animal vectors. Particular attention should be paid to enclosures holding any susceptible species.

Buildings and Structures

A general clean up of all building and enclosures should occur with all accumulated garbage/unused equipment removed. Particular attention should be paid to removal of any accumulated organic material that may either harbor microorganisms or act as insect or vector breeding grounds.

Media and Public Relations

In the event that a zoo or similar facility is within an FMD surveillance zone, some media attention would be inevitable. The designated zoo FMD liaison would be responsible and must work with the FOC and JIC to provide media releases as necessary (see Section 2.10).

Response Plans in Infected or Suspect Premises

Introduction

This section covers the situation where a zoological park lies within a declared infected zone (area determined by FOC), has animals known to have been in direct contact with infected animals, or has infected animals on the premises. Declared premises are defined below.

Infected Premises (IP): An area (which may be all or part of a property) in which an emergency disease exists, is believed to exist, or in which the infective agent of that emergency disease exists or is believed to exist.

Suspect Premises (SP): An area containing animals that might have been exposed to an emergency disease through possible contact with infected animals or facilities, people, equipment, semen or embryos, and currently show no symptoms; OR where the disease symptoms are evident, but the diagnosis is yet to be confirmed.

Can the Enterprise Continue to Operate if Declared an Infected or Suspect Premise

In general, AZA accredited institutions have high levels of biosecurity, including perimeter fences, exclusion or control of feral animals and wildlife, limited access to animal areas, quarantine of all incoming animals, high quality on-site health care, individual identification of animals, and records of all animal movements. In addition, many AZA institutions occur in urban areas remote from agricultural activities. It is therefore more likely that a zoo declared an infected or suspect premises would be able to successfully contain the spread of infection within and outside the institution.

It is also important to recognize that the ability of a zoo to feed and maintain its animal collection often depends heavily on cash flow generated by daily visitation. It is therefore essential that, whenever possible, control measures allow operations to continue. However, the ability of a zoo to continue operations when there is an infection on the premises depends on the physical features of the zoo, the unique biosecurity conditions of that institution, the ability to completely isolate affected animals from zoo visitors, and the location of public access routes in relation to movement control zones. The feasibility of public access must be determined in consultation with the FOC and the USDA, APHIS, EMOC. The following general conditions may apply.

Staff Entry

Staff entry is necessary for maintenance of other animals in the collection. Staff will be required to perform routine disinfection upon entering and leaving the infected zone. For staff associated with animals in the infected premises, special disinfection practices need to be followed (see the Decontamination Manual).

Public Entry

There is potential for large amounts of virus to be produced if a large herd (especially swine) is infected. Public entry into the infected zone may be prevented until a time has elapsed exceeding the survival time for the virus under the prevailing conditions, or the area has been disinfected to the satisfaction of the FOC.

Animal Movements

All movements of susceptible animals should cease in infected or suspect premises, following protocols outlined in Section 3.3.2.

Elimination of the Disease – Animals

Because AZA accredited institutions have high levels of biosecurity and often have endangered or otherwise irreplaceable animals in their collections, every effort should be made to contain and eradicate infection without unnecessary euthanasia of valuable animals. The conservation or other value of the animals (as determined by curators or other appropriate zoo staff) will be a consideration since much of the genetic material represented in zoo animals is irreplaceable. In addition, vaccination of susceptible animals as a means of containing an outbreak should be made an available option whenever possible (see Section 2.9).

All infected domestic animals should be euthanized and disposed of as determined by the FOC (see the Disposal Manual). However, as discussed above, disposition of valuable animals must be determined on a case-by-case basis in consultation with curators, zoo veterinarians, and the FOC. Contact animals deemed valuable should be kept in isolation, tested, and monitored daily for signs of disease.

All susceptible animals will be held in quarantine within the zoo until advised that this is no longer required by the FOC. Tests are required by the FOC, based on incubation periods and ability to handle animals, and will be carried out on any at-risk or susceptible species until the outbreak is officially declared over. Staff or other people handling or feeding animals, cleaning enclosure, or otherwise coming into contact with susceptible species will not be permitted to have contact with any other groups of susceptible species until they have showered, changed clothes, and disinfected any other material or equipment required. As much as possible, different people will be used in the handling of each separate group of susceptible species. Since animals may shed the virus prior to showing any symptoms, it is recommended that the zoo be divided into separate management areas with each area having its own dedicated staff following the steps outlined above to minimize contamination between animals within each area.

Decontamination – Products and Facilities

Products

Advice will be sought from the FOC as to whether any biological products within the zoo constitute a disease transmission risk. If they do, they will be disposed of in the manner directed by the FOC or in a manner directed by the Disposal Manual. Commodities with a commercial value that are required to be destroyed will be valued in accordance with established procedures (see Valuation and Compensation Manual). When disposal of large numbers of animal carcasses cannot be accomplished within the zoo, they must be transported in sealed leak-proof containers to a suitable location identified by the FOC. Advice will be sought from the FOC on whether such transportation requires police escort. Any other products from within the zoo will be decontaminated in accordance with the relevant strategies/manuals.

By-products

By-products will be treated in such a manner as is necessary to destroy the virus or, if this is not feasible, destroyed or disposed of according to the Disposal Manual. In the event of uncertainty regarding the most appropriate method, the advice of the FOC will be sought.

Discharges

Wherever possible, discharges will be contained within the secure area of the zoo until it is certain that they are not infectious. Discharges should be prevented from entering any local watercourses. Where discharges that constitute a risk cannot be held on the zoo premises, they will be transported in secure leak-proof containers to a suitable disposal site.

Vehicles

Vehicle entry should be kept to an absolute minimum within the secure area of the zoo. Different vehicles will be used within the infected area and the other parts of the zoo. Disinfection of people and equipment or material is to occur between the infected area and clean area vehicles. Where it is necessary to remove vehicles from the infected areas of the zoo, they will be thoroughly disinfected at the boundary of the area following the procedures in the Decontamination Manual. Drivers of such vehicles should not be parked within the internal zoo premises. Within the infected premises, vehicle usage should be kept to an absolute minimum.

Equipment and Materials

Equipment and materials will be either disposed of or decontaminated as specified in the Decontamination and Disposal Manuals. In the event of uncertainty regarding the most appropriate method, advice will be sought from the FOC.

Personnel

An initial briefing on the situation should be provided to the staff jointly by a FOC representative and senior zoo veterinarian (or other appropriate senior zoo staff). This should concentrate on eliminating contact between people and susceptible species outside the zoo. Staff who must have contact with susceptible species in the infected area of the zoo should not have direct contact with susceptible species in other parts of the zoo. Staff should be advised to keep direct contact between susceptible species and people to a minimum and also to pay particular attention to hygiene in relation to food preparation and handling from animal to animal in order to minimize risk of disease spread. It may be desirable for a separate area to be set up for food preparation for highly valuable animals, and for staff handling these animals to shower, change clothes, or undergo personal disinfection before handling other animals.

Vermin and Feral Animals

Although AZA accreditation standards require control of vermin and feral animals, control activities should be increased in the event of an FMD outbreak. In addition, boundaries of the zoo and enclosures of susceptible species should be inspected to ensure that there is sufficient security to exclude all other creatures, regardless of whether they are likely to be active disease carriers or not. Methods for controlling feral animals, vermin, and native wildlife should be in accordance with relevant Federal, State, and local regulations, but emergency exemptions may need to be pursued as part of the emergency response.

Buildings and Structures

These should be decontaminated following the techniques outlined in the Decontamination Manual. Highly contaminated structures that cannot be effectively cleaned should be valued for compensation purposes, if applicable, and destroyed according to established procedures.

Tracing Requirements

Existing Zoo Tracing Capabilities

As discussed in Section 1.1, all animals imported into the United State must be positively identified at all times using an accepted method (each tag, brand, microchip implant, tattoo) and records relating to that animal are maintained using Fox Pro or a similar inventory system (see Section 1.1.1). All records relating to animals imported into the

United States and their offspring must be kept up-to-date and be available at short notice. All progeny (2 generations) of an animal imported into the United States must be identified using an accepted method and records relating to that animal maintained using ARKS or a similar inventory system. The system allows individual animals and their offspring to be traced with little difficulty and allows the following data to be retrieved on very short notice:

- An inventory report for each institution that provides status data, with breakdowns of births, acquisitions, deaths, and translocations.
- A taxon report that lists all the specimens of a given species held by that institution, their identification, parentage, date of birth, location, and origin.
- A specimen report that shows the animal's parentage, origin, date of birth, identification, location, treatment, and movements both within the institution as well as from one institution to another.
- Transaction reports that detail all movements for any given period.
- Enclosure reports (with historical option) to show the location of the animals and any animals that have shared that enclosure.
- Management reports that include:
 - Age pyramids for any given taxon.
 - Fecundity and mortality.
 - Local inbreeding.
- Specimen relationship that include:
 - Pedigree charts.
 - Sibling tables, which list both full and half siblings for any given specimen.
 - Reproductive history of any individual, male or female.

A higher degree of surveillance may be applied in cases where the level of tracing does not meet the above standards.

Tracing Actions for Emergency Diseases

Through the institution executive officer, the records officer must be contacted to request the following information:

- Inventory report for the collection, providing a summary of all transactions for any stipulated period (to include births, deaths, imports, exports, and status).
- Taxon report for all specimens of the species in which the outbreak has occurred.

- Enclosure report showing all specimens that have been maintained in the enclosure in which the outbreak occurred over a stipulated period of time. An enclosure report for adjoining enclosures may also be appropriate.
- Specimen reports for those individuals in which the outbreak has been detected.

With the above reports it will be possible to identify any trend that may occur and identify areas in which further information will be required (i.e., sibling, parentage, treatment records, postmortem reports, and location of animals removed from the property). Using information from the above request, as appropriate, the following factors should be traced:

- All material (hay, feces, and bedding) removed from the enclosures in which the outbreak has occurred (stipulate period).
- The location of any crates or containers that may have been used to transport the animals.
- The identification of staff that may have had direct contact with the animals or area in which the outbreak occurred.
- Any contact between staff that have been exposed to animals/areas and contact with domestic/commercial/pet animals outside the institution in which the outbreak occurred.
- The location of any biological samples that have been removed from the property during a specified period.

Proof of Freedom

The OIE International Animal Health Code for FMD sets international requirements for gaining accepted status of “freedom from FMD” (http://oie.int/eng/maladies/fiches/A_A010.HTM). Ultimately the decision to declare freedom from a particular disease and cessation of disease control activities will be made by the USDA, APHIS, EOC and the FOC based on information assessed at the time.

Media and Public Relations

In the event that zoo animals are involved in a FMD outbreak, media interest would be intense. As with other animal disease emergencies, a proactive approach is necessary to manage the media when such an event affects a zoo. It is therefore essential that the zoo’s media representative work closely with the FOC, State EOC, JIC, and APHIS EMOC media representative(s). Whenever possible, all press releases, interviews, and press conferences relating to a zoo FMD outbreak should be conducted jointly by zoo and FOX representatives to ensure the accuracy and consistency of the information being disseminated. See Sections 2.10 and 3.4 for additional detail. It is also recommended that all zoos have a legally designated air space, usually a ceiling of 5,000 feet, above

their establishments. Attention should be drawn to this, particularly in early media releases, so that all concerned are aware of the fact that aircraft movement in this area can be prohibited.

Appendix A – List of Referenced Website Addresses

American Zoo and Aquarium Association (AZA)

<http://www.aza.org>

American Association of Zoo Veterinarians (AAZV)

<http://aazv.org>

Animal Welfare Act (AWA)

<http://www.nal.usda.gov/awic/legislat/usdaleg1.htm>

AUSVET Plan

<http://www.aahc.com.au/ausvetplan/index.htm>

For Decontamination and Disposal Manuals, see section on operational procedures.

AZA Accreditation Standards

<http://www.aza.org/dept/accred/intro.cfm>

National Veterinary Services Laboratory (NVSL)

<http://www.aphis.usda.gov/vs/nvls/>

Office International des Epizooties (OIE)

http://www.oie.int/eng/maladies/fiches/A_A010.HTM

http://www.oie.int/eng/mormes.mcode.a_summary.htm

U.S. Department of Agriculture (USDA)

<http://www.usda.gov>

USDA, APHIS information on vesicular diseases

http://www.aphis.usda.gov/vs/ep/fac_training/bibpage.htm

USDA Traveler's Information for FMD

<http://www.aphis.usda.gov/oa/fmd/travinfo.html>

Appendix B – Acronyms

AAZV – American Association of Zoo Veterinarians

AEOC – APHIS Emergency Operations Center

AI – Avian Influenza

APHIS – Animal and Plant Health Inspection Service

AVIC – Area Veterinarian in Charge

AWA – Animal Welfare Act

AZA – American Zoo and Aquarium Association

CFR – Code of Federal Regulations

CSF – Classical Swine Fever

CVO – Chief Veterinary Officer

DCP – Dangerous Contact Premises

EMLT – Emergency Management Leadership Team

EMOC – Emergency Management Operations Center

EMRS – Emergency Management Reporting System

END – Exotic Newcastle Disease

EOC – Emergency Operations Center

EP – Emergency Programs

FAD – Foreign Animal Disease

FAD/EDI – Foreign Animal Disease/Emerging Disease Incident

FADD – Foreign Animal Disease Diagnostician

FMD – Foot-and-Mouth Disease

FOC – Field Operations Center

FSA – Farm Services Agency

HCD – Highly Contagious Disease

IP – Infected Premises

JIC – Joint Information Center

NVSL – National Veterinary Services Laboratory

OIE – Office International des Epizooties

PEQ – Post-Entry Quarantine

PPE – Personal Protective Equipment

READEO – Regional Emergency Animal Disease Eradication Organization

SOP – Standard Operating Procedures

SP – Suspect Premises

USDA – United States Department of Agriculture

VP – Vaccinated Premises

VS – Veterinary Services

VVND – Velogenic Viscerotropic Newcastle Disease

AMO – Zoo Media Officer

Appendix C – Glossary

APHIS – An agency within USDA responsible for ensuring the health and care of animals and plants.

AVIC – The lead Federal veterinarian for VS in a given area. Nationwide, there are 42 areas that encompass one or more States.

Case Identification:

Confirmed Positive – Agent is isolated and identified.

Presumptive Positive (Index Case) – Animal with clinical signs consistent with an FAD/EDI plus one or both of the following: 1) Sample is positive and 2) other epidemiological information is indicative of the FAD/EDI.

Suspect – Animal with clinical signs that may be consistent with an FAD/EDI.

Case-Premises Classification Terms:

DCP – A premises that has susceptible animals exposed directly or indirectly to infected animals, contaminated products, materials, people, or air and will be subjected to disease control measures (which may include culling). A DCP will be quarantined. If the susceptible animals on a DCP are not culled they will have intense surveillance for 2-3 incubation periods. If it is outside the infected zone, the premises will be treated as an “infected zone” and must have a surveillance zone.

IP – A premises on which a HCD or the agent is presumed or confirmed to exist. Total movement control is imposed and all susceptible animals are culled.

SP – A premises with susceptible animals that are under investigation for a report of clinical signs with no apparent epidemiological link to an IP or DCP or is in the infected zone and not classified as an IP or DCP. These premises are under movement restrictions and intense surveillance for 2-3 incubation periods and if negative, the premises will revert to previous status. The owners of animals on SP’s in an infected zone may elect to depopulate their animals.

Case Priority Designation – Indicates APHIS response levels, sample handling, and testing protocols. Investigations are designated as 1 to 3.

CVO – The USDA veterinarian designated by the Secretary of Agriculture to be responsible for the overall direction of the Federally highly contagious animal disease response.

EMLT – Consists of VS leaders responsible for animal health emergency management.

Epidemiological Information – Includes tracing all contacts with affected animals and premises, including movements of non-susceptible livestock, humans, fomites, animal products or byproducts, crops/grains, and feedstuff.

FADD – A veterinarian who has been through the foreign animal disease-training course at Plum Island and receives continuing education in FAD's and animal health emergency management.

FAD/EDI Investigations – On-site assessments conducted by FADD's, as part of the national surveillance program for exotic or emerging animal diseases. The assessment includes a history of clinical and epidemiological findings, results of physical examinations, necropsy findings, specimen collection and submission to approved laboratory, reporting, initiating appropriate control measures, etc.

HCD – A disease that spreads rapidly from animal-to-animal as well as herd-to-herd. Transmission can occur via direct and indirect modes. An HCD may be recognized by above normal morbidity or mortality per unit time, where morbidity could be characterized as a loss of production.

Infected Zone – The initial zone drawn beyond the perimeter of all presumptive or confirmed positive premises and includes as many as the dangerous contact premises as is logistically practical. In considering the establishment of the infected zone, initially set it at least 6.2 miles (10 kilometers) beyond the perimeters of the presumptive or confirmed infected premises. The boundaries must be modified as new information comes to hand. The actual distance in any one direction is determined by factors such as known characteristics of the agent, terrain, the pattern of livestock movements, livestock concentrations, the weather and prevailing winds, the distribution and movements of susceptible wild and feral animals, processing options (livestock and products), and the effect on non-risk commodities. Infected zones can be modified as tracing and surveillance results become available and wildlife distributions become better defined.

Quarantine Area – The area comprising of the infected and surveillance zones.

READEO – This is a VS organization that has trained animal health emergency managers and can be mobilized to support and fight an outbreak.

State Veterinarian – The veterinary officer for a particular State or territory of the United States in charge of animal health activities.

Surveillance Zone – The zone established outside the infected zone or the same distance around a DCP located outside an infected zone. Initially set the surveillance zone to be large (the entire State or territory). This distance will be reduced as the epidemiological information becomes available, but not less than 6.2 miles (10 kilometers) from the borders of the infected zone. Once the extent of the outbreak is understood, susceptible livestock or poultry can move within and out of the zone with a permit.