

Antibiotic Resistance – Dr Neil Murray, CEO Redx Pharma

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The call from the UK's Chief Medical Officer for the threat of growing antibiotic resistance to be added to the National Risk Register of Civil Emergencies serves as an electrifying wake-up call to anyone unaware of the possible looming health crisis facing the UK.

Dame Sally Davies' apocalyptic warning points to the possibility of a future where a simple chest infection could mean a death sentence. She ranks the threat of antibiotic resistance alongside that of international terrorism and warns that we could be close to reaching a point where everyday infections will become untreatable.

Her fears mirror those of the World Health Organisation (WHO) and add to well-founded fears that we could be heading towards a global health crisis of devastating proportions.

Britain has traditionally been a leader in the development of antibiotic treatment – most notably, the development of penicillin. But over the last couple of decades, the lack of commercial viability in antibiotics coupled with significant research challenges, mean that many of the big pharma companies have withdrawn from this area.

One of the key challenges facing companies working in this area is the very nature of the bacteria which antibiotics target. These bugs are rapidly evolving organisms, which adapt incredibly quickly in order to survive – making them very hard to tackle. Critically, once a bug develops resistance to one sort of drug, it means that it rapidly becomes immune to all drugs within that class since they all act by a common mechanism. This creates the necessity for the creation of not just one more drug, but entirely new classes of drugs to tackle these “superbugs” and their multi-faceted resistance ability, adding significantly to the research and development needed to create an effective solution.

The conventional pharmaceutical R&D model has failed to ensure a steady pipeline of new antibiotics. As many (although not all) large pharma companies have shied away from the field of antibiotic development, the gauntlet in this challenging area has been picked up by emerging pharma companies who are prepared to take on the risks of tackling this critical research.

Redx is a good example of the role these organisations can play in tackling this issue. Later this year, we will open a new £10.8 million research and development centre focused on anti-viral and anti-bacterial drugs. One of our key focus areas will be developing drugs to combat resistance to antibiotics. Importantly, this work is supported by the Government through a grant from the Regional Growth Fund of £4.7 million.

However, it is not enough to rely on emerging companies to solve this problem. The Chief Medical Officer has called for collaboration between healthcare providers and industry in order to address this challenge. Redx is already collaborating with our colleagues in the city and at Royal Liverpool Hospital matching our expertise in drug development with their clinical knowledge. But, big pharma are the only people with the funds and capacity to bring new drugs to market and they need to be collaborating in this area earlier than they currently do. Without such broadly-based collaborations, our chances of overcoming this critical problem are significantly lower.

As with any war, allies working together are much more likely to prevail.