

# DEFRA ANTIMICROBIAL RESISTANCE CO-ORDINATION GROUP

## REPORT OF FIFTY SECOND MEETING

24 September 2014

### Present:

Agri-Food and Biosciences Institute (AFBI)  
Animal Health and Veterinary Laboratories Agency (AHVLA)  
Biotechnology and Biological Sciences research Council (BBSRC)  
British Veterinary Association (BVA)  
Centre for Environment, Fisheries and Aquaculture Science (Cefas)  
Department of Agriculture and Rural Development (DARD-NI)  
Department of Health (DH)  
Food Standards Agency (FSA)  
Health Protection Scotland (HPS)  
Public Health England (PHE)  
Scotland's Rural College (SRUC)  
Scottish Government (SG)  
Veterinary Medicines Directorate (VMD)

## 1 Presentation of research project VM0516

1.1 Interim results from VM0516 "Exploring the molecular basis for antimicrobial resistance in *Brachyspira hyodysenteriae* using whole genome sequencing", a VMD funded study were presented. The project aimed to establish the effect of continued exposure to repeated sub lethal concentration of antibiotics on the emergence of mutants, and to determine the antibiotic dose that prevents mutants from emerging.

Practical considerations such as the selection of antibiotics for minimum inhibitory concentration (MIC) studies, pathogenicity genes as targets for vaccines, the relationship between plasmids and virulence and the outcomes after the results of laboratory studies were all mentioned in the discussion.

## 2 Update on Recent Findings

### 2.1 Resistance in *Salmonella*

- In England and Wales between January and June 2014, there were 48 reports of monophasic *Salmonella* Typhimurium, 23 reports of *Salmonella* 4,5,12:i:- and 13 reports of *Salmonella* 4,12:i:-Two *Salmonella* Rissen isolates were confirmed in companion animals (dogs) demonstrating pentavalent resistance and additional resistance to trimethoprim.
- In Northern Ireland, five monophasic *Salmonella* Typhimurium isolates were identified between 1<sup>st</sup> April and 31 August, from chickens (3), a pig (1), and bovine source (1). No ciprofloxacin resistance or ESBL producing *Salmonellas* were detected.
- In Scotland, between April and August one *Salmonella arizonae* isolate was identified from an ovine source, which was resistant to five antimicrobials. 20 *Salmonella* Typhimurium DT40 isolates have been recovered from eight pheasant submissions since April 2014. One isolate demonstrated resistance to nalidixic acid and ciprofloxacin.

## 2.2 ESBLs in livestock

- In England and Wales, there have been no significant changes in the numbers of ESBL *E. coli* isolates identified in livestock. CTX-M types CTX-M-1 (6), CTX-M-14 (17), CTX-M-15 (16) have been observed in isolates from cattle (31), chickens (5), sheep (2), and pigs (1). Three *E. coli* isolates with a phenotypic pattern of ESBL production have been identified from wound infections of a companion animal (horse). There was a novel finding of a bovine *Mannheimia haemolytica* isolate which demonstrates resistance to florfenicol – a resistance pattern that has not been reported previously.
- In Northern Ireland, between 1<sup>st</sup> April and 31<sup>st</sup> August 2014 one *E. coli* originating from a porcine caecal sample was phenotypically positive for ESBL production, out of 477 *E. coli* isolates tested.
- In Scotland, between April and August five ESBL isolates were detected from bovine (2), canine (2), and equine (1).

## 2.3 MRSA in animals

- In England and Wales, it was confirmed that follow-up investigations at a turkey breeding site, in relation to the finding of an LA-MRSA isolate from a turkey lung in Nov 2013, have proved inconclusive as the source of LA-MRSA.
- In Northern Ireland, there was a finding of 1/85 *Staphylococcus aureus* isolates testing positive for ceftiofur resistance between 1<sup>st</sup> April and 31<sup>st</sup> August 2014 – this isolate was confirmed as MRSA positive.
- In Scotland, no MRSA positive isolates have been confirmed since the last meeting.

## 3 UK Veterinary Antimicrobial Resistance and Sales Surveillance (UK-VARSS) Report 2013

5.1 The report was introduced and a summary of findings were presented to the meeting.

5.2 The value of further investigation as to the species that are receiving treatment with fluoroquinolones in those products with indications for treatment in more than one species was discussed. It was confirmed that the VMD is investigating options for gathering further data on fluoroquinolone usage in particular.

5.3 The “red boxes” highlighting data caveats and extra information in the surveillance section of the report were well received. It should be made clearer that the scanning surveillance data are from England and Wales alone and not UK wide.

## 4 Summary of Joint DARC ARHAI Meeting

6.1 The main outcome of the meeting was the agreement to publish a joint animal and human “One Health” report on antibiotic sales/ prescriptions and resistance. This is in line with one of the objectives of the 5 year AMR strategy on having more useful and comparable data sets to establish trends.

## 7 Antimicrobial Usage Data Collection Project

7.1 The data collection scoping study was completed in July 2014, and recommendations were given to the VMD Directors. There is a lot of activity concerning data collection on antimicrobial usage already occurring, but there is no

central coordination. Collection of data detailing antimicrobial usage was high on the European agenda.

**7.2** The next stage of the project is investigating methods to facilitate the collection of data. One of the initiatives is to develop an in-house data collection hub within the VMD which would have the capacity to receive data submitted by the industry on a voluntary basis. The VMD has also secured some in-year funding from Defra for further development of this project.

## **8 Update on the ESVAC pilot project**

**8.1** The meeting was updated on the progress of the ESVAC pilot project. Currently the project is testing the protocol for collecting antimicrobial usage data from pig farms. At the time of the meeting two pig farms had been visited, with a further three visits scheduled to test the protocol before consultation with the ESVAC team. The protocol is labour intensive and recommendations would be made to the ESVAC team once the testing phase was completed.

## **9 Recent Isolations of LA-MRSA**

**9.1** The meeting was updated on the epidemiological follow up testing resulting from the isolation at a UK turkey holding in November 2013.

**9.2** AFBI gave an update on the situation in NI. In May, there was a submission to regional labs. Post mortem results showed signs of PRRS but there was also *S. aureus* in the liver and lungs. These isolates were sent to the Scottish reference lab and were confirmed to be positive for LA-MRSA. These results have been reported in the Veterinary Record.

**9.3** The wider surveillance of LA-MRSA in the UK was discussed during the meeting including considerations for the most appropriate type of surveillance. A subgroup would be convened as soon as possible to discuss this issue.

## **10 Feedback from CEFAS Meeting**

**10.1** The minutes from the AMR in the environment workshop recently held at CEFAS were discussed. The document presented was minutes and not a position or policy statement.

## **11 UK AMR Strategy**

**11.1** An update report highlighting work so far and an implementation plan on the strategy is due to be published in November, aimed to be in time for EAAD on 18 November.

## **12 Outreach and Engagement**

**12.1** The meeting was updated on some of the current VMD outreach and engagement work.

## **13 European Antibiotic Awareness Day (EAAD)**

**13.1** The meeting was updated on some of the planned activities by VMD for this year's EAAD (November 18). This included covering animal health in Public Health England's Antibiotic Guardian pledge campaign ([www.antibioticguardian.com](http://www.antibioticguardian.com)). All members were encouraged to make a pledge.

## 14 EU Update

14.1 The meeting was updated on the activities of the HMA-V taskforce on AMR:

- A paper looking at the responsible use of pack sizes is to go to the November HMA Meeting.
- Target pathogen programme group will be meeting to discuss what a good programme could look like.
- Analysis of the prescribing cascade is to be published soon on the FVE and HMA website and the vet record.

## 15 AOB

15.1 **Contingency Planning SOP:** A risk consideration and a flowchart have been created to complement the *SOP: response to isolation of resistant bacteria considered potential serious risk to human or animal health*. These documents are to be presented at the October HAIRS meeting.

15.2 The Government response to the House of Commons Science and Technology Committee's report on antimicrobial resistance (AMR) was published on 12 September:

<https://www.gov.uk/government/publications/tackling-antimicrobial-resistance-amr-government-response>

## 16 Date of Next Meeting

11<sup>th</sup> December 2014