

Antibiotics: Novel business models needed



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Antibiotic resistance is widespread. Its global human and economic burden is tremendous and constantly increasing. Despite the recognised and growing need for new antibiotics, most large pharmaceutical companies today have dropped antibacterial drug discovery programmes. One reason is that it is scientifically challenging to discover new antibiotics that are active against the antibiotic-resistant bacterial species of current clinical concern. However, a major challenge is diminishing economic incentives compared to other medical fields such as hepatitis C or cancer. Increased global calls to reduce use of antibiotics, to counter the selection and spread of resistant bacteria, the cost of meeting regulatory requirements and the low prices of antibiotics compared to other therapy fields, are strong deterrents to new antibacterial drug R&D. New economic models that create incentives for the discovery of new antibiotics and delink the return on investment from volume of sales are long overdue.

DRIVE-AB (Driving Reinvestment in R&D and Responsible Antibiotic Use) is a public-private consortium funded by the EU Innovative Medicines Initiative (IMI) with in-kind support from EFPIA partners (European Federation of Pharmaceutical Industries and Associations). It is one of several recent initiatives searching for sustainable solutions that stimulate innovation and responsible use, while ensuring global access to novel antibiotics. Other major governmental and international initiatives include the Review on Antimicrobial Resistance, commissioned by the UK Prime Minister, the European Commission's Action Plan against antimicrobial resistance, the WHO Global action plan on antimicrobial resistance, and the US government's National Action Plan for Combating Antibiotic-Resistant Bacteria. These initiatives are all calling for a strengthening of the antibiotic discovery pipelines as an important investment in the future and a critical

part of the action plans against bacterial resistance to current antibiotics. All of them agree that stewardship needs to be an integral part of the activities. Although a dramatic increase of prices is commonly seen as a solution to incentivise discovery and restrain inappropriate use, access to these drugs, especially in low-and middle-income countries where resistance is more prevalent, must be an important consideration.

The last year has seen the development of concrete action plans for implementation and much greater political involvement at the highest level. The call for a global innovation fund to boost drug discovery and basic research at universities and small innovative companies is gaining increasing support. However, the critical challenges facing all of the proposed solutions are how to combine innovation, conservation, access, and sustainable funding on a worldwide scale. More work needs to be done to model different solutions to these challenges – a central aim of DRIVE-AB. The political drive for action in Europe, North America and Australia is intensifying and it remains to be seen if this can be translated into funding agreements and global action. ■