



## Antimicrobial Resistance

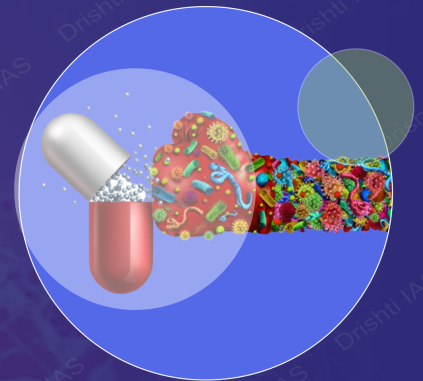
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# ANTIMICROBIAL RESISTANCE



Drishti IAS

*The ability of microorganisms to resist the effects of antimicrobial drugs*



## CAUSES OF ↑ AMR

- Poor infection control/sanitation
- Antibiotic overuse
- Genetic mutations of microbe
- Lack of investment in R&D of new antimicrobial drugs

*Microbes that develop AMR are called 'Superbugs'*

## IMPACTS OF AMR

- ↑ Risk of spreading infections
- Makes infections harder to treat; prolonged illness
- ↑ Healthcare costs

## EXAMPLE

- Carbapenem antibiotics stop responding due to AMR in *K. pneumoniae*
- AMR *Mycobacterium tuberculosis* causing Rifampicin-Resistant TB (RR-TB)
- Drug-resistant HIV (HIVDR) making antiretroviral (ARV) drugs ineffective

## RECOGNITION BY WHO

- Identified AMR as **one of the top 10 threats** to global health
- Launched **GLASS** (Global Antimicrobial Resistance and Use Surveillance System) in 2015

## INDIA'S INITIATIVES AGAINST AMR

- Surveillance of AMR in microbes causing **TB, Vector Borne diseases, AIDS etc.**
- **National Action Plan on AMR (2017)** with One Health approach
- **Antibiotic Stewardship Program** by ICMR

*New Delhi metallo- $\beta$ -lactamase-1 (NDM-1) is a bacterial enzyme, emerged from India, that renders all current  $\beta$ -lactam antibiotics inactive*

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