



# The Use of Dogs in Hospital Settings

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## About This Document

*HABRI Central Briefs are peer-reviewed summaries of particular applications and issues within the field of human-animal interaction. Each Brief presents an overview of the subject matter, assesses the current state of research, then highlights unresolved questions or issues. Key resources are identified for further reading.*

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According to the Centers for Disease Control and Prevention (2015), over 35 million people are hospitalized in the U.S. every year. Many hospitals across the country have incorporated animal programs, such as “animal-assisted therapy” (AAT), “animal-assisted activities” (AAA), “animal-assisted interactions or interventions” (AAI), resident animals, or pet visitation to give patients the opportunity to interact safely with dogs and to make the hospital environment more comfortable and less stressful.

However, there is a lack of information regarding exactly how many hospitals offer these services and how they operate, including what areas or units of the hospital the therapy dogs are allowed to visit, how many therapy dogs visit the hospitals, what dog breeds are permitted, how often visits occur and for how long, and what other species of animals are allowed to participate (Chur-Hansen et al., 2014). There may be a variety of reasons why a hospital chooses to restrict therapy dogs in their facility, such as allergies, immunocompromised patients, and fear of increasing infectious disease rates, but the details of hospital inclusion and exclusion criteria for animals have yet to be systematically investigated.

This article gives an overview of the practice of therapy dogs in hospitals, reviews a selection of recent research findings in this setting and finally, identifies gaps or issues to be further addressed regarding research and practice in this area.

## Overview

In American Humane Association’s experience of managing one of the United States’ largest therapy dog program, as well as discussions with dozens of hospitals across the country regarding its Canines and Childhood Cancer research study, it is evident that there is no standard protocol for operating a therapy dog program in a hospital. However, most hospitals have at their core, a similar model of operation for their program. Most hospitals limit visiting animals to domestic companion animals, specifically canines, due to higher risks of infection and injury from other types of species (Lefebvre et al., 2008).

Typically, volunteer animal-handler teams at hospitals become certified based on their responses to temperament tests (Serpell et al., 2010), which are generally conducted through three main national therapy animal registries –

Pet Partners, Alliance of Therapy Dogs (formerly Therapy Dogs Inc.), and Therapy Dogs International (Marcus, 2012). In addition to the requirements of their therapy dog registries, hospitals generally require these volunteers to complete a volunteer orientation that includes information regarding HIPAA policies and other specialized knowledge pertinent to healthcare, such as understanding hospital emergency code announcements and recognizing signs that indicate patients are on contact precautions. Some hospitals may also require therapy dog handlers to receive annual flu shots and commit to a minimum number of volunteer hours per month.

In terms of service delivery, animal-handler teams may perform AAA, which are informal visits with patients, and/or AAT, which are goal-directed interventions conducted under the supervision of a clinician such as a physical therapist, speech therapist or child-life specialist (Fine, 2015). For example, in physical therapy sessions, the therapy dog may be incorporated into activities such as the patient throwing a ball to the dog to work on motor skills, or walking the dog to work on ambulation. Hospital settings are distinctive environments for animal-handler teams and have a variety of conditions that teams need to be properly trained and prepared for. For example, there are many physical conditions, such as strange medicinal scents, navigating medical equipment like IVs, walking on slippery floors, and riding in elevators. Additionally, dogs need to be prepared to get up and sit on a chair or lie on the patient's bed (with appropriate sanitary precaution) and remain there quietly, so the patient can reach the dog. And finally, the handler needs to be conscientious of the health precautions associated with visiting in a hospital setting to ensure the safety of the patient as well as themselves and their animal, such as avoiding entering patient rooms that have contact precautions.

Although the basic model is somewhat similar across hospitals, the existing literature regarding animals in healthcare settings has shown there to be "substantial variation in practice" (Murthy et al., 2015, p. 7). One such area where this is particularly evident is in regard to what units are appropriate for therapy dog visitation. For example, while one hospital may only allow therapy dogs to visit one evening a week in one specified room in a group setting where patients come to the dogs, other hospitals allow therapy dog visits in nearly every unit/room of the hospital – from Emergency Rooms to Intensive Care Units - every day of the week. While some hospitals

restrict therapy dog visits during sterile procedures, such as accessing a cancer patient's port (a small disc made of plastic or metal that sits just under the skin in which a soft thin catheter connects the port to a large vein, allowing for medication to be given and blood to be drawn from) while others welcome therapy dogs at this time to distract the patient during this often stressful and painful procedure (Ruehrdanz et al., 2013).

It appears most hospitals who have existing therapy dog programs desire more therapy dog volunteers so that the units, and therefore patients, may receive even more regular visits. Some hospitals also allow families to bring their personal pets to visit their hospitalized family member (McKinney, 2014; Murthy, 2015), so it is imperative that animal/handler therapy teams are prepared to safely encounter other dogs. The Mayo Clinic in Rochester, Minnesota even has an employee with a therapy dog "on staff" – Dr. Jack, a Miniature Pinscher, performs daily visits to patients who request a visit from him (Creagan, 2015).

## Risks of Therapy Dogs in Hospitals

Incorporating therapy dogs into therapeutic interventions is a complex undertaking and requires the consideration of myriad topics in order to ensure safe interactions (Jenkins et al., 2012). The risks and benefits of AAIs must be clearly understood in order for the field to advance safely and effectively (Chur-Hansen et al., 2014). Indeed, the fact that AAIs are conducted daily in healthcare settings across the country with little evidence-based research to inform or support them, underscores the importance of practice safety to ensure the field has the opportunity to conduct the research needed. Guidelines and standards regarding the practice of AAT and human-animal interaction (HAI) have been published by several agencies, including Pet Partners (formerly Delta Society) (1996), the International Association of Human- Animal Interaction Organizations (1998), Centers for Disease Control and Prevention (Sehulster & Chinn, 2003), American Journal of Infection Control (Lefebvre et al., 2008), the American Veterinary Medical Association (2011), and Infection Control & Hospital Epidemiology (Murthy et al., 2015). In particular, Lefebvre et al. (2008) introduced extensive guidelines for introducing animals into health care facilities under the auspices of infection control and risk management. Amongst the guidelines that were included

were recommendations for animal handlers to have proper training prior to visiting health care facilities and appropriate management throughout their involvement in these programs.

One of the risks of AAIs in hospital settings is the possible transmission of zoonotic (animal to human) disease, especially for those people who are immunocompromised (Murthy et al., 2015). However, in a 2006 study of existing literature on zoonoses by Hemsworth and Pizer (p. 126), it was concluded that "immuno-compromised people are not at any additional risk by interacting with pets than they would be by interacting with other people and the environment." Precautionary measures, such as veterinary screening of therapy dogs and human hand-washing after contact with a therapy dog, will aid in preventing transmission of most zoonoses (Friedmann & Son, 2009).

Additionally, a pilot study conducted by Caprilli and Messeri (2006) found no increase in hospital infection rates with the commencement of a therapy dog program. Similarly, a 2008 study by Yamauchi and Pipkin found no evidence of infections or adverse reactions in 4,000 patients exposed to therapy dogs over a period of six years. Finally, Snipelisky & Burton (2014) completed a comprehensive literature review on canines in inpatient hospital settings and found that overall, the risks of these types of interactions, including infection, were very minimal and that they should not prohibit their implementation. Included in their review was a 2012 study (Urbanski & Lazenby) which found that over the course of more than 2,400 animal-assisted therapy sessions spanning five years, there was found to be no increases in infection transmission from these canine visits.

Although other risks are plausible in AAIs, such as animal bites and falls caused by the dog, there is little evidence that AAIs are dangerous or have adverse effects (Walter-Toews, 1993). Risks can be minimized through careful selection of animals and adherence to informed policies and procedures (Brodie et al., 2002; DiSalvo et al., 2006). There is also a role for veterinarians to properly communicate to animal owners and handlers about the risks related to zoonotic diseases, how best to minimize these risks, how to identify signs of disease in their pets, best practices for preventative health in pets, and how to safely interact with pets (Stull & Stevenson, 2015; Marsh & Babcock, 2015).

It is important to note that not all people like dogs. Some people may be allergic to dogs, have a phobia of dogs, or simply not want to interact with a dog (Mallon et al., 2010) and therefore would not be an appropriate participant for AAIs. Cultural considerations must also be taken into account regarding AAIs. People may have religious or other cultural reasons for not wanting to interact with animals and it is important to bear in mind that the concept of animals as a therapeutic intervention is not universally accepted (Chur-Hansen et al., 2014). In general, very little is known about how cultural backgrounds may impact therapeutic outcomes in AAIs and research is needed in order to ensure that AAIs are culturally relevant, appropriate, and beneficial (Melson & Fine, 2010). In practice, handlers are trained to mitigate these risks by asking for permission or an invitation for the therapy dog to approach before interacting with any potential clients.

Likewise, there are risks to the therapy dogs themselves when participating in AAIs. It is important to recognize that AAIs involve living, breathing creatures (Mallon et al., 2010). It is incumbent upon handlers as well as the hospitals where AAIs take place to ensure the therapy dogs' safety, health, and well-being. These responsibilities include proper veterinary care, nutrition, exercise, and positive training. Therapy dogs should always be supervised during sessions and allowed proper rest and recuperation after an intervention (Chandler, 2005). Even the most seasoned therapy dog should be limited to a maximum of a one-hour visit to reduce the risks of an adverse event due to animal fatigue (Murthy et al., 2015). Studies of AAIs should include the perspective of the therapy dog in terms of the effects of the intervention in order to ensure a mutually beneficial interaction (Serpell et al., 2010) and clear, ethical standards for the use of therapy dogs are needed in the field (Chandler, 2005).

For hospitals considering animal visitation programs, the recent publication by Murthy et al. (2015) serves as a valuable resource. This comprehensive guide from The Society for Healthcare Epidemiology of America (SHEA) includes a summary of written policies and procedures from more than 20 health care settings who have pet visitation policies in place. This guide outlines the best practices for ways in which to mitigate risks and prevent the transmission of zoonotic diseases, appropriate management of animal programming including legal considerations, and how best to develop comprehensive

policies and procedures related to these types of programs (Murthy et al. 2015).

## Benefits of Therapy Dogs in Hospitals

Research studies have demonstrated promising evidence of numerous benefits of incorporating animals into therapeutic interventions. A meta-analysis conducted by Nimer and Lundahl (2007) found AAIs were associated with improved outcomes in four areas, one of which was medical difficulties. Similarly, in their systematic review of randomized controlled trials, Kamioka et al. (2014), concluded that AAIs may be effective in improving the quality of life for cancer patients (and others with chronic or terminal illnesses) and treating impaired circulatory functioning. Additionally, Kamioka et al. (2014) indicated that AAIs could also improve self-reported outcomes among hospital patients with a variety of clinical conditions.

One of the primary impacts that AAIs can provide is a calming effect to patients. In stressful settings such as hospitals, the mere presence of a friendly animal can have a calming effect (Walsh, 2009b). In addition to providing benefits to patients, therapy dogs can reduce stress and anxiety for friends and family who accompany patients to the healthcare facility (Marcus et al., 2012).

In terms of physical pain relief, a study by Braun et al., (2009) found that pain reduction was four times greater in children who received AAIs when compared to those who relaxed quietly for 15 minutes. A study by Urbanski and Lazenby (2012) found that interacting with therapy dogs helped to decrease fear, provide distraction, increase pleasure, and improve quality of life among pediatric oncology patients. From a biological standpoint, AAIs have been found to decrease blood pressure and heart rate across a wide range of studies (Shiloh et al., 2003). Additionally, Calcaterra et al. (2015), found that AAT had a significant impact on children undergoing surgical procedures, including inducing "neurological and cardiovascular responses" (p. 10), facilitating "rapid recovery of vigilance and activity after anesthesia" (p. 10), and modifying the child's pain perception. Moreover, in a retrospective study, Havey et al. (2014) found that adults undergoing total joint replacement surgery used less pain medication post-surgery when they had their operation performed in

a hospital with an AAT program and received at least one post-operative AAT visit.

Qualitative findings from the needs assessment phase of American Humane Association's Canines and Childhood Cancer Study suggest that therapy dogs often provide hospitalized childhood cancer patients and families with relaxation; unconditional support; joy; distraction from treatment and/or painful procedures; normalcy in the hospital; future orientation; and a way to interact together around a centralized activity (Jenkins et al., 2013).

Multiple studies examining therapy dogs' impacts on hospitalized children have discovered that the dogs help make the hospital feel more "like home," in part because dogs are familiar and tend to characterize children's typical environments (Bardill & Hutchinson, 1997, p. 20; Wu et al., 2002). Wu and colleagues (2002) found that pediatric oncology patients felt that visits from a therapy dog helped them stay motivated to be optimistic and to get better. Similarly, in a recent study examining the reactions of pediatric patients, their families, and medical staff to the introduction and incorporation of AAAs into a Child's Hospital in Italy, Caprilli and Messeri (2006) found that children reported their mood to be pleasurable due to the therapy dog's presence.

In Snipeliski & Burton's (2014) comprehensive review of canines in inpatient settings, they found that often the benefits of these types of interventions can come from the motivational aspect – giving patients something to look forward to and a change in routine. This motivation can help patients to focus more on a pleasurable activity and less on the stressors of being in a hospital setting. Because pets, including dogs, generally give individuals feelings of positivity, it can help to improve individuals' moods and reduce stress. They also found throughout the literature that there were significant improvements in patients' heart rate, blood pressure, catecholamine response and general well-being. For these reasons, they recommended that canine-assisted therapy be considered in both pediatric populations and in individuals undergoing lengthy periods of hospitalization (Snipeliski & Burton, 2014).

In examining the effects that animals have on adult inpatient populations, results have been mixed. A 2003 (Barker et al.) study investigated the effects of using an aquarium as a pre-treatment condition for mental health patients about to undergo electroconvulsive shock therapy

(ECT). The results showed no significant differences in patient self-reported depression, anxiety, fear, frustration, heart rate or blood pressure when the patient sat in a room with an aquarium compared to when they sat in a room without one. However, there was a trend towards significance in the reduction of anxiety when patients spent approximately 20 minutes in a room with an aquarium prior to their ECT treatment (Barker et al., 2013).

Similarly, a 1998 study (Barker & Dawson), comparing the effects of a 30-minute group AAT interaction with a regularly scheduled therapeutic recreation session at a psychiatric inpatient facility failed to find significant differences between the two groups. Yet, it was found that patients in the AAT interaction group had significant reductions in anxiety on their post-session measures (Barker & Dawson, 1998). In a randomized study, Marr et al. (2000) examined the effects of a weekly AAT group in which adult psychiatric patients were able to interact with dogs, rabbits, ferrets and guinea pigs in a classroom setting in comparison to a rehabilitative classroom setting. Over the course of the four-week study, it was found that those in the AAT group were significantly more prosocial and exhibited more smiles and pleasure in their activities (Marr et al., 2000). While these studies had mixed findings, they all suggest that adult psychiatric populations may have numerous benefits from AAT programs, including decreased anxiety and improved social functioning.

## State of Current Research

A recent systematic review of AAI research by Borrego et al. (2014) found that progress in developing an empirical base for AAIs has remained slow over the past two decades. This lack of rigorous research is not unique to hospital settings, but is a widely expressed critique of the field of AAIs as a whole (Griffin et al., 2011). Common methodological issues identified in past AAI clinical trials include a small sample size, lack of a control group, lack of random sampling, and lack of a standardized protocol (Wilson & Barker, 2003). Recently, Chur-Hansen et al. (2014) recently reviewed nine studies of AAIs in children's hospitals and found each of them to have methodological challenges. Similarly, Maujean et al. (2015) examined seven studies and found that while the benefits of AAIs were found to be wide ranging, there remained a lack of well-designed randomized control trials in the field to

more definitely define the types of AAIs that may be best suited for selected populations.

Although progress is being made to address these design issues (McCune et al., 2015), other methodological issues which are unique to AAIs continue to pervade. These issues include the opinion that AAIs cannot truly be measured by a randomized controlled trial since one cannot be blinded to the fact that s/he is interacting with a dog (Chur-Hansen et al., 2014). Also, for those studies which demonstrate effects from interacting with a therapy dog, it remains a question of whether these effects are due to the dog, the handler, and/or the increased attention the patient receives (Chur-Hansen et al., 2014). Another critique of AAI research is the potential bias of researchers who are pet lovers already convinced of the benefits of interacting with animals and thus prone to spinning research results and/or not reporting negative or null outcomes (Herzog, 2015).

Overall, there is strong potential for AAIs to significantly contribute to human health and well-being, but more rigorous studies are necessary to confirm their merit and understand the elements that contribute to their effectiveness and/or ineffectiveness. Following is a brief summary of AAI research studies recently conducted in hospital settings. Many of these studies sought to address weaknesses identified in previous studies of AAIs and hospitalized patients.

### RECENT STUDIES

In a study of 76 adults hospitalized with advanced heart failure who were randomized into one of three groups (12-minute visit with a volunteer and therapy dog, 12-minute visit with a volunteer only, or usual care control group), it was detected that when compared to the volunteer-only and control group, the volunteer-dog group had significant improvements in cardiopulmonary pressures, neurohormone levels, and anxiety (Cole et al., 2007).

A 2007 study by Orlandi et al. compared two groups of patients receiving chemotherapy, with one group receiving a visit by a therapy dog during the chemotherapy session (AAA group) and the other serving as a control. Patients completed an anxiety/depression/somatic symptom questionnaire and had their arterial blood pressure, heart rate and arterial oxygen saturation recorded before and after the chemotherapy session. Researchers determined

that depression improved only in the AAA group, and that these patients also had increased oxygen saturation compared to decreased oxygen saturation in the control group.

Nepps et al. (2014) conducted a study of 218 patients hospitalized in a mental health unit to assess the effect of therapy dogs on patient ratings of depression, anxiety, pain and physiological measures of stress and discomfort (blood pressure, pulse, and salivary cortisol). Half of the patients participated in a one-hour AAA session and half participated in a one-hour stress management program. Measures were taken before and after treatment sessions. The study resulted in significant decreases in depression, anxiety, pain and pulse in the group who participated in the AAA session that were comparable to the decreases in the stress management group, indicating AAIs may be just as effective as traditional stress management programs.

Harper et al. (2014) conducted a randomized controlled trial of 72 patients who had undergone total joint arthroplasty. Patients in the treatment group received a 15-minute visit with a therapy dog before physical therapy, while those in the control group received standard of care. The researchers concluded that including AAIs in postoperative protocols resulted in substantial improvement in pain, as measured by the Visual Analog Scale (VAS) for pain, and consumer satisfaction scores when compared to the control group.

Lastly, a recent study by Barker et al. (2015) randomly assigned 40 children, aged 8-18 years who were newly hospitalized (within three days), to an AAI treatment group or an active control condition (jigsaw puzzle) and assessed their levels of pain and anxiety pre- and post- intervention. No significant differences within- or between-groups were found in either self-reported pain or anxiety were found. Notably, this study also collected information on patient medication (e.g., analgesics) and their likely confounding effects, and examined attachment as a potentially moderating variable.

## Areas for Future Investigation

This final section identifies selected areas within the topic of therapy dogs in hospitals that are in need of continued exploration, including animal welfare and new technologies in AAI measures.

### ANIMAL WELFARE

Although the number of AAI studies are increasing, there remains a lack of investigation regarding the impact of AAIs on the therapy dogs themselves (McCullough et al., 2015). Ng et al. (2015) found only a handful of AAI studies that incorporated measures to assess the effects on participating therapy animals.

Given this current lack of clarity, human-animal bond researchers must implement rigorous study designs that measure the effects on both the human and therapy animal participants. In order to be considered effective and humane modes of adjunctive treatment, AAIs should be mutually beneficial for both people and the therapy animals that provide this service (McCullough et al., 2015).

### TECHNOLOGY

Preliminary evidence suggests that animals can help improve human health; however, we do not have an understanding of the processes underlying these effects (Mills & Hall, 2014) and the mechanisms of AAIs remain poorly understood (Chur-Hansen et al., 2014). Research measures are needed to identify the specific mechanisms of AAIs that create therapeutic benefits, such as what processes occur during AAIs that make them effective or ineffective (Kazdin, 2011; Kruger & Serpell, 2010; Walsh, 2009a).

Encouragingly, recent technological developments in psychological, biomedical and social science hold promise to help uncover mechanisms which underlie the potential benefits of AAIs (McCune et al., 2015). One such technology, Functional Magnetic Resonance Imaging (fMRI) may allow us to examine the ways in which the brain reacts to different stimuli in both humans and animals (e.g., Stoeckel et al., 2014). The costs of genetic studies have become less expensive over time and have been used to examine gene-behavior links in companion animals.

Increasingly common in HAI research is the use of saliva to examine the stress hormone, cortisol. These cortisol studies have shown the reduction of stress in individuals after interacting with companion animals, such as cats and dogs (Allen et al., 2002; Kikusui et al., 2006; Polheber & Matchock, 2013). They are also being used in studies to examine the animals stress reaction in therapeutic situations, such as AAI visits in hospital settings (Ruehrdanz et al., 2013). Another hormone that has been

examined in HAI research and may become more widely used as technologies advance around the collection of it is oxytocin, an indicator of love or attachment. Preliminary studies have shown that oxytocin levels rise in both humans and animals during positive interactions (e.g., Odendaal & Meijne, 2003; Uvnäs-Moberg et al., 2011). As they become more affordable, advances in neuroimaging, genetic sequencing and hormone assays may help shed light on the chemical and neurological processes triggered by AAIs (McCune et al., 2015).

## Conclusion

In order to fully integrate AAIs into medical and mental health treatment, greater attention must be paid to research, theory, and practice of these interventions (Walsh, 2009a). Research must inform practice and practice must inform research. It remains to be determined how many hospitals offer AAT, how long they have been operating their program, why they chose to implement such a program, what benefits they feel it provides to their patients, which units these programs serve and why, the policies and procedures in place around each program, what types of animals they allow, the number of animals participating in these programs, the frequency of their visits, evaluation efforts in place, and comprehensive examinations of infection rates pre- and post- program implementation. Clearly, more research is needed to uncover the answers to these important questions, and with this knowledge, further studies can be better designed to accurately assess the impact of AAIs with hospitalized patients. In turn, a solid evidence base will help aid in the determination of best practices and the development of strategies for expanding AAI programs as merited.

## Key Resources

DiSalvo, H., Haiduven, D., Johnson, N., Reyes, V. V., Hench, C. P., Shaw, R., & Stevens, D. A. (2006). Who let the dogs out? Infection control did: Utility of dogs in health care settings and infection control aspects. *American Journal of Infection Control*, 34(5), 301-307.

*The Santa Clara Valley Medical Centre is a facility that has implemented programs bringing animals in to improve the health and quality of life of patients. The facility had three categories of dogs allowed: service dogs, therapy dogs, and pet visitation dogs. This article discusses the policy implications of having diverse animal types in the healthcare setting and acknowledges that by minimizing the risks and complying with legal requirements, the benefits of such animal programs can outweigh the risks.*

Snipelisky, D., & Burton, M. C. (2014). Canine-assisted therapy in the inpatient setting. *Southern Medical Journal*, 107(4), 265-273.

*This review considers published literature concerning canine-assisted therapy and its use, and reviews the safety considerations associated with such therapy. The review shows that canine-assisted therapy can be effective among patients with varied ages and medical problems.*

Murthy, R., Bearman, G., Brown, S., Bryant, K., Chinn, R., Hewlett, A., Glenn George, B., Goldstein, E. J. C., Holzmann-Pazgal, G., Rupp, M. E., Wiemken, T., Weese, J. S., Weber, D. J. (2015). Animals in healthcare facilities: recommendations to minimize potential risks. *Infection Control & Hospital Epidemiology*, 36(5), 495-516. doi: 10.1017/ice.2015.15

*While the prevalence of animals in hospitals and medical facilities has increased due to the benefits animals can provide, more research is needed regarding the risks associated with animal programs, including transmission of zoonotic pathogens. This study interprets literature regarding those risks, reviews policies related to these programs, summarizes a survey assessing those policies, and provides guidance to minimize the risks of animal presence in facilities.*

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