BCG

Weekly Brief

May 10, 2022

A Global Health Crisis We Can Predict—and Prevent

To BCG's network around the world,

COVID-19 taught us that every player in the global community—governments, NGOs, scientists, and businesses—has a role to play in the fight against a global health crisis. In this context, and with COVID approaching a "post-emergency" phase in many geographies, I have been thinking a lot about another global health crisis: antimicrobial resistance (AMR).

I first learned about AMR in a conversation with a scientist more than two decades ago. I was struck then, as I am now, by the lack of awareness of this deadly health crisis in which bacteria develop resistance to antibiotics and render them ineffective.

Antibiotics have profoundly impacted the course of humanity since their discovery about 100 years ago. Diseases such as pneumonia—once the leading cause of death—suddenly became treatable. The potency of antibiotics, however, has also led to their being increasingly misused and overused in humans and animals over time.

AMR is already estimated to cause 1.27 million deaths globally each year, with 80% of those occurring in low- and middle-income countries. That number could reach 10 million by 2050. But as a recent BCG report explains, we have the ability to keep this new threat at bay.

Contending with a Dried-Up Innovation Pipeline

I think of the "time to resistance" of an antibiotic as that drug's lifespan. From the 1930s through the 1950s, the average lifespan was 11 years. For antibiotics launched from the 1970s through the 2000s, however, it plummeted to just 2 to 3 years.

Why? One major driver is that antibiotics were used (or misused) too frequently, often to address the wrong problem, and they entered our food and water supplies. This caused the bugs to get smarter faster.

Unfortunately, at the same time, the antibiotics innovation pipeline essentially dried up. In great part due to misaligned incentives in the global market, there has been no new major class of antibiotics discovered since the 1980s.

Demand is low in high-income countries, where more resistant strands of disease have yet to manifest aggressively and novel antibiotics are only used as a last resort. And other classes of drugs with similar R&D success rates, in areas such as oncology, generate significantly higher returns through much better reimbursement. The true value of drastically slowing AMR and saving millions of lives, especially in low-income countries, does not make it into this calculation.

Where to Go from Here

Changing human behavior is one way to help slow AMR. We have made great advancements in moderating the use of antibiotics, for example, although more effort is required—particularly to support lower-income countries. We also need to change how antibiotics are used and discharged (in animals and in industry). Improved diagnostics—increasing the understanding of which antibiotics to use when—will also help.

Still, the key issue to address is the antibiotic development pipeline. Policies such as the Generating Antibiotic Incentives Now (GAIN) Act of 2011, which protect pharma companies from generic entrants within a certain timeframe, are important, but they're not enough.

Push incentives include investments in early research to spark R&D and AMR innovation, but costs and risks remain high at the clinical phase. To contend with this, BCG worked with a consortium of 23 pharma companies, supported by Wellcome, European Investment Bank, and the World Health Organization, to create a $1 billion investment fund aimed at supporting the development of two to four novel antibiotics over the next decade.

This is one side of the equation. We also need pull incentives that reward the development of novel antibiotics to create a long-term sustainable ecosystem for antibiotic innovation. One potential solution that BCG research found viable is a subscription-based model. This would offer pharma companies fixed annual

payments or minimum revenues in return for guaranteed commercialization, manufacturing, and stewardship (using the right drugs in the right context, for example) of new antibiotics.

I come back to where I started: we all have a role to play in understanding AMR and supporting the behaviors, incentives, and policies that will help us combat it—in particular with respect to challenges of global inequity. There's no time to waste.

Until next time,

Christoph Schweizer
Chief Executive Officer

Further Reading

The Case for a Subscription Model to Tackle Antimicrobial Resistance

Another global health crisis is on the horizon—and in plain sight. Avoiding its full impact requires action now.

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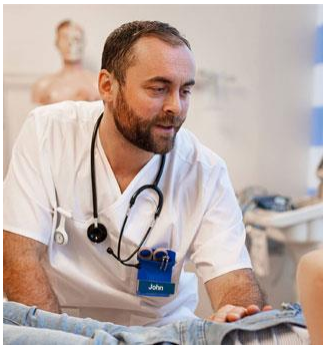

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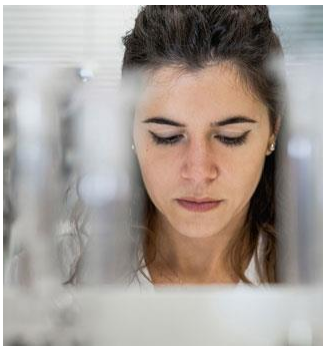

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