CHAPTER

11

Housing Cats in the Veterinary Practice

Ilona Rodan and Martha Cannon

INTRODUCTION

A period of hospitalization is essential at some point for many cats, but keeping cats in an unfamiliar environment and away from their families can negatively impact their welfare and recovery. A veterinary practice's goals for hygiene and patient monitoring often conflict with the hospitalized patient's ability to cope in an unfamiliar environment. Additionally, clients are often anxious about their cats and how they will do away from home. When these stressors are understood, steps can be taken to reduce both feline and client stress and ensure staff safety.

Most cages used to house cats do not meet essential feline needs; they are often too small for the cat to stretch, sleep in a comfortable position, and move around, and most caging setups do not allow cats to hide. Hiding is an important coping strategy for cats in an unfamiliar environment, and they also need a place to perch so they can "monitor" their environment. Consistency in routine, smells, sounds, and handlers is also important in the unfamiliar veterinary practice environment. This chapter provides practical advice for adapting cages and developing standard operating procedures for staff to address these important feline requirements.

Although caging for cats in shelters and catteries is beyond the scope of this chapter, the points discussed here will enhance cat care in those environments as well. These potentially long-term conditions make meeting the needs of cats even more important. For more information on enriching the shelter environment, see the link to the UC Davis Koret Shelter Medicine Program website provided in the Additional Resources section at the end of this chapter.

CHALLENGES ASSOCIATED WITH HOSPITALIZATION AND BOARDING

There are major challenges to hospitalizing cats and being able to provide optimal care for them in the veterinary practice environment. The most important problems are the cat's fear and stress due to disruption of the social bond, its lack of familiarity with the veterinary practice environment, and its inability to perform its normal behaviors.[1–3]

Cats are social animals, and studies indicate that the disruption of the social bond with their owners leads to stress in the hospitalized patient.[4–6] Ensuring provision of familiar bedding, toys, and food is helpful, but cats often do better when their owners also have regular visiting privileges in the veterinary practice.

As territorial animals, cats are most secure in the familiarity of their own territory. During hospitalization or boarding in the veterinary practice, the cat is confronted with unfamiliar smells, sounds, sights, people, and other animals. The unfamiliar schedules and handling can also be very frightening. Adjustment to the new environment can take anywhere from a couple of days to several weeks.[7–9] The outcome, despite the goal of providing the best care for the cat throughout hospitalization, is that the lack of familiarity and reduced sense of control can negatively impact the cat's health and welfare.[4,10]

A good example is seen in the veterinary practice goals of bringing the patient back to health and preventing the spread of contagious diseases, in that stress in a caged cat can increase the risk of upper respiratory infections[11] and stress-associated medical conditions can occur in hospitalized cats.[3,12] Inconsistencies in caregivers, feeding and cleaning schedules, and periods of light and dark can even lead to feline idiopathic cystitis (FIC) in healthy caged cats.[12] This information comes from studies of cats donated to The Ohio State University, some with FIC and some apparently healthy cats, both groups housed in veterinary practice cages. The FIC cats were exposed to a consistent schedule and caregivers, with consistent times to interact with people and have out-of-cage time. They also had places within the cages to hide and to perch, so that they had a sense of control. No medications or prescription diets were given; in fact, the diet provided was a commercial, nonprescription dry food. The option to control their environment, the predictability, and the familiar human interactions at consistent times resolved the signs of FIC.[3,12] Both the apparently healthy cats and the cats with resolved FIC were then exposed to cages without

enrichment and to inconsistencies in schedules and caregivers, which did not provide the cats with predictability and familiarity, and both groups of cats developed signs of stress-related medical conditions such as FIC.[3]

Additionally, abnormal physical findings and diagnostic tests in hospitalized cats can occur secondary to fear and may erroneously be considered disease findings. These exam findings include hyperthermia and increased respiratory and heart rates.[13] The diagnostic findings include stress neutrophilia and lymphocytosis, as well as hyperglycemia. In one study, hyperglycemia was found in 64% of nondiabetic cats hospitalized at a primary referral veterinary practice, and cats with longer lengths of hospitalization had increased prevalence of hyperglycemia.[14]

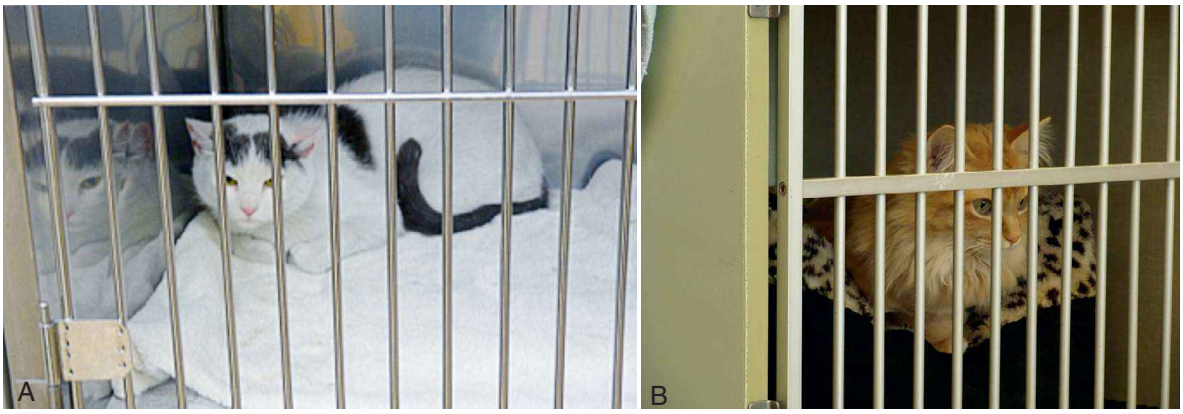
Recognizing Stress in Hospitalized Cats

It can be difficult to recognize stress in a hospitalized cat as the signs of stress associated with lack of familiarity and reduced sense of control during caging are usually inhibited normal behaviors rather than more overt abnormal behaviors.[1,2,15] They include decreased activity, appetite, eliminations, grooming, play, and sleep, and the problem is even more complicated because these signs can also be seen in sick cats.[1,2,7] Cats that demonstrate these more subtle signs of fear and stress may suffer more than cats that demonstrate blatant signs of being upset.[2]

These inhibited signs pose a problem with regard to recovery, because veterinarians often think that a cat should not be sent home until it starts to eat again. However, because hospitalization inhibits eating and other normal behaviors, it is often in the cat's best interest to be sent home when other signs (e.g., hydration, vital signs, recovery from anesthesia) are back to normal. The client must be made aware of why a decision was made to send the cat home before it started to eat (i.e., because cats are often more willing to eat at home) and to contact the veterinary practice if there are any questions or concerns or if the cat does not eat within 24 hours (less for kittens) after getting home. It is important to follow up with the client and to schedule return visits to reassess the patient's progress.

Although inhibited behaviors are more common, some caged cats may become vigilant, watching every movement that occurs around them, and be alert to every sound. These cats cannot rest, because they must monitor the unfamiliar environment to protect themselves. Caged cats also often become fearfully aggressive as a protective mechanism. Although cats prefer not to fight, they will fight to protect themselves when their other defense responses—inhibition (freezing) and avoidance (fleeing)—are not possible or effective, such as when a person attempts to take them out of a cage. The cat usually bluffs, making itself bigger, with arched back and in a crouching position. If the person continues to remove such a cat from the cage, it will often react aggressively in an effort to protect itself.

Cats' positioning and posture in the cage can help to identify fearful cats in the veterinary practice. Compare the position and posture of the two cats in Figure 11-1,



At back of cage

- Ears back
- Slightly arched back
- Vigilant
- Not able to rest
- Stainless steel shows cat's reflection
- Cat may think it's another cat

In front of cage, with hiding option

- Ears forward
- Relaxed body
- Curious
- Watching what is going on
- In Formica cage

FIGURE 11-1 Comparing the cats in A and B helps to differentiate between the fearful and non-fearful caged cat and highlights the importance of always reading facial signals. The cat in A has a body posture that could be mistaken for that of a relaxed cat, with the tail curled around the body and the front paws tucked in and the pads off the floor. Reading the cat's facial signals and considering its positioning at the back of the cage helps to accurately assess its emotional state.

BOX 11-1 How to Tell if a Cat is Fearful or Stressed

Inhibition of Behaviors: Most Common
- Feeding
- Grooming
- Toileting
- Play
- Sleep (may be difficult to recognize, because caged cats sometimes feign sleep)

Hiding
- Hiding in litter box
- Hiding under blanket, in newspapers
- Other attempts to hide (e.g., tearing up newspapers or blanket placed on cage floor to make a hiding place)

Position in Cage
- In back and huddled
- Up front and ready to attack when someone approaches

Posture
- Crouching as if pretending not to be there
- Back arched and appears larger than is (bluffing)
- Ears back
- Pupils dilated

Behavior That Indicates Illness (e.g., feline idiopathic cystitis)
Behaviors Considered Abnormal
- Overgrooming
- Soiling outside the litter box
- Fear-related aggression

A and *B*. For a summary of signs of fear and stress in caged cats, see Box 11-1.

Should the Cat be Hospitalized?

When making a decision to admit a cat to the veterinary practice, it is important to remember the degree of feline stress that can be induced by a period of hospitalization. Veterinarians should weigh the benefits and risks for the individual cat, the cat's condition, and the owner's ability to treat the cat at home. Most cats do better in their familiar home environment than in an unfamiliar veterinary practice, so the real question is what can be done for the cat at the practice that cannot be done at home. A number of questions need to be asked to ensure that the best decision is made for each feline patient.

- Does the cat require hospitalization to perform the needed observations, procedures, or treatments?
- How will this individual cat respond to hospitalization?
- Can the client medicate the cat as effectively at home, or is it possible to arrange for someone to go to the home to do so?
- Will the cat be better off receiving treatments today and returning after a certain period of time to be reassessed instead of being hospitalized?
- Will the client be willing to bring the cat back for recheck of its condition and to update the treatment plan?

Of course, there are several instances in which it is in the best interest of the patient to be hospitalized. These include anesthetic procedures, intravenous fluid administration, shock therapy, hypothermia, respiratory distress, monitoring of vital signs, and other critical treatments and procedures. When hospitalization is considered necessary, the following questions must be answered:

- How can feline fear and stress be prevented?
- How can staff safety be ensured?
- How can owner worries and stress be managed?

Another important consideration is when the patient should be discharged. A rule of thumb that is commonly used with dogs is to send the patient home after it starts eating or once it urinates or defecates, depending on the problem. However, cats often inhibit their normal behaviors, such as eating, due to the stress of hospitalization, and many of them do better if they are discharged as soon as is otherwise medically responsible. Therefore, it is important to consider whether it may be in the best interest of the patient and client if the cat is sent home overnight and then brought back to the veterinary practice for rechecking the next day. This is especially important in situations where there is no overnight care in the veterinary practice and no emergency facility to send the cat to overnight.

BUILDING DESIGN: HOSPITALIZATION AND BOARDING WARDS

Whenever possible, cat-only wards should be provided. Cats with high exposure to unfamiliar dogs have higher urinary cortisol levels than those with low exposure.[12] Providing separate cat and dog wards reduces cats' fear by eliminating or at least reducing the noise, scent, and visibility of dogs, all of which can be very frightening to cats. Dogs should not be walked or carried where cats can see them. Even cats that get along well with a familiar dog in their own household usually become frightened by unfamiliar dogs.

Cats are also more fearful if they see unfamiliar cats, so cats should be caged in a ward with a door closed to the rest of the veterinary practice. Within the ward, the visibility of other caged cats can be prevented by having one bank or row of cages per ward. When this is not possible, cages should be placed so that they are side-by-side or back-to-back instead of across from each other or at an angle to each other. Fear caused by visibility of unfamiliar

animals and people can also be reduced by providing hiding places within the cage (see "A Place to Hide" below). Fear is increased in cats placed in bottom cages and therefore middle and upper cages should be used first, avoiding the use of bottom cages whenever possible. Many veterinary practices use the lower cages for storage or for resident cats that are already comfortable in the environment. Cats that are very anxious, displaying fear-associated aggression, or vocalizing excessively are best moved to an unused isolation area. If this is not possible, a towel should be placed over the front of the cage to screen out activity that may add to the cat's anxiety.

One study has shown increased stress levels in cats when they observed other cats being examined.[16] So, caging in treatment areas or leaving cats in carriers in the treatment area can be terrifying even in cat-only practices. Cats need to be examined out of sight of any other cats and resident cats should be kept away from hospitalized patients at all times. In particular, resident cats should not be allowed to play in front of caged cats or to stick their paws into another cat's cage.

It is not only unfamiliar dogs and cats that cause fear in caged cats. Unfamiliar people walking frequently in and out of wards and at inconsistent times also cause feline stress. Loud voices, machines beeping, and other sounds can further frighten feline patients. Having separate rooms for wards with closed doors helps minimize sound. Playing soft music or white noise in the ward helps prevent startling caused by other noises. Partial or full glass doors to patient wards allow monitoring and observation from a distance. Consistent times for hands-on patient monitoring by the same person—ideally a "cat-friendly" person—facilitate the ability to care for calmer feline patients.

Meeting the Needs of Caged Cats

Regardless of the length of stay (a few hours to several days or more), it is essential to provide for the cat's needs to support its well-being.[6] Both the size and complexity of the cage are important in meeting the needs of the caged cat.[6] Box 11-2 lists feline needs, which are also essential for caged cats.

BOX 11-2 Meeting the Needs of the Caged Cat

Ideally, caged cats need the following:

- Hiding place
- Vertical space
- Food*
- Water*
- Litter box*
- Human interaction if desired by the cat
- Predictability and consistency
- Gentle and respectful handling
- Ability to express normal behavior

*Note: Food, water, and litter box should not be next to each other.

Many cages made specifically for cats and other small patients are too small and do not allow sufficient space for the necessary resources to be provided. Even if a cage is of sufficient size, food is commonly placed near a litter box, which will be stress inducing for any cat. The largest cage size that can be accommodated within the veterinary practice should be used and the material that the cage is made from should be carefully selected.

Stainless steel cages are noisy and cold and can show the cat's reflection (see Figure 11-1, *A*). Cats are often frightened by the reflection in the cage, possibly thinking it is another cat, and have been observed to "attack" the reflection. Formica or polypropylene cages are quieter, warmer, nonreflective, and as easy to disinfect, making them preferable to stainless steel cages.

If the veterinary practice has stainless steel cages and they cannot be replaced in the near term, use cat beds with high sides and toweling to keep the cat warm and to prevent reflections of the cat from appearing or being noticed by the cat. Placing padding on the cage bottom, such as rubber matting, a blanket, or warmed thick towels, also helps keep feline patients warm.

Traditional cages usually lack a place to hide and a place to perch.

A Place to Hide

Hiding is an important coping mechanism for the cat in an unfamiliar environment. It is the cat's attempt to avoid interactions with others, especially in a potentially stressful situation.[17] The option to hide gives the cat a sense of control, allowing it to rest more comfortably. Not having a place to hide often results in fear, vigilance, lack of rest, and fear-associated aggression.[1] In feline terms, hiding occurs when the cat cannot see anything or anyone, and this is helpful information as it means that it is possible to provide cats with a place to hide and still be able to monitor them effectively.

Even if the cat is not allowed space to hide, it will try to do so, whether in the back of the cage, behind the box, or within or under papers or blankets, and it will often "trash" or disrupt things in the cage in an attempt to make a hiding place (Figure 11-2, *A* and *B*). Cats may shred newspaper placed in cages, or hide inside the litter box if there is no other place to hide (Figure 11-2, *C*).

Adding a place to hide, such as a cardboard box or a bed with high sides, reduces stress in caged cats.[5] The added benefit of a hiding place is that there is less potential for fear-associated aggression when a cat is removed from the cage, which greatly reduces one of the common causes of human injury in veterinary practices. The handler should pick up the box or bed while the cat is still within it. A towel covering the door of the cage can protect the cat from the sight of unfamiliar individuals and reduce any anxiety about being removed from the cage.

FIGURE 11-2 Cats that are not provided with a hiding place will make their own place to hide.

FIGURE 11-3 A cardboard box is easy to find in any veterinary practice and can be used as a hiding spot that allows the cat to see out and come out if desired. The box should be lined with fleece or a towel, preferably one from the cat's home that carries its scent.

Hiding places can be as simple as a sturdy cardboard box, a cat bed with high sides, an igloo-shaped cat bed, or the cat's carrier.

- Cardboard boxes are a great hiding place for a cat, which is proven by their desire to climb into any open boxes around the home (Figure 11-3, *A* and *B*). When used as hiding places in the veterinary practice, they should be lined with a towel or fleece bedding, preferably one that came with the cat and thus carries its scent (see Figure 11-3, *B*).
- Cat beds with high sides or igloo-shaped cat beds also make good hiding spots (Figure 11-4, *A–C*). They can be inexpensive and may last a long time, even when put into the washing machine, with diluted bleach added to the laundry soap, and then dried in the dryer. The beauty of these beds is that the cat is able to hide in a warm and comfortable place, and, when there is a need to remove the cat from the cage, this

FIGURE 11-4 Igloo-style beds and beds with high sides make excellent places for cats to hide. Another advantage of this type of bed is that the cat can be moved from one place to another while inside the bed.

can be done by moving the bed with the cat still inside it.

- A litter box with high sides and soft bedding also makes a good place to hide (Figure 11-5)
- The cat's own carrier can also be placed in the cage and used as a hiding spot. Even cats that have not been carrier-trained tend to prefer their carrier at the veterinary practice to an unfamiliar space (Figure 11-6).

When the cat is fearful, the hiding place and bedding should be placed on a side of the cage that will allow the cat to look away from people who are walking by or looking into the cage. If the cat is comfortable and interested in the surroundings, the hiding place can be turned around so that the cat can see out. In a hiding place with multiple entrances, the cat can reorient itself and look out when it feels ready to observe. When a hiding place is provided, many cats will feel comfortable enough to leave the hiding spot and approach the front of the cage with curiosity.

FIGURE 11-5 A litter box with high edges and soft bedding also makes a good hiding place.

FIGURE 11-6 Placing the cat's own carrier inside the cage provides a familiar hiding space.

Custom-made structures such as the Feline Fort (Cats Protection, Haywards Heath, UK) or the Hide, Perch, & Go box (British Columbia Society for the Prevention of Cruelty to Animals, Vancouver, BC, Canada) are also available (see Additional Resources for more information; also see section on vertical space).

In cages with internal shelves, a blanket or towel can be suspended from the shelf to give the cat the option of spending time behind the blanket in the back of the cage, or in the front of the blanket, where it can view its surroundings (Figure 11-7). If no internal shelf is available, then a blanket or towel can be placed over half of the cage door, thus providing additional privacy but allowing the cat to choose to look out through the open portion of the door when it is less fearful (Figure 11-8).

FIGURE 11-7 In cages with internal shelves, a towel or blanket can be suspended from the shelves to allow the cat to hide or look out as it wishes.

FIGURE 11-8 A towel partially covering a cage door provides additional security for the cat. The towel should be placed over half the cage door so the cat can choose to either hide or look out.

Vertical Space

Another important feline need is vertical space or a perch. There are two main benefits to having three-dimensional space in a veterinary practice cage. Cats use raised structures to monitor their environment and to anticipate the approach of others, which is especially important for a caged cat in an unfamiliar environment.[2] The vertical space also increases the overall usable space in the cage (Figure 11-9).

Most veterinary practice cages are not made with a shelf or other raised area, but excellent commercial options are now available. "Kitty condominiums" or "condos" are excellent for boarding cats in the veterinary practice, but they are more challenging to use for hospitalized patients.

FIGURE 11-9 All cats need a vertical space or a perch from which they can monitor their environment. This is especially important for cats in an unfamiliar environment. Cages with raised shelves are ideal for this purpose. However, commercial cage inserts such as the one in this photo can increase both vertical and overall space.

FIGURE 11-10 The Hide, Perch, & Go box, developed by the British Columbia Society for the Prevention of Cruelty to Animals, is a popular structure because it gives the cat the option to either hide or perch.

Some commercial cages for cats are now built with a shelf; placing a towel or blanket over the shelf provides a hiding place for the cat (see Figure 11-7). For veterinary practices that have cages without shelves, there are other inexpensive solutions that will provide both a hiding place and a perch.

- A hard sided, flat-topped carrier can be used as a hiding spot and can also serve as a perch site on top. The carrier ideally stays with the cat throughout its stay, and it can be used to remove the cat from the cage, keep the cat within for treatments to be done in the bottom half, and carry the cat from one area to another.
- The Hide, Perch & Go box developed by the British Columbia SPCA is an excellent option that allows cats to hide or perch. It can be folded up into a carrier for them to go home (Figure 11-10).
- The Feline Fort developed by Cats Protection in the UK is a three-piece unit consisting of a cat step, table, and hiding spot. It provides the cat with the opportunity to hide or perch, thus helping the cat to feel safer. The Feline Fort can be purchased as a unit, or each element of it can be bought individually (Figure 11-11).
- A sturdy cardboard box turned with the opening on the side or with a door cut into the side can also be used to create vertical space.

Food and Water

Feeding the cat its regular diet during hospitalization or boarding helps with familiarity, as well as with prevention of food aversion by not introducing a new diet in a stressful environment. The client can be asked to bring the cat's favorite food and treats to help entice the cat to eat. If a

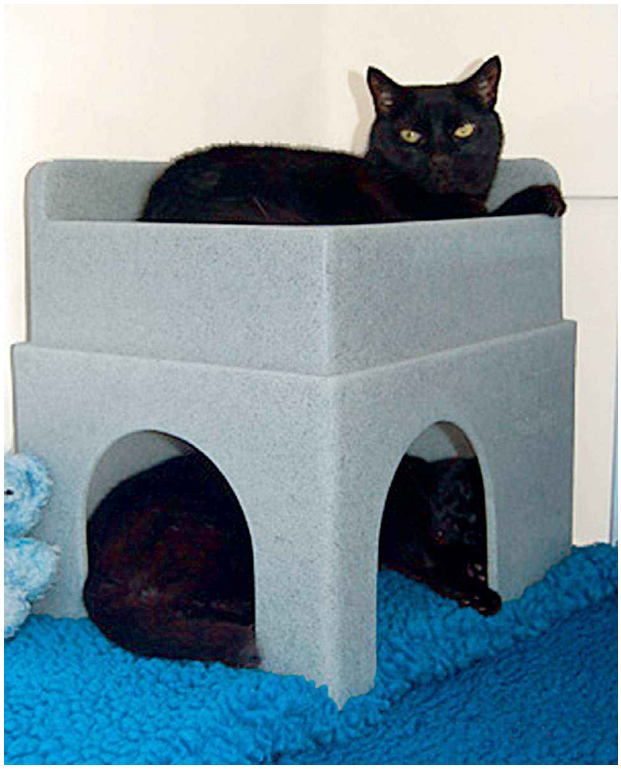


FIGURE 11-11 The Feline Fort, developed by Cats Protection in the United Kingdom, is a three-piece unit consisting of a cat step, a table, and a hiding spot. It provides the cat with a sense of security by giving it a place to either hide or perch.

dietary change is needed, it is ideal to start introducing it gradually once the cat has gone home. It is rare for a cat to need an immediate dietary change; it can usually wait until discharge. However, there are certain situations when a dietary change should be made during hospitalization, such as if the cat's normal diet has made it sick or if the cat has developed a food aversion because it became nauseous or sick when it ate that food.

In order to find out what food the cat is most likely to accept, questions should be asked about the cat's preferred diets, brands, and flavors, as well as its preference for dry and/or canned food. Providing frequent, small offerings of food allows for more normal feeding behavior and also prevents the food from becoming stale or dried. Flat food dishes with low sides are often easier for caged cats to eat from. If dry food is fed, it can be placed in feeding balls or toys to increase the cat's normal hunting behavior.

Many cats prefer warmed canned food. Microwaving the food for a few seconds on high can increase its palatability, but care must be taken to stir the food after heating in this way to avoid hot spots. This is especially true if the food was refrigerated. As cats are individuals, some do not prefer warmed food but do like food from a newly opened can, and some even want refrigerated food. This is often seen in nauseous cats or in cats whose nausea has not been effectively controlled; the intense smell of warmed canned food makes these cats more nauseous.

If the cat has always eaten dry food, it is unlikely that its diet can be changed to canned food. Adding tepid water to dry food may be more acceptable to the cat if it needs increased liquids.

If the cat displays signs of possible food aversion (e.g., getting as far away as possible from the food, attempting to bury it, lip smacking or drooling), the food should be removed immediately. It is important to then wait before adding a different food.

If the cat is not nauseous, or if the nausea has been controlled but the cat is still inappetant, appetite stimulants can be helpful. Mirtazapine is an excellent appetite stimulant in cats. It is also an antiemetic, so it can be particularly helpful in these cats.

Toileting Area

The litter box or tray should be large enough for the cat to be able to get into it and move around without difficulty. In small cages, there is often insufficient space to provide an appropriate size litter box. When possible, the owner should be asked to bring in the litter that is used at home, but if this is not available or not considered appropriate, it is preferable to use a soft sand litter, which is comfortable underfoot and unscented.

Other Resources

Human attention is important for cats that want it. It should be given on a consistent schedule and preferably by the same caregiver so that the cat can adapt easily (see Figure 11-9). If the cat is being boarded or hospitalized on a more long-term basis, some time spent outside the cage is desirable if the cat's disease is not contagious. Long-term patients or boarders also need a place to scratch.

Spatial Arrangement of Resources

Each resource should be placed in a different area so that the cat's food, water, and litter box are separated.[6] Some shelters and veterinary practices modify their existing cages to create cages with two compartments. This is done by creating an opening, or "pass-through," between two adjacent cages (Figure 11-12, *A* and *B*). A litter box can be placed in one compartment and food and water in the other. These double-compartment cages give cats more space and more options, and ideally the cat can remain in one half of the cage while the other half is being cleaned. For more information on how to make these double-compartment cages, see the Additional Resources section.

In a small cage, the easiest way to separate the food, litter box, and resting area is by using three points as in a triangle (Figure 11-13).

FIGURE 11-12 Some shelters and veterinary practices modify their cage banks by having a carpenter make an opening, or "pass-through," between two smaller cages to create larger spaces with two separate compartments. One compartment can be used for feeding and the other for toileting. (Courtesy E. Sundahl)

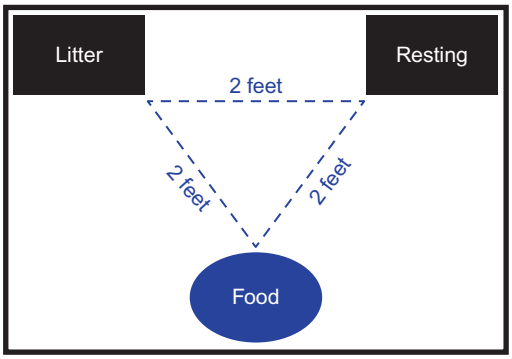


FIGURE 11-13 The easiest way to separate food, litter box, and resting areas is by using three points as in a triangle. (From Newbury S, et al: Guidelines for Standards of Care in Animal Shelters, The Association of Shelter Veterinarians, 2010)

Isolation Areas and Their Additional Uses

The primary function of isolation rooms is to house cats with contagious or potentially contagious diseases. These cats should be housed in easily cleanable cages inside the isolation area. Formica or polypropylene cages are readily cleanable with bleach and other cleaning supplies and are warmer than stainless steel ones. The cage must meet the needs of the cat as described above. Provide a surface within the isolation room for examination and treatment so that the cat is not removed from the isolation area. Cats in isolation wards should always be treated last, and their cages should be cleaned last to prevent disease contagion to other cats.

In many of today's veterinary practices, isolation areas are needed only infrequently for contagious diseases; at other times they can be used to provide a nice, quiet space to house cats that are shy or displaying fear aggression. Removing these cats from the main wards reduces the stress of both these cats and other cats in the ward.

When using an isolation area for the fearful or shy cat with noncontagious disease, more creative alternatives are possible. If the cages in the isolation room are easily movable (e.g., on casters) and can be taken out of the room, these cats can have the entire room to roam, allowing them more space and capacity for enrichment (Figure 11-14, *A* and *B*). Provide warm blankets, especially on the floor, to ensure that the cat is warm enough. Even if the cages cannot be removed and there is only the one cat in the isolation ward, the cage door can remain open so that the cat can jump in and out.

HOSPITALIZATION PROCEDURES

Following certain procedures when hospitalizing a cat can make the process go more smoothly and the hospitalization experience less stressful for the patient, the client, and the veterinary staff.

Admitting Cats for Hospitalization or Boarding

In very busy veterinary practices, it is not uncommon to see several cats being brought in by their owners for admission during a relatively short time period. This can result in cats being left in carriers stacked upon one another or next to each other on the floor of the

FIGURE 11-14 This shy cat did very well with the inexpensive hiding place. The cat could also choose to perch if desired.

treatment area until there is time to move the cats to the hospitalization cages. The result is increased fear and fear-associated aggression and the rest of the day going badly for both cats and staff.

It is ideal to have the ward prepared early in the morning, so that cats that are admitted can be moved to the cages without any delay. To help to create a positive and relaxed association with the enclosure, it is advisable to spray or wipe the cage and bedding with synthetic feline pheromone analog (Feliway; Ceva Animal Health, USA) a minimum of 10 to 15 minutes before it is needed. The spray version of this product has an alcohol carrier, and it is important to ensure that this has evaporated before the cat is put into the cage. Add water, litter, food if appropriate, and whatever other accessories the cat can have, prior to placing the cat inside. Preferably, move the cat while in its carrier and with bedding or something else with familiar scent. Ask clients to bring items that their cat favors, such as a piece of a favored person's clothing, toys, or anything else with a familiar scent that can be kept with the cat in the cage.

Even if there is not enough time to remove the cat from the carrier, it is important to take the cat to the ward as soon as possible and to avoid bringing it into a busy treatment area. The cat can be left in its carrier within the cage, and the carrier door can be left open so that the cat can leave the carrier if it so chooses and explore. If the ward is not prepared or there is not enough time to move the cat to the ward, then another option is to place each cat within its carrier in an unused room, such as an empty exam room or isolation area. If there is no space other than the treatment room for cats to be kept during the admission process, then place the carriers on counters instead of floors and ensure that the cats are facing away from other animals. It can be helpful to cover the carriers with towels sprayed or wiped with synthetic feline pheromone analog. The aim should always be to move the carrier to a cage as soon as possible.

Getting the Cat Out of the Cage

Removing a fearful cat from a cage can be especially challenging. Human injury frequently occurs if the cat's fear is not appreciated and the cat's sense of control is not respected during the process of removing it from what is now the safest space. Fearful cats hide, and if a hiding place is not provided, the cat often cringes in the back of the cage. When a person approaches or reaches into the cage, the cat's fear may increase rapidly, which it demonstrates by hissing, screaming, and/or lunging in the direction of the person. This is a common cause of injury to people who work with cats.

There are multiple reasons why the cat is fearful and trying to protect itself, and it is important to understand these reasons so that they can be addressed.

- Cats are often frightened because they have no place to hide, and the back of the cage is as far away as they can get from the fear-inducing situation.
- They can become more fearful if they see or hear unfamiliar cats and dogs or other animals when in the cage or while being taken out of the cage.
- When people stand in front of the cage, it is as if they are looming over the cat and blocking its only possible escape route. This will increase the cat's fear and make it more likely to display defensive aggressive behaviors.
- If a person tries to reach into the cage and grab the cat to get it out, whether with hands, towel, or gloves, the cat's fear will be exacerbated because other defense strategies—inhibition (freezing) or avoidance (fleeing)—are prevented from being successful. As a result, the cat is forced to use repulsion (fighting) as a defense and injuries to people are very common. (For more information on how to prevent this problem, see Chapters 20 and 22.)

The cat is vigilant from the start of this process and loses its sense of control rapidly as the scenario develops. The cumulative effect of each attempted interaction with the cat exacerbates its fear and increases the likelihood of fear-associated aggression being displayed.

Fortunately, several steps can be taken to make the task of getting the cat out of a cage easier for both the cat and caregiver. Safety for personnel and reduction of stress for the cat are the primary concerns. As with all interactions with cats, it is beneficial to engage in some forward planning and to make sure that all possible eventualities have been considered. The aim is for the cat to leave the cage as calmly as possible and for it to be at a low level of emotional arousal throughout the process.

In order to reduce feline stress and emotional arousal, it is beneficial to prevent them from seeing other animals, either from within the cage or when they are taken out of the cage. It is also important to prepare the room to which the cat is to be taken so that the room is safe. It would be preferable to use a small exam room rather than a large treatment room to decrease the potential for the cat to get trapped in inaccessible places if it escapes. Doors and windows should be shut and any potential escape routes blocked in case the cat gets away. This helps to reduce the temptation to use overly restrictive handling techniques. It is also necessary to ensure that the room is quiet and calm and that there are no loud or startling noises in the environment.

When approaching the cage to remove a cat, it is advisable to stand to the side and to avoid making eye contact with or staring at the cat. From the side, the door can be opened calmly, allowing the cat to choose whether to stay in its hiding place or approach. If the cat does not hiss or show other signs of aggression, the handler can put a hand into the cage so that the cat can sniff it and decide whether it wants to approach. (Figure 11-15). If there is a hiding place, such as a cat carrier, within the cage and the cat will not voluntarily come out of that area, then it would be beneficial to keep the cat within the carrier and remove it from the cage while still inside. This is particularly sensible if the cat needs to be transported over a distance, such as into an adjacent room. If there is no hiding place within the cage, it may be necessary to quietly encourage the cat to walk into a carrier that can be used to transport it to the intended destination.

If the cat is curious and approaches the front of the cage, the handler should stand to the side of the cage in order to avoid direct face-to-face contact. A hand should be moved slowly to gently touch the caudal part of the cat's abdomen to persuade it to move forward into a waiting carrier. No contact should be made with the head and neck region as this will encourage the cat to move backward and to be more resistant to the process of leaving the cage.

FIGURE 11-15 A calm approach is needed when taking a cat out of a veterinary practice cage.

In the majority of cases, by approaching the process of removal from the cage in this calm manner, the cat will remain in a low state of emotional arousal and the potential for fear-related aggression can be minimized. However, in some cases, cats can remain excessively aroused and the caregiver is faced with displays of overt, fear-related aggression, such as lunging and swiping. This is more likely in cats that have learned from previous negative experiences of being handled in a cage or carrier context and are therefore anxious as well as fearful. The anticipatory nature of the anxiety response leads to the cat preparing itself for a negative encounter and results in an elevated level of emotional arousal. It is ideal, if possible, to allow the cat time to relax before attempting handling, and it may help to cover the front of the pen or carrier with a towel to minimize sensory input. However, in cases where time is limited or where the cat's fear and anxiety are particularly high, it may be necessary to consider the use of chemical restraint or antianxiety medication to facilitate the handling. More information on potential approaches can be found in Chapter 20 (also see Additional Resources for a link to an online video produced by the CATalyst Council demonstrating how to remove a cat from a cage safely).

Cage Cleaning

Cats mark their territory with facial pheromones and will exhibit this behavior in a veterinary practice cage. They may display facial rubbing of bedding, boxes, cage walls, and doors. These marks are reassuring for the cat; therefore, it is important to avoid cleaning these marked areas while the cat is resident in the cage.

Most veterinary professionals have been taught to clean patient cages on a daily basis, with the cat moved from one cage to another to accomplish the thorough cleaning. However, complete cleaning of a cage during a cat's stay conflicts with the need to maintain its scent profile and familiarity. Additionally, the act of moving a cat from one cage to another can arouse and frighten both that cat as well as other cats that may hear, see, or smell the cat being moved. Often this leads to more fear and potential fear-associated aggression toward handlers. Despite these issues, it is possible to meet the hygienic requirements as well as the emotional and stress-related needs of caged cats.

If the cage is not soiled, the cat should be kept in the same cage throughout its stay. This allows the scent profile to remain familiar. The preferred method is to spot clean the cage if it is not soiled.[18] Instructions for spot cleaning are given in Box 11-3. The aim is to clean the cage with minimal disruption of the patient and areas should be wiped clean rather than sprayed. It is important to avoid wiping areas that are not soiled. The towels and blankets should not be changed unless they are soiled in order to avoid removal of familiar scents and introduction of unfamiliar ones. A similar approach is needed with litter boxes. The same litter box should be retained during the cat's stay and the litter should be scooped two or more times daily. A complete change of the litter box contents should take place only when necessary.

If the cage is soiled with urine, feces, vomit, or other deposits, the cat should be moved to a clean cage that has been prepared in advance of moving the cat. If something from the previous cage is still clean, it should be moved to the new cage to increase the cat's sense of familiarity. Arousal and fear should be prevented among all of the cats by using a visual barrier to prevent them from seeing each other. This can be achieved by moving the cat into its hiding area or to a new and clean hiding area (e.g., carrier, box, or tall cat bed). The cat should be moved directly to a newly prepared cage nearby that has been sprayed or wiped with a synthetic feline pheromone analog at least 10-15 minutes before the cat is placed into it and stocked with food, water, litter, and anything else the cat may need.

Cages, including the cage doors, should be cleaned thoroughly once a cat is discharged. All cages in one ward should be cleaned before moving on to the next ward, and isolation cages and all cages that have housed cats with contagious diseases should be cleaned last.

BOX 11-3 Techniques for Spot Cleaning

- Keep the cat in the same cage throughout the stay if possible.
- If the cage is clean, do not eliminate the smells that are now familiar to the cat.
- Keep the same bedding or towels if clean.
- Keep the same litter box and scoop a minimum of twice daily if it is easy to get to the box to do so. If not, replace the box with a clean box with minimal disruption to the caged cat.
- Cleaning should be done at a consistent time and by the same person so that the cat can anticipate this procedure.
- Prepare new food and water dishes and/or litter box, as well as anything else that may need to be replaced prior to opening the cage.
- Open the cage door quietly.
- If the cat is shy or fearful, stand to one side and allow the cat to run to or remain in its hiding area. Gently place a towel over the hiding area so that the cat can remain hidden. Tidy and remove old food and water dishes calmly and without making eye contact with the cat, but talk to the cat in a low and reassuring voice. Place prepared dishes inside the cage.
- If the cat is seeking attention, offer social interaction while tidying the cage. This can also occur at other times when the cat shows a desire for human attention.
- If the cage has a double compartment, first clean the compartment that does not contain the cat, then hopefully the cat will move to that section of the cage so that the second compartment can be cleaned.
- Close the cage door quietly.

Note: This procedure is a modified version of the spot-cleaning method recommended by the UC Davis Koret Shelter Medicine Program (Cat cage cleaning protocols for single compartment housing. Available at http://www.sheltermedicine.com/node/338. Accessed January 20, 2015).

Consistency in times for routine ward procedures, such as cleaning and feeding, is important so that the cats can be habituated to the schedule. Cage checks should be done twice daily or more frequently if the cage is being soiled. It is beneficial to have the same person—a person who enjoys working with cats—to clean the cages and interact with the cats, which will help to make the veterinary practice setting more familiar to the cat.

Considerations for "Out-of-Cage" Time

Even if the cage environment meets the cat's needs, an enriched area outside the cage is important for cats that are hospitalized or boarding for 1 week or longer. This allows them room to stretch, scratch, play, and interact with people. This is even more critical when cages are

small. Options are an exam room when it is not in use or an isolation area that is not needed. Make sure the cat is provided with a hiding area and that the room provides opportunities for elevation (Figure 11-16, *A* and *B*). The hiding area can be the cat's own carrier, which can also be used to transport the cat from the cage to the "exercise/play" area.

Decisions regarding provision of "out-of-cage" time must be made on an individual basis because some cats become more fearful when taken away from the familiarity of the cage and do not benefit from having "out-of-cage" time. If the cat is hiding and stressed while in the cage, it is unlikely that taking it to another location will be beneficial, and thus it would be better to provide enrichment within the cage in the form of toys or catnip in addition to the cat's safe hiding place and perch. It is important to observe all cats that have been moved out of cages to make sure that they are doing well during the time out of the cage, and if there are signs of fear or distress, it would be advisable to return them to their more familiar environment.

FIGURE 11-16 Having an enriched area outside the cage is important for cats that are hospitalized or boarded for 1 week or longer. Make sure that the cat is provided with opportunities for elevation, such as an elevated perch. Some fearful cats do much better in a quiet and isolated area.

Boarding Cats in the Veterinary Practice

The focus of this chapter is on caging for hospitalized patients, but many veterinary practices choose to board cats or at least to provide medical boarding for cats that need medication while owners are away from home. Cats that are boarded for several days or longer need larger spaces. "Kitty condos" are excellent options for boarding cats (Figure 11-17, *A* and *B*). However, many veterinary practices do not have these multitiered

FIGURE 11-17 Cats are more relaxed during boarding if they have large condominium-style accommodations with vertical spaces and familiar scents. Owners should be encouraged to bring items from home, such as beds, toys, and food.

arrangements, and other options also work well. For example, allowing the cat time out of the cage during quiet times of the day, perhaps in an exam room or in a place where they can look out a window and climb and scratch. When cats from multicat households are boarded together, it is important to remember that even cats that are bonded to another cat prefer to rest alone at least 50% of the time, and each of the cats should have its own resting area or cat bed.[10] It is also important to assess multicat interactions because those cats that are socially incompatible with their housemates may be able to manage the social tension between them when they have a whole house to occupy, but they may find being confined in a small boarding cage for 1 week or more highly stressful. Clients often want their cats to be housed together, but the decision has to be made with the best interests of the cats in mind, and, in some cases, being separated from each other is preferable from a feline perspective.

Decreasing Client Stress

Stress surrounding hospitalization is experienced not only by feline patients but also by their owners. Cat owners have multiple concerns when they leave their cat at the veterinary practice. In addition to dealing with their own worry about being separated from their feline friend, clients are also concerned about whether their cat will be scared or misbehave. They may also worry about their pet suffering alone and being ill, or even dying, away from home. In such situations, owners need reassurance that their cat will be handled lovingly and cared for in a friendly environment.

Addressing client concerns and fears about their hospitalized cat is essential to make the experience positive. There are several simple things that can be done to help the client. Most clients have never seen the hospitalization area of the veterinary practice, and the fear of the unknown can lead to a vivid imagination. Once the cage has been suitably prepared for the cat, the clients can come through to the ward to see where their cat will be staying. If it is feasible for the practice, it can also help to let the clients know that they are welcome to visit. The vast majority of clients will not abuse their visiting rights, and in fact many never visit, but the permission to do so can be reassuring.

Clients should be informed that their cat will be comforted by familiarity and that it is therefore helpful if they can supply a bed, a carrier, a toy, and some favorite food for their cat during its stay. The most important thing for clients to know is that their cat will receive the best possible care in as comfortable and respectful an environment as possible.

Clients also desperately want updates when their cat is away from them. Modern technology can be helpful in this regard, and owners of boarders can be sent short e-mails or text messages with information about how their pet is doing. Pictures can also be attached if veterinary practice staff have the time to take these. For hospitalized patients, it is important to set realistic expectations of when information, such as results of tests, will be available. It is best to set a time when a member of the practice staff will contact clients, but make it known that they can also call the veterinary practice whenever they want to, provided that they realize that it may not always be possible for them to speak to a specific member of staff and that additional information may not always be available if they initiate the call.

CONCLUSION

Because of the challenges of hospitalization for feline patients and the stress that results for their owners, it is advisable to admit cats into veterinary practices only when absolutely necessary. When the cat must be hospitalized, it is important to provide an environment that respects natural feline behavior and aims to meet the behavioral needs of feline patients. Simple steps based on an understanding of the cat's needs can help to reduce the stress of hospitalization or boarding. This not only benefits the welfare of the cat but also improves the veterinary practice's ability to treat and evaluate the cat and will result in an increase in safety and job satisfaction among staff members.

ADDITIONAL RESOURCES

British Columbia Society for the Prevention of Cruelty to Animals. CatSense: Hide, Perch, & Go Box. http://www.spca.bc.ca/welfare/professional-resources/catsense/CatSense-Hide-Perch-Go-Box.html. Accessed January 20, 2015.

Cats Protection. The Feline Fort–A Defence Against Stress. http://www.cats.org.uk/uploads/documents/feline_fort_-_info_for_vets_updated_vr3.1.pdf. Accessed January 20, 2015.

The CATalyst Council. Getting a Cat Out of a Cage (video). https://www.youtube.com/watch?v=Xr5W91nFK4M. Accessed January 20, 2015.

UC Davis Koret Shelter Medicine Program. Enriching the Shelter Environment. http://www.sheltermedicine.com. Accessed January 20, 2015.

UC Davis Koret Shelter Medicine Program. Cat Cage Modifications: Making Double Compartment Cat Cages Using a PVC Portal. http://www.sheltermedicine.com/shelter-health-portal/information-sheets/cat-cage-modifications-making-double-compartment-cat-cages-. Accessed January 20, 2015.

REFERENCES

1. Griffin B, Hume KR. Recognition and management of stress in housed cats. In: August JR, ed. *Consultations in Feline Internal Medicine*. 5th ed. St Louis: Saunders Elsevier; 2006:717–734.
2. Patronek GJ, Sperry E. Quality of life in long-term confinement. In: August JR, ed. *Consultations in Feline Internal Medicine*. 4th ed. St Louis: Saunders Elsevier; 2001:621–633.
3. Stella JL, Lord LK, Buffington CAT. Sickness behaviors in response to unusual external events in healthy cats and cats with feline interstitial cystitis. *J Am Vet Med Assoc*. 2011;238:67–73.
4. Gourkow N, Fraser D. The effect of housing and handling practices on the welfare, behaviour and selection of domestic cats (*Felis sylvestris catus*) by adopters in an animal shelter. *Anim Welf*. 2006;15:371–377.
5. Kry K, Casey R. The effect of hiding enrichment on stress levels and behaviour of domestic cats *Felis sylvestris catus* in a shelter setting and the implications for adoption potential. *Anim Welf*. 2007;16(3):375–383.
6. Rochlitz I. Recommendations for the housing of cats in the home, in catteries and animal shelters, in laboratories and in veterinary surgeries. *J Feline Med Surg*. 1999;1:181–191.
7. Zeiler GE, Fosgate GT, van Vollenhoven E, Rioja E. Assessment of behavioural changes in domestic cats during short-term hospitalisation. *J Feline Med Surg*. 2014;16:499–503.
8. McCobb EC, Patronek GJ, Marder A, et al. Assessment of stress levels among cats in four animal shelters. *J Am Vet Med Assoc*. 2005;226:548–555.
9. Rochlitz I, Podberscek AL, Broom DM. Welfare of cats in a quarantine cattery. *Vet Rec*. 1998;143:35–39.
10. Rochlitz I. Recommendations for the housing and care of domestic cats in laboratories. *Lab Anim*. 2000;34:1–9.
11. Tanaka A, Wagner DC, Kass PH, Hurley KF. Associations among weight loss, stress, and upper respiratory tract infection in shelter cats. *J Am Vet Med Assoc*. 2012;240:570–576.
12. Stella J, Croney C, Buffington T. Effects of stressors on the behavior and physiology of domestic cats. *Appl Anim Behav Sci*. 2013;143:157–163.
13. Quimby JM, Smith ML, Lunn KF. Evaluation of the effects of hospital visit stress on physiologic parameters in the cat. *J Feline Med Surg*. 2011;13:733–737.
14. Ray CC, Callahan-Clark J, Beckel NF, Walters PC. The prevalence and significance of hyperglycemia in hospitalized cats. *J Vet Emerg Crit Care*. 2009;19:347–351.
15. Buffington CA, Westropp JL, Chew DJ, Bolus RR. Clinical evaluation of multimodal environmental modification (MEMO) in the management of cats with idiopathic cystitis. *J Feline Med Surg*. 2006;8:261–268.
16. Wallinder E, et al. Are hospitalised cats stressed by observing another cat undergoing routine clinical examination? International Society of Feline Medicine 2012 Proceedings.
17. Rochlitz I. Basic requirements for good behavioural health and welfare in cats. In: Horowitz DF, Mills DS, eds. *BSAVA Manual of Canine and Feline Behavioural Medicine*. 2nd ed. Gloucester, UK: British Small Animal Veterinary Association (BSAVA); 2009:35–48.
18. Newbury S, Blinn MK, Bushby PA, et al. *Guidelines for Standards of Care in Animal Shelters*. Corning, NY: Association of Shelter Veterinarians; 2010. http://oacu.od.nih.gov/disaster/ShelterGuide.pdf, Accessed January 20, 2015.