Noting the high mortality rate in a medical student delivery room, in 1896, Ignaz Phillip Semmelweiss introduced a policy of hand washing with chlorinated lime solution and witnessed a ten-fold reduction in death rate (Noakes et al, 2008). Initially contentious, his findings gradually gained traction, and hand hygiene is now accepted as one of the most important measures for preventing infection. A series of guidelines developed in the USA between 1981 and 2002 were considered the seminal works, until the World Health Organization (WHO) provided a comprehensive overview of the essential aspects of hand hygiene. These consensus-based recommendations are seen as the most extensive review to date (WHO, 2009).

This guidance also outlines many of the complexities and equivocations that surround the evidence base. For example, while a combination of evidence, expert opinion and common sense may make a compelling case for hand-mediated cross infection, the scale of this and the possible reductions in the face of optimum standards are difficult to predict. WHO guidance neatly captures the fragility of the transmission model and how poor hand hygiene and adverse outcomes do not always have a linear relationship. Moreover, whether total compliance is necessary to reduce healthcare-associated infection or whether hand hygiene suffers from the law of diminishing returns is open to debate.

Despite this, it is compliance, or lack of it, that tends to dominate the literature. Although generally seen as sub-optimum, a reliable representation of behaviour is problematic because observing hand hygiene has practical difficulties in busy environments, is time consuming, and may suffer from a natural distortion as individuals feel the need to report positive results. Compliance varies significantly among healthcare workers (HCWs) who share the same resources and experience the same barriers to good performance. Hand hygiene is now seen as complex behaviour that is resistant to change, and multifaceted campaigns are viewed as the best way to invoke and sustain behaviour change.

The development of alcohol hand rub (AHR) is possibly the greatest innovation in the delivery of hand hygiene. Put simply, an increase in bed occupancy, patient dependency and economical staff-to-patient ratios, means that the demand for hand hygiene can escalate to the point where full compliance with traditional soap and water is unachievable (WHO, 2009). AHR is the natural solution to the problem as it can be made available at the point of care, assimilated into the work stream, has improved microbiological efficacy and better skin tolerance (Allegranzi et al, 2013). The WHO recommends that healthcare settings promote it as the gold standard for hand hygiene. In the UK, the stance of the Epic guidelines and the National Institute for Health and Care Excellence is more reserved, and tellingly the term ‘gold standard’ is not used. Arguably this makes it not quite so effusive and lacks total conviction. The significance of this rests with the idea that hand hygiene behaviour is habitual and established at a young age. Microbes cannot be seen with the naked eye so the drive to clean hands comes from an emotional concept of cleanliness or as a means of self-protection (Whitby et al, 2007). In other words, people have habituated to clean their hands when they feel dirty. This is a problem in health care where hand hygiene is indicated following a wide range of clinical contacts, many of which are ‘clean’, brief and social in nature.

It is well documented that HCWs overuse soap and water and underuse AHR. If this continues, a combination of time constraints and damaging surfactants will exacerbate omission of care. The evaluation of the Clean Your Hands Campaign suggested that when HCWs adjust to using more AHR, they improve their overall compliance because the use of rub increases without a concomitant decrease in the use of soap (Stone et al, 2012). However, to change the mindset of HCWs, a more radical approach is needed that explicitly advocates AHR as the gold standard for hand hygiene.

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