To develop an evidence-based assessment and training tool for evaluating PPE ensembles and doffing protocols, in the assessment of patients with suspected HCIDs” Poller et al (2018).

Summary:
Background: Healthcare workers caring for patients with high consequence infectious diseases (HCID) require protection from pathogen exposure, for example by wearing personal protective equipment (PPE). Protection is acquired through the inherent safety of the PPE components, but also their safe and correct use, supported by adequate training and user familiarity. However, the evidence base for HCID PPE ensembles and any associated training is lacking, with subsequent variation between healthcare providers.

Methods: VIOLET (Visualising Infection with Optimised Light for Education and Training) comprises a healthcare mannequin adapted to deliver simulated bodily fluids containing UV-fluorescent tracers. On demand and remotely operated, the mannequin projectile vomits (blue), coughs (red), has diarrhoea (yellow) and is covered in sweat (orange). Wearing PPE, healthcare staff participate in an HCID risk assessment and examination of the ‘patient’, thereby becoming exposed to these bodily fluids. Contamination of PPE is visualised and body mapped under UV light before and after removal. Observational findings and participant feedback, around its use as a training exercise, is also recorded.

Findings: Significant contamination from different exposure events was seen, enabling evaluation of PPE and doffing procedures used. Observational data and participant feedback demonstrated its strengths and success as a training technique.

Conclusion: Simulation exercises using VIOLET provide evidence-based assessment of PPE
ensembles, and are a valuable resource for training of healthcare staff in wearing and safe doffing of PPE.


Reference:


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