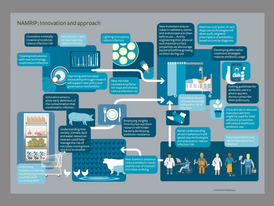
Mapping Microbial Stories: Creative Microbial Aesthetics And Cross-disciplinary Intervention In Understanding Nurses' Infection Prevention Practices.



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Infection prevention (IP) practice is one of a number of measures to tackle antimicrobial resistance (AMR). The application of IP in practice remains inconsistent (D'Alessandro 2015), with studies showing that healthcare workers' adherence to recommended hand hygiene procedures is highly variable (between 5% and 89%) and varies by health profession (WHO 2009:66).

Guthman and Mansfield (2013) have recognised that the mobility of bodies and matter necessitates new methodologies to trace and analyse molecular flows empirically; in the ward the movement of pathogenic agents as the output of complex interplay with objects and touch (D'Alessandro 2015) demands attention. Participatory research methodologies with microbial worlds shifts knowledge-making away from a paradigm of human exceptionalism (Bastian *et al* 2017), thus carrying the implication for studies of IP practice of the need to care for microbial lives whilst also human lives.

Figure 1. The Wet Skills Lab, University of Southampton

Figure 2. Aesthetic stories: Observation equipment with multiple simulated pathogens

Mapping Microbes (2016) was a cross-disciplinary pilot project funded through an EPSRC Bridging the Gap research grant. The team – two engineers, two nursing academics, a microbiologist, a performance artist, and two cultural geographers embarked on an experimental, improvisatory process to study the mobility of simulated pathogens.

- How can we **map** the movements of simulated microbes through the routine touch-practices of nurses?
- Can **creative methods** contribute to understanding the perception of risk associated with the transmission model of contagion?
- And produce **pedagogic materials** for healthcare workers?

The results detail an experiment where nurses (n=2) performed a series of routine care procedures in a mock-ward setting (see figure 1) where traces of coloured ultra-violet glow-powders had been purposely placed, firstly with routine hand-washing and secondly without routine hand-washing. A series of photos and nurse interviews explore nurse-microbial relations and the potential for affective and embodied encounters with microbial worlds to generate new insight in IP.

Creating unfamiliar aesthetics that engage the sensate can intervene in established IP education (see also our short film - Turp and Hurley 2017 *In Our Hands with Michael Rosen*).

The experiment gave a heightened experience of feeling dirt to that common in their care work on hospital wards. The ability of microbes to reside in everyday nursing objects was made all the more apparent by our pseudo-substance's materiality.

"*I definitely thought more about my handover sheet… If I could not feel these grains (UV powders), I would probably be touching it more.*" (Nurse Two)

"*I appreciated what hand washing does (…) but you do not appreciate how much it has transferred, and then seeing it there it was like, oh goodness.*" (Nurse Two and see image 3)

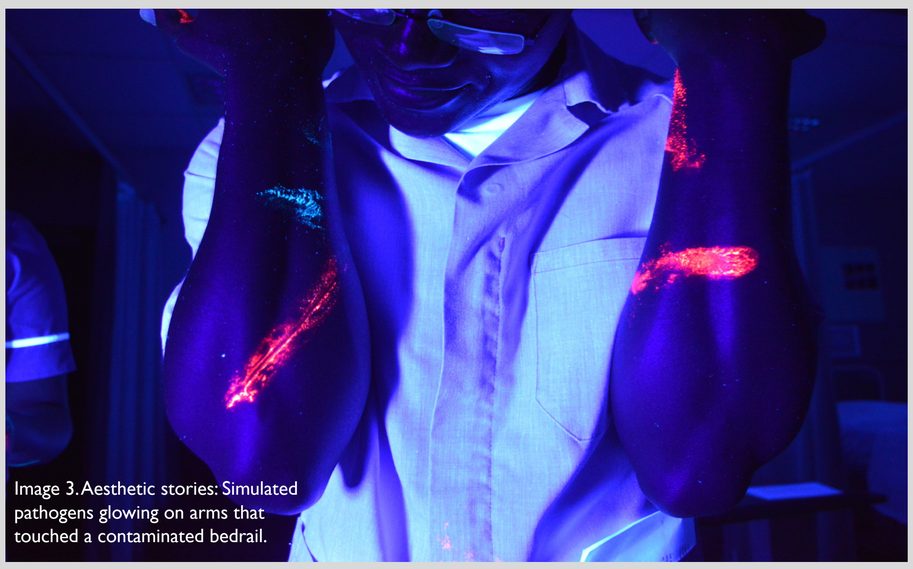

Image 3. Aesthetic stories: Simulated pathogens glowing on arms that touched a contaminated bedrail.

Visualisations of human-microbial interactions were wrenched free from the microscope. There was magic at work in this creative aesthetic.

The photographs explored contrived visual relationships that actively attended to non-human agency as present, active, material and mobile.

This aesthetisation of medo-scientific knowledge, through artistic (though not abstract) imagery of a real experiment in real space, created an affective/emotive understanding of microbial infection and its agency invaluable in tackling AMR.

Our project offers a contrast to the cartoon depictions of feared/imagined bugs, by instead giving visibility to multispecies living with microbes.

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Image credits: Paul Hurley

References:

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