VETERINARY RESPONSE TO ANIMAL CONTAMINATION EVENTS

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Abstract

Based on human societal desires and energy needs, animal exposure and subsequent toxicosis from petrochemical products and other compounds occur and will continue to do so into the foreseeable future. A veterinarian is essential in assessing and stabilizing animals that are exposed to environmental contaminants. A number of products can cause animal contamination, including petrochemicals, salt and salt products, plastic by-products, glues, oils and other food waste products, agricultural runoff, and algal blooms and their by-products from water or soil changes caused by man. The purpose of this short article is to review assessing, recording, triaging, and providing supportive care for the animal before decontamination, which is considered a critical life-saving step to be pursued in all cases of possible toxin exposure. Without animal assessment and stabilization, there is no cause to consider decontamination procedures; the carcass is instead stored in an evidence locker. Veterinarians are essential in the critical intake and stabilization period to assure that animals move on to the decontamination stage. Decontamination procedures, which may be specific and complex, are briefly overviewed.

Key words: decontamination; animals; wildlife; animal contamination; treatment

A systematic approach of care for contaminated animals should be applicable to any contamination event and should be executed in an organized and efficient fashion. The authors advocate a 4-step method for facilitating care of contaminated animals. Each step has specific goals and requires separate forms of training, knowledge, and experience: (1) Take, (2) Assess, (3) Stabilize, and (4) Cleanse (or TASC). Using the TASC protocol, a veterinarian in the field, wildlife rehabilitators, and other wildlife personnel can assign and prioritize tasks to meet the immediate needs of affected animals before planning long-term recovery.

TAKE: TRAP AND TRANSPORT

The first step in triage is to remove the animal from its contaminated environment—the take. Even if the patient is unstable and movement may result in dire consequences for the animal, the animal should be physically removed from the inciting contaminant and taken to an area that better facilitates evaluation and treatment by a veterinarian. This step reduces environmental contamination and serves as evidence should a responsible party be identified. However, responders should be aware that if there is a serious risk of irreversible damage to the environment or human health, animal rescue might be delayed or forgone in lieu of these priorities during the emergency response.

Ideally, a patient would be brought to a veterinarian at the base of operations, where

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laboratory instruments and medical supplies are readily available. Handling and restraint must be minimized to avoid further damage to the affected animal, such as capture myopathy. After capture and transport, the animal should be provided time to acclimate to its surroundings before assessment. Trap and transport of wildlife is performed by individuals who are licensed, permitted, and experienced not only with the animal but also with contaminants. Failure to adhere to this policy places human and animal health at risk, as well as the possibility of the individuals involved facing legal action or being incarcerated. Thorough and complete documentation of the trap and transport, completed in a timely manner and kept secure, is essential and should include the species and location of the animal. Many chemical exposures affect birds, most of which are protected by the Migratory Bird Treaty Act. Other animals such as marine mammals, sea turtles, and fish may also be protected by the United States Fish and Wildlife Service, the National Marine Fisheries Service, or other government entities. If animals are removed without permission from a contaminated area, governmental agencies may subject the responsible party to fines and penalties as imposed by the local, state, and federal authorities and pertinent fish, game, and wildlife laws.

The contaminant is often identified in the initial intake phase, usually from historical information (i.e., reported oil spill disaster causing a team to be deployed). Knowing the contaminant is helpful in understanding what adverse health effects the toxicosis causes in an exposed animal and whether there is a pharmacological antidote, as well as how best to decontaminate the patient once stabilized. Although a Material Safety Data Sheet may be provided to describe precautions for the known contaminant, additional unknown contaminants may also be present.

ASSESS

Once an animal has been given an opportunity to acclimate in a low-stress, low-stimuli setting, assessment may begin. The means by which a patient is assessed is 2-fold. First, a minimal database of information should be established to discover and prioritize the most critically ill patients. This initial assessment must be recorded and should include the following (Fig. 1):

- External physical examination (including heart rate, respiratory rate, and cloacal temperature)
- Body Condition Score determination

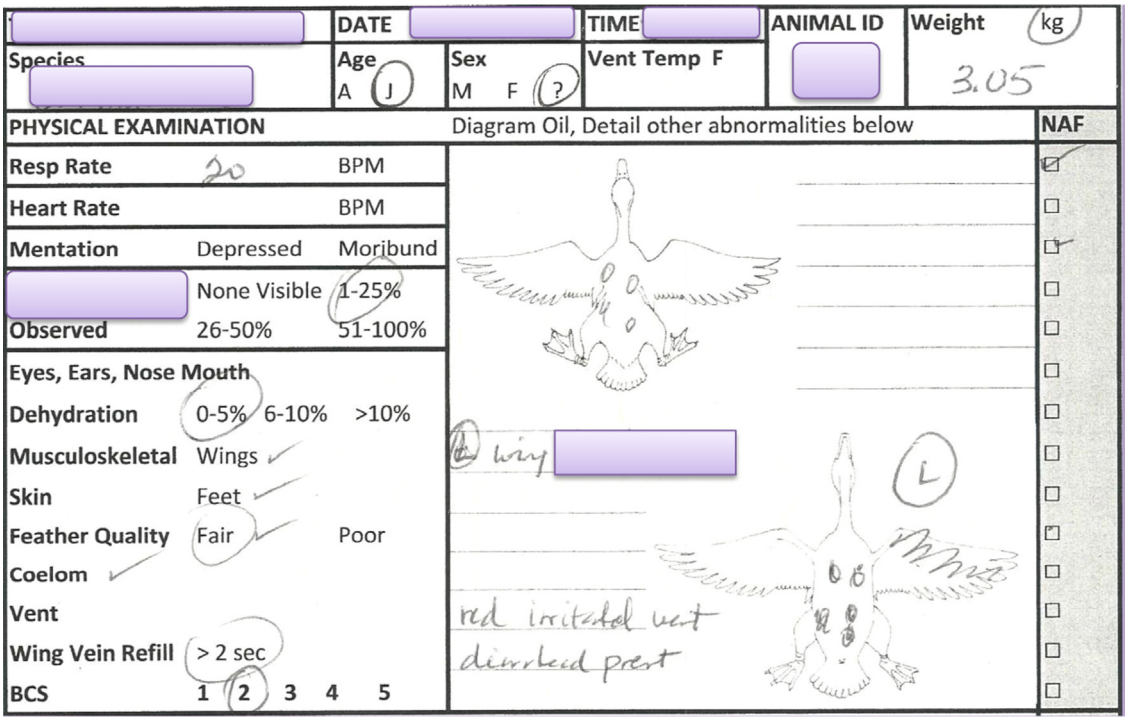

FIGURE 1. Example of an assessment record for contaminated animals. NAF, no abnormal findings; BPM, Breaths per minute (resp. rate); BPM, beats per minute (heart rate); BCS, Body condition score.