Master of Public Health

Integrative Learning Experience Report

MAINTAINING ESSENTIAL VETERINARY SERVICES IN A PUBLIC ONE HEALTH CLINIC DURING A PANDEMIC
&
MAINTAINING ESSENTIAL ANIMAL SHELTERING SERVICES DURING A PANDEMIC

by

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submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

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Veterinary Services One Health Clinic Abstract

Public One Health clinics have become have become valuable for communities by bundling essential medical, social and veterinary services at a single event. The combination of services at these free/low-cost events has resulted in increased participation and attendance, reaching clients often neglected by historically free clinics. As homeless clients might face a barrier if pets are not allowed at a free healthcare clinic, public One Health clinics provide a solution and can increase participation for this population. The COVID-19 pandemic has altered life for everyone, including the service providers who operate One Health clinics. The population who requires the services of these clinics are already very vulnerable; the economic disruption of this public health crisis means the number of low income individuals have increased due to evictions and unemployment, and that those already in this population (i.e. homeless, unemployed, etc.) have become even further marginalized. This project aimed to determine best practices to optimize public health and safety for staff, volunteers, and clients at these clinics during an infectious disease pandemic. These protocols and practices were presented to potential providers, specifically including Community Veterinary Outreach and Prairie Paws Animal Shelter with the goal of resuming services as soon as possible. After drafting safe protocols, the protocols were utilized at a public event in October of 2020 as a proof of concept. The overarching aim for this project was to provide a blueprint for public One Health clinics during the remainder of the COVID-19 pandemic and during future infectious disease outbreaks, so that these essential clinics can continue to maintain operations and safely provide service to people and pets in need.

Animal Sheltering During COVID Project Abstract

The COVID-19 pandemic forced society to appreciate the truly essential services; these range from healthcare or fire departments to food service and primary schools. Another public benefit not traditionally thought of as an essential service is animal sheltering, and the pandemic proved this by forcing animal shelters to figure out how to maintain their programming while providing for the safety of the animals, potential pet-adopters, volunteers and staff. The goal of this project was to aid these organizations by compiling the current best practices from animal sheltering organizations and public health institutions, reconciling these protocols with the rapidly developing knowledge base about the COVID-19 disease, and developing recommendations on best practices and protocols for the Prairie Paws Animal Shelter in Ottawa, KS. These practices focused on two aspects: safety conscious operating protocols and minimizing the amount of clients in the shelter at a time. An explanation of these practices was presented to shelter stakeholders and staff, allowing for a successful rollout. These protocols, while specifically created for this shelter organization, can be used as a starting point for any animal welfare organization navigating the resumption of programming during an infectious disease outbreak.

Subject Keywords: COVID, one health, low-income, animal shelter, public clinic, veterinary

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Chapter 1 - Literature Review

Explanation of COVID-19:

The COVID-19 pandemic began in December 2019 in the Wuhan province of China. SARS-CoV-2 virus is a novel coronavirus that transitioned from infecting animals to infecting people, causing coronavirus disease (COVID-19), similar to the severe acute respiratory syndrome (SARS) outbreak of 2002-2004. Both SARS and COVID-19 are caused by viruses from the *Coronaviridae* family, which is based on the similar shape that they both display microscopically. Using an electron microscope both viruses would appear circular surrounded by projections also called “spikes.” These projections give the appearance of a crown, hence the term “corona.”

Viruses from *Coronaviridae* are also composed similarly; they are enveloped viruses. This means the virus is encapsulated in a lipid “envelope” obtained from a host’s genetic material. It is this lipid casing that makes these pathogens so susceptible to detergents and water; even soapy water would be adequate to kill these viruses on surfaces (Zhang, Li, Zhang, Wang, & Molina, 2020).

It is not the shape or composition that have made this virus cause the current COVID-19 pandemic, it is the latency between infectiousness and symptoms. An individual can be infected and begin shedding 1-2 days prior to displaying any symptoms, with, per preliminary studies, peak viral shedding occurring while the symptoms may still be very mild or non-existent (Woelfel et al., 2020), and those patients who lack symptoms may be the ones who shed the longest (Long et al., 2020).

This is where the recommendation to shelter-in-place stems, which is exactly what the United States started implementing in March of 2020. This policy of social distancing saved thousands of lives, but also further neglected already marginalized populations (Pei, Kandula, & Shaman, 2020). These measures, while effective at the immediate intervention of preventing COVID infection, also compounded the issues faced by individuals of lower socioeconomic status, by removing their services with no set date of resumption.

Research has been indicating that the primary means of transmission of the SARS-CoV-2 virus is via respiratory secretions (Zhang et al., 2020). This virus is

primarily transmitted person-to-person, especially when people are less 6 feet apart. Understanding the most likely means of viral transmission allows plans to be created to reduce the risk of spread. These plans focus on how to reduce the number of people in a place at a time, and how to minimize secretions in an environment.

Public One Health Clinic

COVID-19 has pushed the field of public health to a point of paradox. At a population level, the best recommendation is to shelter-in-place, meaning staying home as much as possible and minimizing visits to public places and gatherings with others. The ease of implementation of this public health recommendation differed greatly based on socioeconomic status. Those with jobs that could be easily adapted to work-from-home were minimally affected, while front-line workers were required and critically necessary to continue working in-person, often with close exposure to others who might be subclinically infected. Further, many people became unemployed due to the COVID-19 pandemic, increasing the number of marginalized and homeless people in our society. Many of these individuals were not able to implement recommended shelter-in-place and distancing guidelines, as they may have relied upon homeless shelters or cohabitated with family members or friends. Prior to the pandemic, marginalized members of our community, including homeless and lower socioeconomic status peoples, had their healthcare provided via many non-traditional forms including One Health clinics. However, the COVID-19 pandemic put a large strain on public health departments and healthcare workers, who were essential to prevent, diagnose, and manage COVID cases and provide vaccination clinics, thus there were not as many resources and personnel available to offer One Health clinics. Additionally, large community gatherings such as One Health clinics did not allow for safe distancing during the pandemic and were not permitted by the public health departments in many communities.

One Health clinics provide a novel solution to communities lacking healthcare options (Sweeney et al., 2018). These events aim to provide a one-stop-shop of services for their clients with hopes of increasing attendance and convenience. Clients typically have struggles with transportation, especially for the homeless pet owner, and

it is difficult to find care or boarding for a pet while the client finds care for themselves. Often this means they deny themselves any care or services (Rhoades, Winetrobe, & Rice, 2015). Offering combined veterinary and human services makes physical examinations and care more accessible for members of marginalized communities, and also can be a brick in the bridge to elevating one's socioeconomic status (Cleaveland et al., 2017). Undiagnosed and/or untreated medical conditions can be chronic challenges for individuals of lower socioeconomic status. Often, their ability to generate income is via physical labor, and an untreated ailment can negatively affect their productivity and attendance.

A compelling case study for the power of One Health clinics is the Knights Landing project organized by University of California, Davis (Colwell, 2020). In 2010, a community led campaign was formed, "Grupo de Mujeres," translated to Women's Group, demonstrating that this was a female-fronted effort. This advocacy group was responding to the disinvestment of healthcare infrastructure in Knights Landing and Robbins, California. The closure of their local clinic meant that residents had to travel 40 minutes by bus to the next closest clinic for any medical needs. Migrant farm workers predominately populate the region, meaning that most residents would never be able to use the other clinic for care, as their work responsibilities would not allow them that much time away. The Grupo de Mujeres found a motivated medical student at UC Davis who collaborated with them as an ally. After much work, the Knight's Landing One Health Clinic emerged.

The region being comprised primarily of migrant farm works meant that disenfranchisement was common and seen in other areas like youth programming, family services, and veterinary care. In response, the UC Davis School of Veterinary Medicine partnered with the Knight's Landing One Health Clinic in 2013. The UC Davis SVM had a mission of not just providing free veterinary services, but to focus on "community health." They understood the role they could have in public health through addressing the health of animals "because this impacts human health and well-being, and to address the health of humans, animals and the environment is to address the health of the community" (https://knightslandingonehealth.com/specialty-clinics/veterinary-clinic/).

Similar to the Knight's Landing clinic in California, Community Veterinary Outreach is a One Health clinic that is offered in cities throughout Canada as a way to provide veterinary services in addition to the existing menu of social and healthcare services. It has provided services to low-income clients for more than a decade in Canada. Kansas City is fortunate to be the first city in the United States to have a Community Veterinary Outreach office. For more than 2 years, the Kansas City office has been working to develop a similar model to the blueprint already in place in every major Canadian city.

Upon establishment, the Kansas City based Community Veterinary Outreach found an effective partner in Dr. Lara Plass, DVM. Dr. Plass attended Cummings School of Veterinary Medicine at Tufts University where she was exposed to community oriented veterinary practice and helped establish a free clinic for low-income clients. While at Tufts, she also became aware of CVO and their mission, and she was resolved to bring the program back to her hometown of Kansas City, KS.

With Dr. Plass at the helm of the Kansas City-based CVO team, attempts were made to establish partnerships with area social workers. This proved to be challenging, as social workers are utilized as an information hub to connect clients to services, rather than being in the midst of third-party interventions. Additionally, they are often tasked with serving more citizens than is realistically possible. This means social workers' follow-up with clients can be limited, with more time spent on emergent client crises and less time providing services targeted towards chronic problems related to homelessness.

Having to culturally transpose the Canadian concept to United States culture caused the Community Veterinary Outreach team to think about how most essential services are received by this clientele. Unlike in Canada, in the United States it was determined to be unrealistic and less effective to schedule appointments for these One Health visits, and instead the intended clientele were more likely to participate when there was a first-come-first-serve event. Therefore, Community Veterinary Outreach partnered with rescue missions and soup kitchens to add programming during concurrent services. These services included mental health screenings, vaccinations, sexually transmitted infection testing, and others. The model proved successful, yet

often meant medium-to-large sized gatherings of clients to queue as they wait for service—exactly what was discouraged during the COVID-19 pandemic.

The US-based CVO holds monthly clinics that offer veterinary services in addition to the previously mentioned human services. These include common wellness services like vaccinations, deworming, and spays and neuters. The organization is evolving and is establishing their own client base, for whom they will offer comparable services to an average private practitioner. These services include more thorough diagnostics, more advanced surgical procedures, and the ability to prescribe long-term maintenance medications for chronic conditions like diabetes.

The veterinary-side of these events is entirely manned by volunteers. These include local veterinarians, veterinary nurses, and other professionals with skillsets that can help rollout a successful event, like social media managers and marketers. These clinics are based at homeless shelters and foodbanks with the target population being the clients who utilize these services.

Animal Sheltering

Based on data collected by the Shelter Animals Count National Database, there are an estimated 6.5 million animals annually entering animal shelters in the United States (Shelter Animals Count - National Database, 2020). The reason for the animals' admittance may range from stray to owner relinquishment. American society has established these institutions because they are understood to be essential for public health and they reflect the value that companion animals have in our lives.

The partnering of animal and human services is nothing new, as the founding of humane societies, in the late 1800's, were to protect both animals and children (American Humane, 2019). Much of this initial work was in the form of lobbying. The efforts of these humane societies were focused on child abuse and abandonment, and they were given an at least partial solution by advocating for the first Cruelty to Children Act in 1883. Their work on behalf of children has since ranged from child labor laws, educational standards, and reforming the foster care system, to name a few projects. For some of these organizations, children are still a component of their mission, but

many have transitioned to a full-time mission for animals as other agencies and organizations have been established to focus on child welfare issues.

The animal focused efforts of this movement in the late 1800's focused mainly on the treatment of farm animals and working animals, especially horses that transported residents throughout cities. These groups advocated for better treatment of horses and were able to secure specific standards of care for public servant animals like police horses. As society progressed, our relationship to animals in populated areas evolved to companion animals becoming the predominant human-animal relationship. This meant these organizations evolved from being predominately advocacy-based to needing to provide services for the dogs of a city. These services were often in competition, or in response, to public services that were already in existence. In New York City during the 1870's, dogcatchers were paid for the number of dogs they brought in a day (McNeur, 2014). This led to questionable apprehension of some dogs, with some dogcatchers being accused of stealing owned-dogs in order to receive additional payment. This practice resulted in fledgling animal shelters becoming overcrowded and many dogs being euthanized.

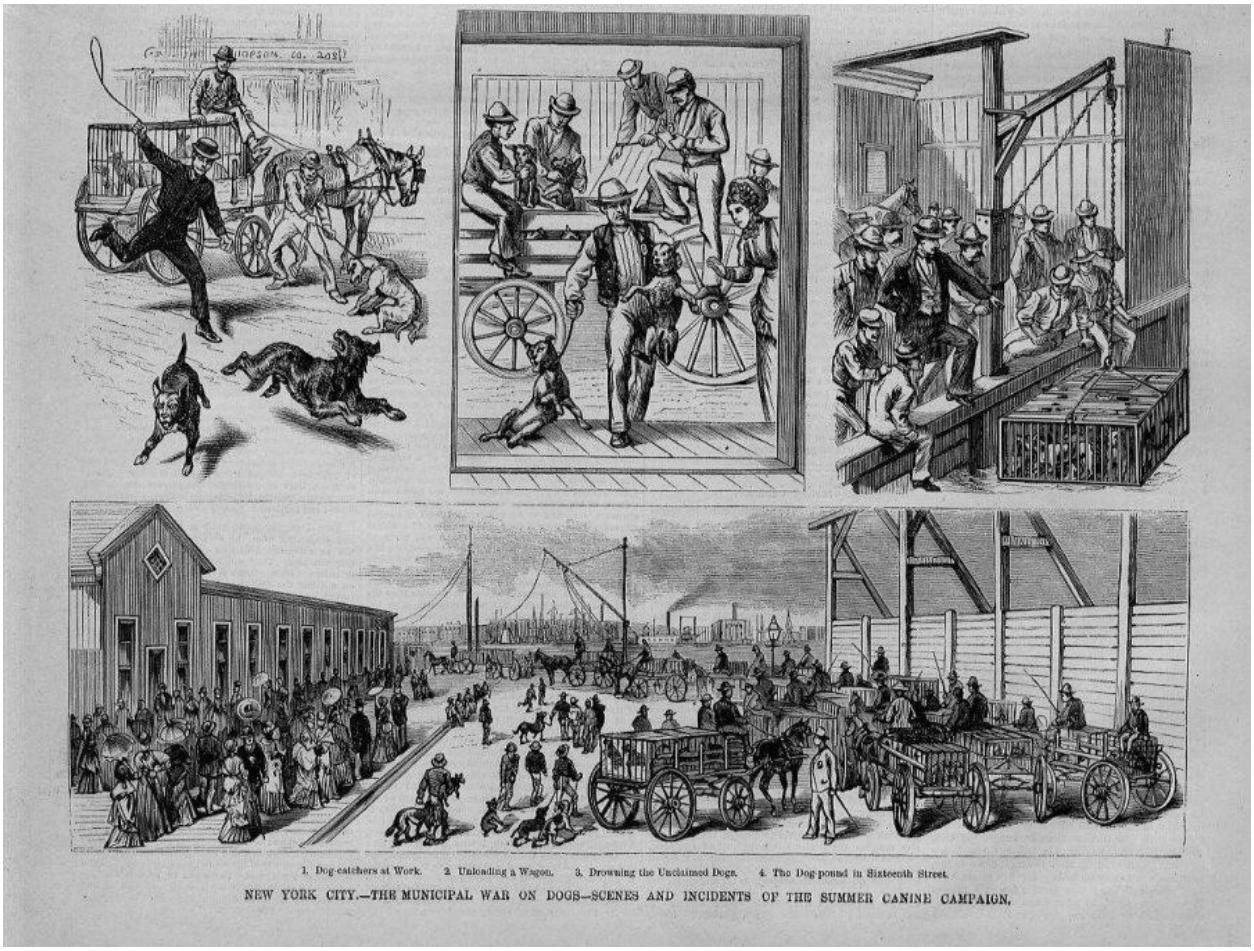


Figure 1.1 New York City's municipal war on dogs illustration: Frank Leslie's Illustrated Newspaper July 1877

The private sector, specifically humane societies and SPCAs (Society for Prevention of Cruelty to Animals) challenged this practice both in advocacy and in practice by establishing their own shelters. These shelters would eventually become the standard of care for homeless animals. Unfortunately, this progress was slow, taking nearly a century.

Until the 1970s, animal welfare was dominated by organizations which could be accurately described as "pounds." They were facilities dedicated to the intake of animals, dogs primarily, with minimal to no adoption or veterinary services. In the 1970's the practice of spays and neuters gave these organizations another emphasis of their mission. By proactively decreasing the population through spay and neuter, the number

of homeless animals would in theory reduce, thereby decreasing the number of animals they cared for and the number of animals euthanized.

Once it was documented that high-volume spays and neuters could have an impact on the number of animals in society, these organizations began to evolve from dog pounds to facilities with more resources. This can be in part attributed to the attention the public gave these organizations after the concerted “spay and neuter your pets” campaign. This slogan became the signoff message for Bob Barker on the popular game show the *Price is Right*. This gave these organizations attention and resources, and society expected more in the form of reduced euthanasia, increased adoptions, and improved veterinary care.

While these evolutions have continued throughout the decades, current paradigms are being challenged with a focus on offering public veterinary services. Traditionally veterinary services within a shelter were reserved for shelter animals, while pet owners were encouraged to seek veterinary care at a private veterinary clinic. It has been demonstrated that in some cases, pet owners cannot afford to pay for veterinary services, and this can be a leading cause of relinquishment of animals to shelters (Park, Gruen, & Royal, 2021), (Weng & Hart, 2012).

One organization that has recently been evolving to address the needs of their community is Prairie Paws Animal Shelter based in Ottawa, KS. In 2014, Melissa Reed, an experienced animal welfare administrator and proven non-profit fundraiser was given the task of returning to her hometown and saving the local animal shelter, Prairie Paws Animal Shelter (PPAS), from permanently closing its doors due to financial insolvency. Well-versed in various models for animal sheltering and holding a firm grasp of the best practices for these organizations, she transformed PPAS into a financially stable organization that was successfully accomplishing its mission. Under her leadership, PPAS has served around 1000 animals annually as a private non-profit shelter, meaning their funding comes from donations, grants, and program revenues, as opposed to tax revenue.

Once the financial stability of PPAS was more certain, they began offering public focused services like trap-neuter-return (TNR), microchipping and vaccine clinics, and a pet food bank. TNR is a strategy to reduce the population and negative impact of

unowned community cats. Working with the caretakers of these animals, traps are set, and once captured the animals are brought to a veterinarian to be vaccinated and sterilized (spayed or neutered). Post-operatively, when the animal is recovered from anesthesia, they are placed in the same location from which they were trapped. The intent being they become a sterile placeholder in the ecology of the area. Eventually, this will lead to decreased populations through attrition, and it more quickly resolves behavioral issues related to sexual hormones.

Prior to the COVID-19 pandemic, PPAS was a leader among shelters by planning to install public veterinary services in their building. These services were viewed as both intake diversion, meaning a tactic with the aims of reducing the number of animals requiring rehoming services, and as a means to further supplement the financial resources for their shelter animals.

PPAS is a partner of the KSU Shelter Medicine Program. The KSU Shelter Medicine Program was founded in 2015 and has partnerships with organizations across the region. The mission of this program is to provide veterinary services to organizations that lack a veterinarian onsite. This relationship contributed to PPAS's success but also gave the KSU staff a first-hand view of the immediate challenges animal sheltering would endure during the COVID-19 pandemic. Knowing the perseverance of the leadership group at this shelter meant they would be an ideal partner for this MPH project as they would be willing to engage in creative measures that would allow them to maintain services during this crisis.

When the COVID-19 pandemic began and lockdowns were ordered by the state and public health authorities, animal shelters and veterinary hospitals were recognized to be essential, in addition to human healthcare providers, grocery stores, emergency responders, delivery personnel and others.

Animal shelters were expected to maintain services yet lacked the veneration or considerations given to other essential service providers. This meant that community and creativity would be required. Community came in the form of the rapid installation of inclusive group Zoom calls led by shelter experts from UW-Madison CVM, Maddie's, and Austin Pets Alive. These meetings were places to discuss challenges, receive informed empathy, and share best practices from germination to implementation. The

creativity took the form of problem-solving new ways to provide services with the barriers that COVID-19 has placed. As a smaller shelter, PPAS had a much lower budget than many participants of these discussions, meaning that they required even more ingenuity, fortitude, and strategic use of resources to remain open and effective during the pandemic.

While PPAS could have shut their doors, they are the only animal welfare organization in their municipality and within three counties, and they were determined to find a way to stay open and serve the pets and people of their community.

Applied Practice Experience (APE) Background:

I had the opportunity to work with Prairie Paws Animal Shelter, Community Veterinary Outreach, Everybody Counts, the Santee Sioux Tribe and with various other partners of the KSU Shelter Medicine Program for my APE. Everybody Counts is an annual event based in Riley County, KS that serves to prepare low-income families for the start of the school year by providing essential services at no cost. This event takes the form of a fair with various providers volunteering their time, services and product. These services range from physical exams, vision screening, and dental checkups. Everybody Counts also gives an opportunity to receive clothing, a meal, and learn about other services which may not be rendered at that time, like daily community meals. KSU CVM joined the event in 2018 to offer wellness exams and preventative care for community dogs and cats. This is a non-profit, community-organized endeavor.

Melissa Reed, Executive Director for Prairie Paws Animal Shelter, served as my preceptor. I also was fortunate enough to have other public mentors like Dr. Lara Plass, DVM, Deb Nuss, Sam Kitto, and KSU CVM faculty like Drs. Brad Crauer and Katherine KuKanich.

Chapter 2 - Learning Objectives and Project Description

These projects focused on four primary learning objectives. The first objective was to attain an understanding of SARS-CoV-2 and COVID-19, including its transmission and prevention. By understanding this disease, I would be able to draft effective protocols to reduce risk of transmission and evaluate the merit of already drafted protocols.

The second objective was to research the current best practices for COVID-19 risk reduction, for public clinics and beyond. All with the goal of giving these providers confidence in resuming services as soon as possible. Having a knowledge of what experts are currently recommending and why would not only aid in the drafting and recommendation of protocols but would make me a more effective communicator. The third objective was to effectively communicate everything I learned from the first two objectives. This would mean not just to my preceptors and mentors, but to the staffs, volunteers, clients, and stakeholders for partner organizations. These communications would take the forms of meetings both via Zoom or in small, socially distanced groups, protocols, and signage.

The fourth objective was to see ways in which veterinarians can practice medicine by promoting public health through non-traditional (i.e. exam room) means.

a. Animal Sheltering- Additional learning objectives for this focus of my APE had to do with operational needs of an animal shelter. Ms. Reed spent time discussing the organization's mission and how the current programming accomplished this. From there, I spent time mastering the current needs of the organization and focused on two goals: Safety for those who need to enter the shelter, and reducing the number of people in the building at a time.

b. Public Health Clinic- One of the first learning objectives for this focus of the APE was documenting the needs of a population to determine how to best to deliver services. An additional objective was communicating with

various professions and disciplines to show them the merits of partnership in hopes of directly working together. This was focused on two fronts: The first was very basic in trying to find facilities or physical spaces that would allow us to conduct an event. The second was more complicated and had to do with establishing relationships with various human service providers. Learning how to effectively communicate with human healthcare providers and establish a relationship clearly became a critical goal for the success of this event and any similar programs to be established in the future.

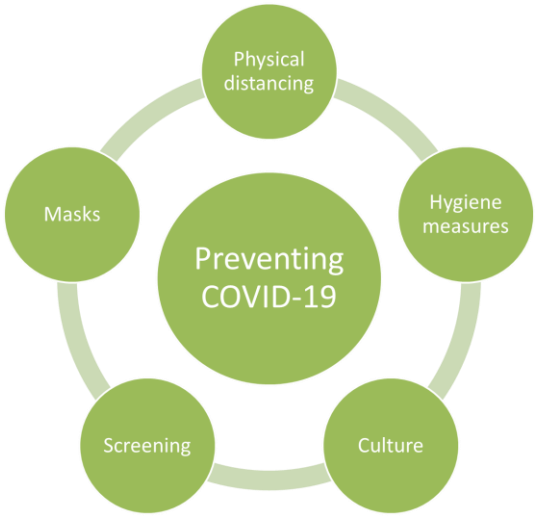
Chapter 3 – Materials and Methods

In order to gain an understanding of COVID-19 and understand best practices as they evolved, Ms. Reed directed me to the 3-times-weekly zoom calls and encouraged additional mentorship from an organization leading the innovations based on research at the time, the Ontario Shelter Medicine Association (OSMA) and the Toronto Humane Society (THS). From there, I was directed to a list of pertinent research articles, some already cited, and others to be found in the bibliography. THS also was on the forefront of drafting protocols and practice recommendations. I would filter through these and with guidance from Ms. Reed determine how to implement at PPAS.

The calls would also allow us to share up-to-date relevant research that had been published that would inform the operations for each of our organizations. Additionally, these calls provided the opportunity to work with various disciplines and problem solve, as these calls weren't only attended by veterinary or public health professionals but also by fundraisers, marketing, graphics designers, etc., and we were aligned in the purpose of the resumption of services.

Animal Sheltering

Once appropriate understanding of the disease was determined, drafts of protocols were authored. Once those were accepted, a plan was made to effectively deliver the information to pertinent parties via meetings and signage. These meetings also offered opportunities to receive questions and ensure protocols were realistic for staff.



https://www.ontariosheltermedicine.org/covid-19-recovery-toolkit/

Figure 2.1 OSMA Five Rings of Preventing COVID-19 Infection

We used the 5 rings of preventing COVID-19 infection tool utilized by the OSMA to aid in drafting protocols. Each ring was a focal point for the protocol, and the entire graphic can function as a visual aid to help staff remember the points.

To maximize the efficacy of this tool we would begin on the screening ring. This ring allows us to communicate the gravity to the situation to the point that if any of the screening risk factors were identified the staff member would be asked to stay home. From there the outer ring would be followed in clockwise fashion going from mask wearing, to physical distancing, to hygiene measures, and culminate with a culture readjustment.

Public Health Clinic

With Dr. Kate KuKanich as a mentor, we drafted and conducted a survey at two subsequent Everybody Counts events (see appendix). These were to determine the demographics for clients of the event and to better determine how best to evolve services. Implementing these surveys allowed me to learn the IRB approval process. Conducting it also allowed me experience in directing a team during a research project as any KSU volunteers could be handing the survey to clients and as such needed to

have their own questions answered. From there it allowed me an opportunity to use data to answer and formulate questions.

With the guidance of Dr. Plass, I sought possible partners for events, including both locations and human health partners. Then I would present to Dr. Plass and would contact those that were determined to be feasible. This led to many emails and phone calls, and a few in-person meetings. One of the most promising was with a free student-run medical clinic in Downtown Kansas City called JayDoc. As with many public health clinics, JayDoc had not yet resumed services during the pandemic.

With oversight of Dr. Plass and Ms. Reed, and in partnership with a classmate, we drafted a PowerPoint presentation that would discuss COVID-19, discuss mitigating strategies, and offer individuals an opportunity to ask any questions. This presentation was conducted 3 times with varying audiences. The goal being to share the logistics best practices to safely resume services.

Chapter 4 - Results

Animal Sheltering

We were able to install effective protocols that allowed Prairie Paws Animal Shelter to maintain services with no cases of COVID-19 contraction. Utilizing documents and information primarily from the Ontario Shelter Medicine Association (OSMA) and National Animal Care & Control Association (NACA), processes and protocols specific for PPAS were created.

At PPAS, we first had to determine the most essential services the shelter provides. It was decided that the Animal Control services and the care of those animals were the only absolutely necessary services, and the only services that could be maintained during the pandemic restrictions. Thus, a plan was made to adopt out or transfer all other animals, leaving only those brought in by animal control officers.

Our next major focus was to reduce the number of people in the shelter at a given time. This included staggered shifts, mandating work-from-home for roles that allowed it, and changing the client interface. To do this, we incorporated more technology and scheduling into the adoption process. The initial strategy to depopulate the shelter was by transferring animals to larger organizations that would not need to furlough. Once normal programming ramped back up, the only safe and sustainable strategy was to see clients on an appointment basis. We had Zoom calls scheduled for initial adoption screenings and animal viewing. Only after a promising match had been met would an in-person meeting be scheduled for potential adopters to meet their pet of interest. Once the shelter transitioned to Animal Control services only, there were only a few animals at the shelter at a time, greatly reducing the number of staff needed to be at the shelter at one time to care for them. These strategies were effective to greatly reduce the number of people in the PPAS building at any given time, thus reducing the risk of COVID-19 transmission.

However, this decrease in service led to staff furloughs during the county's shelter-in-place order. This period of time ended up being about one month and during this time reopening plans for PPAS were drafted with the guidance of the OSMA Step-

Wise Service Resumption, the APSCA Safe Start Guide, and the 5 rings of preventing COVID-19 as a tool for drafting protocols.

Phase 2: Step-Wise Service Resumption or Contraction Based On Priority: Risk

Phase 2A: High Priority, Low Risk

Department	Service	Notes Fall 2020
Foster and Rescue Programs	Facilitated Adoption	
	Adopt from Foster	
Shelter	Adoption - virtual	

Phase 2B: High/Medium Priority, High/Medium Risk

Department	Service	Notes Fall 2020
Foster and Rescue Programs	Behaviour and Training, In-person	
	Veterinary Care, In-person - urgent	
	Facilitated and Rescue Transport (to THS and to other locations)	
Public Veterinary Service	Veterinary Care, In-person - urgent	

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Figure 3.1 Phase 2 of the Ontario Shelter Medicine Association Step-Wise Resumption of Service Planning chart used during the COVID-19 pandemic to triage programming.

1: Essential Services – Keep Open to Fullest Extent Possible

Department	Service	Notes Fall 2020
Foster and Rescue Programs	Virtual Behaviour and Training	
	Telemedicine	
	Urgent Care Foster Support	
Public Programs	Food Bank	
	Pet/Guardian Parent Support Network	
Public Veterinary Service	Euthanasia	
	Preventive Wellness Telemedicine	
	Shelter Outreach Telemedicine	
Shelter	Foster Care	
	Animal Care	
	Behaviour and Training Support	
	Admissions, Urgent	
	Veterinary Care	
Advancement and Research	Shelter Advancement	

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Figure 3.2 Phase 1 of the Ontario Shelter Medicine Association Step-Wise Resumption of Service Planning chart used during the COVID-19 pandemic to triage programming.

This process essentially took all the programs of the organization and ranked these programs based on priority and created a master list. This priority listing would give an order to resuming those services, with tentative dates of resumption.
After determining the priority of resuming services, we used the logical approach of communication from OSMA to inform the drafting of protocols. This led to the drafting of four COVID specific protocols: A screening protocol, a hygiene protocol, a physical

distancing protocol, and a COVID-exposed animal protocol. All are available in the appendix.

Screening

The process began with screening all staff members using a straightforward, three question survey that we drafted to be completed by each staff member prior to each work shift. Confirmation that the survey was completed was done in-person prior to entry of the facility and records were not kept on staff members' responses. Questions on the survey included:

1. Have you been exposed to a person confirmed with COVID-19
2. Are you experiencing any of the following: fever, cough, shortness of breath, fatigue, body aches, headache, sore throat, loss of taste/smell?
3. Have you travelled out of state within the past 7 days?

If any survey questions were answered yes, staff were directed to contact their supervisor and not come to the shelter for their shift that day. The most difficult component of this protocol was determining appropriate follow-up steps if yes was answered to any question. The request from management to staff was to seek a COVID test; however, COVID testing availability near the beginning of the pandemic was quite limited and results were not quickly available. The other step taken was to remove the staff member from the schedule for 10 days. This step was taken a few times, leading to a challenge for the shelter to accomplish their daily work and a challenge for staff as their missed income was only partially covered. This protocol also had the limitation in that it is self-reported.

Hygiene

For PPAS mask wearing was singled out as a critically important step. These procedures were focused on staff members, and eventually volunteers and board members, who were required to complete their work in person.

PPAS COVID Hygiene Protocols

July, 2020

Maintaining consistent and thorough personal hygiene and cleaning practices while at work is a way to ensure that we are doing all we can to keep ourselves and each other safe.

Hygiene Practices for Staff and Volunteers

- ❒ Wear a clean face covering (MASK) at all times while on PPAS property, and while on the clock off property (e.g. transport, supply pickup, TNR, etc.)
- ❒ Wash hand thoroughly (♪ *Happy Birthday* ♪)and frequently (when soap, water, and paper towels are not accessible, use a 60% or greater alcohol-based hand sanitizer)
- ❒ Avoid touching your eyes, nose and mouth with unwashed hands
- ❒ Cover coughs and sneezes with a tissue or your elbow (when your facemask is down, such as in your own office). Throw used tissues in the trash and wash hands
- ❒ Wipe your entire workstation before and after use with disinfecting wipes (Include your phone, desk surfaces, keyboard, mouse, monitor, chair, etc.)
- ❒ Wipe frequently used handles and surfaces with a disinfecting wipe before and after use
- ❒ Minimize use of items not easily cleaned and disinfected or that cannot be routinely laundered (such as fabric, carpet or other soft surfaces)
- ❒ Remove all personal items from desk/workstation/office at end of shift to allow for cleaning
- ❒ Avoid sharing supplies, computer equipment, phones, etc., where possible to reduce the risk of surface contamination and transmission
- ❒ Don't share food or beverages
- ❒ Give your teammates a gentle reminder if they're not following this guidance
- ❒ Offer suggestions to Melissa for additional ways to support hygiene & cleaning

Figure 3.3 PPAS COVID Hygiene Protocols for Staff and Volunteers

There were three distinct documents in this protocol: one for the manager, one for staff, and a key times to hand wash reminder checklist. Starting with the manager, they would accomplish straightforward objectives like maintaining supplies and identifying the high-traffic areas, but their most important task was to ensure each staff member would attend the COVID-19 training that I assembled. This presentation is discussed in detail below.

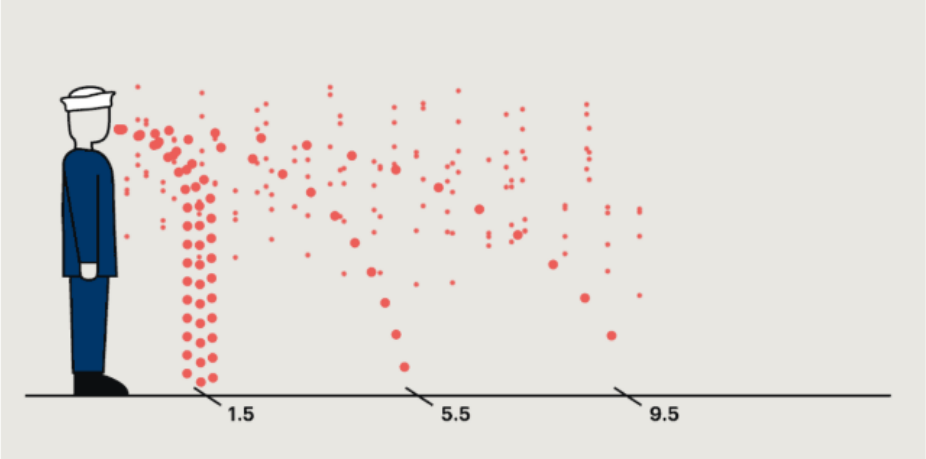
With focus on the staff, their protocols were focused on direct interventions to prevent COVID infection. These steps would include hand washing, disinfecting work stations, sanitizing commonly touched surfaces like doorknobs, and with an emphasis on mask wearing. We would use the masks ring to help us underline the importance of mask wearing to COVID-19 risk reduction. This would require a basic explanation of the virus to relay the understanding that the primary mode of transmission is via aerosolized droplets (Anderson, et al., 2020). An understanding of transmission is helpful in determining why the protocols we emphasized were important. The risk of fomite transmission has been thought to be of low importance in the spread of SARS-CoV-2 ((Zhang et al., 2020), while aerosol spread is considered the highest risk. This is why masks are the second ring from the OSMA model while the PPAS's best practices cleaning protocols needed less adjustment in the reopening plan. If a staff member did not have an adequate mask, PPAS would provide them with one. Management was prepared to send any staff member home who refused to comply with mask requirement. This step was never taken, but in a couple of situations staff were found with no mask and complied when given a mask to wear.

Hygiene is extremely important, and not just during a pandemic. Measures like frequent hand washing, the wearing of gloves, the disinfecting of surfaces, are all things that should be happening at any animal shelter or hospital every single day. PPAS was already operating at an excellent baseline level using an effective disinfectant, Rescue, an accelerated hydrogen peroxide, which is effective against coronaviruses and the more common shelter pathogens like parvoviruses and dermatophytes. The COVID-19 pandemic allowed an opportunity to reemphasize the importance of these measures. An example of a reemphasis was the communication regarding proper donning of PPE. We utilized the CDC signage seen below:

Physical Distancing

The next protocol was physical distancing. Our goals were to limit the amount of people together and when they had to be in the same room space them 6-feet apart. This distance is based on the evidence we already knew about droplet transmission and the

newly mounting COVID specific evidence (Hamburger & Robertson 1948). The physical distancing allowed us to focus on 4 points: 1) Reducing the number of people in the shelter at a time; 2) If needing to be in the shelter, limit your proximity to no closer than 6 feet; 3) If meeting in person, reduce the amount of time to an absolute minimum; and 4) when possible, conduct in person meetings outdoors.



A study conducted at a naval base in the nineteen-forties found that germs were most commonly collected within a foot and a half of the sneezing subject, but in some cases they could travel much farther.

https://www.newyorker.com/science/medical-dispatch/amid-the-coronavirus-crisis-a-regimen-for-reentry#:~:text=A%20study%20conducted%20at%20a%20naval%20base%20in%20the%20nineteen,they%20could%20travel%20much%20farther.

Figure 3.4 Illustration of the naval study focused on droplet transmission of pathogens.

These points were used to draft operating procedures and COVID-specific protocols. The operating procedures involved staggering arrival and departure time for staff, assigning specific lunch times, a designation of in-person versus remote employees, changing all meetings to virtual, and transforming the operation to an appointment-based process, as opposed to allowing walk-in foot traffic in the shelter.

As with the other protocols there was a manager-specific checklist, and these steps were the most crucial. In addition to the operational specifics identified above, they included COVID specifics like reducing capacity in the break room and conference room by removing chairs. It also included designing a one-way flow through the shelter and designating this with tape arrows on the floor.

Physical Distancing Checklist for Managers

- ❒ Inform (and keep reminding) your team of their 10 Physical Distancing Steps; post the 11 Steps prominently
- ❒ Model all 11 Steps at all times, including being a good sport when you get reminded
- ❒ Reduce occupancy in meeting and break areas to 50% or less and post signs inside and outside the space accordingly
- ❒ Post physical distance markers using tape or signs to denote 6' of spacing in common areas
- ❒ Block-off, post or take away seating to ensure 6' between people
- ❒ Limit in-person meetings and gatherings as much as possible and encourage phone and virtual alternatives
- ❒ Ensure one-way foot traffic wherever possible by posting directional signs
- ❒ Consider whether modifications of workstations (plexiglass extensions, for example) are necessary to achieve physical distancing and order accordingly
- ❒ As much as possible, set staggered schedules for arrivals, departures, breaks and lunch to help team members maintain physical distance
- ❒ As much as possible, minimize the number of people your staff interact with by setting up consistent work teams throughout the shift and the week
- ❒ As much as possible, reduce in-person work and shift to remote work
- ❒ Establish designated areas for pick-ups and deliveries
- ❒ Prohibit non-essential visitors
- ❒ Establish a system for regular suggestions and feedback from the team to improve and support physical distancing
- ❒ Reinforce your team for adhering to physical distancing and for being good sports about reminders. Discipline team members for non-compliance when one or two good-natured reminders have failed to get a positive response and consistent change in behavior. This will aid in ensuring everyone's safety, including their own

Figure 3.5 PPAS COVID Physical Distancing Checklist for Managers.

Figure 3.6 CDC Donning Personal Protective Equipment Signage

COVID-Exposed Animals

The fourth protocol was how to safely work with a COVID-exposed client or animal. Having a county contract meant that PPAS was required to serve all clients of that

municipality, even if they or their animal had been exposed to COVID-19. This meant we needed to draft a protocol in the event a staff member had to serve a COVID exposed client or animal. The proper donning and doffing of PPE was an emphasis. Contrasted to other comparable agencies across the country, PPAS does not employ an animal control officer (ACO). For those agencies, their protocols would also need to include steps for the ACO upon entry in the home. PPAS would handle any of these potential situations at the shelter in a controlled environment. This protocol focused on physical distancing for the client, proper PPE usage, and reemphasized the current cleaning protocol.

Using the protocol from UW Shelter Medicine and UC-Davis Koret Shelter Medicine Program's we also drafted protocols for COVID-19 exposed animals and a disclosure form for clients should they take one of these animals in their home. To this date, none of these measures have been needed.

Working with potentially COVID exposed animals or clients

July 2020

Client Interactions

1. Don/doff PPE as seen below
2. Remaining a minimum of 6 feet away from client.
3. If relinquishing, have client place animal in kennel in isolation.
4. Have client sign relinquishment form.
5. Inform client they will be emailed a receiving form to share information about the animal.

Animal Interactions

While there is no evidence at this time that any animals, including companion animals, in the United States, might be a source of infection for humans, it is prudent to keep companion animals that came from households where a person was infected with COVID-19 separated from the general shelter population out of an abundance of caution to protect both human and animal health.

Intake Exams

1. Wear PPE while doing intake exams and treatments in order to reduce contagious disease risks.
    a. Wash hands with soap and water after gloves are removed and discarded.
2. Routinely clean and sanitize animal intake areas as well as materials in animal areas such as food and water bowls and bedding.
3. Do not bathe animals or use disinfectant topically on intake because of COVID 19 concerns. There is no need to bathe an animal because of COVID-19 concerns; at this time, there is no evidence that the virus that causes COVID-19 can spread to people from the skin or fur of pets.

Housing and in-shelter daily care

1. Animal will be housed in isolation for 14 days.
2. Assigned kennel staff team member will be responsible for care after their assigned pods.
3. Don Personal Protective Equipment (PPE)
4. Walk dogs outside for elimination and exercise in designated side yard.
    a. Collect feces using gloved hands or a bag and disposed of immediately.
    b. Spray sanitize yard after use.
5. Cleaning visible dirty surfaces in kennel followed by disinfection. Coronaviruses are readily inactivated by disinfectants typically used in animal shelters, including accelerated hydrogen peroxide at concentrations used for other more common shelter pathogens (e.g. 1:64 (2 oz/gallon) for 5 minutes for coronaviruses, 1:32 (4 oz/ gallon) for 10 min. for parvoviruses). **Normal cleaning and disinfection protocol for both animal housing and common areas is sufficient. Ask Melissa if unsure of that protocol.**
6. Wipe light switches and doorknobs when done in room.

Culture Readjustment

The final ring, culture, was the simplest to understand and possibly the most crucial to our success. This started with an understanding of the stakes of our actions, then empowering everyone to hold each other accountable. Speaking out when seeing a lapse in safety and precaution measures not only protects you and the person in question, but also allows us to continue serving these animals who are relying on us to remain healthy and open to accomplish our mission.

Implementation of Protocols

The new safety protocols were presented primarily via Zoom to all staff, and any interested volunteers, board members and stake holders. The OSMA had an excellent template for a presentation which served as a template for us to customize.

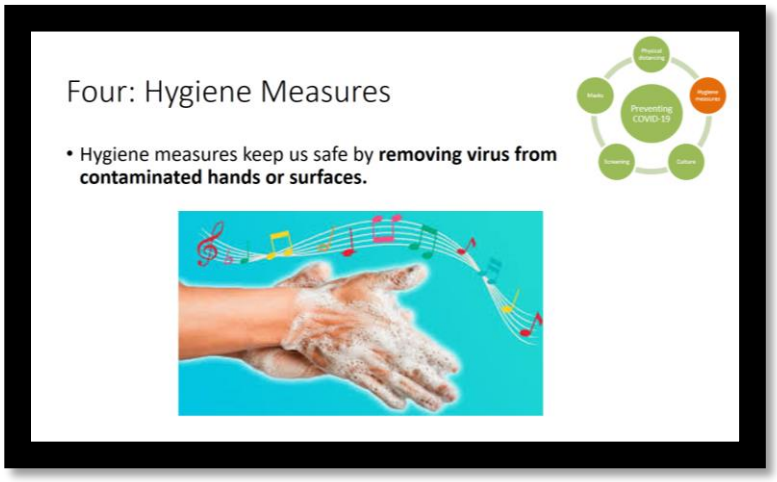


Figure 3.7 Slide from PowerPoint using the Five Rings as a guide for COVID prevention. This one emphasized the proper handwashing technique.

The presentation began with an explanation of what we understood about COVID at that time and then used the five rings to introduce each protocol then take time to emphasize points, like hand washing. It allowed an opportunity to discuss in detail why proper hand washing is effective and allowed us an easy way to retrain tips to thoroughly wash hands, for example.

This experience taught me how to analyze the recommendations of experts and transpose those to a specific situation. It also gave me the opportunity to connect with experts with questions regarding idiosyncrasies of a situation and how they may relate to their recommendations. What I'll take most from this experience, though, is being the role of trusted expert and communicator during a time of crisis. However, these lessons won't only apply during a pandemic. I'll remember at any time to use trusted sources for information, seek appropriate experts for questions, use my own critical thinking capacity to determine validity, and now use my experience to apply these recommendations within the context of my own work.

One Health Clinic

As a member of the KSU Shelter Medicine team, I was given an opportunity to help plan the Shelter Medicine team's involvement in One Health events. One example that I have helped coordinate has been our trips to the Santee Sioux reservation, in Nebraska, where we conduct quarterly veterinary clinics at the site of a community health center. The center is where tribe members have their basic medical care needs met, like physical exams and dental screenings. We are able to house a popup veterinary clinic on this same site where we can offer veterinary services such as vaccinations, flea/tick preventatives, deworming, spay/neuters, and any other services our resources will allow at the time.

Additionally, I have been able to help coordinate the KSU Veterinary Health Center's involvement in Everybody Counts, as well as to help develop, administer, and analyze surveys for the pet owners who attended this event. This began with the drafting of a survey (see appendix) in cooperation with Dr. KuKanich and faculty members from the Shelter Medicine Program. After an approved draft was created, I then learned how to draft an accompanying informed consent form, giving us permission to use the volunteered information anonymously provided by an individual for academic purposes. The final step in this process that I learned was working through the Institutional Review Board approval process. Additionally, to be inclusive for our county's pet owners, we had our survey translated into Spanish so that both English

and Spanish versions were available; we also had several Spanish-speaking veterinarians available at the events to assist with the survey as needed.

Utilizing the volunteer team from KSU CVM that totaled more than 30 students, technicians, and clinicians, we were able to survey attendees of the event. Some of the results we had from the first year are here:

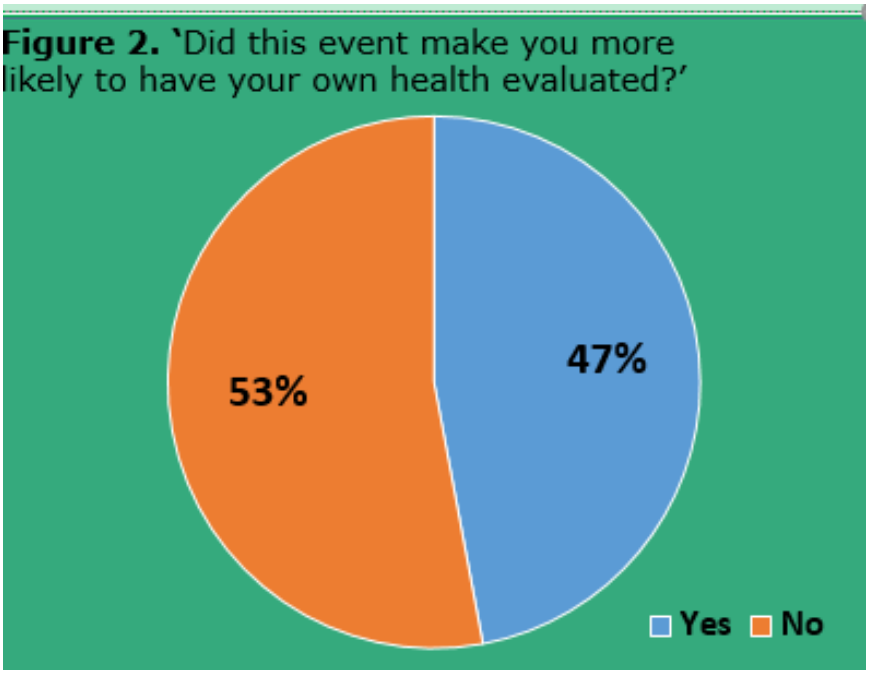


Figure 3.8 Chart from 2018 research results poster. This survey question attempted to ascertain the impact the airing of services had on health outcomes for human attendees, and 47% it positively influenced them to have their own health evaluated. The entirety of poster can be seen in Appendix 1.

We participated the following year, and that afforded me even more experience with Dr. KuKanich inviting me to the monthly planning meetings for the event and to draft some disease-specific literature for conditions like heartworm and ehrlichiosis to distribute at the event if a positive case was diagnosed (see appendix). We also conducted an updated survey for the 2nd year expanding upon areas that raised questions from the first year:

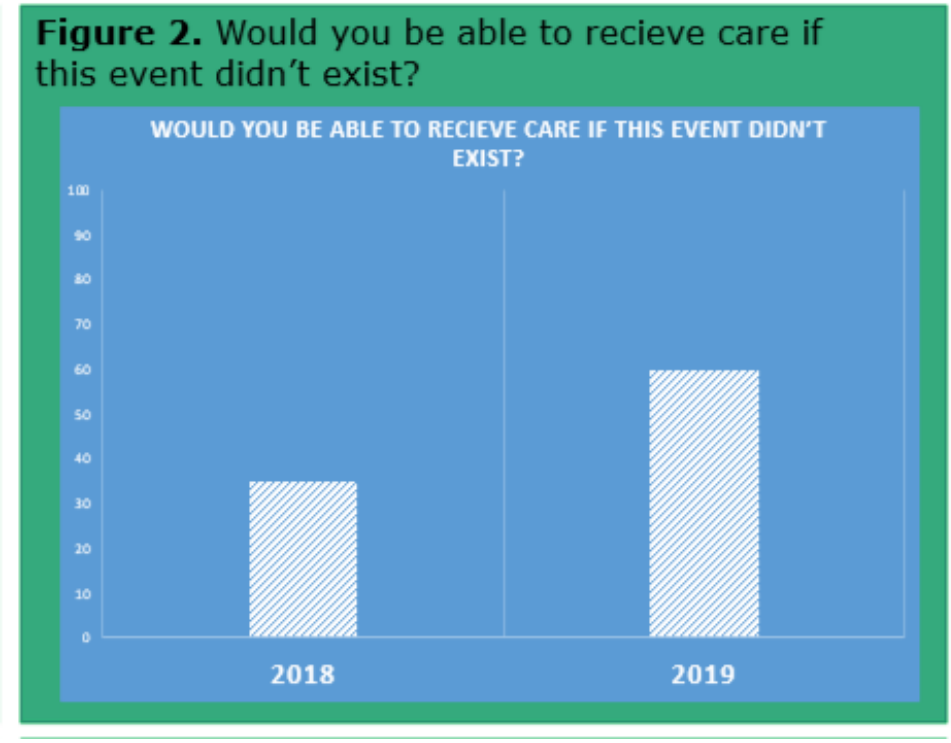


Figure 3.9 We were able to compare from year-to-year in 2019 and saw a more than 20% increase in attendees for individuals with no other way to receive veterinary care. A hypothesis would be that trust is being established in the community. Full poster in Appendix 2.

I learned how to analyze these data and create an informative poster (see appendix), and presented these data at numerous events and conferences, including the Kansas Public Health Association annual conference in 2019.

Concurrently while working on the projects for Everybody Counts, I began establishing a relationship with Community Veterinary Outreach and the president Dr. Lara Plass. Together, we formed a goal of establishing monthly, public One Health clinics in downtown Kansas City (ideally both the Missouri and Kansas-side).

The first step in this plan was to find a suitable location and partner for these events. After many emails and phone calls, we had a meeting established with Hope Faith Rescue Mission. This partner was ideal as they already maintained many of the

services we hope to partner with including meals, social work/service identification, and even some medical services like optometry. They also housed many of the clients we hoped to serve, making this a convenient location for these events.

After Dr. Plass met with her board, they consented to a collaboration between myself and their organization. The goal of the partnership was to find more locations for events and cultivate partnerships with additional human-centric professionals to have a broad offering of services, with a focus to providing a true One Health event. After the location was confirmed, we next had to garner interest and support from human service providers; this meant not just medical professionals but also mental health counselors, women's shelter staff, and any other service a homeless or underserved client may find of use. In the spring of 2019 we were set for our first event and had a roster of services that included a dentist, optometrist, sexually transmitted infection (STI) screening, and staff from the Rose Brooks Woman's Shelter. The one component we were still lacking was a partner for concerns that can be addressed by an MD; these include being able to diagnose diseases and prescribe treatments to address those concerns.

I was also able to effectively garner a tentative partnership to conduct events at JayDoc's space and utilize their programming during a public clinic to have the benefits of both veterinary and human medical services. This meeting was unfortunately in February of 2020, which meant it was one month before the COVID-19 mandated shutdowns. As summer came, I continued to reach out to JayDoc with the hopes of establishing a low-risk protocol that they would find acceptable. Unfortunately, they were ultimately not able to participate due to the COVID-19 pandemic, regardless of protocol or mitigation measures.

Once the COVID-19 pandemic began, many scheduled programs were cancelled including the Everybody Counts event and all CVO clinics. In order to encourage the resumption of these services, a classmate and I created an original presentation (See appendix) to present to CVO and PPAS stakeholders specifically.

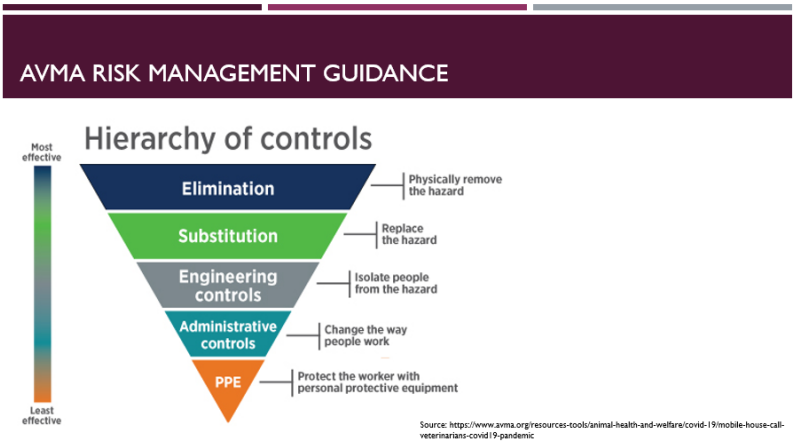


Figure 3.10 Screenshot from PowerPoint created to discussion risk mitigation strategies for resumption of public services. Full presentation in Appendix 4.

The presentation explained about COVID-19, mitigation control, and measures that had been successful thus far. After the presentation, it was communicated that CVO was unable to resume services until the COVID-19 pandemic waned. Although Everybody Counts was cancelled for 2020, their leadership is planning to resume services in 2021 and will be a good audience for this presentation as well. PPAS stakeholders consented to a public veterinary wellness, preventative and microchip clinic. All veterinary materials such as microchips, vaccines, flea/tick medications, and dewormers were donated, which allowed this to be a completely free event for pet owners. Unfortunately, no human services were able to be partnered at this event. Thus, in October, 2020, with partnership and guidance from Dr. Brad Crauer and Melissa Reed, a protocol was drafted utilizing a format used for a drive-in clinic from Pima Animal Care Center in Tucson, AZ (See appendix). The event was held outdoors, at a nearby park that allowed for drive-up service. On the day of the event, I led the team of volunteers through a verbal training of the protocols and took questions. More than 150 veterinary patients were seen and received services, all with no reported cases of COVID-19 transmission among staff, volunteers, and clients.

The protocol focused on physical distancing as our greatest tactic to mitigate risk. This meant all clients would drive up to our station, which was set up under a ramada in

a local park. A PPAS masked and gloved team member would approach the vehicle and hand the client a consent form, which needed to be completed for each animal. The team member would then escort the animal to the ramada. The clipboard and pen would be disinfected, and the animal would be scanned for a microchip and if none was found, implanted with one. Animals would receive a physical exam performed by a 4th year veterinary student with an assistant providing restraint. A DVM was present for oversight; however the physical exam team were the only ones exposed to each other being less than 6 feet apart in distance, but not for longer than 10 minutes at a time. These pairings were consistent and were with members of their current rotation, who they were already in close proximity with for one week. Clean exam gloves were worn and changed in between each patient. For large dogs, the exam was on the ground, often even the grass, and any small dogs were done on the table, which was sanitized between patients. Following the exam, a team member would administer the treatments indicated by the form (e.g. vaccine, flea medication, etc.). The final step would be that the same team member would return the animal to the client from which they were received.

I gained much from these experiences, including creating effective visual presentations and protocols, but the most significant was the experience working with professionals from varying disciplines and backgrounds. I valued the experience to share solid research-based evidence and empirical best practices, as an expert. This was a realistic situation, and not simply a simulation, as I was unsuccessful in changing everyone’s minds regarding the topic at hand, which, if time and energy allowed, would encourage further investigation and communication.

Chapter 5 -Discussion

These projects were undertaken to understand how public veterinary services could be resumed during an infectious disease pandemic, like COVID-19, with specific attention to services designated to clients experiencing barriers to access-to care. This objective evolved from the goal of utilizing these experiences to understand how veterinary medicine can have positive impacts on human health outcomes by participating in One Health clinics. We also wanted to use participation at these events to understand more about the barriers clients face to receive care.

Through the work with PPAS, I was able to see that services could resume safely during a pandemic, as long as thoughtful protocols were put in place. These required rigorous research to be publicly available. Then these data could be used by public health professionals to make best practice recommendations, which would then allow practitioners to draft personalized protocols, often using template protocols as a starting point. Throughout this work, I encountered challenges when trying to establish needed events that were outside of the regular work duties for private organizations and individuals. Following PPAS reduction in service to only ACO operations, I was successful in aiding PPAS to maintain and resume activities, while other organizations such as CVO, JayDoc or Everybody Counts did not resume activities in 2020 due to the perceived risk even with our protocols to mitigate disease transmission.

The CVO response to COVID in the United States differed from their response in Canada. In Canada, the organization relies on social workers to facilitate much of their mission. In Canada, social workers are an essential service provider that did not lapse during the COVID-19 pandemic. In the US, CVO is partnered with other organizations, but at an arms distance. They have a location, but the location is simply space and not an active member in CVO's mission. They have partner providers, but they are just volunteers who attend clinics when invited. They lack any official governmental representative like social workers. This is not the fault of the US-based CVO, but simply an indication in the difference between both countries. CVO tried to align with social workers here but found that social workers were already overloaded and not able to voluntarily contribute to CVO during the pandemic. . Whereas in Canada, the service

CVO provides is seen as essential, meaning that social workers continued with the CVO just as they continued their other job responsibilities.

There are conclusions to be drawn from these differences. One is that the Canadian CVO is able to do this because the government support for these institutions is sufficient to allow this to happen. This government support is evident in their essential services like healthcare. In Canada, they have a universal, publicly funded healthcare system, in contrast to the predominately private healthcare system found in the United States. A common way to analyze and compare healthcare outcomes is by measuring infant mortality rate and life expectancy. Canada performs better in both of these health outcome metrics, while spending less (NBER). This can be contrasted to the US where a patchwork of private entities are relied upon as the only safety net for services reaching even beyond healthcare, for which CVO is a prime example. CVO can be thought of as any of the non-profit organizations in the US with a mission to improve health outcomes. These entities must rely on their own ingenuity for resources, and if ever a significant barrier is encountered, might not possess the means or charter to move forward. Another conclusion that can be drawn from this contrast is how impoverished or disenfranchised populations have difficulty trusting institutions. Much of my work to initiate One Health clinic opportunities had to do with building trust, whether clients at Everybody Counts, the Santee Sioux reservation, or even the staff at PPAS who would often need additional reassurance or evidence on the claims of COVID-19 best practices. For CVO, this meant that they couldn't rely on an institution like a social workers office to function as a middle-man, because some clients wouldn't inherently trust the institution. This could be because our society lacks the opportunities to give these clients positive experiences with them, as are available in Canadian society.

An indirect aim of these projects was to explore how we as veterinarians can be greater champions of public health through civic and social activities: how can we practice veterinary medicine at times when we're not wearing a white coat and when we are not in an exam room. How do we promote a healthy society through our actions as citizens? A conclusion to be drawn is that supporting efforts like those of CVO or Everybody Counts could be a component of public health collaboration.

It is inspiring to the author to see those in shelter medicine and academia being able to maintain essential services during this pandemic. However, as a society, we need to determine a way for public One Health clinics to also be deemed essential and prioritized, especially during a pandemic. One of the biggest challenges for providing services for disenfranchised and marginalized people is building trust. A method for gaining trust throughout the author's experience during these projects, and one of commonsense, is to do what you say you will. In this frame, this means if we determine a one-health clinic to be essential, we need to be there during a public health crisis like a pandemic. This is not an argument for being reckless, but for being courageous. Target population for programs like subsidized One Health clinics will continue to be disenfranchised as long as their essential services are deemed elective and only to be delivered when all conditions are near optimal.

The crux of this conflict comes down to the question of what are essential services? The uptick in private practice veterinary revenue during the pandemic seemed to be the driver for those businesses to remain operational, does this mean they are essential? I would argue yes, but I would also argue that those were the only professional endeavors in which those veterinarians could perform. These veterinarians had to focus on their patients and keeping their staffs and families safe. However, pushing for these clients as essential while those with no, or low, income as not essential during this time indicates there is still much work to be done to ensure a basic standard of care has been set for the humans and animals of this society. There was no coordinated effort to resume publicly subsidized veterinary services during this time, and it was left to the current group of mostly small, underfunded private entities that currently make up the response to these needs.

There are logical recommendations that can be made should we encounter another infectious disease pandemic. Utilizing the processes and protocols in this report, I'm confident to say that operations can resume for an animal shelter, or similarly structured business. The steps that were taken seem even more appropriate in hindsight: a suspension in services as we understand more about the pathogen, and then once transmission is better understood, formulation of protocols to mitigate risk. My recommendation for the public One Health clinics is to be on the front line of

resuming services. Establish and modify safety protocols as soon as possible to allow activities to resume. As pointed out above, trust in institutions has become a barrier in the work of public health, and abandoning these vulnerable clients during a time of severe need is hurting that trust.

This leads into a more complicated recommendation. A reason we encountered so many challenges throughout these projects, with respect to COVID, is because of the amount of misinformation available in the public, leading to fear and mistrust. My bigger picture recommendation is to begin being a champion for these institutions today. Stakeholders should understand that the CDC and their recommendations can be trusted now. They make recommendations at times other than pandemic, as well. Much of the limitations of this work had to do with the complications brought on by being in the midst of a pandemic. This lead to a hesitance to resume services or utilize drafted protocols. It also prevented us from completing a third year of surveying to gain further information from clients at Everybody Counts. And there are limitations to those data; they are entirely self-reported, so there might be bias in the results.

As for future work, I intend to connect other MPH students with the organizations in the hope that they can accomplish a project more reflective of operations for these organizations. Utilizing One Health clinics, like CVO and Everybody Counts, as touch points to evaluate health outcomes can help us further understand the role veterinarians can play in this portion of public health.

A final note on limitations and future plans: My initial APE was to establish a rabies vaccine clinic and cattle dipping station trainings in Zimbabwe. I was given a significant scholarship to accomplish this and was set to depart in May 2020. We all know why this didn't happen, but the comment-less dissolution of hard-earned experiences has left me dismayed. I've remained in touch with my contact there but am skeptical I'll be able to find another time soon that I can travel there for two months. I hope we remember those of us at the crux of our professional and academic careers who will never obtain the once-in-a-lifetime experiences that are post-secondary education. I can honestly say that COVID occurring when it did in the timeline of my education has limited my ceiling, both academically and professionally.

There are clear conclusions that can be made from these experiences. We saw throughout the research portion, and empirically through events, that there is an obvious need for subsidized services. And that the partnership between veterinary and human practitioners at concurrent events may help the outcomes not only for the animals but for the humans that own them. Unfortunately, the state of the world during the time of this project prevented deep investigation and experimentation into this topic. It has however left us with enough evidence and questions to justify further research.

We also saw that with science-based evidence and effective communication, risk mitigation is possible even during an infectious disease pandemic, like COVID-19. We now understand, better than ever, the importance of communication during a crisis and implement similar communication strategies as were developed during the COVID-19 pandemic, such as frequent conference calls, public facing videos, and easy to understand signage and protocols. If another outbreak or pandemic occurs during the lifetime of the author or those referenced in this report, we will be ready to respond quickly and effectively.

Chapter 6 - Competencies

Student Attainment of MPH Foundational Competencies

Table 5.1 Summary of MPH Foundational Competencies

Number and Competency		Description
4	Interpret results of data analysis for public health research, policy or practice	Analyzed data collected during MPH experiences and data published regarding the current pandemic. Used both sets of data to make recommendations in practice through the creation of interventions like public one health clinics, or in the drafting of safety protocols.
17	Apply negotiation and mediation skills to address organizational or community challenges	Much of this project was spent negotiating with stakeholders to communicate the benefits in partnership (e.g. JayDoc) or in the resumption of services (eg CVO). Experience was gained crafting specific presentations for each audience, as time was dedicated to the follow-up to respond to questions.
18	Select communication strategies for different audiences and sectors	Had the opportunity to communicate with various audiences: staffs, volunteers, board members, clients/members of the public, etc. It was important to understand each group's motivations to reach common ground.
19	Communicate audience appropriate public health content, both in writing and through oral presentation	During these experiences, I had the opportunity to hone my writing skills to make concise yet effective instructions, both in the form of protocols and signage. I also had the opportunity to present and facilitate group discussions. Additionally, I was also able to communicate with academic/professional audiences by crafting research posters and presenting them at the KPHA.
21	Perform effectively on interprofessional teams	Was able to work with individuals representing many different roles with regards to the work we were accomplishing throughout my time. With some groups, like staff, volunteers or board

		members of PPAS, I had preexisting common ground. For groups from other disciplines, this brought a different challenge. This specifically references human service providers. It started by focusing on an inclusive goal for all and communicating proactively leading up to events and during.

Throughout my APE I was able to reinforce many of the Foundational Competencies required for an MPH. I chose to focus on the five that I believe will have the most lasting impact on my career as a public health professional.

Competency #4 was able to be attained on two fronts: the collection and analysis of our own data and analyzing the data of published professionals. From our own data, I used them to understand successes of KSU CVM's involvement in the Everybody Counts event, identify deficiencies, and suggest possible interventions. An example was seeing that the respondents were from largely a geographically homogenous area, the nearby surrounding neighborhoods. This led us to hypothesize that the location of the event may be a barrier for some clients and we proposed the addition of an event on the opposite side of town. I also used published data from infectious disease experts to recommend practices at PPAS and draft those practices into protocols to maintain the safety of stakeholders of the organization.

The competency from which I may have learned the most was also the most challenging, #17. One of the goals for my APE, and personally, was to foster relationships with varying professionals to create a truly interdisciplinary team to come together for CVO clinics. This proved difficult, primarily because most of these professionals are already extremely busy. Other challenges this brought was how to gain their attention; I made many cold calls, sent many emails, and did a few "pop-ins", and the majority of these actions led to nothing. When I would get interest, the next challenge would be communicating my public health endeavor with such focus that they would be able to connect the dots and see how they could fit in. This skill took time, and I'm still mastering it. Negotiation was also needed to communicate with the decision makers of CVO and PPAS to share the most reliable, up to date information upon which to make recommendations for safe practices, then to stand by those recommendations

when faced with questions or outright challenges. This competency taught me patience and perseverance.

Competency #18 is about selecting communication styles for differing audiences and these experiences allowed me to work with such various audiences ranging from members of the public with no knowledge of public health to well-educated professionals involved in PH on a daily basis. The strategies that were most effective for the public were utilizing concise language and graphics when possible. This was a stark contrast to working with public health (or even human service) professionals. These groups requested data and studies, the more detailed the better. This contrast in audience forced me to be effective on the entire spectrum of communication tactics.

The theme of my APE was truly communication. This has brought me attainment of competency #19. There were volunteers at PPAS who needed the necessary information that would keep them safe during a volunteer shift. This often required both a written, concise protocol, and a verbal presentation. This was in contrast to the skills needed to communicate to fellow professionals as at a conference like the KPHA. I needed to design an information dense, yet effective poster, and present this work verbally and respond to questions from trained public health professionals. The questions I would get from this group were very different than those from the group of volunteers at PPAS, but both equally valid.

Competency #21 may be that which I'm most proud. A personal component of my APE was to show other disciplines that veterinarians can play an important role in public health, and not just from the perspective of keeping animals healthy. It was my priority to come informed and prepared whenever I had the opportunity to work with other disciplines, whether during the planning stages of events like Everybody Counts or for CVO clinics. It was inspiring to see the efficacy of these multidisciplinary teams during these events and to communicate with these varying disciplines, but also to learn what motivates them to find our common ground for this work to accomplish our mission.

The experiences I gained I will be able to use for the duration of my career; I will always need to communicate effectively and work with interdisciplinary teams.

Table 5.2 MPH Foundational Competencies and Course Taught In

22 Public Health Foundational Competencies Course Mapping	MPH 701	MPH 720	MPH 754	MPH 802	MPH 818
Evidence-based Approaches to Public Health					
1. Apply epidemiological methods to the breadth of settings and situations in public health practice	x		x		
2. Select quantitative and qualitative data collection methods appropriate for a given public health context	x	x	x		
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	x	x	x		
4. Interpret results of data analysis for public health research, policy or practice	x		x		
Public Health and Health Care Systems					
5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings		x			
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels					x
Planning and Management to Promote Health					
7. Assess population needs, assets and capacities that affect communities' health		x		x	
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs					x
9. Design a population-based policy, program, project or intervention			x		
10. Explain basic principles and tools of budget and resource management		x	x		
11. Select methods to evaluate public health programs	x	x	x		
Policy in Public Health					
12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence		x	x	x	
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes		x		x	
14. Advocate for political, social or economic policies and programs that will improve health in diverse populations		x			x
15. Evaluate policies for their impact on public health and health equity		x		x	
Leadership					
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making		x			x
17. Apply negotiation and mediation skills to address organizational or community challenges		x			
Communication					
18. Select communication strategies for different audiences and sectors	DMP 815, FNDH 880 or KIN 796				
19. Communicate audience-appropriate public health content, both in writing and through oral presentation	DMP 815, FNDH 880 or KIN 796				

22 Public Health Foundational Competencies Course Mapping	MPH 701	MPH 720	MPH 754	MPH 802	MPH 818
20. Describe the importance of cultural competence in communicating public health content		x			x
Interprofessional Practice					
21. Perform effectively on interprofessional teams		x			x
Systems Thinking					
22. Apply systems thinking tools to a public health issue			x	x	

Student Attainment of MPH Emphasis Area Competencies

Table 5.3 Summary of MPH Emphasis Area Competencies

MPH Emphasis Area:		
Number and Competency		**Description**
1	Pathogens/Pathogenic Mechanisms	Evaluate modes of disease causation of infectious agents.
2	Host response to pathogens/immunology	Investigate the host immune response to infection.
3	Environmental/Ecological Influences	Examine the influence of environmental and ecological forces on infectious diseases.
4	Disease Surveillance	Analyze disease risk factors and select appropriate surveillance.
5	Disease Vectors	Investigate the role of vectors, toxic plants and other toxins in infectious diseases.

My MPH and DVM training have exposed to in depth knowledge of infectious disease transmission and zoonosis, and this was reinforced during my APE at PPAS. Using COVID-19 as an example, through independent study and during my course work in virology, I learned that the pathogenic mechanisms and immune response for the SARS-CoV-2 virus are intertwined like many diseases. Much of the pathogenicity of the SARS-CoV-2 virus begin with how this virus is able to evade or interfere with deployment of interferons. The immune system's first step in virus detection is through pattern recognition receptors (PRRs) that allow a host cell to detect the genetic material of a virus. These PRRs then signal other chemical communicators of the immune system like cytokines, chemokines, and interferons. Interferons are crucial to the body's cellular immune response, something that is crucial for intracellular pathogens like viruses (Harrison, Andrew G. Lin, Tao & Wang, 2020).

Coronaviruses have developed many ways to evade these PRRs over time, and there have been two found in particular for COVID-19. The first is that the virus is able to utilize double-membrane vesicles (DMVs) to guard their nucleic acid from recognition by PRRs. The second is by being able to directly disable the performance of immune signaling molecules via viral proteins.

By possessing the ability to antagonize interferon release, SARS-CoV-2 evades the normal means by which a virus is eliminated from the body. The body's response to this is by continuing to release cytokines and chemokines. These compounds are

normal in the immune response, but without the feedback from the interferons, there is a heightened release of these compounds. The role for cytokines and chemokines is the recruitment of other chemical messengers and immune cells like macrophages and neutrophils. This heightened response can be directly attribute to a “cytokine storm” that can be seen with COVID patients. These compounds are involved in the cascading inflammatory response of the body, and this is why much of this clinical disease is associated with symptoms of often severe body-wide inflammation.

For the competency of environmental/environmental influences we can look at the origination of COVID-19. It has been theorized that the SARS-CoV-2 virus jumped from bats to humans in Wuhan, China. This hypothesis is logical as this would mimic the exact way the last emerging coronavirus of significance to humans transposed species, SARS (sever acute respiratory syndrome). During that outbreak, and during the subsequent research regarding the virus, viruses very closely resembling SARS were not only found in a specific species of bat, but were also found to be zoonotic to humans. The evidence for this to be the same transmission model for COVID-19 is still lacking, as WHO-China states that “Since Wuhan is not a city or environment close to these bats’ environment, a direct jump from bats is not very likely.” This has left investigators with the theory that an intermediate species was needed for the transmission, and at this point, no species with a virus similar to COVID-19 has been found in the Wuhan area (World Health Organization, 2021). They consider this theory most probable compared to other theories like a laboratory accident. After greater than 50,000 animal specimens being tested, a “direct progenitor” of the virus has yet to be found.

A twist that Chinese investigators are starting to favor based on the evidence, or lack thereof of a direct, is that local transmission in Wuhan involves the frozen food chain. Rather than a wild animal being caught in the surrounding area of Wuhan and brought into town with the virus disseminating at that point, it is being suggested that the virus may have entered Wuhan in a frozen wild animal that was received in a shipment of frozen food. It has been tested that COVID-19 can be frozen, thawed then still detected via testing. At this point, this is also just a theory as there is only evidence that

this could lead to transmission. The direct evidence indicating a specific species, country of origin, and frozen food shipment are lacking.

This past year we got to use surveillance in practice during the COVID-19 pandemic. During my APE I had the experience to meet with local officials and hear their surveillance and monitoring strategies. Most of these offices were tasked with creating their own local monitoring dashboard that would have the local transmission statistics, which would then be used for decision making regarding stay-at-home-orders, mask mandates, etc. Additionally, these offices needed to utilize programs like contact tracing, where an individual who tested positive would give investigators their whereabouts and contacts. The investigators would then act as epidemiologists by determining risks and contacting those applicable to share their potential exposure to the virus.

COVID also cemented the importance of disease specific risk factors. We understand the elderly and immunocompromised are at most risk of acquiring a pathogenic infection, while younger populations, even children, can serve as asymptomatic carriers. This real-life lesson showed the need to understand these factors when making real life suggestions.

COVID brought an interesting compare and contrast for vectors. As mentioned above, there are still theories as to how this virus may be transmitted from other species. These species start with bats, which for a disease like SARS would be considered a vector, then move on to cat species and even pangolins have all been theorized as potential vectors. There is evidence that is lacking to support most of these claims. Traditionally these vectors are thought of as other species like rodent or arthropods. And they can serve as a reservoir that drives incidence of the disease. In COVID, as we have yet to identify a direct vector, humans may actually be as close as we can get to that for this disease, at this point.

This contrasts well with material from Environmental Health (MPH 802), specifically looking at well understood vector borne diseases like, for example, malaria. Malaria is an important disease to focus on because it demonstrates why an understanding of how both vector transmission and the environment are intertwined. The vector for malaria is the mosquito, and as climate change has been taking place, in

locations with increasing warm and wet seasons, the incidence of this disease has increased. Also in contrast, malaria is not caused by a virus or bacteria but by protozoan parasite, *Plasmodium*. A mosquito takes a blood meal from an infected human, and the protozoa then make their way to the mosquito's GI tract where they replicate and eventually migrate to salivary glands of the mosquito. From there, the mosquito can bite a naïve human infecting them with malaria.

My training as an MPH and DVM has prepared me to respond, advise, and advocate on not only infectious disease issues, but those within the wider lens of public health. I will be prepared to offer evidence-based suggestions when I encounter these situations on a regular basis throughout my career. This program has trained me to be able to identify risk factors and pathogens that suggest disease in both humans and animals. As a veterinarian, I must advocate for the health of my patient, always. This training has taught me that advocating for my patient many times may also be advocating for my client, either through education of zoonotic disease, or by using my professional status to support sound public health measures. It is not an exaggeration to say, that each of these competencies were addressed in every MPH and DVM course I took at KSU.

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Appendix

1 – 2018 Everybody Counts Survey

Survey Investigation into The Need for Low-Cost Veterinary Services in Riley County.
(Pet Owners Receiving Veterinary Service)

1. Do you have a pet?

   a. Dog Cat Other_____
   b. What is its age? _____
   c. Is he/she neutered? Yes/no (circle one)
   d. What is its breed? _____

2. Has your pet ever been to a veterinarian? (circle one)
   Yes No

   If so, which veterinarian/office_____

3. If this event hadn't existed, would you still be able to obtain veterinary care (such as vaccines) for your pet? (circle one)
   Yes No

4. Has your pet been vaccinated for rabies in the past 3 years? (circle one)
   Yes No

5. Do you think your pet is up-to-date on vaccinations? (circle one)
   Yes No

6. Has your pet ever been "dewormed" which means received intestinal parasite medication? (circle one)
   Yes No

7. Where did you get your pet?

   a. Shelter/Rescue
   b. Pet Store
   c. Breeder
   d. Friend
   e. Other _____

8. If your pet is not already spayed or neutered, would you be interested in having this done? (circle one)

   Yes No

9. If your pet is not already spayed or neutered, is this because?

   a. Cost
   b. Transportation challenges
   c. I have bred or plan to breed this pet
   d. I prefer to keep him/her intact
   e. Medical or anesthetic risks
   f. Other _____

10. Are you or a family member receiving human health services today? (circle one)

    Yes No

11. If so, did bringing your pet increase your willingness to have your own health screened? (circle one)

    Yes No

12. How did you get to this event?

    a. Drive
    b. Walk
    c. ATA Bus
    d. Other _____

13. Did bringing your pet make it hard to use other services at this event? (circle one)

    1 2 3 4 5
    Not Hard Very Hard

14. What is your annual household income level? (circle one)

Less than $15,000 $15,000-30,000

$30,000-45,000 $45,000-60,000

Greater than $60,000 Prefer not to answer

Please turn over to complete the survey. Thanks!

15. Which other costs make it challenging for you to obtain veterinary care? (circle all that apply)

    a. Alimony and Child Support
    b. Childcare expenses
    c. Food and clothing
    d. Health care costs
    e. Housing and utilities costs
    f. Student loans
    g. Other: _____

11. How/where could we market the veterinary services at Everybody Counts event better next year?

_____
_____
_____
_____

12. What other services would you like provided?

_____
_____
_____
_____

13. Do you have any family or friends that wanted to come to this event with their pet but were unable to?
    (circle one)

    Yes No

14. If so, why were they unable to come?

_____
_____
_____
_____
_____

15. Will you seek follow-up recommendations provided by vets at this event? (circle one)

    1 2 3 4 5

    Not Likely Very Likely

16. If not likely, why?

    a. Cost of veterinary care
    b. Transportation challenges
    c. I don't know where to find a veterinarian
    d. Can't get off work
    e. Other_____

16. What part of town do you live in?
    a. Northview
    b. Redbud
    c. South of Poyntz/Yuma
    d. West side
    e. Other (Name of neighborhood or cross streets) _____

Please turn over to complete the survey. Thanks!

2 – 2019 Everybody Counts Survey

Survey Investigation into The Need for Low-Cost Veterinary Services in Riley County.
(Pet Owners Receiving Veterinary Service)

1. Do you have a pet?

   a. Dog Cat Other_____
   b. What is its age? _____
   c. Is he/she neutered? Yes/no (circle one)
   d. What is its breed? _____

2. If you have more than one pet, please list the others here:

   _____
   _____
   _____
   _____

3. Did your pet(s) receive services at this event last year? (circle one)

   Yes No

4. Has your pet been to a veterinarian in the last 3 years? (circle one)

   Yes No

   If so, which veterinarian/office_____

   If so, when was last visit _____

5. If this event hadn't existed, would you still be able to take your animal in for a checkup? (circle one)

   Yes No

6. If your animal became ill or injured, would you be able to get veterinary care? (circle one)

   Yes No

7. If you had to pay for a veterinary emergency today, how much could you afford? (circle one)

Less than $100 $150-300

$300-1000 $1000-3000

Greater than $3000 Prefer not to answer

8. Do you have a certificate or record showing your pet has been vaccinated for rabies? (circle one)

   Yes No

9. When was your pet last vaccinated?

   _____

10. If a microchip were offered free of charge at this event, would you take advantage of this service? (circle one)

    Yes No

11. Has your pet ever been "dewormed" which means received intestinal parasite medication? (circle one)

    Yes No

12. Where did you get your pet?

    a. Shelter/Rescue
    b. Pet Store
    c. Breeder
    d. Friend
    e. Other _____

13. If your pet is not already spayed or neutered, would you be interested in having this done? (circle one)

    Yes No

14. If your pet is not already spayed or neutered, is this because?

    a. Cost
    b. Transportation challenges
    c. I have bred or plan to breed this pet
    d. I prefer to keep him/her intact
    e. Medical or anesthetic risks
    f. Other _____

Please turn over to complete the survey. Thanks!

15. Are you or a family member receiving human health services today? (circle one)

Yes No

16. If so, did bringing your pet increase your willingness to have your own health screened? (circle one)

Yes No

17. How did you get to this event?
    a. Drive
    b. Walk
    c. ATA Bus
    d. Other _____

18. Did bringing your pet make it hard to use other services at this event? (circle one)

1 2 3 4 5
Not Hard Very Hard

19. What is your annual household income level? (circle one)

Less than $15,000 $15,000-30,000

$30,000-45,000 $45,000-60,000

Greater than $60,000 Prefer not to answer

20. Which other costs make it challenging for you to obtain veterinary care? (circle all that apply)
    a. Alimony and Child Support
    b. Childcare expenses
    c. Food and clothing
    d. Health care costs
    e. Housing and utilities costs
    f. Student loans
    g. Other: _____

21. How/where could we market the veterinary services at Everybody Counts event better next year?

_____

_____

22. What other services would you like provided?

_____

_____

_____

23. If these services were provided at another event, would you be able to attend if required to arrive at a certain time & date? (circle one)

Yes No

24. Do you have any family or friends that wanted to come to this event with their pet but were unable to? (circle one)

Yes No

25. If so, Why were they unable to come?

_____

_____

_____

26. Will you seek follow-up recommendations provided by vets at this event? (circle one)

1 2 3 4 5

Not Likely Very Likely

27. If not likely, why?

    a. Cost of veterinary care
    b. Transportation challenges
    c. I don't know where to find a veterinarian
    d. Can't get off work
    e. Other_____

28. What part of town do you live in?

    a. Northview
    b. Redbud
    c. South of Poyntz/Yuma
    d. West side
    e. Other (Name of neighborhood or cross streets) _____

Please turn over to complete the survey. Thanks!

3 – PPAS Microchip Clinic Protocol

Date: 10/3/20 (Saturday)

Time: 9:00am-1:00pm

Location: Forest Park

Personnel:

2-3 Prairie Paws staff/volunteers (1-2 Reception, 1 Chip registration)

8-10 KSU representatives (3-4 Administration pairs, 1-2 Floaters)

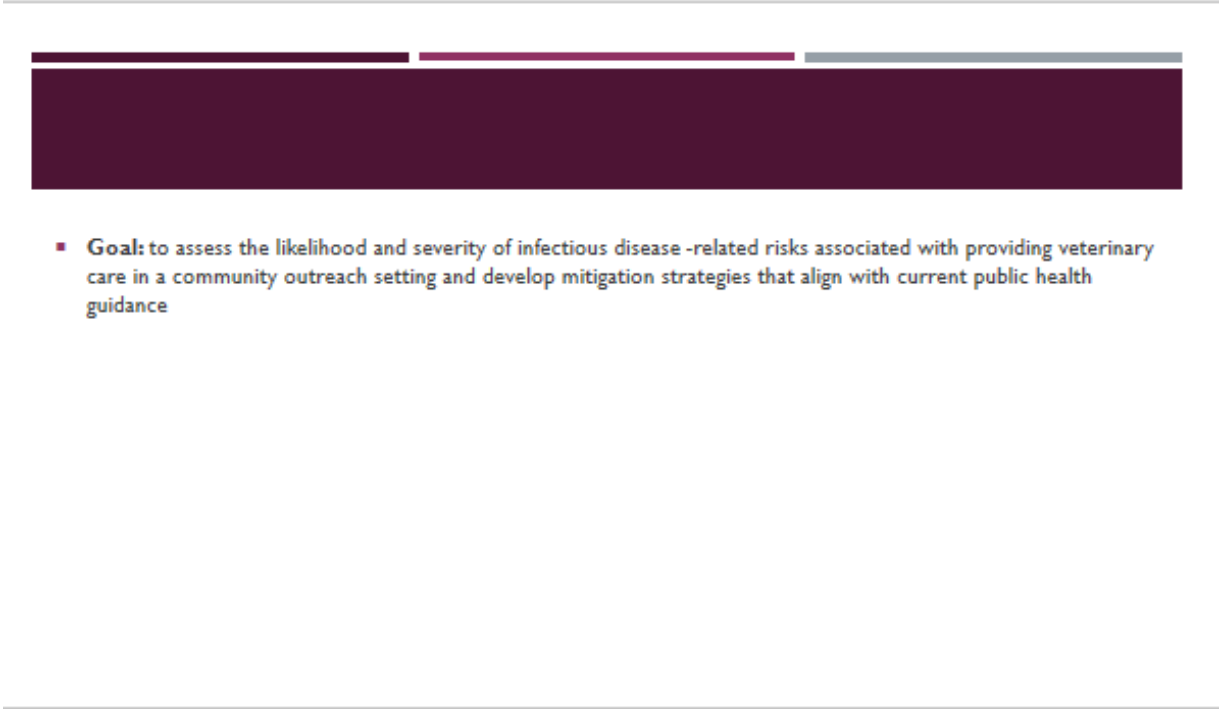
Chipping Stations: 2 per trailer (if needed), and 2 per tent.

Supplies needed: Tent (x2), scanners, clipboards, pens.

Protocol-

1. All staff & volunteers will wear masks and gloves. Gloves will be changed between patients/clients.
2. Clients will pull into parking spot.
3. **Reception** will approach vehicle and give client paperwork to fill out.
4. When **administration pair** is ready for a patient they will inform reception.
5. Once paperwork is complete, **reception** will escort pet from vehicle to available **administration pair**. Client will remain in vehicle.
6. Once chip is implanted, preventative can then be given to patient based on species, size and acceptable product.
7. Once medication is administered, remainder of product package and microchip paperwork along with animal will be given back to **reception**.
8. **Reception** will return animal to vehicle with waiting client.
9. **Reception** will deliver paperwork to **registration**.
10. **Administration pairs** will sanitize pens and clipboards between clients.

4 – COVID Risk Mitigation Presentation



WHY THIS MATTERS

- Veterinary care is essential to public health
- How is this population also impacted by the ongoing pandemic? Possibly less income, fewer options for affordable vet care, reprioritizing budgets
- Evictions are increasing at this time.

WHY THIS MATTERS

According to the U.S. Census, 25.86% of the adult renters in Missouri have no or slight confidence in their ability to make next month's rent payment.

Since the CDC eviction moratorium was enacted, there has been an average of 75 filings every week in Kansas City, Missouri, according to Princeton University's Eviction Lab.

According to the U.S. Census, 26.52% of the adult renters in Kansas have no or slight confidence in their ability to make next month's rent payment.

According to the U.S. Census, 10% of adults in Kansas either missed last month's housing payment or have little to no confidence that they can pay next month's housing payment.

Source: https://nlihc.org/coronavirus-and-housing-homelessness/eviction-update

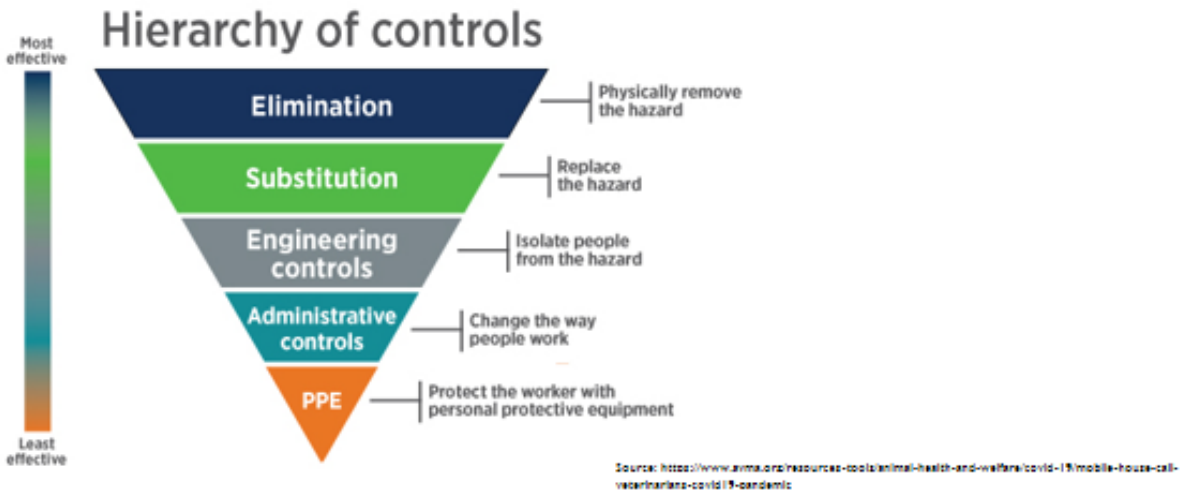
WHY THIS MATTERS

- Veterinary care is essential to public health
- How is this population also impacted by the ongoing pandemic? Possibly less income, fewer options for affordable vet care, reprioritizing budgets
- Evictions are increasing at this time.
- Bottom line: essential veterinary is necessary for the health and welfare of these pets and improves overall public health

RISK MANAGEMENT

- Risk Assessment
- Risk Mitigation
- Risk Communication

AVMA RISK MANAGEMENT GUIDANCE



HAZARD IDENTIFICATION

1- Staff member contracts COVID-19 from exposure to client

2- Staff member contracts COVID-19 from exposure to coworker

3- Staff contracts COVID-19 from exposure to pet

4- Client contracts COVID-19 from exposure to staff

5- Client contracts COVID-19 from exposure to other clients/facility

REDUCING EXPOSURE - PRACTICAL WORKPLACE EXAMPLES (AVMA)

- **Medium Exposure- close contact with people who are not suspected patients**
  - Engineering Controls: physical barriers
  - Administrative Controls – PPE, minimize contact between staff and with clients, restrict client access to the treatment area, concierge service to minimize face to face contact, telemedicine (ipads?) for client/vet communication, leash exchange,
  - PPE: gloves, mask, face shield, +/- gown

(Resuming Practice Operations, 10)

RISK MITIGATION-ENGINEERING CONTROLS

- **Physical Barriers**
  - Separation between clients and veterinary personnel -designated check-in area and waiting area
  - Use of a table for pet handoff area
  - Shelter Medicine mobile unit for all patient exams - physical separation of staff from public/ can be disinfected between patients

RISK MITIGATION-ADMINISTRATIVE CONTROLS

- **Administrative Controls**
  - Screening questions for staff and clients – +/- temperature checks
  - Managing flow of clients – schedule appointments in advance , Sign in and receive a time to come back for walk -ins, hand out numbered tickets so that patients don't wait in a line
  - Designated waiting area for clients
  - Minimize contact between staff and with clients (one or two designated check-in volunteers with contact with public)
  - Concierge service to minimize face to face contact
  - Leash exchange at check-in
  - Restrict client access to the treatment area
  - Telemedicine (ipads?) for essential client/vet communication

RISK MITIGATION – PPE /BIOSECURITY

- **PPE: required for staff and clients**
  - Staff - gloves, mask, face shield, +/- gown
  - Clients – mask
  - Require frequent handwashing
  - Disinfect equipment and surfaces between clients
  - Disinfect client waiting area between clients

(Resuming Practice Operaitons, 10)

RISK COMMUNICATION

- Advertise COVID protocols on event flyers/communication
- Post signage for clients and staff
  - Occupancy limits
  - Social distancing markers
  - Cleaning procedures/ reminders
  - Mask requirements
  - Screening questions/instructions for clients with symptoms

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
- Prairie Paws Microchip Clinic

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
  - 3-6 students at a time
  - More than 20 partnerships across region
  - Staff team of 6
  - New Vehicle!

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
  - Suspended services in March 2020
  - Resumed in June 2020 with protocols
    - Eliminate student contact w/shelter
    - Eliminate lunches
    - Eliminate out of state trips
    - Pre-work day screening
    - PPE

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

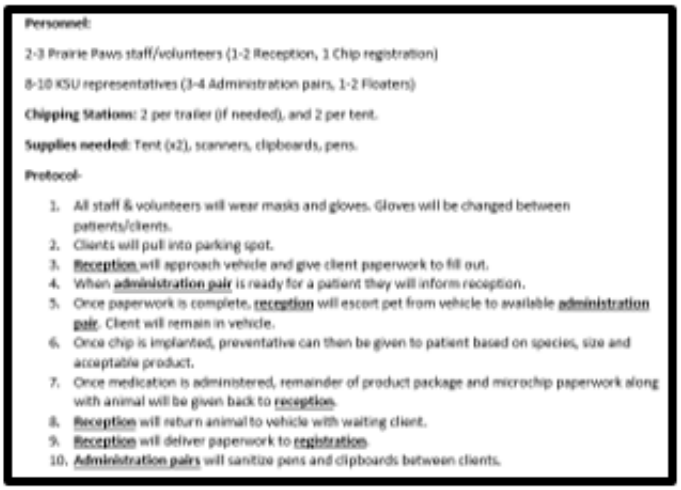
- Shelter Medicine Clinical Rotation
  - Suspended services in March 2020
  - Resumed in June 2020 with protocols
  - Have had 2 isolated positive cases since resumption
    - No spread during either event

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Prairie Paws Microchip Clinic
  - October 2020, Ottawa, KS
  - Clients served: 175
  - Preventative Measures/Impact/Lessons Learned
    - Drive Thru/Walk up

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Prairie Paws Microchip Clinic
  - October 2020, Ottawa, KS
  - Clients served: 175
  - Preventative Measures/Impact/Lessons Learned
    - Drive Thru/Walk up



Personnel:

2-3 Prairie Paws staff/volunteers (1-2 Reception, 1 Chip registration)

8-10 KSU representatives (3-4 Administration pairs, 1-2 Floaters)

Chipping Stations: 2 per trailer (if needed), and 2 per tent.

Supplies needed: Tent (x2), scanners, clipboards, pens.

Protocol-

1. All staff & volunteers will wear masks and gloves. Gloves will be changed between patients/clients.
2. Clients will pull into parking spot.
3. **Reception** will approach vehicle and give client paperwork to fill out.
4. When **administration pair** is ready for a patient they will inform reception.
5. Once paperwork is complete, **reception** will escort pet from vehicle to available **administration pair**. Client will remain in vehicle.
6. Once chip is implanted, preventative can then be given to patient based on species, size and acceptable product.
7. Once medication is administered, remainder of product package and microchip paperwork along with animal will be given back to **reception**.
8. **Reception** will return animal to vehicle with waiting client.
9. **Reception** will deliver paperwork to **registration**.
10. **Administration pairs** will sanitize pens and clipboards between clients.

CVO EXAMPLES

- Suggestions for veterinary services:
  - Minimize Volunteers
  - PPE
  - Minimize client contact
    - Designated reception
    - Only pet travels through service stations
    - Ipad for client communication
- Can aid in tailoring a specific protocol
- Suggestions for other services:
  - Individualized for each service

COVID GUIDANCE/RESOURCES

- https://www.cdc.gov/coronavirus/2019-ncov/community/veterinarians.html
- https://www.maddiesfund.org/assets/webcasts/covid-control-strategies-presentation-slides.pdf
- https://www.avma.org/resources-tools/animal-health-and-welfare/covid-19/mobile-house-call-veterinarians-covid19-pandemic
- https://www.maddiesfund.org/mcc-covid-control-strategies-maintaining-safety.htm
- https://www.ontariosheltermedicine.org/covid-19-recovery-toolkit/
- https://sheltermedicine.vetmed.ufl.edu/covid-19-resources/covid-19-management-animal-shelters/
- https://www.maddiesfund.org/covid-19-emergency-foster-care-resources.htm

5 – 2018 Research Poster

One Health Service Event to Provide Veterinary Preventative Care to Low Income Kansas Residents

Ronald Orchard, Kate KuKanich & Alyssa Comroe
Department of Clinical Sciences
College of Veterinary Medicine, Kansas State University, Manhattan, KS

Abstract

In a One Health collaborative effort, the Kansas State University College of Veterinary Medicine (KSU CVM) joined the annual 2018 Riley County Everybody Counts service day providing free services to community members in need. In addition to providing veterinary care, a survey was conducted to gather information about need within the community and status of veterinary care. Forty-six pets (32 dogs and 14 cats), belonging to 30 families, were examined, vaccinated, and dewormed. Forty-one percent (9/22) of pet owners received free healthcare services for themselves as well at the event. Reported annual household incomes were: <$15,000 (7/26), $15-30,000 (12/26), $30-45,000 (1/26), $45-60,000 (2/26), and prefer not to answer (4/26). Thirty-eight percent (9/24) of families reported that if this free event did not exist, they could not afford veterinary care elsewhere. Eighty percent (20/25) of families reported that their pets were not up-to-date on vaccines, and 61% (14/23) reported that their pets had never received gastrointestinal deworming medication. Thirty-eight percent (9/24) of pets were intact, and cost was the most common reason reported for not having pets spayed or neutered. Providing veterinary services at events such as Everybody Counts fulfills an essential One Health goal to provide preventative veterinary care to low-income community members, thus minimizing spread of infectious diseases (e.g.rabies, parasites) between pets and people and supporting the psychological and physiological wellbeing of community members through healthy pet ownership. Future veterinary service events will build on these data to improve service opportunities within the community.

Introduction

- Everybody Counts was created to provide medical and dental care, food donations, and various social services in a single location on one day in August at no cost, to the most vulnerable population in Riley County, with a special focus on low socioeconomic status (SES) homes.
- In 2018, The KSU College of Veterinary Medicine joined Everybody Counts to provide preventative medicine (e.g. exams, vaccines, deworming, etc.) at no cost for pets, making this a One Health community event.
- Keeping pets in the community healthy through vaccination and deworming at this event in turn minimizes zoonotic disease transfer and keeps our community healthier.
- Offering human and animal services at a single event has been linked to improved human health outcomes for clients with low SES, because the human-animal bond within this population is so strong.[1,2]

Materials and Methods

- A 28 question paper survey was distributed to pet owners as they checked in at Everybody Counts, Manhattan, KS in 2018. The survey was available in English and Spanish.
- Surveys were completed and returned during the Everybody Counts event.
- Results were summarized with descriptive analyses.

Objectives

- To establish which subsidized veterinary services are needed by the most vulnerable population in Riley County and to determine ways that future One Health events can be implemented to better meet this population's needs.

Summary of Results

- Forty-six pets (32 dogs and 14 cats), owned by 30 families, were cared for by the KSU College of Veterinary Medicine team at Everybody Counts in 2018.
- The survey was completed by 26 pet owners.
- Seventy-six percent of participants reported that their annual household income was <$30,000 per year (**Figure 1**), pet owners want to provide care for them. Without Everybody Counts' veterinary service, 38% of attending pet owners reported they would not be able to provide even limited veterinary care for their pets.
- Eighty percent of visiting pets were reportedly **not** up-to-date on their core vaccines, including rabies.
- Most pets (61%) had reportedly ***never*** received gastrointestinal parasite prevention.
- Thirty-eight percent of pets were intact, the most common reason listed by respondents as to why their pets were not spayed or neutered was the cost of surgery (87.5%).
- Forty-one percent of visiting pet owners received health care services for themselves at the Everybody Counts event, and 47% said that bringing their pet increased their motivation for having their own health screened (**Figure 2**). One hundred twenty-three exams were performed on the human health portion of Everybody Counts (This includes vision, dental, school physical, mental health & vaccines).
- Pet owners traveled mostly by car (**Figure 3**) and came from several neighborhoods in the Manhattan community (**Figure 4**), mostly (32%) from the Northview area, a neighborhood too far away for participants to be able to walk to the event.
- Following the 2017 US Census American Community Survey, Northview was designated by the CDC as an area of interest due to numerous needs making this population socially vulnerable. These needs include, but are not limited to: financial security, transportation, care for elderly and disabled, and human health outcomes, specifically life expectancy, which is more than 2 years under the median for Riley County.[3]

Figure 1. Annual household incomes reported.

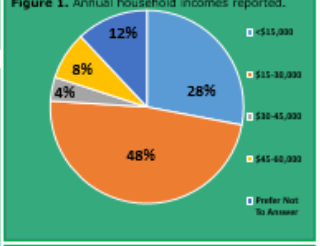


Figure 2. "Did this event make you more likely to have your own health evaluated?"

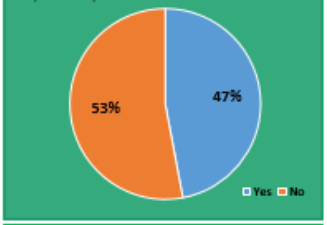


Figure 3. Survey summary of how pet owners traveled to Everybody Counts.

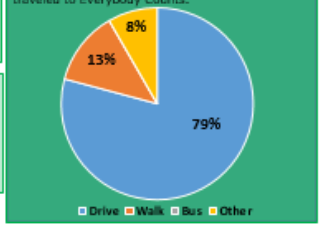
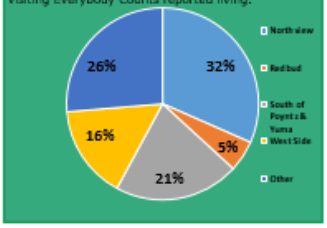


Figure 4. Area of Manhattan KS in which pet owners visiting Everybody Counts reported living.



Discussion/Conclusions

- Pet owners from low SES households are willing to spend their limited resources to provide veterinary care despite severe income limitations; others rely solely on no cost events such as Everybody Counts. A community mechanism to consistently provide subsidized veterinary services is warranted in Riley County.
- Examinations, vaccination and deworming should remain focal services at such events to minimize disease in pets, as well as zoonotic disease spread to family and community members.
- Providing low-cost or free spay/neuter events would help pet owners who cannot afford sterilization surgery elsewhere and would benefit the community by decreasing unwanted pet reproduction and intact male dog aggression.
- Offering veterinary care at this One Health community event did motivate some pet owners to seek medical care themselves; at future events, increased communication between healthcare providers and signage about services offered may help refer clients in both directions to seek additional care during the event itself.
- These data demonstrate that the Northview neighborhood would be an ideal location for a similar no cost or low-cost veterinary community event, at a walkable, centralized site.

References

1. Sweeney JM, et al. "Clinical One Health: A Novel Healthcare Solution for Underserved Communities." *One Health*, 2018;6:34-36.
2. Rhoades H, et al. "Pet Ownership among Homeless Youth: Associations with Mental Health, Service Utilization and Housing Status." *Child Psychiatry and Human Development* 2015;46:237-244.
3. U.S. Census American Community Survey 2013-2017, (https://svi.cdc.gov/Documents/CountyMaps/2016/Kansas/Kansas2016_Riley.html)

Acknowledgments

The authors would like to thank Debbie Nuss and Dave Baker who are the main community organizers of Everybody Counts, as well as the entire KSU College of Veterinary Medicine team who volunteered at the event and the many corporate sponsors who donated veterinary products and pet food.

6 – 2019 Research Poster

Year-to-Year Comparison of a One Health Service Event to Provide Veterinary Preventative Care to Low Income Kansas Residents

Ronald Orchard, Kate KuKanich & Alyssa Comroe
Department of Clinical Sciences
College of Veterinary Medicine, Kansas State University, Manhattan, KS

Abstract

In a One Health collaborative effort, the Kansas State University College of Veterinary Medicine joined the annual 2019 Riley County Everybody Counts service day, for the second year in a row, providing free veterinary services to community members in need. Additionally, a survey gathered information about need within the community. In 2019, 82 pets (59 dogs, 23 cats, 42 families) and in 2018 46 pets (32 dogs, 14 cats, 30 families) were examined, vaccinated, and dewormed. Twenty percent (5/20) of 2019 respondents received free healthcare services for themselves at the event. Reported annual household incomes were: <$30,000 in 65% (2019) and 73% in 2018. In 2019, 60% of families reported that if this free event did not exist, they could not afford veterinary care elsewhere, compared with 35% in 2018. Thirty-five percent (7/20) of families reported that their pets had not been examined by a veterinarian in the past 3 years. Fifty-five percent (11/20) of pets were intact compared to 38% in 2018. Cost was the most common reason reported for not having pets spayed or neutered in both years. Comparing these data over time allows identification of trends and improved targeting of resources for service opportunities within the community. Providing veterinary services at events such as Everybody Counts fulfills an essential One Health goal to provide preventative veterinary care to low-income community members, thus minimizing spread of infectious disease (rabies, parasites) between pets and people and supporting the psychological and physiological wellbeing of community members through healthy pet ownership.

Introduction

- Everybody Counts was created to provide medical and dental care, food donations, and various social services in a single location on one day in August at no cost, to the most vulnerable population in Riley County, with a special focus on low socioeconomic status (SES) homes.
- In 2018, The KSU College of Veterinary Medicine joined Everybody Counts to provide preventative medicine (e.g. exams, vaccines, deworming, etc.) at no cost for pets, making this a One Health community event.
- Keeping pets in the community healthy through vaccination and deworming at this event in turn minimizes zoonotic disease transfer and keeps our community healthier.
- Offering human and animal services at a single event has been linked to improved human health outcomes for clients with low SES, because the human-animal bond within this population is so strong.[1,2]

Materials and Methods

- A 28 question paper survey was distributed to pet owners as they checked in at Everybody Counts, Manhattan, KS in 2019.
- Surveys were completed and returned during the Everybody Counts event.
- Results were summarized with descriptive analyses.
- Select results were compared to data collected at the 2018 Everybody Counts event/

Objectives

- To establish which subsidized veterinary services are needed by the most vulnerable population in Riley County and to determine ways that future One Health events can be implemented to better meet this population's needs.

Summary of Results

- Eighty-two pets (59 dogs and 23 cats), owned by 42 families, were cared for by the KSU College of Veterinary Medicine team at Everybody Counts in 2019.
- The survey was completed by 42 pet owners.
- Reported household incomes: <$30,000 in 65% (2019) and 73% in 2018. (**Figure 1**). Without Everybody Counts' veterinary service, 60% of attending pet owners reported they would not be able to provide even limited veterinary care for their pets, compared to 35% in 2018 (**Figure 2**).
- Thirty-five percent (7/20) of families reported that their pets had not been examined by a veterinarian in the past 3 years, while eighty percent of visiting pets were reportedly ***not*** up-to-date on their core vaccines, including rabies (**Figure 3**).
- Fifty-five percent (11/20) of pets were intact compared to thirty-eight percent in 2018 (**Figure 4**). The most common reason listed by respondents as to why their pets were not spayed or neutered was the cost of surgery overwhelmingly (>75%) in both years.
- Twenty percent of visiting pet owners received health care services for themselves at the Everybody Counts event, compared to forty-one percent in 2018. Ninety-eight exams were performed on the human health portion of Everybody Counts (This includes vision, dental, school physical, mental health & vaccines).
- Pet owners traveled mostly by car in both years and came from several neighborhoods in the Manhattan community, mostly (20%) from the Northview area, a neighborhood too far away for participants to be able to walk to the event.
- Following the 2017 US Census American Community Survey, Northview was designated by the CDC as an area of interest due to numerous needs making this population socially vulnerable. These needs include, but are not limited to: financial security, transportation, care for elderly and disabled, and human health outcomes, specifically life expectancy, which is more than 2 years under the median for Riley County.[3]

Figure 1. Annual household incomes reported.

Figure 2. Would you be able to recieve care if this event didn't exist?

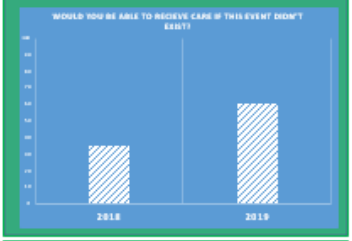
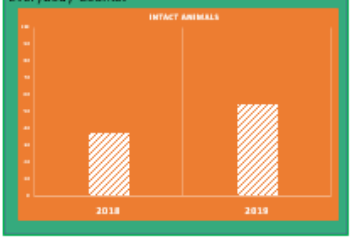


Figure 3. Animals having seen a veterinarian in the past 3 years.

Figure 4. Percent of intact animals receiving care at Everybody Counts.



Discussion/Conclusions

- Pet owners from low SES households are willing to spend their limited resources to provide veterinary care despite severe income limitations; others rely solely on no cost events such as Everybody Counts. A community mechanism to consistently provide subsidized veterinary services is warranted in Riley County.
- Examinations, vaccination and deworming should remain focal services at such events to minimize disease in pets, as well as zoonotic disease spread to family and community members.
- Providing low-cost or free spay/neuter events would help pet owners who cannot afford sterilization surgery elsewhere and would benefit the community by decreasing unwanted pet reproduction and intact male dog aggression.
- Offering veterinary care at this One Health community event did motivate some pet owners to seek medical care themselves; at future events, increased communication between healthcare providers and signage about services offered may help refer clients in both directions to seek additional care during the event itself.
- These data demonstrate that the Northview neighborhood would be an ideal location for a similar no cost or low-cost veterinary community event, at a walkable, centralized site.

References

1. Sweeney JM, et al. "Clinical One Health: A Novel Healthcare Solution for Underserved Communities." *One Health*, 2018;6:34-36.
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Acknowledgments

The authors would like to thank Debbie Nuss and Dave Baker who are the main community organizers of Everybody Counts, as well as the entire KSU College of Veterinary Medicine team who volunteered at the event and the many corporate sponsors who donated veterinary products and pet food.

VIEW NOW
Scan for 2018 results.

7-PPAS COVID Hygiene Protocol

PPAS COVID Hygiene Protocols

July, 2020

Maintaining consistent and thorough personal hygiene and cleaning practices while at work is a way to ensure that we are doing all we can to keep ourselves and each other safe.

Hygiene Practices for Staff and Volunteers

- ❒ Wear a clean face covering (MASK) at all times while on PPAS property, and while on the clock off property (e.g. transport, supply pickup, TNR, etc.)
- ❒ Wash hand thoroughly (♪ *Happy Birthday* ♪)and frequently (when soap, water, and paper towels are not accessible, use a 60% or greater alcohol-based hand sanitizer)
- ❒ Avoid touching your eyes, nose and mouth with unwashed hands
- ❒ Cover coughs and sneezes with a tissue or your elbow (when your facemask is down, such as in your own office). Throw used tissues in the trash and wash hands
- ❒ Wipe your entire workstation before and after use with disinfecting wipes (Include your phone, desk surfaces, keyboard, mouse, monitor, chair, etc.)
- ❒ Wipe frequently used handles and surfaces with a disinfecting wipe before and after use
- ❒ Minimize use of items not easily cleaned and disinfected or that cannot be routinely laundered (such as fabric, carpet or other soft surfaces)
- ❒ Remove all personal items from desk/workstation/office at end of shift to allow for cleaning
- ❒ Avoid sharing supplies, computer equipment, phones, etc., where possible to reduce the risk of surface contamination and transmission
- ❒ Don't share food or beverages
- ❒ Give your teammates a gentle reminder if they're not following this guidance
- ❒ Offer suggestions to Melissa for additional ways to support hygiene & cleaning

8- PPAS COVID Screening Protocol

PPAS COVID Screening Protocol

July, 2020

Before attending a scheduled work shift, answer these questions for yourself and if yes to any please call Melissa at 785-242-2967

1. Have you been exposed to a person confirmed with COVID-19
2. Are you experiencing any of the following: fever, cough, shortness of breath, fatigue, body aches, headache, sore throat, loss of taste/smell?
3. Have you travelled out of state within the past 7 days?

Screening Checkpoints for Managers

If staff reports a 'yes' response to any of the screening questions, inform them they will not be required to attend work that day. Encourage a COVID test, and in high-risk situations, a 10 day quarantine.

9- PPAS COVID Physical Distancing Protocols

PPAS COVID Physical Distancing Protocols

July, 2020

From the time you enter the lobby of our building, until you leave at the end of the day, you'll want to adhere to physical distancing guidelines and help each other do the same. And for those working in the field or traveling for work, these guidelines will also help you safely navigate your workday.

10 Physical Distancing Steps for Staff and Volunteers

1. Maintain 6' of physical space unless safety or core function of the work activity requires a shorter distance
2. Wear a clean mask when at all times.
   Wash and thoroughly dry your cloth face coverings between shifts
3. Follow directional signs and use designated entrances and exits
4. Switch meetings to phone or virtual whenever possible
5. Adhere to posted capacity limits for break room and conference room
6. One staff member in a pod at a time
7. One staff member in a cat room at a time
8. Clients only allowed in lobby and restroom
9. Bring your lunch whenever possible and eat at least 6' away from others. If you order out, consider coordinating orders with others to reduce deliveries
10. Give your teammates a gentle reminder if they're moving in too close or if they don't have their face covering on properly
11. Offer suggestions to your manager for additional ways to support physical distancing

Self-awareness and accountability for our own actions are key to assuring everyone's safety.

Physical Distancing Checklist for Managers

- ❒ Inform (and keep reminding) your team of their 10 Physical Distancing Steps; post the 11 Steps prominently
- ❒ Model all 11 Steps at all times, including being a good sport when you get reminded
- ❒ Reduce occupancy in meeting and break areas to 50% or less and post signs inside and outside the space accordingly
- ❒ Post physical distance markers using tape or signs to denote 6' of spacing in common areas
- ❒ Block-off, post or take away seating to ensure 6' between people
- ❒ Limit in-person meetings and gatherings as much as possible and encourage phone and virtual alternatives
- ❒ Ensure one-way foot traffic wherever possible by posting directional signs
- ❒ Consider whether modifications of workstations (plexiglass extensions, for example) are necessary to achieve physical distancing and order accordingly
- ❒ As much as possible, set staggered schedules for arrivals, departures, breaks and lunch to help team members maintain physical distance
- ❒ As much as possible, minimize the number of people your staff interact with by setting up consistent work teams throughout the shift and the week
- ❒ As much as possible, reduce in-person work and shift to remote work
- ❒ Establish designated areas for pick-ups and deliveries
- ❒ Prohibit non-essential visitors
- ❒ Establish a system for regular suggestions and feedback from the team to improve and support physical distancing
- ❒ Reinforce your team for adhering to physical distancing and for being good sports about reminders. Discipline team members for non-compliance when one or two good-natured reminders have failed to get a positive response and consistent change in behavior. This will aid in ensuring everyone's safety, including their own

10- PPAS COVID Exposed Protocol

Working with potentially COVID exposed animals or clients

July 2020

Client Interactions

1. Don/doff PPE as seen below
2. Remaining a minimum of 6 feet away from client.
3. If relinquishing, have client place animal in kennel in isolation.
4. Have client sign relinquishment form.
5. Inform client they will be emailed a receiving form to share information about the animal.

Animal Interactions

While there is no evidence at this time that any animals, including companion animals, in the United States, might be a source of infection for humans, it is prudent to keep companion animals that came from households where a person was infected with COVID-19 separated from the general shelter population out of an abundance of caution to protect both human and animal health.

Intake Exams

1. Wear PPE while doing intake exams and treatments in order to reduce contagious disease risks.
    a. Wash hands with soap and water after gloves are removed and discarded.
2. Routinely clean and sanitize animal intake areas as well as materials in animal areas such as food and water bowls and bedding.
3. Do not bathe animals or use disinfectant topically on intake because of COVID 19 concerns. There is no need to bathe an animal because of COVID-19 concerns; at this time, there is no evidence that the virus that causes COVID-19 can spread to people from the skin or fur of pets.

Housing and in-shelter daily care

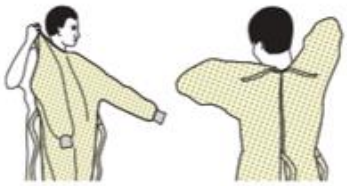
1. Animal will be housed in isolation for 14 days.
2. Assigned kennel staff team member will be responsible for care after their assigned pods.
3. Don Personal Protective Equipment (PPE)
4. Walk dogs outside for elimination and exercise in designated side yard.
    a. Collect feces using gloved hands or a bag and disposed of immediately.
    b. Spray sanitize yard after use.
5. Cleaning visible dirty surfaces in kennel followed by disinfection. Coronaviruses are readily inactivated by disinfectants typically used in animal shelters, including accelerated hydrogen peroxide at concentrations used for other more common shelter pathogens (e.g. 1:64 (2 oz/gallon) for 5 minutes for coronaviruses, 1:32 (4 oz/ gallon) for 10 min. for parvoviruses). **Normal cleaning and disinfection protocol for both animal housing and common areas is sufficient. Ask Melissa if unsure of that protocol.**
6. Wipe light switches and doorknobs when done in room.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown

USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

CDC

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container

2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

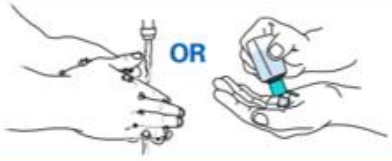
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

11- COVID Exposed Animal Disclosure

DISCLOSURE

Name: _____

Number:_____

Date: _____

EXPOSED TO A PERSON INFECTED WITH COVID-19 (QUARANTINE COMPLETED)

What is the problem? This animal was exposed to someone known or strongly suspected to be positive for COVID-19. In most cases this means the animal lived in the same household with an infected person.

What has PPAS done so far? Followed current recommendations to minimize any possibility of spread to people from this animal. This includes a 14-day quarantine period before releasing to a foster or adoptive home.

At the time of the last update to this protocol [July, 2020], experts continue to advise that:

- The risk of a pet catching the infection is not zero, but is very low
- The risk of an infected pet spreading the infection to other pets or people is also very low

What still needs to be done? Observe local guidelines for handling of pets during this pandemic.

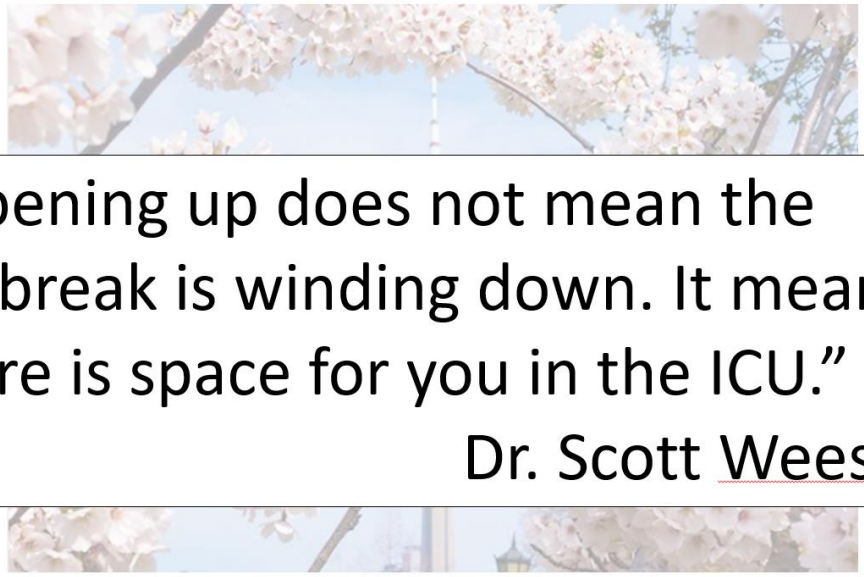
What can the adopter expect? It is impossible to say "never" in biology but we are confident that this animal poses negligible risk to people and other pets, based on available information about the virus and this animal.

_____

Client Signature

12 COVID 5 Rings Training PowerPoint

Infection Control Protocol: Additional Measures During COVID-19

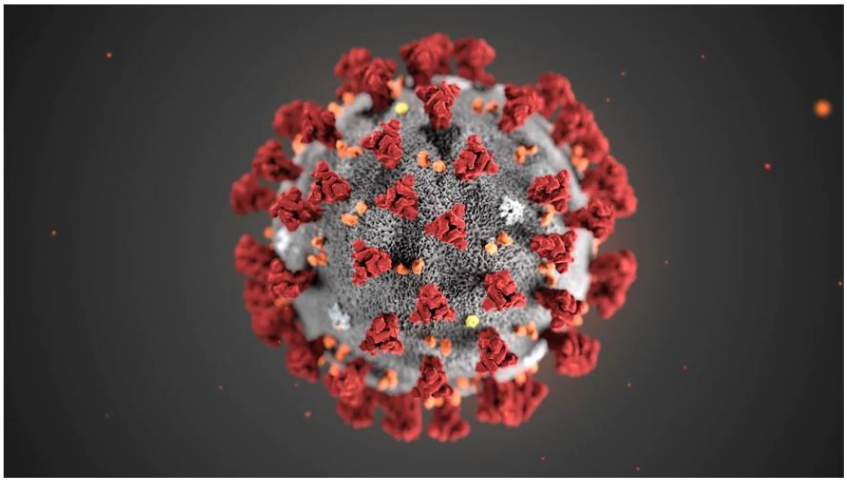


"Opening up does not mean the outbreak is winding down. It means there is space for you in the ICU."

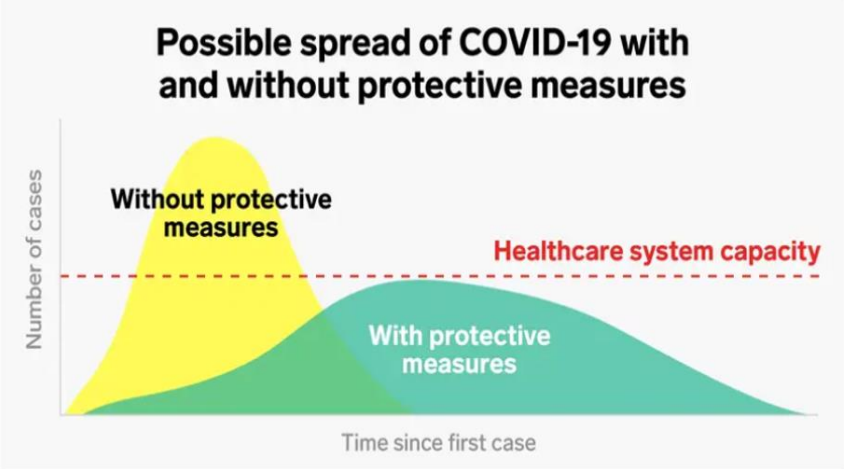
Dr. Scott Weese

Now it’s a waiting game…

- Treatment
- Vaccine
- Herd immunity



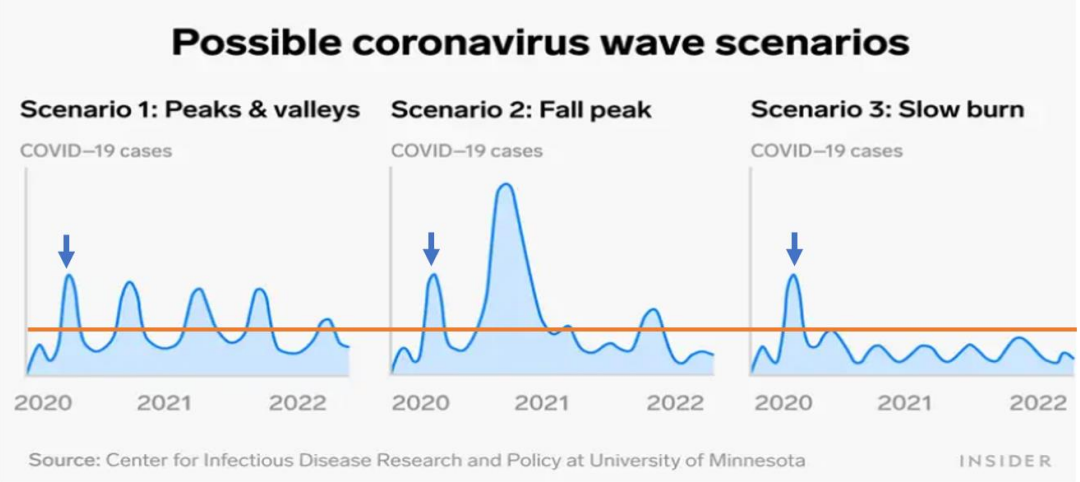
The goal of lockdowns and travel restrictions is to slow the virus' spread and promote social distancing in order to keep the outbreak within the capacity of healthcare systems.



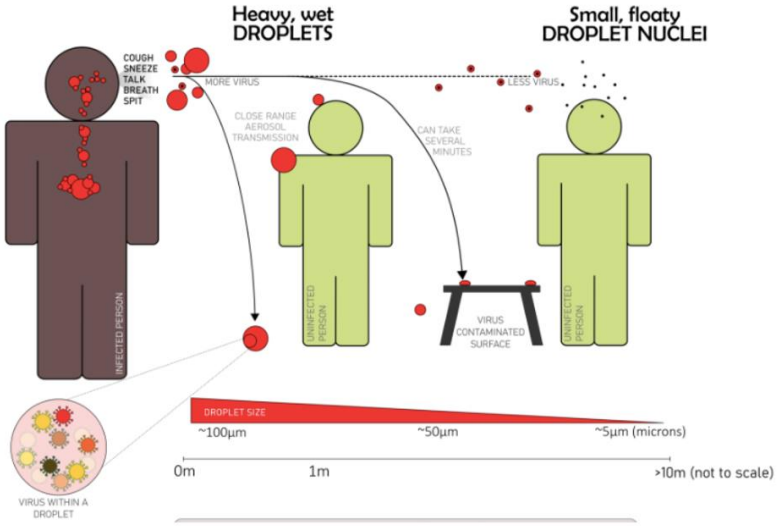
"It is so transmissible, and it is so widespread throughout the world, that even if our infections get well controlled and go down dramatically during the summer, there is virtually no chance it will be eradicated."

– Dr. Anthony Fauci, CDC

Implications for PPAS operations

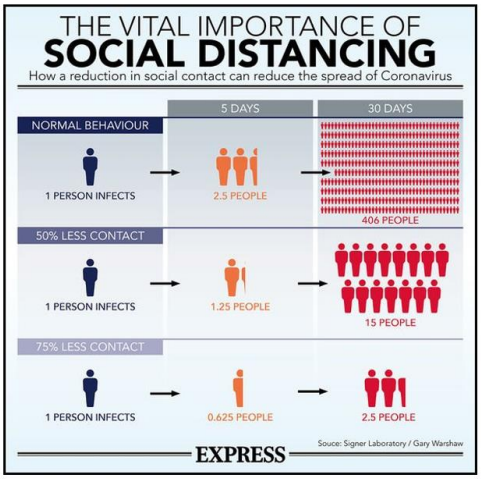


How does SARS-CoV-2 spread?



Source: Kaiserscience

Why every individual matters



Source: Express UK

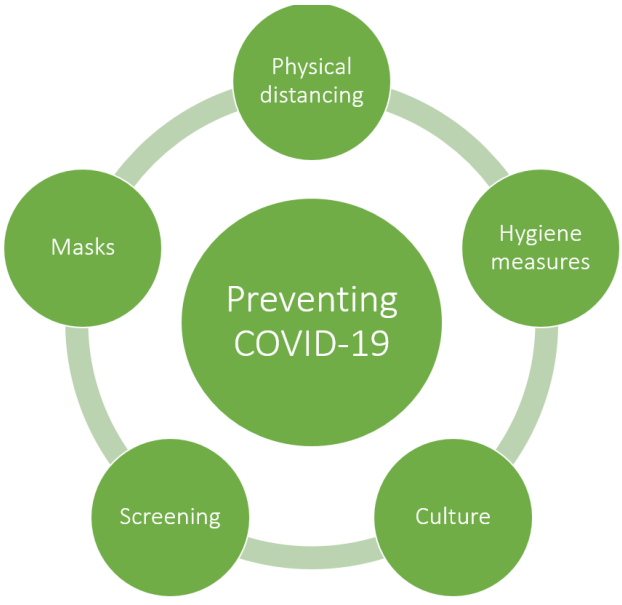
Can we do this?

MEDICAL DISPATCH

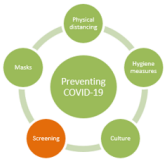
AMID THE CORONAVIRUS CRISIS, A REGIMEN FOR REËNTRY

Health-care workers have been on the job throughout the pandemic. What can they teach us about the safest way to lift a lockdown?

By Atul Gawande
May 13, 2020

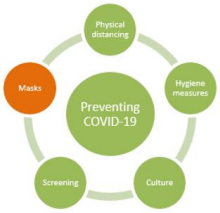


One: Screening

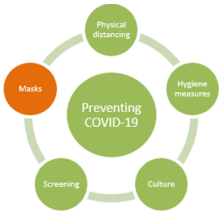


- Screening questions help keep us safe by **identifying people who may be infected with COVID-19**
- Everyone, every day
- Self-screening is very important. Don't come to work if you think you may have COVID-19

Two: Masks

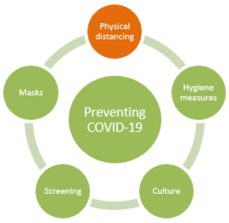


Two: Masks

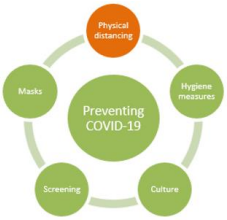


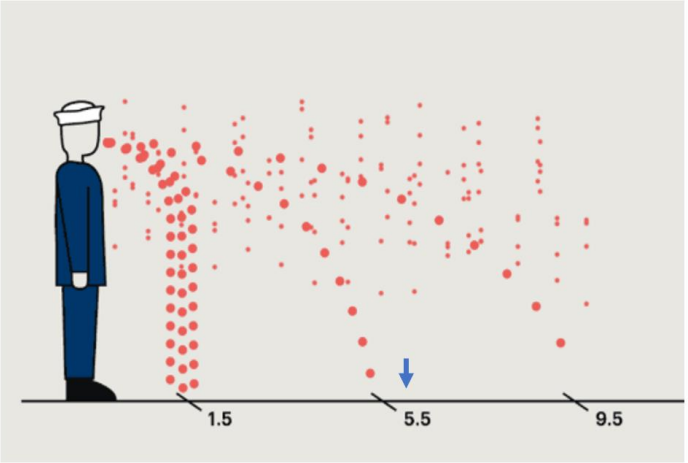
- Masks help keep others safe by **preventing aerosols from getting from the wearer to the other person**
- They also help keep the wearer safe, but are less effective for this
- Masks must be worn correctly, covering the mouth and nose and fitting snugly against the face.
- Everyone in the building needs to wear a mask.
- Wash your mask after each workday. Normal laundry is fine.

Three: Physical Distancing



- Physical distancing keeps us safe by **preventing virus-containing aerosols from reaching** our mouth, nose and eyes
- This is the single most important preventive measure
- Risk of infection is lower outdoors and in large, well-ventilated spaces
- The **amount of time** together in a confined space is very important – plan and prepare in advance!





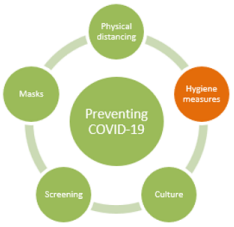
Four: Hygiene Measures

- Hygiene measures keep us safe by **removing virus from contaminated hands or surfaces.**

SARS-CoV-2 survival times

Adapted from Hawaii News Now

Practical Measures



Wash or sanitize hands/gloves:

- Every time you go into or out of a group environment
- Before and after handling every animal

Disinfect objects and surfaces that are frequently touched:

- Disinfection must be scheduled at the start and end of the working day, at a minimum
- During the day, pay attention to **frequently touched metal and plastic objects and surfaces** and disinfect these regularly.

Five: Culture

- Do the right thing
- Be part of the solution
- Practice Fearless Feedback

Other pieces

- Conserve PPE and supplies
- Putting on and taking off PPE – common sense approach:
  - Don’t contaminate PPE when putting it on
  - Don’t contaminate skin and clothes when taking it off
  - Assume your hands are contaminated when you are done, always wash or sanitize before moving to the next task
- COVID-exposed animals have their own protocol in SOPs

13- Ehrlichia Handout

Veterinary Health Center
AT KANSAS STATE UNIVERSITY
TO DISCOVER. TO TEACH. TO HEAL.

EHRLICHIOSIS (*Ehrlichia)* IN DOGS

What is *Ehrlichia*?

- *Ehrlichia* is a bacteria transmitted by tick bites to dogs, which can cause acute or chronic infection.

What are signs of an *Ehrlichia* infection in dogs?

- Decrease in energy, loss of appetite, weight loss, and bleeding disorders.

Prevention of *Ehrlichia*

- *Ehrlichiosis* is spread by tick bites, therefore using a monthly tick preventative is the best prevention. Be sure the preventative you choose has tick coverage (many are designed for heartworm, fleas, or intestinal parasites). You can minimize your dog's exposure to ticks by keeping them away from tall grass and wooded areas. After possible tick exposure, dogs (and people) should be examined closely and ticks removed promptly.

What if my Dog Tests Positive for *Ehrlichia*?

- Most veterinarians screen for *Ehrlichia* with a quick blood test for antibodies, as your dog has had today. A positive antibody test indicates that your dog has been bitten by a tick carrying *Ehrlichia*.
  - If your dog was positive on today's test and your dog is showing signs of illness, treatment is warranted. Additional bloodwork (a complete blood count and chemistry panel) is a good idea to learn the extent of disease, and a PCR test can confirm that your dog's illness is from ehrlichiosis.
  - If your dog was positive on today's test but your dog is not showing signs of illness, treatment might not be warranted. In this situation, it is a good idea to have further blood tested to be sure that there is no sign of developing or chronic disease. A complete blood count should be considered to confirm normal platelet count, and an *Ehrlichia* PCR blood test to confirm no evidence of current infection. If your dog become sick in the future, please remember to tell your vet about this positive *Ehrlichia* test result.
  - If your dog tested positive for ehrlichiosis, please consult with a local veterinarian to discuss having these additional tests performed.

Treatment of Canine Ehrlichiosis

- Ehrlichiosis is treatable in dogs with a course of antibiotics. Your local veterinarian will help you decide if treatment is warranted for your dog and the best antibiotic dose and duration.

Can I become infected with ehrlichiosis?

- Ehrlichiosis is not contagious from dogs to people. However, if you've had ticks attach to yourself, perhaps from a hike or walk in a tall-grass or wooded area, you can become sick from tick-borne diseases such as ehrlichiosis. It is important after spending time outside to check yourself and family members for ticks and to remove them promptly. If you develop signs of tick-borne illness such as fever, headaches, muscle aches, vomiting, or rashes, you should visit your medical professional right away.

14 Heartworm Handout

Veterinary Health Center
AT KANSAS STATE UNIVERSITY
TO DISCOVER. TO TEACH. TO HEAL.

HEARTWORM DISEASE IN DOGS

What are heartworms?

- Heartworms are parasites that can cause serious and potentially fatal disease in many animals. They are worms that can live in the heart, lungs, and blood vessels.

How are heartworms transmitted?

- Dogs get heartworms from mosquitoes. A mosquito bites an infected dog, then spreads the infection to the next dog it bites.

How is heartworm disease prevented?

- We can minimize our dogs' exposure by keeping them away from mosquitoes, but this is near impossible! Therefore, we give them routine preventative medication which is very effective at preventing heartworm disease. Preventative heartworm medications are started in puppies (8 weeks old), given *year round*, and used throughout a dog's life.

What are the symptoms of heartworm disease?

- Infected dogs can be asymptomatic (show no signs) or show coughing, decrease in activity or playfulness, or being tired often or easily. If untreated, heartworm disease can eventually lead to heart failure and death.

Testing for heartworm disease

- Dogs should be tested for heartworm disease once a year (starting at 7 months of age) and prior to starting preventative medications (if there was a lapse in preventative administration). This is a simple blood test checking for presence of antigen in the blood.
- If the antigen test is positive, the veterinarian might confirm disease by looking for presence of a juvenile form of heartworms called microfilaria, which can be seen under the microscope. Chest x-rays should also be considered for any dog testing positive for heartworm disease to learn the extent of involvement in the heart and lungs. These tests can be done with a local veterinarian. In the meantime, please try to keep your dog calm and minimize running, jumping, and playing, as heartworms can migrate and cause sudden cardiac and respiratory complications.

Treatment of heartworm disease

- Treatment is warranted for heartworm positive dogs to eliminate all stages of the heartworms and improve their clinical signs, quality of life, and prognosis. Most dogs do great with treatment, but complications can occur from both the worms and the medications, so treatment requires working closely with a veterinarian. You can discuss treatment options for your dog with a local veterinarian.

Where can I learn more information about heartworms?

- The American Heartworm Society https://www.heartwormsociety.org/