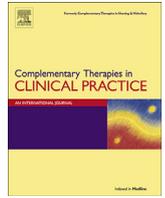




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The design of visitation facilities to engage patients with their own cats and dogs

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ABSTRACT

There are voluminous data acknowledging the validity of the animal/human bond. Pharmacologic, endocrinologic, immunologic, and psychologic studies have clearly documented the impact of the companion animal on the health and well-being of patients and families, especially in the medical setting. Our paper is, to our knowledge, the first study outlining the mechanics, engineering concepts, and background of providing the appropriate facility to connect the hospitalized patient with their companion animal. We have summarized the peer-reviewed research in this critical area.

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1. Introduction

1.1. Benefits of a hospital visit by a patient's pet

While traveling, many pet owners will frequently request information about the state of their pets from family members or pet sitters. The close bond that people have with their pets and the strong need for assurance of their well-being is evidenced by an increasing number of commercially available technologies to help pet owners track their pets' behavior at home or even connect with them through various audio or visual interfaces.

It is fair to assume that pet owners will also miss their pets during a period of hospitalization [1]; in particular, the emotional need to connect with a pet may be even stronger at a time of health concerns. Enabling the possibility of a visit from their own pet while hospitalized can provide significant emotional support, uplift in mood, and decrease feelings of loneliness or isolation. It can be argued that a pet's own demonstration of happiness can have a contagious effect on the owner. An indication of this is the popularity of Internet videos showing situations where pets react excitedly to seeing their owners returning after a period of separation (for example, soldiers returning home from active duty).

For a hospitalized child, the prospect of a visit from their own

pet can be a powerful incentive to persevere through hospital procedures and be something to look forward to during recovery.

2. Results and discussion

For those patients in rehabilitation who might need to exercise their arms or legs to recover from trauma or nerve damage, pets can also be a powerful stimulus for physical activity. Pets enjoy being petted, playing fetch, using interactive toys, or going for a walk. It is hard to ignore your purring cat for a stroke, a belly rub plead from your dog, giving a treat to a deserving pet, or the demand to throw a ball by your persistent Labrador Retriever.

It is well established that interaction with pets has positive impacts on the health and well-being of people [2]. Scientific research has shown that pet ownership impacts cardiovascular health and can significantly increase patient survival 1 year after coronary care unit discharge [3]. The presence of friendly dogs also substantially lowers anxiety in stressful situations [4–6] and lowers blood pressure [7]. Another study showed an increase in oxytocin levels (a hormone associated with positive emotional states) of dog owners after interacting with their dogs [8]. While pets are not expected to replace medical treatments, they can play an important role in supporting the recovery of hospitalized patients.

Several well-respected hospital organizations understand and embrace the benefits of Animal-Assisted Therapy (AAT) and have developed their own programs to provide these benefits to their hospitalized patients [9]. The successful implementation of these

Abbreviation: AAT, Animal-Assisted Therapy.

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Table 1
Likely scenarios for a pet visiting its hospitalized owner.

- The house pet might already be distressed by the absence of its owner during the hospitalization and sense the stress among the other members of the family.
- During transportation from the home to the hospital, pets may not know where they are going or what to expect. The cat or dog might associate travel with unpleasant past experiences (eg, a difficult visit to the veterinarian or a stay at a boarding kennel), which could create anxiety for the pet.
- Usually large dogs are too big for a crate, so they travel in the back section of the car, with a safety belt clicked through their harness. Those large dogs, or senior dogs with joint issues, could need ramps to get in and out of the car. The dog ramps are usually a couple of meters long (6 feet) and require ample space on the side or rear of the parked vehicle for normal use. Hence, a busy parking lot or garage with narrow parking spaces does not facilitate the loading and unloading of these pets.
- Small dogs and cats travel more safely in a pet carrier; however, carriers can be bulky, so the vehicle should have sufficient space to allow for maneuverability.
- Many households have more than one pet. In fact, 52% of households with cats in the US report owning more than one cat. It is possible that a hospitalized patient would expect to receive a visit from more than one pet.
- On arrival at the hospital and after the visit, pets will probably need to eliminate.
- House pets are usually not exposed to hospital environments. The entrance/reception areas of hospitals are busy, often hectic environments. Pets can be confused by the high numbers of strangers in an unfamiliar place. Pets could also be approached by unfamiliar people who are looking to alleviate their own stress, and may not understand that the pet is not a trained therapy animal.
- Not all pets are healthy themselves. Some senior pets have conditions like osteoarthritis, diabetes mellitus, hypothyroidism, or early renal failure. If these pets are receiving proper veterinary treatment, they could still visit their owner and provide the benefit of their company and moral support, but they might have special needs of their own.

Table 2
Considerations from the perspective of people in the hospital.

- The hospital needs to consider the health and safety of all patients.
- Some patients or staff might have a fear of animals, such as big dogs, or be unaccustomed to interacting with them.
- Some patients or staff might have allergies to pets.
- All visitations must be approved by the patient's doctor. Even when the patient is habituated to share a house with his or her pet, some patients might have diminished immune functions due to treatment of disease.
- All visiting pets must be suitably vaccinated, clean, and free from ectoparasites and zoonotic disease. They must be house trained and have acceptable social behavior with both people and other animals. Their nails should be reasonably maintained.
- When moving through the hospital, dogs should be kept on a leash, and cats should be in a carrier.
- Pet owners might feel particularly emotional and prefer to have some private time with their own pet.
- Excited pets can create noise and displays of energetic activity. This might not be welcomed by other patients in need of rest.
- There is a need for pet visitation process and rules, which will need to be communicated clearly to all those involved in the pet visitation process. An example is provided in [Appendix A](#).

Table 3
Considerations for the location of the pet visitation rooms.

- The pet visitation room should be away from areas of the hospital that require silence.
- The room should be easily and safely accessible from the parking space designated to cars transporting pets.
- The room should be easy to access by the hospitalized patients.
- The room should provide some privacy for those inside. If the room has windows to corridors or the outside, there should be an option to use curtains or blinds if the patient wishes to do so.
- The room should provide enough space for a large dog to fetch a toy over some distance.

programs requires a multidisciplinary approach, the pets for the role, specific procedures, and purpose-designated facilities. As AAT programs become established and awareness grows, they are gaining popularity and are expected to become part of the range of standard support services offered to hospitalized patients [10–12].

Other organizations like Pet Partners (formerly known as Delta Society) have created impressive networks that leverage volunteer pet owners, their trained pets, and local hospitals to provide the benefits of interactions with animals to hospitalized patients.

2.1. Differences between aat-trained cats and dogs and house pets

In the case of AAT and Pet Partners animals, the cats and dogs involved are required to pass stringent selection and evaluation processes. The temperament and behavior of the animal is evaluated in the selection process. The requirements of pet behavior, as well as the ability to cope with events by both pet and pet handler, are high. As a consequence, not all candidates achieve the level of performance required for the role. As the behaviors and physical abilities of pets change with age, they are re-tested periodically to make sure they are still suitable. These animals are carefully selected, trained, and evaluated. They also become extensively exposed to hospital environments and prepared for interacting

with a range of patients.

Household pets can differ greatly from cats and dogs trained for AAT. Pets of hospitalized patients are unlikely to have specialized training for an environment with busy receptions, personnel in uniforms, multilevel buildings with elevators, automatic doors, wheelchairs, hospital equipment, and novel smells like disinfectants. In fact, the closest environment a house pet might associate with a hospital is a veterinary clinic, which might not provide favorable memories for the pet. If the pet is stressed when visiting the hospital, this could affect its behavior, and the interaction time with the hospitalized owner might not be as positive and fruitful as intended.

The purpose of this publication is two-fold: 1) to help facilitate positive interactions between hospitalized patients and their own pets by creating optimal pet visitation environments within a hospital; and 2) to increase awareness of the differences between AAT-trained pets and house pets, insights which could help overcome potential challenges.

2.2. Challenges for the house pet to overcome during a visit to a hospital

Table 1 reflects likely scenarios to consider to help us

Table 4

Requirements for the reception of the pet at the hospital.

- Provide adequate parking space to unload the pet safely away from other cars and traffic. The parking space should have a periphery of at least 3 m (10 feet) around the sides and back of the car. Some pets need a ramp to get out of the car. Some pets travel in carriers.
- Avoid access from the parking space to the visitation room through elevators, automatic doors, busy corridors, and narrow or poorly lit areas. The path from the parking area to the room should be well indicated so it is easy to follow (eg, paw print images on the floor leading from the parking space to the pet visitation room).
- Provide pets with a place where they can eliminate on arrival and departure. Most dogs are used to eliminating outdoors on grass. Provide a grassy area or an indoor dog toilet area near the pet-designated parking space. Waste disposal bags should be provided, as well as a trash can for disposal of animal waste. Cats can use a cat litter box provided in the visitation room. Cats might be accustomed to a particular type of litter (eg, clumping, non-clumping). Ideally, the type of litter that the cat is familiar with should be provided in the visitation room, and should be scooped or cleaned after each visit.

Table 5

Requirements for the pet visitation room.

- The room should be easy to clean and be cleaned between pet visits to reduce smells from previous pets. The room should have a sink with hot and cold water, disinfectant wipes, and a trash bin.
- Provide a locker for cleaning items like detergents, disinfectants, paper towels, wipes, and a room-dedicated vacuum cleaner.
- Floors and walls should be of nonabsorbent materials that can be cleaned and disinfected. Epoxy floors are ideal due to their resistance to heavy use like pet nails, and they lack joints that could hold dirt. Avoid slippery floors that could predispose the pet to accidents.
- If the room has windows, they should be low enough for children, pets, and adults in wheelchairs to see through them.
- Doors should be easy to open by people and wide enough for a person to walk through with a large dog on a leash or a pet in a carrier, and for a person in a wheelchair. Doors also should be closed securely so pets do not escape.
- Provide wall hooks for dog leashes.
- Air ventilation in the room should be renewed around 12 times per hour to prevent any odor build-up. Air outlets should not connect to other hospital rooms, and should be placed above litter boxes to avoid sending unpleasant odors across the room.
- Provide pets with continuous access to fresh, clean water in the visitation room. Some pets that are nervous during the car ride may be panting and need to drink.
- Cats that are anxious may benefit from commercially developed calming pheromones (like Feliway; Ceva Sante Animale). A plug-in diffuser could be used in the room prior to the arrival of a cat with a nervous predisposition.
- If a pet happens to eliminate in the room outside the litter box, it should be cleaned as soon as possible. Remove the organic matter and clean using enzymatic products to break down any residuals. If the spot retains smells, it could invite other pets to do the same in that spot in the future.
- Provide furniture (eg, chairs, tables, recliners) of nonabsorbent materials and that are adjustable to different heights to facilitate proximity and interactions between humans and pets of different sizes. Pet ramps or steps may help.
- Consider having a climbing/exploration area, and at least one scratching surface for cats. Ideally, use disposable scratching materials, like cardboard.
- If pets are allowed a longer visit, consider providing pet beds for them. Elevated beds work well for cats, as these make them feel safe, and they can be in view for the patient.
- Provide ways for patients and pets to interact, such as laser pointers, pet treats, soap bubbles, and items like dangling cat toys, balls, and fetch toys. Squeaky toys should be individual to the pet and washable.
- Not all toys are suitable for all pets. Toys should be collected after every visiting session. Do not leave cat toys in the room as they might not be safe for dogs visiting later. Some dogs may ingest small toys or break them into sharp pieces.

understand the perspective of a patient's pet visiting its owner at a hospital.

2.3. Challenges to overcome from the human perspective

In order to design safe and successful pet visitation rooms at hospitals it is also necessary to give thought to the perspective of the hospital personnel, other patients and other visitors (Table 2).



Fig. 1. Child with visiting dog at St Louis Children's Hospital.

3. Material and methods

3.1. How we can help design the pet visitation room at a hospital to ensure the owner/pet interaction is enjoyable and beneficial

The best solution to accommodate the needs of both the patient and the pet is to have one or more pet visitation rooms in the hospital designed for this specific purpose. The *design concepts* need consider the location of the pet visitation room within the hospital (Table 3), the requirements for the reception of the pet arriving at the hospital (Table 4) and the requirements for the space where the patient-pet encounter will take place (Table 5).

3.2. Examples of collaborations to create pet visitation rooms at hospitals

A major pet food company has collaborated on projects to help design visitation areas in hospitals where hospitalized children and other patients can meet and interact with their visiting house pets. These environments have been specifically designed to include the needs of the pets and their owners to ensure that the sessions can be as enjoyable as possible.

3.2.1. St. Louis children's hospital, Missouri, USA

St. Louis Children's Hospital opened a family pet visitation facility (Fig. 1) in early 2016 funded by a PetCare company. The floor map of the facility shows dedicated space on the second floor of the building. The pet visitation room is located in a space contiguous to the parking area and to the hospital's main elevators (Figs. 2 and 3).

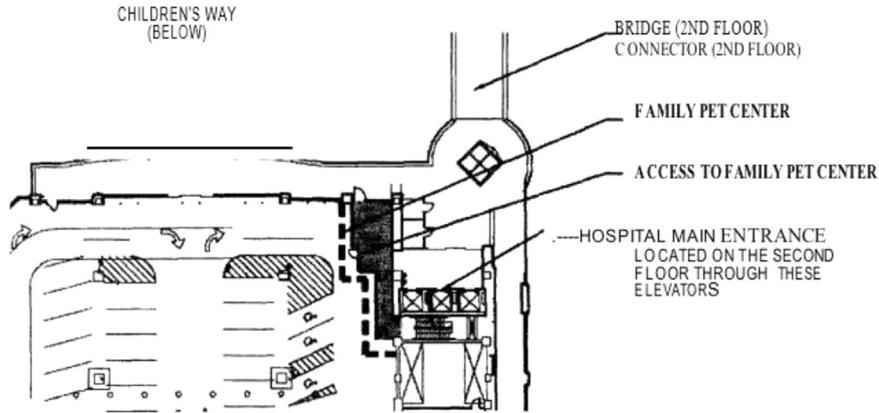


Fig. 2. The pet visitation room (Family Pet Center) has several access points from the designated pet visitation parking area and from hospital as well as fire evacuation. (Courtesy of P. Becker, St Louis Children's Hospital. Used with permission.).

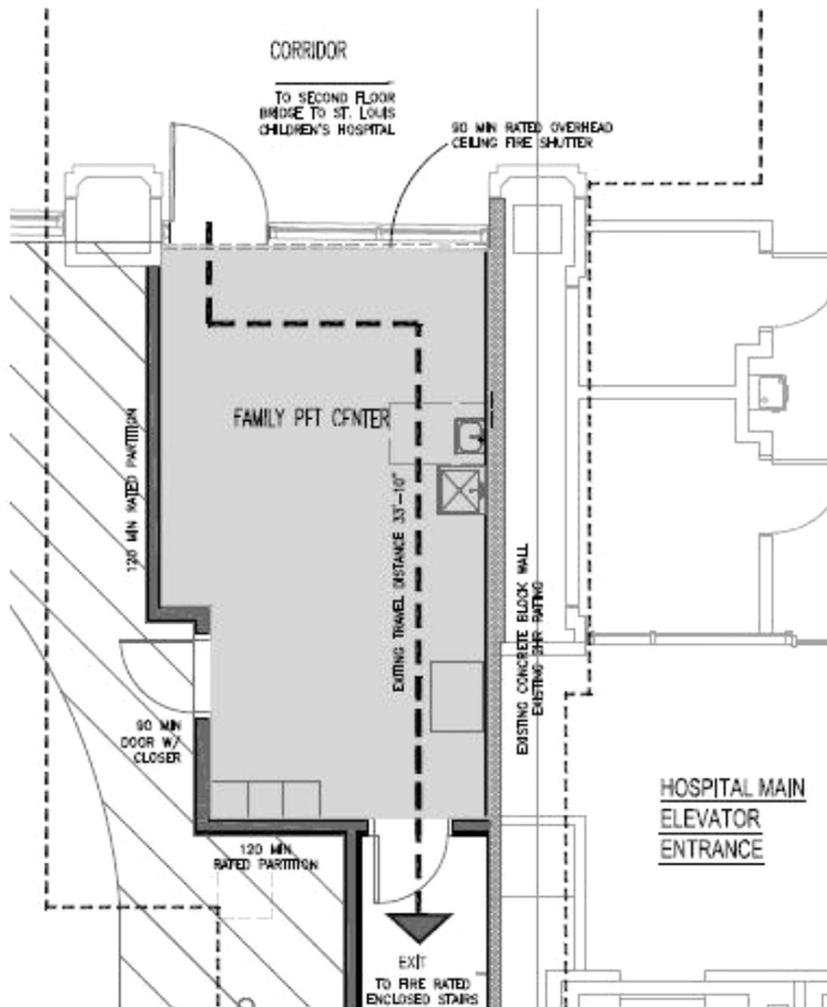


Fig. 3. Design detail of the family pet visitation room at St. Louis Children's Hospital, Missouri, USA. Room has spacious area for pet-owner interactions, wide doors, a sink, and cabinets for tools and materials. (Courtesy of P. Becker, St Louis Children's Hospital. Used with permission.).

This space is ideal for safely loading and unloading the pet from the car and leading the pet into the visitation room with minimal hassle. Similarly, it is easily accessible by patients from all floors of the hospital by patients.

3.2.2. Villa Samson, Brussels, Belgium

Another similar collaboration is Villa Samson, in Brussels, Belgium. In this case, the University Hospital of Jette plans to build a hospital wing with eight rooms for palliative care patients. This



Fig. 4. Bird's-eye view of the hospital wing design at Villa Samson, University Hospital of Jette, Brussels, Belgium. The wing at ground level is dedicated to hospitalized patients who expect visits from their own pets. (Copyright UZ BRUSSEL, University Hospital Brussels, Belgium. Used with permission.)



Fig. 5. Traffic side of the pet visiting wing at Villa Samson, University Hospital of Jette, Brussels, Belgium. Each patient's room has direct access to the exterior, allowing visiting pets to enter directly without crossing hospital reception areas. (Copyright UZ BRUSSEL, University Hospital Brussels, Belgium. Used with permission.)

area will allow these patients to receive visits from their home pets in their own hospital rooms. Patient rooms can be accessed directly by the pet from the outside, but are not visible to surrounding traffic (Figs. 4–6). The original designs allow for direct pet entrance from the outdoor patio into the patient's room, and even for outdoor activities like access to walking trails in the surrounding woods.

Although these rooms will be available for pet-owning patients, the main target groups are children and the elderly. All patient rooms have acoustic isolation.

Due to the popularity of the project, there have been many donations to the project to make this dream a reality.

4. Conclusions

Evidence that the companion animal enhances health and well-being from cardiac, psychologic, and immunologic perspectives is overwhelming. Companion animals enhance recovery during the medical encounter and are especially important in the acute-care hospital setting.

Our manuscript is, to our knowledge, the first publication to describe the concepts necessary to design pet visitation facilities at hospitals for regular cats and dogs. These pets have not been selected nor trained to perform pet therapy sessions, but they are unique to the hospitalized patients as there are their own pets, and

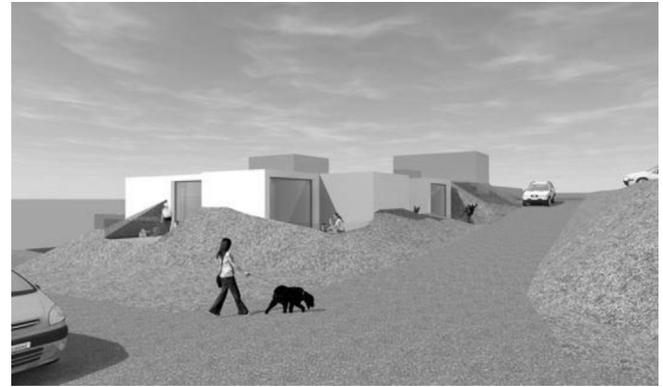


Fig. 6. Designs for Villa Samson, University Hospital of Jette, Brussels, Belgium. Back access to rooms of hospitalized pet owners at ground level. Relatives or volunteers can bring the patient's pet for visits. Pets walk from the nearby parking areas. Patient rooms have outdoor patio areas. (Copyright UZ BRUSSEL, University Hospital Brussels, Belgium. Used with permission.)

they have personal and irreplaceable bonds with them. .

Pet owners report missing their home pets during long hospitalizations and the expressions of joy are clear when pets and owners meet after absence periods. We hypothesize that providing the opportunity for reencounters of patients with their pets during the hospitalization would facilitate those joyful moments together with the scientifically reported benefits of pet interaction.

The creation of pet visitation capabilities at hospitals is a novel concept and, to date, there a very few hospitals with capabilities like St Louis Children's hospital, built in 2016, and Villa Samson, under construction in 2017. The authors hope that this publication will: 1/facilitate and encourage the construction of other private pet visitation facilities in hospitals around the world. 2/enable research studies to explore the physiological and emotional impacts of personal pet visitations for the hospitalized patient, as well as for the relatives/friends of the patient bringing the pet and for the pet itself.

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Author contributions

Dr Pérez-Camargo provided expertise on the design of facilities for the comfort and environmental enrichment of pet cats and dogs.

Dr Creagan added the data, commentary, and literature review on the animal-human bond.

Conflicts of interest

None.

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Appendix A. Example of leaflet at Children's hospital in St. Louis, MO (USA) to communicate about the pet visitation facility program as well as the rules and the visit request process



PURINA
Your Pet, Our Passion.
**Your visit to the
Purina Family
Pet Center**

The Purina Family Pet Center combines family-centered care with the healing power of the human-animal bond. Pets are important family members and many studies have shown that pets can promote and improve the patient's wellness.

HERE'S WHAT YOU NEED TO KNOW:

Whose pet can visit? Patients who stay seven days or more may be able to have their pet visit, if medical staff approves.

How do I request a visit? Visits are coordinated and scheduled by our child life team. You can talk to your child life specialist, call the Purina Family Pet Center at 314.319.8875 or email FamilyPetCenter@bjc.org. Families will be given a pre-visit questionnaire to complete before a visit is scheduled.

How does the visit work? Once families request a visit and your child's medical staff approves, families will receive a confirmation by phone or email with instructions.

On the day of the visit, family members may unload their pet at a drop off area on the 2nd floor of the St. Louis Children's Hospital visitor garage. A child life staff member will bring your child to the Purina Family Pet Center.

One adult family member must escort the visiting pet. Pets cannot be left in a car unattended.

Which types of pets are allowed? Only dogs and cats are allowed to visit. Families must answer questions about the pet before visits are approved. Pets must be current on vaccinations and bathed before a visit. All pets must be on a leash or in a pet carrier when moved from the car to the Purina Family Pet Center.

Contact us: For more information, talk to your child life specialist, email us at FamilyPetCenter@bjc.org, or call 314.319.8875.

Only third of its kind in the United States and the fourth in the world, the Purina Family Pet Center was made possible by a gift from Nestlé Purina.

**Children's
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Dr Creagan is professor of Medical Oncology, John and Roma Rouse Professor of Humanism in Medicine, and a former President of the Officers and Councilors, Mayo Clinic. He received a Distinguish Clinician Award and was the first Mayo Clinic consultant to be board certified in hospice medicine and palliative care. Dr Creagan has authored 600 publications and has delivered over 1000 presentations worldwide.