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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.

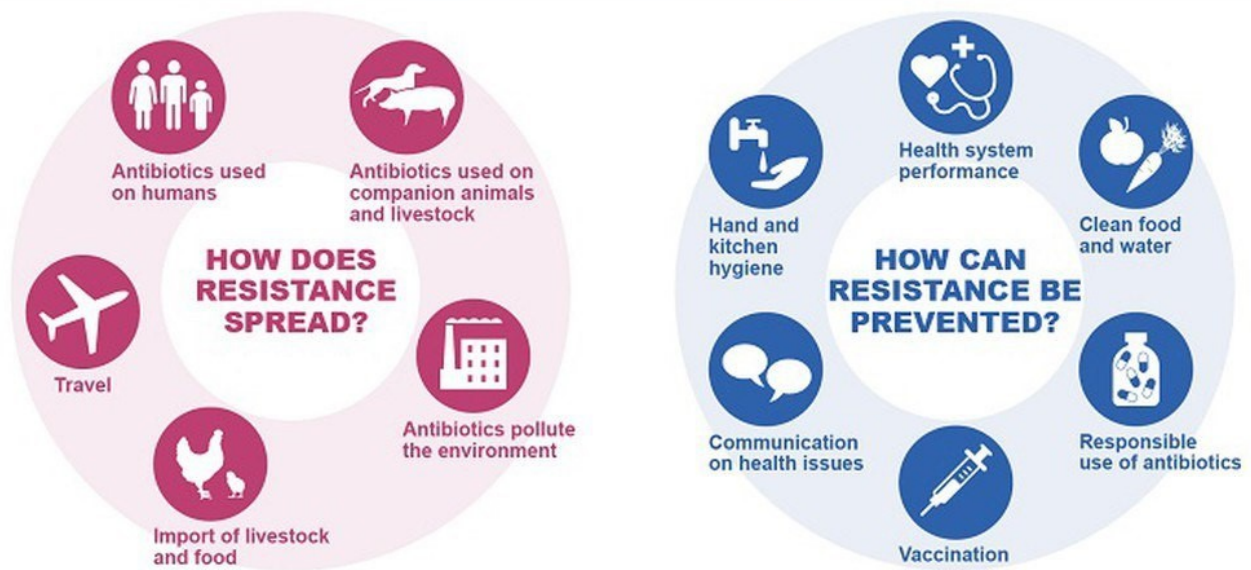
What is Antimicrobial Resistance (AMR)?

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.

ANTIBIOTIC RESISTANCE

(antimicrobial resistance)



- 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](#)



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