## West Nile Virus Summary Guidance for Veterinarians

### Agent
West Nile virus is an arbovirus in the Flavivirus genus (family Flaviviridae)

### Susceptible species
- Multiple species including birds, mammals, reptiles and amphibians
- Birds are main reservoir hosts; WNV-infections have been documented in more than 320 species of North American birds since 1999.

### Occurrence in BC and the world
- Until 1999, WNV was commonly found in Africa, Eastern Europe, West Asia and the northern Mediterranean area
- In 1999, the first N. American cases occurred in New York City. It has since established itself in the lower 48 States and much of Canada.
- In BC, small numbers of cases have been detected, primarily in the Okanagan:
  - Mosquito pools tested positive in south Okanagan in 2009 and 2013
  - 5 birds tested positive (4 crows, 1 magpie) in central Okanagan in 2010, and 1 in 2013
  - 5 horses have tested positive: in 2009 (3), 2011 (1) and 2013 (1)
  - 2 locally acquired humans cases in central Okanagan in 2009; 1 in central Okanagan in 2010

### Transmission
- Vector borne (primarily mosquito). In BC the two primary competent vector species are Culex tarsalis, and Culex pipiens.
- Humans and horses considered dead-end hosts

### Diagnosis

- **Clinical**
  - Incubation period: 3-15 days in horses
  - Horses: Infection often subclinical. In clinical cases, the signs and course of disease are highly variable. Symptoms include inability to stand, colic, anorexia, muscle fasciculation, weakness, lameness, staggering and fever.
  - West-Nile encephalitis is fatal in 30-40% of cases that develop neurological signs
  - Differential diagnoses in horses include: rabies; equine protozoal myeloencephalitis (EPM); neurological equine herpesvirus-1; botulism; eastern, western and Venezuelan encephalomyelitis (EEE, WEE, VEE); heat stress; trauma; bacterial meningitis; cervical vertebral myelopathy (wobbler syndrome); myeloencephalopathy; and equine degenerative myelopathy.

- **Laboratory**
  - Virus isolation, serology (single IgM preferred), IHC, PCR

### Prevention and control
- Prevention: prevention of mosquito bites, controlling the mosquito population, vaccines are available for horses
- Treatment is symptomatic

### Zoonotic implications
- Only about 1 in 5 persons bitten by an infected mosquito will develop symptoms. Of those who develop symptoms, most experience West Nile non-Neurological Syndrome; about 1/150 cases will develop the more severe WE Neurological syndrome

### Reporting
- West Nile virus is a notifiable disease to the Chief Veterinary Officer (CVO) in BC
  - All laboratory-confirmed cases should be reported within 24 hours (604-556-3013)
  - Veterinarians may be contacted by public health authorities for follow-up
- West Nile virus is immediately notifiable to the CFIA
  - Private veterinarians are not required to notify the CFIA of West Nile virus
  - Only laboratories are required to notify the CFIA of suspect or confirmed cases of West Nile virus