Driving new reward models to stimulate antibiotic innovation compatible with 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 project is established to identify models that incentivise the discovery and development of novel antibiotics while supporting efforts to make antibiotic use more sustainable and to ensure access for all patients in need. DRIVE-AB will research the questions that other initiatives in the field of antibiotic resistance are raising, provide evidence-based information, model economic data and recommend implementable solutions addressing innovation, conservation, and access that are based on scientific data.

Creation and testing of new economic models
To date, DRIVE-AB has:
- validated the principle bottlenecks to antibiotic innovation,
- performed an analysis of incentives from other industries that may be applicable for antibiotics
- Designed a computer simulator as basis for large-scale economic simulations
- short-listed the most promising economic incentives.
- Engaged with all involved stakeholder groups and major initiatives

DRIVE-AB will publish its detailed results in peer-reviewed journals and will deliver its final recommendations to governments and policy-makers in the second half of 2017.

DRIVE-AB Conference
The consortium will be holding a high-level conference on “Stimulating innovation, sustainable use and global access to antibiotics”. The conference will be held in Amsterdam on 2 June 2016 and will present DRIVE-AB’s preliminary research results and seek feedback from stakeholders regarding feasibility and implementation of R&D incentive policies. The conference also seeks to demonstrate how DRIVE-AB aligns or deviates from other ongoing European and international initiatives in the field of antibiotic resistance and to identify opportunities for interaction and synergy.

Responsible use of antibiotics, new and old
DRIVE-AB is developing standardized definitions and metrics for responsible antibiotic use as well as identifying the barriers and facilitators to this through the use of literature reviews, consensus procedures and focus groups/interviews with a wide range of stakeholders. The team is currently completing the literature reviews and consensus procedures, preparing the interviews and holding a training event for high-level experts across the EU on how to use the metrics.

Setting, communicating and revising public health priorities
The ultimate output of this work stream will assist pharmaceutical companies and policy-makers to predict the future magnitude and clinical impact of resistance and the need for new antibiotics as well as the effects of various interventions to curtail resistance. To date, data mining of antibiotic surveillance systems has informed models that have been developed to predict the spread of antibiotic-resistant pathogens, resulting infections and their impact at the hospital, regional and global levels. Temporal and geographic patterns in the spread of resistance have been identified.

Antibiotic Valuation
This work stream is focused on the economic valuation of antibiotics. The team is creating a new framework for valuing antibiotics and identifying how current health technology assessment processes fall short for antibiotics. We will demonstrate the framework through a series of case studies.

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