

The answer to the antibiotics crisis

DAVID Cameron issued a dire warning on 2nd July about antibiotic resistance, calling for global action to preserve antibiotic effectiveness. The Prime Minister highlighted the urgent need to develop new antibiotics to replace those being rendered ineffective by resistance. He has appointed the economist Jim O'Neill to lead an expert panel to look at how new antibiotic development can be encouraged.

This is to be welcomed, but the problem we face is a shortage of global collective action. There has been no shortage of expert review panels.

Antibiotics are undoubtedly important to human health. While better sanitation, housing and food and other public health measures have been the most important factors in extending human life, antibiotics have played a critical role over the past seven decades, adding several years to average life expectancy.

They are also critical to many medical treatments. Chemotherapy and hip replacements would become much more dangerous in the absence of effective antibiotics. Procedures like dialysis or endoscopy would no longer be as safe. Entire branches of medicine would be at risk.

So the world clearly needs a continuing stream of new antibiotics, vaccines and diagnostic tools to fight infection, together with every possible technique to delay resistance. But many large drug companies have lost interest in the field over the past 20 years. The primary problem is the business model, which is perhaps why an economist was appointed to lead the UK process.

For any other industry, success comes when millions of people buy your product, and new drugs are therefore widely promoted and marketed. But indiscriminate global sales of a powerful new antibiotic are a formula for a public health disaster, as we are learning with NDM-1—an enzyme produced by some bacteria that make them resistant to some of the most commonly-used antibiotics.

Physicians and public health experts work hard to restrict antibiotics to only appropriate situations, but when they do, this is dismal news for the companies' bottom line. Imagine a smartphone company that brought an innovative model to the market and all of the key players clubbed together to limit demand for the product. Little wonder companies aren't eager to invest in antibiotic research and development (R&D).

Drug company leaders such as Andrew Witty at GlaxoSmithKline acknowledge that the business model for antibiotics is broken. The question is how to fix it.