Establishing proof of concept for a tablet-based dynamic visualisation tool for use in staff training for the prevention of healthcare associated infections

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Introduction: Developments in computer generated visual imaging and mobile computing devices, combined with new research evidence on the behaviour of people and pathogens in hospitals, present opportunities for innovative training to prevent HAIs. Within this context, this poster summarises the development and evaluation of a new tablet-based tool.

Method: A 3-stage iterative prototyping and co-development process involved doctors, nurses, domestic staff and hospital staff in other job roles (n=150). Themes of pathogen location, pathogen survival (before and as a result of cleaning) and pathogen transmission were developed and visualised for each of three pathogens – MRSA, C difficile and norovirus using an evidence-based approach, e.g., employing pathogenic data showing recontamination after cleaning and covert observational data on ‘who touches what’ in the ward setting. Context was provided through a virtual ward setting, enabling zoom-in and zoom-out to various locations and to provide macro/micro scale views. Learning points, risk to patient and other text-based information relevant to job roles and tasks accompanied the visualisations. Data was acquired at each of the 3 stages from staff completing workbooks as they viewed, and interacted with the prototype tool, and participated in group discussion.

Findings: Visualisations were engaging and supportive of different learning styles. They offered staff a new perspective on pathogens, being able to ‘see’ them contextualised in the virtual ward, making them seem more real. Information proved relevant for different staff cohorts, with a mix of experience levels. They increased participants’ awareness about pathogens by explaining ‘why’ (through dynamic visuals and information) IPC procedures should be followed. Further applications were suggested, including at clinical induction, education in schools/universities, and refresher courses.

Discussion/Conclusion: This systematic process has established proof of concept for the tool. A stage 4 prototype is now being developed with the intention of trialling by IPC managers during in-ward use.