

DEFRA ANTIMICROBIAL RESISTANCE CO-ORDINATION (DARC) GROUP

SIXTIETH MEETING: CONFERENCE ROOM, VMD

WEDNESDAY 21 SEPTEMBER 2016

11:00 – 16:00

Present: Agri-Food and Bioscience Institute (AFBI)
Animal and Plant Health Agency (APHA)
Biotechnology and Biological Sciences Research Council (BBSRC)
Centre for Environment, Fisheries and Aquaculture Sciences (Cefas)
Department of Agriculture, Environment and Rural Affairs (DAERA)
Food Standards Agency (FSA)
Health Protection Scotland (HPS)
Public Health England (PHE)
Scottish Government (SG)
Scotland's Rural College (SRUC)
Veterinary Medicines Directorate (VMD)
Welsh Government (WG)

1. Update on Recent Findings: 01 June – 31 August 2016

1.1 *England & Wales* –

- 49 *Salmonella* Typhimurium had been isolated from all livestock over the past 6 months; a 20% increase in numbers when compared to the same time period in 2015.
- The majority of *S. Typhimurium* were from pigs. Phage types U288 and DT193 were most commonly detected.
- Numbers of 4,5,12:i: (31 isolates) and 4,12:i: (16 isolates) had increased by 55% and decreased by 52%, respectively. Pigs accounted for the majority of isolations in both cases.
- There have been 2 isolations of *S. Kentucky* from dogs, and 1 from broilers – both presented with high level fluoroquinolone resistance (FQR). Other serovars with ciprofloxacin resistance such as *S. Orion* and *S. Newport* were isolated from a pheasant and a turkey.
- CTX-M-1 ESBL *E. coli* were isolated from a dog (1), cattle (1), and chickens (2). Two CTX-M-32 type *E. coli* were isolate from pigs. Four CTX-M-14 and one CTX-M-55 were also isolated from cattle.

1.2 *Scotland* –

- Two *Salmonella* Typhimurium DT193 were identified from pigs with resistance profile ApStSxTe. One DT41 with profile ApSpStSxTeTm was isolate from a pheasant; DT41 is commonly associated with garden birds. It was suggested that the resistance pattern appears to be a genomic island and therefore could be a chromosomal mediated.
- One *Salmonella* Sinstorf (a very uncommon serovar in animals) was recovered from a dog (lung, liver and pleural fluid) with the resistance profile ApCfCIGmSpStSxTe.
- ESBL producing *E. coli* and *Klebsiella pneumoniae* were isolated from milk and faecal samples from cattle.
- No cases of MRSA or MRSP were observed.

1.3 Northern Ireland -

- Three multi-drug resistant (MDR) *S. Typhimurium* were isolated from pigs with resistance profiles ACSSuTNx or ACSSuTTm. One of these isolates was from a pig brain.
- A small number of monophasic *S. Typhimurium* 4,12:i: and 4,5,12:i: were recovered from pigs, pork and chickens.
- Three *S. Mbandaka* with resistance profile SSuTTm were isolated from feed.
- ESBL producing *E. coli* were identified from calves (8 from faeces, 4 from caecum) and cows (2, milk). Most ESBL types were from cattle and most had mixed infections with other organisms.

2. Sales and Consumption Data

The VMD gave an update on headline antibiotic sales and resistance findings from the 2015 UK-VARSS report which will be published on 17 November 2016. Previous UK-VARSS reports are available at the following link: <https://www.gov.uk/government/publications/veterinary-antimicrobial-resistance-and-sales-surveillance-2014>

3. R&D

BBSRC gave an update on RCUK investments and initiatives relating to AMR.

The VMD also highlighted an Innovate UK grant, offering capital investment to pay for refurbishment and equipment to be used in research. Funding awards are likely to be in the range of £200,000 and £2 million, and 2-12 projects are expected to be funded. Those successful in gaining funding must spend their grant by the end of the financial year.

4. Update on CVMP activities

A CVMP Update Paper updating the DARC group on the progress of the CVMP strategy on antimicrobials was circulated prior to the meeting. Of importance, following public consultation, the Antimicrobial Advice ad hoc Expert Group (AMEG)'s updated scientific advice to the Commission on: *The use of colistin in animals in the EU: development of resistance and possible impact on human and animal health* was published on the European Medicines Agency's (EMA) website on 27 July 2016, and is available at the following link: http://www.ema.europa.eu/ema/index.jsp?curl=pages/news_and_events/news/2016/07/news_detail_002579.jsp&mid=WC0b01ac058004d5c1

5. Independent Review on AMR

The VMD provided an update on the Independent Review on AMR, following the recent publication of the government response on 16 September 2016:

(<https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance>)

The three core commitments were outlined as follows: a reduction target in antibiotic use in livestock and farmed fish to a multispecies average of 50mg/kg by 2018 (from a 2014 baseline); developing appropriate evidence-based sector specific targets by 2017; and committing to the oversight of the Highest Priority Critically Important Antibiotics. The 10

recommendations listed at the back of the O'Neill report focus on raising public awareness, improving hygiene, reducing unnecessary use in agriculture, improving global surveillance of resistance and promoting development of new vaccines, alternatives and rapid diagnostics.

6. One Health Report

A timeline for the next One Health report has been formulated; it is anticipated that the report will be published towards the end of 2017. It is hoped that the report will expand its focus to include food and the environment.

7. ResAlert

Further to the previous DARC meeting held in June, the ResAlert contingency plan has now been amended to take in to consideration comments received from members and will be approved at the next meeting for publication on GOV.UK.

A brief update was given on resistance in *Salmonella* Infantis previously found in January/February 2016. Recurrence has been detected on the premises, however official collated results are yet to be received. Work is underway to eradicate the bacteria from the layer site it was detected on. It was emphasised that *Salmonella* Infantis can spread rapidly, and the serovar is more of a concern than the resistance profile. It is an unregulated serovar in regards to the NCP, but for certain serovars such as this, which are thought to be of serious concern, attempts are made to manage them in a similar manner to the regulated serovars but on a voluntary basis.

Finally, an update on Res-Alert 9 was provided following a finding of *Salmonella* Kentucky on a broiler farm, detected during routine NCP sampling. The farm was depopulated and cleaned, and APHA have since revisited the site to take post-cleaning samples. All samples tested negative for S. Kentucky, and resampling will occur when the birds are two weeks old. Once results have been obtained, the Res-Alert group may reconvene to discuss the case dependant on sampling outcome.

8. AMR and Animal By-Products

Following recent publication of guidance on how to manage livestock slurry on GOV.UK, the VMD provided a brief overview of this information (<https://www.gov.uk/guidance/handling-of-manure-and-slurry-to-reduce-antibiotic-resistance>).

APHA also provided a presentation on recycled manure solids (RMS) for use as a bedding material. In brief:

- Manure and slurry collected from farm origin is pressed to remove liquid and produce a friable, fibrous material. The bedding and manure is recycled back through the process in a 'closed loop' system, however there is no kill step to reduce bacterial counts.
- RMS is a 'low' cost, environmentally friendly bedding that makes use of a farm waste, however to be cost effective the farm needs to be of reasonable size to produce a constant supply of manure. Approximately 70-80 farms currently use RMS bedding.
- In animal by-product (ABP) regulations, manure is classified as a category 2 ABP. RMS is not a stated method of disposal of category 2 ABP, however ABPs can be used as technical products if they are considered not to pose a risk to public or

human health. It is therefore Member States responsibility to consider the risk of using RMS.

- In 2014-15, a practical study was conducted by University of Nottingham and coordinated by AHDB Dairy, to define the potential risks of using RMS. The focus of the study was to gather base-line figures of antimicrobial resistance present using RMS and to compare this to those farms using conventional bedding such as sawdust and sand. 120 farms participated in the study, which consisted of an epidemiological farm survey to identify farmer's views, herd health history (including udder health), management practice and antibiotic use; and sampling to assess bacterial load in the bedding and bulk milk. The bacterial counts in used bedding were generally higher in RMS due to the lack of a kill step. However, bacterial counts in bulk milk were not significantly different between the bedding types, and animals bedded on RMS appeared to be a lot cleaner and more comfortable. This may be attributed to good hygiene practice being built in to practice management and that RMS bedding is changed more frequently. However this study was limited by the short timeframe it was conducted in.
- England, Scotland and Wales have agreed to allow RMS to be used as a bedding for one more year to allow further research data to be gathered; and Red Tractor are monitoring the situation. Users of RMS must comply with risk mitigating conditions and register with APHA. If data becomes available to demonstrate a risk to public or animal health that cannot be mitigated, then use of RMS may be prohibited.

Finally, a brief update on *Salmonella* Kentucky in dogs was provided. A research article circulated to members in advance of the meeting identified that feeding dogs raw pet treat and then the owner not washing their hands resulted in cross-contamination (available at: <https://www.ncbi.nlm.nih.gov/pubmed/18811907>). The study concluded that pet owners can reduce the risk of their dog acquiring *Salmonella* infection, in addition to the risk of acquiring human salmonellosis, by not feeding raw food diets to their pets that have not been cleared for bacterial contamination.

9. Date of Next Meeting

The next DARC meeting scheduled for Tuesday 22 November 2016 has been **cancelled**. Dates for future 2017 meetings to be agreed shortly by members.