

Abstract Topic: 8i. Other	
Preferred presentation type: Oral / Paper poster or ePoster viewing	
Abstract No.: 7047	
Keywords: pathogen transmission, healthcare environment, hand drying	
Abstract Title: Dispersal of microbes to hospital surfaces following two hand drying methods: paper towels or a jet air dryer	
Session Title:	
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<p>Background: Hand drying is important to minimise microbial spread, noting pathogen survival on environmental surfaces and opportunities for transmission and spread. We investigated whether there are differences in extent of microbe transmission, according to hand drying method, beyond the toilet/washroom to the hospital environment.</p> <p>Materials/methods: Four volunteers simulated contamination of hands/gloved hands using a bacteria-free preparation of bacteriophage (phage PR772; ATCC® BAA-769-B1) at 10⁷ pfu/ml. Hands were dried using either paper towels (PT) or a jet dryer (JD). Each volunteer wore an apron, to enable measurement of body/clothing contamination during drying. Hand drying was performed in a hospital public toilet and, after exiting, samples were collected from public and ward areas. Environmental/surface sites (n=11) were sampled following contact with hands or apron. Samples were analysed by real-time PCR targeting the P3 gene of phage PR772 (results expressed as copies/μl).</p> <p>Results: Both JD and PT methods significantly ($p<0.05$) reduced phage contamination of hands (2.2 and 3.3 log₁₀ copies/μl, respectively, Figure). For 10/11 surfaces, significantly greater environmental contamination ($p<0.05$) was detected after JD versus PT use. All surfaces sampled following JD use showed phage contamination, compared with 6 surfaces after PT use. Average surface contamination following hand contact was >10-fold higher after JD versus PT use (4.1 vs 3.0 log₁₀ copies/μl). Phage dispersal to apron/clothing was 3.5 and 2.8 log₁₀ copies/μl with JD and PT, respectively. Phage transfer from body to environmental surfaces was detected only after JD use (average 3.2 log₁₀ copies/μl).</p> <p>Conclusions: There are clear differences, according to hand drying method, in the residual microbial contamination of the subject's hands and body. Crucially, these differences in contamination translate into significantly greater levels of microbe contamination after JD vs PT use from hands and body beyond the toilet/washroom. As public toilets are used by patients, visitors and staff, the hand drying method chosen has the potential to increase (JD) or reduce (PT) pathogen transmission in hospital settings.</p>	

