

Antibiotics: no market, no interest

The growing resistance of bacteria to antibiotics is becoming a major global threat to public health, with hundreds of thousands of lives already lost each year, and millions more predicted (1). Major pharmaceutical companies, however, are abandoning their activity in this field.

Historically, there is no doubt that it is through antibiotics (along with vaccines) that pharmaceutical companies have contributed most to extending life expectancy around the world, in particular through their ability to fight fatal childhood infections effectively. Antibiotics have also played a crucial role in many other fields of medicine, such as the management of patients with diabetes, and patients undergoing cancer chemotherapy or surgery (2).

However, since the early 2000s, pharmaceutical companies have been progressively abandoning antibiotic research and development. Yet, faced with the phenomenon of increasing resistance, new effective and safe antibiotics are needed. Numerous plans and incentives have been promised or implemented worldwide to stimulate research by companies in this field, but with little effect (2,3).

Among the most recent major drug companies to back out is Sanofi, historically a major player in the field of antibiotics, which has transferred this activity to a small German company. Another is Novartis, a major player whose management now prefers to devote its research budget to the more lucrative treatment of cancer and rare diseases (4,5).

In the run-up to 2020, antibiotics no longer represent a sufficiently profitable market for the big pharmaceutical companies, who prefer the multiple niche markets offered by cancers and rare diseases, as a result of prolonged treatments and exorbitant prices. This trend emphasises the fact that meeting unmet public health needs is not pharmaceutical companies' primary objective, and that the rules of the market do not operate in such a way as to meet these needs. These rules allow drug companies to generate the huge profits much appreciated by financial markets, while neglecting whole swathes of health needs.

Public authorities bear the greatest responsibility for this trend, because it is their economic decisions that have allowed the development of a speculative business model, along with its harmful consequences, which were predictable. Governments today have a responsibility to devise and implement rules that will be effective in incentivising drug research and development that addresses public health needs. The development of new, effective and affordable antibiotics is a priority.

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Sources 1- "AMR: a major European and Global challenge" European Commission 2017: 2 pages. 2- Ventola CL "The antibiotic resistance crisis. Part 1: Causes and threats" *Pharmacy and Therapeutics* 2015; **40** (4): 277-283. 3- Darrow JJ et al. "When markets fail: patents and infectious disease products" *FDA Law J* 2018; **73** (3): 361-382. 4- "Despite Industry AMR Declaration commitments Sanofi quits R&D on anti-infectives" *ReAct* 27 June 2018: 3 pages. 5- "Alarm as Novartis exits the antibiotics space" *Scrip* 2018; (3914): 1-5.

EDITORIAL