Disease Name: Equine Coronavirus, ECoV

Pathogen: Equine Coronavirus; a beta coronavirus (RNA virus)

Transmission: Fecal-oral transmission following contact with infected horses' feces and/or contact with contaminated surfaces. Stalls, muck forks, manure spreaders, thermometers, hands, and clothing are common fomites. ECoV cases occur year round, with a large proportion diagnosed during the winter months.

Incubation period: 2-4 days

Carrier status: Carrier status is currently unknown but subclinical horses (horses with no clinical signs) have been found to shed the virus in feces, and likely serve as reservoirs for infection.

Prevalence: Unknown, but likely low. In a study of horses presenting for gastrointestinal disease, ECoV was isolated from only 1/258 fecal samples (Sanz et al 2019).

Shedding period: In a small experimental infection study, horses shed from days 3 to 15 following infection (Schaefer 2018). Anecdotal reports of much longer shedding periods (>30 days) following infection are not uncommon. Horses with no clinical signs of the disease can shed the virus.

Severity: Generally mild, but mortality from necrotizing enteritis and encephalopathy from increased ammonia in the blood has been reported. Miniature horses appear to be at higher risk of complications from ECoV infection.

Clinical signs and symptoms:

- Fever up to 105° F (40.5° C)
- Lack of appetite
- Depression
- Low white blood cell count (Leukopenia characterized by neutropenia and lymphopenia (can be severe))
- Diarrhea and/or scant fecal production (variably present)
- Colic

Complications that occur in rare cases:

- Low serum protein and electrolyte derangements secondary to intestinal inflammation
- Encephalopathy from increased blood ammonia (depression, obtundation, wandering, ataxia, seizures)
- Death

Diagnoses: Detection of ECoV feces using PCR (polymerase chain reaction)

Treatment: Treatment for ECoV involves supportive care based on the clinical signs. Severe cases may require hospitalization for intravenous fluid treatment, colloid support, and/or correction of electrolyte and metabolic derangements.

Prognosis: Good. Exposure to the virus can result in up to 85% infection rate but most animals do not show clinical signs. Mortality is generally low.

Prevention: There are currently no vaccines for ECoV. Prevention involves maintaining high standards of sanitation in all equine facilities and carefully disposing of manure where it cannot contaminate pastures, paddocks or drinking water.

Biosecurity: ECoV should be suspected in any horse with fever and no evidence of respiratory illness. Horses positive for ECoV should be isolated and strict biosecurity measures and manure management instituted to prevent the spread of infection to other horses in the vicinity. Other horses on the property should be monitored for fevers and/or leukopenia. Horses should remain in quarantine until fecal PCR negative. Positive horses should be isolated for 3 weeks. See EDCC Isolation and Quarantine information.

