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Influenza transmission in the guinea pig model is insensitive to the ventilation airflow speed: evidence for the role of aerosolized fomites¹ SIMA ASADI, University of California, Davis, NASSIMA GAALOUL BEN HNIA, RAMYA S. BARRE, Icahn School of Medicine at Mt. Sinai, ANTHONY S. WEXLER, University of California, Davis, NICOLE M. BOUVIER, Icahn School of Medicine at Mt. Sinai, WILLIAM D. RISTENPART, University of California, Davis — Recent experimental work in a guinea pig model has established that influenza A virus is transmissible through the air via aerosolized fomites, which are microscopic dust and dander particulates contaminated with virus (Asadi et al., Nature Communications, 2020). Here, we report that influenza A transmits efficiently from intranasally inoculated animals to downwind susceptible animals over a wide range of ventilation airspeeds, with a slight increase in transmission probability observed despite increasing the airspeed by a factor of 10. We interpret this finding in terms of a Guassian plume model for airborne disease transmission, and we discuss the implications for transmission via aerosolized fomites in animal models and in humans.

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