

# Voluntary Surveillance Program for Important Equine Infectious Respiratory Pathogens in the United States

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Detection of important infectious respiratory pathogens equine herpesvirus-1/-4 (EHV-1, EHV-4), equine influenza virus (EIV), and *Streptococcus equi* subsp. *equi* (*S. equi* spp. *equi*) occurred in 26.4% of equids presented to a care provider for fever, nasal discharge, and coughing. Polymerase chain reaction (PCR) detection rates for important infectious respiratory pathogens varied with season, age, breed, sex, and use of affected horses. Authors' addresses: Department of Medicine and Epidemiology (Pusterla, Mapes, Johnson) and Department of Population Health and Reproduction (Kass), School of Veterinary Medicine, University of California, One Shields Avenue, Davis, California 95616; and Intervet/Schering-Plough Animal Health, Roseland, New Jersey 07068 (Barnett, Vaala, Gutierrez, Whitehead, McDaniel, Manning); e-mail: npusterla@ucdavis.edu. © 2010 AAEP.

## 1. Introduction

Infectious respiratory tract diseases in horses have been identified as one of the most common medical entities by veterinarians nationwide. Because of the contagious nature of certain pathogens involved in these diseases, early diagnosis is important in order to allow proper management and reduce the risk of exposure to other horses. The short turn-around time and reliability of real-time polymerase chain reaction (PCR) makes this molecular technology an ideal tool for the diagnosis of infectious respiratory pathogens. The objective of this study was to gain a better understanding of the prevalence and epidemiology of important viral (equine herpesvirus-1/-4, equine influenza virus) and bacterial (*Streptococcus*

*equi* subsp. *equi*) respiratory pathogens shed by horses presented to veterinarians with upper respiratory tract signs.

## 2. Materials and Methods

Veterinarians throughout the United States were enrolled in a voluntary surveillance program and asked to collect whole blood and nasal secretions from equine patients with acute infectious upper respiratory tract disease and/or acute onset of neurologic disease. A questionnaire was used to collect information pertaining to the patient and its clinical signs. Samples were tested by real-time PCR for the presence of EHV-1, EHV-4, EIV, and *S. equi* spp. *equi*.

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Research Abstract

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## NOTES

### 3. Results

A total of 761 equids were enrolled in the surveillance program over a 24-mo study period. Two hundred one (26.4%) index cases tested PCR positive for one or more of the four pathogens. The highest detection rate was for EHV-4 (82 cases), followed by EIV (60 cases), *S. equi* ssp. *equi* (49 cases), and EHV-1 (23 cases). There were 15 horses with double infections and one horse with a triple infection. Detection rate by PCR for the different pathogens varied with season, age, breed, sex, and use.

### 4. Discussion

This study provided valuable information on the frequency of common infectious respiratory pathogens detected by real-time PCR. A quick and accurate diagnosis of equine infectious respiratory pathogens is important to implement proper management practices and help control disease spread.

### Acknowledgment

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