

# SEGES COPENHAGEN Swine influenza A virus transmission in the farrowing unit - mission impossible?

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# Background and objectives

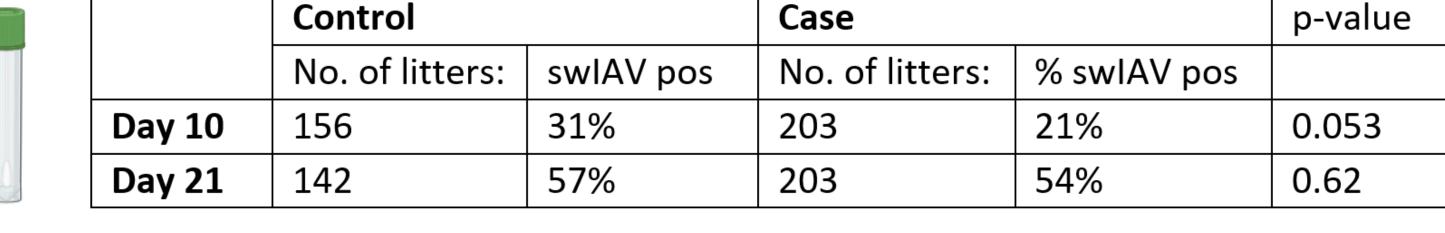
The intensification of swine production in large herds, has led to optimal conditions for virus circulation. Furthermore, increasing litter sizes enhance the use of nurse sows and cross-fostering.

The aim of this study was to investigate the effect of nurse sows and cross-fostering on swine influenza A virus (swIAV) transmission in the farrowing unit. Additionally, the occurrence of other respiratory pathogens were also investigated.



# Results **SwIAV**

Table 1. SwIAV positive litters in nasal swabs in the control and case litters at the two samplings (Day 10 and 21). No significant differences between control and case litters were observed at day 10 and 21 and 8/9 batches showed swIAV circulation.



Interestingly, 39 % of the sows included were defined at nurse sows from another section, and 25 % of these sows arrived with a swIAV positive udder wipe.

### **Co-infections**

While the presence of some of the other respiratory pathogens were unique to the individual herds (*Actinobacillus* pleuropneumonia, Bordetella bronchiseptica, Mycoplasma hyopneumoniae and hyorhinis, Porcine circovirus 2 (PCV2) and strengthening each other in the Porcine Respiratory Porcine Respirovirus 1 (PRV-1)), some were detected in all three herds including *Glaeserella Parasuis, Pasteurella* multocida, Porcint cytomegalovirus (PCMV) and Porcine circovirus 3 (PCV3).



## Material & Methods

# STUDY **DESIGN**



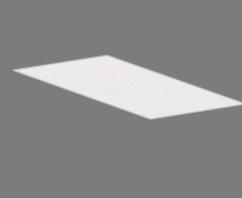




Three sow herds with three weekly batches of sows and piglets. In total: 156 control litters and 203 case litters Control litter: sows fostering their own piglets or receiving piglets within the first 24 hours after farrowing Case litter: nurse sows and later cross-fostering (> 24 hours)

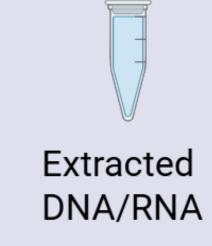
SAMPLES

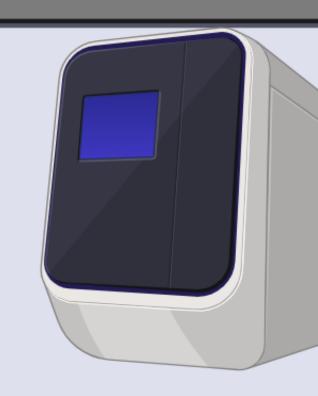
Piglets: nasal swabs day 10 and 21



Nurse sows: udder wipe at entry

ANALYSES





High through-put microfluidic real time PCR for swIAV and 12 other respiratory pathogens

# **Discussion & Conclusion**

The result of this study illustrates the extensive circulation of swIAV and use of nurse sows in farrowing units. Neither 4 the introduction of swIAV positive nurse sows, nor the cross-fostering of piglets between litters explained transmission of swIAV in this study. Thus, other potential routes of swIAV transmissions must be of more importance. This may include transmission by aerosols or mechanical vectors via personal and equipment, emphasizing the need for further studies of swIAV withinherd transmission. The results of the co-infections underline that influenza is one of many agents Disease Complex (PRDC).

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