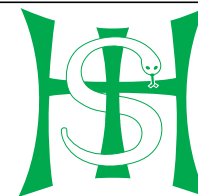




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The inaugural Healthcare Infection Society Middle East Summit: ‘No action today. No cure tomorrow.’

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The Healthcare Infection Society (HIS) decided to run its Spring Meeting in Dubai this year as the inaugural HIS Middle East Summit. The conference was well attended, with delegates from all over the world. Most of the presentations can be viewed on the HIS website.¹

The conference opened with Professor Tawfik Khoja outlining the challenges to infection prevention and control in the Middle East. Professor Khoja focused his thoughts on the impressive joint Gulf Plan for Infection Prevention (2011–2016). This strategy document aims to raise the standards of infection prevention and control in the region, and is already yielding success. Dr Tim Boswell then followed with a presentation describing the challenges in Europe. Among the challenges he covered were public reporting and external scrutiny, hand hygiene, antibiotic resistance, the healthcare environment, surveillance and outbreaks, an increasingly elderly population, new threats [such as Ebola and Middle East respiratory syndrome coronavirus (MERS-CoV)], meticillin-resistant *Staphylococcus aureus* (MRSA), *C. difficile*, and invasive devices and new complex equipment. To these I would add the increasingly cost-constrained financial environment that we face in Europe. How can we invest in infection control when some hospitals can't afford to buy new pens?

The next session covered viruses with pandemic potential: MERS-CoV, influenza and Ebola (although only the first two really have pandemic potential!). Dr Ali Omrani gave an extremely current overview of MERS-CoV, tracking the outbreak in South Korea with up-to-the-minute slides. This illustrated how quickly the picture can change with a pandemic virus such as MERS-CoV. One striking aspect of Dr Omrani's talk was findings from Saudi Arabia that 0.2% of the population are likely to have encountered MERS-CoV, since this is the proportion of a large community sample who were seropositive for MERS-CoV antibodies.² This suggests a sizeable and previously unrecognized burden of asymptomatic exposure – and possibly shedding. Furthermore, animal handlers are more likely to have MERS-CoV seropositivity, reinforcing the link between animals and MERS-CoV.² Dr Omrani then discussed sharp spikes of MERS-CoV in Jeddah, Saudi Arabia in 2014, and the recent outbreak in South Korea, attributing both to breakdowns in simple infection control.

Dr Nick Phin from Public Health England (PHE) then discussed influenza, and Carole Fry preparedness for Ebola. Dr Phin highlighted a useful CDC toolkit providing advice on respiratory protection for healthcare workers, and also a recent *BMJ* review concluding that facemasks may help to prevent the spread of respiratory viruses in the community.^{3,4} Carole Fry added some cultural perspective to Ebola considerations: there are still some 'Ebola deniers' in West Africa! In terms of containing Ebola, the British approach of using Trexler Isolators is safe for staff, but pretty miserable for patients. Is this an appropriate trade-off? Also, our careful use of personal protective equipment (PPE) for Ebola has highlighted our careless use of PPE for other organisms!

There are some parallels in preparing for all three of these unlikely but potentially very serious threats (MERS-CoV, Ebola, and influenza). One of the most important challenges is dealing with the paranoia that always seems to engulf these preparations!

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Valerie Harmon delivered a useful lecture on achieving hand hygiene compliance. Self-reported hand hygiene compliance rates are usually reported to be >90%, but who would believe this with such a huge conflict of interest? The problem with using human beings to monitor hand hygiene compliance is that the moment another person is there, compliance improves! So, automation of hand hygiene compliance monitoring seems the best way forward. Valerie's colleagues demonstrated a state-of-the-art automated hand hygiene compliance monitoring approach based on Google Glass. Although the technology was rather prototype, the principle is there, and it seems likely that automated hand hygiene monitoring systems will come into play over the next few years. But this will not alter a fundamental problem: self-protection is a large and rather unhelpful driver for hand hygiene compliance.⁵ Accurate monitoring of hand hygiene compliance using technology is important, but it must be combined with effective education to help staff to overcome themselves to comply.

Tim Boswell's talk on the environment summarized the evidence that contaminated surfaces make an important contribution to the transmission of key pathogens, including: MRSA, *C. difficile*, vancomycin-resistant enterococci, norovirus, and *Acinetobacter baumannii*. This is demonstrated most convincingly by the 'prior room occupancy' studies, showing that admission to a room previously occupied by a patient with these pathogens is a risk factor for acquisition for the incoming occupant. Underpinning this are the poor levels of conventional cleaning and disinfection, illuminated by techniques such as fluorescent marking of surfaces to evaluate the cleaning process. A failure to eliminate key pathogens from hospital surfaces by cleaning and disinfection processes designed to do just this at the time of patient discharge has been demonstrated for multiple pathogens. Automated room disinfection systems (principally hydrogen peroxide and ultraviolet systems) offer the potential to reduce or remove reliance on the operator to assure adequate distribution and contact time of a disinfectant – and can help to reduce the transmission of hospital pathogens.

Professor Tibor Pal provided an overview of the concerning epidemiology of multidrug-resistant Gram-negative rods (MDR-GNR) in the Arabian Peninsula: lots of overseas healthcare and travel, and huge antibiotic usage is a toxic mix in this regard. Professor Pal's view is that all carbapenemases are not equal: OXA-48 is weedy and *Klebsiella pneumoniae* carbapenemase (KPC)/New Delhi metallo-beta-lactamase (NDM) are scary! – not least due to the emergence of resistance to last-line agents such as colistin. It does seem from the limited available data that the rate of carbapenem-resistant Enterobacteriaceae (CRE) in the Middle East is considerably higher than in Europe, and increasing fast! Switching to the non-fermenters, Professor Pal highlighted the remarkable environmental survival properties of acinetobacter, combined with a propensity towards antibiotic resistance. Although data are limited, it seems that around 50% of acinetobacter in the Arabian Peninsula are carbapenem resistant.

I was next to speak, and I outlined approaches to MDR-GNR control in Europe based on current guidelines. CRE is a big deal in Europe, especially in the UK, and has prompted unprecedented action on a national level. One key question is: do we go universal or targeted? There has been much discussion recently about abandoning traditional targeted (also known as vertical) approaches in favour of universal (horizontal). Interestingly, all

guidelines that I reviewed favoured a targeted approach for MDR-GNR, centred around screening and isolation of carriers. We are hamstrung by the lack of high quality studies telling us with any certainty what works to control MDR-GNR. Also, how do you go about producing good guidelines? Plus, importantly, how do good guidelines translate through a good policy into good practice? As to which interventions we should use for each organism, this depends on organism and setting, although screening, isolation, stewardship, hand hygiene, and cleaning/disinfection are the pillars of infection control. But what do we do about the more controversial areas: decolonization, screening of staff, cohorting staff and patients, environment screening, and education?

Dr Muhammad Halwani then gave an overview of infection control in the Middle East, focusing on acinetobacter and pseudomonas. His comprehensive review set out prevalence and resistance rates across the region, highlighting limited surveillance data – but high rates where data are available. Dr Halwani then reviewed the guidelines available in the region, most importantly the 2007 Guidelines for Isolation Precautions, and the 2015 GCC Strategic Plan for Combatting Antimicrobial Resistance (which has a most apt tagline: 'No action today. No cure tomorrow.').

Professor David Leaper gave an entertaining critique of the evidence base for infection prevention. He began by highlighting the drying of the antibiotic pipeline: the 'variations on a theme' are losing efficacy due to resistance. There is strong evidence for some interventions to prevent infection, for example, the timing of antibiotic prophylaxis prior to surgery, but other areas are more controversial. Professor Leaper cited the example of nasal decolonization for meticillin-susceptible *S. aureus*, based on this study being less convincing than you may think.⁶ But can we expect a randomized controlled trial for everything? Even for parachutes when jumping out of aeroplanes?⁷

Finally, Carole Fry and Martin Kiernan gave an engaging overview with UK perspectives on reductions in MRSA and *Clostridium difficile* infection. Carole described the political situation in the early 2000s, with daily stories in the papers about the MRSA 'scandal'. This led to huge scrutiny and political drive for improvement, which has been successful contrary to the predictions of many (most?) experts! But what has caused the rate of MRSA to fall so dramatically? With many interventions during the same period, it is impossible to tell. But the high degree of scrutiny almost certainly played a key role. Martin gave some useful guidance about performing an effective root cause analysis (to get to the root of the problem!): make sure the right stakeholders are around the table (junior doctors won't do); be a toddler (ask why? Why? Why?), document and evaluate improvement.

On a personal note, the conference was very enjoyable. It had a good mixture of delegates from the Middle East and elsewhere, and the talks prompted much interesting discussion!

Conflict of interest

Author is a consultant to Gama.

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