VIEWPOINT

The materiality of superbugs: risks and opportunities for pharma investors from antimicrobial resistance

By Mara Lilley and Sana Johnson, Access to Medicine Foundation
24 November 2020

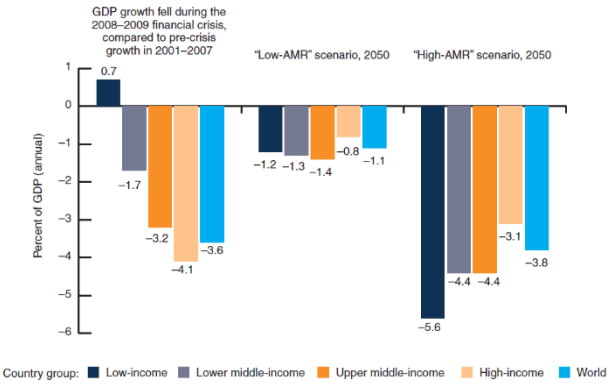
Investors are starting to forecast a post-pandemic world. As part of these efforts, it is crucial that they understand and manage the risks of antimicrobial resistance (AMR). If left unchecked, AMR is set to substantially undermine the global economy's financial recovery and future outlook. Here, we run through the main risks and opportunities presented by superbugs for pharma companies and resources available for navigating through them.

Antimicrobial resistance (AMR) is one of the most pressing global health threats facing society today. It has led to the emergence of superbugs such as *C-difficile* and *MRSA* and already causes at least 700,000 deaths per year. By 2050, AMR is predicted to lead to the loss of 10 million lives annually, as well as costing USD 100 trillion in economic output. COVID-19 has intensified this threat. While its impact on AMR is yet to be fully understood there are signs that it will likely accelerate the rise in resistance, and coordinated surveillance efforts will be critical. Antibiotics are vital in treating potentially fatal bacterial infections, such as pneumonia, that are linked to COVID-19. Up to 95% of COVID-19 in-patients are administered antibiotics as part of treatment, leading to a rapid spike in antibiotics use, which is likely to drive AMR directly. Compounding this, the COVID-19-related spike in demand is contributing to shortages of specific antibiotics. As a result, doctors will resort to less optimal treatments, creating additional opportunities for bacteria to develop resistance. With more antibiotics being used overall, higher volumes of antibiotics are likely to be released into the environment via hospital wastewater, further driving resistance. The relationship between COVID-19 and antibiotics hints at the range of material risks presented by AMR.

Risks

The pharmaceutical industry is set to be worth USD 1.57 trillion by 2023, though this positive short-term outlook could be undermined in years to come. Antibiotics are the foundation on which modern medicine is based, and there are several future blockbuster medicines that depend on effective

Figure 1. Economic costs of AMR may be as severe as during the financial crisis



Source: World Bank, 2017

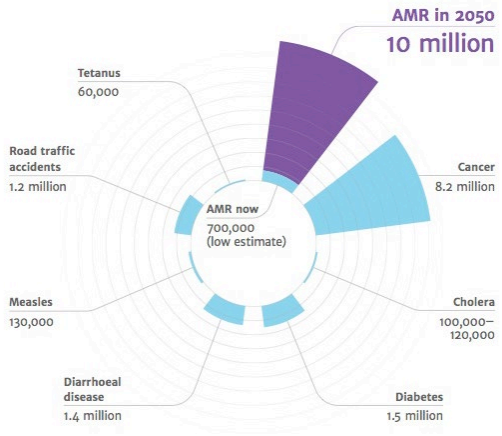
E: mlilley@accesstomedicinefoundation.org T: +31 (0)20 215 3535 W: www.accesstomedicinefoundation.org

antibiotics being available. This is because they either impact patients' immune systems, making effective antibiotics essential for protecting against infections, or they require administration after operations, meaning these operations can only go ahead if antibiotics are available.

Significantly, even seemingly routine procedures and operations – such as organ transplants, cancer chemotherapy, or hip replacements – may soon not be possible without effective antibiotics to ensure patients remain well post-treatment. This would endanger the health of millions of people, have a knock-on effect on the economy at large and undermine the viability of many lines of business for the pharmaceutical sector.

As AMR rises up the agenda, political attention is also turning to the need for greater regulation over how antibacterial manufacturing waste is managed. As a result, regulations around antimicrobial manufacturing discharge now present key supply chain concerns. Engaging on AMR now will contribute to the future proofing of sustainable and profitable business lines in the medium to long-term.

Figure 2. Deaths attributable to AMR every year



Source: Review on Antimicrobial Resistance

Opportunities

Addressing AMR also presents business opportunities, and investors can play a critical role in helping companies recognise long-term trends. For example, some states and policy makers are developing and piloting "pull" incentives designed to reward successful R&D outcomes for pharmaceutical companies. These include the UK government's "prescription-style" payment model for incentivising pharmaceutical companies to bring new classes of drugs to the NHS. If this model was scaled up globally, it would generate global revenues of up to USD 4 billion based on UK prices. There are also influential calls for upcoming policy changes from forums including the G7 and G20.

In the short-term, companies developing antibiotics present low investment returns due to a lack of incentives. However, such high-level calls for urgent market solutions point to a promising bet for those willing to invest in such companies today. In July 2020, a group of large R&D-based pharmaceutical companies announced the USD 1 billion AMR Action Fund to support clinical research of innovative antibiotics. This show of confidence is a strong signal that it is not too late to re-enter the antibiotics field.

When it comes to green procurement practices, there are increasing numbers of incentives for suppliers to meet higher environmental standards. For example, Sweden and Norway have been using new environmental criteria to procure pharmaceutical products. These present responsible manufacturers with opportunities to win larger contracts.

Role for investors

Smart investors will actively steer pharmaceutical companies to cooperate and innovate in response to the rise of resistance. To support them in this, the AMR Benchmark highlights what key players in the antibiotics and antifungals markets are doing to address AMR, in addition to which companies are

best positioned to manage AMR's risks and opportunities. Our team publishes the Benchmark every two years.

The Benchmark identifies companies with innovative products supported by plans to increase access while ensuring good stewardship, which are most likely to win future pull incentives. It also identifies companies with strong environmental risk management strategies that are well positioned to secure tenders that include environmental criteria. Those companies with strong access strategies in place are better positioned to significantly limit the risk of reputational damage, and at the same time attract more positive attention from the growing impact investing space.

For investors aiming to take a leadership role in the global fight against superbugs, a series of tangible steps have been identified through the AMR Investor Initiative, which is run in partnership by the Access to Medicine Foundation, the FAIRR Initiative, the UK Department of Health & Social Care and the Principles for Responsible Investment. Its objective is to catalyse investor and financial community action on AMR.

For example, there are still research and data gaps investors can work to address when it comes to fully understanding the depth of AMR's materiality for the pharmaceutical sector, or what the concept of stranded assets for R&D projects could mean for investors in the healthcare sector. Investors and their clients can also look to ensure investments are supporting companies with R&D pipelines in this vital field. Similarly, investors can advocate more strongly for public policies to address pull incentives and responsible production within the pharmaceutical sector. A further significant and welcome development would be a clear signal from the investment community on the need for government action to address market failures related to antimicrobial R&D, production and access. Announced at the World Economic Forum Annual Meeting in Davos in January 2020, at the launch of the 2020 AMR Benchmark, the AMR Investor Initiative is an acknowledgment of the fundamental need for all stakeholders to adopt a "One Health" approach to tackle this issue. With the World Bank predicting that, by 2050, drug-resistant infections have the potential to cause economic damage similar to or worse than the 2007-08 financial crisis, it is vital that all actors, including the investment community, work to avert this economic disaster and preserve modern medicine for future generations to come.

For more information

Mara Lilley is Investor Engagement Manager at the Access to Medicine Foundation. She manages the Foundation's ongoing conversations with ESG- and mainstream investing communities about the Foundation's research, and jointly coordinates the Investor Action on AMR initiative on behalf of the Foundation. You can contact her directly on the details below

E: mlilley@accesstomedicinefoundation.org T: +31 (0)20 215 3535 W: www.accesstomedicinefoundation.org