The Veterinarian's Role in Emergency Management

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1. Introduction
Climate change and the resulting increased severity of weather-related events remains a topic that is still being vigorously debated at the national level. Regardless of personal stance on this issue, there is mounting evidence that weather conditions in the United States appear to be trending toward weather events of increased severity. One indicator of increased severity of inclement weather patterns lies in the number of incidents that become federally declared disasters. The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1953 authorized the President to provide federal assistance to jurisdictions impacted by disasters.2 The disaster declaration process begins at the local level with local disaster declarations being declared when the incident overwhelms local response capabilities. The next step occurs at the level of the state government followed by a federal declaration when state resources cannot meet the needs of the incidents and when the costs of responding to an incident reaches prespecified financial costs. An easy way to think about this is considering the financial triggers for a federal declaration as being similar to an individual's deductible that's paid prior to their insurance kicking in. In the case of a federal disaster declaration, the deductible is the amount of uninsured losses including the costs of response reaching a population-based level. While there have been adjustments in policy during the time since the Stafford Act was passed, there has been an increase in the numbers of declarations that have occurred (Fig. 1).

The discipline of Emergency Management has developed as a mechanism for jurisdictions to provide for their citizens by mitigating risks, developing emergency response plans, being involved in response, and completing the recovery process when disasters happen. Emergency managers follow an all-hazards approach with “all-hazards” being defined as extreme weather or natural events, man-made events including terrorism, or failures of industrial facilities and technological systems. The vast majority of incidents are handled by local first responders. These incidents are categorized as low-risk/high-frequency incidents. High-risk/low-frequency incidents are those that cause such severe damage that first local and then state resources are potentially unable to fulfill all response requirements.4
An additional way to separate disasters is by the amount of prenotification that is provided prior to an incident. Hurricanes typically provide ample warning allowing mitigative steps to be taken and response plans to be coordinated prior to the incident occurring. No-notice events provide little to no advance notice and preclude pre-emptive mitigative steps. Examples include tornadoes, mudslides, explosions, and other spontaneously occurring incidents.

Disaster scenarios, with the exception of biological events, are in the authors’ opinion, by their very nature, chaotic events with chaos often being at its worst during the first 24 to 48 hours. This chaos occurs for many reasons including loss of infrastructure, up-surge in physical threats, and influx of first responders, media, and the self deployed. Hurricane Harvey provides an excellent example of why this chaos occurs. This hurricane acted differently than expected during the immediate prelandfall period. It was, at a point within 72 hours of landfall, predicted to be not much more than a “rain event.” This prediction did not trigger the normal evacuation and preparation protocols. By the time the hurricane intensified to a Category IV storm, evacuation of many coastal communities was not possible and many either had to make a hasty evacuation or “ride out” the storm. The Texas A&M Veterinary Emergency Team (VET) was deployed to Nueces County, Texas pre-landfall and was positioned at the National Guard Armory just west of Corpus Christi, Texas. Team members deployed into the field shortly after landfall and were met with numerous destroyed buildings, downed trees and power lines, and a general loss of normal infrastructure. Landfall had introduced a number of risks including the potential for sudden collapse of damaged buildings and trees, electrocution, torrential rainfall and subsequent flooding, and potential for toxic exposures in contaminated floodwaters.

It is important at this point to understand the differences between the majority of the first-response community and those focused on responding on behalf of animals. Firefighters, emergency medical technicians (EMTs) and paramedics, and law enforcement officers constitute what many typically think of as first responders. National standards for firefighters have been established by the National Fire Protection Association and provide guidance for a wide range of activities that may occur across the different stages of emergency management. Law enforcement officers also work under established standards, in the case of Texas, regulated by the Texas Commission on Law Enforcement. EMTs and paramedics operate under similar codes and regulations. These first responders are in addition, employed by local and state jurisdictions. They have a similar “language”, organizational structure, and standards of training for working in hazardous environments. They, as well as elected officials and other governmental employees, have legislated requirements for protecting their citizens and property within their jurisdictional areas.

The characteristics described above differ from the general public and specifically from those involved in animal-related industries. The majority of veterinarians and veterinary technicians are engaged in the performance of “small-business” operations or are employed by corporate veterinary medical companies and are not gainfully employed by governmental entities. This community is exquisitely trained to perform preventive, medical, and surgical interventions but most do not have the training that is required for operating in a disaster theater, nor are they able to be self sustaining when normal infrastructures are compromised. These characteristics combined with the risks and responsibilities of government and the training of organized first responders often leads to problems during the response phase of emergency management. These problems often stem from animal-focused first responders not understanding the approaches that are employed by local jurisdictions to protect life, health, and property of first responders and citizens, the accountability that is required across layers of government, and the inability to be self sustaining in an infrastructure-poor environment.

National Incident Management System

The National Incident Management System (NIMS) was established in the aftermath of the 2005 Hurricanes, Katrina and Rita. These storms demonstra-
strated the need for a comprehensive approach for incident management that spans all levels of government. NIMS provides the framework that allows all levels of government, the private sector, and nongovernmental organizations to respond to a disaster in a cohesive and coordinated fashion without usurping local control of incident response.⁷

A key component of NIMS is the Incident Command System (ICS). The ICS is a management system used for managing disaster response. It is organized into 5 functional areas including command, operations, planning, logistics, intelligence, and finance, and administration.⁸ Understanding ICS is a foundational concept that must be understood and adhered to by all involved as first responders. It is also important to recognize that the decision to respond to a disaster is not solely an individual decision. Individuals do not have the right to decide on their own that it is appropriate to rush toward the scene of a disaster. The reason for the decision not being up to the individual lies in the chaos that is created by the disaster and jurisdictional requirements to protect life, health, and property with the safety of the first responder being the highest priority. Self deployment puts the veterinarian in a position of legal risk given that the statutory protections afforded to first responders do not apply to the self-deployed and professional liability policies may not extend into the disaster theater. Many jurisdictions require people to be credentialed to participate in disaster response and the absence of credentials may put the person at legal risk. The self-deployed volunteer is also at a disadvantage from the perspective of having access to resources that may be necessary to support themselves and deliver veterinary medical care in the incident. This often results in the self-deployed volunteer becoming an additional problem for the jurisdiction to deal with. An additional consideration is that all jurisdictions should have animal-focused emergency plans. A component of these plans is a process for ensuring that animals are reunited with their owners. There are numerous anecdotal examples of self-deployed volunteers either intentionally or as a result of a lack of awareness of local plans, transporting animals out of the area thereby excluding any potential for reuniting with their owner.

The process for deploying a first responder or team depends on the level of government under which you are operating. In the case of a local response, the order or request to deploy will come from either the county judge, mayor, or their designee. The process for deploying a state-level asset is more complicated and is described below. The process depicted is based on the Texas model. Other states will be similar but there may be slight differences.

1. A request for assistance (ICS form 213) is developed at the local level by emergency services officers or office of emergency management. Note, in Texas this is a State of Texas Assistance Request (STAR) form and in other states the form may be designated differently as well.
2. In Texas, the STAR is reviewed by the District Disaster Committee to determine whether regional resources capable of meeting the need may be available.
3. If not, the STAR (ICS 213) is sent to the State Emergency Operations Center where it is either approved or not.
4. State-level teams only deploy under a state-approved request (STAR).

Resource
The American Association of Equine Practitioners (AAEP) and its charitable arm, The Foundation for the Horse, can also serve as resources. A network of people, following the above protocols, is important; these two groups can help connect you with like-minded, caring professionals in your area. The Foundation may also be able to provide financial support during times of need, and its staff may be able to assist with communicating your needs to other practitioners, industry partners, and suppliers, again, following the above protocols.

The Foundation for the Horse also invites AAEP-member veterinarians in the United States and Canada to join its State & Provincial Equine Emergency & Disaster (SPEED) network. The SPEED Veterinary Liaisons serve as disaster communication liaisons. A major goal of this network is to facilitate communications regarding urgent needs, long-term needs, overall status, and where resources will be most useful for the wellbeing of horses, especially during times of disaster.

For more information about the SPEED network or resources from The Foundation for the Horse or AAEP, please contact Keith Kleine at kkleine@aaep.org.

Participating in Organized Emergency Response
Veterinarians and veterinary technicians have several mechanisms for getting involved in emergency response including participating as an agent of the jurisdiction in which they are responding, becoming a member of a state-level team such as the Texas A&M Veterinary Emergency Team, Oklahoma Large Animal First Response Team, Florida SART, or the Louisiana State Animal Response Team, or becoming a volunteer with a nongovernmental organization such as the ASPCA, American Humane, or Code 3.

Self-deployed volunteers were a significant component of the 2017 Hurricane Harvey response. They no doubt saved human and animal lives, but there are significant disadvantages of being a self-deployed volunteer. The self-deployed sector is typically fragmented and based on individual decisions and standards. The level of training required is
also an individual decision so people often go into situations for which they are not prepared. The self-deployed volunteer is also typically not able to mount a self-sustainable response, nor are they familiar with a jurisdiction’s plans for managing the animal component of response. The Texas A&M VET responds with the equipment and supplies to be a completely self-supporting veterinary medical unit for up to 5 days and have developed the mechanisms of support that allow the team to be self sufficient for extended periods. In the case of Hurricane Harvey this was a 21-day deployment. The self-deployed volunteer may also not be cognizant of the risks they will face or the steps for mitigating the risks they will encounter. The reality is that any of these may present an additional problem for an already-stressed community.

Participating as an agent of a local jurisdiction is an additional way to assist as a first responder. This approach is highly recommended and can be accomplished through being written into a local jurisdiction’s emergency plan or via a Memorandum of Understanding, Memorandum of Agreement, or an emergency contract. These all provide a recognized role and the ability to interact with and benefit from the rest of the first-responder community. They also provide a measure of liability protection. Liability protections will be discussed in a later session. Memoranda of Understanding should be carefully considered and all aspects of the agreement, including reimbursement mechanisms and requirements should be thoroughly reviewed.

State-level teams provide a mechanism for veterinarians and veterinary technicians to participate as a first responder. The Texas A&M VET provides the deployable veterinary medical resource in the state of Texas. Veterinarians may join the team through participating in the Texas Veterinary Medical Reserve Corps (TVMRC). The TVMRC is recognized at the state and federal level and is a component of the Medical Reserve Corps System organized under the Department of Health and Human Services at the federal level. Monthly training sessions and biannual exercise opportunities are provided to ensure that members are prepared for the rigors and risks associated with emergency response. They are also supported through a response and provided the tools with which to work and the support necessary to meet daily first-responder needs. The disadvantage is that deployments may be lengthy with a 14-day deployment being within the realm of possibility.

Training Requirements
The training requirements required of first responders is dependent on the type of response they will be involved in. This can range broadly depending on the assigned missions. The basic requirement that all first responders must have is a basic understanding and certification in the National Response System, National Incident Management System (NIMS), and the ICS. This training is available online at https://training.fema.gov/nims/.

The courses that are typically required include the following:

- ICS-100: Introduction to the ICS
- ICS 200: ICS for Single Resources and Initial Action Incidents
- IS-700: National Incident Management System, An Introduction
- IS800: National Response Framework, An Introduction

Additional training may be necessary depending on the functions associated with one’s participation in emergency response.

Conclusion
Participating as a first responder can be immensely rewarding on both a personal and professional level. The authors strongly recommend that participating in an organized fashion and recognize that there is a level of structure and organization that will likely be very different than what is experienced on a daily basis. This structure and organization is designed with safety as the highest priority, allows one to respond under the broad umbrella that is emergency response, and provides a level of accountability designed to ensure that animals and their owners are appropriately reunited.

2. Emergency Planning Structure

Emergency planning occurs across multiple layers with individuals, businesses, and local, regional, state, and federal levels of government all needing emergency plans for their area of responsibility. The focus of this presentation is involvement at the local level, but a brief discussion of each of the levels listed will be presented.

Individuals
Every family needs a plan that will allow the best opportunity to protect the health and wellbeing of all family members including their animals. Individual planning is also important for protecting the economic health of families.

Business Emergency Plans
Practice planning is covered in a different section, but all veterinary medical practices should develop emergency plans focused on protecting the health and wellbeing of staff, clients, protecting financial investments made in the practice, and allowing continuity of operations in the face of an emergency or disaster.

Local Jurisdictions
All emergencies begin and end locally. This simple statement implies a tremendous responsibility for local jurisdictions, elected officials, and employees. The planning effort is housed in the Office of Emergency Management. These offices can range from a
part-time employee, an employee with additional duties, to a multi-person unit depending on the size of the jurisdiction. Animal-focused plans that are needed in all jurisdictions include emergency animal evacuation, rescue, veterinary medical support, mortuary management, and sheltering plans. Many emergency managers do not have animal-specific knowledge and may be unaware of many of the nuances that must be considered when planning for owners. They may also be unaware of the implications of the human-animal bond and the financial and cultural significance of agricultural species. The diversity of thought required to achieve the best plan requires a diverse audience of planning participants including veterinary medical professionals, extension agents, animal control officers, animal sheltering and welfare organizations, and representatives from agricultural entities.

Regional Counties may elect to join and develop regional emergency plans. This may be performed when two counties agree to support each other and involve multiple counties organized into Councils of Governments. Regional planning allows resources to be pooled to support larger-scale responses.

State The responsibility for planning for animals at the state level is typically ceded to Departments of Agriculture or Animal Health Regulatory Agencies. The Texas Animal Health Commission is the lead agency in Texas and is responsible for leading planning efforts for both household pets and livestock.

Federal The Federal Emergency Management Agency (FEMA) in the Department of Homeland Security is the lead entity at the federal level. FEMA has delegated part of this responsibility to the United States Department of Agriculture in the case of infectious diseases in agriculturally important species and Department of Health and Human Service in the case of veterinary medical support. The National Guard also serves as a significant federal resource and has historically received mission assignments supporting animals.

Types of Emergency Plans The two types of plans important to this discussion are operational and tactical plans.

- Operational plans link strategic or high-level goals with tactical plans. Protecting animal health and welfare is an example of a strategic goal. Operational plans define the missions, objectives, and responsibilities of what the plan is to accomplish and who will be responsible for accomplishing each component. “Who” is often defined as a department or agency rather than an individual. Operational plans should address animal evacuation, rescue, shelter, veterinary medical support, and carcass disposal or mortuary management.
- Tactical plans are focused on how missions will be accomplished and how operations will be performed. Tactical planning is critically important to the animal-focused areas of emergency planning given the diversity of the stakeholders and the fact that few of these stakeholders are directly involved as first responders on a daily basis. Tactical plans should detail the approaches to be used for animal evacuation, rescue, shelter, veterinary medical support, and carcass disposal or mortuary management. Tactical plans for a specific function should be developed prior to an incident and then reviewed and adjusted as daily mission requirements evolve.

Emergency Planning Process A complete discussion of the planning process is beyond the scope of what can be provided in this presentation and proceedings. The following should be considered an overview discussion. The following points of consideration should be addressed regardless of which tactical plan is being developed.

Hazards and Risks Identify the risks and hazards that have the potential to result in the need for emergency operations. This analysis should be broad and include natural disasters, including infectious diseases manmade or incited, incidents, and transportation accidents. It can be helpful to categorize the hazard by likelihood and consequence.

Animal Populations Identify the approximate number of each species. The American Veterinary Medical Association (AVMA) Pet Calculator provides an estimate of pet populations based on the human population. It is important to note that the AVMA Pet Calculator provides estimates for the horse population as well. The estimate that is provided is based on national averages and may need to be adjusted for regions where horse ownership is more prevalent. It is important to note that agricultural animals can be very difficult to evacuate out of harm’s way and also present unique challenges during the response scenario.

Available Resources A key part of the planning process is identifying resources that will or may be available for emergency response purposes. Resource categories to consider include the following:

- Human resources: The diverse groups that are necessary have been previously discussed. The important consideration is to include them in the planning process. Consider including personnel from the fire department when working on a tactical animal rescue plan.
• Facilities: Most areas of animal-focused emergency response require some type of facility. Many communities plan on using their existing animal shelters. The issue with this approach is that these typically are near capacity and cannot accommodate the needs created by a large-scale emergency or disaster. It is appropriate to consider using non-purpose designed structures. The most commonly encountered by the authors’ team is livestock show facilities. These can be used to safely and humanely shelter large and small animals if appropriate biosafety and animal containment measures are factored into the plan. It is not typically recommended that veterinary practices be used as jurisdictional resources. The reasoning is that most communities cannot reimburse for associated expenses and use of the practice represents a significant financial burden for the practice owner. It also places the practice in a situation where they are basically providing for some animals at no cost while charging for those whose owners are present.
• Tools of the trade: The analogy the authors’ most often used when discussing this area is that a fireman would not be sent to an apartment fire armed only with a garden hose. The same concept applies to animal focused emergency plans. Animal professionals, particularly veterinary medical professionals, are highly trained. They will be most effective when they have the tools of their trade.

Operational Approach
Think of this section as a cookbook. Define the A to Z steps for performing whatever function being planned.

Veterinary Medical Professional’s Role
Animal-focused emergency plans require the input of people with knowledge of animal behavior, disease prevention, animal welfare, nutrition, and veterinary medicine. The veterinary medical professional is the one professional area that has a broad knowledge of all these topics. Knowledge is sorely needed, and investment of time and effort will yield a more effective response. The place to start is introducing yourself at the Office of Emergency Management. Most emergency managers are highly compassionate, skilled, and dedicated to serving people in the community.

Planning Resources
The planning process can be a daunting challenge. There are numerous resources that are available. One is the planning program available under the Texas A&M VET. Instructor-student teams that will travel to your community and assist in the planning process will be provided. These teams typically do most of the writing process and can typically bring a plan to 90% completion within a 2-week period. This service is available at no cost. Email Wesley Bissett at wbissett@cvm.tamu.edu if you are interested. The Texas A&M VET also have planning templates that you can access on the Texas A&M VET Web site. Additional resources are available from animal health agencies.

3. Injuries and Illnesses Commonly Encountered in Disaster Response

Introduction
Disasters invariably impact animals in some manner. They may be displaced, injured, highly stressed, or have chronic or undetected diseases worsened due to the stress of the situation or the inability of the owner to provide necessary medications. The types of injuries, illnesses, and goals of treatment vary with type of incident and the phase of emergency response operations. The following discussion is based on the experiences of the Texas A&M Veterinary Emergency Team across multiple deployments and tactical planning missions. The phases of emergency response that will be discussed in this presentation include evacuation, rescue, veterinary medical operations, and emergency sheltering. The perspective of the presentation is from the view of veterinary medical professionals responding on behalf of a local jurisdiction.

Evacuation

Pre-Incident Evacuation
Evacuation of animals can be separated into two distinct timeframes; pre-incident and post-incident. Hurricanes provide the best example of a pre-incident evacuation. Weather forecasting provides forward-leaning information and the ability to move nonagricultural animals from an impact area to one that is anticipated to be minimally impacted or not impacted at all. Human evacuees can also be separated into two distinct populations; the self evacuees and functional- and access-needs citizens. Jurisdictions have a statutory requirement for providing for evacuation of household pets belonging to functional- and access-needs citizens. The layman’s description of a functional- or access-needs citizen is someone who will need assistance from a governmental entity to evacuate. There are many reasons a person may fall into the category of a functional- or access-needs citizen. These include health, economic, and self-mobility status. These scenarios may also indicate at least the potential for difficulties in accessing veterinary medical care for pets that will be evacuated. Animals may also be subdivided into two groups; household pets and livestock. FEMA defines household pets as “A domesticated animal, such as a dog, bird, rabbit, rodent, or turtle that is traditionally kept in the home for pleasure rather than for commercial purposes, can travel in commercial carriers and be housed in temporary
facilities. Household pets do not include reptiles (except turtles), amphibians, fish, insects/arachnids, farm animals (including horses), and animals kept for racing purposes.19 Livestock are defined in the Texas Agriculture Code as “Livestock means cattle, horses, mules, asses, sheep, goats, llamas, alpacas, exotic livestock, including elk and elk hybrids, and hogs, unless otherwise defined.”20 These are important distinctions given that it creates two classes of animals, one being household pets for which support is required statutorily and associated costs associated with this support is reimbursable during federally declared events and the second is livestock for which support under the Stafford Act will likely be limited to indirect response efforts. The United States Department of Agriculture will usually provide support through the USDA Livestock Indemnity Program.

The discussion means that veterinary medical support performed on behalf of a jurisdiction will be limited to household pets belonging to functional and access needs citizens during the evacuation phase. The goals of this veterinary medical support will likely be as follows:

- **Identify household pets that are not healthy enough to withstand the rigors of evacuation.** Animals that are not healthy enough to undergo evacuation create a second issue for jurisdictions in that there should be a plan for what will happen with these animals.
- **Categorize animals’ risk status.** The Texas A&M VET recommends segregating animals into three categories.
  - Low-risk: The animal is healthy and does not represent a risk for other animals being evacuated, to human evacuees, or to the personnel performing the evacuation.
  - High-risk: The animal either due to a disease or behavioral condition represents a health threat to first responders and other animals and people being evacuated.
  - At-risk: The animal is considered to be an elevated risk for contracting diseases from others. This may be the result of age or medical conditions.
- **Stabilizing animals being evacuated.** This may involve treating a medical condition or pharmaceutically manipulating an animal’s behavior.
- **Performing external parasite control.** This is performed to protect people, animals, equipment, and facilities.

Medical conditions that may be encountered during this phase of response are the same as what would be expected to be presented at a typical veterinary medical practice. There is an increased likelihood for injuries associated with conflicts between animals particularly if a jurisdiction does not have a good plan for segregating animals. If a person is bitten, the same rules regarding potential rabies exposures apply. These rules are not waved because of the disaster setting. This applies across all phases of emergency response. Providing treatment for external parasites will be helpful in limiting issues with the parasites establishing infections on other animals being evacuated or “setting up house” in vehicles used to transport animals to a receiving shelter.

### Post-Incident Evacuation

Post-incident evacuation is defined as the evacuation of animals after the incident occurs and prior to a direct impact on the animals. Chemical plant explosions and transportation accidents provide one of the best examples of this type of evacuation. The issues discussed under pre-incident evacuation applies to this period as well. The differences between the two time frames are as follows:

- All species may be evacuated.
- Animals belonging to citizens other than the functional and access needs population may be supported.
- Evacuation will likely be hasty.
- The need for animal decontamination must be considered.

The goals of post-incident evacuation are the same as discussed above as are the conditions that can be expected. If evacuation is performed because of an explosion or other such event, behavioral changes, traumatic injuries, and ear injuries may be seen.

**Rescue**

Animal rescue operations may involve any species and the decision to intervene on an animal’s behalf will be made by the jurisdiction and first responders that are on scene. A key point is understanding that the safety of first responders is always the highest priority. The goals of veterinary medical support during the rescue phase are as follows:

- Determine whether a rescue or recovery is appropriate.
  - A rescue is appropriate if the animal’s condition is survivable given the support that can be provided in a disaster setting.
  - A recovery is appropriate when the animal’s condition is not survivable given the support that can be provided in a disaster setting. Humane euthanasia is appropriate in these cases.
- Stabilize the patient prior to rescue and provide necessary care immediately after.
- Pharmaceutically intervene if necessary to protect the health and life safety of the animal and first responders.
- Provide animal-specific safety instructions to first responders.
Medical conditions that may be encountered during the rescue phase are typically traumatic injuries such as abrasions, lacerations, fractures, burns, and chemical exposures. The Texas A&M VET has also found that dehydration is a common finding. This can occur even if the rescue is being performed in floodwaters. Animals will often not drink contaminated waters associated with flood conditions. It is important to recognize that definitive resolution of the injury or illness will not be performed during rescue operations. The goal is to stabilize the patient to the point that it can be safely rescued without making injuries and illnesses worse.

Veterinary Medical Operations

Veterinary medical operations is considered to be the phase of emergency response where animals are being presented to the veterinary medical team. There are several different characteristics that are different than normal practice experiences that are worthy of consideration.

- Most animals that are received will present without owners. They may be delivered by animal control officers, rescue groups, and good Samaritans. This means that the animals will not have normal historical findings and owner wishes into the decision-making process cannot be factored in. It is important that the location from which the animal was rescued is documented. This is a key piece of information that is necessary for the animal-owner reunion process.
- Many animals may be relatively normal with only minor or pre-existing conditions.
- Euthanasia decisions may need to be made in the absence of the owner. If responding as an officially recognized component of the response, presented animals will be considered as “wards of the jurisdiction.” Establish the jurisdiction’s expectations on these types of counties. The Texas A&M VET has been in a range of situations from limiting treatment to triage and stabilization where serious conditions are not treated to those where the jurisdiction wishes to do everything possible up through surgeries in order to save animals. The position of the VET is that animal welfare ultimately drives the decision-making process. If a jurisdiction does not wish to pursue extraordinary measures, the goal becomes keeping the animal comfortable until other options are identified. In cases where it is not humane to continue, and an owner is not available to provide consent for euthanasia or has not been identified, concurrence of two veterinarians is required before an animal will be euthanized.

The types of injuries that the authors have experienced during the deployments of the VET have varied with the type of disaster being responded to. A full discussion is beyond the scope of what can be provided in these proceedings so an overview is provided.

High-Wind Events

High-wind events such as hurricanes and tornadoes result in injuries that would be anticipated with high-velocity airborne debris impacting animals. Lacerations, puncture wounds, abrasions, soft-tissue injuries, and fractures are routinely encountered. Ophthalmic injuries are common and ear canals may be packed with debris.

Wildfires

Burns are the most common feature of this type of response. It is important to thoroughly evaluate hooves, paws, and udders as severe burns of these structures may result in chronic pain and lack of production. This is particularly important in livestock. Respiratory disease is a common finding as well with conditions typically increasing in severity over several days. Veterans of multiple wildfire deployments will often recommend salvaging by slaughtering livestock that present immediately after the wildfire if mild lameness or respiratory disease is noted. The reasoning is that these conditions typically become much worse over 3 to 4 days. Dehydration is, as with most types of disaster, a common finding.

Floods

Responding to floods has been the most common reason for deployment of the Texas A&M VET. The VET has encountered numerous animals with submersion injuries. Most of these have been livestock. The authors’ opinion is that more submersion injuries in large animals than small animals because small animals are seen will either reach a structure of some sort that will allow them to get out of the water or unfortunately drown. Submersion injuries may develop with less than 24 hours of exposure. The authors’ opinion is that this occurs as a result of high bacterial and viral loads in floodwaters, velocity of flood waters, and increased sediment rates. Thoughts are that these combine to result in rapid damage of the epidermis. Submersion injuries are characterized by pitting edema and devitalization of the skin. These can be exceptionally challenging to treat given that these animals are very painful and susceptible to secondary infections. The VET has also encountered respiratory disease as a common secondary illness as well. Working with animals that are rescued from floodwaters comes with a significant risk to first responders. Animals should be decontaminated and personnel should wear personal protective equipment.
Gastrointestinal disease is also a common finding in flood impacted waters. Floodwaters are, as noted earlier, very contaminated. Bacterial and viral loads are typically elevated and waters often also contain a variety of toxic substances.

Explosions

Explosions result in similar issues as noted in high-velocity wind events. Additional issues that have been commonly encountered are ruptured ear-drum. Pain management is a critical feature in successfully dealing with these cases.

Emergency Animal Sheltering

The conditions encountered while providing veterinary medical support for emergency animal sheltering operations are very similar to what is typically found in practice. There will be animals with chronic diseases and conditions that must be managed. Animals may decompensate due to the stress of being in an unusual environment. Stress-induced diarrheas are also a common finding. It is important to establish biosecurity measures to limit the spread of disease to other animals and people.

Conclusion

Serving as a first responder is the most professionally rewarding aspect of one author’s (W.B.) 21-year career. It can be difficult and dangerous. It is exhausting. The key to responding well is to do so according to a tactical plan that has been developed with the risks and animal populations that are in your area in mind.

4. Decontamination, Triage, Field Euthanasia Decisions, and Other Important Veterinary Roles in the Disaster Environment

Decontamination (Decon)

Natural disasters and emergencies are an all too frequent increasing reality of daily life. Disaster situations often result in the intentional or unintentional release of hazardous materials into the environment. The Agency of Toxic Substances and Disease Registry estimates that in 2012 more than 15,000 chemical incidents occurred in the United States. In addition to industrial accidents, disasters such as the World Trade Center terrorist attack, Hurricanes Katrina, Maria, Harvey, Michael, Florence, and Dorian, and the multiple wildfire events in the Western United States have all resulted in the release of hazardous materials into the environment. In addition to the debris left behind, destruction of buildings in any disaster can result in the release of asbestos, polycyclic aromatic hydrocarbons, metal compounds, dioxins, and volatile organic compounds liberated in the wreckage. The flooding associated with the multiple major hurricanes of recent years has led to the mixture of hazardous materials from damaged chemical plants, petroleum refining facilities, and commercial establishments into the environment, not to mention just the waste present from sewers and waste water facilities that is released/mingled into the floodwater. In each of these situations, the introduction of hazardous materials into areas that were occupied by survivors, S&R teams, and resident animals created a significant risk to human and animal health.

Animals (both companion and large animals) that are impacted by disasters are frequently exposed to these hazardous materials. In some cases, the contaminants are primarily external (e.g., as is the situation where horses are rescued from a contaminated environment where they have been standing in flood water). However, internal decontamination is also a very real concern for all animals rescued from a disaster environment as internalization of contaminants, from drinking contaminated water or eating contaminated foodstuffs, or through absorption or inhalation of hazardous substances (e.g., from smoke or chemical releases). Regardless of type, the presence of contaminants may result in potential serious or life threatening health complications. To mitigate the exposure and potential health consequences from contaminant exposure, decontamination (particularly external) is a critical step in disaster response activities on behalf of animals. This is also essential to the health and safety of humans who will be handling and caring for them, and for the prevention of contamination of their shelter and future home environments. It is important to identify the types of contaminants that may be involved. Hazardous Material specialists tasked to the deployment are excellent sources for guidance on decontamination approaches and requirements for personal protective equipment requirements. An additional resource is WebWiser®. WebWiser is a web-based program provided by the National Library of Medicine and is an excellent tool for identifying and finding out more information on chemical contaminants. It is available at https://webwiser.nlm.nih.gov/.

Decontamination is the process of removing contaminants from people, animals, equipment, structures, and the environment (Kumar et al, 2010). Decontamination protocols are devised to eliminate exposures to hazardous materials and reduce the spread of contamination. While decontamination is utilized to reduce human and animal exposure to surface (skin/coat) contaminants, there are many challenges associated including efficacy, safety, and methods of decontamination. There are anecdotal protocols that are designed for veterinary clinics and disaster situations based on a single contaminant incident. In current literature, animal decontamination protocols are based on the basic principles of leading animals through multiple stations that involve the removal of contaminated articles (collars, halters, other removable wearables), washing and rinsing the animal, and finally drying and performing a veterinary evaluation. These decontamination practices are the recommended practice for both
large- and small-animal incidents for a vast range of chemical, biological, and radioactive exposures.

Decontamination procedures use both gross decontamination and technical decontamination techniques. It is important to recognize that harmful effects of some contaminants is exacerbated by water and dry contamination is required. When a wet decontamination is appropriate, gross decontamination removes the majority of surface contamination by using large amounts of water to rinse off loose particles from the animal’s coat. This stage accounts for the bulk removal of the contamination. Technical decontamination is a multi-step process that encompasses a detailed removal of the hazardous material from all external aspects of the animal’s body. Methods utilized include “brushing, vacuuming, and washing, to eliminate the contaminant from the animal;” however, in reality, washing remains the primary method by which materials are removed. In short, technical decontamination is an extensive process and may require repeating steps to ensure the complete removal of the hazardous materials or toxic agents. Historically, liquid dish soap has been the agent of choice for external technical decontamination. The physical properties found in liquid dish soap allow for binding and emulsification of particles and particularly oily substances that may bind or attach to the oils of the skin and hair follicles (Heyer, 2011). Other agents such as hypochlorite solutions and chlorhexidine solutions have been utilized for biological decontamination, but have the drawback of time dependency and inactivation. Hypochlorite solution typically requires 15 minutes and chlorhexidine requires 6 minutes of contact time with the skin to effectively denature biological agents (Heyer, 2011).

In addition, to the selection of soaps and setting up procedures for individual decontamination of horses rescued from a disaster environment, there is a critical need to consider the protection of the personnel performing the decon (personal protective equipment), protection of the environment from the contaminants (collection of waste water—itself a potentially massive volume), and need for a potentially very large number of personnel needed to complete the decon process (given a maximum time in personal protective equipment of 20 to 30 minutes in temperatures greater than 75°F, and a minimum of 3 personnel needed for each horse (1 person for restraint and 2 for washing, lathering, and rinsing). Finally, while data on water usage and time for decon procedures in horses is lacking, if one extrapolates from canine data, it will likely require more than 15 to 20 gal/horse and a minimum of 20 to 25 minutes per horse, thus making decontamination of a large number of horses in a disaster event extremely time consuming, personnel intensive, and require a large volume of fresh water (at least potable), which may be at a premium in a disaster. These data are not given to overwhelm, and it is recognized that veterinarians should not be the source of manpower for these procedures, but veterinarian oversight is critical, and the potential need for pharmaceutical restraint for those horses that are unruly or fearful, is a significant reality.

Triage in a Disaster Environment

Providing veterinary medical care during emergency or disaster situations is very different than the typical practice day for the following reasons:

- The number of injured or ill animals being brought to the veterinary medical facility may be much greater than the typical daily caseload.
- Animals will likely be presented by a rescuer rather than their owner.
- The owner may be unavailable to participate in decision making.
- The ownership status of the animal may often be unknown.
- Your facility may not be available or may be operating without the normal resources (power, water, ability to resupply, personnel shortages).
- Evacuation of animals to veterinary medical facilities capable of providing definitive care may be unavailable for many days or longer.
- Resources such as pharmaceuticals, supplies, and animal food may be scarce and difficult to replenish.

The issues identified above require that ground rules be set. In order to prevent a misunderstanding the veterinarians involved in the local animal disaster group (e.g., CART, VMRC, or other local group) need to know what the resources and expectations are for dealing with animal issues. For example, when the Texas A&M VET deploys into an area, county officials are asked how aggressive they want the veterinarians to be in providing veterinary medical care, develop the animal evacuation chain, and discuss with shelter partners the types and numbers of injuries they are prepared to provide continued care for. It has been the authors’ experience that county officials understand the important role that animals play in their constituent’s lives and that sheltering partners are prepared to provide substantial continued veterinary medical care. However, each disaster and local resources are different, requiring clear lines of communication and expectations that are set early.

It is also important to set the triage rules early in the deployment. Triage means literally “to sort” and is a critical process in the management of animals impacted by a disaster. An excellent discussion of triage is provided in “Veterinary Disaster Response” and is considered required reading for veterinarians and veterinary technicians wishing to participate in emergency response (Wingfield, 2009). The authors’ team uses a slightly different system that is divided into field triage and veterinary med-
6. Veterinary Medical Triage and Euthanasia

For most veterinarians and veterinary technicians, this aspect of emergency response is instinctive and natural—particularly for those who have worked in clinical practice and handled emergencies. However, while a practice may be well equipped and able to provide a high level of veterinary care to animals in a disaster, there are limits to what can be provided in a disaster setting that must be understood. These are limits in personnel, limits in resources (particularly drugs or other more expensive items), limits in time that can be devoted to an individual animal’s plight, and limits in space (or ability to house, treat, or provide hospital care) for animals—each of these limits may require a triage decision that may not necessarily be considered ideal, but is essential for the greater good. For example, animals with severe lacerations that may be handled with wound management, antibiotics, and pain meds, can be successfully managed versus those that require an extensive surgical manipulation to repair. All members of the team must be able to discuss these decisions, and when disagreement is present, it is reasonable to have a hearing of all opinions, but ultimately, a final decision (triage) must be given. In all cases where euthanasia is recommended, a second confirmatory opinion must be agreed to—both for the health of the team and its cohesiveness, but also for the best interests of the animal’s welfare, and the owner who may someday ask what happened. All euthanasia decisions and methods follow the AVMA Euthanasia Guidelines for euthanasia decision making as well as for methods. The latest version of the 2020 Euthanasia guidelines are currently available and are a key resource to keep close at hand: both for euthanasia decision making in a disaster setting for appropriate methods, but also for essential processes in situations where no owner is present.

There are several important aspects of medical triage, but key among them are good observation skills, excellent physical exam skills, and an ability to think and work quickly in an austere environment. The key to veterinary triage working well in a disaster setting is having cohesive, well-functioning teams. Strike teams of four or five individuals—typically a veterinarian, 1 to 2 technicians, and 1 to 2 assistants (often lay persons)—these teams are critical to a triage unit, as the veterinarian can move quickly from one animal to another, while technicians are able to perform necessary treatment tasks and assistants are available to restrain, record information in the medical record, or assist in other ways as needed. In a disaster, in order for the responding veterinary unit to be reimbursed for their supplies, drugs, and medical treatment given, there must be an excellent record of everything used. These records are as essential to the triage process as the act itself, as they will be necessary not only for helping to connect the animal back to its

### Table 1. Field Triage

<table>
<thead>
<tr>
<th>Triage Category</th>
<th>Triage Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>Red</td>
<td>Immediate intervention required to preserve life or euthanasia is required</td>
</tr>
<tr>
<td>Delayed</td>
<td>Green</td>
<td>Likely to survive with or without intervention—may shelter in place</td>
</tr>
<tr>
<td>Carcass disposal</td>
<td>Black</td>
<td>Dead animals present</td>
</tr>
</tbody>
</table>

**Table 1.** Field Triage

...
Defusing and debriefing through the use of peer responders, family, and professional CISM personnel. Understanding how to defuse the feelings and where to find the importance of debriefing after an event, understanding awareness of this type of stress response, the approach to management of HCIS is education therapy, or 4) a critique of the response to the event. It is someone they know or not, but it is absolutely necessary that situation be personal—being involved in terrorism, responding to incidents with many affected animals or people, or both, and situations where there is a personal connection (location, situation involving people of similar ages or with children, responding when personally impacted by the event, etc). The bottom line is this: any event can trigger an emotional or stress response, even when prepared for it.

There are many types of symptoms such as physical, cognitive, behavioral, and emotional that can vary widely in severity from mild to extreme debilitation or dysfunction. The most common cognitive symptoms are nightmares, poor attention or problem solving/concentration, intrusive images, but any new or unusual symptoms may occur. Emotional and behavioral symptoms can range from fear, guilt, and grief to irritability, anger, depression or emotional outbursts—to withdrawal, inability to rest, increased use of alcohol or changes in social behavior—and each of these may occur immediately after the event to weeks or months later. The key is to understand and recognize that these are NORMAL people having NORMAL responses to a very ABNORMAL situation. It is also important to recognize that HCIS is NOT: 1) for those who “can’t take it”, 2) a sign of weakness, 3) counseling or psychotherapy, or 4) a critique of the response to the event. The approach to management of HCIS is education in awareness of this type of stress response, the importance of debriefing after an event, understanding how to defuse the feelings and where to find the support needed, such as friends, clergy, fellow responders, family, and professional CISM personnel. Defusing and debriefing through the use of peer counselors and mental health specialists, people who understand this work and what the veterinarian is experiencing, in any response are a key first step in the transition from being a first responder in action and returning to normal activities. This is particularly important for those who don’t respond daily or weekly, such as veterinarians who leave their practice life to respond to a disaster on an occasional basis. Without exception, debriefing and defusing should only include those directly involved in the incident, are confidential, are safe (people who responders trust) and nonjudgmental. Defusing, which occurs immediately post event (12 to 24 hours) allows for symptom mitigation and debriefing, which occurs 24 hours to 4 weeks post event to facilitate psychologic closure, mitigation, and identification of those needing intervention following an event are the bandages that stop the psyche from bleeding. They are emotional first aid after a traumatic event or sequence of events. The process is designed to provide opportunities to vent the trauma and learn ways to cope, while also providing follow-up and help if needed.

Self care is a very important part of developing skills to help survive critical incidents and the stress they bring. It is crucial to keep work, play, and stress balanced and in control. It is also important to be aware of HCIS symptoms. Other helpful keys are to maintain good nutrition and schedules, including exercising regularly and getting rest. One of the most important things to remember is that it is each person’s responsibility to themselves, their family, and the people and animals that are being helped to “remain in the game” by staying healthy. In addition, it is also as important to look out for partners and other team members (“battle buddies”) and help point them toward help when needed.

8. Developing an Emergency Plan for Your Practice: The Importance of Personal, Practice, and Local Preparedness

Supplemental Information and Details on Planning
The Texas A&M VET has been involved in emergency preparedness and response since 2008 and has deployed to most of the disasters that have occurred in the state of Texas since that time. Each deployment has provided real-life examples of how veterinary practices and hospitals are threatened by the event one of the following:

- Direct damage to hospital or clinic with potential for injuries to patients, clients, or staff.
- Financial losses associated with non-reimbursement of response associated costs.
- Reduced future income potential associated with loss of client base. Future client base may be also be lost due to client fatalities, victims moving out of the impact area, or changes in client’s financial status in the post-disaster environment.
The key to successfully navigating a disaster that impacts the practice or community is to commit to developing a practice or hospital emergency and continuity of operations plan. This is a deliberate process that should consider the types of disasters that occur, and the variety of hazards present in each practice and the community. It is helpful to separate the types of disasters into no-notice versus those incidents in which advance notice of an impending event is provided.

- **No-notice event**: These can be separated into those incidents that are clinic-centric and incidents in which the incident is external to the clinic or practice.
  - **Clinic-centric**: The best example of a clinic-centric incident is a fire involving a practice's structure.
  - **External to clinic**: Examples include flash-flooding, explosions, wildfires, and tornadoes. The Texas A&M VET has been involved in responses to each of these types of incidents.
- **Advance-notice event**: The best example of an advance notice event is a hurricane or winter storm. Weather forecasters monitor for these systems and provide advance warning for a significant amount of time prior to arrival. This provides the opportunity to mitigate risks associated with the impending incident.

**Developing a Clinic or Hospital Emergency Plan**

The following discussion will provide an overview of the process for developing an emergency plan for veterinary medical practices or hospitals. This is a complex process and a full discussion is beyond the scope of what can be provided in these proceedings. There are multiple resources available to provide guidance you through the process.8–12

**Define Your Practice**

The initial step in developing an emergency practice plan is to fully define the practice. This may seem counterintuitive, but it is easy to overlook key issues. Addressing the following issues or areas will allow you to have an accurate representation of the practice.

- **Personnel and clients**: Identifying these two populations will identify the number of people who may respond on behalf of the practice and the number of non-employees for whom the practice has the responsibility of providing for their safety. A third population to consider incorporating into the planning process is external contractors who provide specific services for the practice on a contractual or as-needed basis.
- **Patients**: The number of out-patient and hospitalized animals should be calculated. The authors prefer basing this on maximum capacity as it prepares the practice to deal with the worst-case scenario.
- **Data information system**: Identify the systems used for management of patient records, financial accountability, and maintaining other important information such as employee records and insurance papers. The authors prefer electronic systems that are either cloud based or have an automated off-site backup feature.
- **Equipment**: Develop a list of all equipment and include brand, serial numbers, date of purchase, purchase price, and place of purchase. It can be helpful to keep photographs of equipment as well.
- **List of resources that are available to be used as emergency response assets**: This particular point is inward facing and intended to identify resources that may be used to respond on behalf of the practice rather than resources that may be used to respond as an agent of a local jurisdiction.
- **Pharmaceutical and medical supply inventory**: This inventory is rarely static and varies day to day. Electronic inventory systems provide the ability to maintain inventory awareness on a “real-time” basis, particularly when they are part of the medical records system.
- **Contact information**: Maintain a current list of emergency and service provider numbers. This should include law-enforcement agencies, regulatory agencies, and the Office of Emergency Management.
- **As-built drawings for owned buildings**: These will be helpful if a practice is damaged or destroyed because of an emergency or disaster incident.
- **Financial projections for maintaining the liquidity of the practice based on pre-incident conditions**.

**Identify Risks**

Risk identification or hazards analysis is a key component to developing an emergency plan for veterinary practices. It involves identifying those risks that are inherent in the vicinity of the practice. This process should include man-made and natural disasters, with infectious disease incidents being included under natural disasters. Man-made events may be classified as technological (power outages, chemical releases) or intentional (Terror attacks, mass shootings and other deliberate actions). It is important to include transportation accidents given the number of animals and volume of hazardous materials that are transported on highway and rail systems. It is also advisable to contact local jurisdiction’s Office of Emergency Management as they will know of hazards that many may not be aware of. It may also be helpful to separate the risks into the following categories; those that are limited to the practice (e.g., structure fires) and those that have a
broader distribution (e.g., wildfire, tornado, hurricane, winter weather, flooding).

Communications Plan
This plan should be separated into two areas, internal and external. Internal communications planning will involve detailing how all owners, employees, and other identified human resources may be quickly contacted when there is an impending incident or one that has just occurred. This can take a variety of different forms from a telephone calling tree to a group text message. The desired outcome is to have everyone communicated within a manner that gets everyone on scene or evacuated quickly without individually tying up key personnel that may be needed for other purposes.

There should also be a plan for communicating with animal owners. It is often preferable to discharge patients that can be safely discharged to their owners in cases of advance-notice events. No-notice events, particularly those that directly impact the practice, will typically result in heightened concern in owners of hospitalized patients. Consider the role of social media and how it may be used to broadly broadcast a message on the status of your clinic, employees, and patients. It is also important to have a plan on how the practice will monitor for and respond to negative or inaccurate social media posts.

Identify Goals and How They Will Be Accomplished
This will be the lengthiest section of the emergency plan. A full discussion of all the goals is beyond the scope of what can be provided in these proceedings and the following are provided as a starting point for the emergency planning process.

Life safety of employees and clients: This section should be given the highest priority and include plans for performing an immediate evacuation of the practice when the practice is threatened by incidents that are internal to the practice. Structure fires are an example of these types of incidents. It should include information on how the evacuation process will be initiated and communicated to all occupants. Primary and secondary meeting places will need to be identified so that all employees and clients can be accounted for immediately after evacuation.

Life safety should also be considered in longer-term events. One of the best examples is provided when veterinary practices continue to operate in the post-disaster phase in the absence of normal supporting infrastructure. The post-hurricane environment provides a good example. Many hazards can be part of the post-landfall timeframe including down trees, lack of electrical service, and structural damage. Protecting the health and wellbeing of staff and people that may come to a practice should be planned for in an attempt to mitigate any risks that may be present.

Life safety of patients: This will receive the second highest priority. This section should be separated into no-notice and advance-notice events. Providing for the life-safety of patients in no-notice events is focused on getting patients out of the facility as quickly as can be accomplished without introducing unmitigated risks to human resources.

Incidents for which advance notice is typically available provides more options. Discharging patients whose condition allows will typically result in reduction of care provided by clinic personnel. Patients that are not medically stable will require more advanced planning. It is appropriate to identify colleagues that may be able to receive those patients that cannot be discharged. Owners should be provided the opportunity to approve what cases they will be transferred to. If they do not wish for their animals to be transferred to those identified as receiving practices, then plans will need to be made on how animals will be transferred to other points of care.

No-notice events provide a different challenge than that discussed above in that patients may need to be evacuated at a moment’s notice. The structure fire again provides the best example. Planning includes accounting for the safety of personnel that are evacuating patients, location to which patients will be evacuated, and how they will be contained after evacuation. As in the discussion above, thought needs to be invested in planning for where those patients requiring continued veterinary medical care will go assuming the practice being evacuated is no longer viable.

Pharmaceuticals, medical supplies, and equipment represent a significant investment and are critical to the ability of a practice to continue operations after disaster strikes. An evacuation plan and storage plan for supplies and equipment needs to be developed in addition to the documentation discussed earlier in this paper.

Preservation of important documents: This includes medical records, financial instruments, employee records, inventory information, and insurance policies. Electronic storage of these documents in a cloud-based system or off-site server can simplify this process.

Continuity of Operations
This is an exceptionally important area given the role veterinary practices play in providing employment and service to communities. The reality is that disaster scenarios typically cause negative consequences on a practice’s business model. These consequences include but are not limited to the following:

- Direct damage to the veterinary practice structure.
- Loss of key personnel.
- Reduced future client base.
Reduced disposable income for remaining clients.

Some of these risks can be mitigated by hardening the practice when there is advanced notice of a severe-weather event and investing in emergency electrical generators. It will also be helpful to consider where a practice may be relocated if the current structure is destroyed or requires significant repairs. Monitoring of available lease space and having an established relationship with a real estate professional will provide the best opportunity for quickly relocating the practice. It is also good business to understand cash-flow requirements for maintaining current staffing levels. Disasters are anticipated to cause at least a temporary decline in cash flow. It will be important to understand when to lower expenses so as to maintain the long-term practice viability.

An area that is often overlooked is planning for infectious disease. Infectious diseases that can disrupt practice activity are typically considered to be in the livestock realm given the number of regulated diseases. The reality is that viruses and bacteria are continuing to adapt and the appearance of a novel strain that potentially impacts other species and may be zoonotic are always possible. Canine influenza has, as of this writing, not been shown to cause clinical illness in people, but given the potential for reassortments and genetic shifts or drifts, this is not outside of the realm of possibility. Plans identifying how animals and people may be moved on and off the property without resulting in the spread of the disease in question can be developed. These must be developed in conjunction with the USDA and state-level animal health regulatory organizations. It is also helpful to define how personnel will be protected in cases where the disease in question is impacting human populations.

Participating in Organized Emergency Response
Planning for animals in disasters is still not where it needs to be. The authors have worked with some communities that plan for the local veterinarians to play a major role. This is something the authors support, but the reality is that most jurisdictions cannot pay for these services. This places the local veterinarian in the position of performing work for free when there are no owners present and deciding if they will charge when an owner is available. It is recommended that practices define how they will participate and include financial aspects in this decision. This should be discussed with the local jurisdiction. It is appropriate to define the length of time to respond, financial limits, and what the jurisdiction will do when these are exceeded.

Conclusion
Practice planning is beyond what can be fully discussed in these proceedings. It is a complicated process but fortunately, there are resources available. The template available at the link in the fourth reference is excellent. The Texas A&M VET, first reference, also has templates available. The VET can also bring instructor-student teams to assist in the process. This service is available at no to minimal costs.

9. Developing Emergency Plans for Animals at the Local Level

Introduction
As noted in earlier discussions, it appears that adverse weather conditions are occurring more frequently and becoming more severe. The last 2 years have seen 800- and 1,000-year floods, landfall of a Category IV hurricane, and historic flooding from Wharton County, Texas, to the Louisiana Border. Northern California has recently experienced devastating wildfires. There has been an active volcano in Hawaii that destroyed homes and impacted rural areas. Numerous wildfires in New Mexico, Colorado, and California, and flooding in the Northeast and Northwest have occurred as these proceedings were being crafted. Each of these disasters is impacting thousands of people and animals. Some of these communities have robust animal-focused plans while others do not. Planning for and responding on behalf of animals is always a secondary priority at the local, state, and national level with protection of human life and safety appropriately receiving the highest priority. The two things learned from the numerous deployments of the Texas A&M VET is that robust and well-thought-out animal-focused tactical plans make a significant difference in the efficiency and effectiveness of animal-focused response efforts and that the highest-priority mission, providing for the human condition, cannot be fully accomplished without providing for their animals.

Emergency Preparedness Overview
Emergency management consists of multiple phases including mitigation, preparedness, response, and recovery. This presentation is focused on the preparedness or planning phase and how the veterinary medical professional is critical to successfully achieving the desired outcome. FEMA has developed the Developing and Maintaining Emergency Operations Plans Comprehensive Preparedness Guide (CPG) 101 to guide communities through the planning process. This document provides basic principles, discussed below, that are broadly applicable to all communities across the United States.

- “Planning must be community-based representing the whole population and its needs.” Prior to Hurricanes Katrina and Rita, animals were not a legislatively mandated target of emergency planning. These two storms demonstrated the need for emergency planning for animals and federal legis-
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Conflict of Interest
The Authors have no conflicts of interest.

References

● Planning must include participation from all stakeholders in the community.” The stakeholder community for animal-related planning is an exceptionally diverse community ranging from pet owners, agriculturally based industries, animal control officers, livestock officers, animal welfare groups, extension agents, and veterinary medical professionals. The level of diversity in this stakeholder group is increased as compared to other planning areas. An additional complication is that some of the different stakeholder groups have diametrically opposed thoughts and goals.

● “Planning considers all hazards and threats.” While the causes of emergencies can vary greatly, many of the effects do not.

● “Planning should be flexible enough to address both traditional and catastrophic incidents.”

● “Plans must clearly identify the mission and support goals (with desired results.).”

● “Planning depicts the anticipated environment for actions.” The environment in which emergency and disaster operations occurs is markedly different than that encountered on a typical day. Accounting for this difference is critical in accounting for the safety of first responders and understanding what resources will likely be available.

● “Planning does not need to start from scratch.” Each stakeholder brings different skills and protocols into the planning process. These represent a starting point that allow planners to not have to recreate the wheel.

● “Planning identifies tasks, allocates resources to accomplish those tasks, and establishes accountability.” The important point here is that during a response, the animal-focused tasks primarily focused on preserving the health and well-being of animals and maintaining their normal relationship with their owners, is not that different from what practitioners do daily. The environment in which one performs, however, can be vastly different.

● “Planning includes senior officials throughout the process to ensure both understanding and approval.” This is a critically important point. The reality is that a veterinary medical professional may be engaged under the typical veterinarian: client relationship or acting as an “agent” of the jurisdiction. Acting as an agent of the jurisdiction requires an understanding that actions are being performed to accomplish the goals of the jurisdiction in a manner that they approve of.

● “Time, uncertainty, risk, and experience influence planning.” The Texas A&M VET has been actively engaged in the planning process from the time of its inception. The multiple deployments and joint planning efforts with jurisdictions have influenced the planning process. Being a responder makes for better planners and being a planner makes for better responders.

● “Effective plans tell those with operational responsibilities what to do and why to do it, and they instruct those outside the jurisdiction in how to provide support and what to expect.”

● “Planning is fundamentally a process to manage risk.”

● “Planning is one of the key components of the preparedness cycle.”

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Declaration of Ethics
The Authors have adhered to the Principles of Veterinary Medical Ethics of the AVMA.

Conflict of Interest
The Authors have no conflicts of interest.


