

OPINION: Covid-19 a breeding ground for antibiotic-resistant infections

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THE spectre of an infectious disease pandemic killing tens of thousands of people around the globe is no longer a theoretical nightmare scenario. The World Health Organisation's (WHO) "Disease X" is here and despite consistent efforts by the WHO and others to keep the political focus on this threat, the world has been caught largely unprepared. If there are lessons already to be learnt from the coronavirus pandemic, it is that too many political decisions are based on short-term thinking that ignores laws of nature.

Biology dictates how organisms evolve, particularly when we put pressure on them. Importantly, this includes those associated as secondary infections to novel viruses. The link between Covid-19 and drug-resistant infections is more troubling than many realise. Antibiotics, while not effective against viruses, are being used frequently for people with Covid-19 to prevent or treat suspected or confirmed secondary bacterial infections. According to an early study from China, secondary infections causing bacterial pneumonia, bloodstream infections, sepsis and hospital-acquired infections were present in half of all deceased Covid-19 patients.

Antibiotics are in high demand and many of these infections are increasingly resistant to existing antibiotics. There are also growing concerns that the increased use of antibiotics, coupled with disrupted supply chains, could lead to critical shortages of these key drugs within months. There is another impact of Covid-19 that is less well understood. As governments and healthcare infrastructures focus on the pandemic response, numerous research efforts to fight drug-resistant infections are slowing down or coming to a halt.

This is compounded by closure of laboratories and, during the current crisis, the inability of people to participate in clinical trials not related to Covid-19, including those of new antibiotics. In the medium- and long-term, the economic shock resulting from the Covid-19 pandemic may mean financial resources are diverted from critical health systems investments, including antimicrobial research and development. The consequence of this would be catastrophic - ranging from significant delays or even cancellations of critical research and development programmes, to the closure of research organisations and biotech companies working on diagnostics, vaccines and treatments. Ultimately, it could mean the preventable loss of lives.

As a global health community, we must learn the lessons of Covid-19 and take action to fight drug-resistant infections. Covid-19 caught us off guard, so we need to prepare for the next potential pandemic. Ensuring the effective use of antibiotics can save lives now and during future disease outbreaks. In terms of better understanding and addressing the impact of Covid-19 and bacterial infections, there are steps that can be taken by governments, policymakers, funders and researchers, such as:

- Assessing how secondary bacterial infections, antibiotic use and drug resistance affects the survival or death of Covid-19 patients;
- Protecting global access and supply of critical antibiotics required by healthcare systems, especially as these systems are coming under intense pressure;
- Prioritising the development of treatments to tackle drug-resistant infections. It is essential that such efforts are supported during this difficult period and accelerated once the pandemic subsides.

Covid-19 is a loud call for the entire global health community. There is a clear need to invest further in public health and healthcare systems, as well as collaborative research and development.

Antibiotics, the backbone of our ability to respond to disease outbreaks, are also under threat. New, effective interventions are already needed, and this demand will increase. If there are lessons already

to be learned from the coronavirus pandemic, it is that too many political decisions are based on short-term thinking that ignores laws of nature.

This is exactly why the Global Antibiotic Research and Development Partnership (GARDP), a not-for-profit that develops new treatments for drug-resistant infections, believes its mission is more important than ever. It is why we have developed a business continuity strategy with our partners to ensure we can mitigate, where possible, the effects of Covid-19 and accelerate our activities when the situation allows.

By fostering partnerships between the private and public sectors, GARDP is positioned to accelerate the development of critically needed treatments that are accessible in a sustainable and responsible manner. The collaborations extend to South Africa where GARDP is partnering with public and private clinical researchers and institutions in the areas of neo-natal sepsis, which is a growing concern in the country, and sexually transmitted infections (STIs), particularly gonorrhoea.

The research aims to contribute to the global development and delivery of affordable new or improved antibiotic treatments for drug-resistant bacterial infections where there are currently no adequate treatments. Just like Covid-19, antibiotic resistance is a health security crisis that moves silently within populations and knows no boundaries.

No single country, company or organisation can fight drug resistance alone. It can only be done in partnership. We must act now to prevent drug-resistant infections from becoming the next global public health emergency. Governments must take steps to accelerate the introduction of necessary interventions, including the development of new treatments for bacterial infections.