

It's Raining Cats and Dogs: Preventing Veterinary Medication Errors

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Disclosure Statement

- Lauren Forsythe has no relevant financial relationship(s) with ineligible companies to disclose.
and
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.



Learning Objectives


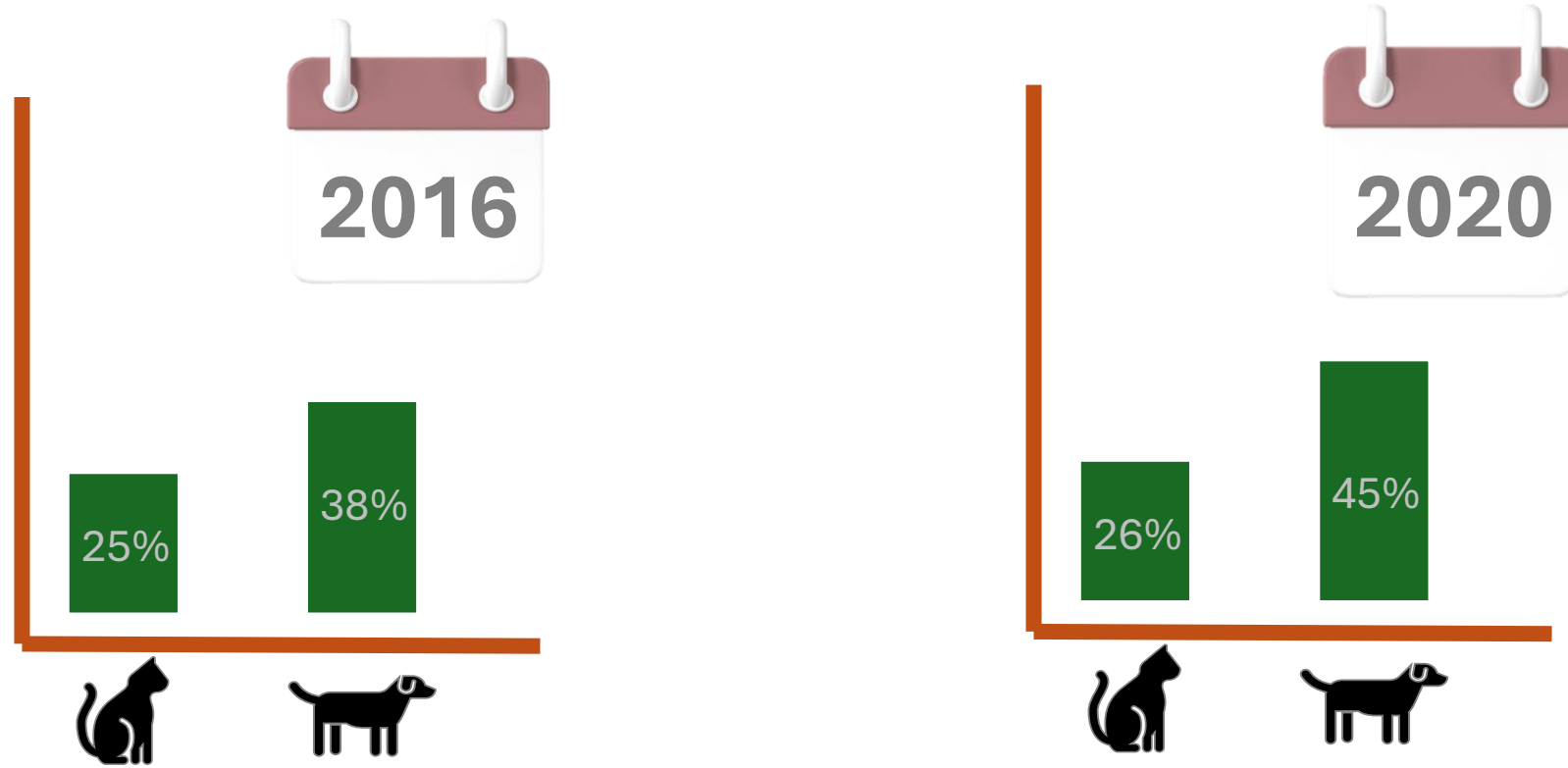
At the completion of this activity, the participant will be able to:

1. Summarize common errors that occur when filling veterinary prescriptions;
2. Examine underlying causes of errors associated with veterinary prescriptions; and
3. Employ communication strategies to bridge the gap between veterinarians and pharmacists.



Background By
the numbers

US Pet Population



61-96% of households consider their pet to be a member of the family

More Statistics



46-65% of pet owners obtain medications directly from the veterinarian



Expertise and ease of access



Price

Retailers and Online Stores



Price and ease of access

Even More Statistics

Pet Drug Market

2018: \$9-billion



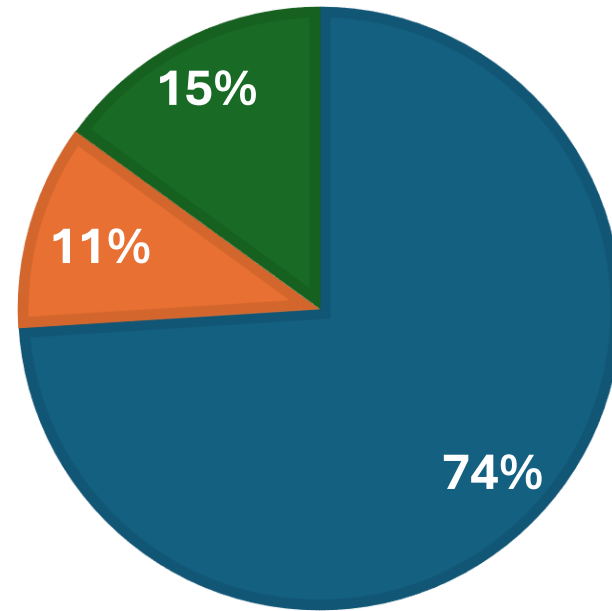
2023: \$47.9 billion



2028: \$83.4 billion (projected)

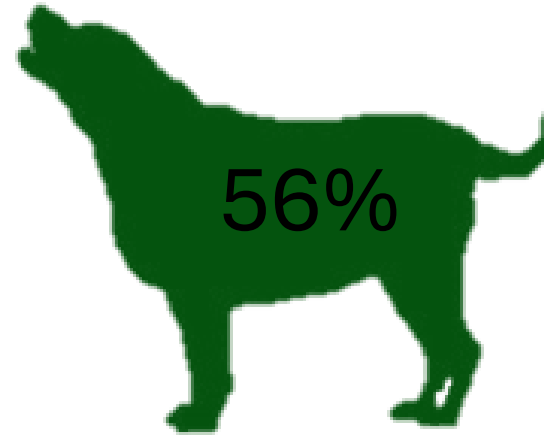
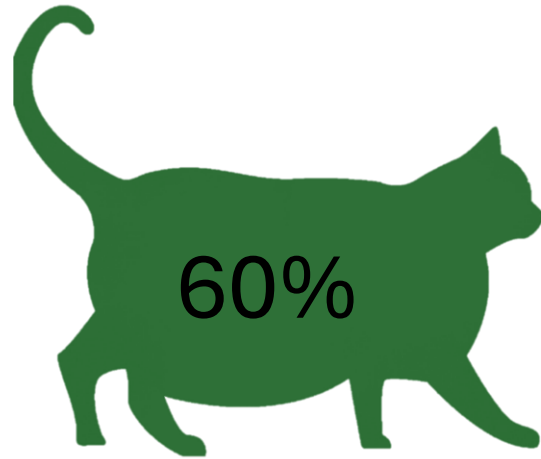
VET MEDICATION SALES

■ Veterinary Clinics ■ Brick and Mortar ■ Online



Disease Statistics

Obese or overweight in the US in 2022



Chronic Kidney Disease (CKD)

– 30% of cats 10 years and older

Knowledge Check

Which of the following is one of the most commonly cited reasons pet owners obtain medications from an online store or retailer?

- a. Advertising
- b. Expertise
- c. Price
- d. Quantity



Additional
considerations



Payment for Medications

- Most clients pay cash for pet meds
- 2022: 44.6% of pet owners reported having their pets insured
 - Still requires paying up front and submitting for reimbursement



Reasons for More Vet Scripts in Pharmacies

Client Perspective

Lower prices



Vet Perspective

Vet school
gives limited
instruction
on managing
drug
inventory and
dispensing
meds



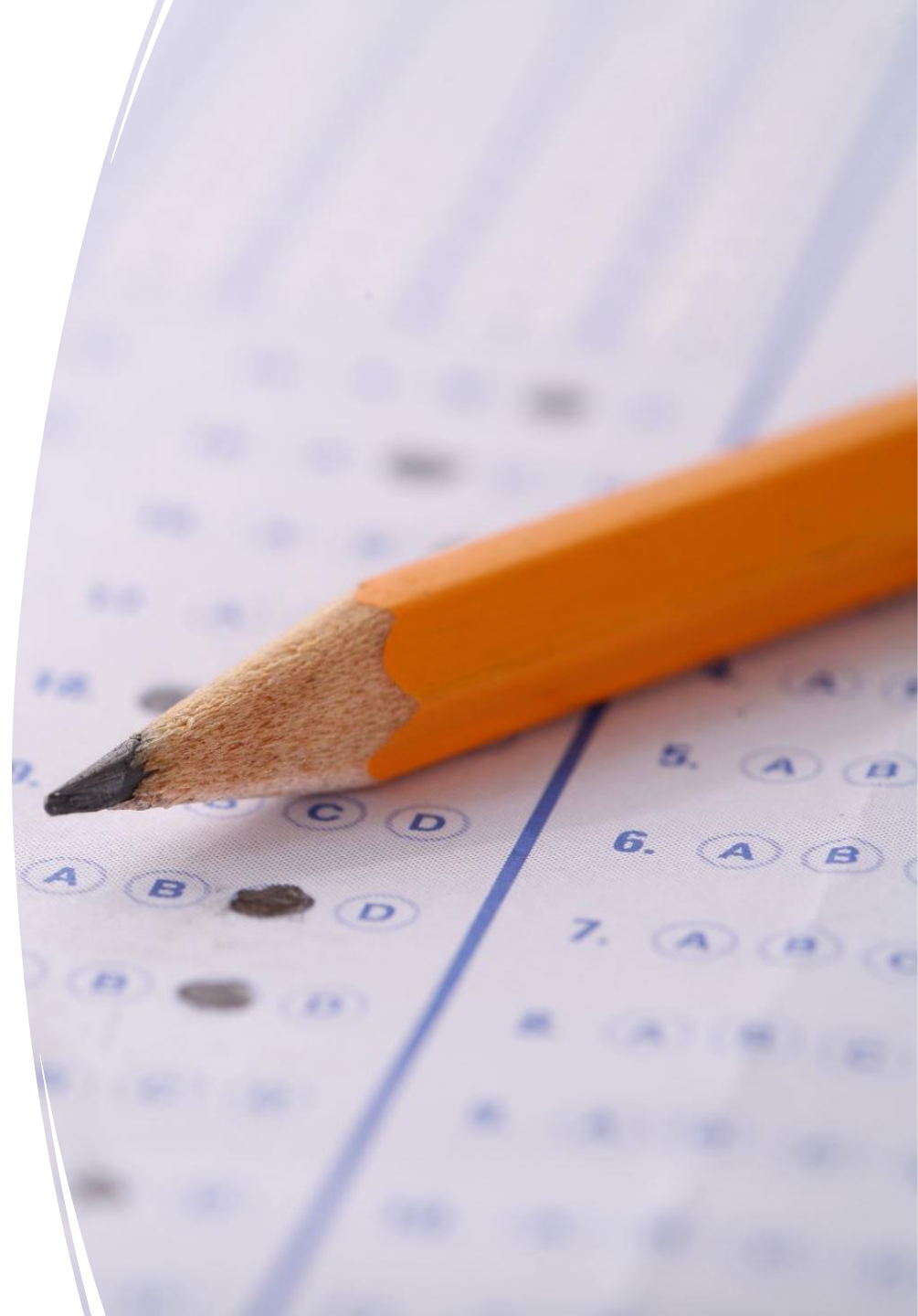
Pharmacy Perspective

Profit without
worrying about
insurance
reimbursement



Education Discrepancies

- Little (if any) training in pharmacy school on vet prescriptions
- Limited (if any) training in vet school on prescribing medications
 - 22.2% of vet students taught script writing
 - JAPhA study found frequent errors on veterinary prescriptions missing info for evaluation (e.g., weight) or legally required info



Technology Differences

Lags behind human healthcare

Electronic medical record systems but don't interface with DEA-compliant electronic prescribing systems

No PDMPs/ineffective PDMPs

More difficult to ID drug diversion compared to human healthcare due to limits in technology

Communication Challenges

Different dialects of the same language

- QD versus SID for once daily

Identifying Info

- No NPI numbers
 - AVMA states to use state license number instead
- May not have a DEA number
 - DEA states not to use DEA number for identification purposes for non-controls

Knowledge Check

Which of the following
identification numbers will a
veterinarian NOT have?

- a. DEA
- b. NPI
- c. State License
- d. None of the above

What Kind of
errors are
occurring?



Error Frequency



PA Vet Med Assoc (PVMA)
unpublished 2019 survey

94% of respondents indicated they had
an issue with scripts filled at a local
pharmacy (68 respondents)



Oregon Veterinary Medical
Association (OVMA) 2012 Survey

Sent to 525 veterinary practices in
Oregon with a 21% response rate

Question	Yes (%)	No (%)
Have you experienced an instance where a retail pharmacy or an online outlet changed a prescribed dosage or medication for your patient without your authorization?	35	65
Has a patient experienced an adverse event that can be related to a change in dosage or type of medication from your prescription as dispensed by an online outlet or brick and mortar retail pharmacy?	16.5	83.5
Has a retail pharmacy or online outlet ever contacted you to discuss concerns with a prescribed dosage or type of medication for your client?	57	43

OVMA Survey Responses

Prescribed insulin product was changed to a less expensive insulin when the products were not interchangeable.

Dosage of thyroid medications were lowered.

Indicated to client that dosage of phenobarbital was too high, and it should be reduced by half.

Dispensed a compounded itraconazole product in lieu of the commercial product prescribed.

Substituted hydrocodone with acetaminophen in place of the prescribed hydrocodone single agent product or in combination with homatropine.

Suggested high doses of acetaminophen in response to a client question regarding options for treating arthritis in a senior dog.

Filled azathioprine instead of azithromycin for a cat.

Filled azithromycin instead of azathioprine for a dog.

Veterinarian prescribed propylene glycol topically and the pharmacist counseled the client that the vet had prescribed antifreeze.

Pharmacist recommended treating a dog with Rogaine when a client questioned the dog's hair loss.

Pharmacist advised a client that the amount of vitamin K prescribed for a dog would be lethal.

Incorrect Medication Filled – LASA Drugs

- One of the most common error types
- More likely due to pharmacist knowledge gap and often having less info on the vet patient
 - Azathioprine versus azithromycin: dosing/indication differences
 - Ketorolac versus ketoconazole: ketorolac rarely used orally in animals

Incorrect Medication Filled - Substitutions

Therapeutic substitutions do occur without consulting with vet

- Hydrocodone or hydrocodone/homatropine to hydrocodone/acetaminophen
- Prednisolone to prednisone

Bioequivalent substitutions allowed for humans may cause problems in veterinary patients

- Gabapentin liquid for dogs must be Amneal brand
- Diltiazem XR needs to be a formulation containing tablets instead of beads inside the capsule

Incorrect Dosage

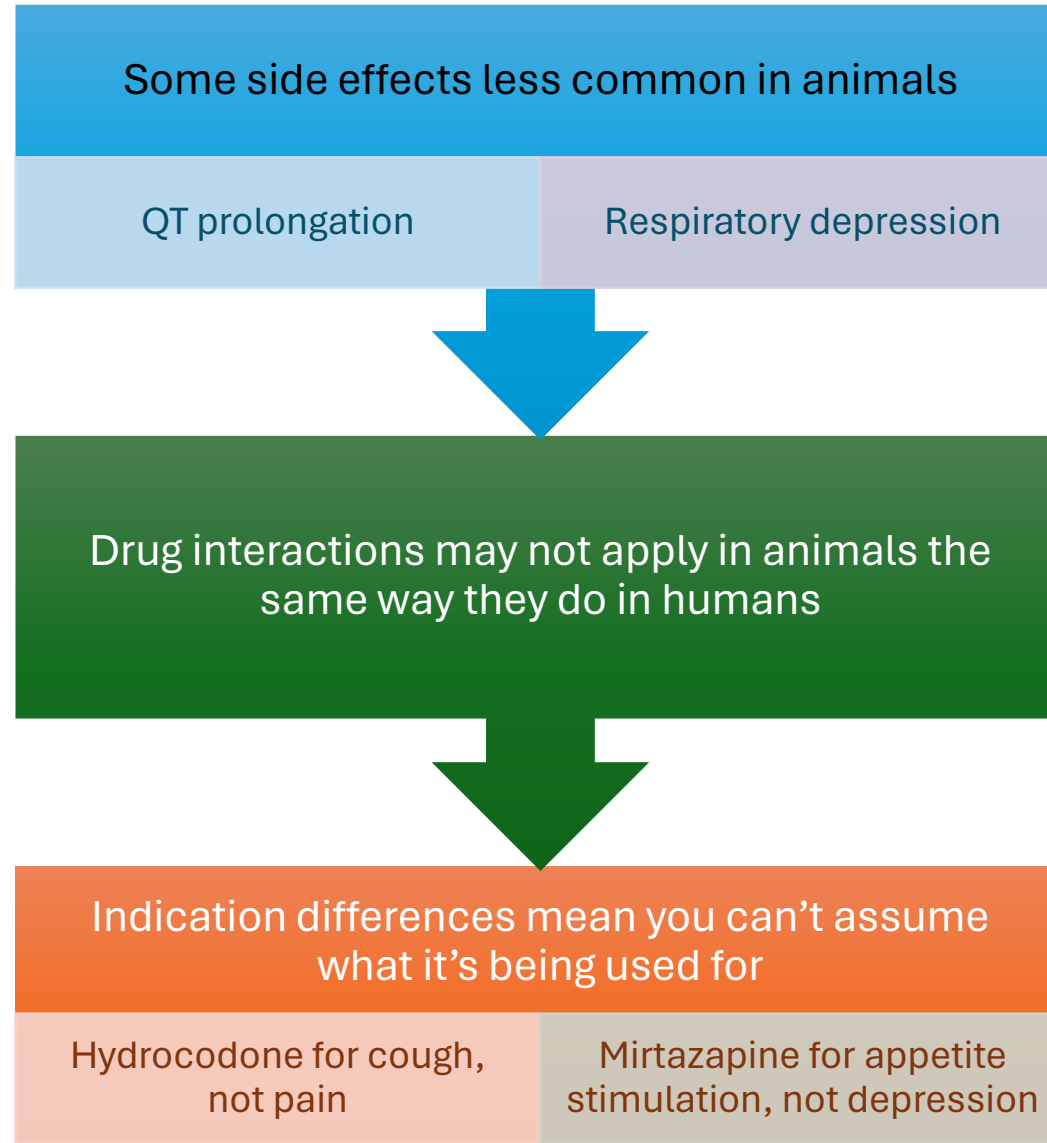
Some medications dosed much higher in animals than in humans on a mg/kg basis

- Levothyroxine
- Terbinafine
- Phenobarbital

Miscommunication due to profession norms

- Veterinary medicine commonly combines the strengths of combination products
 - Sulfamethoxazole/trimethoprim 960mg
 - Amoxicillin/clavulanate 62.5mg
 - Does a script written for amoxicillin/clavulanate 250 mg mean they dosed for 250 mg of amoxicillin plus 125 mg clavulanate?

Incorrect Information During Counseling



Insulin

Human insulins don't all work in animals

- Glargine 100 mg/ml and 300 mg/ml and NPH are most common insulins prescribed
- Debate on the interchangeability of generic versions and biosimilars



Insulin and Insulin Syringes

- Veterinary insulins are U-40 and there are U-40 syringes for administering those
- Longer pen needle lengths are necessary for dogs and cats due to thicker skin but they may not be used as commonly in humans due to risk of putting insulin IM because too deep



OTC
Recommendations

Not legal to
recommend
human OTCs for
animals!

Sometimes used
off-label in
accordance with
the Animal
Medicinal Drug
Use Clarification
Act (AMDUCA)

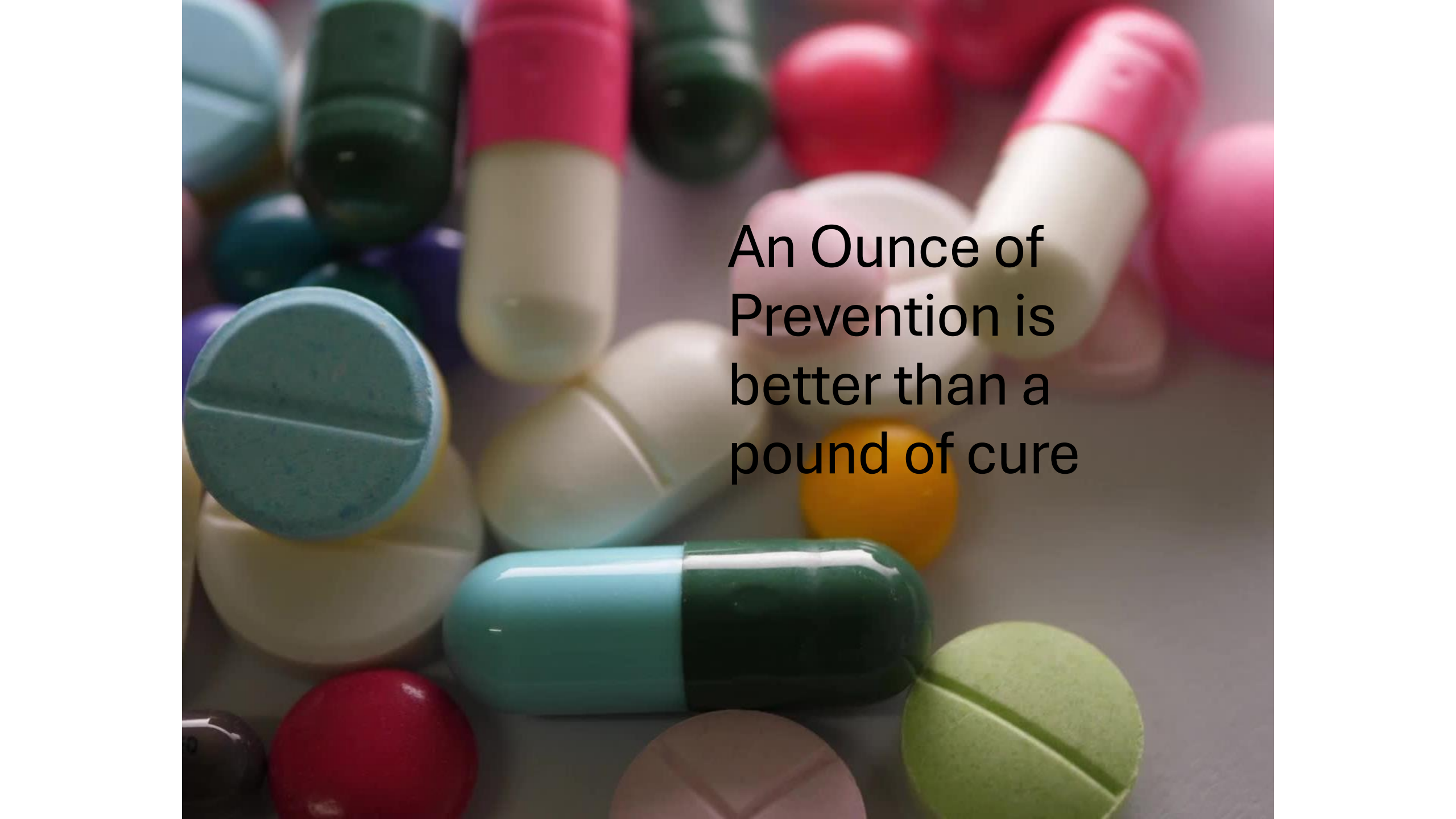
Toxicity concerns

- Acetaminophen in cats
- Xylitol in dogs
- NSAIDs

Knowledge Check

Which of the following is TRUE regarding the use of human OTC products in animals?

- a. Pharmacists can legally recommend human OTC products for use in pets as long as they don't contain xylitol.
- b. Pharmacists can legally recommend human OTC products for use in pets as long as they don't contain acetaminophen.
- c. Pharmacists can legally recommend human OTC products for use in pets as long as they don't contain ibuprofen.
- d. Pharmacists cannot legally recommend human OTC products for use in pets.

A close-up photograph of various pharmaceuticals, including round tablets in shades of blue, green, red, and yellow, and capsules in white, pink, and teal. The pills are scattered on a light-colored, slightly textured surface. The lighting is soft, creating gentle shadows and highlighting the smooth, glossy surfaces of the medications.

An Ounce of
Prevention is
better than a
pound of cure

Prevention Strategies

- Have a veterinary drug reference
- Contact the veterinarian when something doesn't seem right
 - No substitutions or dosage adjustments until the vet is contacted

Reference Name	Format	Free (Y/N)	Type of Information Available
Plumb's Veterinary Drug Handbook	Online database, app, and hardcopy book	N	Indications, dosing, PK/PD information, important counseling points, adverse effects, and drug interactions. - Online and app versions have a drug interaction checker and printable PDF client handouts
Saunders's Handbook of Veterinary Drugs	Hardcopy book	N	Indications, dosing, important counseling points, adverse effects, and drug interactions
Exotic Animal Formulary	Hardcopy book	N	Indications, dosing, and adverse effects for exotic species
DailyMed	Online database	Y	NIH website containing all FDA-approved package inserts for human and veterinary drugs.
Merck Veterinary Manual	Online database, app, and hardcopy book	Y (except book)	General disease state information and treatment recommendations for veterinary species.

Questions?



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Need More Information?

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