

Anti-Microbial Resistance in India

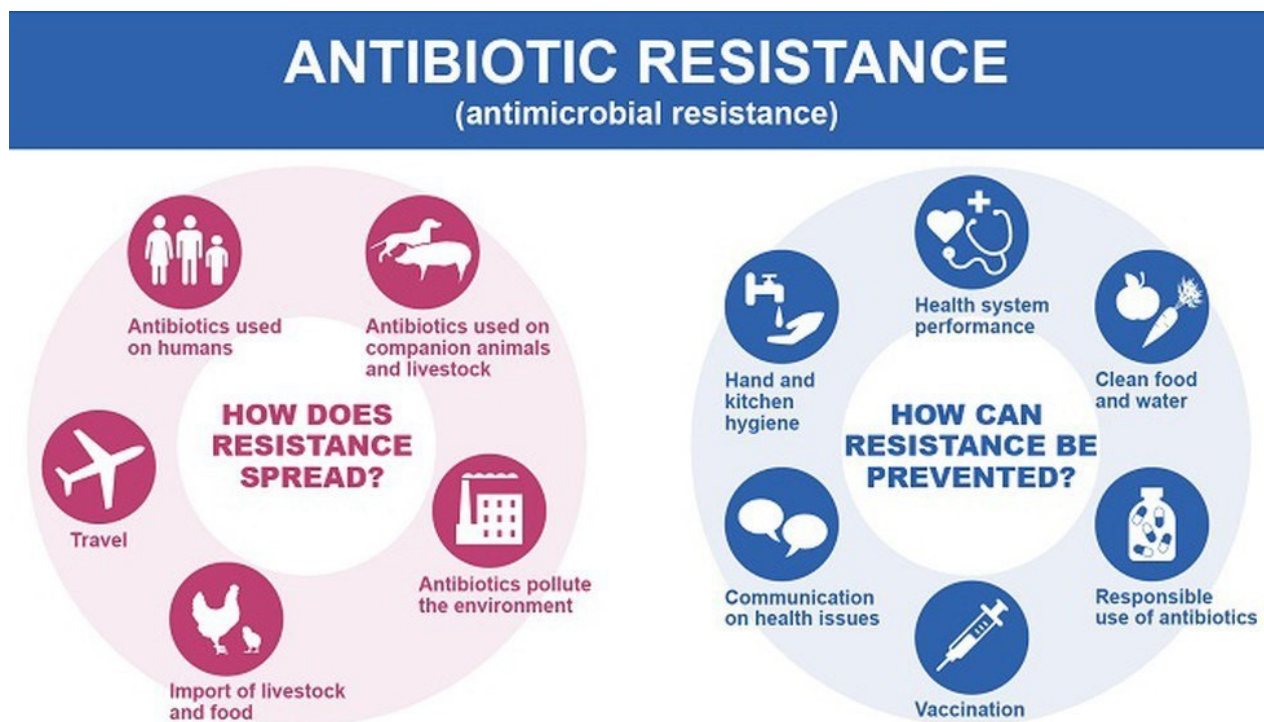
Why in news?

Recently the National Centre for Disease Control (NCDC) in a study found that over half of the nearly 10,000 hospital patients surveyed were given antibiotics to prevent, rather than treat, infection.

What is Antimicrobial Resistance (AMR)?

Antimicrobials - including antibiotics, antivirals, antifungals and antiparasitic - are medicines used to prevent and treat infections in humans, animals and plants.

- It is defined as *resistance of micro-organisms* to an antimicrobial agent to which they were first sensitive.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as “superbugs”.
- **Indian context-** The present serious concern is that multiple types of bacteria like E. coli, Klebsiella, Acinetobacter, Staphylococcus aureus, enterococcus have even become resistant to some of the latest generation antibiotics.



- AMR causes higher mortality and morbidity due to drug resistant infections.

To know more about the silent pandemic of AMR click [here](#)

What are the key highlights of the report?

India carries one of the largest burdens of drug-resistant pathogens worldwide.

Surveyed patients in %	Reason for antibiotic prescription
55%	Given prophylaxis as a preventive measure
45%	It is given to treat infections
6%	To identify the specific bacteria

What are the causes of AMR?

The World Health Organization (WHO) included AMR as one of the top 10 threats to public health in 2019.

- **Indiscriminate use-** The inappropriate use of [antibiotics](#) in non-bacterial infections both because of prescribing practices and the use of over-the-counter antibiotics.
- **Lack of research-** Inadequate laboratory facilities to inform clinicians rapidly about what would be an appropriate antibiotic even in bacterial infections, based on cultures.
- **Lack of capacity building-** Due to lack of adequate training in antibiotic selection, escalation and de-escalation.
- **Lack of regulation-** Inadequate monitoring of AMR and control of antibiotic and dispensing practices by health systems in spite of repeated warnings.
- **Market promotion-** The pharmaceutical industry is incentivizing the antibiotic prescribing practices of doctors.
- **Superbugs-** Inappropriate use of antibiotics and other molecules used to treat or prevent infections in the human, animal and agricultural sectors generate bugs that are resistant to these drugs.
- **Improper sanitation-** This leads to the spread of superbugs due to inadequate infection prevention in healthcare institutions.
- **Lack of support-** AMR is a complex socio-economic and political challenge and not just a scientific issue, it needs support from the pharmaceutical industry, awareness to the patients etc.,
- **Speedy treatment-** The course of antibiotics is cheaper than the investigation of patients, which is time consuming.
- **Infrastructural deficit-** India lacks laboratories to speed up the patient's investigation making it costly, which results in over prescription of antibiotics.

What is the way forward?

- **Promote research-** The need of the hour is linking labs to all levels of clinical setups and the fast transmission of infection-related data between the lab and the clinician.

- **Holistic approach-** The rate of AMR is directly proportional to steady and strong governance, infrastructure, sanitation, poverty, access to clean drinking water, etc.,
- **Patient safety measures-** The factors such as sanitation in hospitals, basic access to personal hygiene and infection control, are vital.
- **Enhance infection prevention-** The basic steps such as washing hands regularly, use of sanitizers helped a lot to keep the infection under control during COVID-19, such practices must be adopted to prevent AMR.

Steps taken to control AMR

Global initiatives

- **Global Action Plan on AMR-** It is committed to the development and implementation of multisectoral national action plans which was launched by the World Health Assembly in 2015.
- **World Antibiotic Awareness Week-** A global campaign that aims to raise awareness of AMR worldwide.
- **Global Anti-Microbial Resistance and Use Surveillance (GLASS) -** Launched by WHO in 2015 to strengthen AMR surveillance.
- **Muscat Ministerial Manifesto-** It has 3 goals - to protect the efficacy of antimicrobials and curb the development of AMR worldwide, reduce environmental pollution and lower the spread of AMR.
- **Access, Watch and Reserve (AWaRe) -** An initiative of WHO that takes into account the impact of different antibiotics.

India's initiatives

- **National Action Plan on AMR (NAP-AMR) for 2017-2021** addresses 6 critical issues.
- The country is in the process of updating its NAP-AMR for the period 2022-2026 through an extensive consultative process.
- **One health consortium-** Country's first one health consortium that enhance medical surveillance.
- **Delhi Declaration on AMR-** A multi-sectoral initiative to recognize the emergence and spread of AMR and to adopt a collaborative approach for preventing AMR.
- **Indian priority pathogen list-** Implemented to guide, research, discovery and development of new antibiotics.
 - **Types of priority-** Critical, High, Medium.
 - Example of critical priority- Colistin-R.
- **Red Line Campaign-** Aimed at discouraging unnecessary prescription and over the counter sale of antibiotics.
- **Chennai Declaration-** To formulate recommendations to tackle AMR.

References

1. [The Hindu- Over prescription of antibiotics in India](#)
2. [WHO- Antimicrobial Resistance](#)