

K454

Keynote Lecture

Antibiotics are dead - how will we manage?

In the space of about two human generations, antibiotics have been so misused that the emergence and spread of pathogens resistant to all available agents is now inevitable. Combine this with a massive reduction in new drug development and a future without effective antibiotics requires genuine consideration. So – how will we manage? While efforts to slow the emergence of new multi-drug resistance (MDR), such as antibiotic stewardship are laudable and necessary, the time has largely passed for these to be particularly effective. Instead we need to focus on efforts to reduce cross-transmission of existing MDR clones through improved application of basic infection control concepts that in many cases were developed in the pre-antibiotic era. In particular, 5 key areas need attention: 1. Improved hand hygiene. National validated auditing programs using the WHO 5 Moments tool are required. Furthermore, increased research into improving education and uptake by medical staff is needed. 2. National Standards for hospital cleaning. Recent studies using universal cleaning with bleach-based products has shown significant reductions in patient rates of contamination with vancomycin-resistant enterococci (VRE). 3. National Standards for the insertion and maintenance of invasive devices. This is particularly crucial for peripherally inserted cannulae since they are commonly associated with hospital-acquired *S. aureus* bacteraemia. 4. Improved hospital design. Spatial separation of infected/colonised patients is a fundamental infection control concept which now needs to be enshrined in all future hospital design. 5. Tightening of antibiotic prescribing and use. Within hospitals, antibiotic stewardship needs to become a fundamental issue for institutional accreditation. Within the agricultural sector, the time has come to ban all non-therapeutic antibiotic use worldwide and adhere to avoiding animal use of agents on the WHO list of “Critically Important Antimicrobials for Human Medicine”. Without full implementation of steps to minimise the cross-transmission of MDR clones, efforts to limit the emergence of new resistance phenotypes are likely to be ineffective and antibiotics really will be “dead”.