

Revitalizing the antibiotic pipeline

Stimulating innovation that supports sustainable use and global access

The Problem

Bacterial resistance is a **global human and economic burden** that is increasing annually. Antibiotic research and development (R&D) pipelines are inadequate and no new antibiotic that is effective against the most resistant Gram-negative bacteria is expected to be available in the near future.

There is an urgent need for new economic models that stimulate antibiotic R&D while considering sustainable use and access for all patients in need.

The Project

DRIVE-AB is a multinational consortium composed of 16 public and 7 private partners from 12 countries funded by the EU Innovative Medicines Initiative (IMI), a joint undertaking between the European Union and the pharmaceutical industry association EFPIA.

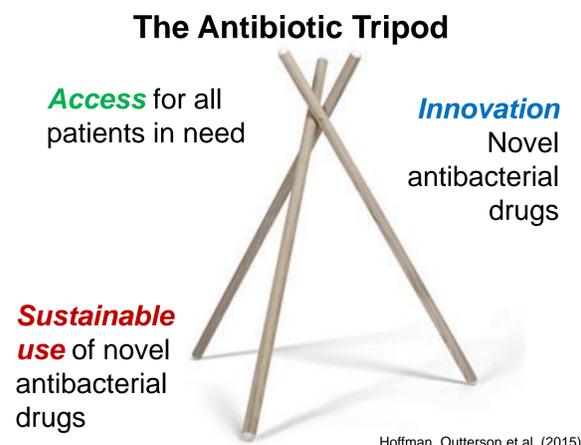
The main objective of the project is to **identify models that incentivise the discovery and development of novel antibiotics** that support sustainable use and equitable access.

DRIVE-AB researches the questions of insufficient supply of novel antibacterial therapies in a situation of rising bacterial resistance globally. Effective antibiotics are necessary to maintain current medical advances in cancer therapies, trauma and extensive surgery. The resistance problem has attracted immense public attention and awareness. DRIVE-AB works in this political environment with multiple high-level initiatives going on in parallel and supports decision makers with evidence-based information and solutions that can be implemented (Figure 1). The tension between the need to incentivise antibiotic R&D while minimising use and maximising global access is a special and antibiotic-specific challenge (Figure 2).

Fig.1 Policy discourse on antimicrobial resistance is gaining momentum



Fig.2 Basics of incentives to stimulate antibacterial drug R&D



Challenge - Discovery

Discovering novel antibiotics that are active against the most resistant priority pathogens is extremely difficult. Hundreds of discovery projects are necessary to increase the chance of one successful development programme and finally getting a new drug. **Energising the research and discovery community is a prerequisite for further development activities** (Push incentives, Figure 3). Increased funding and prioritising parts of the funds for the most relevant scientific problems should supplement efforts to coordinate and align global initiatives and funding bodies.

Fig.3 R&D phases and incentives



Challenge – Business model

The current business model of pharmaceutical companies incentivises volume sales to drive return on investment. Generic antibiotics are effective in most cases and new antibiotics should be used only in case of resistance or intolerance to existing antibiotics. This restriction on volume use results in low returns on investment for pharmaceutical companies compared to other disease areas, leading to reduced R&D resulting in thin pipelines and a future lack of novel antibiotics. **New business models, especially pull incentives are needed that offer an acceptable reward to companies without increasing over- and misuse.** DRIVE-AB is in the process of developing a menu of push and pull incentives that will be recommended to policy makers in July 2017.

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