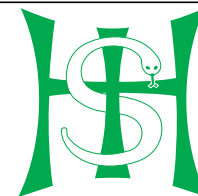




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## News and views

## Journal Roundup: Ebola, antibiotic use and abuse, and the usual suspects

### Ebola

Ebola continues to make waves in the general and specialist journals, with high-profile publications including clinical details from a large cohort of cases in Sierra Leone confirming a case fatality rate of 74%;<sup>1</sup> controversies over quarantine,<sup>2</sup> personal protective equipment,<sup>3</sup> and whether the scale of preparedness in developed healthcare systems matches the risk;<sup>4</sup> laboratory safety;<sup>5</sup> the social and humanitarian impact in West Africa;<sup>6</sup> epidemiology, including stark World Health Organization projections of thousands of new cases per week in West Africa;<sup>7</sup> transmission dynamics;<sup>8</sup> and promising vaccine trials.<sup>9,10</sup>

### Antibiotic use and abuse

'European Antibiotic Awareness Day' and the roughly corresponding US 'Get Smart About Antibiotics Week' are impressive, coordinated strategies. It is difficult to find the right metric to measure their success, but there is some evidence from Europe that public understanding of antibiotics is gradually improving.<sup>11</sup> The recent World Health Assembly resolution on antimicrobial resistance will help.<sup>12</sup>

*JAMA* recently published a special issue on infectious diseases with a number of antibiotic-related articles. An impressive cluster randomized controlled trial compared the impact of selective oral decontamination and selective digestive decontamination (SDD) in a multi-centre Dutch intensive care unit (ICU) study.<sup>13</sup> SDD was associated with lower levels of gastrointestinal carriage of antibiotic-resistant Gram-negative bacteria and ICU-acquired bacteraemia, but more pronounced increases in aminoglycoside-resistant Gram-negative bacteria. Can we afford to give antibiotics indiscriminately to this high-risk group?

A multi-state collection of point prevalence surveys of antibiotic use in the USA published in *JAMA* found that almost exactly 50% of patients were on antibiotics.<sup>14</sup> This rate is considerably higher than the rate found in a point prevalence survey in Europe (35%).<sup>15</sup> Furthermore, at least 5% of patients in the US survey were on antibiotics for no good reason.

Meanwhile, commentary in the *New England Journal of Medicine* discussed the problems, progress and prospects of antibiotic resistance.<sup>16</sup> The article outlines the need for

recognition of the problem, incentivizing the development of new agents, and a move from cure towards prevention, leadership and stewardship. However, an article in the *Journal of Antimicrobial Chemotherapy* highlighted the stark reality of the antibiotic problem in some parts of the world, with approximately one-third of community prescribers in Spain admitting to dispensing antibiotics without prescription.<sup>17</sup> It is likely that the real figure is considerably greater.

### The usual suspects

Recently, a few articles have contributed to the ongoing debate about whether a universal or targeted approach to infection prevention should be adopted. The implementation of antimicrobial surfaces is a promising universal approach, and a recent study published in the *American Journal of Infection Control* found that a quaternary ammonium organosilane product reduced the average bacterial count on ICU surfaces by approximately 2-logs for eight weeks after application.<sup>18</sup> However, chitosan-impregnated scrubs did not fare so well, with no significant reduction in bacterial contamination compared with untreated controls.<sup>19</sup>

One of the commonly cited reasons for moving away from contact precautions for patients infected or colonized with methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE) is that patients under contact precautions have an increased rate of adverse events.<sup>20</sup> However, a study published in the *Journal of Hospital Infection* found that abandoning contact precautions for patients with MRSA and VRE did not affect the rate of adverse events.<sup>21</sup> This may suggest that the increased rate of adverse events for patients under contact precautions has more to do with their underlying risk factors than with contact precautions *per se*.

As the threat of multi-drug-resistant Gram-negative bacteria continues to unfold, it is encouraging to see a success story reported from Italy, where a regional intervention reversed the trend in carbapenem-resistant *Klebsiella pneumoniae*.<sup>22</sup> However, a disturbing study, also from Italy, reported a high rate (43%) of colistin resistance in carbapenem-resistant *K. pneumoniae* across the country.<sup>23</sup> Fortunately, only 1% of these isolates were pan-drug resistant, but the trend is of concern. Finally, an outbreak of New Delhi metallo-beta-

lactamase-1 Enterobacteriaceae associated with contaminated duodenoscopes highlighted the need for appropriate decontamination, and perhaps even sterilization, of duodenoscopes.<sup>24,25</sup>

## Conferences

ID Week took place in Philadelphia, USA in early October. Conference themes included the global outbreak threats from Ebola and Middle East Respiratory Syndrome (MERS); the importance of improving surveillance of healthcare-associated and community-associated infection, including the need to embrace new technology; updates of *Clostridium difficile* treatment and epidemiology, with a strong focus on the impressive impact of faecal microbiota transplantation; improving cleaning and disinfection using education and training or supplemental use of automated room decontamination technologies; and future issues for infection prevention and control, principally the move away from contact precautions for MRSA and VRE, and the urgent need for antibiotic stewardship.

The biannual Healthcare Infection Society (HIS) Conference took place in Lyon, France in mid November. Conference trends included updates on *C. difficile*, norovirus and other pathogens associated with healthcare-associated infection, coverage of the options for dealing with the contaminated healthcare environment, and the need for education and communication to turn the rising tide of antibiotic resistance. A special edition of the *Journal of Hospital Infection* dedicated to the HIS Conference will be published in 2015.

## And finally...

Dealing with contaminated surfaces is a challenge, and a study from Italian and Belgian researchers proposed the novel solution of deliberately seeding hospital surfaces with *Bacillus* spp. spores to reduce the ecological space for contamination with pathogens.<sup>26</sup> It remains to be seen whether or not this will catch on.

### Conflict of interest statement

None declared.

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## References

- Schieffelin JS, Shaffer JG, Goba A, *et al.* Clinical illness and outcomes in patients with Ebola in Sierra Leone. *N Engl J Med* 2014;**371**:2092–2100.
- Drazen JM, Kanapathipillai R, Campion EW, *et al.* Ebola and quarantine. *N Engl J Med* 2014;**371**:2029–2030.
- Fischer II WA, Hynes NA, Perl TM. Protecting health care workers from Ebola: personal protective equipment is critical but is not enough. *Ann Intern Med* 2014;**161**:753–754.
- Klompas M, Diekema DJ, Fishman NO, Yokoe DS. Ebola fever: reconciling Ebola planning with Ebola risk in U.S. hospitals. *Ann Intern Med* 2014;**161**:751–752.
- Cotton D. Biocontainment laboratories: addressing the terror within. *Ann Intern Med* 2014;**161**:609–610.
- Piot P, Muyembe JJ, Edmunds WJ. Ebola in west Africa: from disease outbreak to humanitarian crisis. *Lancet Infect Dis* 2014;**14**:1034–1035.
- World Health Organization Ebola Response Team. Ebola virus disease in West Africa – the first 9 months of the epidemic and forward projections. *N Engl J Med* 2014;**371**:1481–1495.
- Yamin D, Gertler S, Ndeffo-Mbah ML, *et al.* Effect of Ebola progression on transmission and control in Liberia. *Ann Intern Med* 2015;**162**:11–17.
- Ledgerwood JE, DeZure AD, Stanley DA, *et al.* Chimpanzee adenovirus vector Ebola vaccine – preliminary report. *N Engl J Med*; 2014 [Epub ahead of print].
- Galvani AP, Ndeffo-Mbah ML, Wenzel N, Childs JE. Ebola vaccination: if not now, when? *Ann Intern Med* 2014;**161**:749–750.
- Earnshaw S, Mancarella G, Mendez A, *et al.* European Antibiotic Awareness Day: a five-year perspective of Europe-wide actions to promote prudent use of antibiotics. *Euro Surveill* 2014;**19**: pii:20928.
- Shallcross LJ, Davies SC. The World Health Assembly resolution on antimicrobial resistance. *J Antimicrob Chemother* 2014;**69**: 2883–2885.
- Oostdijk EA, Kesecioglu J, Schultz MJ, *et al.* Effects of decontamination of the oropharynx and intestinal tract on antibiotic resistance in ICUs: a randomized clinical trial. *JAMA* 2014;**312**:1429–1437.
- Magill SS, Edwards JR, Bamberg W, *et al.* Multistate point-prevalence survey of health care-associated infections. *N Engl J Med* 2014;**370**:1198–1208.
- Zarb P, Coignard B, Griskeviciene J, *et al.* The European Centre for Disease Prevention and Control (ECDC) pilot point prevalence survey of healthcare-associated infections and antimicrobial use. *Euro Surveill* 2012;**17**: pii:20316.
- Nathan C, Cars O. Antibiotic resistance – problems, progress, and prospects. *N Engl J Med* 2014;**371**:1761–1763.
- Zapata-Cachafeiro M, Gonzalez-Gonzalez C, Vaquez-Lago JM, *et al.* Determinants of antibiotic dispensing without a medical prescription: a cross-sectional study in the north of Spain. *J Antimicrob Chemother* 2014;**69**:3156–3160.
- Tamimi AH, Carlino S, Gerba CP. Long-term efficacy of a self-disinfecting coating in an intensive care unit. *Am J Infect Control* 2014;**42**:1178–1181.
- Boutin MA, Thom KA, Zhan M, Johnson JK. A randomized crossover trial to decrease bacterial contamination on hospital scrubs. *Infect Control Hosp Epidemiol* 2014;**35**:1411–1413.
- Stelfox HT, Bates DW, Redelmeier DA. Safety of patients isolated for infection control. *JAMA* 2003;**290**:1899–1905.
- Gandra S, Barysaukas CM, Mack DA, Barton B, Finberg R, Ellison III RT. Impact of contact precautions on falls, pressure ulcers and transmission of MRSA and VRE in hospitalized patients. *J Hosp Infect* 2014;**88**:170–176.
- Gagliotti C, Cappelli V, Carretto E, *et al.* Control of carbapenemase-producing *Klebsiella pneumoniae*: a region-wide intervention. *Euro Surveill* 2014;**19**: pii:20943.
- Monaco M, Giani T, Raffone M, *et al.* Colistin resistance superimposed to endemic carbapenem-resistant *Klebsiella pneumoniae*: a rapidly evolving problem in Italy, November 2013 to April 2014. *Euro Surveill* 2014;**19**: pii:20939.
- Epstein L, Hunter JC, Arwady MA, *et al.* New Delhi metallo-beta-lactamase-producing carbapenem-resistant *Escherichia coli* associated with exposure to duodenoscopes. *JAMA* 2014;**312**:1447–1455.
- Rutala WA, Weber DJ. Gastrointestinal endoscopes: a need to shift from disinfection to sterilization? *JAMA* 2014;**312**:1405–1406.
- Vandini A, Temmerman R, Frabetti A, *et al.* Hard surface biocontrol in hospitals using microbial-based cleaning products. *PLoS ONE* 2014;**9**:e108598.

J. Otter\*

Guy's and St. Thomas' NHS Foundation Trust and King's College, 5th Floor, North Wing, St. Thomas' Hospital, Lambeth Palace Road, London SE1 7EH, UK

\* Tel.: +44 (0) 207 1887188.

E-mail address: jonathan.otter@kcl.ac.uk

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