Joining forces globally against drug resistant bacteria

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Antibiotics have saved millions of lives from once deadly infectious diseases. But, misuse of antibiotics and other antimicrobials in humans and animals has led to bacteria evolving resistance.

Today, 3 April 2013 in Brussels, the Joint Programme on Antimicrobial Resistance (JPIAMR) presented its strategic research agenda which outlines the steps that need to be taken to minimise antimicrobial resistance, one of today's most serious public health threats. In addition to the 19 countries which include European countries as well as Canada and Israel, already signed up to this initiative, JPIAMR received support from countries ranging from Australia to South Africa during this meeting.

"It's a worldwide concern that resistance to antimicrobial drugs, which have allowed us to treat or prevent deadly infections and save many lives, especially children, is now spreading all over the world at increased speed, related with the increased mobility of people. It's therefore crucial to immediately join forces under one research agenda to achieve a substantial and rapid impact, especially on global health threats like HIV/AIDS, TB and malaria", said Fulvio Esposito from the Italian Ministry for Education, University and Research.

Coming together globally is indeed crucial as the problem of antimicrobial resistance is so wide that the world now seems to be entering a post-antibiotic era in which sophisticated clinical interventions such as organ transplants, cancer chemotherapy or care for pre-term

infants will become far more difficult due the threats of infections with multi-drug resistant bacteria. Resistance is so widespread that for some groups of bacteria, few antibiotics are effective enough anymore for therapy.

The Strategic Research Agenda (SRA)

JPIAMR has identified six priority topics which form a Strategic Research Agenda (SRA). These topics will give the fight against antibiotic resistance a multidimensional approach. The idea is that these approaches will be translated into new prevention and intervention strategies that improve the public health and wellbeing of populations and delivers economic and societal benefits throughout Europe and beyond.

1. Therapeutics: Improvement of current antibiotics and development of new antibiotics and alternatives for antibiotics, such as vaccines.
2. Diagnostics: Improvement of diagnostics and development of new (rapid) diagnostics to stimulate better use of current antibiotics and support the development and use of new antibiotics and alternatives to antibiotics.
3. Surveillance: Establishment of an international, standardised surveillance programme for AMR and antibiotic use in human, and agricultural settings.
4. 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) reservoirs and to translate this knowledge into the development of evidence-based strategies to minimize the spread of resistance.
5. Environment: 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.

6. Interventions: Study of preventative and control interventions that focus on improved antibiotic stewardship, compliance and prevention of transmission of AMR and to determine and improve their efficacy.

"As this is an active research field and AMR is a very real and present societal challenge, the strategic research agenda will need to stay a living document that is continuously updated to keep pace with developments within research and society, "said Mats Ulfendahl, Swedish Research Council.

Operating at all relevant levels, from the scientific community to research funders and from policy makers and societal stakeholders to industry and SMEs, is the only way to reduce the inappropriate use of antibiotic use both in humans and animals to stop this trend from continuing and to ultimately find a more sustainable way to use antibiotics and treat disease.

Therefore, assisted by European Commission funding, the International Medicines Initiative (IMI), national funding contributions and public-private partnerships, the next step for JPIAMR is to fund research which fit within the six priority areas and which will contribute towards solving the AMR problem.

More information: Project website: www.jpiamr.eu

The Strategic Research Agenda (SRA): www.jpiamr.eu/wp-content/uploa … 01/JPIAMR-SRA-v1.pdf

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