

Canine Parvovirus in 2026: Prevalence, New Treatments, and Acknowledging Vaccine Hesitancy

Abstract

Canine parvovirus has had a longstanding effect in the field of veterinary medicine. This fast developing virus with a high mortality makes its rounds through mostly young canines that have not received vaccinations, or have not received them correctly, or completely. While it has been a dominating concern for years, there is to this day no cure, yet there is presence of a consistent development in treatments and discoveries aimed towards vaccination efficacy. There are, however, setbacks. These include owner hesitancy to vaccinate their pets, misinformation, and vaccine deficiencies. This review will provide an overview of how parvovirus impacts the veterinary profession, how it is handled within the field, progression in new areas of study, and a reflection of owner opinions towards vaccinations.

Introduction

Canine parvovirus, also abbreviated as CPV, is a highly contagious virus that targets cell division. The virus is able to withstand extreme conditions over the span of a few months or up to a year. After initial contact is made either fecally or orally, symptoms will begin to appear anywhere between a few days to up to two weeks. These symptoms include lethargic behavior, induced vomiting, diarrhea, fever, and many others that contribute to the canine's discomfort. The classification of this virus is based on its capsid protein antigenic variants, meaning that the structural differences within the virus' capsid lead to distinct immune responses. Currently, there are three notably present antigenic variants stemming from the original strain CPV-2, which is now considered rare. These three strains are known as CPV-2a, CPV-2b, and CPV-2c. Additionally, CPV-2c is suggested to be the most prominent strain in many regions, and has been the subject of occasional breakthrough cases. The severe dehydration and multi-organ failure, accumulated with other symptoms post-infection, requires intensive care and attention of staff. The extensive hospitalization and overall protocol to inhibit endemic circulation can strain veterinary resources. The infection of beloved canines can accumulate financial costs and take an emotional toll on owners. Veterinarians remain concerned over CPV due to early diagnostic limitations, wanting to manage outbreaks, and aiming to better educate clients. The studies involving this virus are relevant to my future endeavors to become a veterinary technician. I hope to efficiently treat canines, provide them with unbiased care, and connect with clients to ensure they choose what is best for their pets' health.

Prevalence

Parvovirus continues to accumulate across breeds in different countries all over the world. This disease has a national focus of outbreak concern, with Australia being mentioned across several studies. CPV-2C remains the dominant strain, seen in 82.75% of cases, considering both vaccinated and unvaccinated dogs (Yip et al., 2020). According to Australian veterinary statistics, 80% of documented vaccine failures involved cases in which the final booster shot was

given before 16 weeks of age, emphasizing a critical susceptibility window persisting in 2026 (Altman et al., 2017). In other words, despite necessary precautions of vaccine administration, this disease is still at large in young canines with age related risk factors. This could be due to the canines' immune system susceptibility at that particular age mark, or the vaccine itself, with either hypothesis needing more research to determine its relevance. These documented vaccine failures have changed veterinary protocol, with veterinarians considering parvovirus as a possibility for all incoming cases despite indicated vaccine records. For example, if the hospitalized canine were to show symptoms similar to parvovirus, but they were shown to still have updated vaccine history, CPV would still be on the differential list in accordance to their case, because of said vaccination inconsistencies. There are additional statistics from an epidemiological survey that highlights cases in fully vaccinated adult canines, with 3.3% of them developing CPV, which builds more of a case towards vaccine deficiency, rather than age related vulnerability (Decaro et al., 2020). Shelters are also an increasing area of concentration for study, not only due to their abundance, but their increase of opportunity for community spillover, and their exchange of animals to new families. If certain biosecurity strategies are implicated, in addition to structured relocation programs, post-transport CPV cases remain diminished at 2.3%, yet numbers still indicate its persistent presence among previously sheltered canines (DiGangi et al., 2021).

Treatments

Biomarkers are consistently used in veterinary medicine to make early diagnoses and assess levels of severity to better adapt a treatment plan to each canine affected. When a serum known as CRP exceeds a designated amount of mg/L, it offers a prediction of the canine's sensitivity to mortality, as well as other concerns related to the heart and intestinal tract (Li et al., 2025). Existing treatments still show a primary level of care across veterinary clinics, and through much diligence most clinics even see survival and recovery. Methods of inpatient care include IV fluids for dehydration, enhanced nutrition for lacking nutrients, antiemetics for nausea and vomiting, and antibiotics. While more traditional inpatient care is considered standard protocol, outpatient care has seen success as well (Mazzaferro, 2020). Outpatient care may even be seen as a more viable option, being less hard on the finances of the owner. Throughout the year 2024, the construction of a new vaccine shows

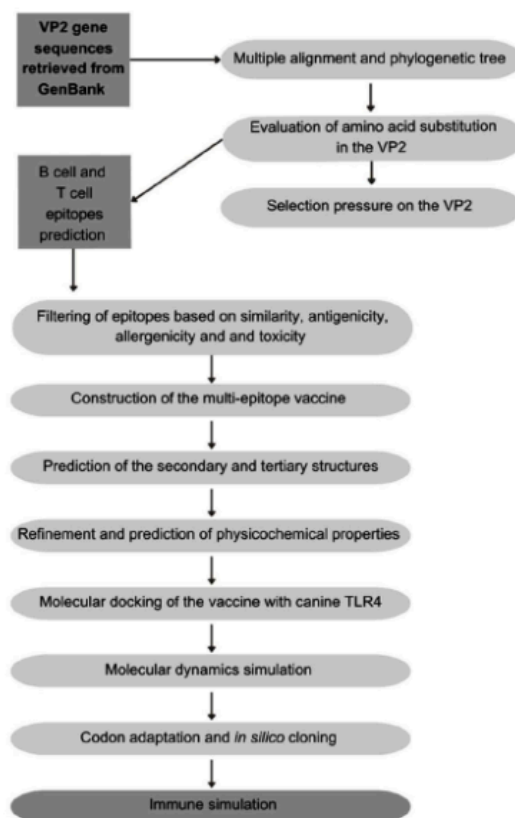


Figure 1: Flow Chart of CPV-2c Vaccine Enabling Immunity
Shows promise in antigenic epitopes

promise, due to its non-allergenic and non-toxic properties, as well as its overall construction being based on five highly antigenic epitopes. This has allowed for the rapid development of immune response, increased antibody production, and the presence of T-helper cells (Lopes et al., 2024). Another vaccine, which began development in 2023, based off of a recombinant CPV-2c strain, has shown immunities in puppies and the ability to overcome antibodies, which is significant to face the immunity gap in younglings (Pearce et al., 2023). Vaccines and treatments for severe diseases are consistently in rapid development as symptoms continue to worsen, or breakthrough infections become more common, and ultimately with the promotion of these epitopes findings, more can be done for canines in the future.

Vaccine Hesitancy

An important factor to consider, aside from the statistics that represent the pets themselves, is the decision making power that the owner holds and their existing concerns. Owner beliefs and decisions may be based on their backgrounds, finances, or advice given to them by their regular clinics. The topic of vaccine hesitancy places an emphasis on proper education on clients by

Table 4
Correlates of Canine Vaccinations.

VARIABLES	(1)		(2)		(3)		(4)		(5)	
	Canine Rabies	AME	Canine Parvo	AME	Canine Distemper	AME	Canine Flu	AME	Canine Lyme	AME
Trump Voter	0.548 (0.069)		0.229 (0.300)		0.085 (0.670)		0.218 (0.251)		0.057 (0.760)	
Liberal	0.211 (0.525)		0.011 (0.964)		0.053 (0.817)		0.132 (0.508)		0.286 (0.133)	
Conservative	0.091 (0.782)		0.155 (0.506)		0.164 (0.434)		0.088 (0.651)		0.202 (0.310)	
Religiosity	0.058 (0.491)		0.056 (0.467)		0.038 (0.569)		0.091 (0.115)		0.163** (0.004)	0.023 0.002
Female	-0.201 (0.397)		-0.053 (0.784)		-0.108 (0.549)		-0.234 (0.124)		-0.490** (0.001)	-0.072 0.001
Number of Dogs in Household	-0.271* (0.039)		-0.109 (0.292)		-0.056 (0.586)		-0.007 (0.930)		-0.111 (0.153)	
Perceived Level of Dog Exposure	0.123 (0.469)		-0.182 (0.164)		-0.091 (0.450)		0.107 (0.305)		-0.072 (0.487)	
Non-veterinary Spending on Dogs	0.259 (0.341)		0.387 (0.053)		0.339 (0.057)		0.305 (0.050)		0.222 (0.146)	
Dog Vaccines Are Safe	0.376 (0.188)		0.100 (0.636)		0.312 (0.138)		0.396* (0.032)	0.052 0.016	0.082 (0.641)	
Dog Vaccines Are Effective	0.268 (0.339)		0.312 (0.203)		0.512* (0.016)	0.044 0.004	-0.129 (0.548)		-0.077 (0.710)	
Dog Vaccines Are Important	0.598** (0.003)	0.024 0.000	0.710*** (0.000)	0.053 0.000	0.470** (0.007)	0.041 0.001	0.730*** (0.000)	0.088 0.000	0.774*** (0.000)	0.093 0.000
Trust in Science	0.034 (0.822)		-0.105 (0.364)		-0.146 (0.194)		-0.171 (0.068)		-0.101 (0.291)	
White	-0.183 (0.639)		-0.815* (0.026)	-0.070 0.019	-0.629 (0.092)		-0.601 (0.116)		-1.006* (0.030)	-0.132 0.013
Black	0.611 (0.278)		-0.510 (0.323)		-0.771 (0.102)		0.085 (0.864)		-0.533 (0.340)	
Asian	0.350 (0.661)		-0.718 (0.266)		-0.564 (0.364)		-0.950 (0.102)		-1.457* (0.013)	-0.283 0.029
Hispanic	-0.038 (0.940)		-1.065* (0.015)		-0.631 (0.146)		-0.662 (0.128)		-0.947 (0.059)	
Children in Household	-0.156 (0.545)		-0.072 (0.743)		-0.064 (0.743)		0.194 (0.253)		0.076 (0.649)	
Age	-0.007 (0.399)		-0.014* (0.036)	-0.001 0.037	0.008 (0.150)		-0.015** (0.003)	-0.002 0.003	-0.010 (0.064)	
Income	0.170* (0.021)	0.008 0.006	0.084 (0.166)		0.160** (0.004)	0.015 0.001	0.064 (0.207)		0.089 (0.072)	
Degree	0.186 (0.199)		0.317** (0.005)	0.027 0.004	0.075 (0.459)		0.127 (0.157)		-0.065 (0.491)	
Constant	-2.302 (0.059)		-1.760* (0.040)		-3.491*** (0.000)		-2.517*** (0.001)		-0.551 (0.506)	
Average Prediction		0.941		0.881		0.872		0.797		0.799
Observations	2,006		2,006		2,006		2,006		2,006	

Notes: P-values in parentheses *** p < 0.001, ** p < 0.01, * p < 0.05.

Figure 2- Table Indicating Pet Owner Beliefs Toward Trio of Canine Diseases

In this table, owner opinions were gathered to indicate P-values. The owners were grouped by designating variables. They were quantified by their decision to vaccinate for the five following canine illnesses.

veterinary staff, while maintaining empathy to their personal statuses. There are some additional setbacks as well, from those that associate the efficacy of human vaccines alongside efficacy of veterinary vaccines. This specific group of individuals has a strong stance against vaccines, so conjoining their beliefs can endanger public health, and spread infectious disease across human and canine populations (Motta et al., 2023). A proposition of vaccine enforcement was initiated, but never followed through with. A plan of regulatory laws and standards for vaccine use would be to combat parvovirus, rabies, and distemper, three of the largest concerns in veterinary medicine. The idea was that with mandatory enforcement, owner viewpoints would begin to shift away from vaccine hesitancy and towards thoughtful prevention (Haedar, 2023).

Conclusion

All of these accumulating factors raise concern to consistently develop veterinary practices in preparation to receive parvovirus cases. Each practice must adapt to what protocol works best for their location, in addition to their client intake. Their access to new vaccines when they become available, will change the efficacy of care, yet it is still important to account for those clients who may refuse new scientific developments. As I enter the veterinary field, it will be important to continuously inform myself of the solutions being made to combat this disease, as it may alter my curriculum while in veterinary school, affect my training, and overall change my day-to-day protocol once fully in the field. While some of the old strategies/treatments are able to persevere, innovations and advancements are always able to make their way into an ever-changing field. This new generation of veterinary professions, including myself, will be prepared to endure the risks of disease, because the motivation to care for beloved animals will continue to persist.

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