

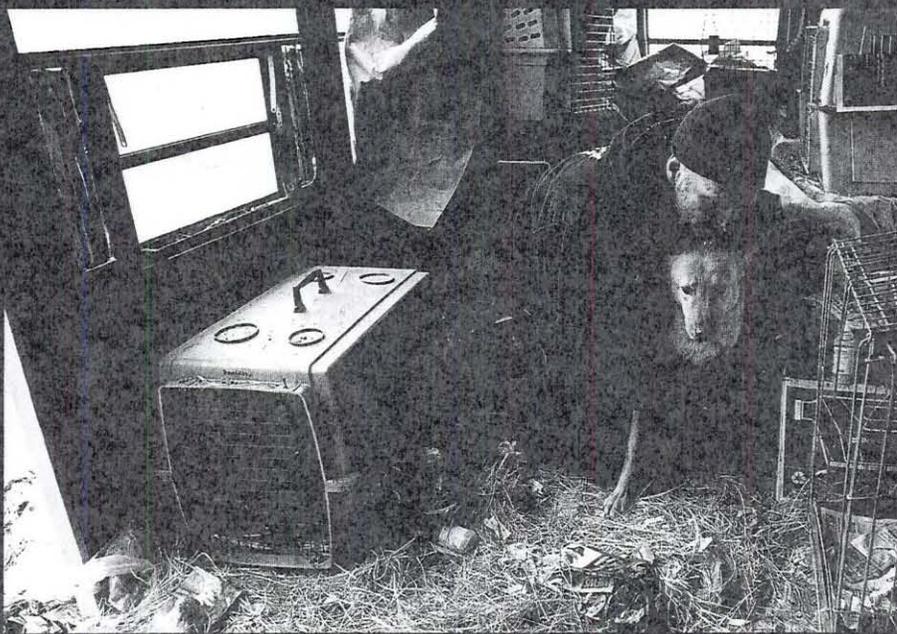
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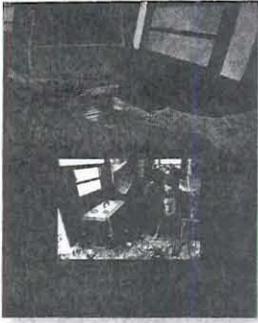
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General Public Health Considerations for Responding to Animal Hoarding Cases

Louisa Castrodale, DVM, MPH
 Yvonne M. Bellay, DVM, MS
 Catherine M. Brown, DVM, MSc, MPH
 Fredric L. Cantor, DVM, MPH
 John D. Gibbins, DVM, MPH
 Marcia L. Headrick, DVM, MPH
 Mira J. Leslie, DVM, MPH
 Kathleen MacMahon, DVM, MS
 Jeanette M. O'Quin, DVM
 Gary J. Patronek, MS, VMD, PhD
 Rodrigo A. Silva, MVZ, MPH
 James C. Wright, DVM, PhD
 Diana T. Yu, MD, MSPH

Abstract Animal hoarding is an under-recognized problem that exists in most communities and adversely impacts the health, welfare, and safety of humans, animals, and the environment. These guidelines address public health and worker safety concerns in handling situations where animal hoarding or other dense concentrations of animals have caused unhealthy and unsafe conditions. Because animal hoarding situations are often complex, a full response is likely to be prolonged and require a cross-jurisdictional multiagency effort. Each animal hoarding case has unique circumstances related to the types and numbers of animals involved, the physical structure(s) where they are being kept, and the health status of the animals, among other factors that must be taken into account in planning a response. Some general public health considerations and associated recommendations for personal protective equipment use are presented that apply to all cases, however.

Introduction

Animal hoarding is an under-recognized problem that exists in most communities and adversely impacts the health, welfare, and safety of humans, animals, and the environment. Animal hoarding is defined by four characteristics (Patronek, Loar, & Nathanson, 2006):

- failure or inability to provide animals minimal standards of sanitation, space, nutrition, and veterinary care;
- inability to recognize the effects of this failure on the welfare of the animals, human members of the household, and the environment;
- obsessive attempts to accumulate or maintain a collection of animals in the face of deteriorating conditions; and
- denial or minimization of the problems and living conditions for people and animals.

Most hoarding cases involve private indi-

viduals who claim ownership of numerous animals in a single rented or owned facility. In some cases, established shelters, rescue no-kill groups, or puppy mills may create a physical setting that mimics a hoarding situation.

The management of recognized animal hoarding situations should be well planned, interdisciplinary, and handled by trained personnel. People may encounter risks while on a premises evaluating or responding to issues caused by animal hoarding itself or the animal hoarding may be an incidental finding during a visit for another purpose. Anyone aware of serious animal hoarding situations should report them to local animal control or public safety authorities for appropriate coordination, investigation, and follow-up. Remediation is extremely difficult and rarely successful in the long term. The multifaceted nature of these situations, refractory behaviors of individuals involved, unclear criteria about animal cruelty, and privacy and personal property rights can be major obstacles to permanent solutions. A complete discussion of remediation is beyond the scope of this article.

Protection of the health and safety of responders and others involved in the response is a priority for any animal hoarding incident. Anyone involved in a response should create a comprehensive plan prior to

FIGURE 1

Suggested Timeline of Activities for Responding to an Animal Hoarding Situation

| | |
|--------|---|
| Before | <ul style="list-style-type: none"> • Engage stakeholders to plan response. <ul style="list-style-type: none"> » Partners could include representatives from public health, agriculture, law enforcement, animal control, humane societies, the local veterinary community, child protective and behavioral health services, local building and safety officials, etc. » Review jurisdictional regulatory authorities (e.g., mitigation of public health risks on private property, criminal investigation for animal cruelty, etc.). » Depending on the scope of the response, consider using an incident command-type structure with assigned duties to achieve an organized, efficient multi-jurisdictional response. » Collect and discuss information about the particular situation. Clearly identify the problem and develop objectives and an implementation plan that addresses health and safety considerations. » Involve communications specialists from participating agencies to lead the development of a communications plan. • Ensure that response personnel receive adequate training to include, as appropriate, incident command, animal handling, or personal protective equipment (PPE) use and safety procedures. • Ensure that recommended PPE and supplies are available. |
| During | <ul style="list-style-type: none"> • Be prepared to adapt to a changing situation, e.g., make adjustments to PPE, involve additional personnel, respond to on-site media, etc. • Ensure ongoing safety of personnel. |
| After | <ul style="list-style-type: none"> • Continue interagency support as needed for after-action issues. <ul style="list-style-type: none"> » Agencies requesting follow-up may include law enforcement to support efforts for potential prosecution, animal shelters regarding potential overflow, etc. » Follow-up as needed with any responders' health concerns. » Consult on health risks with organizations involved in remediation. • Prepare a written summary of the investigation and include what went well and what could have been improved—develop "lessons learned" for the next time. |

because animal hoarding cases often attract attention from media, agencies should alert their public information officers. Requests for information from media should be funneled to a single public information officer, designated by the lead agency or community official, who will coordinate with all involved agencies. The lead agency should ensure the safety of responders by conducting assessments of the possible safety and health hazards and recommending measures to achieve safe entry and response procedures. Additionally, all necessary equipment and appropriate supplies should be made available before beginning work.

All responders to an animal hoarding situation should be trained in the hazards and risks associated with animal hoarding, basic sanitation and infection control practices (e.g., hand washing), the use and care of personal protective equipment (PPE), and—for those working with animals—safe animal handling practices. The employer or volunteer agency should document all training and maintain all records. Establishing a method to document responder involvement is recommended to allow for tracking of injuries and illnesses that may arise in the future because multiple responders from various agencies may be involved over extended time periods. The following steps are recommended at a minimum: establish a reporting system that includes employers/volunteer agencies and local public health officials to document training and responder involvement, including job duties performed and length of involvement; educate responders about their risk of exposure to, and the associated symptoms of, relevant zoonotic diseases; train responders to report all injuries and illnesses, possibly related to the hoarding response, to their supervisor; and educate responders to alert their health care providers of their animal-related activities should they present for medical evaluation.

Health and Safety Considerations

Each animal hoarding case has unique circumstances that must be taken into account; however, there are some general public health considerations that apply to all cases.

Disease Exposure

Zoonotic diseases are those that can be transmitted between animals and humans. Risk of

initiating an investigation (Figure 1). The following guidelines were developed to address public health concerns and the need for careful planning for responder safety in handling situations where animal hoarding or other dense concentrations of animals have caused unhealthy and unsafe conditions.

Preparing for a Response

Adequate preparation to protect responders and careful forethought and engagement of stakeholders prior to any action are important in achieving an acceptable outcome. Because animal hoarding situations are often complex, a full response is likely to be prolonged and involve multiple agencies, including those responsible for providing social services, law enforcement, and animal health and control services. Each scenario must be

evaluated individually. For example, nuisance laws and precedence of authority vary among localities. Local public health agencies generally have broad authority to remediate known or suspected human health risks by prevention and control of known and suspected communicable diseases. These agencies also have authority to address environmental impacts to health affecting the community. Guidelines for planning and managing these efforts are available (The Humane Society of the United States, 1994).

One of the numerous issues to consider when preparing for a response includes ensuring that all appropriate agencies are informed and involved in the planning process. This step is especially relevant when there are legal concerns about proper evidence collection and chain of custody procedures. Also,

acquiring a zoonotic infection will depend on the animals involved, the tasks performed, prevention and control measures used, ventilation available at the premises, and the health status of the responders, among other factors. References for comprehensive lists of zoonotic pathogens are available (National Association of State Public Health Veterinarians, 2008).

Zoonotic pathogens may be transmitted to humans through different routes. Large droplets generated by sneezing, coughing, or vocalizing can be deposited on mucous membranes; smaller infectious particles can be suspended in air (e.g., during cleaning of cages) and inhaled. Gastrointestinal pathogens can be transmitted from unwashed hands to the mouth after contact with feces, contaminated fur, or surfaces, or by eating or drinking contaminated food or water. Some pathogens are transmitted by animal bites, scratches, or inoculation of an open wound or mucous membrane with infectious material. Depending on the geographic location and season of the year, ticks, fleas, or mosquitoes present on the animals or at the premises may carry zoonotic pathogens.

During any response, emphasis should be placed on appropriate hand washing and refraining from eating, smoking, and drinking. If indoor running water is not accessible, alternatives such as outdoor faucets or hand wipes followed by alcohol-based hand sanitizers should be used.

Air Quality

The air in premises where animals have been hoarded may have high levels of ammonia, other volatile organic compounds, or high quantities of dust, dander (allergens), and particulate matter (Zhao, 2007). An assessment of the premises by a qualified safety and health professional should be conducted prior to entry by responders to determine the types and levels of potentially hazardous exposures. All responders should be informed of and trained for any recommended control measures to provide for safe entry. Any persons experiencing health effects that appear to result from, or are exacerbated by, entering animal hoarding premises should leave immediately and seek medical attention if necessary.

If animals have been urinating and defecating inside a home and proper sanitation has not been maintained, ammonia odors and mists may accumulate to an extent that could cause adverse health effects, e.g., watering of the eyes

or tightness of the chest. The National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL) for ammonia of 25 parts per million (ppm), with a short-term exposure limit of 35 ppm (no more than 15 minutes averaged throughout the workday) should not be exceeded (Agency for Toxic Substances and Disease Registry, 2008). Tolerance of elevated ammonia levels and odors associated with animals may vary and residents may not appear to be visibly affected. People with preexisting conditions may show effects at lower exposure levels. For people expecting to enter or work in such premises, handheld direct-reading devices are available to assess ammonia levels (Patronek, 2002). Although urine neutralization products are available, ventilation is the preferred method to reduce contaminant concentrations. Ventilation can be achieved by a combination of opening windows, using attic fans or residential ventilation systems, or by using forced ventilation systems, if available. Local fire departments may be a ready source of building ventilation fans. Note that in some situations, opening a window or door may not be possible or practical and could result in an animal escaping. If adequate ventilation is not possible, responders should use appropriate NIOSH-approved respirators.

Hydrogen sulfide, nitrous oxide, methane, or carbon dioxide may also be present in remarkable concentrations where there is significant decomposition of organic material (Zhao, 2007). Increased ventilation will mitigate potential health effects.

Elevated airborne levels of particulate matter (such as animal dander, environmental tobacco smoke, dust mites, or rodent droppings) may exist inside the premises and may cause adverse respiratory health effects, especially in people who have known allergies or an airway compromise, such as asthma. Used properly, eye protection might reduce irritation caused by excessive particulate matter.

Animals kept in crowded spaces may create damp conditions that contribute to mold growth in indoor premises. Excessive mold spores can produce or exacerbate some underlying health conditions, including allergies and asthma. General information about mold growth, possible health effects, and recommendations for cleaning and assessment is available (Centers for Disease Control and Prevention [CDC], 2005a; New York City Department of Health and Mental Hygiene, 1993).

Injuries

Persons entering an animal hoarding setting may encounter numerous physical hazards that could result in bodily injury. Lighting is often inadequate and some premises are without electricity. Obtain a flashlight or other portable source of light or consider postponing the visit until arrangements can be made to illuminate walking and working spaces adequately.

Animals may bite, especially if space is limited or there is tension among the humans in the premises. Depending on the species of animal involved, other types of injuries may be possible, e.g., envenomation from spiders or reptiles. Aggression has many causes and can be triggered by fear, pain, dominance, or protective tendencies. Animals often try to escape from the premises and may bolt when doors or windows are opened. Block or close doors quickly when entering or exiting. To prevent injury, only persons with training in safe animal handling skills should attempt to capture fleeing animals (CDC, 2005b). Animals may be segregated into rooms with closed doors; allowing them to mingle could result in aggression among the animals. Do not try to physically separate animals that are fighting. Removal of animals should only be done by persons trained to handle and transport the species involved. Even cats and dogs may not react as typical pets would be expected to behave.

If a bite or scratch occurs, the incident should be reported to the supervisor to ensure appropriate follow-up. All wounds should be immediately washed and flushed with copious amounts of soap and water. Given the likelihood that the environment is contaminated, seeking proper medical attention is strongly advised even for a seemingly minor injury. Capture or identify any animal that caused an injury as soon as possible; often many of these animals are related and can look very similar. The rabies vaccination status of the animal should be determined in all bite cases. Local animal control or state public health authorities should be consulted concerning animal management following a bite (e.g., immediate euthanasia, options for observation, etc.). Personnel who routinely handle animals in hoarding situations are strongly urged to consider obtaining a rabies preexposure vaccination series.

Long-term soiling from animals may cause unsafe structural features, such as rotted

floors or stairs or damaged electrical wiring. Cluttered or soiled floor space areas could create hazardous walking conditions. Often such premises are also infested with vermin and insect pests attracted by accumulation of feed and waste material. Consult with building safety personnel/code authorities if uncertainty exists about whether the structure should be occupied or is safe to enter. Move with caution and be aware that accumulations of debris, including animal excrement, may hide structural defects from view.

Depending on the purpose of the visit, the occupant may be agitated and feel threatened. Exercise caution if the occupant/owner is present. Counsel responders to leave the premises immediately if they feel unsafe. Visit the premises as a team whenever possible and ensure co-workers or supervisors are aware of the team's whereabouts and expected time of return. Law enforcement or mental health services should be contacted as appropriate to manage any situation that escalates, and ideally, prior to a visit that involves intervention. It is recommended that the occupant(s) not be present when animals are removed. If evidence of neglect, endangerment, or abuse of a minor, elder, or disabled person or illegal activity exists, leave the premises immediately and call 911.

Personal Protective Equipment (PPE)

Recommendations for PPE will depend on the types of animals in the premises, the purpose of the visit, the proposed tasks to be accomplished, and each responder's personal health status (e.g., allergies or asthma). Prior to visiting a facility, an assessment of potential hazards should be conducted by a qualified safety and health professional to guide the plan for responder safety including use of appropriate PPE. Following entry and initial inspection, modifications to the original PPE recommendations may be necessary to ensure appropriate responder protection. PPE recommendations from the National Association of State Public Health Veterinarians' Compendium of Veterinary Standard Precautions may be applicable to hoarding situations (National Association of State Public Health Veterinarians, 2008). The state or local public or environmental health departments and local hazmat or emergency responders may also be able to give guidance and assistance on PPE use.

For most situations, nitrile gloves provide adequate barrier protection. Depending on the

health status of the animals, protective sleeves may also be necessary. Gloves made of leather or other bite-protective materials should also be considered when handling exotic or aggressive animals. The use of gloves does not preclude the need for adequate hand washing.

If animals (live or dead) will be handled, water-resistant protective outer clothing such as gowns or coveralls is recommended to minimize contact with blood, urine, or feces. Safety goggles or face shields should be worn when there is a risk of being splashed with contaminated material or when particulate matter could be expected to cause eye irritation. Protective footwear such as nonslip rubber boots that can be washed and disinfected or a sturdy protective, disposable Tyvek® shoe covering is recommended to minimize contact with feces or other soiled material. Bouffant-style hair caps, hoods on Tyvek suits, or hard hats may be indicated.

A correctly used respirator can help reduce the exposure to contaminants. Many types of respirators are available that can be selected based on the expected exposures and the medical condition of the responder (National Institute for Occupational Safety and Health [NIOSH], 2007). A qualified safety and health professional should be consulted to ensure the appropriate respiratory protection is selected and procedures followed for a given situation. Knowledge of the contaminants, their levels, duration of exposure, activity levels of the responders, environmental factors such as heat stress, and other factors are important in choosing the appropriate respirator.

For many animal hoarding situations involving mold or particulate contamination in a residence or other structure, an N-95 filtering facepiece respirator may be an appropriate choice. If contaminants such as ammonia are present and ventilation is not a sufficient control, a respirator with specific cartridges designed to remove/filter ammonia should be chosen. Cartridges that can filter other gases may also be indicated. Respirators are only effective if the correct type of filtration is used; if they are properly fitted; if the wearers use them effectively and at appropriate times; and if they have been stored and maintained in working order in accordance with the manufacturer's instructions. Employers of workers who wear respirators must implement a complete respiratory protection program that meets the requirements of the

Occupational Safety and Health Administration (OSHA) respiratory protection standard (Respiratory Protection, 2006).

Prolonged exposure to noise from animals may result in hearing loss (Achutan, 2007; Achutan & Tubbs, 2007a; Achutan & Tubbs, 2007b). If an individual needs to raise his/her voice in order to be heard an arm's length away, the noise level is high enough to warrant hearing protection (CDC, 2005b). For long-term exposure to elevated noise levels, consult with a qualified safety and health professional about an appropriate hearing protection program.

Soiled PPE should be removed as soon as persons leave the contaminated premises. Manufacturer instructions for doffing respirators and removing protective outer clothing should be followed. PPE should be appropriately bagged for safe disposal before entry into a vehicle or another building. Soiled/contaminated PPE that has been appropriately bagged may be placed with household trash or brought to the employee's workplace for proper disposal or disinfection, following local and state laws as applicable. Responders should wash their hands immediately after all contaminated clothing has been removed.

Several important animal diseases such as distemper, calicivirus, or parvovirus may be present in situations with dense concentrations of animals. Care must be taken to avoid transferring potentially contaminated materials from a hoarding site to animals in a different location. Any PPE or equipment that is nondisposable (e.g., rubber boots, animal crates, vehicle tires) should be appropriately disinfected and sanitized before being used in another setting with animals.

Conclusion

Animal hoarding situations are complex and a response is likely to be prolonged and involve multiple agencies and persons. Therefore, it is critical to develop a detailed plan of action taking into account health and safety considerations that can be adapted to changing circumstances during implementation to ensure an acceptable outcome. 🐾

Corresponding Author: Louisa Castrodale, Veterinary Epidemiologist, Alaska Division of Public Health, 3601 C St., Suite 540, Anchorage, AK 99503. E-mail: louisa.castrodale@alaska.gov.

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THE FAMILY CIRCUS

By Bill Keane

How true!!



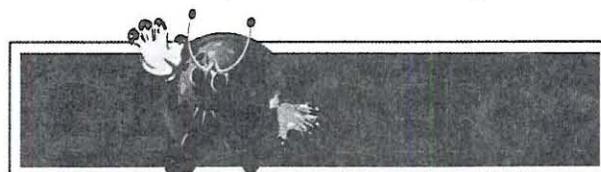
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