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## Characterization of Inhalation Exposure to Airborne Influenza A among Swine Veterinarians

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**Learning Objective:** To determine the inhalation exposure to influenza A virus among swine workers treating infected swine herds. These results will lead to infection controls to reduce occupational exposure to respiratory viruses among swine workers.

**Abstract:** Influenza A virus is a highly contagious respiratory virus that causes severe morbidity among human and animal populations. Influenza A is a zoonotic virus that poses a major public health concern as illustrated by the 1918 Spanish Flu and 2009 H1N1 pandemic. Swine workers have a significantly higher risk of influenza A infection when compared to their neighbors. Airborne influenza A virus has been detected in swine facilities during an outbreak. However, the personal exposure of swine workers treating infected swine has not been characterized. Two personal bioaerosol samplers, the NIOSH Biosampler and the personal high-flow inhalable sampler head (PHISH), were placed in the breathing zone of swine veterinarians treating swine infected with either H1N1 or H3N2 influenza A. More viral particles were recovered from the NIOSH Biosampler (2867 RNA copies/m<sup>3</sup>) compared to the PHISH sampler (545.4 RNA copies/m<sup>3</sup>). In addition, the majority of viral particles were detected by the NIOSH Biosampler in the >4 µm size fraction. These

results suggest that airborne influenza A virus is present in the breathing zone of swine workers employed in a swine production facility during an influenza A outbreak, and the usage of respirators during an influenza outbreak should be highly encouraged.

Equipment needs: None

Poster

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