Project Update: Detection of Airborne Influenza A virus in experimentally infected pigs with maternally derived antibodies

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Background

- Influenza virus infections in swine cause respiratory disease and decreased growth performance. Transmission, which can be through direct nose-to-nose contact or through aerosols, remains a constant risk to swine populations and to humans.
- Neonatal pigs play a key role in the transmission of virus. Dam vaccination is a common approach for controlling influenza by not only protecting the breeding animals but by generating maternally derived antibodies (MDA) to protect the newborn piglets.
- Research suggests that pigs with MDA and challenged with homologous or heterologous influenza strains may have reduced clinical signs but viral shedding may or may not be affected. Other studies suggest that homologous immunity can reduce transmission in neonatal pig populations.
- The importance of aerosol transmission of swine influenza has been demonstrated but needs to be further characterized.

Objective

To determine whether pigs with MDA are able to generate detectable levels of infectious influenza aerosols under experimental conditions
Implications

- This study indicates that pigs with MDA may generate infectious aerosols. However, the risk that aerosols generated by pigs with maternal immunity represents for transmission under field conditions needs to be evaluated.