

TELEMEDICINE INTRODUCTION

Nominated Topic:

“Should veterinarians provide remote tele-medicine diagnosis, prognosis, and prescription?”

The rapid pace of technology and increased demand for accessibility to healthcare, combined with recent world events has catapulted the use of telemedicine in nearly every aspect of our professional lives. Dr. Lori Teller’s extensive knowledge and experience with telemedicine and its various permutations and applications makes her an ideal choice to write the 12 Topics Project inaugural piece “Ethical Dilemmas Concerning the Use of Telemedicine for the Provision of Veterinary Care”. The SVME is grateful to Dr. Teller for her generous contribution to our project.

Author Biography:

Dr. Lori Teller is a graduate of Texas A&M University College of Veterinary Medicine and Biomedical Sciences (TAMU CVM), and she is a board-certified diplomate of the American Board of Veterinary Practitioners in Canine and Feline Practice. She has worked at Meyerland Animal Clinic for many years, starting at the age of 12, and continuing after graduation from veterinary school. In 2018, Dr. Teller joined the faculty at TAMU CVM as the Clinical Associate Professor of Telehealth. She is very passionate about her teaching role, as well as telemedicine and its growth in the veterinary field. Recently, she and her colleagues were awarded a grant from the USDA to explore the role of telemedicine in veterinary education, and a grant from Texas A&M’s School of Innovation to pilot a program to improve access to veterinary care for low-income pet owners. She has authored several papers and articles on veterinary telemedicine as well. Dr. Teller is currently the Chair of the Board of Directors of the American Veterinary Medical Association, was one of the founders of the Women’s Veterinary Leadership Development Initiative, won the Southwest Veterinary Symposium Visionary Award, and has a monthly radio spot on Houston’s NPR station discussing veterinary care for dogs and cats. She continues to mentor veterinary students and recent graduates. Outside of veterinary medicine, Dr. Teller is married to her high school sweetheart, has a son, and several animals. She was a founder of The Gateway Academy, a high school for students with special needs, and she loves reading, hiking, chocolate chip cookies, and puppy breath.

Conflict of Interest Disclosures:

Dr. Lori Teller serves as an advisor to AirVet, a veterinary telemedicine platform. The telehealth program at VirtualVets telemedicine program at TAMU CVMBS is powered by VetNOW.

Ethical Dilemmas Concerning the Use of Telemedicine for the Provision of Veterinary Care

Lori Teller, DVM, DABVP (canine/feline), CVJ

Abbreviations	
AAP	American Association of Pediatrics
AAVSB	American Association of Veterinary State Boards
ACP	American College of Physicians
AP	AVMA's Practice Advisory Panel
ATA	American Telemedicine Association
AVMA	American Veterinary Medical Association
DEA	Drug Enforcement Agency
DTC	Direct-To-Consumer
FDA	Federal Drug Administration
HIPAA	Health Insurance Portability and Accountability Act
PCP	Primary Care Provider
VCPR	Veterinarian-Client-Patient Relationship

Telemedicine has been a hot topic in veterinary medicine for many years, and it particularly rose to the forefront several years ago when the AVMA released its Practice Advisory Panel's report¹ and the North Atlantic Veterinary Community created its Veterinary Innovation Council. There have been an abundance of articles and opinion pieces published on this topic, and the profession is rife with a number of companies providing various platforms to help with the adoption and utilization of virtual care, telehealth, and telemedicine. Of course, most veterinarians practice some form of telemedicine every day. Whenever a veterinarian communicates with a client via email, texting, messaging, or other electronic means, the veterinarian is utilizing telemedicine. The recent spread of SARS-CoV-2 and the subsequent COVID-19 pandemic has triggered an uptick in the utilization of telemedicine in both human^{2,3} and animal⁴ health care.

Easier access to veterinary care, convenience for clients, and the ability to provide appropriate care to patients will help to determine the future of virtual care in veterinary medicine. Ethical concerns must also be considered. What is the right thing to do for the animal? For the client? For the veterinarian and staff? Mars *et al.* summarized it nicely, "Ethics uses principles that are

to ‘social norms’ (values, customs, habits, traditions) in order to determine and justify – or spurn – specific actions and behaviours. Of importance, as social norms change, and in regard to society and ICT (*information and communication technology*), they change rapidly. Consider how recently various social media were introduced, how rapidly their use has grown, and how varied their use has become. It is incumbent on those who would set ethical standards for eHealth and its component activities to ensure that any guidelines keep pace with, perhaps foretell, social norms, and not resist them. To do otherwise will only stifle innovation, and either deny populations of the documented benefits of eHealth or create outlaws of healthcare providers.”⁵ As Mars *et al.* also note, regulators should develop informed and practical guidelines to embed virtual care into routine healthcare practice, but in the absence of such guidance, professional associations and societies should develop discipline-specific guidelines. Virtual care will not be going away, and it will probably eventually be a seamless part of veterinary care, so discussions and thoughtful consideration about its ethical use need to be ongoing.

Magalhães-Sant’Ana *et al.* surveyed veterinarians in Portugal and found that “the dividing line between a clinical advice and an actual consultation is not always clear, and the risk that illegal veterinary acts may be carried out remotely is tangible. Veterinary regulators should act to ensure that telehealth service providers comply with professional requirements, namely on informed consent, data protection, client confidentiality, and quality assurance. The suggestion of establishing a permanent consultative group on veterinary telehealth would be a step on that direction.”⁶

Medical doctors are also faced with ethical considerations with regards to telemedicine. In an article on this topic for the American Medical Association, Mehta wrote that “there are serious concerns about how the adoption of telemedicine may impact care. Ensuring that telemedicine is ethically acceptable will require anticipating and addressing four possible pitfalls: erosion of the patient-doctor relationship, threats to patient privacy, forcing one-size-fits-all implementations, and the temptation to assume that new technology must be effective.”⁷ Veterinarians are faced with similar ethical dilemmas.

Definitions

It is important to understand the various terms that are used when discussing the topic of telemedicine. The terms virtual care, telehealth, and telemedicine are frequently used interchangeably (as will be seen in some of the studies and quotes referenced later in this paper), but it's important to be aware of the distinctions. **Virtual care** is defined by the AVMA and American Animal Hospital Association as an extension of veterinary practice that includes any interaction among clients, patients, and their circle of care that occurs remotely, using any form of technology, with the goal of delivering quality and effective patient care. Think of it as an umbrella term that encompasses all the different terms that follow.⁸

The AVMA defines **telehealth** as the overarching term that encompasses all uses of technology geared to remotely deliver health information or education.¹ The California Telehealth Resource Center notes that, "First and foremost, telehealth is a collection of means or methods, not a specific clinical service, to enhance care delivery and education. Ideally, there should not be any regulatory distinction between a service delivered via telehealth and a service delivered in person. Both should be held to the same quality and practice standards. The 'tele-' descriptor should ultimately fade from use as these technologies seamlessly integrate into health care delivery systems."⁹

The AVMA defines **telemedicine** as the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status.¹ In veterinary medicine, the use of **virtual care** or **telehealth** can encompass giving advice, consulting, and other things that may or may not include the need for an established VCPR, whereas **telemedicine** is specific to a patient and generally requires an established VCPR in order to take place. The requirement for a VCPR is a regulatory requirement that may be established by state or federal regulations.

The VCPR and Physical Examinations

States may define the VCPR in statute, regulation, or policy. These statutes, regulations, and

policies regarding the VCPR are used to determine when veterinarians in a given jurisdiction may use telemedicine and if a VCPR may be established virtually or not. A few states, including Alaska, Connecticut, Delaware, and Michigan, as well as the District of Columbia, do not have a defined VCPR. However, a Michigan bill introduced September 10, 2020, if passed, would define the VCPR and ban its establishment through telehealth.

The FDA defines the VCPR for the purposes of extra-label drug use and veterinary feed directives. The DEA also has rules about using telemedicine, to prescribe controlled substances. Veterinarians in state jurisdictions that do not have a defined VCPR are still required to follow the federal rules.

Both the AVMA and the AAVSB provide model language for the VCPR for jurisdictions to use when formulating laws or rules. Each jurisdiction can determine if they will use the AVMA or AAVSB definition, or they can create their own. The AVMA states that a VCPR is present when all of the following requirements are met:¹

1. The veterinarian has assumed the responsibility for making clinical judgments regarding the health of the patient and the client has agreed to follow the veterinarians' instructions.
2. The veterinarian has sufficient knowledge of the patient to initiate at least a general or preliminary diagnosis of the medical condition of the patient. This means that the veterinarian is personally acquainted with the keeping and care of the patient by virtue of a timely examination of the patient by the veterinarian, or medically appropriate and timely visits by the veterinarian to the operation where the patient is managed.
3. The veterinarian is readily available for follow-up evaluation or has arranged for the following: veterinary emergency coverage, and continuing care and treatment.
4. The veterinarian provides oversight of treatment, compliance, and outcome.
5. Patient records are maintained.

The AVMA further states that:¹

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- No person may practice veterinary medicine in the State except within the context of a veterinarian-client-patient relationship.
- A veterinarian-client-patient relationship cannot be established solely by telephonic or other electronic means.

The AAVSB states that a VCPR exists when:¹⁰

- 1) Both the Veterinarian and Client agree for the Veterinarian to assume responsibility for making medical judgments regarding the health of the Animal(s); and
- 2) The Veterinarian has sufficient knowledge of the Animal(s) to initiate at least a general or preliminary diagnosis of the medical condition of the Animal(s); and
- 3) The practicing Veterinarian is readily available for follow-up in case of adverse reactions or failure of the regimen of therapy.

Before the COVID-19 pandemic, most states required that a VCPR be established with an in-person visit where the veterinarian, client, and patient were in the same location, whether that was a brick-and-mortar building or a farm or production facility. Because animals cannot communicate about their health concerns, veterinarians in general believe that a physical exam is required to establish a VCPR in order to provide adequate care. With the onset of the pandemic, stay-at-home orders, and the higher risk of exposure to and illness from COVID-19 in the human population, many states, the FDA, and the DEA allowed veterinarians greater freedoms to establish a VCPR electronically without first performing a hands-on physical exam.

One example is found in the executive order and interpretive guidance provided by Vermont's Secretary of State that proclaims:

Veterinarians should suspend non-essential veterinary procedures and maximize the use of televisual modalities whenever possible to avoid travel and in-person contact among persons. Administrative rules requiring physical examination are suspended. OPR [Office of Professional Regulation] will use interpretive and enforcement discretion to decline to enforce statutory rules implicitly or expressly requiring physical examination.

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Veterinarians are authorized to substitute remote examination and consultation for in-person services whenever prudent in the clinical judgment of the veterinarian.

The guidance further states:

Vermont law governing the veterinarian-client-patient relationship, 26 V.S.A. § 2433, remains in full force and effect. However, in order to maximize options for veterinary telemedicine in lieu of travel and in-person consultation, OPR and the Board of Veterinary Medicine shall interpret the *examination* requirement, found at *id.* § 2433(a)(2) such that:

1. “sufficient knowledge” may be established via telemedicine;
2. a patient may be “recently seen” via telemedicine;
3. “examination” sufficient to acquaint a veterinarian with the “keeping and care of [] animals” may be accomplished via telemedicine, and
4. “medically appropriate and timely visits to the premises where [] animals are kept” may be accomplished via televisual means.

For the duration of the COVID-19 related state of emergency, when determining whether a valid VCPR has been established, OPR and the Board of Veterinary Medicine will inquire into the sufficiency, reliability, and validity of the veterinarian’s knowledge, not the means or modality by which that knowledge was obtained. Veterinarians are authorized to use their reasoned clinical judgment to determine when and how telemedicine modalities may be used.

When the declared state of emergency concludes, and COVID-19 transmission risk abates, OPR and the Board of Veterinary Medicine will return to the conventional expectation that a VCPR requires physical examination.

Other jurisdictions still required that an in-person visit be done to establish the VCPR, but some allowed discretion about the length of time the VCPR could be considered valid, so a veterinarian could continue to provide care, even if it had been longer than 12 months since the

patient was last seen. Many state and federal agencies have linked their revised rules to emergency orders issued by the government. The AAVSB has maintained an updated list on their website: <https://www.aavsb.org/news/article/83>. It is important that veterinarians be cognizant of ongoing changes both in their local jurisdictions and at the federal level.

The VCPR and Licensure

Although the debate continues about the necessity of a physical exam to establish a VCPR, **there should be due consideration given to the issue of licensure and if or when it is acceptable for virtual care to be provided across state lines.** Can the veterinarian be in one location and the patient in another jurisdiction to provide care virtually? Veterinarians are frequently faced with dilemmas where the ethical thing to do and the legality of the action may not be the same. Virtual care is virtual care whether it is provided to an animal in the same state or a different country. The problems come about when inappropriate care is delivered, and the animal owner has no legal recourse. Should virtual care that can help an animal be withheld because of the issue of jurisdiction? Professional associations and regulators will need to address this issue and determine how to best provide care to these patients while protecting the public from substandard practices, as well as protecting the veterinarian who is trying to do the right thing by the animal. Both interstate and international boundaries will need to be addressed, as well as the impacts on local practices. The needs of veterinarians and their patients in one region may be significantly different than those in another. A one-size-fits-all approach is most likely not tenable over the long term for telemedicine.

The AVMA's Practice Advisory Panel (AP) studied this issue and concluded:

“The AP recommends that legal accountability and recourse be at both places—the state in which the patient is located as well as the state in which the veterinarian is located. In addition, the AP recommends the following definition for legal accountability of practicing veterinary medicine: the legal accountability, liability, and responsibility of practicing veterinary medicine are in the state(s) where the veterinarian has a license to practice and has an established VCPR with the client.

“This is critical for liability in the event that an animal owner seeks damages or a license claim against a veterinarian providing telemedicine services because of the potential for parties to practice telemedicine outside of a VCPR as well as across state and international borders. The AP recognizes that within an existing VCPR, telemedicine appropriately occurs across state lines. The AP further recognizes that as telemedicine evolves and becomes more widely utilized, telemedicine may necessitate the creation of a new cross-border regulatory entity similar to the Federation of State Medical Boards to specifically address licensing issues between states for the purpose of telemedicine. The extreme complexity of this issue in light of current licensing and regulatory laws underscores the need for telemedicine to be conducted only within existing VCPRs.”¹

The AAVSB also gave this topic much consideration and stated in their guidelines:

“A Veterinarian or Veterinary Technician must be licensed by, or under the authority of, the Board of Veterinary Medicine in the Jurisdiction where the VCPR is established (location of Patient at time of VCPR establishment).

“Any veterinarian who is licensed in another Jurisdiction, or any Person whose expertise, in the opinion of the Veterinarian with an established VCPR, would benefit an Animal, and who is consulting with the Veterinarian, is exempt from licensure in this Jurisdiction, provided such service is limited to such Consultation.”¹⁰

They did go on to state that arguments could also be made that the location of veterinary practice could occur in both the jurisdiction where the veterinarian is located as well as the jurisdiction where the patient is located.

COVID-19 Pandemic Procedures

Ethically, from a human health care standpoint during the pandemic, allowing veterinarians to provide veterinary care through a virtual environment seems appropriate to help protect staff

from unnecessary exposure to the disease. The Centers for Disease Control and Prevention recommended that veterinarians minimize contact with the pet owners by utilizing telemedicine where possible for veterinary consults and for triaging patients. In New Jersey, an administrative order required the avoidance of person-to-person contact with animal owners and clients, which was encouraged through the use of telemedicine to the greatest extent possible.¹¹ Although across the United States, veterinary medicine has been considered an essential business and practices have been allowed to stay open, there have been restrictions in place for what care could be provided. Many governors placed restrictions on procedures that required the use of personal protective equipment, including surgical gloves, gowns, and masks, to ensure adequate supplies for human health care providers working on the front lines. This meant veterinarians frequently could not perform procedures that were not considered urgent. As supplies ramped up, these restrictions were eventually eliminated. There were also concerns about exposure of staff to coronavirus infection, especially in clinics where appropriate social distancing could not be regularly maintained. Veterinary hospitals, in many cases, limited access of clients to the hospital and required “curb-side” service where a staff member would retrieve the animal from the car, and further communications with the client were handled via telephone and text-messaging. This approach limited exposure of staff and clients to coronavirus but presented challenges due to the absence of in-person veterinarian-client interactions. The use of veterinary telemedicine has also allowed veterinarians to conduct triage, recheck, and educational visits virtually, further limiting the risk of exposure, and providing a substitute for some in-person visits. There is a difference between curb-side care, where the patient and veterinarian are on the same premises, though the client is not, and telemedicine, where the client and patient are in one location, and the veterinarian is in another. In areas that had complete shutdowns or when an owner was not able to leave home at all, the use of telemedicine allowed for some provision of care. Information on the AVMA’s Telehealth Resource webpage states, “Any service is possible with telemedicine as long as a VCPR is in place, and the attending veterinarian is comfortable assessing the patient remotely and feels able to exercise good clinical judgment to assist the patient.”¹²

Ethical considerations

The ethics of telemedicine have been studied much more extensively in human health care than in veterinary medicine. One of the ways physicians attempt to minimize ethical problems that could arise from virtual visits is to obtain informed consent before proceeding with making a diagnosis or creating a therapeutic plan. The components of informed consent for a medical virtual visit include:¹³

- a full description of the therapy procedures
- a full description of the probable problems after the therapy and the probable risks
- a full description of the positive issues expected
- clarification of alternative processes that can be applied for that certain patient
- a demand that can be responsive to the emergence of any problem
- a procedure that can be canceled by the patient upon choice

Consent is part of the practice of veterinary medicine and is applicable to a veterinary telemedicine visit. “Consent”, as defined in the AVMA’s Model Veterinary Practice Act, means the veterinarian has informed the client of the diagnostic and treatment options, alternatives, potential outcomes, and prognosis, and the client has authorized the recommended services.¹⁴ When conducting any type of virtual visit, part of the consent process should include an explanation about what can and cannot be done via a virtual visit.¹⁵

One of the frequent concerns regarding veterinary telemedicine, in particular, is making a misdiagnosis. Because pets cannot tell us what is wrong, veterinarians believe they cannot provide adequate care in the virtual environment without a physical exam. A misdiagnosis can then lead to prescribing inappropriate medications or recommending an inappropriate treatment plan.

Human health care providers face a similar quandary when dealing with infants and with others who cannot communicate because of neurologic or other disease processes, and telemedicine is still readily used for these patients with the aid of a caregiver. The ATA and the AAP have developed operating procedures for the use of telemedicine with pediatric patients.¹⁶ The

operating procedures state that telehealth providers should “include a triage plan to assess if the encounter is appropriate for the capabilities of that telehealth service, and a mechanism in place to refer the patient to an appropriate provider in the event that telehealth is determined not to be appropriate at any point during the encounter.” The operating procedures further state the standards for telehealth services should be the same as for in-person visits. There is also a statement in the operating procedures that implies telemedicine is not appropriate for infants under the age of two years because they cannot communicate how they are feeling or where something hurts: “Telehealth services should not be provided to children under two years of age in their home or other non-clinical setting except when the provider or their surrogate has a previously established in-person relationship with the patient or when the PCMH [patient-centered medical home, a team care delivery model coordinated by the primary care physician] has referred them for subspecialty consultation.”

There was some confusion amongst veterinarians regarding this language, so the AVMA reached out to Dr. S. David McSwain, the Chair of the Pediatric Guidelines Workgroup, for clarification. In a personal communication to the AVMA, he wrote, “The ability of the patient to communicate with the provider was not a significant consideration in the development of this provision. In most cases of pediatric telehealth, there is a guardian present during the encounter. Conversely, telehealth is a valuable tool in many situations and populations in which the patient is non-communicative for a variety of reasons, including behavioral, developmental, and other medical conditions. Access to care afforded by telehealth is particularly important for high risk populations. The ability to intervene early and leverage the continuum of care afforded by telehealth are benefits which we would encourage all healthcare fields to consider.”¹⁷

The ACP included telemedicine in the seventh edition of its Ethics Manual. They state that a valid doctor-patient relationship must be in place for a responsible telemedicine visit to occur. They further state that the doctor-patient relationship can be established “through real-time, technically appropriate audiovisual technology. When there has been no direct previous contact or existing relationship with a patient before a telemedicine encounter, the physician must take appropriate steps to establish a relationship based on the standard of care required for an in-

person visit or consult with another physician who does have a relationship with the patient. The benefits of opportunities for increased access to care through telemedicine ‘must be balanced according to the nature of the particular encounter and the risks from the loss of the in-person encounter (such as the potential for misdiagnosis; inappropriate testing or prescribing; and the loss of personal interactions that include the therapeutic value of touch, communications with body language, and continuity of care).’¹⁸

The ACP also has policy recommendations that guide the use of telemedicine in primary care settings. Some of these recommendations may lend themselves to the utilization of virtual care in the veterinary profession, including statements that telemedicine can increase access to care, is most beneficial between a provider and a patient as part of an established, ongoing relationship, is a reasonable alternative for patients who lack regular access to relevant medical expertise in their geographic area, and that episodic, direct-to-consumer telemedicine services should only be used as an intermittent alternative to when the patient’s primary care provider is unavailable to meet a patient’s needs. They further recommend that telemedicine be held to the same standards of practice as an in-person visit.¹⁹

The concerns about direct-to-patient care are important, both in human and veterinary medicine. The AAP recommends that telemedicine in general be provided by the patient’s usual care providers. The AAP has concerns that regular use of telehealth services outside of the patient’s regular physician may lead to fragmented or redundant care. Furthermore, few of the standalone telehealth providers regularly notify the patient’s health care provider of the rendered services. This can impede care when the patient seeks follow-up with their own health care provider. Generally, stand-alone services are supposed to be sharing the records of the telehealth visit. Telehealth services are protected by the requirements of HIPAA, and the provider is required to have a secure method to transfer the medical information to the patient’s regular doctor, if the patient has one. The patient should also have a secure way to access the medical record and be able to share with the regular health care provider. Veterinarians are not required to follow HIPAA laws, but they are subject to regulations about client and patient confidentiality. Each jurisdiction sets its own rules, so it is important for a veterinarian to check with the veterinary

board in each location where licensed. The AVMA also maintains a resource with this guidance: <https://www.avma.org/advocacy/state-local-issues/confidentiality-veterinary-patient-records>. Per the AAP, “The effect on patient safety should telehealth-only care diminish the quality and continuity of care warrants close attention.”²⁰

Another concern with telemedicine is the potential for inappropriate prescribing of medications. Although this has not been documented in veterinary medicine, there is evidence of this occurring in human health care. Ray *et al.* compared the antibiotic prescribing practices during telemedicine video consults for acute respiratory infections in children with those of children seen by their own PCP or at urgent care facilities. The study revealed that just over half of the patients seen virtually were prescribed antibiotics while 42% of those seen in urgent care and 31% of those seen by their PCP received antibiotics. The study’s findings “emphasize the need for improvement in guideline-concordant antibiotic use and ongoing antibiotic stewardship efforts in outpatient settings.”²¹

It is possible that non-video telehealth platforms that utilize evidence-based clinical content with artificial intelligence can help lessen inappropriate use of antibiotics. As stated by Constantini, a physician and Chief Executive Officer of Bright.md, “Health care systems that have a patient-facing, non-video virtual care program incorporated into their primary care offer are likely already doing their part for antibiotic stewardship. Those that don’t would be wise to consider adding it to their primary and urgent care strategy. In addition to myriad other benefits — increased patient access, improved provider efficiency, a boost to the bottom line — taking the pressure to prescribe antibiotics unnecessarily off their providers is a win for everyone.”²² Programs such as those referred to by Constantini utilize artificial intelligence to distinguish between bacterial and viral infections, providing an additional tool for accurate remote prescription, minimizing the inappropriate prescribing of antibiotics, and helping to improve patient understanding of why a physician is not issuing a prescription.

Discussions about the ethics of telemedicine may also include concerns about malpractice. At the time of this writing, the AVMA Professional Liability Insurance Trust has not settled any

malpractice complaints with regards to veterinary telemedicine (personal communication, Lori Teller, July 30, 2020). There are apparently not many reported cases of malpractice in DTC telemedicine in human health care either. Fogel *et al.* ran an analysis of legal cases involving telemedicine and identified 551 reported complaints during their reviewed timeframe, none of which involved malpractice claims.²³ It is possible that many of the conditions that can be comfortably handled via telemedicine are at a low risk for malpractice claims, such as sinus problems, the common cold, allergies, acne, or mild trauma. Medical problems considered higher-risk for malpractice claims, such as neurologic or cardiac issues, are typically not handled via DTC telemedicine, and the patient would be referred to his doctor or an emergency center. In fact, as of this writing, there has been news about only one lawsuit involving veterinary telemedicine, and it involved a violation of the VCPR, not malpractice. In *Hines vs TSBVME*, Ronald Hines, DVM, claimed that his first amendment rights had been violated when the Texas State Board of Veterinary Medical Examiners punished him for providing “individualized” veterinary advice to clients without having first examined the animal. Dr. Hines lost his case, including his appeals.²⁴ In Texas, it is required that when individualized advice is given, a VCPR be established first, and the VCPR cannot be established telephonically or electronically.

Advantages & Disadvantages

The impact of telehealth in animal health care cannot be overlooked. It is important to keep in mind that virtual visits can also be used as a source of education, for chronic disease monitoring, remote monitoring, consultation with specialists and other experts, as well as medical diagnosis and therapeutics. Roca *et al.* did a study²⁵ to examine the impact of telemedicine on the traditional veterinarian-client-patient relationship and found that virtual care in addition to traditional care was viewed positively. The platform used in the study was public-facing and did not require an established VCPR for a pet owner to utilize the resource, though those clients who did not have a VCPR could only receive general advice or help with triage. Following a virtual visit, 60% of the participants were advised to seek follow-up care with their veterinarian, and the majority chose to do so. After the virtual encounter, the owners who did seek further care felt better able to communicate with their veterinarian and better informed about their pet’s illness. In this same study, over 80% of the traditional care veterinarians agreed with the virtual

veterinarian's recommendations. More than 75% of the participants in the study had a regular veterinarian before using the DTC platform, and 92% of them said they would use telemedicine with their own veterinarian if it was offered.²⁵

The desire to conduct telemedicine visits with a patient's personal health care provider holds true in the human medical world as well. Welch *et al.* surveyed patients about their willingness to utilize telemedicine for their health care.²⁶ The respondents were offered a choice of a visit with their own provider, with another provider within the same organization who had access to the patient's records, or a visit with a provider outside of the patient's medical home. More than one-half of the respondents were willing to see their own provider virtually, whereas only one-third would see another provider in the organization and less than one-fifth would see someone outside the organization. When a patient does see another health care provider, whether within or outside the organization, it is of the utmost importance that the data from that telemedicine visit be shared with the usual provider to maintain the appropriate continuity of care.

Veterinarians have also found that utilizing a first-line telehealth appointment, which is then followed up with a hands-on exam, can lead to starting treatment in a timelier fashion, especially in rural areas where geography may delay care. Dr. Arn Anderson has a mixed animal practice that incorporates virtual care with in-person care. "Everyone uses a smartphone or an iPad," he says. "We combine these with FaceTime and Skype and can share information between clients and the clinic or between DVMs. It allows us to make a decision and get treatment started before we make it out to the ranch... This technology never replaces hands-on examination, but it does allow us to get the ball moving. We charge to view these videos and to answer email. But clients appreciate this service and the ability to get a rapid response."²⁷

A study by Bishop *et al.* reflects high satisfaction with telemedicine for post-operative rechecks by veterinarians. The owners thought their dogs were much less stressed during the virtual visit than during a traditional visit, and they were much more likely to utilize telemedicine again for their pet's care. The perception of decreased stress in their pet could be major factor in their decision.²⁸

One area of veterinary medicine that has also shown to be effectively handled with virtual care is behavior. The Tufts Cummings School of Veterinary Medicine has offered the option of remote behavioral consultations for canine separation anxiety²⁹ and for owner-directed aggression³⁰ since the 1990s. In studies, there was no significant difference in the level of improvement between the dogs treated via remote consultation or with an in-clinic appointment. Behavioral modification plans and medications were prescribed as appropriate for each patient. Behavior problems are common in veterinary medicine, and owners often do not have direct access to veterinary behavioral specialists. Virtual care can address behavioral issues, especially for owners who live in rural or underserved populations.²⁹ The study on canine separation anxiety concludes, “Owners need a method to access accurate information from qualified professionals; remote consulting is a valid option for clients to garner valuable information.”²⁹

Using virtual care for behavioral problems allows the veterinarian to see the animal’s environment and how the animal interacts with the owner in the home. This can potentially enhance the ability to appropriately treat the pet’s behavior problem. Telemedicine consults with specialists can be of tremendous benefit to both the primary care veterinarian and the client. There is a dearth of specialists in many parts of the country, and clients may not be willing or have the means to travel long distances for specialty care. Primary care veterinarians can schedule telemedicine consults to aid in the pet’s care. Working as a team, the referring veterinarian can share medical records and provide necessary physical exam and diagnostic testing information to the specialist. The specialist can advise of the need for further diagnostics and/or an appropriate treatment plan. In other cases, a consult with the specialist may be enough to convince a client that a referral is in the patient’s best interest.

With regard to human medicine, although physicians have concerns about the quality of care that is provided, patients’ concerns about accessing affordable and convenient care affect their perceptions of telemedicine. In a survey measuring patient satisfaction with their care via a standalone telemedicine visit, 95% of the respondents reported that they were very satisfied with their virtual care and its convenience, and they would definitely or probably use it again and

recommend it to someone else. Almost 60% of the respondents had a regular physician, one-third of the respondents preferred telemedicine to an in-person visit, and almost two-thirds rated a telehealth visit to be just as good as a traditional visit. More than half were motivated to use telehealth because of the shorter wait time to be seen by a health care provider. Convenience and improved access to care were associated with patient satisfaction.³¹ However, the physicians' concerns about the quality of care that is provided should not be disregarded. Patient outcome is at least as important as convenience, and poor outcomes will decrease patient satisfaction in human health care and client satisfaction in veterinary health care.

A recent study by Elliott *et al.* looked beyond convenience to examine patients' perceptions of physician interactional skills via telemedicine.³² Patients who were highly satisfied with their telemedicine visits commented on the ability of the provider to establish rapport. The authors state, "Rapport, a sense of affective connection, is developed and communicated verbally and particularly nonverbally through facial expressions, gestures, and posture and by paralinguistic elements of speech such as pitch, pace, tone, and volume. Although some studies suggest that many patients feel that it is important to have an established relationship with a provider with whom they are interacting via a telehealth visit, this may not be the case when providers have strong relational and communication skills."³² Because the clinicians may have to rely more on eye contact and cannot rely on being near to or touching the patient, and because the clinician can also see their own expressions on the screen in real time, it is possible that they can rapidly adjust their facial expressions and movements to be in synchrony with the patient. This can be perceived by the patient as the physician being more compassionate. The patients also commended the ability of the providers to provide detailed information and practical guidance in a way patients could understand. Obtaining information and guidance from a trusted provider was much more important to the patients than receiving a prescription. Key points of satisfaction "seem to be rapport, information, and guidance." This study demonstrated that, although access and convenience drive satisfaction with telehealth encounters, the communication and interpersonal skills of the provider are also important.³²

Finally, the Royal College of Veterinary Surgeons compiled a summary analysis of the use of

telemedicine in veterinary practice.³³ In it they identified advantages and disadvantages as perceived by both veterinary professionals and the general public. Some of the advantages identified by the veterinary professionals included improved access to care, less stress to the animal and the opportunity to see the animal in the home environment, triage, provision of general advice, and convenience. The general public cited decreased stress for the animal, potentially lower costs for care, convenience, reassurance about the need for a veterinary visit, and speed of access to veterinary care. Both groups identified similar disadvantages, which included risk of error due to incomplete information, lack of physical exam, or limitations of technology, as well as limited client knowledge.

Veterinary Technicians and Virtual Care

It is worth noting credentialed veterinary technicians can play a role in virtual visits. The credentialed veterinary technicians must follow the laws and regulations in their jurisdiction, and if necessary, they can work under the guidance and directives of a veterinarian who has established a VCPR. Technicians can assist the veterinarian much as they do with traditional visits, including taking a history, educating clients, reviewing how to administer subcutaneous fluids or an insulin injection, or discussing dietary recommendations.³⁴ The ability for credentialed veterinary technicians to work with a veterinarian to care for animals may also be of tremendous use in underserved areas. A report³⁵ published by the National Academy of Sciences proposed the following:

“Recommendation 4b: The veterinary profession should formulate new ways of delivering cost-effective services to rural America, using veterinary technicians to extend animal health services to underserved areas.

In rural areas where there are too few farms to support a full-time veterinarian, the profession should develop a system of animal-health care that uses digital and information technologies to integrate licensed clinicians with rigorously trained paraprofessionals. For this to be accomplished, the AVMA and other professional associations will need to enter a dialogue with officials to modify state practice acts to permit credentialed veterinary technicians to administer livestock-health services provided that they are subject to collaborative oversight (and constant

communication) with licensed practitioners who may be in distant locations. Veterinary technicians and other paraprofessionals working with food-animal veterinarians in this way have the potential to provide affordable, high-quality care to rural America, and their role should be expanded. Other fields of medicine have developed paraprofessionals, such as nurse practitioners and certified nurse anesthetists, who do not compete with but rather compliment and extend the influence of the professionals overseeing them. In food-animal practice, such a system can also be used to strengthen the nation's capacity for animal-health surveillance and emergency planning in rural America. The system has the potential for private-public partnerships.³⁴ Clearly the authors of the report recognized the role that credentialed veterinary technicians can play in addressing workforce needs in our profession, and by utilizing telehealth as part of practice, veterinarians can extend the care they offer, as well as improve their ability to ensure a safe food supply.”

Conclusion

In conclusion, veterinary telehealth may offer some tremendous benefits for patient care, particularly during a pandemic and other disasters or crises, and its benefits will most likely carry forward after resolution of the current crisis. Veterinarians have been conducting virtual visits informally for decades through a variety of platforms, and there is plenty of anecdotal evidence that this trend continues to grow. One just has to look at one's own smartphone to see texts, emails, and messages via social media for request for help with patient care. Benefits to the client or patient include access to both primary and specialty care, less stress to the patient, the ability to see the patient in the home environment, client convenience, reassurance to the client that an in-person visit to the veterinarian is or is not warranted, management of issues during times of a disaster or other such emergency, triage, and remote monitoring. Telehealth allows for additional touchpoints between the client and the veterinarian. **Concerns about the appropriate prescribing of pharmaceuticals are justified, as are concerns about when virtual visits can be used to resolve a health issue and when a recommendation for follow-up care should be made.** Attention should also be paid to maintaining client confidentiality and maintaining the security of client information and financial data. Further attention should address concerns around licensure and interstate/international remote practice, communication between the

telehealth provider and the client's regular veterinarian, and record-keeping. There is reasonable evidence to show that clients are satisfied with virtual care and would much prefer to have a telemedicine encounter with their own provider vs. someone with whom they are unfamiliar. This does not rule out the occasional need for an episodic visit with someone who is not the animal's primary care veterinarian, but this should not be the norm. There is also evidence that veterinary care in some instances can be equal to that provided by in-person visits, and for animals that experience stress in a veterinary clinic, virtual visits at times may be a better alternative.

As was stated by Thomas Jefferson and inscribed on his memorial in Washington, DC, "I am not an advocate for frequent changes in laws and constitutions, but laws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circumstances, institutions must advance also to keep pace with the times. We might as well require a man to wear still the coat which fitted him when a boy as civilized society to remain ever under the regimen of their barbarous ancestors."³⁶ Virtual care is here to stay and will be incorporated into veterinary care one way or another. The veterinary profession needs to find ways to thoughtfully incorporate it into practice to best meet the needs of animals, their owners, and the veterinarians who serve them, including by creating guidelines for the appropriate use of telehealth that allow veterinarians a reasonable amount of freedom in determining how best to utilize this tool in their individual practices.

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