

## INTERNATIONAL SHELTER ADOPTIONS: SAVING LIVES OR SPREADING DISEASE?

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### OVERVIEW

While estimates vary, the population of dogs worldwide may be as high as 500 million, with the majority living much differently than traditionally-owned pets by Western standards<sup>1</sup>. Most are classified as free-roaming or 'community-owned', and are frequently subject to malnutrition, abuse, poisoning, and road traffic accidents. During the last decade, increasing numbers of animal welfare organizations have begun working in poorly resourced areas in an effort to improve animal welfare. In areas with little local capacity for local adoptions, sheltering organizations have started investigating whether international pet transport might be a viable option to increase their live release rates. This practice, while a life-saving mechanism for many animals, is not without risks and controversy. Animals must be appropriately selected, screened for infectious disease, and the necessary processes followed for transport. Pet transport programs must comply with local and international regulations of both the importing and exporting country to protect both human and animal health. While saving animals lives is a noble goal, it must be done responsibly to mitigate the risk of disease introduction and transmission.

### TRENDS IN ANIMAL TRANSPORT

Transport programs vary considerably. Some are small, loosely organized grassroots efforts performed by local rescuers while others are conducted by large international animal welfare organizations using a network of overseas shelter partners. The transportation of dogs for commercial purposes also accounts for a significant number of dogs and cats transported each year, but is largely outside the scope of discussion here.

In most countries, pet transportation is on the rise yet no formalized system exists to track exactly how many animals are transported internationally for adoption purposes. The growth in pet transportation has increased largely due to the growing awareness of various international animal welfare issues such as the dog and cat meat trade in Asia. This has created a unique adoption market in countries such as the US and Canada. Korean Air and Asiana Airlines transported pets 24,741 and 12,595 times in 2016, respectively<sup>2</sup>. The combined number increased 19.2% from the year prior (2015) to reach an all-time high. Considerable expansion in animal transportation is expected in the coming years. Soi Dog Foundation, a non-profit based in Phuket, Thailand, routinely adopts and transports up to 50 dogs and cats monthly into homes into the US, UK, and Canada.

### REASONS FOR INTERNATIONAL ADOPTIONS

In areas with a significant stray cat and dog overpopulation, there are often simply not enough adoptive homes or interest locally in rescued animals. In many cultures, a stray mixed-breed dog is viewed much differently than a purebred dog or cat; therefore, when seeking a pet, most local people will typically visit a pet store rather than adopt from a shelter. Adopting animals internationally helps animal shelters reduce overcrowding, relieve stress on staff, and ultimately save more animals in communities where local adoptions are limited. Performing international adoptions may also increase the profile of the organization.

On the receiving end, shelters that receive imported dogs and cats may also reap certain benefits. In the US, the arrival of internationally rescued dogs often generates so much community interest that every animal is quickly adopted from the facility through adoption events. The novelty of imported rescued dogs also increases the public awareness surrounding important international animal welfare issues.

### CONTROVERSY

There is considerable controversy involving the transport of dogs and cats internationally to communities where there is already an overabundance of animals in shelters. Furthermore, international transport can facilitate disease transmission. Given the public health risk posed by the importation of animals for adoption and the euthanasia of adoptable animals in certain countries, many suggest that organizations first consider improving their local capacity through spay/neuter and community engagement before sending animals abroad.

### RISKS TO ANIMAL WELFARE

The transportation of animals is not without risk to the individual animal. While small dogs and cats may be able to travel in an aircraft cabin with a passenger, most typically fly under the cabin in cargo, a pressurized hold. While cargo holds are pressurized, they can be dark, noisy, and have fluctuating temperatures and air pressures. While most airlines have time and temperature restrictions, undoubtedly such environments can be stressful. While animal deaths in cargo are relatively rare, injuries can be common. The most frequent injuries observed result from biting and scratching at kennels and respiratory distress, most likely attributable to stress, particularly at the time of loading. The risk of transport is significantly higher for brachycephalic breeds. The stress of transport may also lead to immune compromise and/or recrudescence of disease and increased viral shedding.

### Disease transmission

A major argument against international adoptions is the potential introduction of foreign animal diseases, particularly

those with zoonotic potential. If animals are shipped, careful management is required to minimize the risk of disease. This risk is magnified when animals of unknown disease status are co-mingled or group-housed prior to or during transport. While rabies poses the greatest risk, the transmission of other zoonotic diseases (e.g., brucellosis, leishmaniasis, campylobacteriosis, leptospirosis, giardiasis, and cutaneous or visceral larva migrans) is also a real threat.

#### **Case study - Canine parvovirus and distemper virus**

In August 2010, 221 rescued dogs ranging in age from 4 weeks to > 1 year were transported by cargo plane from Puerto Rico to Orlando, Florida. The dogs were destined for a national adoption event in New York following a 4-day lay-over in Florida. Unfortunately, several of the imported dogs were incubating parvovirus and distemper virus at the time of transport which led to the Florida State Veterinarian declaring an official quarantine due to the diseased dogs, the first ever state-mandated quarantine for dogs.

#### **Case study - Canine influenza**

Until March 2015, the canine influenza (CIV) strain H3N2 appeared to be limited to Asia, specifically Korea, China, and Thailand. However, an outbreak originating in Chicago was believed to have been due to a H3N2 strain<sup>3</sup>. While it was speculated that the virus was introduced to the U.S. via dogs rescued and imported from Asia, there was no evidence to substantiate this claim. Dogs must be screened for any signs of respiratory disease prior to transport. Researchers at the University of Wisconsin found that CIV H3N2 can shed for more than 20 days<sup>4</sup>.

### **RISKS TO PUBLIC HEALTH**

The most significant zoonotic risk is the importation of a dog or cat incubating rabies. Rabies, the deadliest of all zoonotic diseases accounts for over 50,000 human deaths around the world annually. The introduction of any non-endemic rabies viruses into a naïve animal population has the potential to change the epizootiology of rabies in-country leading to severe health consequences and economic losses.

In June of 2015, a free roaming dog and her puppy were captured in Cairo, Egypt. Her vaccination certificates were forged to avoid exclusion of the dog from entry under the US CDC's current dog importation regulations, and she was transported to the U.S. by an animal rescue organization in a shipment that included seven other dogs and 27 cats<sup>5</sup>. Following her arrival and placement in a foster home in Virginia, the rescue dog developed signs and symptoms classic of rabies. The dog was quickly euthanized and traceback steps were implemented to assess exposure and risk.

### **RESPONSIBILITIES OF THOSE INVOLVED**

It is critical that those involved in transport are familiar with the import and export requirements for all relevant countries as well as airline requirements to ensure safe and responsible

transport. To learn about quarantine policies, documentation and other requirements, organizations must check with the appropriate agency, typically the Department of Agriculture, in their country. It is particularly important that all health conditions of the animal are properly documented. Animal welfare organizations must carefully screen and choose animals based on both medical and behavioral examinations. Animals should ideally be chosen based on the lowest risk of disease. While there is often emphasis placed on adopting puppies and kittens due to their high adoptability, they are immunologically naïve and the most susceptible to disease. Dogs should be assessed behaviorally as well as physically.

After selecting an animal for adoption, the organization or individual shipping an animal internationally carries the burden of ensuring that animal is free of disease and eligible for travel into the desired country. Ideally the shelter or facility should have a preventive care program already in existence. Prior to travel, it is recommended that the following be performed noting that import restrictions may vary depending on the country of import and export.

Spay/neuter surgery – Sterilization should ideally be performed prior to travel. Spay/neuter surgery may allow for the identification of underlying conditions such as pyometra. Adequate time should be allowed between surgery and transport to allow for proper incisional healing. In international settings where veterinary training may be poor, it might be necessary to confirm the removal of all ovarian tissue in female animals prior to transport.

Comprehensive physical examination – This should be performed when deciding whether or not an animal is a sound candidate for transportation, and repeated within 24 hours of transport to detect signs of infectious disease. Vaginal and penile exams should also be performed to detect potential signs of canine transmissible venereal tumor.

Identification – Microchips are preferred and required by most countries for import.

Heartworm antigen testing – Many animals are transported from heartworm endemic areas to areas typically considered free of the disease. It is important to ascertain whether or not a dog has detectable antigen near the time of transport. The American Heartworm Society recommends that dogs with a positive heartworm test be started on doxycycline therapy prior to transport<sup>6</sup>. Dogs with a negative heartworm antigen test should be re-tested six months following relocation. Some organizations may choose to treat infected dogs with either a two- or split-dose melarsomine protocol prior to transport due to the cost of treatment in the import country. Ideally, the transporting agency should allow 4-6 months to complete heartworm treatment prior to transport to reduce the risk of thromboembolism. All dogs regardless of antigen status should be started on macrocyclic lactone therapy prior to transport.

Endoparasiticide – A broad spectrum deworming productive effective against hookworms and roundworms should be administered. Certain countries also require tapeworm treatment days before transport.

Rabies and DHPP/FVRCP vaccination – A rabies vaccination is legally required for all dogs and cats, with minor exceptions which vary per country. All dogs should be appropriately vaccinated for canine distemper and canine parvovirus and cats for panleukopenia.

CBC/Chemistry – Bloodwork can be used to rule out underlying disease that may not be evident on physical examination, including thrombocytopenia for tick-borne disease which is prevalent in free-roaming dogs.

IDEXX 4DX SNAP test – Screens for exposure to tick-borne disease and heartworm infection. Some organizations may elect to administer a 21-28 day course of doxycycline to dogs who test positive for *E. canis* and *Anaplasma* spp. antibodies.

Ectoparasiticide – Animal should be free of ectoparasites during their time spent in the organization's care.

Advanced diagnostics – Further diagnostics may be warranted depending on clinical signs. Certain infectious disease including dermatophytosis, parvovirus, and distemper must be ruled out through diagnostics (DTM culture, SNAP test, blood smears), clinical signs, and keeping animals separated from those that might be carrying infectious disease. Radiographs may be warranted depending on physical examination findings. FeLV/FIV tests should be performed to ascertain the retroviral status of cats going into adoption programs. For dogs originating from shelters in Asia, PCR for influenza may be advised if respiratory disease is endemic in the population.

Rabies titer test (Fluorescent Antibody Virus Neutralization (FAVN)) – FAVN testing is often required by many rabies-free countries and some rabies-controlled countries for dogs and cats to qualify for a reduced quarantine period or no quarantine at all when they are traveling from particular countries. The test consists of a three-fold serum dilution series and is used to detect rabies virus neutralizing antibody after vaccination.

### FALSIFICATION OF DOCUMENTATION

The US CDC and state agencies have received reports of invalid or questionable health and rabies vaccination certificates for imported dogs. Further complicating matters is the fact that importation regulations may be difficult to enforce in certain countries due to limited resources at ports of entry to inspect dog shipments. In May 2014, the US CDC issued the health alert notification "Imported Dogs with Questionable Documents" due to ongoing concerns with dogs' entry documents listing incorrect ages and rabies vaccination status.

Similarly, falsified documents have been reported in relation to the sale of puppies from intensive breeding operations to supply the demand for certain pure breed dogs.

While the US requires that animals from rabies-endemic countries not be imported until one month after they receive their rabies vaccination (3 months of age), puppies younger than 3 months can sell for a higher price. As a result, importers may falsify documents to make the dogs' age older than what they really are. There are also reports of falsifying breed registration and birth location.

Rabies titer tests can also be falsified. Serum can be banked for animals already known to have adequate antibody titers and submitted in the place of another dog who may have failed the titer test previously.

### SUMMARY

The risks and benefits of transport programs both in the area of export and import must be carefully considered. It is the author's opinion that international transport programs should be a last resort after all efforts for local adoption, transfer, and welfare promotion in the local community have been exhausted.

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