Equine Acute Infectious Diarrhea
Field Diagnostic Guidelines

A wide range of infectious and non-infectious diseases can give rise to diarrhea in the horse, some of which have substantial biosecurity, herd health, and zoonotic implications. While many gastrointestinal conditions in the horse are neither contagious nor zoonotic, some common infectious agents, including but not limited to Equine Coronavirus, Equine Rotavirus, *Salmonella* spp., and *Clostridioides difficile,* are contagious or zoonotic, warranting implementation of biosecurity protocols to protect humans and animals from infection.

AAEP Diagnostic Flowchart for Equine Acute Infectious Diarrhea

Considerations for approaching acute diarrhea cases of unknown etiology

The following scenarios are suggestive of underlying infectious disease and should prompt practitioners to implement biosecurity practices and establish a quarantine on the premises:

- Multiple febrile animals (with or without concurrent signs of respiratory, neurologic, or intestinal disease)
- One or more horses with acute gastrointestinal abnormalities (colic, diarrhea, inappetence) and fever

Isolation on-site or removal of affected animal(s) to an isolation facility is highly recommended. Further information regarding facility management and establishing a biosecurity perimeter in a potential outbreak can be found in the AAEP Biosecurity Guidelines.

Differential diagnoses for adult horses with diarrhea

Adult infectious differentials:

- *Clostridioides difficile*
- *Clostridium perfringens*
- Cyathostomiasis (encysted small strongyles *Cyathostomin* spp.)
- Equine Coronavirus
- *Neorickettsia risticii* (and *N. findlayensis*)
- *Salmonella* spp.

Adult non-infectious differentials:

- Right dorsal colitis associated with NSAID administration
- Toxin (including but not limited to blister beetle, arsenic, oak, and ionophores)
- Sand/gravel consumption
- Neoplasia
- Inflammatory bowel disease

Foal infectious differentials:

- *Clostridioides difficile*
- *Clostridium perfringens*
- *Escherichia coli* (neonates)
- Equine Rotavirus types A and B
- Gastrointestinal parasites
    - *Strongyloides westeri*
    - *Cryptosporidium* spp.
    - *Giardia*
- *Lawsonia intracellularis* (<~1 year of age)
- *Rhodococcus equi* (2-3 months of age)
- *Salmonella* spp.

Foal non-infectious differentials:

- Foal heat diarrhea (~4-14 days of age)
- Nutritional intolerance
- Sand/gravel consumption

Diagnostic approach for suspected cases of infectious equine diarrhea

- **Complete history**
    - Including vaccine, recent medication and anthelmintic history, feed changes, other illnesses on the farm and recent travel
- **Physical examination**
    - *NOTE: Take proper precautions to prevent exposure to zoonotic causes of equine infectious diarrhea, including* Salmonella *spp.,* Clostridioides difficile *and* Cryptosporidium *spp.*
- **AAEP Diagnostic Flowchart for Equine Acute Infectious Diarrhea**
- **Diagnostic Testing**
    - Samples to collect
        - Fresh manure within:
            - Sterile, leak-proof container
            - Aerobic bacterial transport media
            - Anaerobic bacterial transport media
        - Blood
            - Separated serum (RTT)
            - EDTA whole blood (LTT)
        - In addition to testing for diarrhea differentials, a complete blood count (CBC) and chemistry profile are recommended.
        - Blood or CSF ammonia should be added to standard CBC/Chem in horses with diarrhea and neurological signs to rule out hepatoencephalopathy. Ammonia is highly labile. Samples must be collected, processed, and frozen promptly or, ideally, run on an in-house analyzer. Contact your

diagnostic laboratory for handling recommendations.
    - Further information regarding diagnostic sampling can be found at Diagnostic Sample Collection, Handling, and Transport Guide.

Postmortem examination

- Due to the zoonotic potential of the agents causing equine diarrhea, the following practices are recommended to reduce exposure:
    - Do NOT use mechanical saws to obtain tissue samples, as these tools may disperse aerosolized tissue particles.
    - Wear Tyvek disposable coveralls or (at a minimum) solid-front, water-resistant, long-sleeved gowns.
    - Wear double gloves and consider Kevlar gloves, if available, to prevent accidental exposure.
        - Innermost pair—latex or other disposable gloves
        - Outermost pair—substantial waterproof gloves (Playtex kitchen gloves) long enough for gown sleeves to be tucked inside
    - Wear a face shield or goggles to protect mucous membranes.
    - Wear a disposable KN95 or 'half mask' HEPA respirator (3M 8293) to avoid aerosol exposure.

If a definitive diagnosis is not achieved

- Maintain biosecurity measures for 21-28 days after the onset of the last clinical case
- Consult infectious disease expert

Reference

1. Devriendt N, Or M, Meyer E et al. Comparative accuracy and precision of two commercial laboratory analyzers for the quantification of ammonia in cerebrospinal fluid. *Veterinary Clinical Pathology.* 2020; 49:119-124.

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