

Epidemiologic importance of interstate transport of equids infected with equine infectious anemia virus

Colin T. Campbell, DVM, and Sidney R. Nusbaum, DVM

Interstate transport of equids is unique, compared with transport of other livestock, because the usual constraints of interstate requirements and proper identification often are ignored, and industry concern is frequently minimal. This undocumented transport encourages the spread of disease and complicates epidemiologic studies.

The success of race, competition, and, to a lesser degree, pleasure horses depends on interstate travel. The degree of compliance with animal health regulations is acceptable among the owners and trainers of these horses; however, horses of less prominence often are transported or sold without regard for these requirements and other disease control procedures. Tracing the route of these horses and locating or identifying current and past owners usually is difficult, if not impossible. Proper Certificates of Veterinary Inspection, required for most interstate transport, rarely accompany these animals. Livestock auction and sale barns, which serve as congregation points, are useful locations to monitor this equine population. These facilities also serve as a method of disposal for sick, unthrifty, and otherwise unwanted equids. Infectious organisms spread rapidly under crowded conditions and eventually become introduced into new populations.¹ Horses infected with equine infectious anemia (EIA) virus are abundant in this type of trade.²

The New Jersey Department of Agriculture (NJDA) requires the management of horse sales and auctions to provide a private veterinarian with blood samples from all horses untested for EIA, except those purchased for slaughter. The state EIA regulations were amended in September 1988, creating registered slaughter buyers to ensure that horses purchased for slaughter are not used for other purposes. A blood sample delivery system from auctions to the NJDA laboratory enables rapid testing (agar gel immunodiffusion), allowing results

Table 1—1988 and 1989 New Jersey equine infectious anemia (EIA) testing data

EIA test performed	1988	1989
Auction testing	2,987	2,010
All other testing	28,425	26,090
Total	31,412	28,100
Positive EIA tests results		
Auction testing	7	9
Trace-back from auction reactors	5	0
Subtotal (auction and traceback combined)	12	9
All other testing	4	3
Total	16	12
Percentage of reactors identified through auction testing and trace-back investigations	21/28; 75%	
1988-1989 EIA prevalence		
Auction markets	16/4,997; 0.32%	
All other equids	7/54,515; 0.013%	

to be reported within 36 hours after the auction. Despite this short turn-around time, horses often are resold and transported to other states before test results are reported. Certificates indicating pending EIA test results are available at New Jersey auctions, but rarely used by purchasers. Test charts are mailed directly to purchasers but, reportedly, are not always forwarded to current owners if horses are resold after the auction.

During 1988 and 1989, most equids infected with EIA virus in New Jersey were recent imports from auctions and affiliated dealers (Table 1). Mandatory testing of horses sold at auctions, enforced since November 1987, and trace-back investigations of infected horses have been responsible for identification of 75% (21/28) of the EIA-virus infected horses in New Jersey. From January 1988 to January 1990, 28 horses in New Jersey were determined to be infected with the EIA virus. Sixteen of these were among the almost 5,000 horses tested at auction, 5 were discovered by locating the origin of infected animals (trace-back investigation) and testing previous equine contacts, and 7 were discovered through 55,000 routine tests conducted on all other equids except auction horses. The prevalence of EIA in horses sold through New Jersey auctions (0.32%; 16/4,997)

From the Division of Animal Health, New Jersey Department of Agriculture, Trenton, NJ 08625. Dr. Campbell's present address is State of New Jersey Department of Health, Division of Consumer Health, Biological Services Program, CN 364, Trenton, NJ 08625-0364. Dr. Nusbaum's present address is 5689 Park Walk, Circle East, Boynton Beach, FL 33437.

was 25 times higher than the prevalence in all other horses tested in the state (0.013%; 7/54,515).

Three recent cases investigated by the NJDA illustrate the threat that EIA virus-infected horses sold through livestock auctions pose to the general equine population. Horse 1 originated in Missouri, was consigned to a Massachusetts auction by an Iowa dealer, and purchased by a New Jersey buyer. The horse was not tested for EIA at the auction, which was standard procedure, because the buyer claimed the horse was purchased for immediate slaughter. Eight days later, this horse was sold and tested for EIA at a New Jersey auction. The positive test result was reported 36 hours after the sale, and the horse was quarantined to the auction barn where it had remained after the sale. A confirmatory test was performed and the owner elected to send the horse to slaughter.

Horse 2 originated in North Carolina, was sold and tested for EIA at an auction in Virginia, then transported to the buyer's residence in Maryland. Two days later, a Delaware horse dealer purchased the horse and sold it through a New Jersey auction, where it was again tested for EIA. The horse was transported to the buyer's property in Connecticut. The owner was notified of the New Jersey auction's positive result within 48 hours after the sale by Connecticut officials. The horse was quarantined, retested, and then sent to slaughter. During a 7-day period, this horse had resided in 6 states.

A third case involved a horse that was consigned from Tennessee to a Georgia livestock auction and subsequently sold to a South Carolina buyer. The horse was tested for EIA at the time of sale. Three days later, the horse was sold through a New Jersey auction to a Massachusetts buyer and was again tested for EIA. The owner was notified of the New Jersey auction's positive test result within 48 hours after the sale, by Massachusetts officials. In this instance, the horse had resided in 5 states during a period of 6 days.

In all 3 cases, EIA-virus infected horses mixed with a large number of other horses during transport and at each location where they temporarily resided. The horses 2 and 3 were resold and transported out of state before the initial auction's test results were completed, and were not located until after they were tested again at a different auction.

After initial concern about control of EIA during the 1970s, interest in regulation of the disease decreased. In the past year or two, however, attempts to control the disease seem to be increasing. At a recent meeting,^a state livestock officers expressed renewed concern about the spread of EIA. Numerous states, including Michigan, Arkansas, and Illinois, added EIA test requirements for interstate importation of equids. Other states tightened their regulations. Texas now requires EIA testing of equids within 6 months, down from 12 months, before they enter the state. Horses also must be listed and fully described on USDA Veterinary Services EIA test charts (VS 10-11).

Officials concerned about EIA must establish programs to monitor sales and auctions. The potential to disseminate the EIA virus is complicated by some horse dealers who ignore or circumvent state and federal regulations whenever possible, because they apparently believe that profit is directly proportional to the speed of resale. Rapid testing, accurate identification, and prompt response at livestock auctions are essential components of an effective EIA control program.

^aWoods T, Director of Arkansas Livestock and Poultry Commission, and Chaddock HM, State Veterinarian and Director of Michigan Animal Industry Division, National Assembly of Chief Livestock Officers, Las Vegas, Nev: Personal communication, 1989.

References

1. Nusbaum SR. Survey findings of equine infectious anemia-positive horses in New York State. *Proc Annu Meet US Anim Health Assoc* 1975;201-205.
2. Knowles RC, King HL. The 1963 equine influenza epizootic. *J Am Vet Med Assoc* 1963;143:1108-1110.