

## Letters to the Editor

### Understanding resilience

I was surprised and puzzled by the headline for a recent *JAVMA* News story,<sup>1</sup> which highlighted that resilience was overvalued. The story reported on the presentation “The high cost of resilience: a discussion of the overarching impacts of veterinary student stress” given by Jeremiah Grissett, a counselor and wellness coordinator at Oklahoma State University College of Veterinary Medicine, at this year’s annual conference of the American Association of Veterinary Medical Colleges. According to the article, Grissett stated “There is a huge reliance on overvaluing resiliency, hardiness, and grit” and suggested that overvaluing resilience invalidates previous difficult experiences, can cause burnout, and places the responsibility for success entirely on students.

I suspect that, in these instances, Grissett may be discussing resilience as a coping mechanism (eg, “just deal with it”). Fundamentally, all coping mechanisms are just ways of dealing with stressful situations while nonetheless remaining in a stressful mindset. That, I will agree, is definitely not desirable.

According to the American Psychological Association,<sup>2</sup> “Psychologists define resilience as the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress.” The key words here are “adapting well.” This is not just coping and tolerating, and the American Psychological Association further states that “As much as resilience involves ‘bouncing back’ from these difficult experiences, it can also involve profound personal growth.” This is the value in cultivating resilience. We can find opportunity in adversity and hardship, and by embracing the lessons that difficult experiences provide, we can create a new paradigm for ourselves. This does not invalidate our previous experiences and the unpleasant emotions

that accompanied them. Rather, it imbues them with meaning and purpose. This seems highly desirable to me because, after all, life will continue to challenge us in uncomfortable ways.

**Michael J. Murray, DVM, MS**  
**Level 5 Coaching and Consulting LLC**  
**Oro Valley, Ariz**

1. Mattson K. AAVMC sessions highlight student anxiety, the overvaluing of resiliency. *J Am Vet Med Assoc* 2021;258:924-926.
2. American Psychological Association. Building your resilience. Available at: [www.apa.org/topics/resilience](http://www.apa.org/topics/resilience). Accessed May 9, 2021.

### Equine rotavirus

Reading the *JAVMA* News story “Kentucky researchers identify novel rotavirus strain”<sup>1</sup> brought back fond memories when, as a speaker at the Fifth International Conference on Equine Infectious Diseases, I presented a paper<sup>2</sup> based on my doctoral research investigating the infectivity of cell-cultured equine rotavirus (ERV). These studies demonstrated that susceptible foals could be infected with cell culture-propagated ERV and would develop diarrhea and other clinical signs of rotaviral disease. Our results were interpreted as evidence that equine rotavirus could by itself cause clinical disease in foals and showed that, in future infectivity

studies, the more easily manipulated cell culture-propagated ERV could be used rather than rotaviral fecal filtrates. Little correlation was observed between serum-neutralizing antibody titers and protection from clinical disease. The results suggested continuous circulation of virus through subclinically infected mares, the environment, and susceptible foals.

Because the novel ERV strain discussed in the *JAVMA* News story does not possess the common inner capsid antigen, it would be classified as an atypical rotavirus and would not be detected with available test kits containing antibodies to the common inner capsid antigen. Electron microscopy can reliably detect ERV in diarrheal fecal samples, provided there are  $> 10^5$  viral particles/mL of feces. It may also be possible to raise antibodies against this atypical ERV in specific pathogen-free laboratory animals (eg, guinea pigs or hens) and use this homologous antibody in an ELISA or to examine cell cultures that have been infected with the virus through an indirect fluorescent antibody test.

The bottom line is that pregnant mares should be kept isolated from outside mares coming to a farm to be bred. Ideally, mares should always be housed on the farm where they will foal for at

### Instructions for Writing a Letter to the Editor

Readers are invited to submit letters to the editor. Letters may not exceed 500 words and 6 references. Letters to the Editor must be original and cannot have been published or submitted for publication elsewhere. Not all letters are published; all letters accepted for publication are subject to editing. Those pertaining to anything published in the *JAVMA* should be received within 1 month of the date of publication. Submission via email ([JournalLetters@avma.org](mailto:JournalLetters@avma.org)) or fax (847-925-9329) is encouraged; authors should give their full contact information, including address, daytime telephone number, fax number, and email address.

Letters containing defamatory, libelous, or malicious statements will not be published, nor will letters representing attacks on or attempts to demean veterinary societies or their committees or agencies. Viewpoints expressed in published letters are those of the letter writers and do not necessarily represent the opinions or policies of the AVMA.

least 30 days prior to parturition and for longer if possible.

**William P. Higgins, DVM, PhD**  
**Glen Elm Equine Veterinary**  
**Consultants**  
**Centreville, Md**

1. Mattson K. Kentucky researchers identify novel rotavirus. *J Am Vet Med Assoc* 2021;258:1169.
2. Higgins WP, Gillespie JH, Schiff EI, et al. Infectivity and immunity studies in foals with cell culture-propagated equine rotaviruses, in *Proceedings*. 5th Int Conf Equine Infect Dis 1987;241-247.

### **Rabies surveillance: how can we do better?**

I congratulate staff at the CDC and USDA and our colleagues in Canada and Mexico for another comprehensive annual surveillance report on rabies.<sup>1</sup> Although greater real-time reporting would be more ideal than the 2019 data alone, delays are inevitable and these local and regional efforts at multinational cooperation are remarkable in the face of a pandemic. The ultimate impact of COVID-19 on rabies surveillance, prevention, and control throughout North America remains undefined. Moreover, the authors again raise several substantive issues in their report, such as a need for modern viral characterization, the improved identification of infected taxa, and the thorough investigation of affected domestic animals, particularly related to vaccination status. Veterinarians contribute to the latter improvements for any suspect animals they euthanize. Importantly, no human cases were reported in the US during 2019 through 2020, but at least 2 human cases have already been identified in 2021, in Minnesota and New York. Relevant updates are beneficial, when available. Besides human and domestic animal prophylaxis, substantial efforts on oral wildlife vaccination continue at the US-Mexico border to prevent the reintroduction of the canine-coyote rabies virus variant. However, given the opportunity of this rabies virus variant to infect dogs and humans readily and the laudable freedom of canine rabies virus transmission now in Mexico,

where is this variant within North America? Coyote rabies was suggestive of a host shift among canids. The epizootiology of this situation portends a troubling mystery, with consequent agricultural, biological conservation, public health, and socioeconomic repercussions. Such will also likely be the case once vampire bat rabies enters the United States. Lastly, Ma et al<sup>1</sup> conjecture that any newly emergent rabies viruses detected via enhanced surveillance efforts will not differ in pathogenicity. Seemingly, our predictions fall short owing to imperfect knowledge on the ultimate evolution, ecology, and perpetuation of such negative-stranded RNA viruses relevant to future prevention, control, and treatment efforts and conflict with existing insights toward a better understanding on the proximate nature of why things are the way they are.<sup>2-6</sup>

**Charles E. Rupprecht, VMD, PhD**  
**Cumming, Ga**

1. Ma X, Monroe BP, Wallace RM, et al. Rabies surveillance in the United States during 2019. *J Am Vet Med Assoc* 2021;258:1205-1220.
2. Dietzschold B, Morimoto K, Hooper DC, et al. Genotypic and phenotypic diversity of rabies virus variants involved in human rabies: implications for postexposure prophylaxis. *J Hum Virol* 2000;3:50-57.
3. Faber M, Faber ML, Papaneri A, et al. A single amino acid change in rabies virus glycoprotein increases virus spread and enhances virus pathogenicity. *J Virol* 2005;79:14141-14148.
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5. Bertoune MAR, Nickl B, Krieger T, et al. The phenotype of the RABV glycoprotein determines cellular and global virus load in the brain and is decisive for the pace of the disease. *Virology* 2017;511:82-94.
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### **The authors respond:**

The authors thank Dr. Rupprecht for his comments. The COVID-19 pandemic has put a strain on the

national public health system unlike anything seen since the establishment of the National Rabies Surveillance System (NRSS). The authors remain impressed with, and grateful to, state and local public health veterinarians, epidemiologists, and laboratory scientists for their efforts in outbreak response while also ensuring normal rabies duties are accomplished.

Despite the NRSS representing one of the oldest and largest zoonotic disease surveillance systems, a lack of data standardization among reporting jurisdictions (eg, temporal and spatial data, rabies virus variant characterization, and genus and species of animals tested) and reporting lag can negatively impact rabies surveillance and subsequent interventions. For this reason, CDC has collaborated since 2016 with the Association of Public Health Laboratories (APHL), the USDA, and state public health, agriculture, and academic laboratories to develop and implement a national electronic laboratory reporting (r-ELR) system. The objective of the r-ELR system is to ensure timely notification and analysis of rabies data to identify changes in regional or national trends. This will be achieved through near real-time electronic data reporting, while standardization will improve data quality and timeliness of cross-jurisdictional data analysis and interpretation. To date, 11 laboratories are reporting data through the r-ELR system, 4 laboratories are in the process of implementation, and 10 more laboratories are engaged in discussions with the CDC and APHL regarding implementation. In 2020, > 15% of annual national surveillance data was reported through the r-ELR system. It is expected that r-ELR will eventually replace current end-of-year national surveillance data collection methods.

Geographic expansion of reservoir species, translocation of rabies from enzootic to nonenzootic areas, introduction of new rabies virus variants through international travel, and host shift events present ongoing threats to public health, wildlife conservation, and animal welfare and production

in North America. Unlike many other zoonotic diseases, rabies can be effectively managed in certain wildlife populations through the targeted use of oral rabies vaccine.<sup>1</sup> Ensuring that wildlife rabies management decisions are evidence-based and ultimately beneficial to human and animal health relies on federal and state partners to provide accurate laboratory and epidemiologic data, in particular on rabies virus variants. Because some samples provide critical information on rabies epidemiology, the CDC has developed a set of criteria to prioritize rabies-positive animals for variant typing on the basis of species, geographic features, and travel history.<sup>2,3</sup> These criteria, termed samples of epidemiologic importance (SEI), are designed to include threats such as the expected geographic expansion of vampire bats and arctic foxes in the face of climate change and the reemergence of the dog-coyote rabies virus variant.<sup>4,5</sup> The 2019 report highlights the increasing prioritizing of animal samples for rabies virus variant typing; 47% of SEIs were variant typed, an increase from 41% for 2014 through 2018, and rapid investigation of abnormal events underscored the importance of performing variant typing.

Rabies is one of the oldest zoonotic diseases known to humankind. Despite phenomenal advances in our understanding of the virus, its natural history and pathogenesis continuously challenge us to seek new methods and technologies to enhance rabies control and prevention.

**Jesse Bonwitt, BVSc**  
**Xiaoyue Ma, MPH**  
**Ryan M. Wallace, DVM**  
**Brett W. Petersen, MD**  
**Victoria Olson, PhD**  
**Poxvirus and Rabies Branch**  
**Division of High-Consequence**  
**Pathogens and Pathology**  
**National Center for Emerging and**  
**Zoonotic Infectious Diseases**  
**CDC**  
**Atlanta, Ga**

**Jordona D. Kirby, MS**  
**Richard B. Chipman, MS**  
**Wildlife Services,**  
**APHIS, USDA**  
**Concord, NH**

**Christine Fehlner-Gardiner, PhD**  
**Centre of Expertise for Rabies**  
**Ottawa Laboratory–Fallowfield**  
**Canadian Food Inspection Agency**  
**Ottawa, Canada**

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### Trauma triggers in veterinary medicine

With a new round of graduates entering the profession, I want to share some things I have learned over the past year about possible triggers in the profession for people who have unresolved childhood emotional trauma. I'm not offering solutions, but if you see a therapist, you should look for one with experience dealing with trauma. And, if you don't have unresolved trauma, this letter may help you better understand a colleague or staff member who does.

Individuals who grew up with an emotionally unsafe parent-child dynamic may find that, as adults, their inner sense of safety is compromised. When these individuals go into private practice,

the inevitable lack of control over various aspects of their work life (eg, abrupt changes to their work schedule or never knowing what might walk in the door at any moment) can easily agitate their already activated sympathetic nervous system.

A common phenomenon among families in general is a lack of proper boundaries. However, in families that are enmeshed, a parent may limit or control their child's individuality and autonomy to such an extent that, as an adult, the child feels as though they are not in control of their life or can't have a say in things. This becomes a problem for these individuals when they work in private practice because boundary violations are so common. Appointments might be added to the schedule without their knowledge, they might be pressured to work in another client even though their schedule is already full, or clients might decide to share their own personal problems with them.

Enmeshed families also often have issues with codependency, and one element of codependency is that the most disordered person tends to create the emotional experience for the group. If you grew up with this background, it becomes easy to internalize someone else's dysfunction as meaning something about you, causing your self-esteem to suffer. It also means that dealing with angry clients can feel like allowing yourself to be bullied, victimized, or shamed. Dealing with angry coworkers can feel similar and result in fear.

Unresolved childhood emotional trauma can manifest itself in various ways in adults. Working to heal unresolved trauma will result in greater resilience at work and in life in general. Feel free to reach out.

**Shagufta Mulla, DVM**  
**Independence, Ore**