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 **CLIENTS  
AT NIGHT**  
p 24

Is ringworm  
running rings  
around your  
patients? p 12

**Dial a diet**  
recommendation  
p 2

**5 FEAR-FREE**  
resolutions  
+ How can she  
afford *that*? p 4 

**"HELP!**  
My dog is  
leaking!" p 17

# FelV+

Offer hope for your  
feline patients with this  
infectious disease p 6



dvm360's  
top people to  
watch in 2018  
 **fetch**  
dvm360  
CONFERENCE  
p 1



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<sup>2</sup>Hill's® Prescription Diet® k/d® with chicken dry vs. Royal Canin Veterinary Diet® Renal Support A, (8.5% vs. Royal Canin Renal Support F, 9.7% vs. Royal Canin Renal Support S.) Data on file.

<sup>3</sup>Ross SJ, Osborne CA, Kirk CA, et al. Clinical evaluation of dietary modification for treatment of spontaneous chronic kidney disease in cats. *J Am Vet Med Assoc.* 2006;229(6):949-957.





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Vetted (USPS 535170, ISSN print: 2469-3987 Online: 2469-3995) is published monthly by UBM LLC, Veterinary, 131 West First St., Duluth, MN 55802-2065. One year subscription rates: \$60 in the United States and Possessions; \$72 in Canada and Mexico; \$97 in all other countries. Single issue orders: \$18 in the United States and Possessions; \$22 in Canada and Mexico; \$24 in all other countries. Periodicals postage paid at Duluth, MN 55806 and additional mailing offices. POSTMASTER: Please send address changes to Vetted, P.O. Box 6087, Duluth, MN 55806-6087. Canadian GST Number: R12421313RT001. Publications Mail Agreement Number: 40612608. Return undeliverable Canadian addresses to: IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2, Canada. Printed in the U.S.A. © 2018 UBM. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including by photocopy, recording, or information storage and retrieval without permission in writing from the publisher. Authorization to photocopy items for internal/educational or personal use, or the internal/educational or personal use of specific clients is granted by UBM for libraries and other users registered with the Copyright Clearance Center, 222 Rosewood Dr. Danvers, MA 01923, 978-750-8400 fax 978-646-8700 or visit <http://www.copyright.com> online. For uses beyond those listed above, please direct your written request to Permission Dept. fax 440-756-5255 or email: [mcannon@ubm.com](mailto:mcannon@ubm.com). UBM Life Sciences provides certain customer contact data (such as customers' names, addresses, phone numbers, and e-mail addresses) to third parties who wish to promote relevant products, services, and other opportunities which may be of interest to you. If you do not want UBM Life Sciences to make your contact information available to third parties for marketing purposes, simply call toll-free (866) 529-2922 between the hours of 7:30 a.m. and 5 p.m. CST and a customer service representative will assist you in removing your name from UBM Life Sciences' lists. Outside the United States, please call (218) 740-6477. Vetted does not verify any claims or other information appearing in any of the advertisements contained in the publication, and cannot take responsibility for any losses or other damages incurred by readers in reliance on such content. Publisher assumes no responsibility for unsolicited manuscripts, photographs, art, and other material. Unsolicited material will not be returned. Address correspondence to Vetted, 8033 Flint, Lenexa, KS 66214; (913) 871-3800; e-mail [dvm360@ubm.com](mailto:dvm360@ubm.com). To subscribe, call toll-free 888-527-7008. Outside the U.S. call 218-740-6477.



UBM

# dvm360's top people of 2018

In an almost-as-exciting announcement as the *Time* Person of the Year, we're pleased to introduce you to our list of top people to watch in 2018. These not-to-be-missed Fetch dvm360 speakers are the people we think you need to know in a profession that's filled with rock stars. (And make no mistake, we love all of them!) Here are a few of our favorite people and why we love them (and we think you will too). We can't include the full list here, so we're giving you a quick glimpse. Go to [dvm360.com/2018people](http://dvm360.com/2018people) to read more about these fine folks.

## Sarah Wooten, DVM

Why you want to know her: Dr. Wooten is an associate veterinarian, frequent dvm360 contributor and Fetch dvm360 conference educator. She's reinvented her life to create a career she loves in a profession that loves her right back. She's also co-creator of the wildly successful *Vets Against Insanity* card game.



## Ken Yagi, BS, RVT, VTS (ECC, SAIM)

Why you need to know him: He's a tireless advocate for veterinary nurses and technicians and a thought leader on topics including telemedicine. We're not sure when he sleeps, but we're pretty sure he's always dreaming up the next big change in vet med.



"I had to take undergraduate courses and apply for vet school with the hope of being accepted in my 30s. I had so many people trying to discourage me—particularly veterinarians—saying how bad it is to be a vet. But they didn't stop me."



## Mary Gardner, DVM,

Why you need to know Dr. Gardner: As a cofounder of Lap of Love Home Euthanasia Services and speaker, she has the passion to make you feel like you can be the best veterinary professional for your patients, your team and yourself. She sees past the pain of euthanasia to find beauty in end-of-life care, and she shares this message tirelessly with her peers.

# THE PICKS

(what we care about now)



## Dial a diet recommendation

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To get a bit more specific, this could potentially look like finding a renal therapeutic diet option that avoids a particular ingredient for a cat with renal disease and a food-responsive dermatitis, or developing a complete and balanced home-cooked diet for a dog with inflammatory bowel disease, protein-losing nephropathy and hypertriglyceridemia where there is no commercial diet option available.

Geographic location needn't put limits on patient care—even highly individualized nutrition needs. **Learn more at [dvm360.com/dialindiet](https://dvm360.com/dialindiet).**



Insight courtesy of  
**Lisa Weeth, DVM, DACVN**





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## THE PICKS

### Money diaries: Personal accounts of your veterinary colleagues

Ever wondered, "How can my coworker afford *that*?" or thought, "I don't know how anyone lives on what she makes"? Money management is all about choices—where you live, the job you take, what you spend. But when it feels like the money's drifting out of the bank account much quicker than it flows in, it's hard to get a handle on where it all goes. We asked several veterinary professionals from different jobs and areas of the country to track their spending for one week. Our goal: to share what they've learned from a deep dive into the cost of living and the choices we make every day.

Check out our diarists' anonymous accounts over at [dvm360.com/personalaccounts](http://dvm360.com/personalaccounts).

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## 5 bite-size resolutions for going Fear Free in 2018

There's no time like the New Year to make some changes in how you practice. Use these tips from Dr. Kathryn Primm.



### Stock up on goodies

Make sure that you have tons of enticing treats on hand. Ask one of your sales reps to bring pet goodies instead of doughnuts for meetings.



### Brush up on body language

Make sure you and your coworkers know how to tell what your patients are saying. YouTube has tons of good, bad and ugly pet body language examples.



### Know when to say when

There are times when you're trying to examine a pet or conduct a procedure or service and the pet is *not* feeling it. It's critical for the team to know when to stop. Fear Free defines these stopping points as three seconds of resistance for dogs and only two seconds for cats.



### Educate your clients

Since so much of Fear Free starts at home, educate your pet owners about the signs of fear, anxiety and stress.

Tip: Direct your clients to [fearfreehappyhomes.com](http://fearfreehappyhomes.com) for resources and product recommendations to reduce fear in the home environment.



### Don't wait to medicate

We are healthcare professionals. Solving problems is what we do! If you're handling a pet and you get that feeling that things are going south, stop and put some chemistry to good use. Do not be afraid of medications. There is no reason to not treat fear.

Ready to have your team become Fear Free certified? Get a special discount courtesy of dvm360. Head over to [dvm360.com/fearfreecert](http://dvm360.com/fearfreecert) to learn more.

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# FelV+

Feline leukemia virus sounds like a horrifying diagnosis to cat owners. But there is much hope for your feline patients with this infectious disease.

*By Elizabeth Colleran, DVM, DABVP (feline practice)*

**Y**ou just ran a point-of-care (PoC) test for feline leukemia virus (FeLV), and the results are positive. Now what?

## **Tell the owners not to panic**

An FeLV-positive cat can live a long and healthy life, often without any veterinary intervention. So make sure owners understand that this is not a death sentence.

## **Perform a confirmatory test**

All PoC tests have been shown to yield false positive results.<sup>1</sup> But keep in mind that all FeLV tests—PoC tests, polymerase chain reaction (PCR) testing or immunofluorescent antibody (IFA) testing—have some intrinsic inaccuracy, making it difficult to resolve discordant results with absolute certainty. Nonetheless, confirmation is essential.





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## Let clients know their cat is not alone

In a recent study of 62,301 cats from 1,396 clinics and 127 shelters, the prevalence rate for FeLV-seropositive tests was 3.1% in North America.<sup>1</sup> This translates to about 3 million cats. Adult age, outdoor access, clinical disease and sexually intact male status were risk factors. The rate of infection is similar to the last decade, meaning that prevention and surveillance have been somewhat unsuccessful. This preventable virus places cats at risk for an array of diseases and premature death. Every cat should be tested and at-risk cats should be vaccinated with a demonstrably effective vaccine.

## Step clients through what happens next

Viral infection with FeLV can result in a variety of outcomes. Some cats contain the infection and show a regressive course, while others stay viremic and succumb to the infection within a few years. In regressive infection, cats cease producing productive virus and circulating p27 antigen but still carry provirus detectable by PCR tests. These cats initially test positive for soluble p27 antigen and then revert to antigen-negative status, do not shed infectious virus and are less likely to develop FeLV-associated diseases. Regressive cats can still shed virus via blood transfusions and may occasionally relapse into produc-

tive infection and illness. Thus, healthy FeLV-positive cats should be treated like any other healthy cat and kept indoors.

## Investigate your treatment options

With the advent of many antiretroviral therapies in the treatment of human immunodeficiency virus (HIV), a number of these new drugs have been proposed for FeLV. Properly designed trials and clear evidence of efficacy, however, remain elusive.<sup>2</sup> Zidovudine, for example, showed promise in in vitro testing but not in vivo. Similarly, adefovir, tenofovir, ribavirin and raltegravir have been shown to be effective in vitro with no supporting in vivo data.<sup>2</sup> Thus, antiretroviral therapy is indicated only in exceptional cases due to lack of proven efficacy of many antivirals and their toxicity at this time. Level 1 evidence-based clinical trials are needed to evaluate these drugs as there may be some in the long list of drugs currently being used for HIV that may prove safe and effective.

Treatment for FeLV-positive cats with clinical signs of illness remains focused on looking for underlying disease. Anemias, for example, should prompt investigation for *Mycoplasma* species before initiating glucocorticoid therapy, to which some cats respond. A diagnosis of lymphoma may carry a more guarded prognosis in these cats. Nonetheless, a typical chemotherapy protocol should be undertaken. If the patient





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has neurologic signs, cryptococcosis, lymphoma and toxoplasmosis should be ruled out. If neurologic signs are thought to be caused by FeLV, zidovudine (AZT; 5 mg/kg orally every 12 hours) may be helpful.

Recurring infections should be treated aggressively. In addition to standard therapy, feline interferon-omega, available in Japan, Australia and Europe, may be helpful. In a placebo-controlled field study, 48

cats infected with FeLV were treated with high-dose feline interferon-omega at  $1 \times 10^6$  every 24 hours given subcutaneously on five consecutive days. The treatment was repeated two more times with weeks between each treatment. This therapy reduced clinical signs and increased survival. However, no virus parameters were measured.<sup>2</sup> There are, as yet, no studies demonstrating efficacy when given orally.

## References

1. Burling AN, Levy JK, Scott HM, et al. Seroprevalence of feline leukemia virus and feline immunodeficiency virus in cats in the United States and Canada and risk factors for seropositivity. *J Am Vet Med Assoc* 2017;251(2):187-194.
2. Hartmann K. Efficacy of antiviral chemotherapy for retrovirus-infected cats. What does the current literature tell us? *J Feline Med Surg* 2015;17:925-939.



### We love cats!

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**Dr. Elizabeth Colleran** is the owner and Hospital Director

of two exclusively feline practices and is an ABVP diplomate in feline practice. She participated in the 2013 Bayer Veterinary Care and Usage Study 3—Feline Findings. Prior to veterinary school, she worked in sales and marketing management for IBM where she worked with Fortune 500 companies to streamline internal networks. Her passions are her crazy husband, two equally crazy Burmese cats, bicycling and Indian cuisine.



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\*Sensitivity represents the ability to correctly identify positive samples.

†Specificity represents the ability to correctly identify negative samples.

#### References:

1. Data on file, Study Report No. D886R-US-17-038, Zoetis Inc.
2. Data on file, Study Report No. D886R-US-16-033, Zoetis Inc.
3. Data on file, Study Report No. D886R-US-16-032, Zoetis Inc.

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Don't let ringworm

# run around your patients

Are you caught up on the latest developments for managing ringworm? *By Anthea Schick, DVM*

**D**ermatophytosis, or ringworm, is a fungal infection caused by protein-eating fungi that invade the hair shaft and the surface of the skin. There are many species of ringworm, but the fungi you are most likely to encounter are *Microsporum canis* in cats and *Microsporum gypseum* and *Trichophyton* species in dogs.

## Predisposing factors

Ringworm is much more common in cats than in dogs, and Persian cats appear to be predisposed. Dogs with ringworm likely became infected through digging. Boston terriers, Yorkshire terriers and Jack Russell terriers are all prone to ringworm.

Both young and old patients are predisposed to ringworm, as are immunosuppressed patients and those with allergies.





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## Clinical signs

Dermatophytosis has come to be called ringworm because of the characteristic circular area of hair loss with a red, raised outer rim. These lesions result from an inflammatory reaction to the fungus. The face, ears, feet and tail are the most commonly affected areas. Ringworm can be more extensive, causing well-demarcated alopecia, erythema, pruritus and scale. In dogs, there is often a clearly defined border of affected versus nonaffected skin. Cats, especially longhaired breeds, have a more generalized form of infection than dogs. These animals can be chronic carriers of a fungus even though they may not show any signs of infection themselves.

## Diagnosis

A fungal culture (using a dermatophyte test medium [DTM]) or fungal polymerase chain reaction (PCR) test is needed to determine the species of ringworm that is infecting your patient. However, a Wood's lamp examination or direct examination of hairs can help you identify and manage ringworm cases.

## Wood's lamp

In patients with a known *M. canis* infection—or ones in which an *M. canis* infection is likely—you can use a Wood's lamp examination to help identify which hairs to sample for a culture or PCR test or to examine under the microscope. *M. canis* fluorescence is bright apple green, and infected hairs glow from the bulb to the tip. Not all ringworm species will fluoresce, so negative fluorescence doesn't rule out dermatophytosis.

A Wood's lamp examination can also help you monitor the patient's response to treatment. If a patient is receiving antifungal therapy, there should be fewer Wood's lamp-positive hairs, and the location of fluorescence should progress from the base of the hair to the tip as the hair grows out.

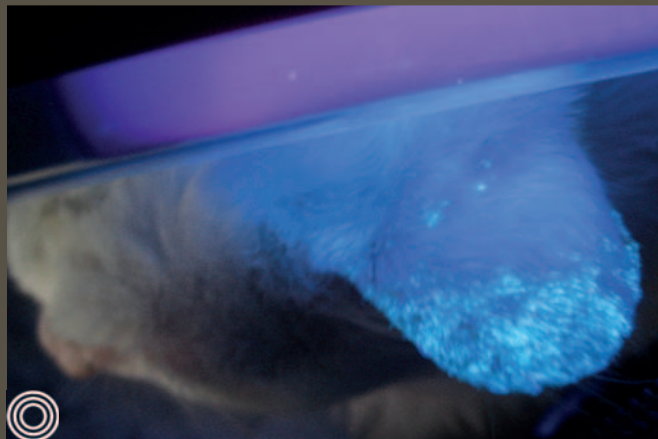
## Direct examination

For direct examination, place hairs plucked from near an affected area (or Wood's lamp-positive hairs) in mineral oil, cover with a cover slip and examine under 10x magnification. Infected hairs may have fungal hyphae within the hair shaft or small, round microconidia on the outside of the infected hair. You can make a tape prep of a suspicious area and stain it with either lactophenol cotton blue or the purple modified Wright's stain (Diff-Quik—Dade Behring).

Ringworm spores will appear round or ovoid and look a bit like nonbudding *Malassezia* species. They also often look like they have clear capsules around them.



A pit bull with generalized dermatophytosis. Note the border between affected and normal skin.



A cat infected with *M. canis* demonstrating the fluorescence of individual hairs under the Wood's lamp.



Sab-Duet from Hardy Diagnostics showing positive growth for *M. canis*.





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## Treatment

Treating ringworm requires a combination of systemic or topical therapy and environmental management. This means that you, your team and the owners will all need to work together.

To monitor treatment progress, perform a repeat culture one to three weeks after beginning therapy and every one to three weeks thereafter. Continue treatment until you obtain two or three negative cultures. Treatment duration is variable and may take between 14 days and six months. In healthy patients, spontaneous resolution may occur within three months.

## Drugs

### Fluconazole

Dogs: 5 to 10 mg/kg orally, twice a day  
Cats: 50 mg/cat orally, once a day



### Itraconazole

Dogs and cats: 5 mg/kg orally, once a day for seven days, then stop for seven days; repeat pattern three times

Itraconazole tips:

- > Avoid alkalinizing agents.
- > Alanine aminotransferase and serum alkaline phosphatase activities may rise without liver disease signs, although hepatotoxicity is rare.
- > Generic and compounded itraconazole are not recommended.

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### Terbinafine

Dogs: 30 to 35 mg/kg orally, once a day  
Cats: 20 mg/kg orally, once a day

Terbinafine tips:

- > Some dogs may have hepatotoxicity with terbinafine, but cats do not.
- > A study showed that terbinafine therapy combined with a weekly lime-sulfur dip resolved ringworm in cats in three weeks.<sup>1</sup>
- > No efficacy comparison studies between itraconazole and terbinafine have been done.

## Topicals

These dips or washes can be applied or performed once or twice a week:

- Lime-sulfur (1:16)
- Enilconazole (1:100)
- Accelerated hydrogen peroxide rinse (1:20)
- Climbazole mousse
- Ketoconazole (1% or 2%) shampoo
- Miconazole (1% or 2%) shampoo

**For references and additional information on culturing and IDEXX's new Ringworm RealPCR Panel, go to [dvm360.com/runrings](http://dvm360.com/runrings).**

## Environmental control

Ringworm is zoonotic, so instruct owners to wash their hands after handling their pets. If possible, owners should isolate infected animals from noninfected animals. Other pets in the household should either be tested or, if non-symptomatic, can be bathed once weekly with an antifungal shampoo.

To decontaminate their homes, owners should clean all nonporous surfaces with diluted bleach (1:10), Rescue (accelerated hydrogen peroxide), Lysol All-Purpose Cleaner or Formula 409 All-Purpose Cleaner twice a week. Carpeted areas where the ringworm-positive animals are kept should be vacuumed daily. All other floor surfaces, as well as the walls, should be cleaned with Swiffer Sweeper Dry Sweeping Cloths weekly, as their electrostatic nature helps attract spores. Any bedding or upholstered items that are difficult to clean, including cat trees, should be thrown out. If the bedding is easy to clean, wash it once a week with hot water and a small amount of bleach or Oxyclean.

Owners of patients infected with *M. canis* should have all their cats and dogs assessed as potential carriers. If positive,

their pets can be treated with topicals, with or without oral medications. If the owner is able to treat the affected dog, perform adequate environmental control; nonclinical positive pets may have negative cultures/PCRs after weekly antifungal bathing.

## Keep your clinic ringworm-free

Prevent contamination in your clinic by isolating dermatophyte-positive patients from other patients. Wear gloves during the examination and change scrubs or laboratory coats before seeing other patients. Clean all nonporous surfaces in the examination rooms with 1:10 bleach, Rescue (accelerated hydrogen peroxide), Lysol All-Purpose Cleaner or Formula 409 All-Purpose cleaner.<sup>2</sup>

*Anthea Schick, DVM, DACVD, is a Fetch dvm360 conference speaker and practices at Dermatology for Animals in Tempe, Arizona.*

FROM YOUR VETERINARIAN

### Ringworm is not a worm (and other things you should know)

A ringworm diagnosis doesn't exactly have a nice "ring" to it. The good news is that it's not as gross as it sounds. The not-so-good news is that getting rid of it requires a lot of cleaning. But if you work with your veterinarian, your pet can get better as quickly as possible.

**What is ringworm?**  
Ringworm has a misleading name, because it isn't a worm. It's a fungal skin infection that can make your pet feel itchy and uncomfortable. Ringworm is also called dermatophytosis.

**Did my pet get ringworm because I didn't clean it thoroughly?**



- Vacuum carpeted areas where your ringworm-infected pet is kept daily.
- Clean floors and walls with Swiffer Sweeper Dry Sweeping Cloths weekly.
- Clean all of your pet's bedding weekly in hot water.
- Bathe your pet's bedding on sighted areas that are difficult to clean, including cat trees.
- Practice effective rodent control and reduce your pet's exposure to rodent habitats.
- If your pet's ringworm infection is serious, or if you have multiple infected pets, clean your home's air ducts and



**Use this handout to set the ringworm record straight and to give your clients a helpful guide to their role in fighting the infection. (Hint: It's going to take a lot of cleaning.) Scan the code to download the handout now.**



# HELPFUL STUFF

## "Help! My dog is leaking!"



Incontinence in dogs can be a situation your clients have never thought of before. Fetch dvm360 conference speaker and incontinence expert India Lane, DVM, DACVIM, feels your (and your clients') pain in dealing with this condition. Ease their minds with this client handout where she covers

what incontinence is, what might be causing it and what can be done about it. Download it now at [dvm360.com/leakypet](http://dvm360.com/leakypet).

## Plus, get more urology resources!

### Unlucky leaky Lucy: When that Labrador's gotta go gotta go right now

This update on treating urethral incontinence in dogs calls for less frequent administration of PPA, the most common form of treatment.

Read more at [dvm360.com/leakylucy](http://dvm360.com/leakylucy).

### How to outwit refractory incontinence in dogs

You're trying to stop the leaks, but it's not working. Dr. India Lane says to run through this list to find and capture the culprit.

Read more at [dvm360.com/outwit](http://dvm360.com/outwit).



## Fight dental marketing decay

We don't mean for this to be a kick in the teeth, but do you have a social media plan for talking about National Pet Dental Health Month with your veterinary clients? With a strong social media strategy in February, you can keep the dental education (and income) rolling all year long.

These days, video is about the only thing that will get people to stop scrolling and view your content. Keep edutainment videos short—preferably 90 seconds or less or 150 words or less—and stick to one easily explainable topic, such as:

- > Why is dental health important?
- > What's the difference between a dental prophylaxis and the \$5 tooth brushing at your groomer?
- > Why does your pet need dental radiography?

For more ideas, check out [dvm360.com/marketingdecay](http://dvm360.com/marketingdecay).



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# Hospital design



Bring the bakery to you with a beverage and snack bar like Palm Beach Veterinary Specialists has in West Palm Beach, Florida. Their lobby features a coffee machine, baked goods and complimentary Wi-Fi.

*Photo courtesy of Palm Beach Veterinary Specialists*

## Offering refreshments is ahhhh-cheivable

**R**egardless if you're cramped or you have counter space to spare, you can take your veterinary reception and waiting area to the next level by offering your clients something to eat or drink while they wait. Your clients will appreciate the welcoming touch, especially if they have a long-term wait. Not sure where to start? Here are some of our favorite spaces used for serving beverages and snacks to those waiting.



There can be comfort in every corner. Conejo Valley Veterinary Hospital in Thousand Oaks, California, hosts a nook in their reception area that offers cookies, bottled water and coffee to enjoy during the wait. (We'll take the smell of fresh-baked cookies over anal glands any day.)

*Photo courtesy of Conejo Valley Veterinary Hospital*



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Rustic décor and refreshments pair well at Happy Tails Veterinary Care in Bethlehem, Georgia. Here, veterinary clients can help themselves to juice, water or coffee—set up in a chic barn-style setting that will make them feel at home.

*Photo courtesy of Happy Tails Veterinary Care*

See more examples at [dvm360.com/refreshments](http://dvm360.com/refreshments)

Tackling your own design project? Join us at the Hospital Design Conference in Kansas City August 15-17. Visit [fetchdvm360.com](http://fetchdvm360.com) to learn more.

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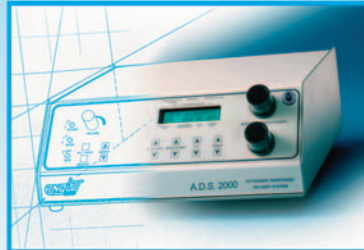


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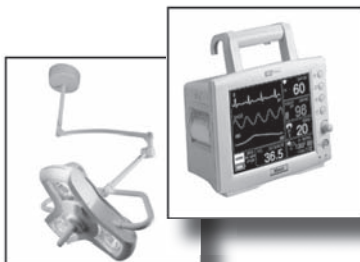
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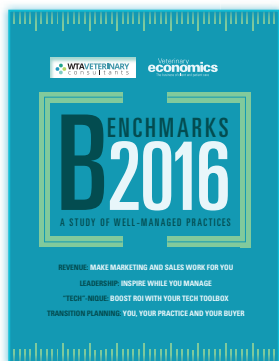
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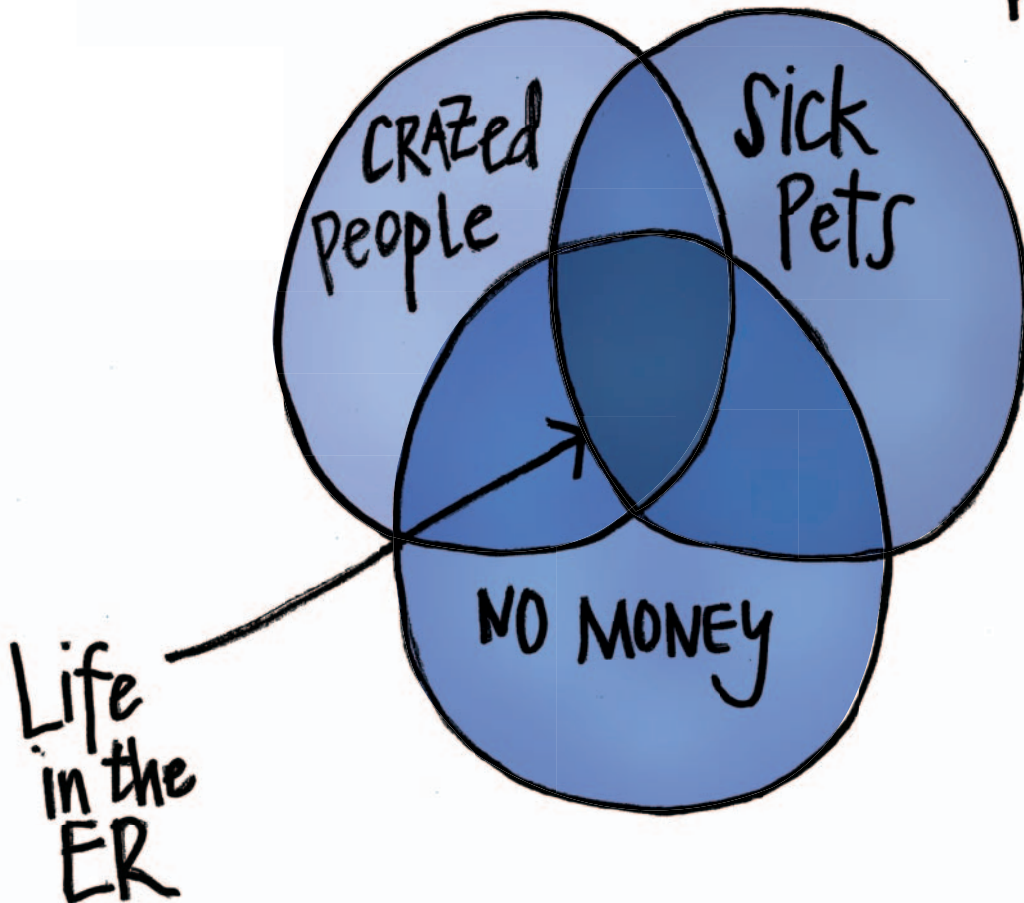
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<sup>1</sup>Chu H., Chavez L., et al. (1992). Immunogenicity and efficacy study of a commercial *Borrelia burgdorferi* bacterin. *J Am Vet Med Assoc.* 201(3), 403-411.

<sup>2</sup>Levy S., Millership J., et al. (2010). Confirmation of presence of *Borrelia burgdorferi* outer surface protein C antigen and production of antibodies to *Borrelia burgdorferi* outer surface protein C in dogs vaccinated with a whole-cell *Borrelia burgdorferi* bacterin. *Intern J Appl Res Vet Med.* 8(3), 123-128.