

# VIRGINIA-MARYLAND VETERINARY NOTES



Veterinary Teaching Hospital, Virginia-Maryland Regional College of Veterinary Medicine

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## Thoughts for the Month

My favorite Song – “How can I miss you when you won't go away”

**Dr. K.C. Roberts**



This newsletter is published quarterly in support of the outreach program of the Veterinary Teaching Hospital VMRCVM, Blacksburg, VA and is prepared for and distributed to veterinarians in the Mid Atlantic Region



## Success is No Accident

Have you taken time recently to think about the Human Resources aspect of your practice? If not, it could be time well spent studying this critical area of successful management.

Practice employees and co workers represent a very important asset if properly managed, motivated and rewarded. Their relationship to management, each other, and especially to clients, determines to a great extent how successful the practice will be.

Good employees and employer relations start with good hiring practices, followed by more than adequate training. Involvement of the employee team in both hiring and training can produce above average results and sends a clear message that employee opinions and abilities are valued.

Some helpful hints:

- ❑ Develop training and hiring mission statements
- ❑ Set specific goals for hiring and training employees
- ❑ Involve the employee team in practice goal planning/setting.

Employee behavior is critical to effective team work and is a common stumbling block in providing smooth, effective service. Management must make clear the model of behavior it wants and expects from employees. Behavior rewarded will continue, so make sure all members of the practice team clearly understand what is expected in their roll as competent, caring, communicative team members. Reward only the employee behavior that fits the carefully thought out model.

Employee benefits routinely run 25-35% of total compensation. Deciding what benefits to provide can be critical to hiring and keeping good employees. These benefits can range from a signing bonus when hired, to a cell phone as a means of improving communication with key employees.

Performance goals and productivity incentives may make sense for many practices and for team leaders within those practices. For an employee to get a \$5,000 increase in income, probably means the practice must generate \$37,500 more gross income which can translate into an increase of \$10-12 more per client visit. Clear practice objectives, performance evaluation and measurement, and a fair, transparent rewards system are key to any employee incentives. A poorly conceived and operated system can be worse than none at all.

One way of handling employee time off is by giving each associate a package of an agreed upon total of days off that the employee can then allot to vacation, holidays, sick days and personal leave as they wish. Remember that setting up a rewards and time off system can be difficult, and changing it, or terminating it, may be even more difficult.

Relations with practice employees/associates must be fair, honest, open and understandable. Consistency is critical but not easy to achieve. The Human Resources of any practice requires lots of care and “feeding”, but must be workable within the practice resources. And finally – lead, don’t manage.

Kent Roberts, DVM  
Blacksburg, VA

## Would You Believe?

Olfactory nerves (which regulate smells) continually regenerate throughout our adult lives. They are the only nerves in the human body with this capacity for self-renewal. When the axons of nerves in the olfactory bulb are severed, fresh connections quickly regrow.

New Yorker, Nov. 10, 2003

## Distance Education Keeping up with Exploding Demand

Excerpts from *10 Challenges for the Next 10 Years*

- The explosion in distance-education enrollments is likely to continue over the next 10 years.
- "You're going to see more and more students not only accessing more distance learning, but also expecting it."  
*- John Flores, executive director, United States Distance Learning Association*
- To accommodate the expected growth in distance learning, many colleges may start buying online courses from one another and from outside vendors.  
*- Sally Johnstone, director of the Western Cooperative for Educational Telecommunications at WICHE*
- Institutions may eventually buy courses the way they now purchase textbooks. "The faculty will continue to be the one to teach the courses. They'll have plenty of opportunity to customize these things."  
*- A. Frank Mayadas, director of the Alfred P. Sloan Foundation's grant program for online education*
- As students' Internet services improve, they will expect more video and audio clips, along with other bells and whistles. "Without any question, the technology is just getting stunningly better. Educationally, we're going to be able to do lots of stuff that we haven't been able to do with largely text-based courses."  
*- Janet K. Poley, president of the American Distance Education Consortium*
- Colleges that don't choose to buy packaged courses and find they cannot keep up with other institutions' offerings could be early victims of a distance-education shake out that is sure to come.
- Online programs will eventually be ranked by the U.S. News & World Report the same way traditional programs are now.  
*- Andrew S. Rosen, president and chief operating officer of Kaplan*

Dan Carnevale, et al., The Chronicle of Higher Education, January 30, 2004, as reported in E-Learning at Virginia Tech, February, 2004

### Would You Believe?

Gerhard Domagk (1895-1964) of the German Bayer Company, a survivor of the trench warfare of Flanders in WWI, was a medical student when he enlisted in military service and witnessed many horrifying gas gangrene infections in soldiers who suffered open wounds. He made a personal vow to help overcome such problems if he survived to complete his medical education. Domagk selected hemolytic streptococcus, cause of childbed fever and scarlet fever, and established a lethal experimental model in mice. Joseph Klarer led the synthetic chemistry research team and produced a red dye, KI-730. When Domagk injected it into his mouse model in which all untreated mice died, it provided one hundred percent protection. The agent's red crystals were christened Prontosil rubrum. French scientists showed that the true efficacy of the agent was due to the sulfonamide side-group. This finding triggered a new wave of research, and a long series of related sulfa drugs were developed. Domagk was awarded the Nobel Prize for medicine in 1939, but Hitler's Nazis did not allow him to travel to Stockholm or to accept it. His work had begun the new era of chemotherapy against bacterial diseases.

R. H. Dunlop & D. J. Williams, Veterinary Medicine: An Illustrated History, pp 567-568, 1996, as reported in VetMed, Vol. 10, Issue 2, January 2004, Iowa State University, Ames, Iowa

## **Did Crohn's Disease Evolve with the Advent of Refrigerators?**

Authors of a hypothesis article in this week's issue of THE LANCET propose that the emergence of Crohn's disease in the second half of the 20th century-the same time that domestic refrigerators became widely available-is no coincidence. The authors suggest that certain types of bacteria that can survive in refrigerated food may be implicated in Crohn's disease.

Crohn's disease is thought to be caused by environmental factors (diet, lifestyle, smoking) among genetically susceptible individuals. Mutations in CARD15, a gene involved in innate immunity, are known to predispose people to the disease.

Jean-Pierre Hugot from Hospital Robert Debre, Paris, France, and colleagues discuss the cold-chain hypothesis (the production and storage of food in low temperatures) as a potential major risk factor for Crohn's disease. Jean-Pierre Hugot comments: "All findings point to refrigeration as a potential risk factor for Crohn's disease. Furthermore, cold-chain development paralleled the outbreak of Crohn's disease during the 20th century. The cold chain hypothesis suggests that psychrotrophic bacteria such as Yersinia and Listeria-commonly found in beef, pork, chicken, sausages, hamburgers, cheese, and lettuce-contribute to the disease.

These bacteria have been identified in Crohn's disease lesions. From a molecular perspective, we suggest that the disease is a result of a defect in host recognition by pathogenic bacterial components that usually escape the immune response, which results in an excessive host response to these bacteria."

**The Lancet, December 11, 2003. From FSNet-L December 12, 2003, as reported in PennState Veterinary News, January 2004, Penn State Cooperative Extension, University Park, Pennsylvania**

## **Markers of Bone Metabolism in Dog Breeds of Different Size**

Serum and urinary markers of bone turnover maybe of value in animals as noninvasive tools for determining the response of the skeleton to disease and injury. Although normal values for bone markers have been reported for the Beagle, concerns remain that breed to breed differences will complicate the interpretation of bone marker data in dogs. To explore this, we examined serum bone markers in two breeds of vastly different size, Pomeranians and Irish Wolfhounds. Our hypothesis was that serum concentrations of bone markers are similar in toy and giant dog breeds and fall within the same range as those reported for Beagles. Bone alkaline phosphatase (BALP) and carboxy-terminal telopeptide of type I collagen (ICTP), respectively markers of bone formation and bone resorption, were measured in age matched Pomeranians (n=14) and Irish Wolfhounds (n=14). No statistically significant differences between the mean BALP and mean ICTP serum concentrations from Pomeranians and Irish Wolfhounds were found. All BALP and ICTP concentrations were within the reference range reported for Beagles. The results of this study suggest that serum BALP and ICTP concentrations in giant and toy breeds are the same as in Beagles and that these assays may be used for dogs of all sizes.

**Gert J. Breur, Matthew J. Allent, Scott J. Carlson and Daniel C. Richardson, Dept of Veterinary Clinical Sciences, Purdue University Dept of Orthopedic Surgery, SUNY-Health Science Center, Syracuse, NY, Hill's Science and Technology Center, Topeka, KS, research in Veterinary Science, Volume 76, Issue I February 2004, Pages 53-55, as reported in PennState Veterinary News, January 2004, Penn State Cooperative Extension, University Park, Pennsylvania**

## Evaluation of Urine Sucrose Concentration for Detection of Gastric Ulcers in Horses

**Objective** - To evaluate the use of sucrose permeability testing to detect ulcers in the equine gastric mucosa.

**Animals** - 13 adult horses ranging from 5 to 19 years of age.

**Procedure** - Following induction of gastric ulcers by intermittent feed deprivation, horses underwent sucrose permeability testing (administration of sucrose by nasogastric intubation followed by collection of urine at 2 and 4 hours after intubation) and gastric endoscopy. Squamous ulcers were assigned a severity score (range, 0 to 3) by use of an established scoring system. Horses were subsequently administered omeprazole for 21 days, and sucrose testing and endoscopy were repeated. Pair-wise comparisons of urine sucrose concentration were made between horses with induced ulcers before and after omeprazole treatment. Urine sucrose concentrations also were compared on the basis of ulcer severity score.

**Results** - Urine sucrose concentrations and ulcer severity scores were significantly higher in horses with induced ulcers before omeprazole treatment than after treatment. Urine sucrose concentrations were significantly higher for horses with ulcer severity scores > 1. Use of a cut-point value of 0.7 mg/ml revealed that the apparent sensitivity and specificity of sucrose permeability testing to detect ulcers with severity scores > 1 was 83% and 90%, respectively. Results were similar after adjusting sucrose concentrations for urine osmolality.

**Conclusions and Clinical Relevance** - Urine sucrose concentration appears to be a reliable but imperfect indicator of gastric squamous ulcers in horses. Sucrose permeability testing may provide a simple, noninvasive test to detect and monitor gastric ulcers in horses.

*Am J Vet Res* 2004;65:31-39, Michael S. O'Conner, Jorg M. Steinert, Allen J. Roussel, Dept of Large Animal, Texas A&M, David A. Williams, Jon B. Meddings, Frank Pipers, Noah D. Cohen, Texas A&M Univ., Gastrointestinal Laboratory, Texas A&M Univ. Gastrointestinal Research Group, Univ. of Calgary, Canada Merial Ltd, Duluth, GA, as reported in PennState Veterinary News, January 2004, Penn State Univ., University Park, PA

## Influence of Acetylsalicylic Acid and Ketoprofen on Canine Thyroid Function Tests

Many factors, including drugs, can influence thyroid function in humans, rats and dogs. Studies in humans report significant effects of non-steroidal anti-inflammatory agents (NSAIDs) on thyroid function tests, which can lead to misinterpretation of the results and inappropriate therapeutic decisions. As NSAIDs are used more and more frequently in dogs, it is important to know to what extent they can influence results. Eighteen spayed female beagle dogs were randomly assigned to three treatment sequences in a 3x3 crossover study design with treatments consisting of acetylsalicylic acid (ASA) (25 mg/kg BW q 12 h), ketoprofen (Keto) (1 mg/kg BW q 24 h) or placebo administered for a 1-week period with a 3-week washout period between treatment periods. Blood samples for determination of total thyroxine (TT4), free thyroxine (FT4), total triiodothyronine (TT3), thyrotropin (TSH), reverse triiodothyronine (rT3), Keto and ASA concentrations were taken during each treatment period on days 0, 1, 3 and 7. During the washout period samples were taken weekly. A significant decrease in TT4 was observed as soon as 24 h after ASA administration, whereas the decrease in TT3 was less pronounced and differed significantly from the placebo only after 1 week of administration. No significant effects were found for free T4 and TSH with ASA administration. No significant effects on thyroid results were found following Keto administration. The results indicate that TT4 can be markedly decreased by ASA therapy and until the results of further studies are available, thyroid function test results should be interpreted cautiously in dogs on NSAIDs therapy.

S. Darninet, S. Croubelst, L. Duchateaut, A. Debunne, C. van Geffen, Y. Hoybergs, H. van Bree and A. de Rick, Ghent University, Belgium, as reported in PennState Veterinary News, January 2004, Penn State University, University Park, PA

## **Kaopectate Reformulation Could Be Dangerous To Cats**

Kaopectate, the over-the-counter diarrhea treatment for humans, recently has been reformulated to contain an aspirin derivative that is toxic to cats in high doses.

Kaopectate's new formula contains bismuth subsalicylate, which may cause salicylate toxicosis in cats if they are overdosed. Previously, the product contained attapulgite, an inert clay aluminum. The original kaolin pectin formula of Kaopectate was replaced by the attapulgite formula in caplets in 1984, and liquid attapulgite formulations were first introduced in 1989.

The attapulgite formulation of Kaopectate caplets may still be available. According to a Pfizer Animal Health spokesman, the new formulation of all liquid forms of Kaopectate began shipping in December 2002.

Reformulated caplets are scheduled to begin shipping no later than April 2004.

Though it is an extralabel use, for decades, veterinarians have recommended Kaopectate to treat diarrhea in cats and dogs, particularly for clients who call after hours or are unwilling or unable to get immediate veterinary care, said Dr. Cory Langston, a diplomate of the American College of Veterinary Clinical Pharmacology and a member of the AVMA Council on Biologic and Therapeutic Agents. Dr. Amy Neal at U.S. Pharmacopeia, an organization that provides drug information and runs a medication errors reporting system, alerted Dr. Langston about the formulation change.

"This (product) was prescribed, perhaps in part, because it could do no harm, since none of the ingredients were absorbed orally. Because of this safety factor, large and frequent doses were commonly used." Dr. Langston said. "Unlike the old Kaopectate, this new formulation could result in toxicosis if you don't account for the salicylate content of the product. "

Dr. Steve Hansen, a diplomate of the American Board of Veterinary Toxicology and director of the American Society for the Prevention of Cruelty to Animals' Animal Poison Control Center, said the range of recommended aspirin-derivative dosages that have been published for cats is 10 mg/kg every other day to 25 mg/kg every day.

A tablespoon of reformulated children's or regular-strength Kaopectate contains 130 mg aspirin equivalent, and extra-strength Kaopectate contains 230 mg aspirin equivalent. A tablespoon of extra-strength Kaopectate given to a 5-pound cat would yield 120 mg/kg aspirin equivalent and would likely result in toxicosis, according to Dr. Hansen.

"Cats typically don't metabolize and excrete many compounds, including aspirin, efficiently, which means we're much more likely to have effects," Dr. Hansen said.

For more information on managing poisons and poison prevention, visit the ASPCA's Poison Control Center Web site, [www.apcc.aspca.org](http://www.apcc.aspca.org).

**JA VMA 2003, 223(10):1400, as reported in PennState Veterinary News, January 2004, Penn State Cooperative Extension, University Park, Pennsylvania**

### **Would You Believe?**

- Rio de Janeiro has 680 slums which "house" almost one quarter of the city's 9 million residents.
- In 2001, drug costs rose 16% in this country while imaging costs(CT, MRI, PT) excluding x-ray, increased 23%.
- Per capita Consumption of coffee in the US was 24.2 gallons in 2001, down from 26.3 gallons in 2000.
- Ozone is a form of Oxygen in which the molecule contains three atoms instead of the normal two.
- Recent estimates conclude that 15 cents of every dollar spent by the 50 states goes to fund Medicaid.

## West Nile Virus Encephalitis And Myocarditis In Wolf And Dog

Two Illinois canids were brought in for necropsy in August 2002. The first case was a 3 month-old female wolf pup, which died after 2 days of lethargy, depression, and irritability that progressed to anorexia, weakness, ataxia, and blindness. The wolf brain had encephalitis compatible with a viral infection, including scattered blood vessels with narrow rims of lymphocytes. WNV immunolabeling was intense in the brain. Also immunolabeled were a few myocardial cells.

The second affected canine was an overweight 8-year-old castrated male Irish Setter-Golden Retriever mixed breed dog which developed multisystemic clinical signs including dyspnea, diarrhea with melena, ataxia, a head tilt with head bobbing, pulmonary edema, and cardiac arrhythmias. The major gross lesion was fibrinous epicarditis of the atria. Histologically, polioencephalitis similar to the wolf's was observed. The dog had marked myocarditis (especially in the atria) with numerous loose aggregates of leukocytes associated with degenerated or necrotic myocardial cells. The heart had intense WNV immunolabeling in many myocardial cells. The labeling in the dog brain was weak and inconclusive.

The epidemiology of WNV in canids is likely similar to that in humans: sporadic disease cases with no important role in viral transmission or maintenance. In a recent study in which four dogs were experimentally infected, no clinical disease was observed, and a low viremia developed in one dog. Natural infections occur in dogs, as indicated by serum antibodies; seropositivity in surveys was 37% in the 1980s in South Africa, 24% in the 1990s in India, and 5% in 1999 in New York City.

**Taken from: Lichtensteiger, et al Emerg Infect Dis 9:1303-1306, 2003, as reported in VetMed, Vol. 10, Issue 2, January 2004, Iowa State University, Ames, Iowa**

### Continuing Education Opportunities

<u>Date</u>	<u>Topic</u>	<u>Location</u>	<u>Contact Hours</u>
April 2 & 3, 2004	Applied Ultrasonography	Blacksburg	10
April 16 & 17, 2004	Diagnostic Ultrasonography	Blacksburg	10
April 23,24 & 25, 2004	Advanced Echocardiography	Blacksburg	21
May 7 & 8, 2004	Introductory Echocardiography	Blacksburg	10
June 6, 2004	Laser Surgery	Blacksburg	6
July 12 – 14, 2004	3-Day Introductory Endoscopy	Blacksburg	24

Please note:

The courses listed above are limited enrollment and feature a hands-on laboratory experience under the guidance of clinical faculty members. Program brochures provide course details. For more information, please contact **Anne Cinsavich**, [aclapsad@vt.edu](mailto:aclapsad@vt.edu) (540) 231-5261; or to register for a program, please contact **Conference Registration**, Continuing Education Center, (540) 231-5182.

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