Veterinary medicine and the opioid epidemic

Although I was encouraged reading the JAVMA News story addressing veterinary medicine’s role in the opioid epidemic, I thought the article missed the mark by focusing solely on current laws surrounding prescription monitoring. Although timely, balanced, and informative, the article’s focus could inadvertently drive a deeper wedge between state and federal officials and veterinarians, who should aim to work together to help tackle this public health crisis.

As stated in the article, veterinarians do indeed have “professional obligations to the public to ensure appropriate drug use.”

And, the Veterinarian’s Oath requires that veterinarians work to promote public health. The opioid epidemic is no different from any other public health epidemic, and just like those other public health epidemics, its causes are multifactorial and complex and must be approached as such.

Currently, in my home state of Texas, the Board of Veterinary Medical Examiners is under review by the Texas Sunset Advisory Commission, which comprises mostly state legislators. The commission recently noted US Drug Enforcement Administration data suggesting that, out of all practitioners, Texas veterinarians have the highest reports of theft, especially through employee pilferage. Although mandatory reporting requirements may help improve compliance and enforcement, this is only half the battle and does not address other underlying concerns. The veterinary profession as a whole must come to accept that veterinarians play the additional role of pharmacist in our practices and that with that role comes additional responsibilities.

However, the veterinary profession should not wait on federal or state legislatures to determine the role that veterinarians must play in this crisis. Veterinarians are in a unique position to truly advance the one health concept, which is more than the prevention of zoonotic diseases or the application of translational research to prevent or treat human and animal diseases. We should step up and set the tone by implementing evidence-based outreach methods such as staff, patient, and community prescription drug education. Through multidisciplinary collaborative efforts, we can promote successful prescription take-back initiatives. Of course, these ideas only scratch the surface of possibilities. We must be proactive instead of reactive and have a seat at the table where we are often absent.

Make no mistake, protecting our profession from burdensome regulations is a noble fight, but as one of the most trusted professions among the public, veterinarians must leverage that trust and establish local, state, and national standards of our own to address a crisis that affects not only our patients, but also our clients and communities as a whole.

Priscilla Bowens, DVM, MPH, JD
Fort Worth, Tex

Drug diversion in veterinary practice

I read the JAVMA News story “States track dispensing to counter drug fraud” with interest. Efforts to increase awareness of drug diversion and decrease the availability of controlled substances have become increasingly important.

Veterinarians should be aware that drug diversion can be quite subtle. One day, for example, a gentleman rushed into my clinic claiming that his dog had just eaten a whole bottle of Ritalin (methylphenidate). The dog appeared calm and did not look like it had just ingested a CNS stimulant. Still, we induced emesis and observed the dog for the remainder of the day. We never found any pills in the vomitus, and the dog remained normal during the observation period. The owner was provided with a bill, including the relevant history. Unfortunately, we knew that he could then present this documentation to his healthcare provider and request a refill of his Ritalin. The cost of the
veterinary visit must have been substantially less than the street price of Ritalin.

Veterinarians should also be aware that external diversion is not the only problem we face. Veterinary clinic employees have much greater access to controlled substances than do members of the general public, and there should be greater awareness of the possibility of drug diversion by staff members.

For example, one clinic I am aware of had an employee who was refilling tramadol prescriptions, paying cash, and taking the medication for herself. This deception was not discovered until a client called to get a refill on her dog’s tramadol prescription, only to find that the dog’s chart indicated a refill had been provided a few days earlier. Had the client relationship not been longstanding, this could have looked like doctor shopping for pain medication. Still, many animals are prescribed tramadol for brief periods after surgery or a traumatic injury. How easy would it be for those prescriptions to be refilled even once by a staff member looking to divert medication? Is anyone reviewing records for that possibility?

I work in the medical information field on behalf of human pharmaceutical companies. Rarely, veterinary clinics call to question the quality of an injectable opioid, complaining that animals are not receiving the expected pain control during surgery. In these instances, although the possibility of a manufacturing problem must be investigated, the possibility that the medication has been diverted by a staff member must also be considered. At a clinic where I previously worked, we noticed that animals were not vomiting as expected when given an opioid premedication. One day, a particular staff member called in sick. Amazingly, dogs vomited after receiving their premedications that day. We had identified a problem. Soon after, the staff member’s friend posed as a regulatory agent, requesting to inspect the ketamine on site because of a series of veterinary clinic robberies. That effort was thwarted and local police were called.

As a community, we should be aware of possible drug diversion by staff members. We should be vigilant for diversion opportunities and evidence of problems and have a response plan in place. Documented diversion should be reported to state licensing boards. Similar to doctor shopping, staff may be job hopping to hide diversion.

Kari Johnson, dvm
Stillwater, Minn


On the dosage of levothyroxine sodium in dogs

We read with interest the Pathology in Practice article by Pieper et al. describing a dog in which histologic examination of skin biopsy specimens played a crucial role in establishing a diagnosis of hypothyroidism. The authors gave a recommended starting dosage of orally administered levothyroxine sodium of “0.02 mg/kg (0.009 mg/lb) every 12 hours,” equivalent to a daily dosage of 0.04 mg/kg (0.018 mg/lb). Although this may have been within the recommended starting dosage range (0.022 to 0.044 mg/kg/d [0.01 to 0.02 mg/lb/d]) for the numerous unapproved veterinary levothyroxine sodium formulations on the market when this dog was evaluated, this is no longer the case.

In January 2016, Thyro-Tabs Canine (levothyroxine sodium tablets), USP, became the first veterinary levothyroxine sodium drug product for oral administration to obtain FDA approval under a New Animal Drug Application (NADA 141448). In the clinical trial supporting the New Animal Drug application, 80% of the dogs had maintenance doses between 0.018 and 0.026 mg/kg/d (0.008 and 0.012 mg/lb/d), with an overall maintenance dose range of 0.009 to 0.044 mg/kg/d (0.004 to 0.020 mg/lb/d). In addition, there was no difference in therapeutic monitoring results or in resolution of clinical signs between dogs that received the entire daily dose once every 24 hours and dogs that received half the daily dose every 12 hours.3

On the basis of these results, the labeled starting dosage for Thyro-Tabs Canine is 0.022 mg/kg/d given as a single dose every 24 hours or as a divided dose every 12 hours.4 Pharmacovigilance monitoring by Lloyd Inc supports the use of this lower dosage. For dogs with newly diagnosed hypothyroidism, we have received more reports of signs of thyrotoxicosis (eg, panting, hyperactivity, polyuria, and polydipsia) when dogs received a starting dosage of 0.044 mg/kg/d than reports of lack of efficacy when dogs received a starting dosage of 0.022 mg/kg/d.

It is unknown what the recommended starting dosage will be for other veterinary levothyroxine sodium drug products if and when they obtain FDA approval. Until that time, Thyro-Tabs Canine is the only FDA-approved veterinary levothyroxine sodium drug product in the United States. As such, Lloyd recommends that veterinarians start dogs with newly diagnosed hypothyroidism at the new, lower, labeled starting dosage of 0.022 mg/kg/d.

W. E. Lloyd, dvm, PhD
Founder and Co-Chair
Carla M. K. Morrow, dvm, PhD
Director of Product Registration and Technical Services
Lloyd Inc
Shenandoah, Iowa

Importance of standards and guidelines for veterinary genetic laboratory services

As genetic testing becomes more common in veterinary medicine, both for determining the ancestry of mixed-breed dogs and to identify potential predispositions for genetic diseases, there is an increasing need to discuss quality standards in veterinary genetic testing. Currently, no regulatory oversight or testing standards exist for veterinary diagnostic laboratories performing genetic testing. In the United States, the American Association of Veterinary Laboratory Diagnosticians provides accreditation for university-based and state-affiliated veterinary diagnostic laboratories, and the American Association for Laboratory Accreditation has an accreditation process for commercial veterinary diagnostic laboratories. However, veterinary diagnostic laboratories are not currently required to be accredited, putting veterinarians and dog owners in the difficult situation of not knowing which laboratory results can be trusted.

By contrast, the Centers for Medicare and Medicaid Services regulate human clinical diagnostic laboratories on the basis of standards outlined in the Clinical Laboratory Improvement Amendments of 1988. In addition, the American College of Medical Genetics and Genomics has established voluntary standards for clinical genetics laboratories, including information on appropriate quality control and quality assurance, proficiency testing, and personnel. We recommend that all veterinary diagnostic laboratories performing genetic testing follow these standards. This includes designating three physically distinct areas for reagent preparation, sample preparation, and PCR amplification and product detection. In addition, as part of an ongoing methods-based proficiency testing program, every mutation region should be interrogated through the use of two independent methods, not just when heterozygous or at-risk results are obtained.

As an example of how a methods-based proficiency testing program can effectively reduce errors, we recently, through the use of sequencing and size fragmentation via gel electrophoresis, identified the insertion described by Turba et al1 in 13 Collies during the initial development and validation of assays for the c.118G>A variant associated with degenerative myelopathy in dogs. Although the insertion did not affect the testing results, because the insertion was identified by both of our standard assays, the proficiency testing program allowed us to recognize the allele dropout prior to the launch of this diagnostic test. Because predicting every polymorphism in the canine genome is impossible, comparing results across methods within an individual sample helps ensure that normal genomic variation is less likely to affect target amplification.

The American College of Medical Genetics and Genomics, in conjunction with the College of American Pathologists conducts proficiency testing of human diagnostic genetic testing laboratories, and veterinary diagnostic genetic laboratories need a similar system. Thus, we appeal to the AVMA and American Association of Veterinary Laboratory Diagnosticians to work together with diagnostic laboratories to provide regulatory oversight with standards and guidelines that will help prevent substandard testing in veterinary diagnostic genetic testing. Until that time, we recommend that veterinary genetic testing laboratories implement a methods-based proficiency testing program.

Christina J. Ramirez, DVM, PhD
Casey Carl, DVM
Blake C. Ballif, PhD
Paw Print Genetics
Genetic Veterinary Sciences Inc
Spokane, Wash
Lisa G. Shaffer, PhD
Paw Print Genetics
Genetic Veterinary Sciences Inc
Spokane, Wash
School of Molecular Biosciences
Washington State University
Pullman, Wash


Conflicts of Interest

Dr. Shaffer is the owner and all authors are employees of Genetic Veterinary Sciences, DBA Paw Print Genetics, which provides genetic testing for inherited disorders to breeders, owners, and veterinarians.