

Overdeest and others (2011) demonstrated that a stay in hospital of 48 hours or more increased the carriage of the common human ESBL *bla*_{CTX-M-15} in patients, four-fold. This is why it is important to try to determine the source and attribution rate of resistance transmission, so that rational and effective procedures can be put in place to try to prevent it occurring.

I may have rhetorically questioned the significance of resistance transmission from animals and food to man but it was a Danish report that concluded that 'consumption of meat may currently be considered an insignificant source for the human infections' (DANMAP 2015).

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ANTIMICROBIALS

Use of antibiotics in animals and people

IN response to Cólín Nunan and Richard Young (*VR*, January 2, 2016, vol 178, p 22) I think there is a misunderstanding. I do not question that some *Escherichia coli* carrying plasmids with resistance genes can be directly transmitted from animals to man. This was clearly demonstrated by De Been and others (2014) when they sampled pigs' and farmers' stools in their survey. My own letters (*VR*, September 19, 2015, vol 177, pp 292-293; November 28, 2015, vol 177, pp 549-550) showed that indirect transmission of extended-spectrum β -lactamase (ESBL) resistance genes found in clinical infections in man, related to both urinary tract and bloodborne infections, were identical to those found in animals and food. My only surprise came from the degree of transmission, that is, 2/747 (0.27 per cent), and the majority (97.3 per cent) seem to be human derived. This suggests that there is a very different and much more important epidemiological transmission pathway occurring than the one highlighted by Nunan and Young of animals/food to man.

Third- and fourth-generation cephalosporins are mainly used by injection in human hospital facilities and, therefore, the development of ESBL resistance from human use can be expected to develop there. Patients are often elderly and may have repeated visits or stays in hospital.

Use of antibiotics in animals and people

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