AMR Funders Forum

3 working groups

- WG Research priorities
- WG skills and capacity
- WG output and impact
Aims of the review

- Key skill sets required to perform AMR research
- Any gaps in the skill sets?
- Any challenges that need to be addressed?
Methodology

• Look at existing surveys AMR/infection
• Set up questionnaire with input from SG and AMRFF
• Launched 20\textsuperscript{th} January 2017
• Closed 17\textsuperscript{th} February 2017
• 363 responses from the different communities
Who completed the survey?

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Number of responses</th>
<th>Number of responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academia</td>
<td>307</td>
<td>78.5</td>
</tr>
<tr>
<td>Hospital</td>
<td>40</td>
<td>10.2</td>
</tr>
<tr>
<td>Government</td>
<td>18</td>
<td>4.6</td>
</tr>
<tr>
<td>Industry</td>
<td>17</td>
<td>4.3</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>1.3</td>
</tr>
<tr>
<td>Charity/non profit</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Learned Society</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>37.20</td>
</tr>
<tr>
<td>Clinical</td>
<td>21.29</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>9.25</td>
</tr>
<tr>
<td>Computation</td>
<td>6.67</td>
</tr>
<tr>
<td>Mathematical/statistics/modelling</td>
<td>5.59</td>
</tr>
<tr>
<td>Translational/applied</td>
<td>5.59</td>
</tr>
<tr>
<td>Economics</td>
<td>3.01</td>
</tr>
<tr>
<td>Agricultural Sciences</td>
<td>2.58</td>
</tr>
<tr>
<td>Engineering and technology development</td>
<td>2.37</td>
</tr>
<tr>
<td>Natural and Environmental Sciences</td>
<td>1.51</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>1.29</td>
</tr>
<tr>
<td>Arts and Humanities</td>
<td>1.29</td>
</tr>
<tr>
<td>Public health/epidemiology</td>
<td>1.29</td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td>1.08</td>
</tr>
</tbody>
</table>
Results

• 84.8% involved in AMR
  ➢ 76.5% of which believed there were barriers to working in the AMR field
• 15.2% not involved in AMR
What types of barriers?

- Access to characterised materials/data/animal models/facilities
- Lack of understanding of key questions/awareness from the RC's
- **Lack of experience and expertise eg chemistry, natural products research**
- **Improve relationships with pharma/investors**
- **Experience of and support in working in an interdisciplinary way**
- Management/government too slow to rise to AMR challenge
- Issues with public dissemination of information
- Issues with working internationally
- Issues with the health services
- High level of competition
- Lack of methodology standardisation
- Issues regarding renumeration
- Difficulties in measuring benefit
- **Difficulties in meeting the right people**
- **Better linkages with industry/clinicians**
What could be done to address this?

- New **funding/business models** to attract industry
- More opportunities to develop **skills**
- More funding opportunities/Longer term initiatives
- Changing how **REF** is considered with better management structures/support
- Better **links with industry** and within the healthcare system
- Better **reviewers** of interdisciplinary grants
- More **openness** in thinking and creativity
- **Standardisation** of data collection and access to data, journals and past experiences
- More support for **infrastructure** including access to specialist facilities
- Better **communication/promotion** of **interdisciplinary** opportunities
- Better communication with health agencies and support groups
- Better awareness of other disciplines/ethical considerations
Why not involved in AMR?

- Lack of interdisciplinary thinking and opportunities
- Lack of understanding of the potential value of less-familiar disciplines
- Personnel have the skills but don’t apply them to AMR
- ‘Other’ responses included:
  - AMR was not the current area of expertise
  - already in the area but would like to increase efforts
  - they have an interest but are not working currently in this area
How AMR research can be advanced further?

- Extend knowledge to different contexts
- Become more interdisciplinary
- Expand into global research challenges
- Training in wider areas
- Better regulation/governance
- Additional funding
- Awareness/acceptance of alternative approaches
- More time to generate data and establish networks with experts
- Others
Skills and technologies needed

- Bioinformatics/Big data analysis/handling/storage
- Access to data/patients
- Interdisciplinary working
- International issues/working
- Diagnostics
- O'mics
- Sequencing/gene editing
- Therapeutic development/clinical trial
- Alternative approaches and strategies
- Modelling and statistics/computation
- Surveillance/epidemiology
- Funding constraints
- Imaging
- Social studies
- Behavioural science
What else?

• What skills are needed beyond expertise:
  ➢ Flexibility, adaptability, creativity
  ➢ Curiosity about, and willingness to learn from other disciplines
  ➢ Good communication and listening skills (*different language and terminology!!!*)
  ➢ Ability to bridge the gap between theory and practice
  ➢ A good team worker and a manager

• How to create the right environment?
  ➢ Across different groups, Universities
  ➢ Linking with industry
  ➢ Linking with policy
Contacts

- amr@headoffice.mrc.ac.uk
- http://www.rcuk.ac.uk/research/xrcprogrammes/tackling-antimicrobial-resistance/
- www.mrc.ac.uk/amr