

Priority topic	Focus	Research objectives/activities
A - Therapeutics	The improvement of current antibiotics and treatment regimens, the development of new antibiotics and therapeutic alternatives to antibiotics.	<ul style="list-style-type: none"> - To find new targets for antibiotics. - To develop new antibiotics. - To improve pharmacokinetics and pharmacodynamics of neglected antibiotics. - To develop treatment protocols based on combination therapy using existing and new antibiotics. - To develop alternatives for antibiotics (e.g. vaccines). - To develop and study effect of policy measures and economic stimuli to minimize barriers for the development and introduction of new antibiotics.
B - Diagnostics	The improvement of diagnostics and the development of novel (rapid) diagnostics to stimulate better use of current antibiotics and support the development and use of new antibiotics and alternatives to antibiotics	<ul style="list-style-type: none"> - To improve existing and develop new diagnostic tools that more effectively distinguish between viral and bacterial infections. - To improve existing and develop new diagnostic tools that can promote the use of narrow-spectrum antibiotics. - To improve existing and develop new diagnostic tools for the identification of antibiotic resistant bacteria; including their resistance profile. - To identify and remove current barriers that inhibit the acceptance of rapid diagnostic tests.
C - Surveillance	The establishment of an international, standardized surveillance programme for AMR and antibiotic use in human, and agricultural settings	<ul style="list-style-type: none"> - To perform operational research on the standardisation and extension of existing surveillance systems. - To perform a pilot study on the feasibility of a global phenotypic and genotypic surveillance programme for AMR. - To initiate a surveillance programme for antibiotic use in people and animals.
D - Transmission	A comprehensive, multi-disciplinary understanding of the transmission mechanisms by which antibiotic resistance can spread between bacterial populations and between different (animal and human) reservoir and to translate this knowledge into the development of evidence-based strategies to minimize the spread of resistance.	<ul style="list-style-type: none"> - To determine by which mechanisms and how efficiently AMR can spread among bacteria that populate the human and animal intestinal tract. - To determine whether food is an important vector for the spread of AMR. - To determine the effect of migration, tourism, different healthcare systems and agricultural practices in Europe on the spread of AMR. - To perform a risk assessment that will identify the important factors that contribute to the exposure of humans to antibiotics and AMR. - To provide testable hypotheses for intervention studies that are aimed at controlling the emergence and spread of AMR.
E - Environment	The assessment of the contribution of pollution of the environment with antibiotics, antibiotic residues and resistant bacteria on the spread of AMR and the development of strategies to minimize environmental contamination by antibiotics and resistant bacteria.	<ul style="list-style-type: none"> - To perform risk assessment studies to estimate which of the various transmission pathways from the environment to humans are the most important to address to minimize the spread of AMR. - To perform a meta-analysis of current national and international activities that are aimed at reducing the contamination of the environment by human and animal waste and by human activity with antibiotics and resistant bacteria. - To determine the exact role of various environmental reservoirs (e.g. surface water, soil, air) on the emergence and dissemination of AMR - To understand the basic biological process that underlies these phenomena to develop remediative and preventative measures.
F - Interventions	The study of preventive and control interventions that focus on improved antibiotic stewardship, compliance and prevention of transmission of AMR and to determine and improve their efficacy.	<ul style="list-style-type: none"> - To initiate large-scale, international projects in which interventions that are aimed to prevent and control the spread of AMR can be tested in different (health care, community, agricultural) settings. - To compare and combine AMR prevention and control practices in cost efficacy trials - To perform research to optimise implementation strategies of interventions aimed at reducing AMR.

Table 1 An overview of the priority topics and main research objectives per topic.