UNDERSTANDING WEST NILE VIRUS

Clinical Signs, Treatment Options, Prevalence

Q: My beloved 1 1/2 year old filly died from West Nile in October of 2006. She was being vaccinated every six months by my vet. I thought she was safe. Watching her die was heartbreaking. I didn’t know that I lived in a high-risk area should consider vaccinating every 4 months until after her death. Is there a Website horse owners can visit to find out the current threat level of West Nile in their area?

A: The Web site for the Centers for Disease Control (CDC) has a number of maps and charts with indications of the number of confirmed cases in each state. The US Geological Survey has a Web site with maps showing veterinary cases in each state and county. These sites are updated frequently. As of this morning the USGS site had data that was accurate through September 25, 2007.

Additional surveillance information can be found on the USDA’s APHIS Web site and the National Animal Health Monitoring System (NAHMS). The vaccination information is in the Part I of the report and in the information sheet on vaccination in the list of publications from the Equine 2005 study.

Q: Hi, I bought a horse and after a short time of owning her she started rubbing her rump. She rubbed it for a few days. I didn’t think too much of it until she seemed to be doing it most of the time (like 10+ hours a day). After 2 months, 2 different vets and 700 dollars worth of medicines, shampoos, topical anesthetics, the vet told me he didn’t know what it was or why she was doing it suddenly. So off to the University of Wisconsin (Madison) we went. The vets did some neurological tests on her and (pardon my lack of terms) ran a pen down some nerve pathways(?) down her side and both left legs collapsed. They did a few other tests including a spinal tap. They came to the conclusion that she had “west Nile virus”. Even though her gait and all other visual aspects were normal. They did a necropsy on her and notified me that she had lesions throughout her neck, spine and thoracic(?) cavity. Now, would there have been any other “visual” sign besides incessantly rubbing her rump? She rode fine etc. Thank you for your time.

A: As with many neurologic diseases of horses West Nile virus can cause a very wide variety of clinical problems. In some horses those problems are very minor and transient. In other horses, those problems are severe and may have long-lasting consequences. It is possible that other minor problems (slight fever, slight instability, etc.) were present in your horse when she was first infected with the virus but that the only problem that persisted was the rubbing of her rump. It would be easy for even a very astute owner to miss the presence of a low fever or mild signs in their horse if they occurred on a day that you did not spend much time with your horse. Because these are atypical clinical signs in the horse for WNV, this would likely have not been a consideration made by even the most astute veterinarian. Likely the WNV infection caused more severe disease in the spinal cord closer to her tail and not as severe in the spinal cord around her neck. This would explain why one could still ride her.

Q: WNV was relatively prominent in the east several years ago, and now most diagnoses are in the western states. Have eastern horses developed some degree of immunity, even without immunizations? Should we (in the east) continue to immunize?
A: There is almost certainly some degree of immunity in the bird and horse populations because of natural exposure to the virus over time. It is estimated that as many as 9 horses are exposed to WNV through mosquito bites and fail to get any recognizable disease for every 1 horse that develops disease after infection. The horses without disease then develop some immunity to future infection. This contributes to the decline in cases that has been observed in eastern states. The other reason for the apparent decline is the lack of reporting of clinical cases. It is no longer mandatory to report all cases of equine WNV. Many horses that are strongly suspected of having WNV are not tested and not reported, especially in the eastern states where veterinarians have become more comfortable with making presumptive diagnoses based on clinical signs.

Q: Where is west Nile most prevalent?

A: It is now seen in all 48 of the continental United States. Most reported cases this year have been in the Western United States. How often should you vaccinate?

Q: What is considered overvaccinating for west Nile? Where can we get reported cases for our state?

A: At web sites for the CDC, USDA, and USGS as described in one of the previous answers.

Q: I live in Illinois and the mosquitoes are or have been really bad this year. I have vaccinated my horse and was wondering what her chances are if she gets this anyway?

A: Vaccinated horses have less severe disease and are less likely to die if they do get sick as compared to unvaccinated horses.

Q: What is the length of immunity from a natural infection?

A: No one knows for sure.

Q: My horse Diego, a BLM mustang, contracted West Nile before there was a vaccination for it, and lived to tell about it. Before he had West Nile he was unflappable and very calm natured. Since his recovery he spooks more easily and is more easily startled and is inclined to run sometimes, rather than stop and look at things as he used to. Physically he has recovered 100%. My question is how to discern whether or not he is safe to use, and if training will be able to diminish these new behaviors. It’s hard to determine what a normal training issue is and what are the irreparable damages to his mind, because at times it’s as if he sees things that aren’t there and completely overreacts to the perceived danger. I’ve heard some horses have been reported to have very different personalities after having West Nile and would like to know of any were able to be safely used afterwards. Thank you for your help.

A: Yes, changes in behavior have been report after West Nile infection along with other long term effects. Unfortunately there is no way to diagnose this. This happens in people also and unfortunately their long term effects are quite debilitation. However, I would give Diego a chance and try a professional trainer to work him out of his problems. Some of this will improve with time and reconditioning.

Q: What are some of the signs that your horse has contacted West Niles? What are the chances of a horse surviving if it does contact West Niles Virus? Thanks, Sarah

A: In horses, a mild low-grade fever, feed refusal and depression are common systemic signs. Neurologic disease is frequently sudden and progressive, and characterized by problems in maintaining balance strength. Many horses have periods of hyperexcitability, apprehension, and/or sleepiness. Fine tremors and fasciculations of the face and neck muscles are very common and paralysis of the nerves of the
head can occur. The disease is extremely unpredictable. About 1/3 of WN virus cases do experience an increase in severity of clinical signs within the first 7-10 days of onset. This can occur many times after the clinical signs have abated. Some horses progress to complete paralysis of one or more limbs. Most of these horses are euthanized due to humane reasons or die spontaneously.

Q: What are the chances of full recovery and could they please give an outline of treatment and some kind of time table for it if at all?

A: The mortality rate in horses is consistently around 33%. Within 6 months most of these horses are clinically normal. All therapy is supportive; there is no specific treatment. The focus of therapy is to decrease brain inflammation, treat fever, and provide supportive care which may require 1-4 weeks of intermittent therapy.

Common medications include flunixin meglumine (Banamine), dimethyl sulfoxide (DMSO), and dexamethasone. Only anti-inflammatory doses are recommended. Some veterinarians express concern that signs can recur when steroids are decreased. Sometimes fluid therapy is needed for animals not able to drink. Oral or intravenous feeding may also be necessary. For recumbent horses, slinging is recommended 2 to 3 times per day. Head and leg protection is also frequently needed. In general, many horses will improve within 3 to 7 days of displaying clinical signs. After 3 to 5 days, horses that are recovering or stable may exhibit a sudden recurrence of clinical signs. This may be of short duration or horses may become suddenly recumbent and either die or require prolonged treatment.

Horses that become recumbent should be aggressively treated with anti-inflammatory therapy. Multiple attempts per day to assist standing are recommended. Other problems occur with horses with WN virus that occur secondary to prolonged sickness. Multiple injections of flunixin meglumine in the muscle are not a good idea. If a horse has clinical signs that last a long time, intravenous catheterization or hospitalization is recommended. Joint and tendon sheath infections, pneumonia, and diarrhea can all occur as secondary events. Monitoring for appropriate fecal output is also important and horses may need to be treated with mineral oil during the course of the disease. Once the horse has demonstrated significant improvement, full recovery within 1 to 6 months can be expected in 90% of the patients. Residual weakness and ataxia appear to be the main problems.

Q: We have a horse that was suspected for West Nile and is a Dressage horse. She went back to work quit well after warm up but after 6 months had a brake down again. The question is can we bring her back again? Yours Dana

A: The clinical syndrome for long term problems is muscle wasting which is severe and debilitating. Unless your horse has these signs, would recommend a reevaluation for other issues. So the answer is more than likely give her a chance.

Q: What would I see as early symptoms of West Nile in my pastured horses?

A: In horses, a mild low-grade fever, feed refusal and depression are common systemic signs. Neurologic disease is frequently sudden and progressive, and characterized by problems in maintaining balance strength. Many horses have periods of hyperexcitability, apprehension, and/or sleepiness. Fine tremors and fasciculations of the face and neck muscles are very common and paralysis of the nerves of the head can occur. The disease is extremely unpredictable. About 1/3 of WN virus cases do experience an increase in severity of clinical signs within the first 7-10 days of onset. This can occur many times after the clinical signs have abated. Some horses progress to complete paralysis of one or more limbs. Most of these horses are euthanized due to humane reasons or die spontaneously.
Q: Treatment?

A: All therapy is supportive; there is no specific treatment. The focus of therapy is to decrease brain inflammation, treat fever, and provide supportive care which may require 1-4 weeks of intermittent therapy. Common medications include flunixin meglumine (Banamine), dimethyl sulfoxide (DMSO), and dexamethasone. Only anti-inflammatory doses are recommended. Some veterinarians express concern that signs can recur when steroids are decreased. Sometimes fluid therapy is needed for animals not able to drink. Oral or intravenous feeding may also be necessary. For recumbent horses, slinging is recommended 2 to 3 times per day. Head and leg protection is also frequently needed. In general, many horses will improve within 3 to 7 days of displaying clinical signs. After 3 to 5 days, horses that are recovering or stable may exhibit a sudden recurrence of clinical signs. This may be of short duration or horses may become suddenly recumbent and either die or require prolonged treatment. Horses that become recumbent should be aggressively treated with anti-inflammatory therapy. Multiple attempts per day to assist standing are recommended.

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Q: I recently heard a story about someone who was told by a stable owner that her horse died of West Nile Virus a week after another horse at the stable was also said to have died of West Nile virus. The story went that the stable owner had a relative that worked at a lab and the relative identified the cause as West Nile virus. An autopsy wasn’t performed on either horse. ML-The only way to confirm WNV in horses that have died is through a full post mortem.

Other information indicated that both horses were fully vaccinated against West Nile and the second horse (22 years) was ridden with no noticeable symptoms within the week of his death. The horse apparently went off his feed a few days before he went down and, though he has been known to colic in the past, there were no signs of colic when he was discovered the next morning.

A: There are many diseases that could cause the death of an older horse. The only way to ultimately confirm would have been through a post mortem.

Q: Why do the northeast states (NH, VT, Maine) not show up with numbers one would expect? They have plenty of mosquitoes – but do they have the correct subspecies?

A: This is probably related to the comparatively short mosquito season in those far northern states. There are many species of mosquitoes in the NE United States that are capable of transmitting this virus. Keep vaccinating!

Q: Many have indicated that horses are sentinel animals with regards to alerting to WNV in humans. Have there been any studies that correlate horse cases with human cases?

A: Human cases occur in the same geographic area as equine cases. You can use either species as a sentinel for the other. The value of horses as sentinels has lessened because of widespread vaccination of horses in the US. Human case numbers are increasing while equine case numbers are declining.
Q: How often should you give if you are in the southeastern part of the US?

A: Speak to your veterinarian about what is recommended for your specific area. The answer will vary depending on your exact location, the climate that year, mosquito populations, and the vaccine you use.

Q: What are signs and symptoms of west Nile if any? In humans and horses?

A: This question is answered in the presentation and in previous answers.

Q: Once a human or horse has contracted WNV are they then immune to further occurrences or can it reoccur?

A: It’s probably unlikely they would become sick again unless there was a significant change in their immune status -- in other words, they were immune suppressed for some reason.

Q: Is there ever confusion in diagnosis of WNV versus EPM when seeing ataxia in a horse? Is the blood test for WNV definitive?

A: Absolutely these diseases can be confusing to sort out clinically. The blood test for WNV is very reliable but no test is 100%. It is also possible that a horse could have both WNV and EPM at the same time. Adverse health events can trigger clinical signs from EPM.

Q: Has the inappropriate mastication response in affected horses been seen chronically (>1 year duration for example)?

A: It is possible for this to occur, but not common.

Q: What other areas are affected with the twitching? We saw the face in the videos but can it be any area? My horse was twitching in his flanks after a ride and I thought he was just tired, but then I noticed it again while cleaning his hooves.

A: First, your horse likely was twitching from exercise. The twitching associated with WNV is spontaneous and uncontrollable. While facial twitching is the most common, twitching can be noted in the chest and flank. There may be whole body twitch that is so intense that the horse cannot eat or drink.

Q: Is there a possibility that WNV may become endemic such that natural long term immunity may develop?

A: Yes, this is part of the reason why there is less disease in horse; they are becoming naturally immune. However, disease in people has been increasing over the past two years while horse disease is staying the same. This is because of vaccination so keep on vaccinating your horse. Here in Florida we have had disease from Eastern equine encephalitis virus reported in horses every year since the turn of last century. Even though it is “endemic” and some horses are lucky to become naturally immune, the majority will still get sick if not vaccinated.

Q: Isn’t the first wave of a disease more dangerous than subsequent outbreaks (i.e. equine flu hitting Australia now)?

A: No not necessarily. In fact with WNV, the isolates now obtained in the Northeast are more virulent while the ones from the southeast are less. There is no predicting which way the severity of disease will go in nature.
Q: Could you please cover some ways to help eliminate the mosquitoes the carry the virus? We have wetlands in the area and a pond next to the pasture. What steps can we take to minimize the mosquito population from the pond? Pond size is approximately 40’ x 50’ and wetlands would surround it on a joining property.

A: A few suggestions include:

Use fans-air, movement is protective.
Clean debris in stable and property. Mosquito breed in filth and underbrush.
Keep horses in at night or spray with fly spray. Do not use human products that contain DEET.
Remove standing water. If stock tanks are used for livestock watering place larva feeding fish in tanks.
If ponds are present stock with larva feeding fish.
Keep water moving-Water needs to be disturbed once weekly Empty buckets dog bowls etc weekly.

Regarding wetlands, check with your mosquito control for non-pesticide means of mosquito control. For more mosquito information see the following excellent website: http://mosquito.ifas.ufl.edu. For heavy mosquito infestations consider fogging. PROTECTYOURSELFALSO!

Vaccination/Testing

Q: Perhaps you need to refrain from commenting, but do you have a feeling for which vaccine (sorry, but I am unfamiliar with them) is being used the most? And, how often?

A: I am not aware of any public data regarding sales of specific brands. However, my impression is that the Fort Dodge product (Innovator) is the most widely used. It was the first West Nile vaccine on the market and was very helpful in blunting the severity of disease as the virus traveled across the US. In speaking to veterinarians across the country, it is my understanding that they are vaccinating horses once, twice or three times yearly, depending on their locale.

Q: What is the effect of vaccination on the IgM ELISA test results? Do all of the current vaccines have the same effect or do they differ?

A: One cannot predict the effect of vaccination on the IgM given there are three vaccines that have different formulations. Early literature indicated little IgM in naïve horses but now we are dealing with endemic disease with vaccination with three different products. There may be some interaction if the horse has been recently (like within a week) vaccination and new exposure affecting test results. Interpretation of any diagnostic test must be made with vaccine history. It is obvious based upon Seino 2007 that vaccination is highly efficacious so if there is a good vaccine history with any of the products, it is likely not WNV anyway.

Q: What is the duration of the IgM response? And, is it appropriate to refer to the IgM ELISA as detecting “recent” infection?

A: IgM response to West Nile virus lasts for approximately 4-6 weeks. This response is more reliable than in human infections where a more persistent IgM response is common. ONLY in the face of good vaccine history that indicates no recent vaccination should the IgM ELISA test be used to detect “recent” infection?

Q: Is it still recommended that all positive IgM ELISAs be confirmed with the PRN test?

A: I do not make this recommendation to my clients when they get a positive IgM ELISA. I am
comfortable that a positive IgM response is indicative of recent infection. When combined with appropriate clinical signs I consider it diagnostic for West Nile infection in my patients. We use the PRNT only as paired sera in vaccinated horses. We mostly use the PRNT for horses when the veterinarian needs a titer for evaluation of vaccine response.

Q: What is the role and usefulness of the IgG tests?

A: If the tests do differentiate vaccinated from non-vaccinated horses, then they are excellent for surveillance. The IgG tests are harder to interpret because IgG should be increased after any vaccination. The IgG responses are further complicated because of wide-spread natural exposure across most of the US now. You would have to have paired IgG titers to feel confident of evidence of recent exposure.

Q: I have 27 year old Mare who has been vaccinated in the past with a twice yearly vaccine with no apparent problems. My question is there any problems with vaccinating any older horse with the once yearly vaccine? She who has foundered in the past. Are there any precautions that I need to take in switching over? She is otherwise a healthy older horse. Thank you.....Sue in Florida

A: There are no precautions, all WNV vaccines can be used interchangeably. It is important to note that all the currently available vaccines have a label approval for once yearly vaccination. Despite this label approval, many veterinarians and horse owners have chosen to vaccinate twice yearly. I believe that Intervet is the first company to actively promote once yearly vaccination with their PreveNile product. To my knowledge, none of the vaccines have been specifically tested in older horses. All available data suggests that there is no problem in switching between vaccines at this time.

Q: I live in Southwest Idaho and we were hit very hard with WNV last summer. Not as bad this year, but here's my concern: On Oct. 13th, three weanlings from Eastern Oregon will be arriving at my farm. They have not been vaccinated and have not been halter broken, so will not have an opportunity to do so before they arrive here. Typically, we have a frost around the 10th of October here. How should I proceed once they arrive? Thanks, Julie

A: I would vaccinate the weanlings as soon as they arrive at your farm. If you use the PreveNile product you can have effective immunity in a very short time after a single injection. You can then booster the horses in the spring.

Q: I have a filly that is three years old was vaccinated and still was stricken with west Nile-she lost some co-ordination but has recovered very well. should she be vaccinated next year or is she now immune to west Nile? thanks, lory phillips. ps both vaccine companies say she should be but as this is a live vaccine I am afraid of a relapse.

A: I am very sorry to hear that your horse had West Nile but happy to hear that she recovered. No vaccine is perfect and can prevent all infections. However, it is quite likely that the vaccination your filly received contributed to her rapid and full recovery. There is no hard evidence as to whether clinically affected horses should be boosterized with vaccine in subsequent years. We don’t know how long protection lasts after natural infection. However, most experts recommend that you go ahead and vaccinate as usual in the future. There is no concern of relapse related to vaccination if you use the live “chimera” vaccine. This vaccine includes only a small part of the West Nile virus (the genes coding for the viral surface proteins). The rest of the live vaccine is made from Yellow Fever virus which does not cause disease in horses.

Q: When is it appropriate to give the WNV vaccine to the horse? Spring or Fall or both? Thank you.
A: Give the vaccine in the spring prior to onset of mosquito season. All vaccines on the market are labeled to give once yearly. However, some veterinarians are recommending more frequent vaccination in some areas because of the length of the mosquito season. Speak with your veterinarian about whether the second vaccine is necessary.

Q: Hi, I have two questions, 1st one is if a horse has tested positive for West Nile and survived with treatment does it still need to be vaccinated annually or does it have a natural immunity for life. 2nd question, if you have older horses like in the mid to late 20’s or older that have other medical issues do you feel it is still worth stressing them and vaccinating them at this time? Thank you for any info you can give. Ann

A: The current recommendation is that you continue to vaccinate annually even if the horse has experienced clinical disease.

Q: Hi, I have two questions, 1st one is if a horse has tested positive for West Nile and survived with treatment does it still need to be vaccinated annually or does it have a natural immunity for life. 2nd question, if you have older horses like in the mid to late 20’s or older that have other medical issues do you feel it is still worth stressing them and vaccinating them at this time? Thank you for any info you can give. Ann

A: We recommend that you continue to vaccinate older horses. It appears that these older horses are more likely to die if they get WNV disease than are younger horses. Therefore, the older horses need all the protection they can get.

Q: How often should you vaccinate?

A: This depends on where you live and the vaccine that is being used. Consult your veterinarian.

Q: Is the WNV vaccination which is administered only annually just as effective as the bi-annual vaccination?

A: This depends on the vaccine and the area in which you live. Consult your veterinarian.

Q: Is it okay to vaccinate at the same time I worm or is that hitting my (healthy, young) horse with too much at once?

A: Yes, go ahead and vaccinate and deworm at the same time.

Q: Do pharmaceutical companies change the vaccination composition to best address the viral mutations that may have occurred since the last batch was produced (sort of like our flu vacs)?

A: No, the USDA requires a reapplication for licensure so many vaccines have older versions of the viruses or bacteria, unfortunately. This is a very real problem at present for influenza and possibly PHF and Herpesvirus. We are still likely ok for WNV, but this virus does change rapidly also. Recently the USDA has only allowed exceptions for Influenza vaccines and only if they are “killed” vaccines or preparations that are inactive not modified live.

Q: If so and I purchase direct instead of from my vet, how will I know I have the most current version? Thanks again. Rhonda

A: The most current version is what the company is licensed for. However purchase from your veterinarian will likely make sure the vaccine was handled properly. By the way most state laws require your veterinarian to administer the vaccine if it is an encephalitis vaccine. This allows for correct reporting of disease which is a requirement for most encephalitis disease in the horse.

Q: Yes, all my horses are vaccinated. What is the efficacy of the vaccine? How long is it effective for? I had two late term abortions in my mares this year. Both within a couple of weeks of the West Nile vaccination. I have already decided that next year’s vaccinations will be later in the season after foals are on the ground.
A: The efficacy of vaccination is 90 to 95% in the naïve horse. We recommend that diagnostic testing be performed on all late term abortions. Furthermore consider what else the mare may have been exposed to. New arrivals?, Other vaccines? We tend to blame the newest thing on the farm. However, this may actually hinder an accurate diagnosis. All abortions should be submitted to a diagnostic laboratory for complete work-up.

Q: Since I have only heard of West Nile occurring if a horse hasn’t been vaccinated or is between his first and second vaccination at startup, I’m a little skeptical the cause of death was West Nile and would like to verify there haven’t been any documented cases of a horse dying of West Nile virus once the horse has been fully vaccinated. Thanks, Kat

A: Dear Kat, I cannot verify this. There will always be some horses that do not respond in a protective fashion to vaccination. We really do not know the answer to this. All vaccines are highly efficacious, but about 1 in 10 to 30 horses seem to have a lower response to vaccination in general. If the horse was properly vaccinated and properly identified as WNV and had overt clinical disease, there may be some lingering effects as is shown for any horse affect with WNV. However, at least 95% of vaccinated horses should be resistant to WNV. There are many other neurological diseases which may account for the symptoms and I always recommend further testing for neurological diseases in WNV vaccinate horses with clinical signs.

Q: Is there a WNV vaccine for dogs and cats yet?

A: No.

Q: Has the horse WNV vaccine been improved significantly from what was available in 2001-2002?

A: The original vaccine is still available and to our knowledge, has not been changed significantly since originally marketed. There are two newer vaccines now available as well: RecombiTek by Merial and PreveNile from Intervet.

Q: At what age should a horse first be vaccinated?

A: At 5-6 months if the mare was vaccinated. At 3 months if you are in a high risk area and the mare is unvaccinated.

Q: My question concerns the proper use of vaccine. If I purchase a 10-dose vial of West Nile vaccine, must I use all of it upon initial use of the vial. If I only need, say 8 doses immediately, can the remainder of the vaccine be kept to be used at a later date? Of course, assuming that the vaccine is kept at the proper temperature and vaccine expiration dates are observed.

A: Multidose vials can be stored and used after a period of time if storage conditions and expiration dates are observed. You must contact the manufacturer directly for recommendations. You must be very careful to use sterile technique when getting doses from the vaccine vial. If you accidentally introduce bacterial contaminants, you might get very severe vaccine site reactions with subsequent injections.

Q: Why do we have to have acute and convalescent serum samples to dx an infection if we are testing for IGM Not IGG? Acute and convalescent serum samples are not need for IgM testing, only for IgG testing. A single sample is sufficient for most horses for IgM testing.

A: And How often do we see false initial Negatives that do actually become positive with IGM? This is
uncommon but definitely can occur. Most horses have a detectable IgM titer at the time the first clinical signs are observed. Heather

Q: Can Prevenile be purchased and given by the horse owner.

A: No and most state laws prohibit veterinarians from selling encephalitis vaccines to clients over the counter.

Q: Two years ago I had the vet vaccinate the whole barn as usual for WN. I had had no problems before. One yearling colt, however, within one hour of the shot, lay down and gave the appearance of colic. I took him to the clinic, to discover that his intestine had twisted. We did the surgery, to great expense, and he has been fine ever since. He has not received a WN shot since. Has there been documentation of other such cases? You would have to check with individual vaccine companies for this information.

A: This is not a reaction to the vaccine. Intestinal displacements are a primary syndrome and one of the most common illnesses affecting horses. Given the graveness of your horse’s condition, we are happy that he is doing well and appreciated the investment in time, money and heartache this caused. Unfortunately when we provide common preventative practices there are going to be times when there are concomitant diseases occurring in animals just like in people. In these cases, our preventative measures are often blamed. It is highly recommended that a PRNT test be performed on this horse to make sure he has antibody because he is at risk for encephalitis irrespective of his abdominal surgery.

Q: Are the current WNV horse vaccines applicable to other equine species such as zebras or donkeys or even llamas/alpacas?

A: The current vaccines are only approved for use in horses because they have only been tested in horses. Any other use is “off label”. However, we would highly recommend vaccinating in donkeys. The literature indicates that llamas do make antibody to vaccination with the killed product. For off label use, the product should be administered by a veterinarian and the owner must assume the risks for this use.

Breeding Concerns

Q: How is the West Nile effecting Brood mares Stallion. I have lost several foals after giving the west Nile a month before foaling. The Stallions seems like the have trouble getting the mares to settle of take several months to do so. The mares are cleans so are the Stallions.

A: There is no credible scientific evidence that any of the West Nile vaccines have an adverse effect on stallions or broodmares.

Q: There are so many horror stories about sterility in stallions, aborted foals, and mares coming up open after being confirmed in foal, and all of this after receiving the vaccination. I have also been told that veterinarians are now recommending you NOT vaccinate during the first trimester. Is there any truth to all of this?

A: There is no credible scientific evidence that any of the West Nile virus vaccines cause problems in brood mares or stallions. Many experts caution against vaccinating mares with any vaccine during the first trimester of pregnancy. This is generic advice for all vaccines and not specifically targeted at West Nile vaccines.

Q: My own experience has been with two mares that came up open the following spring after breeding. My stallion has had a perfect record of settling mares, even difficult to settle mares, in the one heat
cycle, before and after that year. I had vaccinated those mares for WNV. That was the only year I vaccinated bred mares, and the only time this happened. I realize there can be other reasons but it seemed a bit too coincidental. Your expertise on this would be very much appreciated.

A: We are sorry for the problems that you had. However, there is no reason to believe that the WNV vaccine was responsible. We both strongly recommend vaccination of breeding mares.

Q: Is it safe for and if so up to how far along, to vaccinate a mare in foal?

A: The initial series of vaccinations for WNV (or any disease) should occur when the mare is not pregnant because she will respond better. Booster vaccinations should then occur approximately 30 days prior to the mare's due date.

Q: Should you vaccinate a pregnant mare, and if so when in the gestation period is safe?

A: Most equine reproduction specialists do not recommend vaccinating within the first 60 days of gestation. However if this puts your mare at risk for encephalitis, it is better to vaccinate the mare irrespective of gestation.

Q: Is there any relation to abortions and the vaccine in pregnant mares, it seems some horse people seem to think so from their own experience?

A: No there is not. However, remember that giving medications during very early gestation is not recommended by many veterinarians.

Q: If a vaccinated horse contracted West Nile virus...would there be any lingering symptoms? Thank you. Janet

A: We really do not know the answer to this. All vaccines are highly efficacious, but about 1 in 10 to 30 horses seem to have a lower response to vaccination in general. If the horse was properly vaccinated and properly identified as WNV and had overt clinical disease, there may be some lingering effects as is shown for any horse affect with WNV. However, at least 95% of vaccinated horses should be resistant to WNV. There are many other neurological diseases which may account for the symptoms and I always recommend further testing for neurological diseases in WNV vaccinate horses with clinical signs.

Q: What have you seen as far as vaccine problems in pregnant mares?

A: We have seen very little.

Q: Several years ago there were some cases that indicated occasionally human fetuses could be affected if the mother had WNV. Any further evidence of this?

A: There is no evidence that foals become infected while in utero. However, any virus might infect a fetus if the levels of virus in the mother’s blood are high enough or if there are specific problems of the mare, fetus or placenta. Transplacental and milk transmission have been demonstrated in people and cannot be entirely ruled out in horses.