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Description of influenza in Minnesota swine herds by veterinarian survey: 2007-2009

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Background: Influenza A virus infections are the cause of frequent and significant respiratory morbidity in the North American swine industry. Minnesota, third in the United States for statewide pig population size and pork production, experiences year-round outbreaks of influenza in its swine production facilities. Influenza A viruses can be transmitted from people to pigs and vice versa, thereby presenting a human source of influenza within a herd, as well as a consideration for human health.

Objective: The goals of the current study were to characterize influenza infections in Minnesota swine herds and assess the use of personal protective equipment (PPE) and biosecurity measures by swine production facilities.

Methods: Veterinarians submitting influenza-positive swine samples to the Minnesota Veterinary Diagnostic Laboratory between October 2007 and April 2009 were contacted and surveyed regarding disease-related information for each herd, as well as the PPE-use and biosecurity procedures at each farm. A small subset of producers was similarly surveyed.

Results: Influenza-positive samples were submitted year-round, with peak influenza isolations during March-April and September-November. In the study herds, H1N1 was the most commonly isolated subtype (52%), followed by H3N2 (13%) and H1N2 (13%). Most positive submissions were associated with illness in growing pigs, with a median age of infection of 8.5 weeks. Mean morbidity and mortality were 32% and 2.8%, respectively. Vaccination of sows and growing pigs was conducted at 71% and 7.9% of the swine facilities, respectively. Veterinarians reported that special footwear was the most commonly used form of PPE, followed closely by protective clothing. Glove and mask-use was less frequently reported. Smoking was allowed on 24% of the production sites, and 20% and 23% of sites were known to encourage hand washing before and after handling pigs. Employee vaccination for seasonal influenza was reported by 19% of producers.

Conclusions: The vaccination rate of sows in this study is consistent with national data from 2006, though vaccination of growing pigs is lower than the national average. The seasonal prevalence and knowledge of the most commonly affected age group may provide guidance for diagnostic decision-making when groups of young pigs break with respiratory disease. This study also reveals that the use of PPE and employee vaccination varies among Minnesota swine facilities, a finding which may stimulate discussion between veterinarians and producers about the biosecurity benefits of such measures.