



Antibiotic Resistance: What Everyone Should Know

Antibiotics that
changed human
history - and why
are they failing?

03

When antibiotics
fail - is there a
backup plan?

04

A national
responsibility -
what each of us
can do today

05

Editor's Desk

Dear Readers,

Welcome to the 17th issue of the KIMS e-newsletter on health and wellness. This issue is titled **“Antibiotic resistance: what everyone should know”** where we look at the critical shift in global health as antibiotics lose their effectiveness, and share strategies on how we can protect ourselves.

Antibiotics are among the greatest discoveries in human history. They revolutionised medical practice, saved the lives of millions of people, contributed to the safety of surgical procedures, and enabled humanity to combat infections that had previously caused a great deal of misery. However, this protection is gradually fading away in the present day as bacteria become resistant to a wide variety of antibiotics used routinely.

The unregulated or improper use of antibiotics kills many pathogens, yet certain bacteria are able to survive. These survivors exhibit a consistent capacity for resilience, and the same antibiotic becomes ineffective, improving their survivability and the spread of disease.

Penicillin once changed the world. Today, many bacteria can easily defend against it. Scientists develop new medicines, while bacteria develop new resistance. Unfortunately, bacteria are evolving faster than new antibiotics are being discovered.

At the same time, researchers from all around the world are engaged in the quest for novel approaches to combat potentially lethal illnesses. One alternative in this situation is phage therapy involving the use of naturally occurring viruses known as bacteriophages, or phage, which are designed to precisely target dangerous bacteria

There has been steady progress in scientific knowledge, but the message to the general public is that they must use antibiotics responsibly and with caution. Most effective preventive strategies include careful practices such as taking antibiotics only when necessary, nurturing a healthy immune system, protecting gut microbiome bacteria, and increasing awareness among all family members

Phage research is still in its infancy worldwide, but it holds great promise for the future treatment of antibiotic-resistant infections. Until such therapies become widely available, antibiotics remain our primary defence and should be used responsibly and judiciously.

This newsletter has been written to promote the safe and responsible use of antibiotics among professionals and the general public to help safeguard the health of future generations. The purpose is also to create awareness in society, among students, homemakers, and professionals, to encourage everyone to play a responsible role in combating antibiotic resistance.

With regards

Dr. Bhujanga Rao Vepakomma

Chief Editor

Antibiotics that changed human history - and why are they failing?

There was a time when a small cut on the skin could become fatal. A simple fever could take away a child's life. A mother giving birth faced enormous danger from infection, and even a routine surgery carried a serious risk.

The story of antibiotics: Why are we running out of miracle cures?

Before penicillin was discovered in 1928, common medical procedures and everyday injuries carried a massive risk of severe, untreatable complications. Then came the golden age of medicine in the 1950s through the 1970s. Science built powerful germ-killing drugs to stay ahead of constantly evolving bacteria, saving millions of lives. Today, our strongest antibiotics are reserved for hospitals as a last-resort defence against dangerous superbugs. Slowly, we are running out of effective treatment options. We are in a precarious situation indeed. To keep common infections from turning deadly again, we must protect the drugs we have. Never ask for antibiotics when you have a virus like a cold or the flu, and always finish your whole prescription just as your doctor says.



Antimicrobial Resistance (AMR)

These medicines transformed modern civilisation and made life much better. They allowed doctors to safely perform surgeries, safely deliver children, treat diseases like pneumonia easily, save accident victims and protect millions of children from infections that once devastated families.

So, for nearly 80 years, antibiotics have quietly protected humanity. Today, however, this protection is weakening. Around the world, bacteria are slowly learning how to survive the medicines designed to kill them. This growing threat is called Antimicrobial Resistance (AMR). The antibiotics that cured infections in the past may no longer work in the future. This is a fact, and it has already started showing negative effects on human health.

Doctors across the world are seeing infections that no longer respond to common medicines. Some patients now need stronger, costlier, and more harmful antibiotics. Sometimes even those antibiotics fail.

India, with such a huge population, is especially vulnerable because antibiotics are often used without prescription, incomplete treatment courses are common, there is a lack of control in their use, sanitation problems spread infections rapidly, and resistant bacteria move quickly through crowded communities. The concern is not only for hospitals. It is about ordinary people and their families.

The medicine that saves us today may not save our children tomorrow. Some infections that earlier needed a simple medicine now require hospitalisation and intravenous treatment.

A simple comparison every family can understand

a) A UTI Patient Today

A young woman develops urinary infection symptoms: burning while passing urine, fever, discomfort. In many cases today, she receives a urine test, a common antibiotic tablet, and improves within 3-5 days. She returns to normal life quickly.

A similar patient 30 Years Later - If AMR worsens, the patient may need hospital admission, intravenous antibiotics, multiple laboratory tests, expensive reserve drugs, several days away from work, and prolonged recovery. What was once a small inconvenience may become a serious medical problem.

b) Upper Respiratory Infection (URI): Then and Future

Today most coughs, colds, and viral fevers improve with rest, fluids, steam, and simple supportive treatment. Unfortunately, many people still take antibiotics unnecessarily.

If antibiotic resistance continues increasing, future bacterial chest infections may become far harder to treat. Some patients may require oxygen support, intensive care, and stronger reserve antibiotics. The tragedy is that careless antibiotic use for mild illnesses today may reduce the power of life-saving medicines tomorrow. Antibiotics are not ordinary consumer products. They are a precious shared resource for humanity.

How are we accidentally destroying antibiotics?

Most people do not misuse antibiotics intentionally, but irrational use can create a national problem.



Five common mistakes in using antibiotics:

a) Taking antibiotics for a cold and viral fever kills bacteria.

They do not kill viruses. Taking antibiotics without proper medical advice does not speed recovery; it can only damage good and beneficial bacteria and encourage antibiotic resistance.

b) Stopping medicines halfway

Many people stop antibiotics as soon as they feel better. This is very harmful to the human body. The weakest bacteria die first; the strongest survive. Those surviving bacteria become harder to kill later and slowly spread in the community, affecting generations to come.

c) Buying antibiotics without prescription

In India, antibiotics carry a RED LINE on the strip. It means: Do not use it without proper medical advice. Self-medication is one of the biggest drivers of creating bacterial resistance.

d) Overuse in poultry and animal farming

Large quantities of antibiotics are also used in poultry, fish farming, and livestock. This leads to the formation of resistant bacteria that can spread through food, water, and the environment.

e) Coming era without medicine

We are reaching a time when doctors may know what infection a patient has, but may not have antimicrobials to stop it. The problem is not a lack of medical knowledge; rather, it is that bacteria have become stronger than our medicines. This is a crisis that humanity must actively prevent.

b. Safe Drinking Water: Many dangerous infections spread through contaminated, unsafe drinking water, causing nearly 5.7% of all illnesses. Using boiled, filtered, and clean water helps reduce infections like diarrhoea, typhoid, cholera, and other intestinal diseases.

c. Vaccination: Vaccination protects children, the elderly, pregnant women and the sick, while also reducing the need for antimicrobials.

d. Food Hygiene: Simple kitchen discipline prevents many infections. To practice this, cook meat properly, keep kitchen surfaces clean, and wash fruits and vegetables properly.

e) Quick care for better healing: Even small cuts need to be washed with soap and water. Keep them dry and watch them closely. Ignoring any wound can lead to a dangerous infection.

f) Include traditional fermented foods: Curd, buttermilk, kanji, idli & dosa batter, and homemade pickles support microbial diversity and strengthen the gut.

g) Include prebiotics for fuelling the gut's good bacteria: Incorporating daily servings of fibre-packed ingredients like bananas, onions, garlic and fibre introduces vital prebiotics that selectively nourish your beneficial gut bacteria.

h) Avoid excess processed foods: Highly processed foods and excessive junk food may disturb the gut microbiome, and they should be reduced at any cost. (Ultra-processed foods and their impact on health: What Everyone Should Know, KIMS e-Newsletter, Issue-16)

When antibiotics fail - is there a backup plan?

When you get sick, it is important to ask your doctor if your infection is caused by bacteria or a virus before you take any medicine. You are encouraged to ask, "Do I really need antibiotics, and can we do a test to find out what is making me sick?" Your doctor can then explain that antibiotics only kill bacteria, so they will fail if you actually have a virus. By talking together, you and your doctor can find the right treatment and make a safe backup plan to help you get better.



Daily family habits that save lives

a. Handwashing: Approximately 80% of common infectious illnesses are spread by hand contact, which is why washing your hands properly with soap for 20 seconds before eating, after using the toilet, after returning home, and before cooking will reduce infections dramatically. Soap remains one of humanity's greatest health inventions.

What is happening inside our body?

The Gut Microbiome - Our Invisible Protective Army

Inside every healthy human body lives a vast community of useful microorganisms. These beneficial bacteria help with digestion, immunity, vitamin production, and protection against harmful germs. Scientists now understand that maintaining a healthy gut microbiome is vital. However, when people overuse antibiotics, these helpful bacteria are also destroyed, which weakens the body's natural defences.

Nourish your good bacteria

Many bacteria, generally described as the 'gut microbiome', that thrive in our body benefit our health. They help digest food, produce essential nutrients, strengthen the immune system, and protect us against harmful germs.

You can help these beneficial bacteria thrive by:

- Eating a balanced diet rich in fruits, vegetables, pulses (dal), whole grains, millets, oats, and green leafy vegetables.
- Fermented foods such as idly, breads, curd, and pickles also help to produce these bacteria in our body.
- Unnecessary use of antibiotics can destroy both harmful and beneficial bacteria.
- Following a healthy lifestyle with regular exercise, adequate sleep, and good hygiene.

Phage Therapy – A Promising New Approach

Scientists around the world are searching for alternatives to antibiotics. One of the most promising approaches is **phage therapy**.

Phages, also called bacteriophages, live in the natural environment as viruses that can be managed to deploy to attack and destroy harmful bacteria. They are found to survive near rivers, oceans, soil, sewage, and many other parts of the environment.

We know that broad-spectrum antibiotics often kill a spectrum of both harmful and beneficial bacteria. Phages usually are designed to target only specific disease-causing bacteria. This helps retain beneficial bacteria and offers hope for treating infections that no longer respond to antibiotics.

Countries such as Georgia, Poland, the United States, and the United Kingdom have been conducting phage therapy research for many decades.

India demonstrated its scientific capability through the successful development and large-scale production of vaccines. A similar mission-oriented national effort will help the country develop phage technologies to combat antibiotic-resistant infections in the years to come.

What everyone should understand

Phage therapy is not a magic solution that will replace antibiotics overnight. However, it offers real hope for the future in the fight against antibiotic-resistant infections. Until such new treatments become widely available, our best defence is the responsible use of antibiotics today. No future technology can fully replace responsible human behaviour. Every antibiotic used wisely today helps to protect its effectiveness for tomorrow. Inside every healthy human body, there lives a vast community of useful microorganisms.

These beneficial bacteria help with digestion, immunity, vitamin production and protection against harmful germs. Gut Microbiome scientists now understand that a healthy gut microbiome is extremely important. When antibiotics are overused unnecessarily, useful bacteria also get destroyed. This weakens the body's natural defences.

A future we must avoid

Imagine a future where minor surgery becomes risky, dental infections become dangerous, accident victims cannot be protected from infection, or children die from ordinary pneumonia.

This may sound frightening. But history reminds us that before antibiotics, such events were common. Humanity must not return to that era. Protecting antibiotics is a national responsibility.



A national responsibility - what each of us can do today

Antibiotic resistance is not only a hospital problem. It is a family problem, a community problem, a national problem, and a global challenge. Every citizen has a role.

- Never take antibiotics without the advice of a qualified healthcare professional.
- Always complete the full course of antibiotics as prescribed. Never stop treatment midway without your doctor's advice.
- Do not demand antibiotics for viral illnesses such as the common cold or flu.
- Maintain good hand hygiene and personal cleanliness.

- Safe food-handling and daily kitchen cleaning are to be practised.
- Drink clean and safe water.
- Keep up vaccination schedules against several infections.
- A balanced diet, regular exercise, adequate sleep and a stress-free life should be adopted.
- Keep clean, dry, and well-ventilated toilets and washroom facilities.
- Feel free to question why antibiotics are needed, how to take them correctly, and what precautions to follow.

Teaching about hygiene in schools

Schools shape the future behaviour of society. Simple awareness programs about hygiene, immunity, infection prevention, and responsible medicine use can create a healthier generation. In fact, health education and responsible antimicrobial use hold the key to preventing AMR.

When people follow certain precautions in consuming antibiotics, they help stop bacteria from becoming

resistant. The choices our students make today will decide if future doctors can still cure basic infections. By teaching responsible medicine use now, you are shielding the next generation from untreatable diseases.

Takeaway message

A century ago, people died from basic infections because they had no medicines. Today, medicines exist, but they are rapidly losing their power because we use them carelessly. The WHO warns that 1 in 6 global infections is now drug-resistant, a crisis linked to 4.7 million deaths every year. Because up to 70% of antibiotic prescriptions are completely unnecessary, every wrong dose we take today leaves us defenceless tomorrow. This is why hospitals use Antimicrobial Stewardship (AMS), a strict system to ensure doctors only use the right drug, at the right dose, for the right time. Stopping this crisis is not just a job for doctors; it is our shared ethical and social responsibility to preserve these life-saving tools for future generations.



DRIISTI – AI-BASED SMART VISION GLASSES FOR VISUALLY IMPAIRED



**Empowering
Vision,
Enhancing Life**

+91 7995543879

Developed by:



Interpreter enabled telemedicine for the Deaf



**Ensuring Accessible Telehealth for
Hearing Disabled (Deaf & Mute)
A Collaborative Program**



SIGN CARE TELEMEDICINE FOR THE DEAF

The essential information of the hearing disabled patients will be missed when the clinicians cannot understand the sign language of the patients. To address this communication gap, KFRC and DEF have collaborated to create a two-way interaction system between the patient and physician, facilitated by an expert sign language interpreter. The goal is to eliminate disparities for the hearing - disabled community in our society.



**First Nationwide
Telemedicine
Centre for the Deaf**



**Sign Language
Interpreters
Available**



**Online and
Offline
Consultations**

Patient Journey: • Scheduling • Online Registration • No Consultancy Fee • Qualified Interpreter
• Patient - Physician Interaction • Transcription • Follow-up Instructions • Medication Instructions

For more details, contact: KIMS Foundation & Research Center

PG Road, Old KIMS Sunshine Hospital, Near Paradise Hotel, Secunderabad - 500 003, TS, India

Email: signcare@kfrc.co.in | Website: www.kfrc.co.in | ☎ 70755 27522

Time: 10 am - 5 pm (Monday - Friday) | **Closed on Public Holidays**

Practical tips to practice Health & Wellness

To subscribe your free digital copy, of our previous issues,
Please email us: wellness@kimshospitals.com



Editorial Committee

Dr. B. Bhaskar Rao

Chairman & Managing Director
KIMS Group of Hospitals

Dr. Bhujanga Rao Vepakomma

Chief Editor & Author

Shri. Vinay Bhushan Bhagwat

Executive Editor

Dr. Shiva Priya Eswaran

Senior Consultant & HOD, Microbiology
Medical Reviewer

Disclaimer: The KIMS Newsletter is published periodically and distributed freely to disseminate information on wellness to help the society. For any personalised medical advice, please contact your nearest KIMS Hospitals listed here - • **Telangana:** Hyderabad (Secunderabad - 040 4488 5000 | Kondapur - 040 4488 5333 / 088973 14141 | Gachibowli - 080081 08108 | Begumpet - 040 4455 0000) • **Andhra Pradesh:** Nellore - 0861-2315835 | Ongole - 08592-667788 | Anantapur - 08554251234 | Kurnool - 08518-352000 | Srikulam - 0894-2271116 | Vizag (Sheela Nagar - 089135 36379 | Seethammadhara - 0891 2827777) | Guntur - 0863 2227777 • **Maharashtra:** Nagpur - 071267 89100 | Nashik (Renuka Nagar - 0253 7100200 | Mahatma Nagar - 0253-6605666) | Sangli - 9699772402 | Thane - 022 4142 3456 • **Kerala:** Kannur - 0497271555 | Kollam - 0476 265 9999 • **Karnataka:** Bengaluru (Mahadevapura - 080 44004400 | Electronic City - 080 44004400) For any information and feedback, please email to wellness@kimshospitals.com

Follow us: www.kimshospitals.com



Copyrights©2026, KIMS Hospitals | Published by KIMS Foundation and Research Centre (www.kfrc.co.in)
If you would prefer not receiving this newsletter email, please click here to [Unsubscribe](#)

The views expressed in this Newsletter are that of the authors and not that of the Organization.