

Zoonotic disease concerns in animal-assisted therapy and animal visitation programs

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Abstract

A survey was done of 150 systematically selected United States animal care agencies and 74 Canadian humane societies to determine the prevalence of animal assisted therapy (AAT) programs; concerns about, and experience with, zoonotic diseases; and precautions taken to prevent zoonotic disease transmission. Of the 69 US agencies and 49 Canadian societies that reported having AAT programs, 94% used dogs and/or cats in their programs, 28% used rabbits, 15% used "pocket pets" (hamsters, gerbils, mice, guinea pigs), and 10% used birds (excluding poultry). About two-thirds of the programs were involved with the elderly in nursing homes, about a quarter of them worked with schools, and a quarter worked with hospitals. Half of the respondents had concerns about zoonotic disease control. Rabies, ringworm, and external parasitism were the most commonly cited zoonotic diseases of concern. Few concerns were based on actual experience. Fewer than half of the programs consulted a health professional about prevention of zoonotic diseases. Only 10% of the respondents reported having printed guidelines about the prevention of zoonotic disease transmission. Practising veterinarians are encouraged to make their expertise available to local AAT programs.

Résumé

Inquiétude à l'égard de la possibilité de transmission de zoonoses lors de programme d'animalothérapie et de visites organisées

Une enquête a été effectuée auprès de 150 agences en santé animale sélectionnées aux États-Unis et 74 sociétés protectrices d'animaux au Canada afin de déterminer la prévalence des programmes d'animalothérapie; les inquiétudes et l'expérience reliées aux zoonoses et les mesures de prévention établies pour contrer leur transmission. Soixante-neuf agences américaines et 49 sociétés canadiennes ont des programmes d'animalothérapie; de celles-ci, 94 % utilisent des chiens et/ou des chats, 28 % utilisent des lapins, 15 % des animaux de petite taille (hamster, gerboise, souris, cochon d'Inde) et 10 % utilisent des oiseaux (excluant la volaille). Près des deux tiers de leur programme était destiné aux personnes âgées des centres d'accueil; un quart de ces organismes travaillaient dans le milieu scolaire et un quart dans les milieux hospitaliers. La moitié des répondants avaient des inquiétudes concernant la prévention des zoonoses. Les maladies les plus souvent citées étaient la rage, la teigne et les parasites externes. Moins de la moitié des

programmes s'étaient prévalus de l'expertise d'un professionnel de la santé sur les mesures de prévention des zoonoses et seulement 10 % des répondants avaient en leur possession des nomres écrites. Les auteurs encouragent les vétérinaires praticiens à fournir leur expertise aux différents programmes locaux d'animalothérapie.

(Traduit par Dr Thérèse Lanthier)

Can Vet J 1993; 34: 549-551

Introduction

In January 1989, a dogcatcher picked up a friendly Brittany spaniel near London, Ontario, and took it into a nursing home where it was used as part of a pet therapy program. The dog shortly developed clinical rabies, by which time 49 people at the home had been exposed, as well as 42 other people in the community (1). The incident raised serious questions about the way in which the risks of zoonotic diseases are handled in animal visitation and therapy (AAT) programs.

Zoonotic diseases contractible from pets have been reviewed in the veterinary and medical literature (2-9); such reviews have been written with the intent to draw together medical knowledge on the subject for professional reference. Literature designed to educate the public and promote safe animal handling practices appears to be scarce.

Therefore, a study was initiated to determine the prevalence of AAT programs run by humane societies in Canada and the United States and the importance, availability, and utilization of resources to prevent transmission of zoonotic diseases.

Materials and methods

A questionnaire was developed and pretested on volunteers at meetings of the Human Animal Bond Association of Canada. Questions asked were straightforward queries about types of animals used; types of programs engaged in; concerns about, and experiences with, zoonotic diseases; and written or professional resources consulted as part of the programs.

The final form of the questionnaire was sent to 42 hospitals registered with the Delta Society, the major organization in the United States concerned with human-animal bond and AAT programs, 143 local humane societies in 10 provinces and two territories in Canada (the complete listing of the Canadian Federation of Humane Societies), and a 10% systematic sample of 3634 local humane societies, animal care agencies, and societies for the prevention of cruelty to animals (SPCA) listed by the American Humane Society in Washington, District of Columbia.

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This research was supported by the Pet Trust Fund of the Ontario Veterinary College, University of Guelph.

Table 1. Sites visited by community-based animal visitation and animal-assisted therapy programs in Canada and the United States^a

Country	Nursing homes	Schools	Hospitals	Total ^b
Canada	29 (59%)	15 (31%)	14 (29%)	49
United States	46 (67%)	18 (26%)	17 (25%)	69

^aCategories are not mutually exclusive

^bTotal number of respondents from that country

A second letter and questionnaire was sent to those addresses from which no response had been received within six months of the initial mailing.

Results

Representatives from 19 of the Delta-listed hospitals, 150 US agencies, and 74 Canadian humane societies sent in responses, for response rates of 45%, 41%, and 52%, respectively. The US responses came from Puerto Rico and 45 continental states, including Alaska. Canadian responses came from nine of the provinces, the Yukon, and the Northwest Territories.

Respondents from 69 (46%) of the US agencies were running AAT programs; 49 (66%) of the Canadian societies were running AAT programs. Including data from the Delta-listed hospitals, dogs and cats were by far the most commonly used animals (94% used dogs and/or cats), with rabbits (28%) the next most popular animal. "Pocket pets" (hamsters, gerbils, mice, guinea pigs) were used in 15%, and birds (excluding poultry) in 10% of the programs. The existence of a few zoo and farm-based programs in the sample produced some surprising animal participants, including reptiles and insects.

About two-thirds of the respondents worked with the elderly in nursing homes, about a quarter worked with schools, and a quarter with hospitals; a number of them worked in several different kinds of institutions (Table 1). About half of the respondents had concerns about the control of zoonotic diseases; some of them were concerned about specific diseases or conditions, particularly rabies, ringworm, and external parasitism (Table 2). The main departure from the general pattern of concern was in hospitals, where concern for intestinal infections, such as salmonellosis and campylobacteriosis, was higher than in the community-based programs. Three US respondents and two Canadian respondents reported that their concerns about ringworm were based on experience with it; one respondent each in the US and Canada reported experience with allergies in their programs. None of the respondents reported incidents with rabies or intestinal infections.

Fewer than half of the community-based programs (48% in the United States and 43% in Canada) consulted a health professional about prevention of zoonotic diseases; not surprisingly, 95% of the hospital-based programs reported involving a health professional. Of the 72 who consulted professionals, 45 worked with a veterinarian, three with a physician, and 21 with both.

Finally, in both Canada and the United States, 10% of the respondents from community-based programs reported having printed guidelines to prevent transmission of zoonotic diseases in their programs; 74% of respondents from hospital-based programs reported having such guidelines.

Discussion

If the respondents to the questionnaire are representative of the population of local animal care agencies in the United States and Canada, then there are more than 1,670 AAT programs being run from such agencies in the United States and 95 in Canada. Even given that some of the replies represented individuals affiliated with a local society, it is clear that there is a substantial institutional delivery vehicle for AAT programs.

The reported experiences with, and concerns about, allergies and dermatomycoses should not come as a surprise. It has been estimated that 5.3% of the US population has a sensitivity to animal dander (10); in the Netherlands, 5.8% of primary school-aged children were reported to have allergies to pets (11). These prevalences are much higher for people with a history of asthma (12). Although proper epidemiological studies have not been done, Scott and Horn (13) suggested that 15% of all human dermatomycoses are caused by *Microsporum canis*.

Although people in AAT programs do not appear to be at great risk of acquiring a wide range of infections, a few incidents of one serious disease, such as rabies, may be sufficient to raise the alarms. In Canada, two similar outbreaks of exposure to rabies in AAT programs were reported recently (1,14). The high prevalence of rabies in wildlife was cited by one respondent as the cause for concern. This basis for concern is particularly appropriate for the northeastern United States, where raccoon rabies is epidemic (15), and Ontario, where more than 3000 cases of rabies in wildlife were reported in 1986 (16). It is reasonable in this situation not to await "personal experience" with the disease before taking adequate precautions.

Finally, given the high frequency of cases of bacterial gastroenteritis in the United States over the past decade (17), and the serious sequelae in many cases, the hospital concern with intestinal infections is not out of place. The prevalence of salmonellosis in dogs may be up to 27%, but it is usually lower (18). *Campylobacter* spp. infections are most common in immature dogs and cats, especially among strays or those from kennels, and are least common in mature animals housed in homes (18). One study in the United States identified ownership of cats as a risk factor for *Campylobacter jejuni* infection in college students (19). Snakes, lizards, turtles, and poultry have all been identified as sources of salmonellosis for people, but these species are rarely used in AAT programs. In all species, risk from mature healthy animals is probably minimal.

There is clearly a wide variety of diseases that could be contracted by people from animals in the context of AAT programs (6,7); however, it appears that such transmission is uncommon (20-22). A study by Stryler-Gordon *et al* (21) of 284 Minnesota nursing homes

Table 2. Zoonotic disease concerns in animal visitation and animal-assisted therapy programs in Canada and the United States

Disease	Program			
	Canada	United States	Hospitals ^a	Total
Rabies	14 (29%) ^b	12 (17%)	1 (5%)	27 (20%)
Ringworm	5 (10%)	10 (15%)	1 (5%)	16 (12%)
External parasitism	5 (10%)	5 (7%)	—	10 (7%)
Allergies	1 (2%)	4 (6%)	1 (5%)	6 (4%)
Internal parasitism	3 (6%)	3 (4%)	—	6 (4%)
Intestinal infections	1 (2%)	2 (3%)	3 (16%)	6 (4%)
Bites and scratches	3 (6%)	3 (4%)	—	6 (4%)

^aHospitals with animal-assisted programs listed by the Delta Society

^bNumber of programs reporting concern (% of programs in that country/category). Categories are not mutually exclusive

with visiting and live-in pets, for instance, found no cases of pet-related infections over a 12-month period. The most obvious explanation for this apparent contradiction is that most people involved in AAT programs take reasonable precautions in preventing disease. The corollary to this is that, as such programs increase in number, and to the extent that they are run by enthusiastic volunteers, we need to entrench in the thinking of health professionals and lay workers alike, and in widely adopted and enforced program guidelines, the simple and straightforward measures required to prevent the occurrence of zoonotic diseases.

In this context, it is important to note that some of the respondents appeared to have misperceptions about zoonotic diseases and their control. Several of the respondents included diseases such as feline leukemia and canine parvovirus among their concerns; whether they thought that these could be transmitted to people or were simply infectious disease problems of high priority to them could not be determined from their answers. Furthermore, a number of the respondents noted that they only used puppies and kittens (as opposed to mature dogs and cats) in their programs; the implication appeared to be that they considered younger animals to be safer than older animals. For most bacterial and parasitic diseases, the opposite is true.

Overall, the fact that only 10% of the respondents had printed guidelines for control of zoonotic diseases and fewer than 50% consulted a health professional indicate that there is a definite need for more education in this area. Practising veterinarians should be encouraged to take an active role in making their expertise available to local AAT programs.

Acknowledgments

I thank Carla Wilkie for many hours spent preparing and mailing questionnaires, entering the replies into computer files, and conducting part of the literature review.

C.V.J.

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