



# Stop AMR

## Global Media Monitor

November 2019

### **EU action has done little to halt the spread of superbugs**

The latest report from the European Court of Auditors (ECA) found that there is little evidence that EU efforts against antimicrobial resistance (AMR) have had any significant impact. National governments rather than the European Commission have proposed a new research partnership on AMR funded through Horizon Europe. Most policies against AMR are the responsibility of member states and not subject to ECA oversight, despite this, national policies have led to a 20% reduction overall in veterinary antibiotics sales between 2011 and 2016. In six member states, however, sales increased by more than 5%.

99% of the EU budget for AMR, €1.5 billion since 2004, goes to research. Because of the cost and complexity of collecting information, pan-European surveillance of superbug infections has been deficient despite efforts by the European Centre for Disease Prevention and Control. The auditors report that the Joint Action on Antimicrobial Resistance (JAMARI) has been successful in the short term, however the long-term impact is still unknown.

The auditors recommend that EU support of national action plans and policy coordination efforts be strengthened. Additionally, there is a need for better surveillance and further research into new antibiotics.

Source: Science Business, 18 November 2019

### **New antibiotics won't stop antimicrobial resistance. Luckily, there are other things we can try**

Abstract Bacteria will continue to develop resistance to antibiotics making treatments difficult or

impossible. New antibiotic development is critical to address this, however any new drugs must be used infrequently which makes the venture unappealing to the industry. Fortunately, alternative methods exist to counteract this problem.

Vaccines are one of the most promising endeavours because they cannot develop resistance. Designing clinical trials for new vaccines against the bacterial infections that pose the greatest risk to AMR will be essential for limiting their spread.

Public-private partnerships are key players in antimicrobial R&D. IMI invests heavily in AMR to fund a wide range of studies into Gram-negative bacteria, monoclonal antibodies, rapid diagnostic tools, among others. A cooperative, networked community is essential to the success of these projects to best coordinate top experts.

Source: IMI

### **New International Group to Monitor Antibiotic Resistance in the Environment**

An international team of scientists called EMBARK (Establishing a Monitoring Baseline for Antimicrobial Resistance in Key environments) launched this week to track antibiotic resistance in the environment. The data will then be used to standardize different methods of resistance surveillance and identify high-priority targets for monitoring.

The group, which includes scientists from Sweden, Germany, France, China, and Pakistan, also aims to create an early-warning system by developing and evaluating methods to detect new and emerging resistance mechanisms that could spread from the environment to humans. EMBARK has received €1.4 million (\$1.5

million US) in funding from the Joint Programming Initiative on Antimicrobial Resistance.

Source: CIDRAP, 21 November 2019

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### **European health group releases 'roadmap' to address antibiotic resistance**

The AMR stakeholder network, which is managed by the European Public Health Alliance (EPHA), has released a short report establishing a roadmap for actions at EU level to curb AMR. It comes after the European Court of Auditors report on the Commission's actions on AMR. The emphasis is on the "One Health" approach and it proposes 5 key strategies for the EU institutions and Member States to follow:

**SET TARGETS AND PERFORMANCE INDICATORS:** these are needed to indicate progress and direct efforts in reducing of antimicrobial uses in both human and veterinary medicines. As of now, the European Commission has not set any targets or performance indicators

**HELP COUNTRIES MOBILISE RESOURCES FOR BETTER IMPLEMENTATION OF NATIONAL AMR POLICIES:** as of now, several EU MS have no significant national action plan in place: "The inability of stakeholders to participate in the Commission's EU AMR One Health Network continues to limit opportunities for civil society to provide valuable input."

**CLOSE THE EXISTING COLLABORATION GAP BETWEEN CIVIL SOCIETY AND EU POLICYMAKERS:** civil society has not yet officially been brought in the policy-making process

**PUT PREVENTION AT THE HEART OF AMR POLICYMAKING:** well-known that prevention is the least expensive way to make significant improvements to the AMR crisis: "3 out of 4 deaths from antimicrobial resistant infections could be averted by spending just 1.5 EUR per person a year on simple public health measures such as hand hygiene and prudent antimicrobial prescribing." (OECD)

**TACKLE THE ENVIRONMENTAL DIMENSION OF AMR IN THE FRAMEWORK OF THE EUROPEAN GREEN DEAL:** Pharmaceuticals are able to enter the

environment at any stage of their life cycle, however, the ECA report on AMR established that the environmental facet of AMR was wholly ignored, despite its presence in the "One Health" approach. As of now, Active Pharmaceutical Ingredients (APIs) are excluded from EU environmental regulations.

"For Europe to become a global leader and best practice region on AMR the EU must demonstrate ambition, leadership and policy coherence between all AMR-related areas, ensuring that political and policy priorities are translated into action and have a lasting impact," (EPHA)

Source: EPHA, 18 November 2019

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### **Researchers develop a database to aid in identifying key genes for bacterial infections**

A new database, the BacFITBase database, of bacterial genes relevant to host cell invasion and infection has been established by a team of researchers from the Department of Biochemistry and Molecular Biology of the Universitat Autònoma de Barcelona and from the Centre of Genomic Regulation (CRG). The characteristic that sets it apart is that it is based on in vivo experiment results. This is important as in vitro experiments do not always correlate with the in vivo situation as bacterial genes that are key for infection will depend on the environment of the colonized organism.

The experiments were based on transposon mutagenesis, where transposons (DNA fragments) are injected into the organism and can inactivate genes in vivo.

As of now, the database contains over 90,000 entries with information on their effects and impacts in vivo in 5 different host species. 15 bacteria were studied: two variants of *Salmonella enterica*, *Haemophilus influenzae*, *Streptococcus pyogenes*, *Porphyromonas gingivalis*, *Mycobacterium avium*, three variants of *Escherichia coli*, *Vibrio cholerae*, *Campylobacter jejuni*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Serratia marcescens* and *Vibrio parahaemolyticus*. 5 vertebrate hosts were studied with information across 10 different tissues: cow, pig, hen, mouse and rabbit

Source: EurekAlert! 19 November 2019

### **Euro Health Workers Spotty on Antibiotic Knowledge**

The ECDC has released a survey indicating that overall, European healthcare workers have a high level of knowledge when it comes to proper antibiotic use and prescription and how mis-prescribing can lead to AMR. However, there are still knowledge gaps and the survey suggested that there could be divergence between knowledge and actions. Therefore, focusing on behavior change regarding the health worker practices, through the development of locally adapted interventions regarding antibiotics, was recommended by the survey authors.

Meanwhile, AMR is still a significant health problem in the EU, as evidenced by the latest data from the European Antimicrobial Resistance Surveillance Network (EARS-Net), and it has a high variability in resistance across the different EU/EEA countries. This divergence was confirmed in a report from the European Surveillance of Antimicrobial Consumption Network (ESAC-Net), showcasing how some EU countries were finding success in reducing antimicrobial use.

Source: CIDRAP, 18 November 2019

### **Paper Calls for Short-Term, Long-Term Strategies on Antibiotic Development**

A new paper in The Lancet Infectious Diseases calls for a two-pronged strategy to address the weakness of the antibiotic research and development pipeline.

New research from the United Kingdom has highlighted that, in order to stave off the moment the antibiotic pipeline stops producing new drugs, the use of a two-pronged approach has seen some success. It is a combination of public-private partnerships, such as CARB-X or the Global Antibiotic Research and Development Partnership (GARDP), which provide push initiatives for initial antibiotic R&D, and pull incentives, such as the UK National Health Service recently announced antibiotic subscription model. However, companies are still abandoning this market as it is not lucrative, due to high cost in development combined with the need to decrease antibiotic use in society thereby decreasing the market size.

Pharmaceutical industries remain the best suited to continue antibiotic production in the short term and this two-pronged model therefore needs to be maintained for now. However, in the long run, the for-profit antibiotic development model is unlikely to stay sustainable in any shape or form and as such the authors propose the creation of a not-for profit publicly funded international organisation to take on this challenge. Several mechanisms of funding could be used ranging from government funding, taxation, antibiotic usage fees, insurance payments, to contributions from the pharmaceutical industry.

Source: CIDRAP, 20 November 2019

### **New clinical guideline for the treatment and prevention of drug-resistant tuberculosis**

The American Thoracic Society, US CDC, European Respiratory Society, and Infectious Diseases Society of America have published a practice guideline on treating drug-resistant tuberculosis (TB) that includes new recommendations for the choice and number of drugs in a regimen and duration of therapy, as well as the role of injectable drugs in multidrug-resistant TB (MDR-TB).

The guideline makes clear that treatment should be tailored based on drug-susceptibility testing, and that patients should not receive medicines to which the *Mycobacterium tuberculosis* strain is resistant. It also prioritizes the use of oral medications. The guideline recommends treatment with a later-generation fluoroquinolone for all infected contracts of patients who have MDR-TB and it provides evidence-based guidance for treating pregnant women who have MDR-TB. The experts also spell out the role of surgery in treating MDRTB and advice for treating isoniazid-resistant TB.

Source: EurekAlert! 18 November 2019