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# COPING WITH ANTIMICROBIAL RESISTANCE

REPORT



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**Tamsin Rose**

Senior Fellow at Friends of Europe

**“We should be very worried”**

**Francesca Colombo**

Head of the OECD Health Division

## ANTIMICROBIAL RESISTANCE - TIME TO BE CONCRETE

Antimicrobial resistance (AMR) has become a political priority: from the G20 to the European Union, governments are committed to working together. Strategy documents have been drafted, and public, private as well as research sectors have developed partnerships. It is now time for concrete action and we all have a part to play.

That was the conclusion of experts speaking at “Coping with Antimicrobial Resistance,” a Friends of Europe Café Crossfire event on 23 January. An initial discussion led by Friends of Europe in November 2016 on “Policies to counter risks to global health” already identified AMR as one of the current deadliest global threats on the planet, and called for stronger political commitment and multisector cooperation to counter this rising risk. Some 50,000 people die every year in the EU and the United States from antimicrobial resistant infections, a figure that could rise to 10 million by 2050 if the problem is not properly addressed.

“This is truly a global problem that can only be addressed by working together across the planet,” said moderator [Tamsin Rose](#), a Senior Fellow at Friends of Europe.

## HOW DID WE GET HERE?

“One of the main causes of AMR is the misuse of antibiotics. Particularly the systematic and excessive use of antibiotics,” said [Cristian-Silviu Buşoi](#), Member of the European Parliament Committee on Industry, Research and Energy. “We should be very worried,” said [Francesca Colombo](#), Head of the OECD Health Division. “Being infected with resistant bacteria rather than non-resistant bacteria doubles the probability of death. It also massively increases costs for European healthcare systems, currently estimated at €6.2 billion a year.”

## CUTTING BACK ON ANTIBIOTIC USE

Though some EU member states have cut back on antibiotic use, others have not, said [Charles Price](#), Head of AMR at the Unit for Crisis management and preparedness in health in the European Commission Directorate-General for Health and Food Safety. “The EU has coordinated efforts to curb misuse, but in 2015 resistance to last-line antibiotics continued to increase. In Europe today, 50% of antibiotic use in human health is inappropriate. In animal health, the figure is even higher. The use of antibiotics as animal growth promoters has been banned in the EU since 2007, unlike in some of our trading partners. There has also been a major programme of better animal welfare to prevent infections.”

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### **GETTING THE BASICS RIGHT: DIAGNOSTICS, HYGIENE AND VACCINATION**

Currently, general spectrum antibiotics are prescribed in healthcare even if they might not actually benefit the patient. “We need faster, more appropriate diagnostic tools to make sure that antibiotics are used for specific infections and only used when necessary,” said [Jean Lang](#), Associate Vice President at Sanofi Pasteur Research & Development.

“It is also about good sanitation and improving hygiene practices, particularly in hospitals,” said Buşoi.

Such basic measures could lead to dramatic improvements, said Colombo. “These interventions are indeed extremely cost effective. If we upscale the stewardship interventions in 80% of the hospitals in Europe and the largest OECD countries, we halve the probability of dying because of infection.”

This lesson applies to developing countries and to other diseases too, said Lang. “Take the example of Ebola. Of course an effective vaccine is needed. But it was the lack of functioning healthcare systems in the countries concerned that turned the outbreak into an epidemic”.

### **THE IMPORTANCE OF VACCINES**

While vaccines and antibiotics are essential medical assets that must be used with care, AMR has not been helped by the drop in vaccination coverage across Europe. Lang said. “One of the weapons against AMR is vaccines. For example, reaching flu vaccination targets would result in fewer bacterial infections that often accompany flu, thereby reducing the need for antibiotics.”

Social media campaigns against immunisation have badly damaged public trust, and public health efforts should take on this issue, said Buşoi. “We have to tackle campaigns against vaccination in all countries – particularly in Central and Eastern European countries. In Romania, I see a lot of these messages online and I try to be active in these debates and provide the real facts. We need to help citizens to understand that not all of these messages are true. They are fake news.”

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Member of the European Parliament Committee on Industry, Research and Energy

Another reason for the spread of AMR is the lack of new antibiotics. Colombo noted, “It’s quite complex to develop new antibiotics but the innovation pipeline is starting to improve. However, at the OECD we estimate that 90 % of funding goes towards the research side. A very small proportion is spent on developing the pull side – bringing new products to the market.”

To address this, the pharmaceutical industry needs to be concrete about what the realistic costs are to develop a new antibiotic so that governments and philanthropic funders can explore where they can support this process financially.

### **INCENTIVES FOR INNOVATION**

In the past, R&D efforts were hampered by a split between a public sector focussed on public health and a private sector concerned with business, said Lang.

“We are trying now to move collectively, and we are partnering with public health,” Lang continued. “You cannot dissociate the research challenges from incentives. AMR is a silent pandemic. It is something that doesn’t have a face like Ebola or Zika. It is something that we will all suffer from. It’s a global public health emergency and we need to act collectively as responsible, global citizens. In the laboratory, all the low-hanging fruits for antibiotic compounds have already been picked. We now have to aim for fruit that are higher in the trees. This will be more complex.”

Lang pointed out that there have been only two new classes of antibiotics in the last 30 years. “The economic incentives are not there to develop a new drug that would be used as last resort to prevent resistance.”

The medical industries, such as biotech, diagnostics, generics and research-based pharmaceutical companies, have come together in the AMR Industry Alliance.

The Alliance roadmap covers R&D, access, appropriate use of antibiotics and environmental protection. They prioritise investing in R&D to meet public health needs, reducing the development of AMR and improving access to antibiotics, vaccines and diagnostics.

“A key new incentive for the development of innovative antibiotics is the Transferable Market Exclusivity (TME),” said Buşoi. “It grants new antibiotic authorisation holders additional months of exclusivity that can help ensure longer term predictability.”

“This new incentive is extremely welcome by developers,” underlined Lang. “It ensures sustainability for antibiotic and vaccine industries and helps boost innovation.”

The innovation pipeline is already improving, with new potential drug candidates for future trials. “Access is critical,” said Lang. “In our global work, we can’t ignore that antibiotic resistance is hitting low- and middle-income countries very hard. All of our companies have special prices in place and a special environment to encourage the appropriate use of antibiotics in all these countries.”

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## WHAT THE EU IS DOING

Since Friends of Europe’s first debate on Health Threats, the European Commission has stepped up a gear and issued an AMR action plan in 2017, which explores how EU regulatory tools and incentives could encourage the emergence of novel antimicrobials, particularly where there would not be a guaranteed return on investment.

The action plan is also providing funding through the EU Innovative Medicines Initiative (IMI) support for the New Drugs 4 Bad Bugs programme (ND4BB). This brings together industry, academia and biotech organisations to look for solutions to the scientific, regulatory and business challenges that are holding up the development of new antibiotics.

Price compared the AMR challenge with that of sustainability and climate change. “We can invest and we may get technical solutions, but it’s not going to cure things,” he said. “We can only tackle AMR by behaviour change and by changing the way that our health and agricultural systems use these very precious substances. The EU Commission has produced guidelines on the prudent use of antimicrobials in human health and also guidelines for use in veterinary medicine. Obviously guidelines by themselves don’t do anything. It’s about the implementation, and that needs to be done through incentives, behaviour change, systems change and support for practitioners.”

With these words in mind, Friends of Europe aims to publish a factsheet in June 2018 on “The One Health Action Plan against AMR”, one year after the adoption of the road map by the European Commission. Taking stock of the results achieved so far, this publication will look at what still needs to be done for the EU to fully develop a global approach and enhance multi-sectoral efforts to combat AMR.





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