

3rd International Conference on

Influenza and Zoonotic Diseases

August 21-22, 2017 | Birmingham, UK

Occurrence and spread of influenza A(H1N1)pdm09 virus infection in norwegian pig herds based on active serosurveillance from 2010 to 2014

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The incursion of influenza A(H1N1)pdm09 virus was detected by Norway's active serosurveillance of its pig population in 2009. Since then, surveillance data from 2010 to 2014 revealed that 54% of 5643 herd tests involving 1567 pig herds and 28% of 23 036 blood samples screened positive for antibodies against influenza A virus. Positive herds were confirmed to have influenza A(H1N1)pdm09 virus infection by haemagglutination inhibition test. In 50% of positive herd tests, 560% of the sampled pigs in each herd had antibodies against influenza A(H1N1) pdm09 virus. This within-herd animal seroprevalence did not vary for type of production, herd size or year of test. The overall running mean of national herd seroprevalence, and annual herd incidence risks fluctuated narrowly around the means of 45% and 32%, respectively, with the highest levels recorded in the three densest pig-producing counties. The probability of a herd being seropositive varied in the five production classes, which were sow pools, multiplier herds, conventional sow herds, nucleus herds, and fattening herds in descending order of likelihood. Large herds were more likely to be seropositive. Seropositive herds were highly likely to be seropositive the following year. The study shows that influenza A(H1N1)pdm09 virus is established in the Norwegian pig population with recurrent and new herd infections every year with the national herd seroprevalence in 2014 hovering at around 43% (95% confidence interval 40–46%).

Biography

Jwee Chiek Er is a Veterinary Epidemiologist and a Research Scientist at Norwegian Veterinary Institute. After completing BVSc at University of Queensland, Australia in 1989, he worked as a Public Health Inspector at slaughterhouses for pigs and poultry in Singapore for 13 years. He completed his Master's degree in Preventative Veterinary Medicine (MPVM) at UC Davis in 2000 and began his career as an Epidemiologist. With the pandemic H1N1 virus emerging in the world and infecting the pigs in Norway for the first time for any influenza strain, he spent five years conducting epidemiological research of this new influenza strain in Norwegian pigs and investigated production impact it has on pig production. He received his Doctorate in Philosophy for his research in 2016 at University of Life Sciences in Oslo.

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