



**House
Legislative
Analysis
Section**

Washington Square Building, Suite 1025
Lansing, Michigan 48909
Phone: 517/373-6466

THE APPARENT PROBLEM:

There are a number of serious horse diseases, some of which humans also may contract, that can be prevented by vaccinations and others which, though not currently preventable, can be reliably identified through clinical testing.

Equine infectious anemia (EIA, also known as "swamp fever") is a viral disease that affects only equine species, such as horses, ponies, donkeys, and mules. It has been compared to AIDS among humans, because it is transmitted by the introduction of a bodily fluid (usually blood) from an infected horse to a healthy horse. Transmission is most commonly by biting insects (mainly horse flies), though it also can be transmitted by the use of a single needle on a number of horses, one of which is infected. Once infected, horses harbor the virus for life. Though there is a reliable test (the "Coggin's" test) for the presence of antibodies to the virus, there currently is no effective vaccine or treatment for EIA.

Equine infectious anemia is commonly confused with two other diseases of horses, eastern equine encephalomyelitis ("EEE" or "sleeping sickness") and Potomac horse fever, because the early signs for all three are similar (fever, depression, and loss of appetite) and they all have complicated and often misunderstood transmission patterns. Humans also can be infected with EEE and with western equine encephalomyelitis (WEE), though not with Potomac horse fever.

After an outbreak of equine infectious anemia in Tuscola County, in Michigan's thumb area, a petition drive (which gained several thousand signatures) was initiated to request the state legislature for "the introduction of legislation aimed at creating a state regulatory control program for the control and eventual eradication" of EIA. The Department of Agriculture has further suggested legislation to require vaccinations against three other serious horse diseases (EEE, WEE, and Potomac horse fever).

THE CONTENT OF THE BILL:

Section 26 of the Animal Industry Act of 1987 (Public Act 466 of 1987) requires that all horses (and other domesticated members of the horse family) that are imported into the state test negative for equine infectious anemia within 180 days before being imported. The bill would add two new sections to the act, and would amend the existing provision concerning the testing of horses imported into the state.

Note: The committee substitute, H-1, is apparently flawed, since it adds a new section (section 25a) which would require that horses be vaccinated for equine infectious anemia, a disease for which no vaccination currently exists. The bill would also require testing for EIA and vaccination for EEE, WEE, and Potomac horse fever.

ANNUAL HORSE VACCINATIONS, TESTS

House Bill 4730 (Substitute H-1)
First Analysis (5-15-89)

RECEIVED

JUN 06 1989

Sponsor: Rep. Kay M. Hart
Committee: Agriculture

Mich. State Law Library

H.B. 4730 (5-15-89)

The bill would add language to require that horses be vaccinated annually for eastern equine encephalomyelitis (EEE), equine infectious anemia (EIA), and Potomac horse fever before being imported or sold and before participating in or being on the grounds of a fair, race, show, or equine sale. Upon request of the Department of Agriculture or of the fair, race, show, or sale operator, the horse's owner (or the owner's representative) would have to present proof of the required vaccinations.

The bill would also amend the act to require that imported horses, in addition to testing negative for equine infectious anemia within 180 days of importation, be vaccinated, within 365 days before importation, for eastern equine encephalomyelitis, western equine encephalomyelitis, and Potomac horse fever. A dated, completed vaccination certificate or statement signed by a veterinarian would be proof of the required vaccination.

Further, the bill would add language to require that all horses within the state:

(a) test negative for equine infectious anemia within 180 days before any public or private sale, exchange of ownership, fair, race, show, or public exhibition, and

(b) be vaccinated for eastern equine encephalomyelitis, western equine encephalomyelitis, and Potomac horse fever within 365 days before any public or private sale, exchange of ownership, fair, race, show, or public exhibition.

Upon the request of the director of the Department of Agriculture or of the operator of a fair, race, show, sale, or public exhibition, the horse owner (or the owner's representative) would have to present proof of the official test for equine infectious anemia and proof of the required vaccinations. The authority running the fair, race, show, sale, or public exhibition would be responsible for examining and approving the required official test chart for equine infectious anemia and vaccination record.

MCL 287.726 et al.

FISCAL IMPLICATIONS:

Fiscal information is not available.

ARGUMENTS:

For:

As a public health measure, and generally for the good of the horse industry, all horses in the state should be vaccinated annually for eastern equine encephalomyelitis (EEE) and western equine encephalomyelitis (WEE), serious diseases that can affect humans as well as horses. Both diseases, though rare in humans, are especially dangerous to children who become infected.

Eastern equine encephalomyelitis is a disease caused by a virus that attacks the nervous system. It is transmitted by mosquitoes, who infect horses, people, birds and a

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variety of small mammals. EEE is fatal 90 to 95 percent of the time in horses, and 50 to 75 percent of the time in people, with the highest percentage of fatalities occurring among children. The majority of children who do survive an EEE infection are left with permanent neurologic damage, including mental retardation, behavioral changes, convulsive disorders, and possibly paralysis. The one confirmed human case of eastern equine encephalomyelitis reported in Michigan, which occurred during the 1980 outbreak of EEE, did result in death for the infected child. A 12-year-old boy from St. Joseph County became infected with EEE and was hospitalized in August, 1980. He suffered severe, permanent neurological damage until his death in March, 1982.

Western equine encephalomyelitis (so called because in the past it occurred almost exclusively in the western United States and Canada) also affects both horses and humans. Though only three to four percent of infected humans die from the disease, and although permanent damage in affected adults is rare, western equine encephalomyelitis, like eastern equine encephalomyelitis, is especially severe in infants and children. About one-third of the reported human cases have been in children under five years old, with infants under one year old being most apt to develop severe cases of the disease. About half of the infants who catch the disease suffer permanent damage, including progressive retardation and major motor disorders. Outbreaks of the disease occurred during 1975 in North Dakota, South Dakota, Minnesota, and Manitoba, with at least 346 suspected human cases reported. In 1981, Manitoba had another outbreak with over 100 horse cases and five human cases reported, while during 1983 there were four human cases of WEE and 32 horse cases reported in the U.S. Even though human cases have not been reported in Michigan, horse cases occasionally occur and the WEE virus has been isolated from mosquitoes in Michigan; the potential exists for an outbreak in Michigan.

If human deaths or permanent damage in children can be prevented by requiring the vaccination of all horses against these diseases, the state has an obligation to its citizens to see that such a requirement is enacted into law.

Response: Because of the transmission cycle for both EEE and WEE, universal vaccination of horses would not appear to be an effective public health measure, although it may well be desirable to protect the horse industry.

According to information distributed by the state veterinarian, horses and humans are considered "dead end" hosts in the transmission cycle of both diseases. The "reservoir" for infection is, instead, wild birds (such as cardinals, blue jays, catbirds, wood thrushes, robins, and sparrows), who are beyond the reach of standard public health measures such as universal vaccination.

Mosquitoes which feed on both infected birds and on mammals are responsible for transmitting the diseases to horses and humans. Once infected, mosquitoes remain infected for life, though they do not die from the disease. However, for mosquitoes to become infected, and thus able to infect others, they must first feed on a host with high enough levels of the virus in its bloodstream. Mosquitoes feeding on blood which contains virus amounts below a certain level may not become infected or may not produce levels of virus adequate to infect other subjects on subsequent feedings. Horses, and probably humans, rarely develop levels high enough to infect mosquitoes. Levels of the virus do get high enough in infected wild birds (who rarely die from the disease), but once infected, birds produce antibodies which eliminate the virus after a few

days' infection, so the necessary high levels of virus in an infected bird's bloodstream last only from three to five days.

For:

Although responsible horse owners will vaccinate their horses against serious horse diseases when vaccinations are available — as they are for both eastern and western equine encephalomyelitis and for Potomac horse fever — less responsible owners may not. Like all effective preventive measures, vaccinations can save horse owners both economic loss (whether or not their infected animals actually die) and emotional distress. To protect the valuable horse industry in the state — and to protect responsible horse owners from irresponsible owners — the state should require universal vaccination of horses in the state (or imported into the state) for these three diseases.

For:

Currently, Michigan's animal industry act requires only that horses imported into the state have had negative Coggins tests within 180 days of being imported. Horses already in Michigan are not required by state law to have had negative tests before participating in public horse events; this is left up to the organizers of such events, and reportedly many do not require negative tests. Because of the nature and seriousness of equine infectious anemia, for which no vaccination or cure currently exists, all horses coming into the state or present at certain events where other horses will be present should be required to test negative for this disease before being allowed to come into the state or participate in public horse events.

Equine infectious anemia is a disease caused by a virus that attacks red blood cells in members of the horse family. The disease can be fatal, though fatalities are more the exception than the rule. Infected horses can die within 3 to 10 days after the virus enters their bloodstream; they may become very sick and then have no sign of the disease for a long time other than occasional attacks of fever, weight loss, and depression; or they may appear to be healthy for their entire lives and never show signs of the disease, though all the while serving as a "reservoir" of potential infection for other, healthy horses.

Since horses infected with EIA may appear healthy, the only way that owners of healthy horses can protect their animals from unwitting exposure to this disease is by being assured that all horses coming into the state or present at fairs, sales, and exhibitions are free from the disease. The economic loss to unsuspecting breeders and owners whose horses are exposed to asymptomatic infected horses can be devastating, and there is little that such owners can now do to protect themselves from it on their own. It is imperative that all horses be tested for EIA and not allowed to come into the state or participate in public events if they are infected.

Against:

Since there is no vaccine for equine infectious anemia, it is impossible to require that all horses in the state be vaccinated against this disease. However, universal screening should be required.

Response: A second substitute for the bill has been prepared which would delete section 25a (which, among other things, would require vaccinations for EIA).

Against:

Even if the state does require that horses coming into the state or participating in public events be tested for EIA, unless enforcement of this requirement is funded there is little likelihood that a required testing program will help identify infected horses. The bill appears to add more state regulations without funding them to accomplish their intended goal. What is more, many public fairs and shows already require negative EIA tests for participating horses, so the bill may be redundant.

Response: Enforcement funding often lags behind needed regulation. The bill would at least establish the importance of a universal testing program for EIA, and would give the Department of Agriculture the authority to ask for proof of EIA testing in situations where this information would be important to protect healthy horses from exposure to the disease. Also, even though many public events apparently do require that horses test negative for EIA, reportedly test results at some events are rarely, if ever, checked, so there is no way for responsible owners to know when their healthy horses are being exposed to infected ones, short of keeping their horses home.

Against:

There may be a need to test horses participating in public events and require that they have certain vaccinations, but private sales should not be included in the bill. Horsetraders are well aware of the warning "buyer beware!" Any responsible buyer (and any responsible seller) will be sure that a prospective purchase has had these vaccinations and has tested negative for EIA, and a buyer would be foolish not to ask. What is more, there are some groups in the state, such as the Amish, for whom the costs of the proposed testing and vaccinations could be prohibitive (though costs will vary from veterinarian to veterinarian, they could range from \$30 to \$50 per animal), and whose transactions remain entirely within their own community, so outsiders would not be affected even if the horses in question were infected with EIA.

Response: The Amish horse community is not a closed community. Many non-Amish horse owners board their horses with Amish farmers and pay to have their horses trained as draft or buggy horses, so there is a constant traffic in horses between the Amish and non-Amish horse community. Responsible horse owners are aware that owning a horse means paying certain veterinary bills, both preventatively and when the horse is injured or falls ill. The bill would not be an unreasonable economic burden on owners and would, in the long run, benefit everyone in the horse industry.

Against:

The bill's measures against equine infectious anemia do not go far enough. Screening alone will not eradicate EIA; only killing all horses who test positive for the disease will eventually eradicate it. The bill should not only require universal testing for EIA but also should require that all horses who test positive for EIA be killed, so as to prevent them from serving as a potential source of infection for other horses.

Response: Often, owners of horses who test positive will voluntarily kill the infected horse, even though the Department of Agriculture does not require that they be killed. The department allows owners of horses with positive tests to kill the horse, isolate it in a mosquito-proof stall, or pasture it at least a quarter mile from any other horses.

As the conflicting estimates of the incubation periods of the disease indicate, not enough is yet known about the disease to institute an effective preventative program. What is needed is more education of the horse-owning public and more research into the disease itself, before any such drastic steps are taken as requiring that private owners' horses be killed.

Finally, some people believe that the EIA problem is not so great as to require universal testing, let alone killing all horses testing positive. According to figures from the state veterinarian, out of 18,768 horses tested in 1987, 54 tested positive for EIA, while the figures for 1986 were 11,982 tested, with 50 testing positive.

POSITIONS:

The Department of Agriculture supports the concept of the bill. (5-15-89)

The Michigan Horse Council opposes the bill. (5-15-89)