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Potomac Horse Fever recently diagnosed in Alabama

Potomac Horse Fever (PHF) was originally identified in the late 1970's as a disease affecting horses in the eastern United States near the Potomac River. However, since then, the disease has been diagnosed in other locations in the United States and Canada, but never in Alabama until recently. This summer, PHF was diagnosed in Alabama horses that had not travelled to regions typically associated with PHF, indicating natural transmission of the disease in Alabama. Potomac Horse Fever is a potentially fatal disease for horses, but is curable if treated early. If you suspect PHF in your horse, contact your veterinarian immediately.

What are the symptoms of PHF?
In the beginning, the symptoms of PHF may be subtle and similar to other intestinal diseases. Initially, an infected horse will often be lethargic and have a loss of appetite, fever, and decreased intestinal sounds. Within about 24-48 hours, horses then develop moderate to severe diarrhea with or without mild colic in about 60% of cases. Any combination of these symptoms may be present. About 20-30% of affected horses will also develop laminitis, which is usually severe and often refractory to treatment. Uncommonly, pregnant mares affected between day 90 and day 120 of gestation may abort their fetus during the last trimester. Foals appear to have a low risk of contracting PHF. The overall case fatality rate is 5%–30%.

When does PHF usually occur?
The disease is seasonal, typically occurring between late spring and early fall, with most cases in July, August, and September with the onset of hotter weather.

What causes PHF?
PHF is caused by the bacteria *Neorickettsia risticii*. The incubation period (the time from exposure to *Neorickettsia risticii* until clinical disease begins) for PHF is about 10–18 days.

How is PHF transmitted?
Neorickettsia risticii, the causative agent of PHF, is found in flukes that develop in aquatic snails that are then released by the snails into bodies of water. Aquatic insects such as damselflies, caddisflies, and mayflies can pick up infected flukes, and the primary route of transmission is believed to be accidental ingestion of the insects carrying *Neorickettsia risticii* by horses grazing near or drinking from freshwater creeks, rivers, lakes, or ponds. Even if the horses are not near these bodies of water, precautions should be taken; make sure there is no stagnant water where the horses are kept. This includes proper drainage in pastures, clean water in troughs and buckets, etc.

Are horses with PHF a health risk for other horses?
No. Horses with PHF are not contagious and can be safely housed with susceptible horses. However, PHF is initially indistinguishable from *Salmonella*, which is zoonotic (can be passed from animals to humans) and does pose a health risk to the other horses as well as any other animals and their owners. In order to ensure that the horse does not have *Salmonella*, he/she should be quarantined until fecal test results come back negative. If the results do come back negative for *Salmonella*, he/she can be turned out to normal housing conditions.

However, horses housed in the same area as horses with PHF are potentially at risk for contracting the disease from the same environmental hosts, and should be monitored closely as well.

Are more cases of PHF likely to occur in Alabama?
Possibly. Since PHF is transmitted by flukes, aquatic snails, and insects, once it has been confirmed in a particular geographical area, it is possible that additional cases will occur in the future. While additional studies are needed to determine the exact role of the fluke, snail, and insect vectors in the complex maintenance cycle of *Neorickettsia risticii*, the fact that there are hosts capable of transmitting this disease in our Alabama environment means that future cases are likely. The frequency of new cases remains to be seen.

Can PHF be treated?
Yes. PHF diagnosis is confirmed by identification of the organism in a blood or manure sample from the horse via PCR tests in the laboratory. Once confirmed to have PHF, affected horses can be treated successfully if your veterinarian is able to administer the proper antibiotics early in the clinical course of the disease. A response to treatment is usually seen within about 12 hours, starting with a drop in rectal temperature, followed by an improvement in appetite and intestinal sounds. If therapy is started soon enough, clinical signs frequently resolve by the third day of treatment. Since PHF causes diarrhea, horses may become severely dehydrated. Electrolytes are recommended until the veterinarian is able to see the horse.

Are people or other animals at risk of contracting PHF?
There is no known risk to human health associated with PHF. Occasional disease caused by *Neorickettsia risticii* has been reported in dogs and cats, but cattle appear to be resistant to infection.

Prevention and vaccination
Minimizing accidental ingestion of insects carrying *Neorickettsia risticii* is the best way to help prevent PHF. For example:

- Turning off barn lights at night for stabled horses, as these lights normally attract the insects carrying *Neorickettsia risticii*.
- Minimize grazing near or drinking from freshwater creeks, rivers, lakes or ponds.

Although vaccination has protected 80-85% of experimentally infected horses, it does not appear to be as protective in the field. Vaccine failure in the field has been attributed to genetic diversity among the greater than 14 different strains of *Neorickettsia risticii* isolated from naturally occurring cases of PHF. Despite this, vaccination is still recommended for horses at risk of contracting PHF.

AAEP recommended vaccination schedules for PHF
- The American Association of Equine Practitioners (AAEP) makes the following vaccine recommendations for horses at risk of contracting PHF, but check with your local veterinarian for recommendations in your area.

- Due to the seasonal incidence of disease, vaccination should be timed to precede the anticipated peak challenge during the summer months or fall.

- *Adult horses, previously vaccinated:* The vaccine manufacturer recommends annual revaccination. However, veterinarians may consider an interval of 3 to 6 months for horses in high-risk areas because protection following vaccination can be incomplete and short-lived.

- *Adult horses, previously unvaccinated or with unknown vaccination history:* Administer a primary series of two doses, at a 3- to 4-week interval. Peak protection occurs 3 to 4 weeks after the second dose.

- *Pregnant mares previously vaccinated against PHF:* Vaccinate semi-annually to annually. Schedule one dose to be administered 4 to 6 weeks before foaling. To date, no studies have been published that examine the efficacy of PHF vaccines to prevent *Neorickettsia risticii* induced abortion.

- *Pregnant mares unvaccinated or with unknown vaccination history:* Administer a primary series of two doses, at a 3- to 4-week interval. Schedule so that the 2nd dose is administered 4 to 6 weeks before foaling.

- *Foals:* Due to the low risk of clinical disease in young foals and the possible maternal antibody interference, primary immunization for most foals can begin after 5 months of age. The manufacturer's recommendation is for a 2-dose series administered at a 3- to 4-week interval. However, as with other killed products, a third dose at 12 months of age is recommended. If the primary series is initiated when foals are less than 5 months of age, additional doses should be administered at monthly intervals up to 6 months of age to ensure that an immunologic response is achieved.

- *Horses having been naturally infected and recovered:* Administer a primary series (as described above) or booster vaccine (if previously vaccinated) 12 months following recovery from natural infection.

Please contact your local veterinarian about specific PHF prevention and vaccination strategies for horses living in your area of Alabama.

References:

1. Merck Veterinary Manual
2. American Association of Equine Practitioners

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