

Hydrogen Peroxide Vapour (HPV) decontamination assessments at Birmingham Heartlands Hospital

Heartlands Hospitals, Heart of England NHS Foundation Trust

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Case study contributors:

Katie Hardy (Clinical Scientist, Heart of England NHS Foundation Trust), Peter Hawkey (Consultant Microbiologist, Heart of England NHS Foundation Trust), Savita Gossain (Consultant Microbiologist, Heart of England NHS Foundation Trust), Beryl Oppenheim (Consultant Microbiologist, Heart of England NHS Foundation Trust), Jonathan A. Otter (BIOQUELL (UK) Ltd.)

Hydrogen Peroxide Vapour (HPV) has been shown to eradicate environmental contamination due to methicillin-resistant *Staphylococcus aureus* (MRSA) and other organisms in several clinical settings. However, the rate of recontamination following HPV decontamination is largely unknown. We conducted studies in our hospital to confirm the microbiological efficacy of the HPV process and to investigate the rate of recontamination in several different scenarios. HPV was used to decontaminate our intensive care unit (ICU), high-dependency unit (HDU) and a general ward. MRSA was identified after cleaning but before HPV decontamination in all three areas tested. No MRSA was detected immediately after HPV decontamination in all three areas, corroborating the data from other studies. No MRSA recontamination was detected until four weeks after HPV on the HDU following the first admission of MRSA-positive patients. By contrast, MRSA contamination was identified 24-hours after HPV on the ICU into which MRSA colonised patients were admitted immediately after HPV. Recontamination on the general ward had returned to pre-cleaning levels by six days after HPV; one MRSA-positive patient was admitted to the ward after HPV. Rapid recontamination with MRSA occurred when areas were re-populated by MRSA-positive patients but not when areas were populated only by MRSA-negative patients. These findings are important for the optimal deployment of HPV in hospitals.



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BIOQUELL UK Ltd, 52 Royce Close, West Portway, Andover, UK. SP10 3TS
Tel: +44 (0)1264 835835 Email: enquiries@bioquell.com