

## **The solution to the antibiotics riddle**

### **Proper use of antibiotics and public-private partnerships can be key in the fight against antibiotic resistance.**

Much of modern medicine depends on our access to effective antibiotics. Due to misuse and overuse, more and more infections are being caused by bacteria that have developed resistance to the drugs that we use.

For some cases of antibiotic resistance, using a different product may be sufficient. In these cases, the consequences of resistance are limited to higher costs due to more expensive drugs, prolonged hospital stays and longer disease courses.

However, healthcare workers are increasingly faced with potentially deadly infections that prove to be incurable. In addition, we are paradoxically faced with the fact that so many people in poor countries die each year from treatable diseases and infections caused by non-resistant bacteria. These people could have been saved if they had had access to regular, affordable antibiotics.

The development of antibiotic resistance has created a need for new antibiotics. Yet we have not seen economic incentives that are strong enough for the pharmaceutical industry to find it profitable to invest in research and development in this field.

Ideally, antibiotics should only be used when strictly necessary. And when they are first used, the treatment is usually short lived. Sales of antibiotics are therefore expected to be relatively low. And even if revenues from these medicines may create some profit, they understandably lose the internal fight for investment to development of treatments for dementia, diabetes, cancer and heart disease.

The problem is therefore threefold:

- We need new antibiotics at a faster pace than we are seeing today, so that we can stay ahead of the development of resistance.
- We want these medicines are made available to all who need them.
- Antibiotics must be used in a manner that slows and limits the development of resistance as much as possible.

Public funds and effort are needed to cope with this complex challenge. In response to the challenge, pharmaceutical companies and over 20 research institutions in Europe, including the NIPH, have partnered to develop proposals for action that can provide a new economic framework for antibiotic research and development – and distribution.

Ideally, the new regulatory framework should the following:

- Arrangements to fund or provide incentives for investment in research and development of antibiotics.
- Introduction of global guidelines or mechanisms for restrictive use of antibiotics.
- Financing mechanisms for universal distribution and access to antibiotics.

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In the project, various proposals for the new regulatory framework will be constructed as computer models so that several different scenarios can be explored virtually.

We see it as very positive and exciting that the pharmaceutical industry has shown interest in participating in the project, both with funding and with concrete cooperation. We hope that the project will result in more informed recommendations on credible funding models for sustainable development and use of antibiotics.

The recommendations will thus encourage the authorities in various European countries to understand the necessity of participating in an international joint effort to solve a growing global health crisis.

The problem of antibiotic resistance in Norway is less acute than in many other countries due to longstanding policies and traditions of restrictive use of antibiotics. As a rule, sinusitis, urinary tract infections and earaches self-heal and go away within a few days.

Joint efforts on several different levels can help us to achieve a future where we may conduct chemotherapy or hip surgery without significant risk of dying from an incurable bacterial infection.

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