

Hand Hygiene Technique to Prevent Healthcare Associated Infections

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Introduction: Practicing hand hygiene is a simple yet effective way to prevent infections. Cleaning your hands can prevent the spread of germs, including those that are resistant to antibiotics and are becoming difficult, if not impossible, to treat. The hands of hospital staff become contaminated involuntarily with pathogenic microbes during patient care, introducing the risk of nosocomial infections. Alcohol-based hand rub is considered to be the most efficient preventative tool, but how well do healthcare professionals know how to wash their hands? This study investigated the effectiveness of targeting hand hygiene technique using a new training device (called Hand in Scan) that provides objective, personal and quantitative feedback.

Methods: This study covered two hospitals in Campania (Italy) and was performed between October and November 2020. Participants were asked to rub their hands with an ultraviolet labelled disinfectant solution. The Hand-in-Scan device was used to monitor hand coverage. Digital images of both sides of the hands were taken under UV-A light. Areas treated properly with

the solution showed brighter under UV light, while missed areas remained darker.

Results: In total 22 hospital operators took part in the study. All participants provided at least two measurements. The total number of observations considered was 128.

The test on the palm of the left hand was passed in 89% of cases.

The test on the palm of the right hand was passed in 85% of cases.

The test on the back of the left hand was passed in 89% of cases.

The test on the back of the right hand was passed in 91% of cases.

Discussion: The literature of hand hygiene technique assessment reports early experiments with different visible and invisible dyes, and includes dozens of studies that employed UV-dye based ABHR solutions to visualize the outcome of this technique. Using systems in daily practice that can verify the quality of hand hygiene can help prevent infections associated with care.