Developing a collaborative approach to reducing antibiotic use

Presented by: Dr Fraser Broadfoot MRCVS
Timeline of Actions - strategic

- **2013** – One Health UK AMR Five Year Strategy published
- **2014** – Independent Review on AMR Commissioned
- **2015** – AMR added to UK National Risk Register
Timeline of Actions – data and stewardship

- **1993** – Antibiotic sales data collection for animals starts

**Table 12: Sales of total antibiotics for food-producing animals only (tonnes active ingredient) by food animal species 2006–2011**

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tonnes Active Ingredient</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle Only Products</td>
<td>10</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Pig Only Products</td>
<td>71</td>
<td>66</td>
<td>62</td>
<td>62</td>
<td>47</td>
<td>62</td>
</tr>
<tr>
<td>Poultry Only Products</td>
<td>17</td>
<td>18</td>
<td>31</td>
<td>37</td>
<td>50</td>
<td>23</td>
</tr>
<tr>
<td>Sheep Only Products</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Fish Only Products</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pig and Poultry Combined Only</td>
<td>234</td>
<td>216</td>
<td>195</td>
<td>205</td>
<td>252</td>
<td>162</td>
</tr>
<tr>
<td>Multi Species Products In Food Animals Only</td>
<td>21</td>
<td>22</td>
<td>28</td>
<td>31</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>356</strong></td>
<td><strong>335</strong></td>
<td><strong>327</strong></td>
<td><strong>349</strong></td>
<td><strong>390</strong></td>
<td><strong>290</strong></td>
</tr>
</tbody>
</table>

*A difference in rounding from Table 2 gives a total of 358 tonnes.*
Timeline of Actions – data and stewardship

- **1993** – Antibiotic sales data collection for animals starts
- **2011** – British Poultry Council Stewardship formed
Timeline of Actions – data and stewardship

- **1993** – Antibiotic sales data collection for animals starts
- **2011** – British Poultry Council Stewardship formed
- **2015** – Poultry antibiotic usage data published
Timeline of Actions – data and stewardship

- 1993 – Antibiotic sales data collection for animals starts
- 2011 – British Poultry Council Stewardship formed
- 2015 – Poultry antibiotic usage data published
- 2016 – Pig industry developed stewardship programme and launches electronic Medicines book for pigs
Timeline of Actions – data and stewardship

• 1993 – Antibiotic sales data collection for animals starts
• 2011 – British Poultry Council Stewardship formed
• 2015 – Poultry antibiotic usage data published
• 2016 – Pig industry developed stewardship programme and launches electronic Medicines book for pigs
• 2017 – Antibiotic use data published for pigs, laying hens and gamebirds
• 2018 – Antibiotic use data published for salmon and trout
• 2021 – Medicine Hub for ruminants launched
Benchmarking

Average usage for this category 31 mg/kg
Your usage 63 mg/kg
Timeline of Actions – targets

- **2015** – RUMA plans industry taskforce
- **2016** – Government response to independent review on AMR committing to developing sector targets
- **2016** – Industry taskforce used to develop sector targets
- **2017** – Sector targets published
Antibiotic Sales Data – Food Producing Animals

Sales for food-producing animals (mg/kg)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales in mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>62.3</td>
</tr>
<tr>
<td>2015</td>
<td>56.5</td>
</tr>
<tr>
<td>2016</td>
<td>39.0</td>
</tr>
<tr>
<td>2017</td>
<td>32.1</td>
</tr>
<tr>
<td>2018</td>
<td>29.0</td>
</tr>
<tr>
<td>2019</td>
<td>30.5</td>
</tr>
<tr>
<td>2020</td>
<td>30.1</td>
</tr>
</tbody>
</table>

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The role of food and agriculture stakeholders in antimicrobial resistance

Proactive approach

The next diagrams highlight the importance of a **proactive approach** to preventing disease. An important part of this involves veterinarians* and producers working together to create, implement and monitor health and welfare plans and focus on long-term improvements.

- **Producer**
  - Health and welfare plan
  - Implement agreed measures and review regularly

- **Veterinarian**
  - Identify common and recurrent disease issues
  - Identify risk factors on farm

- **Outline how disease outbreaks should be managed**
- **Outline disease prevention measures**

Record-keeping

This diagram highlights the importance that keeping good records has for monitoring disease/treatments and informing management decisions. This includes monitoring the supply, use and prescription of antimicrobials, and assessing the health and welfare of the treated and untreated animals.

<table>
<thead>
<tr>
<th>Click on the hand icon to learn more</th>
<th>Supply records</th>
<th>Use records</th>
<th>Prescription records</th>
<th>Health and welfare monitoring</th>
<th>Adverse events</th>
<th>Clinical records/laboratory test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale and retailer distributor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicated feed manufacturers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinarian*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*or other suitably trained person authorized in accordance with national legislation

Learn more about record-keeping
FAO e-learning Session Three

The role of food and agriculture stakeholders in antimicrobial resistance

Monitoring antimicrobial use

Antimicrobial use data can be collected in several ways and has many benefits.

Data sources

- Prescriber/supplier
- Central database
- Producer

Measure trends and effects of control measures
- Benchmarking
- Set national targets
- Identify risk factors
- Reputation/public confidence

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4 How can antimicrobial resistance be contained and its impacts minimized on food and agriculture?

**Antimicrobial stewardship groups**

The diagram below illustrates the key stakeholders that can form Antimicrobial Stewardship Groups.

- **Sector or species**
- **One Health**
- **Antimicrobial stewardship groups**
- **Farm businesses/veterinary practices**
- **Retailers/processors/food production companies**

4 How can antimicrobial resistance be contained and its impacts minimized on food and agriculture?

**Disease prevention - Key areas**

As highlighted in the infographic below and in the previous screen, disease prevention requires a holistic approach, focusing on good animal husbandry, effective biosecurity/infection prevention and control, and vaccination.

- **Vaccination** targets specific pathogens
- **Effective biosecurity** acts as a broad-range filter for infectious agents
- **Good animal husbandry** forms the basis of disease prevention

Implementing these measures will help to reduce infection pressure and increase the resilience of animals.

- Effective implementation requires clear protocols, which should be available to everyone on the farm.
- In some cases, expert and financial support for producers may also be needed to help them adapt their management of the production process.

More information
Below are some examples of diseases in various animals sectors.

**Pigs**

Respiratory diseases:

- Example of biosecurity in Indonesia

- Biosecurity interventions can be practical yet inexpensive. For example, the 3-Zone Biosecurity model that FAO’s Emergency Centre for Transboundary Animal Diseases (ECTAD) and partners developed divides a farm into three separate areas, according to the associated biosecurity risk:
  - high-disease risk external areas (red zone);
  - medium-risk service areas (yellow zone); and
  - the clean and highly secure access-restricted green zone, where the chicken flock is located.
Conclusion - Key factors of success

- Strong leadership
- Collective approach with accountability
- Cross sector organisations to lead on the work
- Strong relationship between farmers and vets
- Government and livestock industry working together
- Setting targets relevant to the challenges of each livestock sector
- Access to data to set and monitor targets and assess impact
- Clear and transparent communications