
Nosocomial filamentous fungal infection in immunodeficient patients results from airborne fungal spores. Indoor spore sources subvert filtration systems. We quantified human fungal spore shedding in a rigorously cleaned, vertical flow, HEPA filtered 17m² clean room (CR). Air samples were collected on inhibitory mold agar using a 700L/min Casella air sampler. Plates were incubated at 25°C and counted at 48 hr. Pathogenic species were identified at least to the genus level. The sampler vacuum was isolated in a separate HEPA filtered box. During operation CR air is spore free; with the fans off 12 1.4m² samples had a mean of 1.0 fungal CFU (range 0–3); vigorously shaking the freshly washed walking mat for 5 min produced levels of 7 and 9 CFU/1.4m², respectively.

56 trials (T) of 34 people were performed. With the fans off, subjects walked in a 1m circle for 5 min then gently patted their clothes (ankles to shoulders) for 2 min. Mean total shed CFU, presuming a zero baseline, were respectively, 38 T of 32 oncology and marrow transplant ward personnel: 850 CFU; 15 T of 2 persons in street clothes during the 3rd day of wear: 1700 CFU; and 5 T of a person in fresh operating room garb: 522 CFU. Fusarium and phycomycetes were recovered from 18% and 20% of the samples. No Aspergillus flavus or fumigatus were recovered.

Hospital personnel shed pathogenic fungal spores although the shedding rate should produce only a very small increase in spore levels in most hospital wards. Shedding rates were influenced by the time since last clothes laundering.

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