

Superbugs on the rise: WHO report signals increase in antibiotic resistance

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A new World Health Organization (WHO) report reveals high levels of resistance in bacteria, causing life-threatening bloodstream infections, as well as increasing resistance to treatment in several bacteria causing

common infections in the community based on data reported by 87 countries in 2020.

For the first time, the [Global Antimicrobial Resistance and Use Surveillance System \(GLASS\) report](#) provides analyses for [antimicrobial resistance](#) (AMR) rates in the context of national testing coverage, AMR trends since 2017, and data on antimicrobial consumption in humans in 27 countries. Within six years, GLASS achieved participation from 127 countries with 72% of the world's population. The [report](#) includes an innovative interactive digital format to facilitate data extraction and graphics.

The report shows high levels (above 50%) of resistance were reported in bacteria frequently causing bloodstream infections in hospitals, such as *Klebsiella pneumoniae* and *Acinetobacter* spp. These life-threatening infections require treatment with last-resort antibiotics, such as carbapenems. However, 8% of bloodstream infections caused by *Klebsiella pneumoniae* were reported as resistant to carbapenems, increasing the risk of death due to unmanageable infections.

Common bacterial infections are becoming increasingly resistant to treatments. More than 60% of *Neisseria gonorrhea* isolates, a common sexually transmitted disease, have shown resistance to one of the most used oral antibacterials, ciprofloxacin. More than 20% of *E. coli* isolates—the most common pathogen in [urinary tract infections](#)—were resistant to both first-line drugs (ampicillin and co-trimoxazole) and second-line treatments (fluoroquinolones).

"Antimicrobial resistance undermines [modern medicine](#) and puts millions of lives at risk," said Dr. Tedros Adhanom Ghebreyesus, WHO Director-General. "To truly understand the extent of the global threat and mount an effective public health response to AMR, we must scale up microbiology testing and provide quality-assured data across all

countries, not just wealthier ones."

Although most resistance trends have remained stable over the past 4 years, bloodstream infections due to resistant *Escherichia coli* and *Salmonella* spp. and resistant gonorrhea infections increased by at least 15% compared to rates in 2017. More research is needed to identify the reasons behind the observed AMR increase and to what extent it is related to raised hospitalizations and increased antibiotic treatments during the COVID-19 pandemic. The pandemic also meant that several countries were unable to report data for 2020.

New analyses show that countries with a lower testing coverage, mostly low- and [middle-income countries](#) (LMICs), are more likely to report significantly higher AMR rates for most "bug-drug" combinations. This may be (partly) due to the fact that in many LMICs, a limited number of referral hospitals report to GLASS. These hospitals often care for the sickest patients who may have received previous antibiotic treatment.

For example, the global median AMR levels were 42% (*E. Coli*) and 35% (Methicilin-resistant *Staphylococcus aureus*—MRSA)—the two AMR Sustainable Development Goal indicators. But when only countries with high testing coverage were considered, these levels were markedly lower at 11% and 6.8%, respectively.

As for antimicrobial consumption in humans, 65% of 27 reporting countries met WHO's target of ensuring that at least 60% of antimicrobials consumed are from the "ACCESS" group of antibiotics, i.e., antibiotics which—according to the WHO AWaRE classification—are effective in a wide range of common infections and have a relatively low risk of creating resistance.

AMR rates remain difficult to interpret due to insufficient testing coverage and weak laboratory capacity, particularly in low- and middle-

income countries. To overcome this critical gap, WHO will follow a two-pronged approach aiming at short-term evidence generation through surveys and long-term capacity building for routine surveillance. This will entail the introduction of representative national AMR prevalence surveys to generate AMR baseline and trend data for policy development and monitoring of interventions and an increase of quality-assured laboratories reporting representative AMR data at all levels of the health system.

Responding to trends of antimicrobial resistance requires high-level commitment from countries to boost surveillance capacity and provide quality assured data as well as action by all people and communities. By strengthening the collection of standardized quality AMR and AMC data, the next phase of GLASS will underpin effective data-driven action to stop the emergence and spread of AMR and protect the use of antimicrobial medicines for future generations.

Provided by World Health Organization

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