Unitaid
SAVE LIVES FASTER

Antimicrobial resistance

Antimicrobial resistance (AMR) is one of the top 10 global health threats facing humanity, according to the World Health Organization (WHO).

AMR occurs when bacteria, viruses, fungi, and parasites mutate and no longer respond to medicines. As a result, infections become harder to treat, and the risk of disease transmission, severe illness and death increases.

AMR is already a leading cause of death globally, directly responsible for 1.27 million deaths in 2019 – and it's on the rise. Deadly diseases such as tuberculosis and malaria are becoming increasingly resistant to the lifesaving drugs used to treat them. Experts estimate that by 2050, AMR-related deaths could grow to 10 million per year unless AMR is curbed.

At the same time, 5.7 million people die each year in low- and middle-income countries because they lack access to effective antimicrobials.

While we urgently address emerging resistance, we must also ensure people get the right treatment at the right time – which means increasing access to medicines and diagnostics that can support good stewardship and people-centered care.

How we work

At Unitaid, we save lives by making new health products available, adapted, and affordable for people in low- and middle-income countries. We identify challenges that are slowing progress towards global health goals, find and invest in innovative products and solutions, then work with countries and partners to take them to scale so people everywhere can benefit.

To address AMR, we are collaborating with partners to introduce affordable, accessible new tools against pathogens that are already drug-resistant; support health workers to stop the overuse and misuse of antimicrobials to prevent new resistance from emerging; address some of the main diseases impacted by AMR, particularly HIV, tuberculosis and malaria; and develop tools to better track and respond to AMR.

Photo: To fight AMR, we also help introduce drugs that are less prone to resistance, such as dolutegravir, an HIV drug that is now used by 24 million people worldwide. © Medicines Patent Pool.

New diagnostic tests, treatments and prevention tools

We are working with partners to introduce innovative new diagnostic tests, treatments and prevention tools against pathogens that are already drug-resistant and make them affordable and accessible for the people who need them. Accurately diagnosing AMR is critical to ensure people get the right treatment and to prevent the resistant pathogen from spreading. We also help introduce drugs that are less prone to resistance, such as dolutegravir, an HIV drug that is now used by 24 million people worldwide.

Drug-resistant tuberculosis: We have helped introduce new tests and treatments for drug-resistant TB (DR-TB), a leading cause of death from AMR. DR-TB is more costly and difficult to treat, and severely complicates efforts to halt transmission and control the disease. More than 450,000 people have DR-TB but only two in five access treatment.

Key results:

- **Multidisease testing devices for TB that can detect other pathogens, including COVID-19, and that can identify if a pathogen is resistant to available drugs.**
- **First-ever treatment specifically formulated for children with DR-TB.**
- **New preventative treatment for DR-TB for children.**
- **Shorter, all-oral, more effective and less toxic treatments for multidrug-resistant TB that ensure all people with TB can be cured.**

Fighting antimalarial and insecticide resistance: Malaria parasites and the mosquitoes that transmit them are developing resistance to the recommended antimalarial medicines and the insecticides used to repel and kill them, threatening our strongest lines of defense. We're working with partners to introduce malaria drugs and treatment strategies to stay ahead of resistance, and develop new vector control tools for malaria prevention, such as innovative spatial repellents – products that are permeated with slow-release chemicals that protect people indoors.

Key results:

- **Catalyzing introduction and scale-up of the first dual-insecticide-treated mosquito nets (together with the Global Fund) and new classes of indoor residual sprays to counter insecticide resistance.**
- **Increasing access to new antimalarials to fight resistance.**
- **Supporting countries to use multiple first-line treatments to mitigate resistance.**

Investing in monoclonal antibodies: Monoclonal antibodies are engineered antibodies that mimic human antibodies – the proteins generated by the immune system to defend against pathogens. Monoclonal antibodies have the potential to be used to target multidrug-resistant pathogens and may also reduce AMR by providing alternative treatment options to antibiotics, thus reducing their use, and filling the gap where antibiotics fail to treat drug-resistant pathogens. Unitaid has planned investments to demonstrate feasibility and viability of business models that enable access to an affordable and sustainable supply of monoclonal antibodies in low- and middle-income countries, with a priority focus on infectious diseases.

Supporting access and appropriate use of antimicrobials

In low- and middle-income countries, ensuring access to essential and quality-assured antimicrobials remains a significant challenge. Preventing the misuse and overuse of antimicrobial drugs is equally essential to curtail AMR. We are supporting initiatives that expand the supply of quality-assured antibiotics, promote appropriate use, help patients adhere to prescribed treatment, and support health workers to accurately diagnose illnesses and deliver alternative treatments if appropriate.

Integrated fever management: We are testing new tools, including pulse oximeters to measure the oxygen saturation in the blood to diagnose severe hypoxemia, and electronic clinical decision support tools, that health workers can use to accurately diagnose febrile illnesses at the primary health

care level. These tools help health workers determine which diseases need antibiotics or antimalarials – and those that don't, preventing misuse.

Long-acting products to increase adherence to treatment: We're investing in the development of long-acting products for HIV treatment, TB prevention, hepatitis C treatment and malaria prevention. Long-acting products are easier to administer and last longer, increasing treatment adherence and completion and allowing care to reach people in remote settings. This increases survival rates and reduces the risk of resistant strains developing and spreading.

Eliminating vertical (mother-to-child) transmission of HIV, syphilis, hepatitis B, and Chagas disease: We are investing to improve accessibility of diagnosis through rapid testing and appropriate treatment to prevent onward transmission and limit development of resistance. Syphilis, in particular, is the second leading cause of preventable stillbirth worldwide, but global shortages of the recommended treatment – benzathine penicillin G – have significantly curtailed access for pregnant women. Unitaid is strengthening the supplier base and supporting countries to implement integrated elimination programs.

Addressing the contributing causes of AMR

Preventing people from being infected with diseases that require antimicrobial drugs is the most effective way to combat AMR – and contribute to achieving Sustainable Development Goal 3: Health and well-being for all. We focus on some of the world's biggest health challenges: HIV, TB and malaria; women's and children's health; and pandemic prevention, preparedness and response.

Preventing the spread of HIV means fewer people need to take antiretroviral therapy – drugs that are increasingly losing efficacy as drug-resistant strains of HIV emerge. Unitaid has helped introduce oral pre-exposure prophylaxis (PrEP) and long-acting cabotegravir, making it easier for people at risk to protect themselves from HIV. We continue to advance access to, and scale up, the best TB prevention tools for those most at risk, including people living with HIV and children. We supported the introduction of the first-ever preventive therapy for adults and children exposed to DR-TB, which was recommended by WHO this year.

Case Study:

First-ever drugs for children with drug-resistant TB

Chad, from Cape Town, South Africa, was diagnosed with DR-TB when he was just five years old. In the past, there was no child-specific treatment available; nurses had to crush bitter-tasting adult pills and guess at the right dose. With the incorrect dosage, many children continued to suffer or died from the disease – or passed DR-TB on to others. Unitaid helped introduce the first-ever medicines specially adapted for children with DR-TB – fruit-flavored dispersible tablets that are easy for children like Chad to take, ensuring they complete their treatment and live healthy, TB-free lives.

Expanding surveillance and empowering communities

Targeted next-generation sequencing (tNGS) provides accurate results on drug resistance for nearly all TB drugs within days rather than months. Advancements in sequencing also support pandemic preparedness. Our investment provided the evidence for WHO's recommendation on using tNGS for clinical care, released in March 2024. We are also supporting civil society leadership and meaningful engagement with communities, which is critical for driving demand and awareness and ensuring appropriate and responsible use of new and existing drugs.

The way forward

Despite the urgency, there are only a few new antimicrobial products in the research and development (R&D) pipeline expected to be ready within the next decade. It is critical to protect the antimicrobials we have, prevent new AMR from emerging, and invest in R&D to accelerate new solutions. We are coordinating with partners, including the Global Antibiotic Research and Development Partnership and WHO, to map out the challenges and opportunities to fight growing resistance in drugs used to fight conditions like gonorrhea and sepsis.

At the upcoming UN High-Level Meeting on Antimicrobial Resistance in New York in September 2024, world leaders have the opportunity to collectively address the growing threat of AMR. Drug-resistant pathogens know no borders, and it will take a coordinated, global effort to fight AMR.

Unitaid

Climate change and AMR

Climate change is making people more vulnerable to illnesses exacerbated by increased pollution, flooding, extreme heat, drought and famine, and increasing the spread of infectious diseases – including drug-resistant forms. Our Climate and Health Strategy aims to address the health impacts of climate change through the introduction of climate-smart health products that have a strong public health value, are relevant for affected communities, support our objectives for mitigation and adaptation, and are more sustainable than current products and interventions.

About Unitaid:

We save lives by making new health products available and affordable for people in low- and middle-income countries. We work with partners to identify innovative treatments, tests and tools, help tackle the market barriers that are holding them back, and get them to the people who need them most – fast. Since we were created in 2006, we have unlocked access to more than 100 groundbreaking health products to help address the world's biggest health challenges, including HIV, TB, and malaria; women's and children's health; and pandemic prevention, preparedness and response. Every year, more than 300 million people benefit from the products we've helped roll out.

August 2024 **unitaid.org**