

Monitor | First, wash your hands

Biomedicine: Smart antiseptic dispensers promise to save lives by subtly encouraging medical staff to wash their hands more often



Surgically scrubbing up nicely

GIVING birth was a dangerous endeavour in the 1800s; many women died soon after doing so. Ignaz Semmelweis, an obstetrician working at the time at Vienna General Hospital observed that by washing his hands with bleach before he touched his patients he could reduce their mortality rate by 90%. This was before Louis Pasteur established the germ theory of disease, and Semmelweis could not explain the correlation. After he published his findings, though, many of his colleagues were offended at the suggestion that they did not have clean hands. After all, doctors were gentlemen and as Charles Meigs, another obstetrician, put it, “a gentleman’s hands are clean”. Discouraged, Semmelweis slipped into

depression and was eventually committed to a lunatic asylum. He died 14 days later, after being brutally beaten by the guards.

Hygiene in hospitals has come a long way since Semmelweis’s time. But there is still room for improvement. Every year nearly 100,000 people die in America alone from preventable infections acquired in hospitals. An invention devised by Paul Alper of Deb Group, a British skincare company, could help change this.

As in Semmelweis’s day, unclean hands are a big cause of infection. Wards abound with devices that dispense antiseptic hand-wash, but they are not always used as frequently as they should be—the compliance rate is below 40% in most hospitals.

The DebMed Group Monitoring System (GMS) is intended to encourage staff to wash their hands.

The invention itself is simple. It consists merely of adding a chip to the dispenser to monitor usage. It is the psychology behind it that is clever, because instead of being intrusive and allocating blame, as happens when dispensers in (say) toilets are monitored by cameras to make sure people who have been to the lavatory do indeed wash and sterilise their hands, it relies on peer pressure. Individuals are not singled out; wards are. What could be oppressive thus becomes a competition between groups, rather than a finger-wagging exercise within them.

The chip in each dispenser sends information to a remote server, where it is recorded, analysed and then made available either on the web or by e-mail to hospital staff in an entirely automated process. The GMS records the number of times dispensers are used in different parts of a hospital and compares this with an estimated reasonable usage, customised to the circumstances of each hospital. This target is based on the World Health Organisation’s “Five Moments for Hand Hygiene”, a guide to the best hand-washing practices for different types of contact with patients. The ratio of actual to target score gives the compliance rate for a particular unit or ward. Because this provides a rating for a group of people, nobody is singled out. And if compliance is low, the offenders can correct their behaviour collectively, behind closed doors, without the need for confrontation.

If the system works as intended, it will save many lives. It should also save money, for treating hospital-induced infections is costly. According to Mr Alper, dozens of hospitals have already signed up for trials. The ghost of Ignaz Semmelweis is no doubt smiling. ■

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