**Patient Safety: When the Patient is a Companion Animal**

**POST-TEST**

**LEARNING OBJECTIVES**

After participating in this activity, pharmacists and pharmacy technicians will be able to:

* Discuss the increasing numbers of veterinary prescriptions being filled in pharmacies with an emphasis on cats and dogs
* Discuss ways in which companion animals’ needs differ from those of human patients
* Describe safe medication use in dogs and cats
* Identify methods to ensure that each prescription is appropriate for the companion animal and owners are well informed
* Acquire reputable references for pharmacy staff and companion animal owners

**1. What is a main reason why pet prescriptions in community pharmacies are increasing?**

A. More convenience to the pet owner

B. May lower costs for the pet owner

C. Pharmacies are competing with veterinarians

**2. Select the statement that is TRUE.**

A. Close to 70% of American households have pets, and 13% of households have exotic pets.

B. Exotic animals use antibiotics infrequently and require antibiotics specific to their species.

C. Fad species like sugar gliders and prairie dogs are treated like other animals of similar size.

**3. A Bengal cat’s owner comes back into the pharmacy one day after picking up a compounded antibiotic suspension. The owner says, “Little Cricket hates this medicine. She hides when I try to medicate her!” What is one way you can help the pet owner?**

A. Tell the owner to mix the suspension in cold, wet food.

B. Flavor the medication with strawberry flavoring.

C. Flavor the medication with chicken or liver flavoring.

**4. Why can’t cats metabolize many medications that humans metabolize well?**

A. They often have CYP2D15 enzyme mutations.

B. They all lack UDP-glucuronsyltransferase.

C. They all lack salivary amylase.

**5. A regular customer is picking up an analgesic for his old, arthritic cat that he refills every month. He brings OTC Children’s Tylenol Oral Suspension to the counter. He says his cat’s pain medication doesn’t seem to be working for her anymore and that he’s going to try Children’s Tylenol® using the weight-based dosing described on the box. What do you say?**

A. Tell him to look animal weight-based dosing online because it may not be the same as children’s weight-based dosing.

B. Tell him to use OTC ibuprofen instead; some NSAIDs can be used in cats and ibuprofen is one of them.

C. Tell him Tylenol contains acetaminophen, which is toxic to cats, and to contact his veterinarian to find an alternative.

**6. You receive and fill a new prescription for a 30 lb Border Collie: levothyroxine 0.3 mg twice daily. This dose and frequency is considerably different than the dose you are accustomed to seeing for humans. How do you verify the dose and frequency?**

A. Call the owner and ask her if the veterinarian clarified the dose at counseling.

B. Use The Merck Veterinary Manual or Plumb’s Veterinary Drug Handbook.

C. Consult a package insert from one or more brands of levothyroxine.

**7. The owner of the Border Collie comes in to pick up the levothyroxine. She is alarmed and questions the dose, saying she herself takes levothyroxine 0.1 mg daily and she weighs 10 times what her dog weighs. She also asks if she can just give the medication once daily. What do you do?**

A. Explain to the pet owner that dogs require a higher dose and different frequency than humans due to differences in anatomy and physiology, and the dose and frequency are correct.

B. Explain to the pet owner that dogs require a higher dose due to anatomy and physiology, but she can just give 0.6 mg once daily since it would be easier to administer once a day.

C. Explain that this is what the veterinarian prescribed and to tell her to call the veterinarian if she has any concerns.

**8. A patient calls your pharmacy and says she saved a nine pound stray cat that was roaming in her neighborhood. She is bringing the cat to the veterinarian tomorrow. Meanwhile, she is trying to prevent the cat from spreading ticks in her house or to her dogs. She has an extra Activyl® Tickplus for Dogs and Puppies (weighing 11 to 22 pounds) and wants to use it on the stray cat to prevent transmission as soon as possible. What do you tell the patient?**

A. You ask how much the cat weighs and help her calculate how much to apply.

B. Say Activyl contains acetaminophen, which is toxic to cats, but she can use peppermint oil.

C. Say this product contains an active ingredient permethrin, which is toxic to cats.

**9. An owner of a 4 year old, 10 lb toy poodle calls your pharmacy in a panic; the owner found the pill box that he keeps on his nightstand in the dog’s crate and all medications were missing for multiple days. What should you tell the owner?**

A. Immediately give the dog 3% hydrogen peroxide to induce vomiting.

B. Immediately give the dog ipecac syrup to induce vomiting.

C. Contact Animal Poison Control center at (888) 426-4435.

**10. Your pharmacy received a prescription for fluoxetine 10 mg daily for a 20 lb Maine Coon cat. Where can you check if fluoxetine is indicated in cats and if the dose is correct?**

A. Lexicomp for Animals

B. Veterinary Clinical Drug Information Monographs

C. A poison control veterinary hotline

**11. Which NSAIDs are safe to use in cats?**

A. Meloxicam and robenacoxib

B. Ketorolac and ibuprofen

C. Ibuprofen and naproxen

**12. When using tramadol, what is the dosing difference between dogs and cats?**

A. Cats require a higher weight-based dose than dogs.

B. Cats require a lower weight-based dose than dogs.

C. The dose is similar as both animals have short GI tracts.

**13. How does the length of a dog’s GI tract affect metabolism of drugs and/or food?**

A. Dogs are obligate carnivores and eat only meat and small amounts of fiber, preferably at warm temperatures.

B. Dogs metabolize drugs much more slowly than humans do and require extended-release dosage forms.

C. Dogs metabolize drugs much more quickly than humans do, so they pass extended-release dosage forms too rapidly.

**14. Select the statement that is TRUE:**

A. Veterinarians prefer to fill pet prescriptions on site to save money for owners and increase their own profits.

B. Pet owners can request written prescriptions rather than receiving the medication from the veterinary practice.

C. Pet owners are most likely to receive seasonal medications, compounded products, or expensive medication from the vet.

**15. Select the statement that is TRUE:**

A. The veterinary drug approval process looks nothing like the human drug approval process, reflecting animals’ different pharmacokinetics and pharmacodynamics.

B. Once a veterinary medication is approved in one species, it can be used in all species including humans.

C. An INAD file allows a sponsor to distribute the investigational drug for further testing before final FDA approval.

**16. Which of the following elements found in medications and common objects is toxic to dogs?**

A. Zinc

B. Calcium

C. Magnesium

**17. An owner presents a prescription for her dog for pancreatic enzymes. The prescription says that the owner’s name is John Jones, the patient’s name is Benson, and it includes their address. What is a good reason to start a conversation with the owner about this pet?**

A. It would be helpful (and in some states required) to know the dog’s species and weight.

B. You will want to tell the owner that he should not change the dog’s diet for any reason.

C. You’ll want to tell Mr. Jones to let Benson exercise off-leash often to improve his health.

**18. A customer has insurance for her Lhasa Apso and presents prescriptions for an antibiotic and an analgesic. The dog was injured in a grooming session when the groomer nicked him with sharp scissors, requiring stitches. She asks if her pet insurance will cover the medication. Select the BEST answer.**

A. Probably not. Most policies cover only prescriptions dispensed by the veterinary practice.

B. I’m not sure. We should submit the claim electronically and see if it goes through.

C. Look at your insurance policy when you get home. Almost all policies cover accidents.

**19. A customer calls and says that his dog ate a tube of toothpaste and is acting strangely. Spot seems weak and is staggering. Which of the following would be the BEST first step?**

A. Ask the caller to find the toothpaste tube, see if it contains xylitol, and if so, call back.

B. Ask the caller to determine how much toothpaste Spot ate, and call the vet.

C. Tell the caller to hang up and call or—better—take Spot to the nearest veterinary practice.

**20. Select the statement that is TRUE about compounding transdermal gels for animals:**

A. Usually the pharmacy compounds gels with penetration-enhancing vehicles, such as propylene glycol or Lubriderm.

B. Drugs that have molecular weights lower than 300 kDa are most suitable for transdermal gels.

C. The United States Pharmacopeia exempts veterinary compounding from its purity and quality standards.