NexGard® (afoxolaner) is

TRUSTED PROTECTION IN ONE LITTLE CHEW

223 MILLION STORIES¹ Protection with every dose.

A SAVORY LEGACY The beef-flavored chew’s enduring appeal.

TAKING IT EASY Easy to give, easy to love.

POWER TO THE PUPPIES* Monthly protection, assurance as they grow.

*For puppies 8 weeks of age or older, weighing 4 pounds or more.
¹ Data on file at Boehringer Ingelheim.
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Appreciating your team during the pandemic  

Testing your anesthesia machine for leaks  

Managing hyperthyroidism is a team sport  

Five reasons why cats go berserk  

Make your practice the happiest place on Earth
Can’t find the cat?

Must be time for her monthly treatment.

2x

THE DURATION
OF MONTHLY PRODUCTS

Reduce her anxiety with protection that lasts twice as long.

Longer-lasting, broad-spectrum parasite protection can mean less stress on felines and better compliance.¹-³ Recommend BRAVECTO® PLUS (fluralaner and moxidectin topical solution) for Cats with 2x the duration of REVOLUTION® PLUS (selamectin and sarolaner topical solution) for Cats.

NEW!

The most commonly reported adverse reactions include vomiting, hair loss, itching, diarrhea, lethargy, dry skin, elevated ALT, and hypersalivation.

BRAVECTO PLUS has not been shown to be effective for 2 months duration in kittens less than 6 months of age. For topical use only. Avoid oral ingestion. The safety of BRAVECTO PLUS has not been established in breeding, pregnant and lactating cats. Fluralaner is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures. Neurologic adverse reactions have been reported in cats receiving isoxazoline class drugs, even in cats without a history of neurologic disorders. Use with caution in cats that are heartworm positive. The effectiveness of BRAVECTO PLUS to prevent heartworm disease after bathing or water immersion has not been evaluated.


For information, visit BravoVets.com/Plus.

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Revolution is a registered trademark of Zoetis Services LLC.
In a well-controlled laboratory safety study, Bravecto Plus was administered topically to cats ranging in weight from 2.6 lb – 27.5 lb (1.2 kg to 12.5 kg). Each tube is formulated to provide a minimum dose of 18.2 mg/lb (40 mg/kg) fluralaner and 0.9 mg/lb (2 mg/kg) moxidectin.

Bravecto Plus is available in three tube sizes to treat cats ranging in weight from 2.6 lb – 27.5 lb (1.2 kg to 12.5 kg). Each tube contains 280 mg of fluralaner and 14 mg of moxidectin. Each tablet contains 18.2 mg of fluralaner and 0.9 mg of moxidectin.


Indications:
Bravecto Plus is indicated for the prevention of heartworm disease caused by Dirofilaria immitis and for the treatment of infections with intestinal roundworms (Toxocara cati, Toxascaris leonina), intestinal hookworms, and canine hookworms (Ankylostoma caninum) in cats 6 months of age and older weighing 2.6 lb or greater.

Dosage and Administration:
Bravecto Plus should be administered topically as a single dose every 2 months according to the Dosage Schedule below to provide a minimum dose of 18.2 mg/lb (40 mg/kg) fluralaner and 0.9 mg/lb (2 mg/kg) moxidectin.

For prevention of heartworm disease, Bravecto Plus should be administered at 2-month intervals. Bravecto Plus may be administered one month without information or at a minimum should be administered at 2-month intervals beginning at 6 months of age.

The safety of Bravecto Plus has not been established in breeding, pregnant, and lactating cats.

Animal Safety:
- There were no serious adverse reactions.
- There were no clinically-relevant, treatment-related effects on physical examination, body weights, food consumption, or clinical pathology (hematology, clinical chemistries, coagulation tests, serum amyloid A, and urinalysis), gross pathology, or weight changes.
- There were no clinically-relevant changes in behavior or adverse signs.
- No abnormal adverse reactions were observed from the concurrent use of Bravecto Plus with other medications.

Human Warnings:
- Do not eat, drink or smoke while handling the product. Avoid contact with skin and eyes. If contact with eyes occurs, flush eyes slowly and gently with water.
- Avoid contact with skin and a sticky residue on the skin may occur after washing, rubbing alcohol (70% isopropyl alcohol) can be applied to the area to remove the residue.
- Avoid ingestion of the product. If the product accidentally contacts skin and a sticky residue on the skin may occur after washing, rubbing alcohol (70% isopropyl alcohol) can be applied to the area to remove the residue.

Adverse Reactions:
In a well-controlled U.S. field study, which included a total of 176 treated cats (135 with Bravecto Plus and 41 with a monthly topical active control), there were no serious adverse reactions.

Effectiveness:
- Bravecto Plus is available in three tube sizes to treat cats ranging in weight from 2.6 lb – 27.5 lb (1.2 kg to 12.5 kg). Each tube is formulated to provide a minimum dose of 18.2 mg/lb (40 mg/kg) fluralaner and 0.9 mg/lb (2 mg/kg) moxidectin.
- Each tube contains 280 mg of fluralaner and 14 mg of moxidectin.

How to test an anesthesia machine for leaks
Ask Emily: How can I help my team feel appreciated during the pandemic?

Is managing feline hyperthyroidism a team sport?

New managers: 6 tips for a great start

When a new dog is too much for an older client

When felines attack: 5 reasons cats go berserk

Thoughts from a small animal surgical nurse

Cheat sheet: Service animals, ESAs and pets

Make your practice the happiest place on Earth
How can I help my team feel appreciated during the pandemic?

Here are 10 ways to show your veterinary team how grateful you are for their hard work and dedication during the COVID-19 crisis.

These says, veterinary teams are feeling stress, anxiety, fear and uncertainty on a daily basis. You have likely changed your entire work flow, including your team’s schedules, in light of COVID-19. This is the perfect time to show your team that you appreciate their efforts. Here are 10 things you can do to help them feel appreciated both during and after the pandemic.

1. **Play curbside bingo.** You may have seen this game circulating through social media. Download or create curbside bingo cards for your practice team, and offer prizes to the winners.

2. **Provide breakfast, lunch or yummy treats for the team.** Local restaurants and bakeries will surely appreciate the orders!

3. **Have meetings at the beginning and end of each shift, and always ask for feedback.** Your team has great ideas—use them!

4. **Schedule meditation or yoga sessions.** I bet some of you let out a chuckle just now, but I do this with my team and it is palpable when we don’t have our meditation session at lunch time to help us prepare mentally for the afternoon.

5. **Set revenue goals and offer cash or gift card bonuses when those goals are reached.**

6. **Organize an ongoing potluck.** Working seven days on and seven days off, our team has been pairing up and cooking lunch and dessert. This has eliminated the stress for team members around having to bring or pick up their own lunch every day.

7. **Write thank-you notes and place them around the practice for a nice surprise.**

8. **After a long day, don’t forget simply to tell your team “thank you”—use communication platforms like Slack.**

9. **Give the gift of time.** On the other side of the pandemic, award those who weathered the storm with an additional PTO day to use at their leisure.

10. **Plan an “after-party” once all of this is over.**

The sky is the limit when it comes to showing appreciation to your team, whose lives have literally been turned upside down over the past several weeks. Don’t forget to utilize your drug representatives to help you with some of these ideas, as many of them would be more than happy to send your team lunch or help you organize a prize for the bingo winner. Take care of your team, and they will take care of you!

Emily Shiver, CVPM, CCFP, is practice manager at Cleveland Heights Animal Hospital in Lakeland, Florida.

dvm360.com and Firstline magazine asked practice manager Emily Shiver to answer your questions about life in practice for managers, technicians, assistants, client service representatives and more. Got a question for her? Email us at firstline@mmhgroup.com.
CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Description: NexGard® (afoxolaner) is available in four sizes of beef-flavored, soft chewables for oral administration to dogs and puppies according to their weight. Each chewable is formulated to provide a minimum afoxolaner dosage of 1.14 mg/lb (2.5 mg/kg). Afoxolaner has the chemical composition 1-Naphthilcarbamoyl-dimethyl-4-(3-chloro-5-(1-fluorooxazol-5-yl)-phenyl)-4-dihydro-5-( trifluoromethyl)-3-isoxazolyl]-N-(2-oxo-2-[3,2,2-trifluoroethyl]aminomethyl)ethyl.

Indications: NexGard kills adult fleas and is indicated for the treatment and prevention of flea infestations (Ctenocephalides felis), and the treatment and control of Black-legged tick (Ixodes scapularis). American Dog tick (Dermacentor variabilis), Lone Star tick (Amblyomma americanum), and Brown dog tick (Rhipicephalus sanguineus) infestations in dogs and puppies 8 weeks of age and older, weighing 4 pounds of body weight or greater, for one month. NexGard is indicated for the prevention of Borrelia burgdorferi infections as a direct result of killing louse (scapularis) vector ticks.

Dosage and Administration: NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg).

Dosing Schedule:

<table>
<thead>
<tr>
<th>Body Weight</th>
<th>Afoxolaner Per Chewable (mg)</th>
<th>Chewables Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0 to 10.0 lbs.</td>
<td>2.0</td>
<td>One</td>
</tr>
<tr>
<td>10.1 to 20.0 lbs.</td>
<td>6.0</td>
<td>One</td>
</tr>
<tr>
<td>20.1 to 40.0 lbs.</td>
<td>8.0</td>
<td>One</td>
</tr>
<tr>
<td>40.1 to 60.0 lbs.</td>
<td>12.0</td>
<td>One</td>
</tr>
<tr>
<td>Over 60.0 lbs.</td>
<td>16.0</td>
<td>One</td>
</tr>
</tbody>
</table>

NexGard can be administered with or without food. Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes to ensure that part of the dose is not lost or refused. If it is suspected that any of the dose has been lost or vomited occurs within two hours of administration, re-dose with another full dose. If a dose is missed, administer NexGard and resume a monthly dosing schedule.

Tick Treatment and Prevention: Treatment with NexGard may begin at any time of the year. In areas where fleas are common year-round, monthly treatment with NexGard should continue the entire year without interruption.

To minimize the likelihood of flea reinfection, it is important to treat all animals within a household with an approved flea control product.

Tick Treatment and Control: Treatment with NexGard may begin at any time of the year (see Effectiveness). Contraindications: There are no known contraindications for the use of NexGard.

Warnings: Not for use in humans. Keep this and all drugs out of the reach of children. In case of accidental ingestion, contact a physician immediately.

Precautions: Afoxolaner is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures. Seizures have been reported in dogs receiving isoxazoline class drugs, even in dogs without a history of seizures. Use with caution in dogs with a history of seizures or neurologic disorders (see Adverse Reactions and Post-Approval Experience).

The safe use of NexGard in breeding, pregnant or lactating dogs has not been evaluated.

Adverse Reactions:

In a well-controlled US field study, which included a total of 333 households and 615 treated dogs (415 administered afoxolaner, 200 administered active control), no serious adverse reactions were observed with NexGard.

Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of ≥ 1% within any of the three months of observations are presented in the following table. The most frequently reported adverse reaction was vomiting. The occurrence of vomiting was generally self-limiting and of short duration and tended to decrease with subsequent doses in both groups. Five treated dogs experienced anorexia during the study, and two of those dogs experienced anorexia with the first dose but not subsequent doses.

Table 1: Dogs With Adverse Reactions

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Afoxolaner</th>
<th>Oral active control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%) (n=415)</td>
<td>N (%) (n=200)</td>
</tr>
<tr>
<td>Vomiting (with and without blood)</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>33</td>
<td>31</td>
</tr>
<tr>
<td>Diarrhea (with and without blood)</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Lethargy</td>
<td>7</td>
<td>1.7</td>
</tr>
<tr>
<td>Anorexia</td>
<td>5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

1 Number of dogs in the afoxolaner treatment group with the identified abnormality.

2 Number of dogs in the control group with the identified abnormality.

In the US field study, one dog with a history of seizures experienced a seizure on the same day after receiving the first dose and on the same day after receiving the second dose of NexGard. This dog experienced a third seizure one week after receiving the third dose. The dog remained enrolled and completed the study. Another dog with a history of seizures had a seizure 19 days after the third dose of NexGard. The dog remained enrolled and completed the study. A third dog with a history of seizures received NexGard and experienced no seizures throughout the study.

Post-Approval Experience (July 2018):

The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA/CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

The following adverse events reported for dogs are listed in decreasing order of reporting frequency for NexGard:

Vomiting, pruritus, lethargy, diarrhea (with and without blood), anorexia, hyperactivity/restlessness, panting, ataxia, dermatitis (including rash, papules), allergic reactions (including hives, swelling), and tremors.

Contact Information:

For a copy of the Safety Data Sheet (SDS) or to report suspected adverse drug events, contact Merial at 1-888-637-4251 or www.nexgardfordogs.com.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/AnimalVeterinary/SafetyHealth.

Mode of Action:

Afoxolaner is a member of the isoxazoline family, shown to bind to a binding site to inhibit insect and acarine ligand-gated chloride channels, in particular those gated by the neurotransmitter gamma-aminobutyric acid (GABA), thereby blocking pre- and post-synaptic transfer of chloride ions across cell membranes. Prolonged afoxolaner-induced hyperpolarization results in uncontrolled activity of the central nervous system and death of insects and acarines. The selective toxicity of afoxolaner between insects and acarines and mammals may be inferred by the differential sensitivity of the insects and acarines’ GABA receptors versus mammalian GABA receptors.

Effectiveness:

In a well-controlled laboratory study, NexGard began to kill fleas four hours after initial administration and demonstrated >99% effectiveness at eight hours. In a separate well-controlled laboratory study, NexGard demonstrated 100% effectiveness against adult fleas 24 hours post-infestation for 35 days, and was ≥95% effective at 12 hours post-infestation through Day 21, and on Day 35. On Day 28, NexGard was 91.1% effective 12 hours post-infestation. Dogs in both the treated and control groups that were infested with fleas on Day 1 generated fleas at 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated dogs, and 4-80 eggs and 0-118 eggs in the control dogs, at 12- and 24-hours, respectively). At subsequent evaluations post-infestation, fleas from the treated group continued to be essentially unable to produce any eggs (0-1 eggs) while fleas from the control group continued to produce eggs (1-141 eggs).

In a 90-day US field study conducted in households with existing flea infestations of varying severity, the effectiveness of NexGard against fleas on the Day 30, 60 and 90 visits compared with baseline was 98.0%, 99.7%, and 99.9%, respectively.

Collectively, the data from the three studies (two laboratory and one field) demonstrate that NexGard kills fleas after four hours and prevents subsequent flea infestations after the start of treatment of existing flea infestations.

In well-controlled laboratory studies, NexGard demonstrated >97% effectiveness against Dermacentor variabilis, >96% effectiveness against I. scapularis, and >95% effectiveness against Rhipicephalus sanguineus, 48 hours post-infestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >95% effectiveness against Amblyomma americanum for 30 days.

In two separate, well-controlled laboratory studies, NexGard was effective at preventing Borrelia burgdorferi infections after dogs were infested with louse (scapularis) vector ticks 28 days post-treatment.

Animal Safety:

In a margin of safety study, NexGard was administered orally to 8 to 9-week-old Beagle puppies at 1, 3, and 5 times the maximum exposure dose (6.3 mg/kg) for three treatments every 28 days. In two separate, well-controlled laboratory studies, NexGard was effective at preventing Borrelia burgdorferi infections after dogs were infested with louse (scapularis) vector ticks 28 days post-treatment.

Storage Information:

Store at or below 30°C (86°F) with excursions permitted up to 40°C (104°F).

Newly Supplied:

NexGard is available in four sizes of beef-flavored soft chewables: 11.3, 28.3, 68, or 136 mg afoxolaner. Each chewable size is available in color-coded packages of 1, 3, or 6 beef-flavored chewables.

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Rev. 2/2018
Is managing feline hyperthyroidism a team sport?

It sure is, and here’s how veterinary technicians can play their part.

By Karen Todd-Jenkins, VMD

Hyperthyroidism is the most prevalent feline endocrine disease of cats, affecting about 10% of cats age 10 or older. It’s caused by a functional tumor of one or both thyroid glands that ignores the body’s regulatory mechanisms and produces excessive amounts of thyroid hormone. Most feline thyroid tumors are benign, but about 2% can be malignant.

Clinical signs include increased drinking, urination and appetite (polydipsia, polyuria and polyphagia, respectively), along with weight loss. Vomiting, diarrhea and behavioral changes (e.g. increased vocalization) can also occur.

Diagnosis is based on blood testing (baseline total thyroxine and sometimes free thyroxine) and consistent clinical signs. Treatment options include radioiodine, which is considered the treatment of choice, and surgical removal of the thyroid gland(s). Both are curative but involve significant up-front costs, so some owners opt for medication (methimazole) or a therapeutic diet, which can manage the problem but aren’t curative.

The good news? Most cats respond favorably to treatment. The not-so-good news? Clinical signs of hyperthyroidism resemble those of kidney disease, diabetes mellitus and even cancer, so early detection isn’t always straightforward. But veterinary technicians can play an important role at every step of the process, from diagnosis to long-term management.

Facilitate earlier diagnosis

Signs of hyperthyroidism are easily misinterpreted or missed completely. A pet owner whose senior cat starts drinking from water faucets may not realize this could indicate polydipsia. And a cat that suddenly eats voraciously may be dismissed as having a “healthy appetite.”

Including thyroid hormone level testing as part of routine wellness screens in senior cats can increase the chances of early detection and prompt treatment. Also, when a middle-aged to senior cat is being examined, an astute veterinary technician can ask the right questions to help determine
if the cat is showing subtle disease signs.

Help clients manage at-home therapy
Owners who opt for medication may dread the idea of giving their cat a pill every day for life. Fortunately, veterinary technicians often have tried-and-true methods for medicating cats, and some of these easily translate to home care.

When all else fails, veterinary technicians can recommend other dosing options, such as transdermal formulations, compounded liquids and flavored chews. Technicians should recognize common side effects of methimazole (e.g. vomiting, anorexia, lethargy), so clients can be advised if issues arise. Technicians can also help clients navigate their cat’s transition to a prescription diet.

Focus on client communication
Technicians can spearhead client communications by following up after office visits or medication dosing adjustments, or fielding phone calls when owners have questions.

Promote blood pressure monitoring
Hypertension and hyperthyroidism tend to target the same population of cats—middle aged to seniors. Blood pressure monitoring in at-risk cats is an excellent way to catch the condition early, before damage to organs, such as the eyes and kidneys, can occur.

Because cats with hyperthyroidism are considered at risk for hypertension, the American Association of Feline Practitioners recommends checking blood pressure during office visits for cats with hyperthyroidism.

Several portable devices are available for measuring indirect blood pressure in cats. It’s helpful to become familiar with the equipment at your practice, including how to use, maintain and calibrate the device.

Help track patient progress
Recheck exams aren’t just for drawing blood to recheck thyroid levels. These visits are an excellent opportunity to monitor weight gain, assess body condition score, and question the owner about improvements in drinking, urination and other disease signs.

Dr. Todd-Jenkins received her VMD degree from the University of Pennsylvania School of Veterinary Medicine. She is a medical writer and has remained in clinical practice for over 20 years. She is a member of the American Medical Writers Association and One Health Initiative.

REFERENCES
An anesthetist must understand how to use multiple pieces of equipment to perform their job properly, but the main tool of the trade is the anesthesia machine. To deliver oxygen efficiently, remove carbon dioxide and deliver appropriate concentrations of inhalant to the patient, it is paramount that the anesthesia machine be functioning properly. This article describes how to test your anesthesia machine’s pressure systems, breathing system and scavenging system for potential leaks.

Assessing the high-pressure system
The anesthesia machine’s high-pressure system is where the pipeline and cylinder gas supplies are attached. It consists of the cylinders, hanger yoke, cylinder pressure gauge and regulator. Oxygen and other medical gases are supplied to the anesthesia machine through a central gas supply or by attaching the cylinder directly to the machine via the hanger yoke.

The larger cylinders typically are used for the central gas supply. They can be attached to the anesthesia machine by a single supply line or by a manifold that connects multiple cylinders at once. The regulator attaches to the cylinder through a gas-specific, threaded diameter index safety system (DISS; Figure 1). Malalignment of the threads or a loose connection can result in a leak.

The smaller cylinders attach directly to the anesthesia machine via a gas-specific, pin-indexed hanger yoke. A small washer, called a Bodok seal, must be placed around the yoke to form a tight attachment between the gas cylinder and hanger yoke (Figure 2). If the Bodok seal is not present, a leak will be heard when the cylinder is opened.

For anesthesia machines that are equipped with a double hanger yoke, both yokes should contain check valves, which prevent gas leaking from a cylinder with higher pressure to one with lower pressure. The valves also prevent gas leaks into the room of a vacant hanger yoke.

Hanger yokes in older anesthesia machines may not have built-in check valves. In this instance, a plug can be placed on the empty hanger yoke to prevent retrograde leaks.1 All cylinders should be tested immediately after being changed by slowly opening the valve in a counterclockwise direction to ensure that no leak is present from the regulator attachment.

Assessing the intermediate- and low-pressure systems
The intermediate-pressure system in an anesthesia machine includes the pipeline inlet connections, pipeline pressure gauge (may not be present on all machines, especially portable ones), conduits from pipeline to flowmeter, conduits from flowmeter to inspiratory and expiratory ports. A negative-pressure and positive-pressure test should be performed on the system.

Timing is everything
How often should you check the pressure systems in your anesthesia machine? The high-pressure system should be checked whenever an oxygen cylinder is replaced. The intermediate- and low-pressure systems need to be checked via negative-pressure and positive-pressure tests on a regular basis—at least monthly or whenever the breathing system is not leak checking properly.
Backed by the largest prospective study in diabetic cats to date, PROZINC offers predictable glycemic control and efficacy proven to improve clinical signs associated with diabetes.1-3

Another study shows that remission rates with the use of PROZINC were comparable to glargine.2

Make PROZINC your first-line treatment for diabetic cats.4–6

For more information, contact your Boehringer Ingelheim representative.

Important Safety Information for Cats: For use in cats and dogs only. Animals presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdosage can result in profound hypoglycemia and death. Progestogen and glucocorticoid use should be avoided. PROZINC insulin is contraindicated in cats during episodes of hypoglycemia and in cats sensitive to protamine zinc recombinant human insulin or any other ingredients in the PROZINC product.

For more information, please see full prescribing information for cats.


ProZinc® is a registered trademark of Boehringer Ingelheim Animal Health USA, Inc. ©2019 Boehringer Ingelheim Animal Health USA, Inc., Duluth, GA. All rights reserved. PET-0887-PROZ0119.
All cases of hypoglycemia resolved with appropriate therapy and if needed, a dose reduction.

A cat with signs of hypoglycemia should be treated immediately. Glucose supplementation or food; others received intravenous glucose. One cat had a serious hypoglycemic event associated with seizures and blindness. The cat fully recovered and was treated with appropriate therapy and if needed, a dose reduction.

### Dosage and Administration

**Use of A SYRINGE OTHER THAN A U-40 SYRINGE WILL RESULT IN INCORRECT DOSING.**

**For Subcutaneous Injection Only.**

**Do Not Shake or Agitate the Vial.**

**PROZINC** should be mixed by gently rolling the vial prior to withdrawing each dose from the vial. Once mixed, **PROZINC** suspension has a white, cloudy appearance. Clumps or visible white particles can form in Insulin suspensions; do not use the product if clumps or visible white particles persist after gently rolling the vial.

Using a U-40 Insulin syringe, the injection should be administered subcutaneously on the back of the neck or on the side of the cat.

Always provide the Client Information Sheet with each prescription.

The initial recommended **PROZINC** dose is 0.1 – 0.3 IU insulin/pound of body weight (0.2 – 0.7 IU/kg) every 12 hours. The dose should be given concurrently with or right after a meal. The veterinarian should re-evaluate the cat at appropriate intervals and adjust the dose based on clinical signs and glucose nadirs until adequate glycemic control has been attained. In the effectiveness field study, glycemic control was considered adequate if the glucose nadir from a 9-hour blood glucose curve was between 80 and 150 mg/dL and clinical signs of hypoglycemia such as polyuria, polydipsia, and weight loss were improved.

Further adjustments in the dosage may be necessary with changes in the cat’s diet, body weight, or concomitant medication, or if the cat develops concurrent infection, inflammation, neoplasia, or an additional endocrine or other medical disorder.

### Contraindications

**PROZINC** is contraindicated in cats sensitive to protamine zinc recombinant human insulin or any other ingredients in **PROZINC**. **PROZINC** is contraindicated during episodes of hypoglycemia.

### Warnings: User Safety

**For Use In Cats and dogs only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with running water for at least 15 minutes.** Accidental injection may cause hypoglycemia. In case of accidental injection, seek medical attention immediately. Exposure to product may induce a local or systemic allergic reaction in sensitized individuals.

**Animal Safety:** Owners should be advised to observe for signs of hypoglycemia (see Client Information Sheet). The product, even at established doses, has been associated with hypoglycemia. A cat with signs of hypoglycemia should be treated immediately. Glucose should be given orally or intravenously as dictated by clinical signs. Insulin should be temporarily withheld and, if indicated, the dosage adjusted.

Any change in insulin should be made cautiously and only under a veterinarian’s supervision. Changes in insulin strength, manufacturers, type, species, human, animal) or method of manufacture (rDNA versus animal-source insulin) may result in the need for a change in dosage.

Appropriate diagnostic tests should be performed to rule out endocrinopathies in diabetic cats that are difficult to regulate.

### Precautions

Cats presenting with severe ketoadosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to obtain and maintain adequate glycemic control and to prevent associated complications. Overdose can result in profound hypoglycemia and death.

Glucocorticoids, progestogens, and certain endocrinopathies can have an antagonistic effect on insulin activity. Glucocorticoid and progestogen use should be avoided.

The safety and effectiveness of **PROZINC** in breeding, pregnant, and lactating cats has not been evaluated.

### Adverse Reactions: Effectiveness Field Study

In a 45-day effectiveness field study, 176 cats received **PROZINC**. Hypoglycemia (defined as a blood glucose value of < 50 mg/dL) occurred in 71 of the cats at various times throughout the study. Clinical signs of hypoglycemia were generally mild in nature (described as lethargic, sluggish, weak, trembling, uncoordinated, groggy, glassy-eyed or dazed). In 17 cases, the veterinarian provided oral glucose supplementation or food as treatment. Most cases were not associated with clinical signs and received no treatment. One cat had a serious hypoglycemic event associated with stupor, lateral recumbency, hypothermia and seizures. All cases of hypoglycemia resolved with appropriate therapy and if needed, a dose reduction.

Three cats had injection site reactions which were described as either small, punctate, red lesions; lesions on neck; or palpable subcutaneous thickening. All injection site reactions resolved without cessation of therapy.

Four cats developed diabetic neuropathy during the study as evidenced by plantargrade stance. Three cats entered the study with plantargrade stance, one of which resolved by Day 45. Four cats were diagnosed with diabetic ketoacidosis during the study. Two were euthanized due to poor response to treatment. Five other cats were euthanized during the study, one of which had hypoglycemia. Four cats had received **PROZINC** for less than a week and were euthanized due to worsening concurrent medical conditions.

The following additional clinical observations or diagnoses were reported in cats during the effectiveness field study: vomiting, lethargy, diarrhea, cystitis/hematuria, upper respiratory infection, dry coat, hair loss, ocular discharge, abnormal vocalization, black stool, and rapid breathing.

### Extended Use Field Study

**Cats that completed the effectiveness study were enrolled into an extended use field study.** In this study, 145 cats received **PROZINC** for up to an additional 136 days. Adverse reactions were similar to those reported during the 45-day effectiveness study and are listed in order of decreasing frequency: vomiting, hypoglycemia, anorexia/poor appetite, diarrhea, lethargy, cystitis/hematuria, and weakness. Twenty cats had signs consistent with hypoglycemia described as: sluggish, lethargic, unsteady, wobbly, seizures, trembling, or dazed. Most of these were treated by the owner or veterinarian with oral glucose supplementation or food; others received intravenous glucose. One cat had a serious hypoglycemic event associated with seizures and blindness. The cat fully recovered and was treated with appropriate therapy and if needed, a dose reduction.

**Fourteen cats died or were euthanized during the extended use study.** In two cases, continued use of insulin despite anorexia and signs of hypoglycemia contributed to the deaths. In one case, the owner decided not to continue therapy after a presumed episode of hypoglycemia. The rest were due to concurrent medical conditions or worsening of the diabetes mellitus.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim at 1-888-637-4251.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/reportanimalae.

### Information for Cat Owners: Please refer to the Client Information Sheet for Cats for resolved without therapy. **PROZINC** like other insulin products, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the associated clinical signs. Potential adverse reactions include: hypoglycemia, insulin antagonism/resistance, rapid insulin metabolism, insulin-induced hyperglycemia (Somogyi Effect), and local or systemic reactions. The most common adverse reaction observed is hypoglycemia. Signs may include: weakness, depression, behavioral changes, muscle twitching, and anxiety. In severe cases of hypoglycemia, seizures and coma can occur. Hypoglycemia can be fatal if an affected cat does not receive prompt treatment. Appropriate veterinary monitoring of blood glucose, adjustment of insulin dose and regimen as needed, and stabilization of diet and activity help minimize the risk of hypoglycemic episodes. The attending veterinarian should evaluate other adverse reactions on a case-by-case basis to determine if an adjustment in therapy is appropriate, or if alternative therapy should be considered.

### Effectiveness: A total of 187 client-owned cats were enrolled in a 45-day field study, with 176 receiving **PROZINC**. One hundred and fifty-one cats were included in the effectiveness analysis. The patients included were categorized by mixed breed and mixed breed cats ranging in age from 3 to 15 years and in weight from 4.6 to 20.8 pounds. Of the cats included in the effectiveness analysis, 101 were castrated males, 49 were spayed females, and 1 was an intact female. Cats were started on **PROZINC** at a dose of 0.1-0.3 IU (0.2-0.7 IU/kg) twice daily. Cats were evaluated at 7, 14, 30, and 45 days after initiation of therapy and the dose was adjusted based on clinical signs and results of 9-hour blood glucose curves on Days 7, 14, and 30.

Effectiveness was based on successful control of diabetes which was defined as improvement in at least one blood glucose variable (glucose curve mean, nadir, or fructosamine) and at least one clinical sign (polyuria, polydipsia, or body weight). Based on this definition, 115 of 151 cases (76.2%) were considered successful. Blood glucose curve means decreased from 415.3 mg/dL on Day 0 to 203.2 mg/dL by Day 45 and the mean blood glucose nadir decreased from 407.9 mg/dL on Day 0 to 142.4 mg/dL by Day 45. Mean fructosamine values decreased from 505.9 mg/L on Day 0 to 380.7 mg/L on Day 45. Cats that completed the effectiveness study were enrolled in an extended use field study. The mean fructosamine value was 342.0 μmol/L after a total of 181 days of **PROZINC** therapy.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim at 1-888-637-4251.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/reportanimalae.

### Storage Conditions: Store in an upright position under refrigeration at 36-46°F (2-8°C). Do not freeze. Protect from light. Use the 10 mL vial within 60 days of first puncture. Use the 2 mL vial within 80 days of first puncture.

Approved by FDA under NADA # 141-297.

Marketed by: Boehringer Ingelheim Animal Health USA Inc. Duluth, GA 30096

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regulator to flowmeter, flowmeter assembly and oxygen flush valve.\textsuperscript{2,3} Aside from the oxygen flush valve, the intermediate-pressure system is difficult to test for leaks because the components are upstream from the oxygen flow control valve (i.e. flowmeter). A negative-pressure leak test (described below) can be used to assess leaks in the intermediate-pressure system, but the flowmeter must be turned on and the oxygen cylinder turned off.

The low-pressure system—where the oxygen and volatile anesthetic join together—includes the flow indicator within the flowmeter, vaporizer, low-pressure conduits and common gas outlet. Leaks in the low-pressure system may be difficult to recognize simply by listening. The best way to check for leaks in this system is to perform both negative-pressure and positive-pressure tests.

**How to perform a negative-pressure leak test**

The negative-pressure leak test, which is also known as the universal leak test because it can be used on anesthesia machines with or without a common gas outlet check valve, assesses only the flowmeter, flush valve, vaporizer and conduit tubing between the intermediate- and low-pressure systems. It cannot be used to check any components of the breathing system.

1. Make sure the flowmeter and vaporizer are turned off. If the machine has a minimum mandatory flow, it must be turned off or disconnected from the oxygen source.
2. Remove the fresh gas inlet hose from the common gas outlet.
3. Attach a suction bulb to the common gas outlet and squeeze until it is fully collapsed (Figure 3). If the bulb remains collapsed for at least 10 seconds, then no leaks are present. If the bulb inflates, a leak is present. (Note that some anesthesia machines may require the suction bulb to be collapsed manually before attaching it to the common gas outlet.)

To test for internal vaporizer leaks, repeat the process with the vaporizer turned on (to the 0% position, if possible). Due to the capacity of the vaporizer, more than 10 seconds will be needed to assess the suction bulb. This test may not be sensitive enough to detect extremely small leaks within the vaporizer.

To complete the test, ensure that the vaporizer is turned off, remove the suction bulb and replace the fresh gas inlet hose to the common gas outlet.

1. If the anesthesia machine contains a check valve at the common gas outlet, then a negative-pressure leak test should be performed in conjunction with a positive-pressure leak test (see below). A positive-pressure leak test will not detect a leak of the low-pressure components that are upstream from the check valve.

**How to perform a positive-pressure leak test**

This test assesses only the flowmeter, vaporizer and conduit tubing between the intermediate- and low-pressure systems. It is not used to check any components of the breathing system. Perform this test with caution on anesthesia machines that contain a minimum mandatory flow option. Pressure that exceeds the prescribed limits can damage the flowmeter and other low-pressure components.
Make sure the flowmeter and vaporizer are in the off position. If the anesthesia machine contains multiple flowmeters, make sure they are all turned off.

Connect a pressure gauge to the common gas outlet (Figure 4). A sphygmomanometer can be modified with the appropriate connection for the common gas outlet as well.

Slowly turn on the flowmeter until the pressure gauge reads 30 cm H₂O (22 mm Hg). Do not use the oxygen flush valve for this test because the high pressure can damage the delicate anesthesia machine components.

Turn the flowmeter off and watch the indicator in the pressure gauge for movement; if the pressure remains constant, no leak is present.

- If the indicator begins to fall, the leak can be quantified by slowly turning on the flowmeter until the sphygmomanometer indicator stays at 30 cm H₂O. The flow of oxygen that is needed to stop the indicator from moving represents the size of the leak.

- If less than 50 ml/min is needed to stop the leak, then the machine still passes this test.¹ (Note: If the indicator continues to rise with the flowmeter turned off, this can indicate a leak through the flowmeter flow control valve or oxygen flush valve, as oxygen is continuing to be supplied to the common gas outlet.)

To test for internal leaks, repeat this test with the vaporizer turned on (to the 0% position, if possible). If the anesthesia machine contains multiple vaporizers, turn on only one vaporizer at a time to 0%.

Repeat steps 4 and 5 for each vaporizer. It may be necessary to turn on the flowmeter briefly to re-pressurize the system between vaporizers. The most common location for a vaporizer leak is the filling port.

If a leak is detected during either the negative- or positive-pressure test but the location cannot be identified easily, then a trained professional should be called to service the machine. Their specialized professional equipment can be used to locate the exact position of the leak, which will help resolve the issue in a quick and efficient manner.

Assessing the breathing system

The breathing system contains all the parts required to deliver the anesthetic gas mixture to the patient. The components of the breathing system should be inspected visually before each use to ensure they are not damaged. Because it is the most common source of anesthesia machine leaks (see Common sources of leaks in rebreathing circuits on page 13), performing a leak test on the breathing system prior to every use is absolutely imperative.

Assessing rebreathing circuits

Rebreathing circuits use breathing hoses that are attached to the inspirational and expiratory one-way valves (uni-directional valves), pop-off valve (adjustable pressure-limiting valve), reservoir bag, manometer, air intake valve (not present on all machines) and CO₂ absorbent canister. The most common type of rebreathing circuit used in veterinary medicine is the circle system, which is designed so that gases flow in only one direction. The breathing hose configuration can be either paired hoses that are joined with a Wye piece (Y-piece) or a coaxial design in which the inspirational hose is located inside the expiratory hose (Universal F).
Steps to pressure check a circle rebreathing circuit (Wye dual-hose configuration):

1. Attach one breathing hose to the inspiratory one-way valve and the other to the expiratory one-way valve, and then attach the appropriate-size reservoir bag for the patient to the bag port. Alternatively, each component of the rebreathing circuit can be tested individually using the following steps:
   - To test the components of the breathing system without the breathing hoses or reservoir bag, place a piece of scavenge tubing between the inspiratory and expiratory one-way valves and a plug on the bag port (Figure 5A).
   - To assess the breathing hoses, attach a plug to the reservoir bag port (Figure 5B).
   - To assess the reservoir bag, attach a piece of scavenge tubing between the inspiratory and expiratory one-way valves and a plug on the bag port (Figure 5C).

2. Close the pop-off valve and occlude the patient end of the circuit with your thumb or palm. Do not use a pop-off occlusion valve to perform a pressure check. These valves are designed to leak after a certain pressure so they may prevent a true assessment of a leak-free breathing system.

3. Fill the system with oxygen by turning on the flowmeter or pressing the oxygen flush valve until a pressure of 30 cm H₂O is reached on the manometer. Once that pressure is reached, turn the flowmeter off. Do not use the oxygen flush valve if using the scavenge tubing noted in the alternate methods for step 1. The sudden high pressure could damage delicate internal components of the anesthesia machine.

4. If no leaks are present in the breathing system, the pressure should remain constant for at least 15 seconds (Figure 6).
   - If the manometer indicator begins to fall, then a leak is present. To quantify the leak, turn on the flowmeter until the indicator stops moving. If an oxygen flow of 300 ml/min or less stops the leak, then the breathing system passes the leak test.¹
   - If the manometer indicator rises, a leak may be present in the flowmeter or oxygen flush valve. However, this test is not specific enough to indicate the precise location of such a leak.

Common sources of leaks in rebreathing circuits:
- Loose connections on breathing hoses or attachment to machine
- Kinked or damaged breathing hose creating a hole in the corrugated tubing
- Hole in the reservoir bag (tears around the neck of the bag are most common)
- Loose or cracked dome on either one-way valve
- Improper placement of CO₂ canister or canister gasket after changing absorbent
- Worn rubber parts or gaskets on the CO₂ canister
- Debris present between rubber seal or gasket of CO₂ canister

Figure 5A. To test the breathing system components without the use of hoses or a reservoir bag, place a piece of scavenge tubing between the inspiratory and expiratory one-way valves and a plug on the bag port. (Figure 5 shows a Vetamac testing kit; images are courtesy of Michelle McConnell, LVT, VTS [Anesthesia & Analgesia])

Figure 5B. Testing the breathing hoses with a plug at the reservoir bag port.

Figure 5C. Testing the reservoir bag with a piece of tubing between the inspiratory and expiratory one-way valves.
Open the pop-off valve slowly and observe the release of pressure from the reservoir bag. This ensures that the scavenging system and pop-off valve are working properly. Do not simply remove your hand from the patient port. A sudden drop in pressure could damage certain parts of the anesthesia machine. It can also cause absorbent dust to enter the breathing hoses and potentially come in contact with the patient’s airway.

Assessing one-way (unidirectional) valves
The inspiratory and expiratory one-way valves work together to ensure that gases move in only one direction throughout the breathing system. They are composed of a round, lightweight material, often referred to as a disk, that is housed within a transparent dome so that you can see them moving. The one-way valves are placed on the anesthesia machine in either a horizontal or vertical position. Malfunction of these valves can lead to excessive rebreathing of CO₂, which is detrimental to the patient when the anesthesia machine is in use. Therefore, competency of the one-way valves should be assessed before every use of the anesthesia machinery.

A variety of methods can be used to test the one-way valves, but I am most familiar with the pressure decline method, as described here.

**How to assess the inspiratory one-way valve**
1. Place a leak-tested reservoir bag on the inspiratory one-way valve port.
2. Close the pop-off valve.
3. Occlude the reservoir bag port.
4. Inflate the bag to 30 cm H₂O using the oxygen flush valve.
5. An intact inspiratory one-way valve will prevent gas flow back toward the machine. If no leak is present, the bag will remain inflated (Figure 7).

**How to assess the expiratory one-way valve**
1. Place a leak-tested reservoir bag on the inspiratory one-way valve port.
2. Close the pop-off valve.
3. Occlude the inspiratory one-way valve port.
4. Inflate the bag to 30 cm H₂O using the oxygen flush valve.
5. An intact expiratory one-way valve should prevent gas flow out of the machine. If no leak is present, the bag should remain inflated (Figure 8).

**How to find a leak**
While pressure checking the anesthesia machine, soapy water can help determine the source of a leak. Follow the flow of gas through the machine and spray the soapy water in all locations that could be a source of a leak. If a leak is present, the soapy water will begin to bubble out of the machine (Figure 9).

A refrigerant leak detector (available from Amazon for less than $30) can be used to detect halogenated hydrocarbon vapor. This device will not quantify the concentration of inhalant or the parts per million, but it is more sensitive than a basic “sniff” test in exposing leaks that are present downstream from the vaporizer.

**Steps to pressure check a circle rebreathing circuit (universal F hose configuration)**
A Universal F has the inspiratory hose inside the expiratory hose (coaxial configuration), so only one hose connects to the patient but at the machine end the hose splits so that each hose connects to its corresponding one-way valve. Follow the same procedure outlined above for pressure checking a Wye dual-hose configuration. In addition, the inner tube should be tested in the same manner as the Bain coaxial circuit (see below).

**Assessing non-rebreathing circuits**
Non-rebreathing circuits are used commonly on smaller patients to help minimize resistance to breathing during spontaneous ventilation. These circuits do not use chemical absorbent for CO₂ removal but instead depend on high fresh gas flow rates to flush the exhaled CO₂-laden gas from the system. Because of this, the components of a non-rebreathing circuit are less complex. The two non-rebreathing circuits commonly used in veterinary medicine are the Bain coaxial and Jackson Rees circuits.

**Pressure check for a Bain coaxial non-rebreathing circuit**
A Bain coaxial circuit is commonly used in conjunction with a Bain block that can be mounted on the anesthesia machine. This allows the circuit to use a reservoir bag port, manometer and pop-off valve.
Follow steps 2 through 5 outlined earlier for checking a rebreathing circuit. Note that even if the pressure remains constant there is no guarantee that the inner tube of the coaxial circuit is leak free. There are two methods to evaluate the inner tube: the occlusion test and the oxygen flush test.

**Inner tube occlusion test**
1. Turn the flowmeter to 2 L/min and close the pop-off valve.
2. Occlude the inner tube at the patient end with a pencil eraser or syringe plunger for no more than two to five seconds.
3. If the float in the oxygen flowmeter drops, then the inner tube is leak free.

Depending on the inner tube diameter, occlusion may not be possible on all types of coaxial circuits. Careful inspection of the inner tube should be performed before every use to ensure it is attached properly at both the patient and machine ends. If the integrity of the inner tube is questionable, then the circuit should be discarded. Malfunction of the inner tube will greatly increase mechanical dead space that may result in significant rebreathing of CO₂.

**Oxygen flush test (Pethick test)**
1. Close the pop-off valve and occlude the patient end of the circuit.
2. Using the flowmeter or oxygen flush valve, fill the reservoir bag completely.
3. Turn the flowmeter off and release the patient end of the circuit.
4. Activate the oxygen flush valve and observe the reservoir bag. The reservoir bag should deflate slightly (Venturi effect) if the inner tube is intact.
5. If the inner tube is detached from the machine end of the circuit, then the reservoir bag may inflate instead of deflate during this test.

**Pressure check for a Jackson Rees non-rebreathing circuit**
The same procedure outlined earlier for the circle (Wye dual hose configuration) rebreathing circuit can be used to pressure check the Jackson Rees non-rebreathing circuit. The pop-off valve may be a button that is pressed on the reservoir bag or a valve that is moved between the open and closed positions. The standard Jackson Rees circuit does not use a manometer. Therefore, to pressure check this circuit, the reservoir bag should be overfilled for at least 15 to 30 seconds in order to observe the presence of any leaks. The pop-off valve should be opened to release the pressure in the circuit rather than removing your hand from the patient port. This will test the proper function of the pop-off valve. Disposable manometers (Figure 10) can be purchased and used on the Jackson Rees circuit. A manometer can be used in the same manner to pressure check the Jackson Rees circuit as it is with the other breathing circuits.

**Assessing the scavenging system**
Excess gas exiting the pop-off valve of an anesthesia machine’s breathing system is collected and diverted into the scavenging system. The scavenging system can be active or passive.

An active scavenging system consists of a piped vacuum and duct system that carries the waste anesthetic gas (WAG) away from the anesthesia machine. The interface of an active scavenging system can be open or closed. An open interface does not contain valves and is open to the atmosphere, allowing both positive- and negative-pressure relief to occur spontaneously. This is considered the optimal design for patient safety.

**Checking an active system**
A closed interface consists of a knob that allows for adjustment of suction/vacuum, a collection bag, a positive-pressure...
relief valve and a negative-pressure relief valve (Figure 11). The collection bag on the scavenging system interface acts as a holding area for WAG coming from the anesthesia machine until it can be drawn properly into the scavenging system. The collection bag should be examined regularly to ensure there are no holes, especially around the neck of the bag. A collection bag that has a leak will act as a source of WAG contamination into the workplace.

If suction/vacuum on the scavenging interface is set too low, then the WAG leaving the anesthesia machine may exceed the capacity of the scavenging collection bag. If the scavenging collection bag becomes too distended, the positive-pressure relief valve will open and allow WAG to escape into the room.

To ensure this valve is working properly, attach a circle system to the anesthesia machine and occlude the patient end. With the pop-off valve open, activate the oxygen flush valve. The positive-pressure relief valve on the scavenging interface is working properly if the machine’s manometer indicates a pressure of less than 10 cm H₂O when the collection bag is fully distended.¹

If suction/vacuum on the scavenging interface is set too high, then there is potential for the active scavenging system to pull fresh gas away from the patient. The negative-pressure relief valve acts as a safety feature that will open to allow ambient air to enter the scavenging system if negative pressure is detected.

To make sure the negative-pressure relief valve is working properly, attach a breathing circuit and reservoir bag. Keep the pop-off valve open, occlude the patient end of the circuit and turn on the oxygen flowmeter to a minimum setting. Apply suction to the scavenging system using a pipeline vacuum, and observe the scavenging collection bag collapse. The manometer on the anesthesia machine should indicate a negative pressure of no more than 1 to 2 cm H₂O if the negative-pressure relief valve is working properly.¹

Checking a passive system
Passive scavenging systems that use an adsorption canister contain activated charcoal that effectively scavenges the halogenated inhalants. However, they do not properly scavenge nitrous oxide. These canisters must be changed on a regular basis to prevent WAG contamination.

Several brands of adsorption devices are available. Breath Fresh (JorVet) and F/AIR (A.M. Bickford) must be changed when a 50-g weight gain has occurred, whereas Enviro-Pure (SurgiVet) must be changed when a 100- to 120-g weight gain has occurred.

Some references suggest changing the adsorption canister after 12 to 15 hours of use. Exhausted canisters can be a significant source of inhalant exposure to personnel. Excessive oxygen flow rates (>3 L/min) may decrease the effectiveness of the adsorption canisters.

Darci Palmer became a veterinary technician specialist in anesthesia and analgesia in 2006. She holds the executive secretary position for the Academy of Veterinary Technicians in Anesthesia and Analgesia. Darci is an instructor for the Veterinary Support Personnel Network (VSPN) and an administrator for the Facebook group Veterinary Anesthesia Nerds.

REFERENCES
Because NOTHING should come between you and your cat

With its fast-drying formulation, REVOLUTION® PLUS broadens the scope of protection and safeguards the bond of a lifetime.

Application is QUICK AND EASY

No separation from family needed—owners just wash their hands and continue cat care as usual.

Broaden the Scope of Protection at RevolutionPlusDVM.com

IMPORTANT SAFETY INFORMATION: The safe use of REVOLUTION PLUS has not been established in kittens less than 8 weeks old or in breeding, pregnant or lactating cats. Reported side effects in clinical trials included lethargy and anorexia. Use with caution in cats with a history of neurologic disorders. Sarolaner, one of the ingredients in REVOLUTION PLUS, is a member of the isoxazoline class, which has been associated with adverse reactions such as tremors, ataxia, and seizures. Reactions have occurred in cats with or without a history of neurologic disorders. In humans, REVOLUTION PLUS may be irritating to skin and eyes. See Brief Summary of full Prescribing Information on page 19.

REVOLUTION PLUS is an easy-to-apply, quick-drying, small-volume, monthly topical solution that protects against fleas (Ctenocephalides felis), ticks (Black-legged or deer tick [Ixodes scapularis], Gulf Coast tick [Amblyomma maculatum] and American dog tick [Dermacentor variabilis]), ear mites (Otodectes cynotis), roundworms (Toxocara cati), hookworms (Ancylostoma tubaeforme), and heartworms (Dirofilaria immitis) for cats and kittens as young as eight weeks of age and weighing 2.8 pounds or greater.

*REVOLUTION PLUS broadens the scope of protection for cats and kittens against fleas, ticks, ear mites, roundworms, hookworms, and heartworms.

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Stepping into the role of veterinary practice manager can be overwhelming. You’re suddenly responsible not only for yourself, but for a whole team of individuals. You’re likely trying to improve processes at the same time as you need to put out the normal fires that come with the territory. Your to-do list can seem insurmountable, and you may feel obligated to work insane hours just to keep up.

When I was a new manager, I remember trying to do everything I could to keep my head above water. I wanted to prove myself. I often stayed late and woke up in the middle of the night to send a few emails—the job was on my mind most of the time. As you can imagine, this was not sustainable, and I started feeling burned out and needed to make some changes.

Part of that change was prioritizing and letting go of nonurgent items—basic time management and self-preservation tactics. Here are six tips for new veterinary practice managers.

1. **Get your priorities right**
   
   Prioritization was clearly Step 1. There were certain items that couldn’t wait; upset clients were high on the list, along with technical systems issues. However, the items that came across my desk as urgent when they should have been addressed much earlier (for example, a tardy employee who’d been coming in late for several months and now needed an emergency performance improvement plan) could wait 24 to 48 hours. Part of this was helping the managers I oversaw. It was important that they understood what was and wasn’t urgent so they could better manage their own time and know when to involve me as well.

2. **Untether from technology**
   
   The next, and one of the hardest, tasks was to stop being tethered to my email and phone. At first, if I received a call from one of our doctors or saw a new email in my inbox, I stopped what I was doing and addressed it right then. Constantly diverting your attention elsewhere creates a significant decrease in your efficiency. It can feel like you’re on top of everything at all times, but you’re actually wasting huge chunks of your day refocusing. Also, when you can dive into a task with your full attention until it’s completed, you produce higher-quality work. The type of mindset it takes to audit medical records is completely different than the frame of mind needed to address employee relations issues. The longer you’re in one headspace, solving similar problems, the better you perform.

3. **Set—and stick to—your goals**
   
   Setting reasonable goals was (and still is) a struggle. Being smart with your time also means knowing what can and cannot reasonably be accomplished in a day. I started a habit on Mondays to roughly set up my plan for the week. Each day, toward the end of the day, I would reassess the next day’s plan and adjust as needed. Everyone works at a different pace, but try to figure out how many “large” projects you can take on in a day, how much time you need to spend on catching up on emails, and how many smaller tasks you need to accomplish. It’s always wise to leave an hour or so for the unexpected as well.
I also began to realize that I was my own toughest critic. My own expectation of my output was far beyond what my organization expected. You want to wow your employer, but don’t do it at the expense of your own sanity.

Work on the toughest stuff when you have the most energy
When organizing tasks for the day, remember that everyone has a certain time of day when they’re most productive. Use this time to accomplish your least favorite tasks. For a lot of managers, these are the employee check-ins and reviews, the most important part of your responsibilities as a leader. Make sure to knock these out when you’re most energized, then you can take on the “easier” tasks when your mind is slowing down during the day.

Learn to delegate
New managers have a tendency to try to take on the world themselves without asking for help. Delegation, when done appropriately, can actually enrich your team’s abilities and add a sense of self-worth and responsibility for each employee. Employees want to feel helpful and want to be given higher-level tasks, and delegation can be key in accomplishing this. It’s important to find tasks that match the skillset and interests of each individual and to hand off tasks with trust (don’t hover), then check in periodically to see if they need your help. If mistakes occur, address them as they arise versus watching every move just in case an error happens. If you hover, your employees will feel mistrusted, and because you can’t be in all places at all times, the quality of everyone’s work is likely to suffer.

Give yourself a break
Lastly, but most importantly, give yourself time to reenergize—and encourage these healthy behaviors in your team as well. Part of managing your time is giving yourself mental breaks throughout the workday, in the evenings and on days off. Completely disconnecting mentally from work helps to recharge and keep alive that passion for your work. Take advantage of your paid time off during the day.

tips can help you work more purposefully, more efficiently and more happily.

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**Revolution Plus**

(selamectin and sarolaner topical solution)

**Brief Summary:** See package insert for full Prescribing Information.

**CAUTION:** Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

**INDICATIONS:** REVOLUTION PLUS is indicated for the prevention of heartworm disease caused by Dirofilaria immitis. REVOLUTION PLUS kills adult fleas (Ctenocephalides felis) and is indicated for the treatment and prevention of flea infestations with Ctenocephalides felis (black-legged tick), Amblyomma maculatum (Gulf Coast tick) and Dermacentor variabilis (American dog tick), the treatment and control of ear mites (Otodectes cynotis) infestations in cats, the treatment and control of ringworm (Toxocara cati) and intestinal hookworm (Ankylostoma braziliense) infections for one month in cats and kittens 8 weeks and older, and weighing 2.8 pounds or greater.

**CONTRAINDICATIONS:** There are no known contraindications for the use of REVOLUTION PLUS.

**WARNINGS:** Human warnings: Not for human use. Keep this and all drugs out of the reach of children. In humans, REVOLUTION PLUS may be irritating to skin and eyes. REVOLUTION PLUS and selamectin topical solution contain isopropyl alcohol and the preservative butylhydroxytoluene (BHT). Reactions such as chills, itching and skin rash have been reported in humans in rare instances after accidental dermal contact with selamectin topical solution. Individuals with known hypersensitivity to selamectin topical solution should use caution or consult a health care professional before applying this product on a cat. Wash hands after use and wash off any product in contact with the skin immediately with soap and water. If contact with eyes occurs, then flush eyes cautiously with water; if wearing contact lenses, rinse the eyes first then remove contact lenses and continue to rinse for 5 – 10 minutes and seek medical attention. In case of ingestion by a human, contact a physician immediately. The safety data sheet (SDS) provides more detailed occupational safety information. For a copy of the SDS or to report a suspected adverse reaction, call Zoetis at +1-888-363-4871. Flammable - Keep away from heat, sparks, open flames or other sources of ignition.

**PRECAUTIONS:** Sarolaner, one of the ingredients in REVOLUTION PLUS, is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures in dogs. Adverse reactions in cats treated with REVOLUTION PLUS included diarrhea, anorexia, emesis, and lethargy. Foreign Market Experience: The following adverse events were reported voluntarily during the pre-approval use of REVOLUTION PLUS in domestic cats: anorexia, seizures, and tympanic membrane liquid. To report adverse reactions call Zoetis Inc. at +1-888-363-4871. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or http://www.fda.gov/AnimalVeterinary/SafetyHealth.

**ANIMAL SAFETY:** Margin of Safety: Studies One exploratory and two pivotal margin of safety studies were conducted with REVOLUTION PLUS. In the first study, REVOLUTION PLUS was applied topically to kittens eight weeks of age at doses of 152 (selamectin/sarolaner) mg/kg (1X), 304 mg/kg (1X), 456.5 mg/kg (3X), and 60/10 mg/kg (3X) every 28 days for eight consecutive doses. One female cat in the 152 mg/kg (1X) group was found dead on study day 115. The cause was determined to be hemorrhage in multiple tissues secondary to a low platelet count. The role of the drug in contributing to this event is undetermined. No significant changes related to REVOLUTION PLUS were observed in the remaining cats for physical examination, body weight, clinical pathology (hematology, coagulation, and serum chemistry). During an exploratory margin of safety study, one cat in the 60 mg/kg (1X) group died approximately 24 hours after receiving the third monthly dose of the combination. Signs resolved without treatment within 24 hours. This cat completed the study, receiving 3 subsequent DX doses with no abnormal observations. Oral safety study The safety of REVOLUTION PLUS administered orally to kittens was tested in case of accidental oral ingestion. Oral administration of the highest recommended topical dose of REVOLUTION PLUS to kittens resulted in transient lower food consumption and clinical findings of emesis, soft feces, and salivation. In one male, mild tremor was observed and resolved within 3 hours after dosing; the same cat demonstrated reduced activity approximately 6 hours after dosing. Heartworm Positive Cat Safety of Selamectin: Selamectin is the active ingredient in REVOLUTION PLUS that prevents heartworm disease in cats; it has been shown that the addition of sarolaner does not interfere with this activity. In a safety study in which selamectin topical solution was applied 3 times the recommended dose to patent heartworm infected cats, no adverse reactions were observed. Field Safety In three well-controlled field studies, REVOLUTION PLUS was used concurrently with other medications, such as vaccines, antihelmintics, antihistamines, beta-blockers, and sedative/hypnotics. Adverse reactions in cats treated with REVOLUTION PLUS included emesis, dermatitis and eczema, pruritus. In a third field safety and effectiveness study, REVOLUTION PLUS was administered to 70 cats with fleas. The study included a total of 403 cats (252 treated with REVOLUTION PLUS and 151 treated with imidacloprid + moxidectin once monthly for three treatments). Over the 90-day study period, all observations of potential adverse reactions were recorded. Reactions reported in the REVOLUTION PLUS group included those presented in the following table. Adverse Reactions by Treatment Group

<table>
<thead>
<tr>
<th>Adverse Reaction</th>
<th>REVOLUTION PLUS</th>
<th>Imidacloprid + moxidectin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 252)</td>
<td>(n = 148)</td>
</tr>
<tr>
<td>Lethargy</td>
<td>12 (4.8%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Skin lesions*</td>
<td>10 (4.0%)</td>
<td>3 (2.0%)</td>
</tr>
<tr>
<td>Anorexia</td>
<td>9 (3.6%)</td>
<td>3 (2.0%)</td>
</tr>
<tr>
<td>Pruritus</td>
<td>7 (2.8%)</td>
<td>3 (2.0%)</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>7 (2.8%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Sneezing</td>
<td>6 (2.4%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Administration site hair changes</td>
<td>5 (2.0%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Administration site lesions</td>
<td>2 (0.8%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>

* not associated with application site.

In a second field safety and effectiveness study, REVOLUTION PLUS was administered to 134 cats with ear mites. Adverse reactions in cats treated with REVOLUTION PLUS included emesis, dermatitis and eczema, and pruritus. In a third field safety and effectiveness study, REVOLUTION PLUS was administered to 70 cats with hookworm. Adverse reactions in cats treated with REVOLUTION PLUS included diarrhea, anorexia, emesis, and lethargy.

**STORAGE CONDITIONS:** Store at or below 30°C (86°F).

**HOW SUPPLIED:** Available in three separate dose strengths for cats of different weights (see Dosing and Administration). REVOLUTION PLUS is available in cartons containing one, three, or six single dose tubes. The amount of liquid in tube varies for each weight range (2.8 - 5.5 lbs, 5.6 - 11 lbs, 11.1- 22 lbs). Tubes are never completely filled.

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**DOSAGE AND ADMINISTRATION:** See package insert for full Prescribing Information.
When a new dog is too much for an older client

How does your veterinary team help a client who’s adopted a dog that’s a little too much for them? Educate, support and be kind.

By Julie Mullins

You walk into the treatment area after lunch, and the team is talking: “I can’t believe he got a puppy! He’s being hauled everywhere by that thing already. What was he thinking?” You keep walking and peek into the exam room window. Mr. Jones got a new chocolate lab puppy. You’re not sure how old Mr. Jones is, but you think at least mid-70s. You know he isn’t steady on his feet, and you remember more than one occasion on which you helped load him and his elderly dog into his old Ford truck. “Thank you kindly,” he would say with a smile. “We aren’t as young as we used to be.”

‘Thank you for being with me today, with me and Joe’

You’re very fond of Mr. Jones. He’s been coming into your clinic for as long as you can remember with his chocolate lab Joe. They became fixtures for a while, because Joe was coming in for cold laser therapy to help his aching hips when the anti-inflammatory medication Mr. Jones was faithfully giving just wasn’t cutting it anymore.

“You walk into the treatment area after lunch, and the team is talking: “I can’t believe he got a puppy! He’s being hauled everywhere by that thing already. What was he thinking?” You keep walking and peek into the exam room window. Mr. Jones got a new chocolate lab puppy. You’re not sure how old Mr. Jones is, but you think at least mid-70s. You know he isn’t steady on his feet, and you remember more than one occasion on which you helped load him and his elderly dog into his old Ford truck. “Thank you kindly,” he would say with a smile. “We aren’t as young as we used to be.”

Neither of us move that well anymore,” Mr. Jones commented, rising slowly to take the leash from your hand after what would be the last treatment. “Can I get some of that laser therapy?” His eyes sparkled, and he laughed like it was the first—rather than the fifth—time he told you that joke. You remember the sadness that suddenly came over his face as he continued, “I think it’s just about time.”

You were the technician assigned to help with Joe’s euthanasia procedure. After completing the requisite paperwork, you looked up at Mr. Jones, his eyes welling with tears.

“You were the technician assigned to help with Joe’s euthanasia procedure. After completing the requisite paperwork, you looked up at Mr. Jones, his eyes welling with tears.

“Thank you for being with me today. With me and Joe,” he said. “My Ruthie—remember her?—she passed away last year. I think she’d be glad you’re here with me. I know Joe is. Go see Ruthie, Joe, give her a kiss for me.”

Mr. Jones left your office wiping his face with a worn handkerchief. He asked to hug you goodbye before he left. You thought he’d never let go.

He was lonely and needed connection

Mr. Jones’ new puppy barks happily, and you’re snapped back to reality. He smiles at you through the door and motions for you to come in.

“I’m so glad you’re here! Meet Mr. Little Bit!” As you sit and talk to your elder-statesman client, you find out his
Let them know you’d be happy another pet. Some aren’t so sure.

clients know they don’t want considered what they’re going to

senior pet is failing about new pets when the day.

Be open to conversations high-energy new pet

How to help an older pet owner manage a high-energy new pet

Be open to conversations about new pets when the senior pet is failing

Gently ask older clients if they’ve considered what they’re going to do when their pet passes. Some clients know they don’t want another pet. Some aren’t so sure. Let them know you’d be happy to set aside time to help them select an appropriate breed when the time is right. Normalize these conversations. Role-play with your veterinary team members about how to start these conversations. Let your clients know that pets are a huge part of life, and ask how you can help them through the process.

Make a handout

Create a brochure or other print-able items for clients with tips like, “Consider an older dog” or “Consider a smaller breed.” Mr. Jones would probably have loved a King Charles spaniel—loving, loyal, happy to please … and small.

Connect clients with help

Provide pet owners with lists of dog walkers (some larger cities offer dog runners) as well as positive-reinforcement–based dog trainers. Look into doggie daycares in your area to help fulfill the new pet’s need to be social and active; be sure to ask about senior discounts to help those clients on a fixed income.

Check in on these clients

When you know an older client has a potentially difficult-to-handle dog, set reminders to call and check in with them. Offer support without judgment.

Pitch clients on foster care

Suggest they become foster parents until they’re ready to adopt another companion. Many older clients become wonderful foster help as they find the perfect companion they didn’t even know they were looking for!

Share stories and articles

Post content about options after pet loss on your website and on social media. Again, seek to normalize the conversation.

Find grief support

Suggest they join a grief sharing group for pet loss. They’re popping up in cities near you. Not there yet? Reach out to mental health clinics and suggest they add one. The act of attending the group can help meet a need for community interaction.

Remember, these conversations are important

When a strong dog doesn’t get the proper training, the pet can become too much for the owner. What happens when it’s too much for the owner? These dogs may be rehomed, but often they wind up in shelters and the elderly owners find themselves alone and even more discouraged.

It’s important that we seek to understand. While we may not think adopting is a wise choice, it’s not our decision to make. We can become part of a solution if we just take the time and forearm ourselves with talking points to take to our clients as the situations arise.

Remember this as well: If we’re lucky, we’ll all be old people with dogs one day—and we’ll want to be understood as well.

After 10 years working in the veterinary field as a veterinary assistant and trainer, Julie Mullins felt the call back to school to complete her education. She earned her Bachelor’s in Psychology and her Master’s in Professional Counseling at Liberty University. She is passionate about helping individuals and families achieve healthy functioning and is convinced that animals should be a part of that journey. Julie observed the power of the human-animal bond while in the veterinary field and has further witnessed the power of the presence of her own dog, Ed, in the counseling sessions she conducts. Julie is also a grandmother, a runner, a business owner, a photographer and a lover of coffee, chocolate, wine and water.
When felines attack: 5 reasons cats go berserk

Veterinary behaviorist John Ciribassi, DVM, DACVB, shared his thoughts at a recent Fetch dvm360 conference about why cats get aggressive and how veterinary professionals can help clients deal with this behavior.

By Brendan Howard

Felinel aggression comes in many forms, said John Ciribassi, DVM, DACVB, at a recent Fetch conference. But there are some innovative tips and approaches to share with veterinary clients who own warrior cats, he explained in his talk about this topic.

Types of feline aggression

Here are the major types of aggression Dr. Ciribassi’s clients see and a few tips to manage them.

1 Redirected aggression

This occurs when a cat can’t get at a stimulus, so it goes after another family member, Dr. Ciribassi said, with the cat’s aggression flipping on “like a light switch.” The remedy? Separate the cat from its target and reduce the new stimulus (for example, put up blinds to block the view of animals outside).

Consider counterconditioning and desensitization, as well as medications as needed. If supervised play between aggressor and victim helps, try it. But don’t hesitate to separate the two when unsupervised. Be careful not to let the situation ramp up into aggression from the victim, too: “Put yourself in the paws of the victim,” Dr. Ciribassi said, and be sensitive to the fact that suddenly that cat can’t roam freely anymore.

2 Territorial aggression

Cats aren’t like dogs; they don’t obey fences and consider a single, bounded territory their own, Dr. Ciribassi said. “Think of cats as moving around in a bubble. That determines the space between cats. They carry their territory with them.”

A major trigger can be when two people join households and bring their separate cats together in a new environment. Dr. Ciribassi recommended the “house of plenty” approach in these cases, with enough “core” areas around the house with food, water and litterboxes so that every cat gets lots of space. If an outside cat is agitating the...
indoor resident, draw those blinds. Lorazepam in some cases can help calm an aggressor.

3 Fear-related aggression
This typically stops when the fearful stimulus disappears. But it can get worse when classical conditioning causes the aggressor to start associating fear with the victim all the time, every time. Separate the aggressor from the target, set up a “house of plenty” and consider anxiolytics. If all else fails, “set up the environment so the cats can live equally but separately,” Dr. Ciribassi suggested.

4 Petting-associated aggression
Some cats like to be petted for a time—and only a time. Cat owners need to learn the signs their cat sends when it has received enough pets. Some figure out how long a cat likes to be petted and stop well short of that point; Dr. Ciribassi called it “playing hard to get.” But everybody always wonders, why doesn’t a cat that doesn’t want to be petted anymore just walk away?
“Cats like to stay on a person’s lap,” he said. “If they can bite and remain comfortable where they are, they’re getting both the things they want.”

5 Play-related aggression
This often happens when a new kitten shows up and wants to play with an older cat that isn’t interested. Cat owners should provide plenty of other outlets for the playful cat’s energy. “That means long, feathery toys, not your body parts,” Dr. Ciribassi joked.

Be positive!
Last but not least, Dr. Ciribassi shared two thoughts to help in reframing your own thinking on feline aggression.
First, one study found that quick introductions of new cats to a household saw the same success rate as gradual and lengthy introductions. Turns out, he says, it’s really the cats’ personalities—and especially that of the resident cat—that makes for a successful introduction. Don’t get frustrated with cats that can’t get along despite all the best tactics. Sometimes, cats that need to live together but can’t do it peacefully need separate safe places to live inside the same house. If they can’t live together, don’t make them. “Most of these cats do really well,” he says, as the problem with aggression can outweigh the pleasure of the potential housemate.

Second, Dr. Ciribassi worked with cats in veterinary clinics for decades, and he hasn’t soured on the species. He’s not disappointed that so many cats hiss, scratch and bite in fear-related aggression—he’s surprised more of them don’t.

Your feline aggression toolbox
- **Counterconditioning:** Offset a negative stimulus by introducing a competing, pleasurable stimulus.
- **Desensitization:** Gradually introduce a trigger, but aim to keep the response below the arousal threshold (ideally through counterconditioning).
- **“House of plenty”:** Provide enough food, water, litterboxes and other resources for every cat in the household
- **Proper play activity:** Supervise cats at play that are struggling with behavior issues.
- **Medications:** Anxiolytics, selective serotonin reuptake inhibitors and other pharmaceuticals can help reduce stress.
- **Remote punishment:** Dr. Ciribassi is generally not a fan of punishment in any form, but when it is used, it should be humane and administered remotely. Some cat owners see success with automatic “scarecrow”-like sprinklers that keep outside cats and wildlife out of the yard as well as products that surprise or distract a cat while its owner is nowhere nearby.
Thoughts from a small animal surgical nurse

There are a million things to keep track of in this fast-paced position—all while keeping your patients alive and comfortable.

By Jen Bowdish, RVT

Being a surgical nurse in a small animal practice is much more than the technical aspects of the job. It also involves caring for patients, clients, surgeons, teammates and yourself. Our surgical patients are usually pets that we have been caring for already and know well. You don’t connect only with your patients. Just as often, you connect with their owners to provide reassurance, sympathy, familiarity and confidence that their pet is receiving the best possible care.

But not every procedure is routine, and you can’t guarantee there won’t be risks with the various types of surgeries performed. With orthopedic surgery, for example, the primary concern is the weeks of at-home postoperative care and how the clients will adjust their daily life around their pet’s recovery. For emergency surgeries, where emotions often run high, detail and precision are imperative. Life-altering procedures, such as amputations or enucleations, also involve elevated emotions as well as concerns that must be addressed regarding the patient’s physical disability.

The scrub technician’s checklist

Then there are the technical aspects and making sure all the boxes have been checked off before surgery can proceed, from the exam and bloodwork to scheduling the day’s procedures, and on and on.

Before surgery, you need to ask yourself many questions: Is the right patient going under for the right surgery? Has the best anesthetic protocol for this individual patient been formulated? Is the patient is properly prepped for the procedure? Are the proper surgical supplies sterile and ready? Do you have all the supplies the doctor may want or need? Is the table set to the right height? Are the lights placed in the doctor’s preferred position?

During surgery, you must keep your patient at the safest and best anesthetic depth while paying close attention to your surgeon’s needs. If applicable, you must make sure you mark the right specimen to the right patient, and then send the right specimen to the right lab for the right test.

After the procedure, you must also ensure that the patient’s pain is being managed to the best of your ability. One of the primary concerns of a surgical nurse should be ensuring that you are providing the best possible pain management. Proper pain management is not only important for the patient during and directly after the procedure, but it’s equally important for the owner to feel their pet is pain free during recovery.

At the end of the day

When the surgery is complete and the patient has recovered, you then reunite animal and owner. When all the stars align, the patient walks out sleepy but comfortable and the owner’s worries start to melt away. Not every day ends so nicely, of course, or even starts nicely. There are days when nothing goes as planned, or for whatever reason you or a coworker is having an off day. The veterinary profession is an emotional rollercoaster. As a surgical nurse, you are everything, and the only way to be everything is to have an amazing team of people you trust to support you and keep you smiling, and who enjoy all gross things you’re not allowed to talk about at the dinner table.

Ms. Bowdish is a surgery technician at Upper Arlington Veterinary Hospital in Upper Arlington, Ohio.
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Cheat sheet: Service animals, ESAs and pets

Pets, emotional support animals (ESAs) and service animals have very different rights and responsibilities in veterinary clients’ lives. Take advantage of your opportunities to gently but firmly educate pet owners on what designations are appropriate for which animals and why it’s important not to blur the lines between them.

By Julie Mullins

It feels like service animals, emotional support animals (ESAs), and therapy dogs are everywhere you look these days. You see them in airplane cabins, in restaurants and in condos known for their strict “No Pets!” policies. They’re wearing little vests or tags to indicate their “helper” status.

Two questions spring to mind. First, are these animals really helping their owners and, second, what’s the difference between these designations?

These animals fill a crucial human need

Let’s tackle the first question first: Are these animals helping? Of course they are—in many ways. Dogs especially are incredibly versatile creatures. They can locate an escaped prisoner in the woods, guide a vision-impaired individual around a busy city, calm an individual in the throes of a severe panic attack and even sniff out cancer cells. They can do all of this with a whimsical wag of their tail and an adorable cock of their head, causing us to fall head over heels in love with them.

Throughout history, dogs have been trained for important tasks as messengers, mine sweepers, scouts and sentries. They’ve protected households, helped hunt for food, warmed the beds of their owners (a “three-dog night” is a cold one!) and even served as flea traps to keep the pests off their noble owners (gross, right?). They have long been valued for the services they provide, and their usefulness continues today.

Many research articles demonstrate the health benefits of animals. A 2003 study found that when people pet dogs, both the animal and the person experience decreased blood pressure and increased oxytocin, endorphin and dopamine levels. More recent work shows that interaction with animals can reduce social isolation and alleviate depression.

From the companion animal who greets a beloved owner at the door after a long day at work (or a 10-minute trip to the grocery store), to the emotional support animal prescribed by a mental health professional, to the service animal trained to provide a specific task for a person with a disability, dogs fulfill myriad duties for their owners. However, each of these groups is afforded different rights and has different responsibilities within the world of humans.

Every veterinary professional should have a clear understanding of the differences among these designations so they can guide and educate their clients.

Companion animals are pets. They’re wonderful and live in the homes of lucky individuals in areas where they’re allowed. They encourage activity via daily walks. They connect people in the community during outdoor activities. But companion dogs are generally not allowed inside businesses, and many apartment complexes and school dormitories ban pets altogether. And while many pet owners prefer calm, well-behaved companion animals, this is not a requirement—people can choose to own animals that are on the aggressive side (working with a veterinary behaviorist is recommended).

What about therapy animals?

Therapy dogs (and other animals) used in animal-assisted interventions—such as being present during counseling sessions—must be well mannered, approachable by many kinds of people and able to be touched. They must be...
older than 1 year, free of parasites and used in goal-oriented, planned and structured interventions. These animals have neither the rights afforded to service animals through the Americans With Disabilities Act (ADA) nor the public access or housing rights granted to ESAs. Animal-assisted interventions must be provided by licensed professionals.

**Emotional support animals** provide therapeutic support to people with a diagnosed mental illness such as anxiety, depression or post-traumatic stress disorder. These animals must be prescribed by a licensed mental health professional, and the prescription must state that (1) the individual has an impairment that substantially limits one or more major life activities and (2) the presence of the animal is necessary for the individual’s mental health. These animals are present for the comfort of the owner and do not require any special training. The animal just needs to meet the needs of its individual owner.

ESAs do have more rights than companion animals but not as many as service animals, according to the ADA. ESAs are permitted with their owners in public areas with the permission of the venue. They may also fly with their owners in an airplane cabin. As written in the Fair Housing Amendments Act, ESAs are permitted in housing regardless of the housing’s pet policy.

**Assistance or service dogs** are the other major group of helper animals. These dogs are selected for their temperament and are highly trained to meet the needs of an individual with a specified physical, sensory, psychiatric, intellectual or other mental disability. Training can take years to complete and cost upwards of $35,000. Service dogs are protected by Titles II and III of the ADA and must comply with standards set by Assistance Dogs International, including stringent testing requirements. These dogs are not to be touched when they are working (you’ve seen the warnings on their vests) and must be left to do their jobs. An enormous amount of time, training and bonding must be devoted to making a human-dog team work well together.

**Designation manipulation**

These important designations are damaged when people try to manipulate them for their own purposes. Unfortunately, ESAs aren’t well regulated at this time, and letters can be purchased online without the prerequisite mental health diagnosis, which can cause problems. Consider, for example, a dog owner who is moving into a new apartment with a no-pets policy who purchases a letter online for a couple hundred dollars to make his dog an ESA and thus able to live in the new place. When pet owners purchase letters like these for the sole purpose of being able to “take their dog anywhere” as a “service animal”—without understanding the ESA designation—they’re misrepresenting the “service” title and muddying the waters for those who legitimately need ESAs.

It is incumbent on veterinarians and veterinary technicians to understand these designations and educate clients on this topic. If clients ever hint that they’re going to order an ESA patch for their pet, ask why. Offer to assist them in locating a licensed professional counselor who can perform a proper diagnostic exam to assess for need. If they insist that they don’t need to see a mental health professional, then tell them the ESA designation doesn’t apply to them.

Dogs are remarkable animals that provide for the needs of humans in so many ways, especially as service dogs, ESAs and, yes, as pets at home. But making sure everyone understands the differences between these designations is crucial for the safety of all of us in the public sphere.

**REFERENCES**

Make your practice
the happiest place on Earth

How to make new clients happy and break out of your old habits all in one go.

By Brent Dickinson

Lots of us practice managers are stuck in our ways. We’re not breaking our habits year to year as part of the annual resolution package we outline for ourselves. We’ve followed the same old protocols for ages, doing things, for the most part, because we think they work just fine. These processes might work, but rarely do they work well. (If they did, would you still be reading this?)
So why not spice your processes up? Why not try something new that could turn things around, enhance the customer experience and increase profits, all while making you feel like you crossed something off your New Year’s list?

If you want to start fresh, do it with new clients. For starters, they’ve never seen your old ways. This puts you in the driver’s seat for a new path to success. They are also a great audience for excitement.

Our practice is thrilled to have been in business for 40 years this year, but we try not to let age lead to comfort. We make a point to extend a great handshake to new customers, joining them on the other side of our front desk to greet their pets with enthusiasm and respect. This way we present as a young and spirited team but maintain the endurance of an old, wise one. Walking clients to their car, assisting with their pet’s carrier or simply engaging in conversation is another delightful way to show them that you value their presence at your practice.

I recently took a flight home from Orlando on a “discount” airline. While I wasn’t expecting much, I disembarked the flight rather impressed. One particular flight attendant seemed excited to see my 3-year-old son board the plane and went out of her way to ensure his comfort during the whole flight, checking in from time to time. This set them apart from other less friendly airlines I’ve been on in the past few years. When it comes to veterinary clients, I truly think most of them don’t expect much of us. In their eyes, we’re in the medical industry, but if my trip to Disney World showed me anything, that’s not entirely true. We’re in the service industry because we have direct contact with our clients, personally handling the issues they encounter and doing our best to make them right. It’s just what that famous mouse does, except his “issue” is trying to deliver the most bang for your buck.

If you step back and look at your day-to-day routine, it’s easy to see why a lot of us fail at our missions to have great veterinary practices. We commonly don’t put our focus on what matters, forgetting that the pot at the end of the rainbow is those people on the other side of our front desks. A client recently told me that she was sick of her old veterinary clinic because she felt like a problem to them. A problem. I explained to her that when we are offered the opportunity to serve our customers, they become a part of our family. She said she ended up at our clinic because she saw the word “family” so many times in our online reviews. She read about how people had brought multiple pets over the decades to our practice because we felt like family.

So, if you want people in your clan, make every attempt to be as personal as possible (without being weird). Bend down to greet their children, quietly offering a snack or an age-appropriate book (dollar stores have great, cheap options). While you’re at it, learn that child’s name and put it in the notes section of your practice management software with a brief description (little girl, dark hair, named Lyla). The next time you see the family, I assure you her mother will feel so special when you remember her daughter’s name and ask her about her favorite color this month.

Another approach is to call a few days after a pet’s visit and ask the owner if they had any questions they forgot to ask during their time with your team. You wouldn’t believe how many people truly do have a question but felt like they would be annoying if they called. Email is also an easy way to accomplish this.

Try new little things all the time and see what works. Not every big thing has to cost big money. In fact, like the old saying goes, the best things in life are free. But don’t worry—they’ll make you money in the long run!

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