The Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) is an international collaborative platform that facilitates the alignment of research programmes and coordinates funding on AMR through its Strategic Research and Innovation Agenda (SRIA). Through implementation of the SRIA, the JPIAMR supports research on the development of new therapies, stewardship of new and existing antibiotics, and strategies to monitor and prevent the spread of AMR between humans, animals and the environment in a One Health perspective.

**Six priority topics of the JPIAMR SRIA**

The SRIA covers six research and innovation priority topics that encompass the broad scope of the societal challenge posed by AMR: therapeutics, diagnostics, surveillance, transmission, environment and interventions. The SRIA forms a comprehensive One Health framework to guide JPIAMR joint actions and provide guidance for countries to align their AMR research agendas and action plans.
An overview of JPIAMR SRIA priority topics and research and innovation objectives

<table>
<thead>
<tr>
<th>Priority topic</th>
<th>Research and innovation objectives</th>
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| **Therapeutics**                                                              |  • Find new antibiotics and targets  
  • Develop new chemical entities and scaffolds  
  • Improve pharmacokinetics and pharmacodynamics of antibiotics, including neglected antibiotics  
  • Use personalised medicine and artificial intelligence to improve therapies  
  • Develop alternatives for antibiotics  
  • Develop treatment protocols based on combination therapy using existing and new antibiotics  
  • Develop policy measures and economic stimuli to minimise barriers for the development, availability and introduction of new therapies and alternatives  
  • Assess how regulation modifies and influences production and use of antibiotics |

| **Diagnostics**                                                               |  • Improve the efficacy of new and existing diagnostic tools to more effectively distinguish between bacterial and non-bacterial infections, and/or detect antibiotic susceptibility  
  • Create support for the implementation of innovative technologies and linkage to data platforms promoting the use of narrow-spectrum antibiotics  
  • Improve the use of rapid diagnostics in appropriate One Health settings  
  • Improve understanding and explore ways to overcome behavioural and socio-economic barriers limiting the adoption and use of rapid diagnostics |

| **Surveillance**                                                             |  • Improve and standardise AMR surveillance systems, from sampling to data analysis including sampling frame, tools, methodology and reporting  
  • Strengthen the use of surveillance data to identify human and non-human reservoirs of AMR  
  • Optimise the use of surveillance data to estimate burden and to assess the impact of interventions  
  • Develop novel techniques to supplement and promote the exchange of surveillance data  
  • Improve and standardise the surveillance of antibiotic use |
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<tr>
<td><strong>Transmission</strong></td>
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| Understanding and preventing the transmission of antimicrobial resistance | • Unravel the complex dynamics of selection and transmission of antimicrobial resistance  
• Identify factors responsible for the persistence and spread of resistant organisms and resistance elements  
• Determine the impact on AMR of different systems of healthcare, animal production, global trade and environmental pollution and contamination |
| **Environment** |  |
| The role of the environment in the selection and spread of antimicrobial resistance | • Determine and model the contribution of contamination sources, environmental reservoirs and exposure routes on the emergence and spread of AMR  
• Evaluate the relationship between AMR and the environment, climate change, and pollution  
• Assess the potential impact of industrial systems on AMR in the environment  
• Develop innovative technological, policy, social, economic and regulatory approaches to mitigate AMR in the environment |
| **Interventions** |  |
| Investigation and improvement of infection prevention and control measures in One Health settings | • Develop innovative interventions aimed to prevent and control the spread of AMR in a One Health perspective  
• Investigate the effectiveness of AMR prevention and control strategies to increase uptake and acceptance in One Health settings  
• Assess the effectiveness and cost-effectiveness of specific AMR prevention and control practices, considering different geographic and socio-economic settings  
• Optimise implementation strategies, including drivers for and barriers to behavioural change, to reduce AMR  
• Understand the prescription behaviours contributing to the responsible and prudent use of antimicrobials  
• Assess educational and training programmes to enhance antibiotic stewardship |
The JPIAMR Strategic Research Agenda (SRA) was first published in 2014. The JPIAMR recognises that innovation is critically important in the field of AMR, as there is a strong need for new therapeutics, diagnostics, and innovative infection prevention and intervention measures. In 2018, the JPIAMR updated the SRA to take account of recent research findings and extend the JPIAMR SRA into a Strategic Research and Innovation Agenda (SRIA). The updated SRIA was published in May 2019. This extension will support the participation of the private sector in JPIAMR research projects, and aid in the monitoring and evaluation of innovation management in funded research projects.

The update was developed by the JPIAMR Scientific Advisory Board and the SRIA Editorial Board considering input from expert workshops, JPIAMR member countries, as well as open and stakeholder consultations.

More about JPIAMR

JPIAMR is seeking and supporting solutions to decrease transmission of antibiotic resistant bacteria, to lessen the burden of AMR on a global scale. JPIAMR jointly funds both research and networking calls, convenes workshops within strategic areas of AMR and coordinates actions within the JPIAMR Virtual Research Institute.

For more information about JPIAMR, please visit: www.jpiamr.eu
Follow us on social media: Twitter @JPIAMR; facebook.com/JPIAMR

The SRIA defines research and innovation objectives for the following priority topics:

- **Therapeutics**: Discovery of new antibiotics and therapeutic alternatives, and the improvement of current antibiotics and treatment regimens.
- **Diagnostics**: Development and improvement of diagnostics to improve use of antibiotics and alternatives to antibiotics.
- **Surveillance**: Optimisation of surveillance systems to understand the drivers and burden of antimicrobial resistance in a One Health perspective.
- **Transmission**: Understanding and preventing the transmission of antimicrobial resistance.
- **Environment**: The role of the environment in the selection and spread of antimicrobial resistance.
- **Interventions**: Investigation and improvement of infection prevention and control measures in One Health settings.

**Update Process of the JPIAMR SRIA**

The JPIAMR Strategic Research Agenda (SRA) was first published in 2014. The JPIAMR recognises that innovation is critically important in the field of AMR, as there is a strong need for new therapeutics, diagnostics, and innovative infection prevention and intervention measures. In 2018, the JPIAMR updated the SRA to take account of recent research findings and extend the JPIAMR SRA into a Strategic Research and Innovation Agenda (SRIA). The updated SRIA was published in May 2019. This extension will support the participation of the private sector in JPIAMR research projects, and aid in the monitoring and evaluation of innovation management in funded research projects.

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