



Western Washington University
Western CEDAR

WWU Honors College Senior Projects

WWU Graduate and Undergraduate Scholarship

Spring 2022

All Creatures Great and Small: The Impact of the Covid-19 Pandemic on Veterinary Medicine

Amelia Schlemmer

Follow this and additional works at: https://cedar.wwu.edu/wwu_honors



Part of the [Biology Commons](#)

Recommended Citation

Schlemmer, Amelia, "All Creatures Great and Small: The Impact of the Covid-19 Pandemic on Veterinary Medicine" (2022). *WWU Honors College Senior Projects*. 580.

https://cedar.wwu.edu/wwu_honors/580

This Project is brought to you for free and open access by the WWU Graduate and Undergraduate Scholarship at Western CEDAR. It has been accepted for inclusion in WWU Honors College Senior Projects by an authorized administrator of Western CEDAR. For more information, please contact westerncedar@wwu.edu.

WWU Honors Senior Capstone Project

All Creatures Great and Small: The Impact of the Covid-19 Pandemic on Veterinary Medicine

Amelia Schlemmer



ABSTRACT

The Covid-19 pandemic has presented many changes and challenges to veterinary medicine during the past two years. These challenges have created barriers to veterinary care that both veterinary professionals and pet owners have had to overcome. The goal of this project is to elucidate the impacts of the pandemic on veterinary medicine through the review of journal and research papers and interviews with veterinary professionals who have worked during the pandemic. The main challenges faced by veterinary professionals throughout the pandemic have been practice shutdowns, short staffing, increased caseloads, decreased work efficiency, and increased burnout as veterinarians work under increased pressure. Veterinary professionals have faced these challenges with changes to practice operation, such as curbside care, telemedicine, and increased sanitation, as well as changes in management to continue providing care and prevent the spread of Covid-19. The pandemic instigated a significant increase in demand for veterinary care, which can be explained by the combination of owners spending more time at home with their pets and adopting new companion animals. Pet owners experienced challenges in accessing veterinary care, adjusting to new practice protocols, and difficulties caring for pets during the pandemic. Veterinary medicine faced many barriers to providing care to pets in their communities during the pandemic, but practices can overcome these barriers by improving their efficiency with effective operational protocols and increased prioritization of veterinary professional wellness to decrease burnout.

INTRODUCTION

The Covid-19 pandemic has been a challenging period for veterinary medicine to navigate over the past two years. While there is hope that we're moving into a post-pandemic era, the veterinary profession is still trying to cope with the pandemic's impact, while continuing to provide care to the animals in their communities. Veterinarians and their staff have struggled with changing protocols, short staffing, and increased demand for veterinary care. For pet owners, the pandemic has been a great time to bond more closely with their animals but challenging to find veterinary care, navigate clinic procedures, and deal with pet emergencies. It is clear from both the perspective of the veterinary professional and the pet owner that the pandemic has presented many barriers to providing and accessing veterinary care. Despite the challenges faced during the pandemic, the future of veterinary medicine is bright and there are improvements within veterinary practice that can aid in providing better, accessible care pet owners and their pets.

VETERINARY MEDICINE BEFORE THE PANDEMIC

To understand the major impacts that the pandemic has had on the veterinary profession, the structure of veterinary care pre-pandemic must be examined from both the veterinary professional's perspective and the owners. Visits to a veterinary clinic or animal hospital have remained consistent in structure and protocol for many years, with the focus being on face-to-face relationship building between the veterinarian and the pet owner. Prominent changes have occurred in the ways that veterinary professionals treat health problems and the information that new research provides. Pre-pandemic, a typical vet visit consisted of a face-to-face exam with the veterinarian, where the health of the animal was evaluated, and owners explained in person their

reason for the visit and specific health concerns about their pet. For a general exam and vaccine updates, the owner and pet may remain in the exam room the entire visit while the veterinarian and assistant give the vaccines and discuss the pet's general health. Very rarely would communication occur through the phone or by email between the veterinarian and pet owners. Prior to the pandemic, veterinary-owner relationships were mainly formed through face-to-face interactions with pet owners and their pets.

VETERINARY MEDICINE DURING THE PANDEMIC

The start of the Covid-19 pandemic in early 2020 drastically changed the way that veterinary clinics and hospital's functioned and provided care for animals. With regulations to social distance, quarantine, or lockdown, veterinary practices faced shutdowns, operation changes, and staff changes. With operation changes came the restructuring of the entire vet visit to curbside care, new technology including telemedicine, and increased sanitation practices. However, the transition from a pre-pandemic clinic to a functioning clinic during the pandemic introduced new issues for veterinary professionals and pet owners. For veterinary professionals, challenges arose with increased caseloads, decreased efficiency, communication issues, supply shortages, and overall decreased wellness among veterinary professionals. For pet owners, more attention and time was spent with pets or invested in adopting new ones. The "pet boom," however, created issues for owners needing care for pets they already owned or pets they adopted during the pandemic, as well as issues adapting to new practice protocols. Wellness among pet owners was also an issue in cases where pet ownership was more challenging during the pandemic. The Covid-19 pandemic presented many new changes and challenges that made providing and accessing veterinary care difficult for veterinary professionals and pet owners.

Many clinics, similar to many businesses, experienced shutdowns in the early months of the pandemic lockdown. This was either due to administrative decisions to halt work or because staff had become sick and not enough could come to work (Wayne & Rozanski, 2020; Mureşan et al. 2021). For clinics that shut down, this only remained for a short period; many quickly reopened. Dr. Mark Donovan stated in an interview that his practice, "had to close clinics periodically through Covid exposures, and not enough staff [because they were] either quarantined because they [were] being tested, the guidelines, or they [were] actually sick" (Donovan, interviewed 2022). Shutdowns and closures put strain on clinics that remained open as they had to increase their caseloads. Dr. Ed Sullivan, who did not close his practice, shared in an interview that in the initial months of the pandemic his practice saw, "tons and tons of new clients 'cause no one was seeing anybody" (Sullivan, interviewed 2022). Once past the initial lockdown period of the pandemic, clinics and hospitals quickly adapted their practices to include increasing sanitation protocols, restructuring face-to-face appointments, and management changes.

Face-to-face appointments were restructured to curbside care, following regulations to social distance. These appointments involved pet owners either dropping off their pets or remaining in their cars, communicating with the veterinarian and their staff through phone calls as their pet received care ("Telehealth Curbside Care Tips" jav.ma/curbside, 2021). Curbside care remained the primary form of appointment that veterinary clinics offered during the pandemic

(Wayne and Rozanski 2020; Grubb, 2021). In a survey published in February of 2021, it was reported that 86% of surveyed veterinarians were offering curbside care and that these were making up 62% of their appointments (Grubb, 2021). Many clinics have stated that curbside care has made work easier and less stressful since they have fewer face-to-face interactions with owners and can focus primarily on the pets (Rosenberg, 2020). Others have stated that curbside care created more difficulties. Dr. Maria Moody shared in an interview that, “the only things I liked about doing full curbside was that the vast majority of the patients were calmer and quieter without their owners present, and that I could sit down and gather my thoughts, frequently even write up the records, before talking to the client. However, everything else about curbside service in a general practice is so inefficient, it’s almost painful” (Moody, interviewed 2022). Curbside care has been one of the biggest adjustments that veterinary practices have made during the pandemic, but it has allowed practices to remain open despite new challenges.

Another way social distancing was accommodated was through new technology. For example, clinics and hospitals have shifted to online appointment booking, touchless payment options, online sales of pet pharmaceuticals and food, pre-appointment forms to be filled out online that cover patient histories, and other strategies that decreased the workload on veterinary staff (Weese, 2020; Grubb, 2021; Croft 2020). One strategy, however, has become increasingly popular in both human medicine and animal medicine. Telemedicine, once rarely used by both fields, has become an essential tool for navigating social distancing while still providing care to patients. It was reported in April 2020 that 30% of veterinary practices were using telemedicine, and by February of 2021, 39% of practices were offering this as an appointment option (Salois, 2020; Grubb, 2021). Veterinarians have found that telemedicine works best for determining whether an animal needs to be seen in person or performing follow-ups and consultations on existing cases where the animal has been diagnosed (Weinstein, 2020). “Since our patients can’t tell us in words what’s going on with them, physical exams are extremely important in veterinary medicine. Telemedicine could be useful for some skin cases, and possibly for recheck consults, but other than that vet med is a pretty hands-on profession.” (Moody, interviewed 2022) Besides determining whether an appointment is needed or performing follow-ups, telemedicine is not sufficient for diagnosing or treating most cases. This aspect is most likely why it was reported that fewer than 3% of surveyed pet owners were utilizing telemedicine services offered by their clinics (Grubb, 2021); pet owners may feel that their pets would not receive sufficient care through telemedicine and would rather bring their pets in to see their veterinarians.

To remain open and prevent the spread of Covid-19 among staff members, many practices put in place new staffing methods. Once clinics reopened at the beginning of the pandemic, staff was limited to prevent closures from exposure. Many clinics adapted by grouping their staff, making sure that the same people worked together to ensure that if one person was exposed or became sick, then only the people working in that same cohort would need to quarantine, rather than all staff being exposed and causing a shutdown (Rowe et al. 2022; Weese, 2020). “We decided to go with a cohort system because we knew that if we were to split our teams up that staffed the practice, from the doctor on down to the kennel assistants, if we did that, we would be able to maybe, for each clinic, create an A and B cohort of workers. And if we did that, then if we

lost one of those cohorts due to a spread through that group that worked closely together all day long, it wouldn't close the hospital.” (Donovan, interviewed 2022) But with exposure and illness forcing people into quarantining, many clinics struggled to stay properly staffed.

Properly staffing clinics and hospitals have been a consistent challenge during the pandemic. This has not been helped by the fact that demand for veterinary care increased significantly during the pandemic (McKee et al. 2021; Limper et al, 2021; Snyder, 2021; Salois & Golab, 2021). So not only have clinics struggled to stay properly staffed to handle their normal caseloads, but more pets were also needing to be seen. This has been true for general practice clinics and animal emergency centers (Limper et al, 2021). A survey done by VetSuccess reported that the average number of booked appointments increased by 4.5% from 2019 to 2020 (Salois, 2021). Booked appointments then increased by 6.5% between January and June of 2021 compared to 2020 (Salois, 2021). “All DVMs (Doctor of Veterinary Medicine) are fully booked every day and have been so for two years straight.” (Moody, interviewed 2022). Survey and anecdotal data both show that the veterinary industry is struggling to meet the demand for care. This has been especially true for emergency clinics, where there has been an increase in emergency cases, longer wait times, and a declining population of veterinary professionals able to staff them (Wayne and Rozanski 2020; 2021). A study done in April of 2020 found that most of the surveyed emergency hospitals reported increases in caseloads greater than 10%, with 44% of those hospitals reporting caseload increases greater than 25% (Wayne & Rozanski, 2020). When the same survey was done a year later in April of 2021, surveyed emergency hospitals reported substantial caseload increases of 25% or more compared to the same month in 2020. (Wayne & Rozanski, 2021). In an interview, Dr. Julie Irwin discussed the emergency clinics near her practice, stating that, “they are just so overwhelmed, they’re not even accepting patients. So, we’ve sometimes had trouble referring emergencies out.” (Irwin, interviewed 2022) The demand for veterinary care has increased significantly during the pandemic, which has amplified the pressure that veterinary practices are under to supply care to pets in their communities.

Clinics and hospitals have tried to cope with increased demand by prioritizing certain cases and appointments depending on the illness. For example, many clinics stopped accepting appointments for annual exams and vaccinations and created ranking strategies for appointments. This helped clinics determine which cases were emergent or nonemergent, allowing serious cases to be prioritized. “We have now learned the only way to survive in this demand level that we have is to have appointments set aside [that are] different levels of care and we strategically block them off, and they can only be filled by our receptionists according to what they're described as.” (Donovan, interviewed 2020) But with emergency hospitals struggling under high demand, general practice clinics were seeing more emergent cases with owners not knowing where to go when wait times at emergency hospitals were several hours long. This led some clinics to take only emergent cases and refer non-emergencies to other clinics. It was reported in April of 2020 that 20% of practices were only seeing emergency cases (Salois, 2020). “Certain emergencies after going through a list of questions with a nurse and/or doctor were placed into categories. If they had a high emergency they would be seen right away, if not they would be spread out or if one place was already at capacity then spread out to other clinics. Every clinic I have worked for has a cap

because after a certain point you can't really practice good medicine and techniques and you're hurting the animal more so it's better to send the patient elsewhere" (Rybka, interviewed 2022). Other clinics limited their appointments to previous clients only to handle the increase in cases. "We never completely closed to new clients but [] we did strategically limit them and in fact right now our doctors are only allowed to see one new client per day because we wanna keep seeing new clients and helping the people that are now just adopting pets... but if we overwhelm our practice with all new pets then we can't take care of the other pets... Our quality would suffer and that means all of the clients that we are now engaged in are getting subpar service." (Donovan, interviewed 2022) Clinics and hospitals have yet to see a decrease in the demand for care.

Communication in veterinary care has always been challenging. Veterinarians need to understand the medical problem of a patient who cannot speak to them from an owner who only has their personal knowledge and observations to present the problem. Veterinarians then need to communicate effectively with the owner about what they believe is the problem and the best treatment for their pet. Face-to-face, in-person appointments allow collaboration between the veterinarian and the owner, where owners are involved in making decisions about their pet's care. Unfortunately, certain barriers to the typical collaborative communication arose with new protocols put in place during the pandemic (Bohac, 2020). As described by Dr. Elyse Rybka in an interview about her time working during the pandemic, "communication between doctor and clients was strained" (Rybka, interviewed 2022) Curbside care allowed veterinarians to continue seeing animals in need of care, but the requirement to social distance from owners meant that essential communication had to be done virtually or through the phone. Veterinarians and owners were having to make long phone calls where opportunities for miscommunication and misunderstanding were higher (Limper et al, 2021). This became even more challenging when veterinarians were not able to get ahold of clients to discuss treatment or receive their permission. For situations where a diagnosis would have been presented to an owner in an exam room and decisions for treatment made quickly, communication over the phone increased the time it took to provide care and treatment to pets. "Sometimes those conversations were not as efficient or maybe the owner missed when the cell phone rang. So, you know we'd have to have a conversation. I have to go talk to my tech and tell them what to do, the tech would have to call them to get permission and payment information. And the whole thing just took three times as long as previous appointments." (Irwin, interviewed 2022) Along with challenges presented by increased caseloads and patient volumes, BluePearl Pet Hospital's 2020 Veterinarian Report indicated that poor client communication was a key pandemic-related challenge (BluePearl Pet Hospitals, published 2021; "BluePearl Reports Link Increased Veterinary Visits to COVID-19," 2021). This is unfortunate as effective use of telemedicine could have been very beneficial for many veterinary practices in handling increased caseloads. Despite the negative impact on veterinarian-client communication, innovative practice changes such as curbside care and telemedicine kept practices open during the pandemic.

To decrease the spread of the virus within clinics and hospitals, increased sanitation practices were put in place. This commonly involved sterilizing any items or rooms that came into contact with a pet owner or always having hand sanitizer available (Weese, 2020). To prevent their staff from getting sick, mask mandates and regular handwashing were put in place. However,

supply shortages made sanitation materials and PPE hard to get (Rowe et al. 2022). The pandemic saw supply shortages in multiple different areas, but the general medical field has continuously struggled to maintain proper supplies of sanitation equipment, personal protective equipment (PPE), and other things, such as pharmaceuticals. This has been especially true for veterinary practices where prioritization of supplies has been to human hospitals coping with Covid-19 cases. Dr. Ed Sullivan, who donated most of his practice's PPE supplies to human hospitals stated that later in the pandemic, "we couldn't get masks, caps, surgery gowns and stuff, but we immediately tried to mitigate that by using cloth gowns" (Sullivan, interviewed 2022). A survey done in 2020 reported that 25% of surveyed practices asked staff to sanitize and reuse PPE while 20% had asked their staff to limit the use of PPE (Salois, 2020). The study also reported that 60% of surveyed practices had difficulties getting sanitation supplies and that at some point during the pandemic, over 50% were unable to order PPE (Salois, 2020). Veterinary practices rely on having clean, sterile treatment areas to ensure the health and safety of individual pets. While studies have not specifically looked at the impact of supply shortages on practices during the pandemic, it was still a challenge that practices had to overcome.

Veterinary medicine has been impacted by new challenges during the pandemic from changes in operation such as curbside care and telemedicine, to management changes trying to handle increased demand. For veterinary professionals, certain aspects got better throughout the pandemic, such as procedures and protocols improving as practices figured out what worked best, and prioritization of appointments helped manage the overload of cases. But some aspects also got worse. The boom in demand for veterinary care can be correlated to clinic closures and short staffing, but the efficiency of clinics and hospitals has also been impacted by the pandemic (Salois and Golab 2021). The many changes to operation and new protocols set in place to handle social distancing and other Covid-19 related issues had negative effects on the performance and efficiency of veterinary practices (Salois & Golab 2021; Snyder, 2021). The AVMA's Census of Veterinarians and Veterinary Practices done in 2020 reported that fewer patients were being seen per hour by veterinarians compared to before the pandemic and productivity was reported to have declined by 25% in 2020 compared to 2019 (Salois & Golab, 2021; AVMA 2021). This can be attributed to short staffing, which means that fewer pets can be seen per hour because there are not enough staff members to do the work. "Every place I worked was overcrowded, overbooked and it was very overwhelming when it came down to it because even if we had ten doctors on staff it didn't matter since support staff was lacking" (Rybka, interviewed 2022). Decreased efficiency can also be attributed to new operating strategies, such as curbside care and telemedicine. "The efficiency, just between the phone calls, literally six phone calls per case, and all the other things...it just killed our efficiency. We were faced with more pets coming in, more needs from the public, and we couldn't do it as fast or as easy and it was very tiring" (Donovan, interviewed 2022). While both curbside care and telemedicine have been positive innovations during the pandemic, there have been negative effects from them.

The demand for care put strains on veterinary staff as well as impacted efficiency. With the prioritization of appointments, practices are seeing backlogs of patients needing exams and vaccine updates, indicating that the major demand in care will continue to bear upon veterinary medicine.

Veterinary professionals are becoming burnt out, with some leaving the profession altogether (McKee et al. 2021; Snyder, 2021). “The technicians and assistants, maybe they’ve been doing this for ten years or two years, but the burnout is making them question whether they want to continue to do it” (Donovan, interviewed 2022). The veterinary profession had high turnover rates before the pandemic, and this issue has most likely only been exacerbated. Veterinarians have the third-highest turnover rate while veterinary technicians have one of the highest turnover rates of any healthcare job position (Salois & Golab, 2021). The pandemic has increased anxiety, depression, burnout, and compassion fatigue in veterinary professionals who are under increased pressure (Salois, 2020; McKee et al. 2021; Rowe et al. 2022). This is extremely concerning considering that veterinary professionals have some of the highest suicide rates of any profession (Limper et al, 2021; Dembosky 2022). According to several studies, veterinarians are 2.7x more likely to commit suicide compared to the average person, with men being 1.6x more likely and women 2.4x more likely (Dembosky, 2022; Nett et al. 2019). Studies are also seeing higher likelihoods of suicide in technicians compared to the general population (Nett et al. 2019). The pandemic has made the veterinary work environment more stressful and harder to work in than ever before.

PET OWNERSHIP DURING THE PANDEMIC

To understand the source of the increased demand for veterinary care, the perspective of pet owners and the changes in pet ownership during the pandemic needs to be evaluated. Pets have become a fundamental component of people’s lives and more and more people are adding companion animals to their families. For many pet owners, the bond they share with their pets has never been stronger than during the pandemic. Or for people without pets, the pandemic has provided opportunities to adopt new pets. Two causes can be identified for creating such a high demand for care: owners spending more time with their pets and more people adopting new pets.

With mandated lockdowns, many people were forced to either stay at home or work from home. For people with pets, this meant that they were able to spend more time with them, as they were not leaving every day for work (Hoffman, 2021). For many people, their animal companions were an important support system in dealing with the stress and uncertainty regarding the constantly changing and worsening pandemic (Jeziarski et al. 2021; Hoffman 2021; Applebaum et al. 2021). A survey conducted by Banfield Pet Hospital in 2020 found that 39% of surveyed pet owners felt their pet lowered their anxiety and uncertainty from the pandemic and 45% felt the happiness of their household increased while spending more time with their pet in quarantine (Banfield Pet Hospital, published May 2020). While spending more time with their pets in many cases helped owners during the pandemic, pet owners were able to better observe their pets and notice changes in behavior or health. This increased awareness of their pet’s health led to more calls and visits to their veterinarian. Surveys from Banfield Pet Hospital reported that 84% of pet owners felt more attuned to their pet’s health in 2020 and 20% reported being more committed to taking their pets to their veterinarian for preventative care (Banfield Pet Hospital, published May 2020). A year later, Banfield Pet Hospital reported that 95% of pet owners made their pet’s health a priority in 2021, a significant increase from the results of the 2020 survey (Banfield Pet Hospital, published December 2021). Prioritization of pets’ health led to increased veterinarian visits when

owners noticed changes in health. For dogs, there was an 8.4% increase and a 13.8% increase for cats reported by the 2020 survey (Banfield Pet Hospital, published January 2021). Then in 2021, it was reported that 44% of owners had taken their pets to more health care visits that year than in the previous one (Banfield Pet Hospital, published December 2021). However, some of the concerns voiced by pet owners during the pandemic were from observing things that appeared concerning or out of the ordinary but were not critical or in need of care. “I do think a lot of people just sitting at home all of a sudden were noticing things about their pets that they hadn't noticed before. I mean just the number of times that people brought pets in for really insignificant problems, things I think that just would have gotten glossed over before [the pandemic].” (Irwin, interviewed 2022) Owners spending more time with their pets is one cause of the increased demand for veterinary care that was observed during the pandemic.

The pandemic has been a great time for pet owners to connect more with their pets, but it has also been a great time for people to invest in new companion animals. Many people working from home decided to adopt new pets or add another to their family during the early phases of the pandemic. Working from home or quarantining provided the opportunity for people to care for young pets, as they were able to invest more quality time in training them (Hoffman et al, 2021). With an increase in demand for veterinary services, it appeared that during the first year of the pandemic, there was a pet boom where many more people were adopting animals and then needing care for those animals. However, studies based on adoption rates at shelters have shown that there was a not a pet boom, though many of these studies do not include data from breeders or other adoption methods (Salois, 2021; Hoffman et al, 2021; “Intake and Outcome Database (IOD)”, Shelteranimalscount.org; Figure 1). From the shelter perspective, the pet boom was a lack of surrendered animals, creating a shortage of adoptable pets. Any available pets were then frequently adopted, producing lower adoption rates at many shelters in 2020 compared to other years simply because there were fewer animals available to adopt (Ho, Hussain, and Sparagano 2021). Data from a broad study done by ASPCA on the acquisition and retention of pets during the pandemic illustrates the truth about the “pet boom.” The survey looked at the percentage of participants who had cats or dogs prior to the pandemic (March 2020) and at the time of the survey. Before the pandemic, 47% of participants had dogs and 33% had cats, while 45% of participants had dogs and 33% had cats at the time of the survey (Hoffman et al, 2021). The study found that for individuals who did not have a dog prior to the pandemic, 4% had one at the time of the survey, and 8% who did have dogs before the pandemic no longer had them. For cats, 3% of individuals who did not have one before the pandemic had adopted one while 8% of those who had cats before the pandemic no longer had them (Hoffman et al, 2021). Overall, this data demonstrates no increase in the proportion of households with dogs or cats during the pandemic. Animal companions were an important support for many people, and to those isolated from their normal support systems, a new pet was the perfect way to find company in a time where socializing was only occurring through remote methods. While the data shows that a major pet boom did not occur during the pandemic, people were still adopting animals and those animals were still needing care. The combined increase in owner attentiveness towards their pet while spending more time with them and the

changes in pet ownership throughout the pandemic help explain the drastic increase in demand for veterinary care.

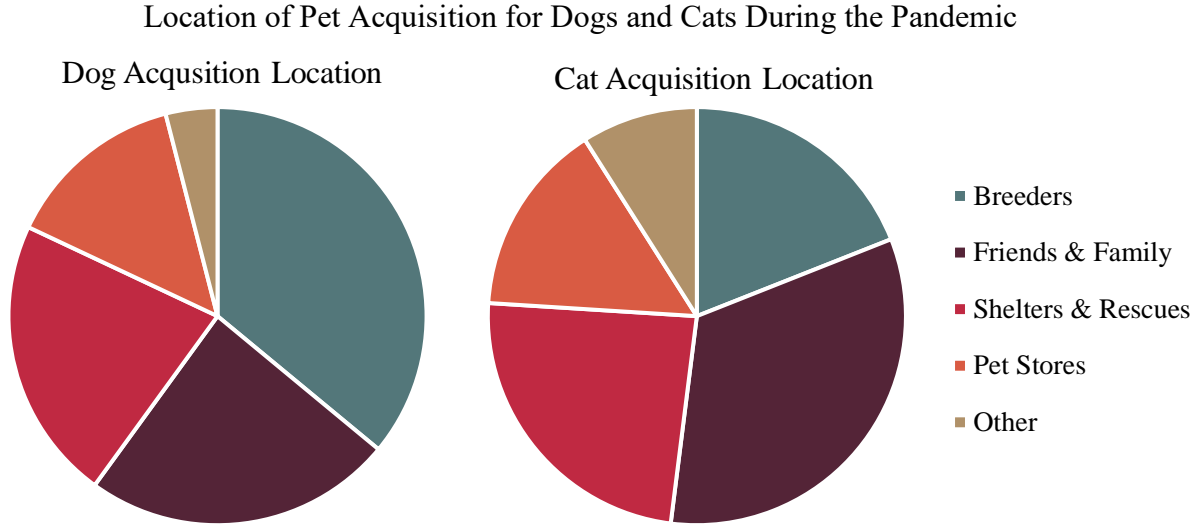


Figure 1. Data from the ASPCA study published in 2021. Part of the study measured the percentages of pets acquired from different sources, including breeders, friends and family, shelters and rescues, pet stores, and other sources which are presented in the pie charts. This study looked at acquisition of dogs and cats. This data demonstrates that sources just looking at shelter adoptions are not necessarily reliable in relating the full picture of pet acquisition since most animals were not adopted from a shelter. (Hoffman et al, 2021)

For pet owners, the pandemic presented challenges in accessing veterinary care for sick pets and caring for a pet while dealing with many other issues. Adapting to new practice protocols has been difficult for not only veterinary practices but also for clients, many of whom have been frustrated by the changes throughout the pandemic. Of the many challenges faced by pet owners, some of the most significant have been practice shutdowns, decreased accessibility to veterinary care, adjusting to curbside care, and difficulties caring for pets while staying at home. Practice shutdowns and decreased availability put a strain on pet owners (Applebaum et al. 2020). From the owner’s perspective, the closure of their regular veterinarian meant they had to find care elsewhere, where they may not be able to get an appointment for an extended period or where they experienced refusal because other clinics refused to see new clients. Where they could find care, pet owners experienced greater difficulty in making appointments, longer wait times on phones and in parking lots, and communication challenges with veterinary professionals (Snyder, 2021). Having a sick pet is already a tough and stressful experience for pet owners but finding out that their veterinarian may not be able to see their animal soon or that seeking emergency care may take hours of waiting, makes the experience even worse.

A study looking at the concerns of dog owners at the start of the pandemic and the impact that new Covid-19 procedures had on owners found that owners were most concerned about whether their veterinarian would be available (Kogan et al. 2021). Other concerns included their

ability to afford care, the ability to exercise their dogs, and the ability to find a caretaker if they contracted Covid-19 (Kogan et al. 2021). For cat owners, a survey on their perceptions of owning a pet cat during the pandemic reported that 20% of cat owners experienced difficulties acquiring veterinary care (Jeziarski et al. 2021). Difficulties accessing care for their pets were common or concerning for both dog and cat owners during the pandemic.

New operational procedures at veterinary practices were easy to adjust to for some owners, while others struggled with them. For some, curbside care has been a welcomed change to the standard appointment model, while for others it has been a tough adjustment to not accompany their pets for their appointments (Rosenberg, 2020; Kogan et al, 2021). “We have clients that won't come in the building. We have clients that demand to come in the building. So, there's a variety of challenges because all of the people that work and come to the practice have slightly different perspectives on these issues of safety and risk and what they're willing to, you know, accommodate for others as well as what they feel about themselves.” (Donovan, interviewed 2022) Overall, it appears that curbside care was more positively accepted by pet owners. A study reported by M/A/R/C research reported that 86% of surveyed pet owners were satisfied with curbside treatments, although only 28% said that curbside care went better than in-clinic visits (Grubb, 2021). The same study reported that 48% of owners would use curbside care post-pandemic (Grubb, 2021). Despite challenges in adjusting to curbside care faced by both veterinary professionals and pet owners at the start of the pandemic, this procedural change has kept both healthy and safe.

Many pet owners expressed increased happiness and bonding while staying at home with their pets during the pandemic, but this has not been true for all pet owners. Many people have experienced hardships during the pandemic, and unfortunately, some of those hardships have been caused by pet ownership (Applebaum et al, 2020; Hoffman; 2021). A study looking at the concerns and difficulties of caring for pets during the pandemic found that many pet owners were concerned about meeting the needs of their pets, handling behavioral issues, acquiring and affording veterinary care, the ability to socialize their pets, and the availability of pet supplies (Applebaum et al, 2020). Owners were also concerned about things other than their pets, such as caring for family or managing their personal health, which impacted their relationships with their pets and their ability to care for them. Owners reported difficulties handling behavioral issues with their pets, especially attention-seeking behaviors (Applebaum et al, 2020). These commonly created irritations, frustration, and annoyance especially when they caused interruptions to work while working from home (Applebaum et al, 2020; Hoffman, 2021). Behavioral issues were reported to be the most common reason for pet relinquishment during the pandemic (Applebaum et al, 2020). Caring for pets also created stress for owners on top of the stress from the pandemic. This was especially significant for owners that had difficulty handling pet health problems or the loss of a pet during the pandemic. Stress was also created for owners who were concerned about the spread of disease, specifically, their pet contracting or spreading Covid-19 (Applebaum et al, 2020). It should be noted that there are few cases of companion animals contracting Covid-19 and no evidence of transmission back to human owners (Parry, 2020). The pandemic has created many concerns and stressors for pet owners which have not been easy to navigate. While no significant

data is reporting a negative impact on pet health, veterinarians and pet owners will need to work together to overcome the challenges of the pandemic.

VETERINARY MEDICINE POST-PANDEMIC

As the Covid-19 pandemic drags on, uncertainty remains for both veterinary professionals and pet owners. In 2022, things are beginning to shift into a “post-pandemic” era, but the impacts of the past two years are still fresh and being felt. But there is hope for the future, especially when many of the pandemic’s challenges can be used to improve veterinary medicine. When reflecting on the long-term impacts of the pandemic, focusing on improving efficiency by utilizing effective operational protocols and concentrating on veterinary staff well-being will improve the ability to provide care to pets despite the large demand for care. Doing so will also help owners overcome barriers in accessing care.

Many of the adapted practices during the pandemic were necessary for practices to remain open and provide care to pets, but few of these will remain in use as Covid-19 cases decrease and restrictions are lifted. The ones that will remain are those that can continue to help veterinary practices manage the demand for pet care and increase efficiency. Face-to-face appointments are returning, but many practices will keep curbside care and drop-offs as an option for clients and certain case types (Boman, 2021). By doing this, practices can continue to prevent the spread of Covid-19, as well as keep waiting rooms and exam rooms less busy. For pet owners returning to work, drop-off appointments will be an important option as many owners struggle to take time off from work to attend clinic visits. Similar to curbside care, the incorporation of telemedicine into veterinary practice has had benefits and challenges, but as technology improves and more practices utilize it, telemedicine will most likely become a normal part of practice (Dubin et al. 2021). Advancements in telemedicine in the future may help overcome challenges some owners face in accessing care. For pet owners who may not have the transportation or the money for an in-person visit, telemedicine has been a great option to determine what their pet may need (Morris, Wu, & Morales, 2021; Lundahl et al. 2022). Going forward with telemedicine, however, will require more regulations so that high-quality care can be given. The critical changes to sanitation and disinfection protocols instated during the pandemic will also remain in place for many practices (Boman, 2021). These have been essential for preventing the spread of Covid-19 among humans, but also preventing the spread of animal diseases commonly treated in veterinary practices. Keeping veterinary staff, pet owners and pets safe has never been more important than during the Covid-19 pandemic, and practices can continue to expand these. To handle the increased demand in veterinary care, some practices changed the way they organize and prioritize their appointments. Practices can continue to organize their appointment schedule to improve their efficiency, control the pressure their staff is under, and prioritize emergent cases. This will be especially important for handling the backlog of vaccines and general exams that were put off during the pandemic. These operational changes have been essential for keeping veterinary practices open, and now that they’ve been tested and fine-tuned during the pandemic, they can improve the ability of veterinarians and their staff to provide care.

The demand for veterinary care has increased dramatically during the pandemic, but there seems to be a limited number of veterinarians and veterinary professionals available to handle the surge. The pandemic saw many challenges presented by staffing shortages, increased burnout, and high turnover rates. Unfortunately, there is no way to make the profession less demanding on its workers but ensuring access to wellness support could help veterinary professionals be more successful and stay in the profession. Veterinary practices should be focusing on lowering the turnover and burnout rate by prioritizing their staff members and overall “staff family.” This could be achieved by ensuring that veterinary professionals have access to mental health support, reasonable working hours, sufficient staffing, and a safe work environment (Rowe et al. 2022). “We always knew how important people were, but I think through the pandemic the focus on our staff and our work family is stronger and will only continue to be the most important part of what we do. Because if we’re not together to do this, to serve the public, to take care of the pets and their pet parents, if we’re not cohesive, or passionate, or want to come to work every day and do a good job...then we cannot do those other things for the community.” (Donovan, interviewed 2022) The high demand for veterinary care will eventually decrease, but in the meantime, prioritizing staff members and supporting them through these times of intense work is extremely important.

Veterinary practices are not the only ones that can work to improve the high demand for veterinary care caused by the pandemic. There are actions that pet owners can take to help themselves overcome barriers to care caused by the pandemic. Pet owners facing financial barriers to care should invest in pet insurance, which can help pay for their animal’s care and make sure that veterinary professionals get properly compensated. Pet owners should check with their veterinarian to find which pet insurances they take to receive the most benefits, as many clinics work with specific insurance companies. Pet insurance policies cover the medical costs from serious injuries or illness, which without insurance, can be extremely costly. Investing in pet insurance can help pet owners overcome financial barriers to care which may have increased during the pandemic. Pet owners concerned about accessing veterinary care because their regular practice is so busy should prioritize their pet’s preventative care. Despite the difficulties to get general check-ups done during the pandemic, staying on top of general yearly exams and vaccines could greatly impact the health of pets and catching major health issues earlier on. This will benefit the health of the pet and most likely decrease the long-term cost of care (Banfield Pet Hospital, published October 2021). Pet owners should check with their veterinarians to find out when their animal is due for their yearly exams and vaccines and schedule necessary appointments far out in advance. Many clinics are overwhelmed by pets with serious health issues and in some cases, are prioritizing appointments that are serious or life-threatening. This will change as the high demand for veterinary care slowly decreases, but pet owners will benefit most from preventative care if they schedule weeks to months out in advance. Overall, preventative care will support the health of the pet, decrease the number of pets with serious illnesses needing care, and improve the accessibility of care to pet owners.

CONCLUSION

The Covid-19 pandemic presented many changes and challenges to veterinary medicine during the past two years. These challenges have created barriers to veterinary care that both veterinary professionals and pet owners have had to overcome. The main challenges faced by veterinary professionals throughout the pandemic have been practice shutdowns, short staffing, increased caseloads, decreased work efficiency, and increased burnout as veterinarians work under increased pressure. Veterinary professionals have faced these challenges with changes to operation and management to continue providing care and prevent the spread of Covid-19. The pandemic instigated a significant increase in demand for veterinary care, which can be justified by owners spending more time at home with their pets and adopting new pets. Pet owners experienced challenges in accessing veterinary care, adjusting to new practice protocols, and difficulties caring for pets during the pandemic. As Covid-19 shifts into an endemic virus, veterinary medicine is still struggling to keep up with the demand for care. Improving efficiency by utilizing effective operational protocols learned during the pandemic and improving the wellness of veterinary professionals will be critical going forward. Owners will need to work closely with their veterinarians during this time to overcome any barriers to care they might be facing. Investing in pet insurance and prioritizing preventative care are just some suggestions that can help pet owners ensure their pet's health and care. The most important thing that pet owners can do for veterinarians and their staff during this time is to have compassion, understanding, patience, and kindness from their clients. Recognize that veterinary professionals are human and are not perfect, especially during a pandemic.

INTERVIEWS

Veterinarians from Bellingham and Seattle, Washington participated in interviews regarding their experiences working in veterinary medicine during the Covid-19 pandemic. Interviews took place in March and April of 2022 in-person, over zoom, or through email. Three veterinarians from Seattle, Washington and two from Bellingham, Washington participated in interviews. Dr. Julie Irwin interviewed over zoom on March 10th, 2022. Dr. Ed Sullivan interviewed face-to-face on March 13th, 2022. Dr. Maria Moody submitted her interview answers via email on March 21st, 2022. Dr. Elyse Rybka submitted her interview via email on March 27th, 2022. And Dr. Mark Donovan interviewed face-to-face on April 13th, 2022.

ACKNOWLEDGEMENTS

I would like to say thank you to my senior capstone advisor, Georgianne Connell, whose support, and encouragement guided me through the process of completing this project. I would like to thank the veterinarians who participated in my interviews, Dr. Ed Sullivan, Dr. Elyse Rybka, Dr. Julie Irwin, Dr. Maria Moody, and Dr. Mark Donovan. Their perspectives greatly helped shape the focus of this project and their hard work during the pandemic is greatly appreciated. Thank you to Western Washington University's Honors College for providing me with the opportunity to do a project that I was passionate about and share it with the rest of the world. And a huge final thank you to my friends and family, whose unlimited support I am eternally grateful for.

REFERENCES

Applebaum, Jennifer W., Carlyn Ellison, Linda Struckmeyer, Barbara A. Zsembik, and Shelby E. McDonald. 2021. "The Impact of Pets on Everyday Life for Older Adults During the COVID-19 Pandemic." *Frontiers in Public Health* 9 (April).

<https://www.frontiersin.org/article/10.3389/fpubh.2021.652610>.

Applebaum, Jennifer W., Camie A. Tomlinson, Angela Matijczak, Shelby E. McDonald, and Barbara A. Zsembik. 2020. "The Concerns, Difficulties, and Stressors of Caring for Pets during COVID-19: Results from a Large Survey of U.S. Pet Owners." *Animals* 10 (10): 1882.

<https://doi.org/10.3390/ani10101882>.

"Banfield Pet Hospital® Data Shows Increase in Care for Pets in 2020 despite Pandemic." 2021. Banfield Pet Hospital. January 11, 2021. <https://www.banfield.com/about-banfield/newsroom/press-releases/2021/banfield-pet-hospital-data-shows-increase-in-care-for-pets-in-2020-despite-pandemic>.

"BluePearl Reports Link Increased Veterinary Visits to COVID-19." 2021. DVM 360. February 22, 2021. <https://www.dvm360.com/view/bluepearl-reports-link-increased-veterinary-visits-to-covid-19>.

Boman, Sarah. 2021. "COVID-19 Keepers: Practice Design Changes That Should Stay." *Supplements, Hospital Design360* June 2021, , May. <https://www.dvm360.com/view/covid-19-keepers-practice-design-changes-that-should-stay>.

CNN, Alec Snyder. 2021. "Covid-19 Pandemic Magnifies Workforce Crisis in Veterinary Field." CNN. June 20, 2021. <https://www.cnn.com/2021/06/20/us/vet-tech-shortage-burnout/index.html>.

Croft, Dan. 2020. "How Veterinary Practices Can Thrive despite COVID-19." DVM 360. September 21, 2020. <https://www.dvm360.com/view/how-veterinary-practices-can-thrive-despite-covid-19>.

Dembosky, April. 2022. "It's Not Just Doctors and Nurses. Veterinarians Are Burning out, Too." *NPR*, April 8, 2022, sec. Public Health. <https://www.npr.org/sections/health-shots/2022/04/08/1086091339/its-not-just-doctors-and-nurses-veterinarians-are-burning-out-too>.

Dubin, Rachel J., Gillian Angliss, Curtis Eng, Trinidad Cisneros, and Dominique Griffon. 2021. "Veterinarians' Perceptions of COVID-19 Pandemic-Related Influences on Veterinary Telehealth and on Pet Owners' Attitudes toward Cats and Dogs." *Journal of the American Veterinary Medical Association* 259 (10): 1140–47. <https://doi.org/10.2460/javma.21.04.0203>.

Grubb, Louise. 2021. "The Changing Dynamics of Veterinary Care." *Dvm360*, dvm360 August 2021, 52 (July). <https://www.dvm360.com/view/the-changing-dynamics-of-veterinary-care>.

Ho, Jeffery, Sabir Hussain, and Olivier Sparagano. 2021. "Did the COVID-19 Pandemic Spark a Public Interest in Pet Adoption?" *Frontiers in Veterinary Science* 8 (May). <https://www.frontiersin.org/article/10.3389/fvets.2021.647308>.

Hoffman, Christy L. 2021. "The Experience of Teleworking with Dogs and Cats in the United States during COVID-19." *Animals: An Open Access Journal from MDPI* 11 (2): 268. <https://doi.org/10.3390/ani11020268>.

Hoffman, Christy L., Melissa Thibault, and Julie Hong. 2021. "Characterizing Pet Acquisition and Retention During the COVID-19 Pandemic." *Frontiers in Veterinary Science* 8 (November). <https://www.frontiersin.org/article/10.3389/fvets.2021.781403>.

"Intake and Outcome Database (IOD)." n.d. *Shelter Animals Count* (blog). Accessed May 15, 2022. <https://www.shelteranimalscount.org/intake-and-outcome-database-iod/>.

Jeziarski, Tadeusz, Irene Camerlink, Rachel S. E. Peden, Jen-Yun Chou, Patryk Sztandarski, and Joanna Marchewka. 2021. "Cat Owners' Perception on Having a Pet Cat during the COVID-19 Pandemic." *PLoS ONE* 16 (10): e0257671. <https://doi.org/10.1371/journal.pone.0257671>.

Kogan, Lori R., Phyllis Erdman, Cori Bussolari, Jennifer Currin-McCulloch, and Wendy Packman. 2021. "The Initial Months of COVID-19: Dog Owners' Veterinary-Related Concerns." *Frontiers in Veterinary Science* 8 (February). <https://www.frontiersin.org/article/10.3389/fvets.2021.629121>.

Limper, Candice B., Ariana L. Hinckley-Boltax, and Casey L. Cazer. 2021. "Brief Research Report: Veterinary Student Perspective on COVID-19 and Veterinary Medicine." *Frontiers in Veterinary Science* 8 (October). <https://www.frontiersin.org/article/10.3389/fvets.2021.723890>.

Lundahl, Lauren, Lauren Powell, Chelsea L. Reinhard, Eleni Healey, and Brittany Watson. 2022. "A Pilot Study Examining the Experience of Veterinary Telehealth in an Underserved Population Through a University Program Integrating Veterinary Students." *Frontiers in Veterinary Science* 9 (April). <https://www.frontiersin.org/article/10.3389/fvets.2022.871928>.

Matthew Salois, PhD. 2020a. "How Will COVID-19 Transform Veterinary Practice?" *Dvm360*, *dvm360* June 2020, 51 (6). <https://www.dvm360.com/view/how-will-covid-19-transform-veterinary-practice>.

———. 2020b. "A New Normal: Managing the Ups and Downs of COVID-19 Recovery." *Dvm360*, *dvm360* October 2020, 51 (10). <https://www.dvm360.com/view/a-new-normal-managing-the-ups-and-downs-of-covid-19-recovery>.

Matthew Salois, PhD, and Gail Golab. 2021. "The COVID-19 Pet Adoption Boom: Did It Really Happen?" *Dvm360*, *dvm360* September 2021, 52 (August). <https://www.dvm360.com/view/the-covid-19-pet-adoption-boom-did-it-really-happen->

McKee, Hayley, Basem Gohar, Ryan Appleby, Behdin Nowrouzi-Kia, Briana N. M. Hagen, and Andria Jones-Bitton. 2021. "High Psychosocial Work Demands, Decreased Well-Being, and Perceived Well-Being Needs Within Veterinary Academia During the COVID-19 Pandemic."

Frontiers in Veterinary Science 8 (October).
<https://www.frontiersin.org/article/10.3389/fvets.2021.746716>.

Morris, Amy, Haorui Wu, and Celeste Morales. 2021. "Barriers to Care in Veterinary Services: Lessons Learned From Low-Income Pet Guardians' Experiences at Private Clinics and Hospitals During COVID-19." *Frontiers in Veterinary Science* 8 (October).
<https://www.frontiersin.org/article/10.3389/fvets.2021.764753>.

Mureșan, Alexandra Nicoleta, Sorin Morariu, Radu Andrei Baisan, Ruxandra Costea, and Cosmin Mureșan. 2021. "The Impact of COVID-19 Pandemic During Lockdown on the Veterinary Profession in Romania: A Questionnaire-Based Survey." *Frontiers in Veterinary Science* 8 (November). <https://www.frontiersin.org/article/10.3389/fvets.2021.737914>.

Nett, Randall J., Tracy Witte, Elizabeth G. Spitzer, Nicole Edwards, and Katherine A. Fowler. 2019. "Suicide Risk for Veterinarians and Veterinary Technicians | Blogs | CDC." September 4, 2019. <https://blogs.cdc.gov/niosh-science-blog/2019/09/04/veterinary-suicide/>.

"New Data from Banfield Pet Hospital Reinforces the Power of Preventive Veterinary Care." 2021. Banfield Pet Hospital. October 14, 2021. <https://www.banfield.com/about-banfield/newsroom/press-releases/2021/new-data-from-banfield-pet-hospital-reinforces-the-power-of-preventive-veterinary-care>.

"New Survey Reveals Effects Stay-at-Home Order May Have on Pets and Their Owners." 2020. Banfield Pet Hospital. May 26, 2020. <https://www.banfield.com/about-banfield/newsroom/press-releases/2020/new-survey-reveals-effects-stay-at-home-order-may>.

Parry, Nicola M. A. 2020. "COVID-19 and Pets: When Pandemic Meets Panic." *Forensic Science International: Reports* 2 (December): 100090. <https://doi.org/10.1016/j.fsir.2020.100090>.

"Pet-Obsessed Humans and More Affectionate Dogs and Cats: New Report Looks at Pandemic Pet Ownership Two Years In." 2021. Banfield Pet Hospital. December 8, 2021. <https://www.banfield.com/about-banfield/newsroom/press-releases/2021/pet-obsessed-humans-and-more-affectionate-dogs-and-cats>.

Rosenberg, Marc. 2020. "The Dilemma: The Curbside Care Controversy." *Dvm360*, dvm360 August 2020, 51 (8). <https://www.dvm360.com/view/the-curbside-care-controversy>.

Rowe, Zoe C., Merritt L. Drewery, Ryan G. Anderson, and Crystal M. Russo. 2022. "Challenges Faced by U.S. Veterinary Technicians in the Workplace During COVID-19." *Frontiers in Veterinary Science* 9. <https://www.frontiersin.org/article/10.3389/fvets.2022.831127>.

Salois, Matthew, and Gail Golab. 2021. "Are We in a Veterinary Workforce Crisis?" American Veterinary Medical Association. August 25, 2021. <https://www.avma.org/javma-news/2021-09-15/are-we-veterinary-workforce-crisis>.

Shana Bohac, D. V. M. 2020. "Survival Mode: Practicing Veterinary Medicine during a Pandemic." *Dvm360*, dvm360 June 2020, 51 (6). <https://www.dvm360.com/view/survival-mode-practicing-veterinary-medicine-during-a-pandemic>.

"Telehealth Curbside Care Tips." 2021. *Journal of the American Veterinary Medical Association* 259 (9): 945–69. <https://doi.org/10.2460/javma.259.9.945>.

Wayne, Annie, and Elizabeth Rozanski. 2020. "The Evolving Response by Emergency Veterinary Hospitals during the COVID-19 Pandemic." *Journal of Veterinary Emergency and Critical Care* 30 (5): 601–601. <https://doi.org/10.1111/vec.12995>.

Wayne, Annie, and Elizabeth A. Rozanski. 2021. "Update to Cataloguing the Response by Emergency Veterinary Hospitals during the COVID-19 Pandemic." *Journal of Veterinary Emergency and Critical Care* 31 (3): 439–40. <https://doi.org/10.1111/vec.13065>.

Weese, J. Scott. 2020. "Social Distancing & Veterinary Medicine: Are They Compatible?" March 18, 2020. <https://www.cliniciansbrief.com/article/social-distancing-veterinary-medicine-are-they-compatible>.

Weinstein, Peter. 2020. "A Note on COVID-19 & Telemedicine." 2020. <https://www.cliniciansbrief.com/article/note-covid-19-telemedicine>.