

The Interplay Between Climate Change and AMR

Climate Change:¹

- Long-term shifts in temperatures and weather patterns
- Largely due to human activities (e.g. burning of fossil fuels)
- Causes extreme weather events and decreases biodiversity

Antimicrobial Resistance (AMR):

- Microbes (bacteria, viruses, fungi and/or parasites) stop responding to antimicrobial medicines²
- Largely due to overuse and misuse of antimicrobial medicines³
- Infectious diseases become more difficult or even impossible to treat²

250 000

Climate change is forecast to cause **250 000 deaths per year** between 2030 and 2050⁴

10 million

AMR is forecast to cause **10 million deaths per year** by 2050⁵

1.2 °C

The average temperature of Earth’s surface is now about **1.2 °C warmer** than it was before the Industrial Revolution¹

Climate change and AMR are **2 of the biggest global health challenges** facing our world today.⁶ We’re discovering that these problems are closely linked, although experts are still determining exactly how^{5,6}

How Does Climate Change Create Favorable Conditions for Disease to Spread?

Rising temperatures = faster bacterial growth + expanded territories for climate-sensitive diseases^{5,6}

Examples ⁵		
Microorganisms	Impact of climate change	Outcome (disease)
<i>Campylobacter spp. and Salmonella spp.</i>	Rising temperatures in the water system = more favorable conditions for microorganism survival	Water- and food-borne diseases
<i>Vibrio cholerae</i>	Rising temperatures = natural disasters = more favorable conditions for microorganism survival	Cholera
<i>Candida auris</i>	Increasing tolerance to heat and salinity in the wetland ecosystem	Candidiasis
<i>Plasmodium falciparum</i>	Rising temperatures and humidity = easier transmission	Malaria

How Do Extreme Weather Events (Natural Disasters) Spread Disease and Exacerbate AMR?⁶

Population displacement

Overcrowding, lack of sanitation

Disrupted access to health services

Damage to sewage infrastructure

What Is the Role of IVD in Combating AMR?³

Misdiagnosis = unnecessary antibiotic use = increased risk of AMR

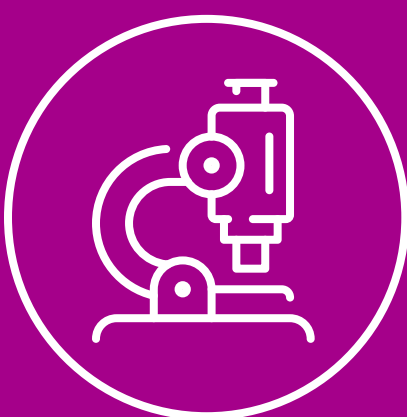
In vitro diagnostic (IVD) testing **improves diagnostic distinction** and helps to reduce the overuse of antibiotics

What Is the Value of IVD in Natural Disaster Settings?

Point-of-care (PoC) IVD testing:



Can be done at or near the site of patient care, using mobile equipment^{7,8}



Makes accurate diagnoses and monitoring more accessible^{7,8}



Provides access to accurate diagnosis and monitoring, which improves disease management and provides rapid, accurate testing to prevent misdiagnosis and overtreatment^{3,7,8}



Is critical in resource-limited settings (like those following a natural disaster)⁷

How Can Medix Biochemica Help?

Medix Biochemica is a provider of high-quality antibodies, antigens, proteins and enzymes for the development of IVD assays⁹

Our comprehensive portfolio includes a wide variety of raw materials to be used in infectious-disease tests¹⁰

Comprehensive technical and customer support throughout entire buyer journey

Our recent **acquisition of ViroStat**, a leader in infectious-disease antibodies and antigens, has allowed us to further enhance our product portfolio and manufacturing capabilities¹⁰

References

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