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## Storage of euthanasia solution as a factor in addressing veterinarian suicides

**Randall J. Nett, MD, MPH,**

Respiratory Health Division, National Institute for Occupational Safety and Health, CDC,  
Morgantown, WV 26505

**Tracy K. Witte, PhD,**

Department of Psychology, College of Liberal Arts, Auburn University, Auburn, AL 36849

**Suzanne E. Tomasi, DVM, MPH,**

Respiratory Health Division, National Institute for Occupational Safety and Health, CDC,  
Morgantown, WV 26505

**Katherine A. Fowler, PhD**

Division of Violence Prevention, National Center for Injury Prevention and Control, CDC, Atlanta,  
GA 30341

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In a recent study of suicides and deaths of uncertain intent among US veterinary professionals, Witte et al<sup>1</sup> found that for 34 of 73 (47%) veterinarians, the mechanism of death was classified as poisoning, with 18 of those 34 deaths (or 25% of the total) attributed to pentobarbital, the active ingredient in euthanasia solutions. Even more troubling, for 13 of the 18 deaths attributed to pentobarbital poisoning, the death-related injury occurred at home. Although data were not available on where or how the pentobarbital was procured, it seems likely that in some, if not all, of these cases, euthanasia solution was removed from a clinic setting or shipped directly to a decedent's home office and used for the purpose of suicide.

As has been the case for other studies of veterinarian suicide, Witte et al<sup>1</sup> identified a higher likelihood of death by suicide among veterinarians than among members of the general US population. However, when they reanalyzed their data after excluding veterinarians for which the mechanism of death was pentobarbital poisoning, they no longer found a significant difference in the likelihood of death by suicide between veterinarians and the general population. This raises the question of whether developing more stringent policies for accessing euthanasia solution in veterinary clinics, beyond those already required by the US Drug Enforcement Administration, might be helpful in addressing the comparatively high prevalence of suicide among veterinarians.

Suicide is a major public health problem associated with a complex constellation of risk factors, and the specific factors leading to suicide differ from one individual to the next. However, all people who die by suicide have two things in common: access to lethal means

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Address correspondence to Dr. Nett (gge5@cdc.gov).

and the knowledge or ability to use them. A person contemplating suicide who lacks ready access to lethal means or lacks the knowledge or ability to use available lethal means is unlikely to attempt suicide, even if the underlying factors leading to suicidal ideation are not addressed. In addition, suicide methods differ in their degree of lethality. Firearms, for instance, are generally more likely to result in death than a single overdose of acetaminophen.<sup>2</sup>

Given this, it seems possible that, all else being equal, veterinarians have a uniquely higher risk of suicide because of their access to and knowledge of one particularly lethal method: pentobarbital poisoning resulting from administration of euthanasia solution. The factors that contribute to suicide in veterinarians likely have the same wide variability observed in individuals outside the veterinary profession, making it difficult to address them at a population level. And more research is needed into the factors that contribute to suicide among veterinarians so that effective intervention efforts can be developed. However, it may also be possible to decrease the number of veterinarian suicides by decreasing access to lethal means, in this case, access to euthanasia solution.

It has been argued that decreasing access to lethal means (also known as means safety) is not an effective method for preventing suicide, because individuals prevented from using one particular suicide method will simply switch to another (often referred to as means substitution) and die anyway. To the contrary, however, a growing body of literature<sup>2</sup> demonstrates that limiting access to lethal means results in an overall reduction in the number of suicides, not just the number of suicides by which those means were used, which would not be the case if means substitution were widespread. To be clear, this does not necessarily entail removing all access to a particular method, which would not be possible in the case of euthanasia solution for veterinarians. Simply making access more difficult may be sufficient. For instance, placing barriers on bridges has been shown to reduce suicide from jumping,<sup>3</sup> and requiring individuals to purchase charcoal behind a pharmacy counter rather than from open shelves resulted in an overall reduction in suicide in an area of Hong Kong where charcoal asphyxiation had become a frequently used suicide method.<sup>4</sup>

Interestingly, we do not know for certain why such simple interventions result in a reduced likelihood of suicide. One possible explanation is that even a modest increase in the amount of effort and time needed to enact a lethal attempt can “nudge” people away from suicide or offer more of an opportunity for intervention by others. People who survive a suicide attempt often report spending little time (ie, < 10 minutes) contemplating their decision<sup>2</sup>; therefore, even relatively minor obstructions might be consequential.

Some have argued that decreasing access to lethal means ignores the underlying causes of suicide, such as mental illness and occupational stress. We agree that suicide prevention requires a multifaceted approach that addresses the multiple factors involved. However, we think it would be a grave error to overlook the critical role that means safety can play in preventing suicide in the veterinary profession. The veterinary profession has come a long way both in terms of increasing access to mental health treatment and reducing the stigma associated with receiving it and in terms of addressing structural occupational stressors. However, to our knowledge, little has been done to address means safety, and we are

advocating that means safety be added to the overall package of suicide prevention tools at our disposal. Means safety alone cannot prevent all suicides. Still, any evidence-based approach that can reduce the number of suicides is a tool to consider.

Ultimately, any meaningful, systematic approach to controlling access to euthanasia solution that goes beyond existing US Drug Enforcement Administration policies would best originate collectively from veterinarians representing the wide range of practice settings that exist and from professionals involved with managing veterinary practices. It is highly likely that different approaches to ensuring safe storage of euthanasia solution will be needed across different veterinary practice settings. As such, it is critical that key stakeholders from all practice areas be included in any related policy discussions. Rather than a one-size-fits-all approach to means safety across the entire veterinary profession, we invite veterinarians from various specialties and settings to think creatively and to consider which proposed solutions would work best for their situation.

While the veterinary community continues to address the issue of mental well-being to improve the health and professional performance of veterinarians, the veterinary community could also act to ensure that colleagues in crisis are aware of suicide prevention resources and that veterinary practices have administrative barriers in place to prevent veterinarians in crisis from removing euthanasia solution for personal use. The safe storage of euthanasia solution is especially important because veterinarians have the knowledge to calculate lethal doses. Nett et al<sup>5</sup> and Volk et al<sup>6</sup> found that US veterinarians were less likely than the general population to report a previous suicide attempt, which might be because veterinarians, as a population, were less likely to survive a first suicide attempt. Approximately 90% of survivors of suicide attempts do not go on to die from suicide,<sup>2</sup> which underscores the need to limit access to lethal means for persons who are experiencing a temporary suicidal crisis. The obvious challenge for the veterinary community is to prevent the personal use of euthanasia solution for the purpose of suicide while also balancing the needs of veterinarians who require ready access to euthanasia solution as part of their veterinary practice.

Again, ensuring the safe storage of euthanasia solution may be a critical factor in preventing future veterinarian suicides; however, this cannot be the only action taken by the veterinary community. Preventing future veterinarian suicides requires a range of activities that not only address safe storage of potentially harmful substances but also promote a protective environment for workers.<sup>7</sup> Key activities already ongoing should continue, including current work to improve the mental well-being of veterinarians through implementation of improved workplace practices and personal measures, as highlighted by the AVMA<sup>8</sup> and numerous state veterinary medical associations and other organizations. Additionally, veterinarians in crisis can access the National Suicide Prevention Lifeline 24 hours a day, seven days a week at 800-273-8255. Veterinarians can also access Vets4Vets, a confidential support group for veterinarians administered by the VIN Foundation, at 530-794-8094.

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