

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

Antimicrobial Resistance Working Group

Summary of the seventh meeting of the Group held on 24 February 2015

The prevalences of *Salmonella* Genomic Island 1 variants in human and animal *Salmonella* Typhimurium DT104 are distinguishable using a Bayesian approach

Members had received a paper on the above study¹ at a previous meeting and asked to receive a presentation on the study as its findings/conclusions were relevant to the work of the group. Study was aimed to address the following questions:

- Are resistance phenotypes in human and animals microbial populations the same, and do they arise from common or indistinguishable microbial communities?
- In which microbial population are resistances and resistance profiles common to both animals and humans first identified?
- Can we identify the most probable origins of all resistance phenotypes recovered from human and animal populations, and thereby infer directionality of resistance transmission in these microbial communities?

The study considered data from Scottish DT104 from 1990 to 2011. Around 5600 clinical isolates (animal and human) collected through passive surveillance. These were tested against 13 antimicrobials. All performed in the same laboratory (Scottish *Salmonella*, *Shigella* and *C.difficile* Reference Service).

Study was a comprehensive coverage of a global zoonotic pathogen that demonstrated the differences between resistant *Salmonella* Typhimurium DT104 in human and animal population during the epidemics that occurred in Scotland.

Progress report on the UK 5 year AMR strategy: 2014

Members attention was drawn to a progress report on implementation of the AMR strategy on the gov.uk website. It was explained that the first year of the strategy had been spent developing the infrastructure and objectives of the strategy.

It was underlined that the subject of AMR has now been brought onto the international agenda. CMO, Ministers and senior officials have taken many opportunities to raise the issue internationally. It was acknowledged that there were still gaps in the evidence with regard to AMR in food and it was important to start mobilising the food industry.

¹ <http://eprints.gla.ac.uk/59009/1/59009.pdf>

Update on systematic review of contribution of food in AMR

Members were updated on progress made on the FSA's proposal for a systematic review on the contribution food makes to the problem of AMR. The protocol had been circulated to other government departments and the aim was to publish the research call before the end of March. The group was also informed that as part of the EC monitoring programme there was a requirement to take retail samples for ESBLs, AmpC and Carbapenemase-producing *E. coli*. In 2015, 2017 and 2019 beef and pork will be sampled, with poultry being sampled in the alternate years. The Commission will publish the data and this will enable UK results to be compared with other parts of Europe.

Presentation on the work of JIACRA

The group received a presentation on the Joint Interagency Antimicrobial Consumption and Resistance Analysis final report² (published on 30 January 2015). This was the first integrated report by the European Centre for Disease Prevention and Control (ECDC), the European Food Safety Authority (EFSA) and the European Medicines Agency (EMA) analysing possible relationships between the consumption occurrence of antimicrobial resistance in humans and food-producing animals.

The report used data from 2011 and 2012, from five different surveillance networks, collecting information from EU Member States, Iceland, Norway, Croatia and from Switzerland for purposes other than the current integrated analyses, and the analyses focused on certain combinations of antimicrobials and bacterial species.

Update on MRSA in the food chain and LA-MRSA in meat

The group were updated on the issue of methicillin-resistant *Staphylococcus aureus* (MRSA) in the food chain by referring to the report produced by University of Salford and Public Health England on the identification of livestock-associated MRSA ST9 in retail meat in England. Paper is expected to be published by end of February 2015. Report stated that sixty percent of all meat consumed in the UK is imported from European countries where there have been increasing reports of MRSA identified in food-producing animals, but rarely from such animals in the UK.

With the emergence of MRSA in pig, turkey and in retail meat in the UK, the FSA has requested the group to carry out a qualitative risk assessment on MRSA in the UK food chain. Group agreed to consider this at its June 2015 meeting.

Update on the activities of DARC

The group was updated on the key points from the 17 February 2015 meeting of DARC. Members were informed that PHE and the Department of Health presented a paper on their activities in relation AMR. This include devoting addition resources to genomics with the aim of PHE establishing a validated accredited service to ISO standard in order to use Whole Genome sequencing to support clinical and public health investigations and interventions and from April 2015 PHE would be carrying out enhanced surveillance of Carbapenemase-producing Enterobacteriaceae.

² <http://ecdc.europa.eu/en/publications/Publications/antimicrobial-resistance-JIACRA-report.pdf>

From October 2014, Red Tractor Assurance Scheme had introduced criteria for farmers/producers to show evidence of antimicrobial usage.

The European Commission is drafting new legislation on Veterinary Medicines (medicated feeds) which will include guidelines for risk assessment on the prescribing of medicated feeds to food-producing animals.

Update on the work of the AMR funders group

Members were informed that a meeting of the above group was held on 27 January 2015. The group was launched in June 2014 and is a forum for funders chaired by the MRC, with participation from NERC, BBSRC, and ERC. There are 4 priority research themes:

- Resistant bacteria in the context of the host,
- Accelerating therapeutics in diagnostic development;
- Understanding the real-world interactions
- Behaviour within and beyond the health care setting.

**Secretariat
June 2015**