

## **Understanding the First Targeted Treatment for Canine Parvovirus**

Since emerging in the 1970s, canine parvovirus has caused significant worldwide morbidity and mortality in the canine population. However, thanks to safe and effective vaccines, many dogs can be protected from parvovirus, although the young and unvaccinated populations remain vulnerable to the devastation of this disease. First distributed in July of 2023, Canine Parvovirus Monoclonal Antibody (CPMA) is the first and only USDA conditionally approved targeted parvovirus treatment, bringing with it the potential to change outcomes for individual patients, pet owners, veterinary teams, and shelter communities.

Dr. Miller: Since the onset of canine parvovirus in the 1970s, we've made great strides with vaccination, but unfortunately, we still see parvovirus cases. How common is parvovirus?

**Dr. Zersen:** We see it so commonly. We don't have great data on the numbers because it's not reportable, and the numbers that we do have are probably a huge underestimation because we know a fair amount of puppies don't receive veterinary treatment.

**Dr. Metzger:** There's a big difference between the number of potential parvo cases that we could see and the ones we actually see. Some people will call on the phone but never make it in because of cost or other barriers. The estimated cost of treatment can have a pretty profound impact on the number of parvo cases we actually see in the clinic.

Artimus, a CPMA recipient and parvovirus survivor. Image courtesy of East Bay SPCA, Oakland, CA

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**Dr. DiGangi:** From a shelter perspective, we also don't have great data on the number of parvo dogs, but we do know a good portion of dogs coming into shelters don't have protective antibody titers, which certainly contributes to us seeing it year-round. It's a threat for everybody, regardless of how wellresourced a clinic or shelter is, where they are, what time of year it is, or any of those factors.

**Dr. Pachel:** As a behaviorist, I'm not on the front lines of treatment, yet parvo is one of the things that comes up repeatedly during consultations with clients. In those conversations with pet owners about early socialization and where they have taken their puppy, I would say 80% to 90% mention parvo as a reason why they weren't bringing their puppy to public spaces. So it's absolutely top of mind for pet owners.

Dr. Miller: What is your first reaction when you have a parvovirus case in the clinic?

Dr. Zager: I think there's a pretty universal feeling of frustration and exhaustion. It's difficult because it's

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-Dr. Metzger



Mango, a CPMA recipient and parvovirus survivor. Image courtesy of East Bay SPCA, Oakland, CA

often an otherwise healthy puppy that was just adopted, so new pet owners are being hit with this big news. No one wants to go in and tell a new pet owner that their puppy is sick with a life-threatening illness. Having a parvo-positive dog in the hospital is also a huge drain on resources—gowning up, getting isolation equipment together, and setting up isolation areas. The amount of staff that is required for a parvo puppy is more than almost any other disease, so these cases are really frustrating because you know the amount of time, effort, and discussions that are going to be had, in addition to the impact on the pet and its family.

**Dr. Zersen:** My first reaction is to alert the troops right away. We need someone to set up isolation, and we need a minimum of 2 people to wear personal protective equipment to work with the puppy. Then we need to get the IV catheter in and collect diagnostics and start stabilization. It's not just 2 people for 5 minutes—it's multiple people for extended periods of time, and often we don't have 2 people to spare. We are short-staffed; a lot of the veterinary community is. Obviously, we prioritize these patients, but the amount of manpower that goes into getting a parvo puppy just hospitalized significantly impacts the entire team.

**Dr. Metzger:** It's a clear drain on the veterinary team, which is already understaffed. There's also a stigma with parvovirus. When you hear the word "parvovirus," generally, our first reaction is that we're going to have a big drain on our staff. We also have to worry about the virus living in our yard and in our clinic for weeks. Obviously, cost also comes into it as well; the stigma is often that clients are not going to be able to afford treatment, which maybe has been brought on by us as a profession, but in other words, it's going to be a lot of work and we may not want the animal there. It's an expensive disease that takes a lot of staff. It's a sick puppy—it's vomit, it's diarrhea, it's the essence of critical care. Parvovirus puppies are some of the sickest patients we treat. I believe the monoclonal antibody has the potential to change outcomes dramatically and help with the stigma with canine parvovirus.

Dr. Stull: As a profession, we talk about infection control, and we do what we can, but generally, most private practices are not really set up to do the job that we have to with something like parvo. We know we make mistakes when we put on and take off PPE, when, for instance, the dog with GI disease is sitting in the lobby for an hour and a half before it comes in to see you and you realize it has parvo.

Dr. DiGangi: From the population perspective, we also want to make sure that this doesn't turn into an out-

break. I feel like the risk in the shelter is maybe a little bit greater than in most clinic settings because I've got a kennel full of animals that are undervaccinated, young, vulnerable, and otherwise not protected, so there's a real risk of having one infected animal turn into an entire kennel full of infected litters.

Dr. Pachel: There are also concerns from the client perspective. Some clients may not know much about parvo. They may come in with a puppy that they've had for a few days or weeks, and they're having to make true life-and-death decisions that cost huge amounts of money for an animal that they may or may not have even bonded with yet. That's what I think about when I hear parvo. What is the client's perspective, and how can I bring empathy to that conversation? So, trying to hold space for all those things while simultaneously needing to begin treatment on the pet is really a challenge. And from a behaviorist's perspective, my worry is also about the long-term behavioral consequences that intensive early veterinary care can have on the patient with regard to fear and aggression.

**Dr. Metzger:** In our 24-hour hospital, we have a separate, modern isolation area for patients with suspected infectious diseases. On occasion, a suspected patient with an infectious disease is not in that special area, and I'll ask our overnight staff why this patient is not in isolation. Our support staff, who does almost all the treatment, explains it requires a lot of monitoring and it's down in a separate building. So, even under the best circumstances, I find it very hard to follow all the things that need to be done to properly isolate and care for these patients. When I think about parvovirus cases, I also think about the impact on the team. Sometimes hard decisions are made for financial reasons, and our team members are wondering why we're in veterinary medicine if we're not going to help a puppy. That's something I'm excited about with this new treatment—we're giving general practitioners back that ability to logistically care for most of these pets, with reduced length of hospitalization stays and improved outcomes, and we can save the really bad cases for the 24-hour ER hospitals. Let's at least give these puppies a chance!

### Dr. Miller: What has your experience been with the survivability of parvovirus?

**Dr. Zager:** It seems like most of the published numbers are pretty in line with what I'm seeing in practice, with 70% to 80% of the patients receiving standardized outpatient therapy surviving and 90% or so of the inpatients surviving. But when we're talking about the 10% of puppies that are dying despite best efforts, that is still devastating. Whenever a patient doesn't make it,

it's devastating to the team and the doctor on that case.

**Dr. Metzger:** And not all patients receive treatment. There are times when a pet owner calls and says that their pet may have parvo, and they are given an estimate that is too overwhelming, which can discourage them from coming in. What happens to those puppies? I think that's kind of the unsung story of this: the new monoclonal antibody therapy offers the first targeted treatment for parvo. We now have a targeted treatment that can give them a chance, even if the aggressive hospitalization is out of reach financially. I think we could have a lot more success and be helping a lot more animals if we just gave them a chance.

Dr. Stull: In smaller general practice settings, you may not have the resources or setup to handle parvovirus cases, so things aren't always limited just because of pet owner resources. The clinic may not have overnight staff, for example. Having so many roadblocks to getting patients the care they need like this takes a toll on the veterinarian.

Dr. DiGangi: And thinking of the shelter environment, many shelters still don't have veterinarians regularly available to them. Some don't have a relationship with a veterinarian who can help guide them on the management of many diseases, let alone parvo cases. And sometimes the veterinarians who are accessible to them don't feel like parvo is something they can take on in a consultant role due to the intense nature of the disease and its care. Maybe if there were more options and people understood the benefit of having a variety of options to treat parvo, veterinarians might be more willing to engage with those shelters and help them be more successful.

Dr. Miller: What is the impact of a parvovirus diagnosis on the human-animal bond, that pet's family, and the relationship with the veterinary team?

Dr. Pachel: It's potentially devastating. This is a highstakes situation where you're having to make quick decisions with large dollar figures on a medical diagnosis they may not be familiar with. Making a decision like that in that type of situation certainly affects the human-animal bond. The relationship with the veterinary team is often impacted by the case outcome as well: are they bonded to that practice when the animal survives miraculously and we came in under estimate? Or does the opposite happen, when we do our best and the outcome isn't favorable and there are negative impacts on the relationship? Then there's the behavioral component. Often what I see from clients who have dealt with a parvo puppy in the past is fear, which may limit their future puppy's exposure, having ripple effects later on.

Dr. Zersen: In these emergency cases like parvo, we have to have difficult conversations very quickly. We typically say, "Here's the diagnosis. It will cost thousands to treat, and your dog may or may not make it. Are we going to treat? Yes or no?" That doesn't set us up for good long-term relationships between veterinary teams and pet owners. I would love to have time to sit down and have a more in-depth and compassionate conversation, but we need to intervene on a lot of these puppies very quickly, in addition to getting to the waiting room full of patients. And for new owners, it's a total 180 after that excitement of bringing home a new family member and then having to make those incredibly difficult decisions based on so many factors, including finances. I think a lot of people aren't prepared to invest \$3,000 to \$5,000 when you've just brought a puppy home. More than finances go into that decision, of course, but it's one aspect that can impact both the human-animal bond and the relationship between pet owner and practitioner.

**Dr. Zager:** Experiencing parvovirus can be traumatizing for both the pet and these owners. They see us gowning up and often taking their puppy back to a place of isolation, without contact with other dogs and infrequent contact with people. I try to encourage the owners of my ICU patients to come visit as frequently as possible so they can see what we are doing for their pet and to provide that emotional support, but with isolation patients, that just isn't possible.

**Dr. DiGangi:** There are implications beyond the immediate family as well. Regardless of how the case turns out, if that animal came from a shelter, that shelter may get blamed, whether they did everything right or not. And that has implications for the shelter's future and reputation in the community.

Dr. Miller: The new targeted treatment we've alluded to is Canine Parvovirus Monoclonal Antibody (CPMA). How does it work specifically against parvovirus?

**Dr. Zersen:** The monoclonal antibody actually targets the virus in the bloodstream. It neutralizes it in a sense, so it can no longer bind to host cells like

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enterocytes and enter the GI tract. Damage to the enterocytes is what causes the clinical signs of vomiting and diarrhea. It's catching the virus before it causes the damage.

**Dr. Zager:** That's an important thing to understand. It also explains where in the clinical course of disease CPMA should be administered. This is not fixing the dog that is already laterally recumbent and in shock from the disease. In those cases, the damage has been done, and preventing viral cells from entering additional cells is probably not going to do a whole lot. Getting to these patients early in the course of disease is critical. I'm always big on understanding the underlying function of the therapies we're using, which can help us know how and when to target these treatments. It helps us realize it's not necessarily a silver bullet, but for a subset of this population, it can do a lot to help prevent the progression of disease.

**Dr. Zersen:** Administering CPMA early in the course of disease when you have the highest viremic load is important, but this is not a monotherapy. This doesn't mean that you get to just give the injection and send everyone home and everything's going to be great. Antibodies don't treat hypoglycemia, they don't treat shock, etcetera, so you still need to support these puppies. Hopefully we're catching them as early in the course of disease as possible, but what we absolutely need to avoid is thinking that this means we no longer have to treat parvo puppies with supportive care. It's important to realize that these puppies that are sick still absolutely need other care for these issues. CPMA should be added to our inpatient and outpatient treatment protocols, not used in place of them.

**Dr. Metzger:** We still need to treat these dogs like we always have, making sure we have the right diagnosis and that we're doing hematology, serum chemistry profiles, electrolyte panels, and testing for GI parasites and concurrent diseases. That's my only worry about this product. You still need to look for concurrent diseases and complications like hypokalemia and hypoglycemia. We still have to do the diagnostics to test for all those other diseases and not get tunnel vision. An accurate diagnosis is so important, because there are other conditions with similar presentations.

**Dr. Zager:** One of the challenges we're going to face is pushing to get those patients into the clinic when they have diarrhea. Puppies can have diarrhea for a number of reasons, and without diagnostic testing, we won't know the underlying cause. With the advent of CPMA, we need to encourage pet owners to bring them in for a test, explaining that if your dog does have parvo, there is a treatment that's more effective the earlier it's administered. Before CPMA, it was a lit-

tle harder to make a case to tell owners to bring their puppy in with, say, one episode of diarrhea, but now we can say, "We want to test for this disease, because there is something we can do if your pet has parvo, and it will work better right now than it will in 4 days when your puppy is profoundly sick."

### Dr. Miller: Can you share some of the highlights or things you are excited about with the new monoclonal antibody treatment for canine parvovirus?

**Dr. Zersen:** For me, the main thing is that we're directly targeting the virus with this treatment. Historically, the virus just had to run its course, so we supported the puppy through that and treated the clinical signs, but to finally be able to target the virus, in addition to providing supportive care, is a game-changer. It's a complete paradigm shift.

Dr. DiGangi: I think it's sort of the simplicity of the treatment, the one-time IV injection that makes it really feasible for a lot of clinics, including shelters and the fact that it decreases the amount of time that they're exhibiting severe clinical signs. So much of what we do in shelters is geared towards reducing the length of stay and shortening the amount of time we have to provide care for the animals, so to be able to do that by a couple of days is huge in addition to the other benefits.

**Dr. Stull:** With all the challenges and all the resources that treating parvovirus requires, this treatment reduces all that by taking days off the recovery period. That's huge. From the risks to the practice and everything else that goes along with that, we now have a dog that's going to potentially be shedding the virus for a much shorter period of time, which has huge benefits for the patient and the clinic—and potentially even the community, because now we're less likely to contaminate the environment.

Dr. Pachel: You improve the clarity of the conversation with the pet owner—the ability to say that you're providing treatment versus solely supportive care. If you say it's going to be \$1,000 for supportive care versus \$1,000 for a specific treatment, that can make a big difference. It changes the tone of the conversation. From a behavior perspective, I'm also thinking about the length of stay, the length of illness, all of those things, and that ripple effect on trauma, socialization, and how soon the patient can get back on their feet.

**Dr. Metzger:** The number 1 way clients evaluate us is by knowing we care. I think the monoclonal antibody can bring that back a little bit, not only so owners know we care but so our staff understands that we as veterinarians want to help puppies and we don't want to turn these patients away. I think it could be one of those diseases where we don't fear it so much anymore. I think it allows us to give a much more realistic estimate, including how long they're in the hospital and the total cost. With supportive care, it's really hard to get an accurate estimate on a parvo dog. You don't know if they're going to be there 3 days or 7 days. That all comes into the financial estimate, which is frequently not accurate. I think this standardizes the treatment a little bit more.

**Dr. Zager:** One of the things I'm excited about that I've experienced in my use of CPMA is the good safety profile. I think I spend less time talking to owners about potential risks with CPMA than I do for an NSAID. There's a risk for an allergic reaction, but that's pretty much the main one.2

Dr. Pachel: I also think about our teams, the ones who are delivering care within the clinic. It's not just our pet owners who will benefit from knowing we are providing targeted treatment over solely supportive care. I hear from nurses, technicians, tech assistants, the ones who are doing a lot of the hands-on care. It's really draining to be doing that work. Now there's a treatment that's specific to the disease, and I have to believe that, when we look back on what impact this has, we will notice an improvement in job satisfaction.

### Dr. Miller: Are there any reasons you would not use **CPMA** in treatment protocols for parvovirus?

Dr. Zager: I think there are probably situations when the financial aspect of the drug will play a role. Additionally, when patients are a little bit sicker, we may be worried that we've missed that golden opportunity to get CPMA on board and now we're trying to balance the benefits of spending that money on CPMA versus on another day of hospitalization. I don't think we have enough information yet to say what the right choice is—because, depending on where you are, that can be \$1,000, even \$2,000, that you're saving that patient. Those are questions we're asking: can CPMA still play a role in treatment in cases of more advanced disease, or does it make more sense to dedicate your resources to hospitalization and the current standard of care?

**Dr. Zersen:** We will see puppies younger than 8 weeks of age with parvo, but CPMA is currently licensed for puppies 8 weeks of age and older. With its current licensing for 8 weeks, that would be another reason to not give CPMA.

Dr. Metzger: My big one would be if I'm not convinced it's parvo. The great thing about parvo is it's generally pretty clear cut. The tests are very good, and there are some pretty classic clinical findings you expect to see.

# Dr. Miller: Are there any specific strategies or communication points that you have found to be successful when getting an owner to buy into using CPMA?

**Dr. Zersen:** I think we should emphasize the efficacy study and reiterate the goal of CPMA is to improve survival but to also make the puppy feel better more quickly.<sup>3</sup> If we can get our puppies eating more quickly and get them to stop vomiting and get them feeling better, they will get out of the hospital quicker. In my clinic, if you get out 1 day sooner, that could be \$1,000. In addition to the cost, it's so important we're getting these puppies feeling better sooner and back home with their families. Of course, it's one of the difficulties of veterinary medicine, having to talk about price, and as we've talked about, the implications of that are farreaching, but we also just want these puppies feeling better as soon as possible. When I think about the messaging, there is a cost investment upfront, but if we can get the puppy out of the hospital sooner, that is going to be returned multiple fold with decreasing hospitalization costs.

**Dr. Metzger:** In the early stages, my recommendation is to not mark up this drug to encourage increased use and experience. We need to evaluate how efficacious CPMA is, and so far, I think it is pretty incredible. But if you look at the number of parvo cases we see and you're regularly putting this into your treatment protocol at a reasonable price, I think, for me, what I will get from the pet owners and just my own sanity will be well worth it. I'm going to continue to mark up fluids and the other treatments needed for hospitalization. I'm not saying not to charge regularly, but I think, for me, in the beginning—and I usually do this with new products—I'm going to see how it works and then



Cookie, a CPMA recipient and parvovirus survivor. Image courtesy of The Fix Project, Long Beach, CA

make my decision on pricing from there. You can't put a price on going home at the end of a busy day knowing you are at least trying to save a puppy! It's why we are in this crazy profession. Our clients want to know we care. Later on, I may mark it up, but that's my approach right now.

**Dr. DiGangi:** I would encourage shelters to look at what the cost of care is for animals each day, even though there might not be a hospitalization charge going to a client. It still costs money to house and care for these animals, and it's easy to forget that. In addition, if this has the potential to reduce the post-recovery shedding period, that should be factored in as well when assessing the financial benefit of using CPMA. Of course, there are many other benefits of getting the animal out of the shelter system more quickly, including the physical and behavioral benefits.

**Dr. Stull:** In veterinary medicine, we're not very good at knowing what everything costs us sometimes. For instance, there are plenty of clinics that may not charge extra for an isolation unit just because we want to encourage isolation in situations where we have to use it. I think it's equally important to establish what these patients truly cost each clinic in terms of time, resources, and all these other things that we've talked about. Some of them are pretty hard to quantify, but that might also have an impact on how you decide to price the product and what that looks like for your clinic.

Dr. Pachel: I'm reminded of the similarities between this conversation and so many of the other things we do in veterinary medicine where there are options for how we proceed. In my early days of practice, I found myself sort of making my recommendations based on what I thought a particular client either could do or should do or had the capacity to do. Some of that internal bias was guiding my decisions, but one of the things I have tried to work on over the course of my career is trying to be as clear, concise, and specific as possible to say, "Based on X, Y, and Z, these are your options. These are the predicted outcomes based on going down this pathway versus this other pathway." You can present the gold standard and say, "Based on all of the data points, this is likely going to give your pet the best possible chance for survival. Is that within your capacity?" If I get either an objection or any sort of hesitation, that's my window to then have a slightly longer conversation with the client to try to identify what their obstacle is. Is it fear? Is it an emotional response that I can assuage by discussing the details about the treatment itself? If it's financial, maybe then we are looking at option B or option C. If they're concerned about something else, I need to know what that objection is before I start offering

other options. I say all of that, because I think, if we have specific therapies and the ability to impact that bottom line, I want to make sure that the client is given the opportunity to do that and that I'm not the one biasing or creating an obstacle to care for some of those patients.

### Dr. Miller: What are your initial reactions on how CPMA is performing in your real-life cases?

Dr. Zersen: We've been using it at Colorado State University, and it's so easy to use. It's a one-time injection. There's nothing else I do in parvo treatment that is a one-time intervention. It's been really easy to implement in both outpatient and inpatient models. In those inpatient models, they're diagnosed and we're talking to owners, then we're moving forward with treatment; we're getting the IV catheter in, we're collecting all of our blood work, and we're giving CPMA and getting them hospitalized. On the outpatient protocol, they're still getting IV CPMA. For us, it's been really easy to insert into our traditional protocols. For us, I think the single IV dose has been a welcome benefit, and it's been easy for us to implement. I personally haven't noticed any specific side effects.

Dr. Metzger: My experience has been the same. The first day we received it, we had 2 parvo dogs, which was crazy. When we unpacked the box, I expected it to be much more difficult to use. It thawed very quickly to room temp. It was very easy to use. In the dogs we've used it on so far, it's been effective and the laboratory work has showed that as well, with a seemingly quicker bounce back of neutrophils, in particular. I'll be interested to get more experience with it in our practice.

Dr. Zager: And CPMA isn't just for criticalists or emergency doctors; it can be at the frontlines, where it is needed the most: in general practice. The only equipment it requires is a freezer, syringe, and a needle.

**Dr. DiGangi:** This treatment may make practitioners more likely to work with local shelters on treating parvo, whereas before CPMA, maybe it felt like parvo was a little bit too onerous to manage from afar.

Dr. Miller: One of the main goals of CPMA is to protect against mortality from canine parvovirus and to shorten hospitalization times. How important is it to get these puppies home sooner?

Dr. Zersen: A lot of clinics, including us, are still having to turn cases away when we're at capacity, because we don't have the staff to care for all these patients. Getting patients out of the hospital is imperative. It opens up a spot in the clinic—maybe it's for another parvo puppy, maybe it's for another patient.

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Dr. Stull: I think everyone should ask their staff, "What if we could get this parvo dog out 2 days earlier than we would otherwise?" See what your staff says, because I bet they're going to be really excited about it. If you're able to tell them that, overall, this is going to reduce mortality and all these things, it's just a win-win. Some of the benefits are easy to quantify, and some of are hard to quantify but important to understand. As mentioned earlier, we have some serious challenges in veterinary medicine—whether we're talking about emotional challenges, financial components, or other things. I think all of these components lend themselves well to this type of therapy in terms of the benefits.

Dr. Metzger: I want decreased viral shedding in my lawn area. We have a specific area where we take the parvo puppies, and anything we can do to decrease viral shedding and fomite transmission by staff or exposure to other patients is going to be a huge help. That's a big component for me. It's going to not only help that puppy get home earlier, but it's also going to help other puppies as well by decreasing exposure, hopefully.

Dr. DiGangi: For shelters, on a very high level, most of them share the same goal: to serve as many animals as possible. The best way we can do that is to shorten the amount of time that is spent on each individual animal. We know we can process more animals through the system if we can get them in and out as quickly as possible, so anytime there's some sort of barrier to animals flowing through the system, we want to work through that. Certainly, parvovirus is a big barrier that slows things down, and shortening hospitalization time in the shelter—even if it's just by a few days—is going to really have a huge impact down the line as far as the number of animals that organization can help.

Dr. Zager: I think one thing we don't talk about a lot in medicine in general is the amount of waste that happens per day of hospitalization—the amount of gowns, gloves, et cetera. It's always one of the disheartening parts of medicine; there's not a green option really for veterinary medicine or medicine in general, so anytime I'm able to get those patients home a little bit earlier, that's one more benefit we can add.

**Dr. Pachel:** From a socialization standpoint, the difference between 1 or 2 days can be huge. If we're talking about a 10-week-old puppy, we know that primary socialization period when we start to lose some of that neuronal development, some of the plasticity within the brain, is somewhere in the 12-, 14-, 16-week age range. It's different from puppy to puppy, but it's about a 30-day window. So, when we're dealing with that illness, that onset of diagnosis, to when that primary socialization window is starting to close, 1 to 2 days out of that 30 is actually pretty significant. If we can get that back and also have them feeling better, and if we've got decreased shedding to the point where we can manage our exposure more safely, all of those things have a ripple effect from the standpoint of learning development and socialization.

### Dr. Miller: What do you think the future of parvovirus treatment is going to look like?

**Dr. Zersen:** By introducing CPMA into the standard of care, are we going to be able to treat more patients on

### **Key Takeaways**

- Despite the availability of safe and effective vaccinations, canine parvovirus remains a significant threat to unvaccinated and young dogs, often with significant morbidity and mortality.
- In addition to the emotional impacts, treating parvovirus patients can have significant impacts on veterinary clinics, particularly those with limited staff or other resources.
- CPMA is the first targeted treatment for parvovirus, binding to the virus before it can enter and destroy patient cells.<sup>2</sup>
- CPMA has been shown to reduce the length of illness and mortality, with the potential to have profound impacts on individual patients as well as shelter communities.<sup>2</sup>
- Decreased severity and duration of illness can provide numerous benefits, including improved socialization opportunities for pets, decreased financial burden for pet owners, and increased capacity for veterinary clinics and shelters to serve more patients.

Copyright 2024 Educational Concepts, LLC, dba VetMedux Elanco and the diagonal bar logo are trademarks of Elanco or its affiliates. PM-US-23-2246 an outpatient basis? Are we going to have fewer patients that are diagnosed with mild clinical signs that end up worsening over the following days? Are we going to be able to limit the number of those that get critically ill? Parvovirus is never going to go away, but are we going to be able to limit the number of pets with lengthy hospitalizations? Just by being able to incorporate CPMA into our standard of care, I think we have the potential to impact our larger community and our patients in terms of their severity and length of illness.

**Dr. Metzger:** I'm hoping that the monoclonal antibody will become standard of care. I'm hoping that, for the group of patients we catch early, we can manage them with CPMA and outpatient treatment. I think that is going to do a lot of things, including bringing management of many patients back to private practice. If we make it our first line of therapy, I think you could divert cases away from the ER and bring it back to the private practitioner, where we can treat a large number of parvo puppies that are not even being looked at right now. I think there will still be groups of more severely ill patients that need more intensive care in the ER, but I'm hoping it will free up emergency clinics a little bit more to really handle the cases that need more immediate care. I see no reason why CPMA wouldn't be the standard of care moving forward.

**Dr. DiGangi:** I agree. If CPMA becomes more accessible to shelters and everyone else, I don't think it's unrealistic to think that outbreaks of parvovirus in shelters can be a thing of the past. We have this tool available that can help stop outbreaks from happening, and if there's a situation where an outbreak does occur, we would be able to get through it much more quickly and with a lot less mortality than we would otherwise. I have a lot of hope for the future of the use of this product in the shelter space.

**Dr. Zager:** My hope is that CPMA takes a little bit of fear away from the disease. It's not replacing vaccines or other standards of treatment, but it offers hope that we can help many patients avoid suffering from severe disease and mortality. •

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