

Who let the dogs out? Infection control did: Utility of dogs in health care settings and infection control aspects

Heidi DiSalvo, MPH,^a Donna Haiduven, BSN, MSN, PhD,^{a,b} Nancy Johnson, BSN, MSN,^b Valentine V. Reyes, BSN,^b Carmen P. Hench, BSN,^b Rosemary Shaw, OT,^b and David A. Stevens, MD^b
Tampa, Florida, and San Jose, California

Research has substantiated that animals improve human health, both psychologically and physiologically. Therefore, healthcare facilities have begun to implement programs, such as the "Furry Friends Foundation," that bring animals into the facility to improve the quality of life of patients. When implementing these programs, consideration must be given to potential adverse events such as phobias, allergies, and particularly the possibility of zoonotic disease transmission. Santa Clara Valley Medical Centre (SCVMC), a 600-bed county teaching hospital with specialized units (e.g., for burns, rehabilitation, and pediatric care), has implemented programs that incorporate animals into the healthcare setting. This facility allows three categories of dogs to interact with their patients: service dogs, therapy dogs, and pet visitation dogs by the "Furry Friends Foundation." A blurring of the roles of the three categories of dogs occurred when these programs were put into place at SCVMC. The American with Disabilities Act (ADA) states that service animals cannot be prohibited from any area. For example, a "no pet allowed" policy could not apply to these animals. Proof of a person's disability or proof of the service animal's health or training cannot be required. The purpose of this project was to maintain these programs by clarifying the policies regarding animals, specifically dogs, in the healthcare setting. This had to take place to provide a safe and enjoyable environment for the patients and the staff. A comprehensive table was developed to delineate the three categories of dogs and the corresponding policies. Therapy dogs and the visitation animals are more restricted than service dogs. Both therapy dogs and visitation dogs require identification and certification of health and are excluded from certain areas of the facility, including intensive care units and isolation rooms. By complying with the current policies and regulations, the risks from these programs can be minimized. Staff should be educated on the proper terminology and procedures to prevent a blurring of the categories and roles of these animals. (*Am J Infect Control* 2006;34:301-7.)

It has been known for a long time that pets are emotionally beneficial for humans. Recent research has indicated positive effects of pets on human physiology, eg, blood pressure.¹ These findings, among others, have led to animals being incorporated into health care settings. One must take into consideration the potential risks of incorporating animals into this type of setting, a setting that includes individuals with altered immune systems. Not only are phobias and allergies prospective problems for these programs, but also there is a potential for zoonosis transmission. If proper measures and policies are put in place to prevent these risks, these programs can be very safe and effective. This subject has become very timely because of the issuance of relevant Centers for

Disease Control and Prevention (CDC) guidelines regarding hygienic consequences of contact with animals.²

Santa Clara Valley Medical Center (SCVMC) was one such facility that chose to incorporate animals, specifically dogs, into the lives of their patients. The 3 categories of dogs included therapy dogs, service dogs, and visitation dogs. A blurring of the roles of the categories of dogs initially occurred. Therefore, SCVMC defined the 3 categories of animals found in a health care setting and implemented specific policies regarding each category of dog.

THREE CATEGORIES OF DOGS IN A HEALTH CARE SETTING

The dogs are divided into 3 categories: service dogs (eg, seeing-eye dogs), therapy dogs, and visitation dogs. A service dog is defined in the Americans with Disabilities Act (ADA) as "an animal individually trained to perform tasks for people with disabilities."³ The service animal provides essential assistance to the individual with the disability to compensate for his/her limitations.⁴ Although the ADA does not restrict the definition to only canines, dogs are usually the animals chosen for service work.⁴

From the University of South Florida,^a Tampa, FL, and the Santa Clara Valley Medical Center,^b San Jose, CA.

Reprint requests: Donna Haiduven, PhD, RN, CIC, Assistant Professor, University of South Florida, College of Public Health, 13201 Bruce B. Downs Blvd MDC 56, Tampa, FL 33612-3805. E-mail: dhaiduve@hsc.usf.edu.

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A service animal and a therapy animal serve 2 different functions. Therapy animals are defined in the Standards of Practice for Animal Assisted Activities and Animal Assisted Therapy as “personal pets that provide supervised, goal-directed intervention to individuals in hospitals, nursing homes, special-population schools, and other treatment facilities.”⁵ As with service animals, dogs are probably the most commonly chosen animals for pet therapy.⁶ Therapy dogs must be trained in obedience and must be able to respond to commands given by the handler to provide controlled interactions between the dog and the patients. The handler must be trained in skills and concepts of dog management and understand how the dog can be utilized in a therapeutic role.

Therapy dogs are used to stimulate cognitive functions and communication, increase movement, increase self-esteem and motivation, and increase participation in treatment. The ADA has no regulations regarding therapy animals. Several organizations are involved with using pet therapy in hospitals, nursing homes, and other health care facilities. One such organization is the “Furry Friends Foundation.” This organization is made up of volunteers that bring their pets to health care facilities to improve the quality of life of the patients.⁷ Before the animal is allowed to participate in the program, the organization requires that these animals pass both a physical and behavioral evaluation.⁷

Visitation animals allow patients to spend time with pets in a designated area of the facility. The animal visitation program at SCVMC is a cooperative program between the hospital’s therapeutic recreation division and the “Furry Friends Foundation.” These animals have numerous restrictions within the health care facility. SCVMC only allows visitation animals in the day rooms of the facility. The visitation animals are only used for entertainment and recreational therapy for the patients. Classifying the dogs in this way has allowed the development of policies and guidelines that can be utilized by facilities involved with patient-dog programs.

BENEFITS OF ANIMALS IN THE HEALTH CARE SETTING

Animals are beginning to be used in health care settings to improve the well-being of patients. Many long-term care facilities, such as nursing homes and assisted-living facilities, are also adopting these programs. Animals are being utilized in health care settings for pet visitation and pet therapy programs. These programs are used to increase patient responsiveness and communication. It has been documented

that interactions with animals positively contributes to the patients overall health and happiness.⁸

Carmack and Fila’s (1989) study (as cited in Jorgenson 1997) found that these programs not only benefit the patients but also the staff.⁹ Nurses felt that the experience was positive and that it allowed them to spend more time with the patients. According to the study, the nurses also reported that it helped improve the nurse-patient relationship and reduced their own stress level.¹⁰

DISADVANTAGES OF ANIMALS IN THE HEALTH CARE SETTING

Few studies have been conducted regarding the negative impact of bringing animals into the health care setting. The majority of the literature that has been published regarding animals in a health care setting has involved the positive aspects. Some studies have examined the potential risks and disadvantages associated with animal use in a health care setting.⁶ These include patient phobias, allergies, bites, and the potential risks for zoonoses.^{8,11} Other detrimental aspects includes the risks of animal-caused injuries, such as scratches or other trauma that can occur and affect infection control and risk management.

Allergies can occur in both the patients and staff in the health care facilities. Individuals may be allergic to the saliva, dander, or excretions of the animals.⁴ The coordinators of these animal programs need to be aware of the potential allergies and which patients are sensitive. Appropriate action should be taken (ie, grooming and bathing the animal) before arrival at the health care facility to minimize allergic reactions in those susceptible.¹²

Although bites are a potential for concern when working with animals, they do not usually pose a major threat. One potential concern after an animal bite is the possibility of the transmission of the rabies virus (a rhabdovirus of the genus *Lyssavirus*), a disease that is almost invariably fatal without appropriate treatment.¹³ An immune globulin is available as postexposure prophylaxis but must be given as soon as possible after the animal bite.¹³ According to Hoff et al,¹⁴ most animal bites only produce minor injury. However, infection of the wound with numerous types of bacteria is a potential complication.¹⁴ Of particular concern is the potential for a high mortality rate from an infected animal bite among the immunocompromised population.¹⁴

A zoonosis refers to an infectious disease that can be transmitted from animals to humans under normal circumstances.¹³ There are more than 200 zoonotic diseases.¹⁵ For example, tinea, a fungal infection of the skin, can be spread from dogs or cats to humans. This

infection is caused by species of *Microsporium* and *Trichophyton* and also by *Epidermophyton floccosum*.¹⁵

Those at high risk of contracting a zoonosis include elderly adults, pregnant women, young children, and immunocompromised individuals. Pregnant women are extremely susceptible to certain zoonotic infections, one of which is caused by *Toxoplasma gondii*. If the woman becomes infected, the organism may cross the placenta and infect the fetus. This may have devastating effects on the unborn child.¹⁶

According to one group of researchers, children seem to be at higher risk for animal-related illnesses because of a combination of immunologic reasons and behavioral factors.¹⁷ For example, children are likely to forget to wash their hands after contact with the animal. This could potentially spread a zoonotic disease. Infants, because of their naïve immune systems, are also very susceptible to zoonotic diseases. In Japan, it was demonstrated that household dogs were able to pass *Salmonella* to an infant on multiple occasions.¹⁸

Immunocompromised individuals must be careful when in contact with animals because they are more susceptible to certain agents, such as *Salmonella* species, *Campylobacter* species, *Giardia lamblia*, and many others.¹⁹ *Campylobacter* species can be passed from infected puppies and kittens to susceptible individuals through contact. Animals that have diarrhea are particularly important in the transmission of *Campylobacter* species. Pets with diarrhea can be treated with erythromycin to rid the animal of the infection.¹³ Domestic animals, including dogs, can also carry strains of other enteric pathogens that are pathogenic to humans.¹⁷

Although zoonotic diseases can be passed by many different animals, dogs are the main concern in a health care setting. However, according to a survey performed by Grant and Olsen, dogs were viewed as having the lowest risk of transmitting a disease to humans by both physicians and veterinarians.¹⁹

There are many ways to reduce the risk of transmission of a zoonotic disease. Implementing effective hygienic measures to prevent transmission (such as handwashing) is a key way to avoid the transmission of a zoonotic disease. Early detection of a zoonotic disease is essential in preventing transmission of the agent to humans, demonstrating the importance of regular evaluation by a veterinarian.¹⁵

According to Khan and Farrag, animals can become carriers (or vectors) of potentially infectious human pathogens and may be responsible for cross infection.¹¹ Therefore, "animals should not be allowed to visit with patients who are infected or colonized with tuberculosis, *Salmonella*, *Campylobacter*, *Shigella*, *Streptococcus* group A, methicillin-resistant *Staphylococcus aureus* (MRSA), dermatophytes, *Giardia*, or

amebiasis."¹¹ A list of potential bacterial, viral, parasitic, and fungal disease agents that can be transmitted from dogs to humans are listed in Table 1. With careful planning, risk of transmission of zoonotic diseases and cross infection can be minimized.

POLICIES

Therapy dogs

Policies regarding therapy dogs were developed and implemented at SCVMC. These policies are listed below:

1. The handler must successfully complete training that meets the "Minimum Standards for Training Service Dogs" set by Assistance Dogs International, Inc.²⁰
2. The therapy dog must be supervised by the handler or left in a secure and controlled environment.
3. The use of a therapy dog with a specific patient requires a written order from the patient's physician.
4. The therapy dog is utilized only with patient/family permission and based on a therapist's evaluation of the patient's needs, as well as the patient's physical and mental ability to use the dog appropriately.
5. The therapy dog is permitted or excluded from the areas listed in Table 2 and Table 3, respectively.
6. The handler must use appropriate hand hygiene between patients.
7. The therapy dog and handler should enter the hospital and go directly to the area in which therapy is to be delivered. When the therapy is completed, the therapy dog and handler should directly exit areas in which patients are housed or circulate.
8. The Therapy Dog Program is a cooperative venture between selected SCVMC divisions (eg, therapy services, geriatrics clinic) and programs such as Canine Companions for Independence (CCI). Each SCVMC division maintains the right to terminate the program if needed.
9. The dog's health is cleared as follows:
 - (a) Physical exams: The dog's health must be evaluated by a veterinarian on an annual basis. The veterinarian must provide proof of the physical exam to SCVMC. The handler is responsible for ensuring that the physical exams are current.
 - (b) Vaccinations: The handler is responsible for documented proof that all vaccines are current.
 - (c) Fecal exams: The handler must provide documented proof to SCVMC that the dog has had an annual fecal exam. If the test is positive, the dog will not be permitted to visit the hospital and must be cleared by the veterinarian before any future visits are allowed. Fecal exams include the test for parasites (*Giardia*, *Coccidia*, roundworm,

Table I. Zoonoses transmitted by dogs

	Agent	Mode of transmission
Bacterial disease		
Brucellosis	<i>Brucella canis</i>	Contact with infected animals especially aborted fetuses, fluids or membranes, or urine. Possibly airborne.*
Campylobacteriosis	<i>Campylobacter jejuni, C coli.</i>	Fecal-oral route, through contamination of food or water, or by direct contact with infected fecal material. Infected children may transmit infection to puppies or kittens, which may then expose other children.*
Group A Streptococcal diseases [†]	Group A <i>Streptococcus</i> species	Indirect. Animal acts as a carrier. [‡]
Leptospirosis [§]	<i>Leptospira interrogans</i>	Handling affected animals, contaminating hands, or abrasions with urine or aerosol exposure during cage cleaning are most common.*
Lyme disease	<i>Borrelia burgdorferi, B garinii, and B afzelii</i>	Indirect. Tick is brought into contact with humans on dogs.*
Methicillin-resistant <i>S aureus</i> (MRSA) [†]	<i>Staphylococcus aureus</i>	Indirect. Animal acts as a carrier. [‡]
Rocky Mountain Spotted Fever	<i>Rickettsia rickettsii</i>	Indirect. Tick is brought into contact with humans on dogs.*
Salmonellosis	Salmonella	Fecal-oral route. Ingestion of organisms in food derived from infected animals or contaminated by feces of an infected animal. [§]
Staphylococcal diseases [†]	<i>Staphylococcus</i> species	Dog bite. [†]
Streptococcal diseases [§]	<i>Streptococcus</i> species	Dog bite. [†]
Tularemia	<i>Francisella tularensis</i>	From bite or scratch of a dog whose mouth or paw is contaminated by eating an infected animal. [§]
Viral disease		
Rabies [§] (from a dog bite)	Rhadovirus genus <i>Lyssavirus</i>	Saliva containing the rabies virus is introduced via a bite or scratch or into a fresh break in skin or intact mucous membranes. [§]
Parasitic diseases		
Cryptosporidiosis	<i>Cryptosporidium parvum</i> [§]	Fecal-oral transmission from animals to humans.*
Giardiasis	<i>Giardia lamblia</i> [§]	Fecal-oral transmission from animals to humans.*
Hookworm	<i>Ancylostomiasis canis</i>	Penetration of intact skin by larvae deposited in soil or sand via dog feces.*
Scabies	<i>Sarcoptes scabiei</i> (mite)	Indirect. Animal acts a vector.*
Tapeworm (flea)	<i>Dipylidium caninum</i>	Ingestion of the flea that contain larvae.
Toxocarasis (roundworm)	<i>Toxocara canis</i>	Ingestion of ova from contaminated materials. [†]
Fungal disease		
Ringworm [†]	<i>Microsporum canis, Microsporum gypseum</i>	Direct or indirect contact and aerosol. [†]

*Information from Linville 2004.²⁴†Information from Guay 2001.¹⁵‡Information from Brodie et al 2002.⁶§Information from Heyman.¹³||Information from Roberts et al 2000.¹⁶

tapeworm, whipworm) and bacteria (Salmonellae, Campylobacter).

- (d) Cleanliness: The dog must be clean and free from any fleas or skin problems, and the handler is responsible for inspecting the dog before entering the hospital. If the dog does not pass the inspection, the dog will not be permitted to enter the hospital or visit with patients. Additionally, the handler must groom the dog and trim the nails.
- (e) Social behavior: The therapy dog is previewed and handled by a qualified veterinarian and trainer to assure adequate human socialization. Antisocial behavior by the dog, provoked or not, during any visit will immediately disqualify the dog from the program.
- (f) Illness: Upon any sign of illness (eg, diarrhea, vomiting, running nose or eyes, skin lesions, excessive scratching/chewing), the dog will not

be allowed to enter the hospital or work with patients and must be cleared of such conditions before returning.

10. The therapy dog must carry identification, service pack, or other clearly visible sign that identifies it as a therapy animal.

Service animals

Policies for service animals cannot, by law, be readily put into place. "No pets allowed" policies do not apply to service animals. Any facility that serves the public, including hospitals, must allow service dogs into the facility.³ A business can inquire verbally if the dog is a service animal, but the ADA prohibits public accommodations from requiring "certification" or proof of an animal's training or of a person's disability.³ There is also no legal requirement that a service animal wear special equipment or tags. Numerous states have

Table 2. Areas in a health care facility at which therapy dogs are permitted

Permitted
Individual patient rooms
Therapy gyms
Pediatric play areas
Ambulatory clinics
Skilled nursing facilities (with approval)
Office areas
Common public areas

Table 3. Areas at Santa Clara Valley Medical at which therapy dogs are excluded

Excluded
Excluded in multibed rooms if any other patients therein or excluded in single-bed rooms if patient's physician objects on grounds of allergy, fear, or other medical or psychologic problems.
Excluded in rooms of patients on isolation.
Excluded in the intensive care units, with the exception of the rehabilitation trauma center and the burn center.
Excluded in any area in which patient wounds are not dressed.

“White Cane Laws.”²¹ These laws allow the police to be called if a service animal is prohibited from entering an establishment.²¹ The law also allows the filing of criminal charges against an establishment if admission into the establishment was denied.²¹

Even though service animals are not normally restricted, there are some exceptions. A business owner may lawfully prohibit a service animal from entering the facility if the animal is a direct threat to the occupants of the facility or if the animal is being disruptive.³ “Allergies or fears of animals are not generally valid reasons for denying service animals’ access or refusing service.”³ Duncan^{4(p.172)} states that “the ADA requires that all places of public accommodation, including health care facilities, modify their policies and practices to permit the use of a service animal.” However, there are certain situations that must be taken into consideration. If allowing the service animal requires “alteration of the nature of the business,” the service animal may be excluded from that facility or area.²² For instance, in health care facilities, there are many ill people, including those who are immunocompromised. Therefore, restrictions may be placed on service animals entering particular areas of the facility.¹²

The dog owner must assure that the service animal is free of disease. The animal must have undergone training and be current with all veterinary visits, including physical exams, stool cultures, and vaccinations. The animal must also have a temperament conducive to working in a health care setting. The

Table 4. Santa Clara Valley Medical Center policy components

Requirements*	Service dogs	Therapy dogs	Visitation animals
Federal/State law	Yes	No	No
Hospital policy	Yes	Yes	Yes
Trained handler	Yes	Yes	No
Required training	Yes	Yes	No
Physical examination	Yes	Yes	Yes
Vaccination	Yes	Yes	Yes
Hospital access	Yes	Restrictions, see policy	Restricted to day rooms
Free of disease-stool culture	Yes	Yes	Yes
Assurance of social ability	Yes	Yes	Yes
Verification requirements	Cannot require [†]	Yes	Yes
Handler hygiene emphasis	Yes	Yes	Yes
Specific department coordination	No	Yes	Yes

*See policies in text.

[†]The ADA prohibits public accommodations from requiring “certification” or proof of an animal’s training, or proof of a person’s disability, for the purposes of access. There is no legal requirement that a service animal wear special equipment or tags.

owner must also be trained to appropriately manage the animal.

Visitation animals

The policies regarding visitation animals also require that the animals undergo a physical exam by a veterinarian. The handler must provide proof that the animal has current vaccinations, a negative stool culture, and a physical exam. The animal must also be friendly, and the handler must be properly trained. These animals have considerable restrictions within the health care facility. At SCVMC, visitation animals are normally only permitted in the day rooms of the health care facility and are used only for entertainment.

A summary comparison of policy components for the 3 categories of dogs can be found in Table 4. It is important to note that handlers of all 3 of the categories of animals must be conscientious of hygiene while handling the animals. Handlers must be properly trained and competent to control the animals. Such standards are necessary to minimize risks to client and staff populations. It is also important to note that such policies must be communicated to all hospital staff involved in these programs at the health care facility.

DISCUSSION

The benefits of animal involvement in the health care setting are greater than the risks. Animals can perform useful functions in hospital and clinical settings, and risks can be minimized while complying with legal requirements. This was apparent to the infection control department at SCVMC when policy

changes were undertaken to delineate the different animal programs within its facility. The changes in policy were a response to concerns about pet-assisted therapy terminology merging with service dogs (dogs for the blind, deaf, wheelchair-bound, and others) terminology and applying it uniformly, allowing pet-assisted therapy animals (primarily dogs) the same liberties as service dogs. This ambiguity was of concern to infection control because it was a possible impingement on the health and safety of the patients and employees.

Because the Americans with Disabilities Act of 1990, Public Law 101-336 (42 USC Sec. 12102), and the California Civil Code, section 54-55.1, already set the standards for the use of service dogs and their handlers in the hospital setting, and there were no set provisions for pet-assisted therapy animals, the focus for changing the policy was primarily placed on pet therapy animals to include therapy dogs and visitation animals. The basics for the pet-assisted therapy program policy changes were clarified in discussions involving pertinent individuals, including those in infection control, therapy services and administration. These discussions led to changes in the pet therapy policies that were acceptable to all. Although the dog therapy programs occurring in the facility had no known incidences of communicated disease or safety issues, the policy needed to emphasize differentiating, defining, and surveying the 3 animal programs within the facility, with greater regulation of pet-assisted therapy animals. In part, this put greater restriction on locations at which pet-assisted therapy could occur in the hospital, restricting pet therapy animals from specific parts of the hospital to include ICUs. Changes also stressed animal health and hygiene. The policy also included the requirement for hand hygiene for employees and patients interacting with the animals.

Today, much of the success of the SCVMC pet therapy program's policy implementation is due to the strong involvement of professional handlers (therapists). However, it is strictly a volunteer contribution to the facility. The handlers assure the quality of the participating therapy dogs that contributes to the program's success. The handlers and their 5 pet therapy dogs provide goal-directed interventions to approximately 30 patients daily in the hospital and clinics. SCVMC's large rehabilitation center, burn center, and geriatric clinic benefit greatly from the use of therapy dogs. Therapy dogs have many uses in patient therapy, such as improving motivation and participation, and increasing purposeful movements (eg, grooming a dog can improve arm range of motion and strength). The handlers continuously demonstrate the use of the therapy dog to the patient, and the therapy dogs retrieve objects for patients and help with

purposeful range of motion movements by distracting from pain caused during movements, thus reducing the need for analgesics, among many other interventions. This is especially important in therapy for burned children with contractures and constrictions. The handlers educate patients because the patients may be candidates for utilizing therapy dogs in the future. It is important to reemphasize that handlers of non-service animals must be properly trained, but, at this time, there are no specific requirements.

The new policy was implemented with satisfaction of both the patients and the employees. The attention given to delineation of pet therapy programs appeared to have improved the legitimacy of therapy dogs within the facility. The uniqueness of the entire process was enhanced partly because of the support from infection control appreciation of a pet therapy program in the facility and willingness to assist therapy services to adapt a policy.

IMPLICATIONS

With careful planning and well-constructed policy guidelines, SCVMC has successfully incorporated well-trained and healthy dogs to perform useful functions in specific therapy programs. Because of the success with therapy dogs in the hospital setting, some patients have obtained their own dogs to assist with activities of daily living and provide constant accepting companionship. We believe if guidelines are well-defined and followed, dogs can perform useful functions in hospital settings. It is important to point out that the revised JCAHO guidelines effective in 2005 are now directly applicable to this issue. Standard 1C.4.10 requires organizations to "Plan and effectively implement infection prevention and control processes and strategies to meet identified goals." To accomplish this, core interventions must be done throughout all organizations, with one directly applying to animals as follows: reduction of risks associated with animals brought into the hospital.²³ Thus, this intervention applies to therapy animals and pets brought by individuals receiving care.

The psychological benefits of visitation animal programs are also a successful extension of the therapy programs. Other health care facilities can use these policies as a guide to develop similar strategies. With careful planning and implementation of these policies, any potentially negative aspects of bringing animals into health care settings can be substantially diminished. Other health care facilities may benefit from "letting the dogs out" to show how they can earn their reputation as man's best friend.

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