



Immediately notifiable disease (IND) – *Factsheet*

Equine Encephalomyelitis, Eastern (EEE) and Western (WEE)



Epidemiology:

Etiology: Eastern (EEEV) and Western (WEEV) equine encephalomyelitis viruses (*Togaviridae*)

Agent type: Virus

Mode of Transmission: Vector transmitted disease

Susceptible species and reservoirs:

Reservoirs: Avian (wild birds)

Vector: Mosquitoes (*Culex tarsalis* (WEEV), *Culiseta melanura* (EEEV&WEEV), *Aedes sollicitans* and *A. vexans* (EEEV))

Dead-end hosts: Most frequent: Equine and Human
Other: Other mammals (EEEV only)

Descriptive information		Source
OIE-listed	Yes	(1)
Zoonotic (Public Health impact)	Yes; flu-like syndrome and neurological signs. Can be asymptomatic. EEE: 4-5% infected with the virus develops encephalitis. In these, the case fatality rate of 30-70% and persistent neurological deficits in patients who survive. WEE: Milder than EEE. Severe disease in children, mild in adult, with 3-14% case fatality rate. Experimental vaccine exists.	(2, 3)
Global distribution	Americas	(4)
Animal occurrence in Canada and USA	<p>Canada : EEE is sporadic in Canada; IND (immediately notifiable disease) cases reported by year in domestic horses: 13 (2018), 2 (2017), 2 (2016), 9 (2015). A few cases reported in domestic avian. WEE is rare. Latest cases detected in 1988 in Canada (Manitoba) and a possible case reported in 2017.</p> <p>USA : EEE is endemic in USA. WEE appears to be declining in USA, no case confirmed since 1998.</p>	(5-8)
Clinical signs*	Fever, lethargy, anorexia, characteristic somnolence and other signs of neurological disease (cranial nerve abnormalities, altered mentation, impaired vision, circling, head pressing, wandering, difficulties swallowing, hyperexcitability, ataxia and convulsions).	(2, 9, 10)



Animal Health impact	Equine: Fever and neurological disease (sleeping sickness) with case fatality rate of 20-30% (WEE) and 40-90% (EEE). Surviving horses show persistent neurological deficits.	(2, 4, 11)
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Criteria for reporting an immediately notifiable disease:

Compatible clinical signs* plus one or more of the following:

- Detection of EEE/WEE virus by reverse transcription polymerase chain reaction (RT-PCR), immuno-histochemistry (IHC) or virus isolation;
- A fourfold or greater serological test result in antibody titer in paired serum samples;
- Detection of IgM antibody in a horse that has not been vaccinated in the preceding 45 days. (2, 9, 10)

References

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