



EDITORIAL

Antimicrobial Resistance (AMR) Prevention is a Shared Responsibility

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Antimicrobial resistance could be prevented by good practices in COMMUNITY & HOSPITALS

Prime Minister Narendra Modi has spoken about AMR (Antimicrobial Resistance), and the medical fraternity welcomes this with great seriousness and appreciation, as it reflects concern over this growing threat. AMR occurs when patients do not take medicines as prescribed—either by self-medicating, buying drugs from chemists without a prescription, or by not completing the full course. In such cases, microbes become resistant, leading to drug resistance, which makes future treatment difficult and sometimes ineffective. AMR can also develop when patients delay doses or stop medication before the prescribed duration, even when antibiotics are recommended by a doctor. This causes long-term harm, as patients may not respond to treatment later. Urge all patients

never to take antibiotics without a doctor's prescription. Antibiotics should be taken only as prescribed by qualified doctors, strictly following the advised dose and duration:

Antimicrobial Resistance (AMR)

Preventing a Growing Public Health Threat through Good Practices in the Community and Hospitals

Antimicrobial Resistance (AMR) has emerged as one of the most serious global health threats of the 21st century. The recent emphasis placed on AMR by Hon'ble Prime Minister Shri Narendra Modi is both timely and significant, and the medical fraternity welcomes this leadership with seriousness and appreciation. AMR threatens to reverse decades of medical progress by rendering common infections difficult—or sometimes impossible—to treat.

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AMR develops primarily due to inappropriate use of antimicrobial agents. In the community, a major contributor is self-medication—patients purchasing antibiotics over the counter without a valid prescription. Incomplete treatment courses, skipped doses, or premature discontinuation of antibiotics once symptoms improve further accelerate resistance.

Even when antibiotics are appropriately prescribed, failure to adhere strictly to the recommended dose and duration allows surviving microbes to adapt, resulting in resistant strains that compromise future treatment effectiveness.

Good Practices in the Community

- Preventing AMR begins at the community level. Antibiotics must never be taken without a prescription from a qualified doctor. Patients should be educated that antibiotics are ineffective against viral illnesses such as common colds or flu. Strict adherence to prescribed dosage, timing, and full course completion is essential, even if clinical improvement occurs early. Public awareness campaigns, regulation of over-the-counter antibiotic sales, improved sanitation, vaccination, and infection prevention measures are critical to reducing unnecessary antibiotic use.

Good Practices in Hospitals

- In hospitals, AMR prevention requires robust antimicrobial stewardship programs. These include evidence-based prescribing, culture-guided therapy, de-escalation of broad-spectrum antibiotics, and strict infection prevention and control practices such as hand hygiene, environmental cleaning, and isolation protocols. Regular audits, clinician education, and multidisciplinary stewardship teams help ensure rational antibiotic use. Accurate documentation, timely review of antibiotic therapy, and adherence to standard treatment guidelines are essential safeguards.

A Shared Responsibility

- AMR prevention is a shared responsibility of policymakers, healthcare professionals, pharmacists, and patients alike. Rational prescribing, ethical dispensing, patient education, and system-level safeguards must work together. Antibiotics are a precious, finite resource; preserving their effectiveness requires disciplined, informed, and collective action—today, to protect the health of future generations.

Prime Minister Narendra Modi's message for Medical Fraternity in Mann ki Baat on

December 28, 2025:

“Antibiotics are a shared national resource—prescribe wisely, protect the future.”

A Shared Responsibility

AMR is a National Threat, Not Just a Clinical Issue

- **Doctors are Gatekeepers of Antibiotics; Avoid Overuse and Misuse of Antibiotics**
- **Prescription Discipline Is Critical; No Antibiotics Without Prescription**
- **Patient Education Is a Professional Responsibility**
Doctors must ensure patients understand why antibiotics are given, why full courses matter, and why stopping early is harmful.
- **Infection Prevention Reduces Antibiotic Dependence**
Hand hygiene, asepsis, vaccination, and hospital infection control are powerful tools against AMR.
- **Stewardship and Surveillance Must Be Strengthened**
Hospitals should implement antimicrobial stewardship programmes, audits, and resistance surveillance aligned with national guidelines.
- **AMR Requires Interdisciplinary Action**
Collaboration across clinicians, microbiologists, pharmacists, nurses, public health professionals, and policymakers is essential.
- **Protecting Antibiotics Is a Moral and Professional Duty**
Preserving antibiotic efficacy for future generations is an ethical obligation of the medical profession.

Every antibiotic prescription is a decision that affects not only today's patient, but tomorrow's population.



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Efficiency of treatment outcomes is being affected due to the overuse of antibiotics & its adverse consequences are evident at the community level:

Overuse and misuse of antibiotics directly reduce the efficiency of treatment outcomes at the individual level and create serious downstream consequences on the community level.

The impact is both clinical and systemic.

1. Impact on Efficiency of Treatment Outcomes (Individual Level)

*a. **Reduced Drug Effectiveness:** Repeated or inappropriate antibiotic exposure selects resistant organisms. When resistance develops: First-line antibiotics fail. Treatment requires*

broader-spectrum, more toxic, or more expensive drugs. Time to clinical improvement is prolonged.

- b. **Delayed Recovery and Higher Complications Resistant infections are associated with:** Longer hospital stays
Higher rates of treatment failure,
Increased ICU admissions and need for invasive support
Greater risk of secondary infections (e.g., Clostridioides difficile).*
- c. **Escalation of Care:** Overuse forces clinicians to escalate therapy earlier:
From oral to intravenous antibiotics
From single agents to combinations
From standard protocols to salvage regimens. This increases adverse*

effects, drug interactions, and monitoring burden.

- d. **Loss of Predictability in Clinical Practice:** Standard treatment guidelines become unreliable as resistance patterns shift, reducing clinician confidence and increasing empirical overtreatment.

2. What This Means at the Community Level

- a. **Community-wide Resistance:** Reservoir Resistant bacteria do not remain confined to hospitals: They spread through households, schools, daycare centres, and communities. Previously, “simple” infections become difficult to treat at the primary-care level.
- b. **Increased Healthcare Costs and Inequity:** More diagnostic tests, longer treatments, and costly drugs are required. Families face higher out-of-pocket expenses. Vulnerable populations are disproportionately affected.
- c. **Higher Morbidity and Mortality:** Infections that were once easily curable can become life-threatening, especially in Neonates and children Elderly individuals Immunocompromised patients.
- d. **Pressure on Public Health Systems:** Increased hospital admissions and bed occupancy Overburdened laboratories and pharmacies. Reduced capacity to manage outbreaks effectively.
- e. **Loss of Trust in Healthcare:** When treatments fail repeatedly, community confidence in doctors and health systems erodes, fueling self-medication and further misuse—a vicious cycle.

The Larger Meaning At the community level:

Antibiotic overuse converts a curable infection into a public health risk. What begins as an individual prescribing decision ultimately determines:

- Whether standard therapies remain effective
- Whether future generations will have reliable treatments
- Whether healthcare remains affordable and accessible

At one glance:

FIVE KEY STEPS HOSPITALS CAN TAKE to prevent antimicrobial resistance:

- **Implement Antimicrobial Stewardship Programs (ASPs):** Establish multidisciplinary teams (including physicians, pharmacists, and microbiologists) to create and enforce guidelines for appropriate antibiotic use. This includes ensuring the right antibiotic is used at the right dose, for the right duration, and only when necessary.
- **Strengthen Infection Prevention and Control (IPC):** Rigorously promote and monitor adherence to IPC protocols, such as proper hand hygiene (using alcohol-based hand rubs or soap and water), use of personal protective equipment (gloves, gowns), and effective environmental cleaning and disinfection.
- **Enhance Surveillance and Reporting:** Implement active surveillance systems to track antibiotic resistance patterns and the incidence of healthcare-associated infections (HAIs)

within the facility. The data collected should be analyzed and used to inform local prescribing guidelines and identify potential outbreaks.

- **Improve Diagnostics:** Utilize rapid and accurate diagnostic tests to identify the specific pathogen causing an infection and its resistance profile. This allows for targeted therapy rather than the use of broad-spectrum antibiotics, which contribute more to resistance.
- **Provide Education and Training:** Offer continuous education and training for all healthcare workers (including doctors, nurses, and pharmacists) on the principles of antimicrobial stewardship, proper hygiene practices, and the risks of antibiotic misuse. Educate patients as well about the importance of using antibiotics correctly and not demanding them for viral infections.

□ **FIVE KEY STEPS AT THE COMMUNITY LEVEL to prevent antimicrobial resistance:**

- **Use antibiotics only when necessary:** and prescribed antibiotics only work against bacterial infections, not viral infections like colds, flu, or most sore throats and ear infections. Do not demand antibiotics from your healthcare provider if they determine they are not needed; ask for advice on how to relieve symptoms instead.
- **Complete the full course of treatment:** Always take antibiotics exactly as prescribed by your doctor. Do not stop taking the medication even if you start feeling better, as stopping early can allow some bacteria to survive, potentially mutate, and develop resistance.

- **Never share or use leftover antibiotics:** Antibiotics are prescribed for a specific infection and person. Using someone else's medication or saving leftovers for a future illness can lead to improper use and promote resistance. Dispose of unused or expired medications properly, as advised by your pharmacist or local drug take-back programs.
- **Practice good hygiene to prevent infections:** Proper hygiene reduces the spread of all germs, including resistant bacteria, which in turn reduces the overall need for antibiotics.
- **Hygiene:** Wash your hands thoroughly with soap and water regularly, especially after using the toilet, before handling food, and after touching animals. Cover your mouth and nose with a tissue or your elbow when coughing or sneezing. Stay home when you are sick to avoid spreading infections to others.

In essence: Antibiotic overuse trades short-term reassurance for long-term treatment failure—affecting not just one patient, but the health security of the entire community. Staying up to date on vaccinations Immunization, is an effective way to prevent many infectious diseases, both viral and bacterial. By preventing infections, the demand for antibiotics is reduced, which helps in the fight against antimicrobial resistance.