**982.2.** **Using novel visualisation methods to combat infection risk during clinical practices**

Alastair S. Macdonald1, Mark A. Chambers2, Roberto La Ragione2, Kayleigh Wyles2, Matthieu Poyade1, Andrew Wales2, Naomi Klepacz2, Tom R. Kupfer3, Fraje Watson4 and Shona Noble1

1Glasgow School of Art, UK

2University of Surrrey, UK

3Vrije Universiteit Amsterdam, Netherlands

4 University College London, UK

ABSTRACT. CONTEXT: Effective infection prevention and control (IPC) is essential for tackling anti-microbial resistance (AMR). The update of appropriate IPC is heavily influenced by human risk perception and consequently how humans interact within a healthcare environment. A referral veterinary practice provided the site for the development of an IPC training intervention. AIM: To provide an appreciation of infection risk in the veterinary surgical environment by designing and piloting a novel training intervention supported by a 3D digital simulation tool which ‘makes the invisible, visible’. The ultimate goal is to motivate changes in perception and ultimately behaviour needed to reduce risk of infection. METHOD: A mixed-methods approach was informed by: video data to determine workflow actions and interactions between people, animals and the practice environment; evaluation of risky procedures and behaviours associated with infection transmission; iterative prototyping of the 3D tool allowing normally invisible bacteria to be ‘seen’ as they spread via contact between actors in the environment; four co-development workshops; and deployment in a UK veterinary school. DEVELOPMENT: The 3-D digital tool comprised a surgical preparation area with avatars (3 clinical staff, 1 canine patient) [figure 1], enabling users’ attention to focus on visual cues showing contamination sources, their spread, and IPC. The grey-based monochrome model enabled enhanced visibility of IPC and contamination information. A red-shaded ‘contamination’ layer was added, showing the potential transfer of microbes during the sequence of procedures in the preparation stage [figure 2], and which interacted with the green-shaded IPC elements showing barriers and sanitised equipment typically used in good veterinary practice [figure 3]. These layers could be switched on and off as required during delivery of the intervention. OUTCOME: At deployment, a total of 51 practice staff participated in 9 separate sessions, experienced and evaluated the intervention.

Keywords: infection prevention and control, co-design, digital modelling, visual software, veterinary practice training

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Figure 1: Layer 1 showing the pre-surgical procedure with in-built risky behaviours.



Figure 2: Layer 2 ‘switched on’ to show transfer of ‘invisible contamination between animal, veterinary staff, surfaces and equipment during a pre-surgical procedure if proper infection control methods are not being properly observed.



Figure 3: Layer 3 ‘switched on’ showing infection prevention and control (IPC) measures in place.