

ORAL ABSTRACTS

1221. Air and Surface Burden of Measles Virus in a Hospital Setting

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Background. Measles virus (MeV) is one of the most contagious viruses known to infect humans. The infectious period is generally considered to be the four days

preceding and four days following rash onset. However, MeV has been detected in respiratory secretions of some cases for up to two weeks after rash onset.

Methods. An unvaccinated, young, female patient with MeV confirmed by direct epidemiologic link was admitted to the hospital 5 days after onset of rash. Air samples were taken within 2 feet, at 4 feet, and 8 feet from the patient's head over the four day hospitalization period in a single room. Surface swabs were collected daily from the head bedrail, the nightstand, and a counter across the room from the bed. Face masks were collected daily from caregivers. Samples were tested for the presence of MeV RNA by quantitative real time RT-PCR (RTqPCR). Viral isolation on Vero/hSLAM cells was attempted from some samples that were positive by RTqPCR.

Results. MeV RNA was detected in the air, from surfaces, and on four of the tested face masks. The highest RNA copy numbers coincided with increased coughing and movement by the patient on days 7 and 8 post-rash. Half of airborne virus-containing particles (56%) were larger than 4.7 microns and detectable at up to 8 feet. MeV RNA was also found on surfaces more than 10 feet away from the patient. MeV was not isolated from any of the PCR positive samples.

Conclusion. RNA from MeV was readily detectable in the air and on surfaces even beyond the 4 day infectious window confirming the highly infectious nature of MeV.

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