Novel Bunyavirus in Domestic and Captive Farmed Animals, Minnesota, USA

To the Editor: Xing et al. (*1*) conclude that evidence of infection with a severe fever with thrombocytopenia syndrome (SFTS)–like virus or Heartland-like virus (HRTV) was found in many captive large mammals from much of Minnesota, raising the specter of widespread distribution of a novel pathogen. Although it is likely that HRTV can be found beyond the areas in northwestern Missouri, where it was discovered (*2*), we contend that this conclusion is not substantiated by the data presented by Xing et al., which were generated by an assay that was developed to diagnose SFTS virus infections in China (*1*,*3*). The study used an ELISA developed for an SFTS virus recombinant nucleocapsid protein that detects SFTS-reactive antibodies (*3*). The conclusions reached by Xing et al. are based on the assumption that the SFTS assay developed in China will cross-react with HRTV antibodies (*1*). This assumption remains unsupported because the SFTS assay has not been evaluated for cross-reaction with antibodies to other non-SFTS members of the genus *Phlebovirus* (*1*,*3*). In addition, it is well recognized that serologic tests, like the ELISA, are often group reactive (*4*), requiring neutralization tests to confirm antibody presence and provide specificity. Alternative explanations include the possibility that positive results from testing by Xing et al. may have been caused by cross-reaction with antibodies directed against other known tick-associated phleboviruses endemic to North America, such as Lone Star virus (*5*), which is not known to be pathogenic. In the absence of confirmatory data generated by an independent method, the report by Xing et al. (*1*) should be considered speculative. Reports suggesting substantial expansion in the geographic range of a pathogenic organism should be based on rigorously validated laboratory methods.

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In Response: We welcome the critiques of Nasci et al. (*1*), who may have misinterpreted the point of our Dispatch. Regarding identification of Heartland virus (HLV) in farm animals, in our article (*2*), we stated that "the viruses detected in this region are most likely HLV or close relatives of HLV," which indicates that the exact identification of the viruses in the animals in Minnesota will not be confirmed until the viruses are isolated and/or the genomic sequence data are available.

The underlying data were obtained with an ELISA specific to severe fever with thrombocytopenia syndrome virus (SFTSV). The conclusion was based on our knowledge, at the time our manuscript was submitted, that in North America no other known phleboviruses of this expanded Uukuniemi group that contains SFTSV and HLV were reported to be cross-reactive with SFTSV. When tested by using our reagent, SFTSV was not cross-reactive with Rift Valley fever virus. Related phleboviruses of this group (e.g., Bhanja, Palma, Forecariah, and Kismayo viruses) have not been reported in North America (*3*). Phleboviruses of this group, such as Murre virus and RML-105355 virus, and Sunday Canyon virus, were isolated in Alaska and Texas, respectively, but are not cross-reactive with SFTSV (*4*).

Other bunyaviruses in North America (e.g., Cache Valley virus and California serogroup viruses) are distantly related and have ≈11% amino acid sequence homology to SFTSV. The recently characterized Lone Star virus appears to be the closest relative to SFTSV and HLV and may cross-react with SFTSV and HLV, as also suggested by Nasci et al., but this virus is apparently known only from 1 isolate obtained in 1967 (*5*). These data suggest that SFTSV is not serologically cross-reactive with the known Uukuniemi group viruses that are currently being transmitted in North America. Our report shows that tickborne