**[Superbug threat](https://www.dawn.com/news/1756582/superbug-threat)**

[Jamil Ahmad](https://www.dawn.com/authors/8939/jamil-ahmad) Published May 29, 2023

THE spectre of global public health emergencies, as we saw in the case of Covid-19, is lurking in the shadows of the current climate and environmental crisis. One such emergency is the rise of antimicrobial resistance, or AMR, which could push world economies into a spin again, with similarly disastrous consequences as the recent pandemic. The WHO considers AMR to be among the top 10 threats to global health.

At a time when the world is concerned with slow progress on the Sustainable Development Goals, thanks to financial problems caused by climate and conflict, AMR, if not checked, can hit global GDP with a loss of $3.4 trillion by 2030, according to World Bank estimates. Worsening the woes of the Global South, it is set to push another 24 million people below the poverty line as healthcare costs spike and productivity reduces.

Driven mostly by the overuse and misuse of antimicrobials, AMR leads to drug-resistant pathogens. As the current generation of antibiotics becomes ineffective, costs of treatment are rising, putting a heavier burden on patients and the weak healthcare systems in poor countries. Up to 5m deaths annually are associated with AMR, mostly in developing countries.

Scientific research on the origin, drivers and spread of AMR shows that the overuse and misuse of antimicrobials are not the only reasons for the emergence of drug-resistant pathogens. Other drivers include lack of access to clean water, poor healthcare systems, and the weak enforcement of the law to control biological and chemical pollution emanating from pharmaceutical and other industries.

By 2050, drug-resistant bugs could claim 10m lives annually.

When damaged and degraded, nature becomes, simultaneously, a driver and multiplier of risk. Several international and national health emergencies in recent times have their origins in the human-induced degradation of nature. Pollution and waste are destroying ecosystems, irreversibly in many cases, and are a leading cause of the spread of numerous diseases afflicting humans. Outbreaks of zoonotic diseases — those that jump from wildlife to human populations — like avian flu, foot-and-mouth disease, Ebola, Covid-19, and monkeypox, are linked to environmental degradation and biodiversity loss.

Over 70 per cent of all antimicrobials in the world are administered to animals raised for food. Such a heavy intake is also leading to drug-resistant infections in both animals and humans.

Scientific insights into the origin and drivers of pandemics and other threats to public health re-emphasise the inextricable and growing links between the environment and health. Initially, AMR was probed with a focus on human health and agriculture, but a fresh line of research takes a close look at the environmental dimension of AMR. UNEP’s recent report — Bracing for Superbugs: Strengthening environmental action in the one-health response to antimicrobial resistance — reveals strong evidence that environmental degradation due to pollution and waste exacerbates the development, spread and transmission of AMR; by the same token, a healthy environment can serve as a safeguard against AMR.

The report highlights the linkages bet­ween the health of people, animals, plants, and the environment and promotes a one-health approach — addressing human, animal and environmental health simultaneously — and profiles how the interplay bet­ween climate change and AMR, both human-induced, can lead to serious problems for people and how both can be mitiga­ted by urgent human action through reducing pollution and waste, rev­ersing nat­ure loss, and add­­ressing glo­bal warming. Pha­r­m­a­ce­uti­cals and chemicals-manufacturing, food and agriculture, and healthcare delivery systems are identified as three key economic-sector value chains that influence AMR’s development and spread. In fact, antimicrobial resistance could trigger up to 10m deaths annually by 2050.

In many developing countries, the discharge of untreated waste from chemical industries into waterways and the interaction of wildlife and feral animals with municipal and medical waste in landfills and open dumps also contribute to the spread of AMR.

Four UN agencies, UNEP, FAO, WHO and the World Organisation on Animal Health, have jointly developed a Global Action Plan on AMR and are promoting international collaboration for a one-health response on AMR. A funding facility provides policy advice, technical assistance, and capacity-strengthening pro­g­r­a­mmes and has supported 170 countries to finalise national AMR action plans.

Linking AMR plans with environmental and climate strategies and raising public awareness — with the support of governments and health practitioners — will be key to tackling the growing threat of AMR superbugs.

*The writer is director of intergovernmental affairs, United Nations Environment Programme.*

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