



## Mains Practice Question

**Q.** 'Antimicrobial resistance is one of the biggest challenges of modern medicine.' Discuss. Also suggest some measures to deal with the issue. (250 Words).

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### Approach

- Briefly explain what is meant by the antimicrobial resistance.
- Discuss how it is one of the biggest challenges of modern medicine.
- Suggest some measures to deal with the issues of antimicrobial resistance.

### Introduction

Antimicrobial resistance is the resistance acquired by any microorganism (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs (such as antibiotics, antifungals, antivirals, antimalarials, and anthelmintics) that are used to treat infections.

As a result, standard treatments become ineffective, infections persist and may spread to others. Microorganisms that develop antimicrobial resistance are sometimes referred to as "superbugs".

### Body

#### Concerns related to Antimicrobial resistance

- A **threat to prevention and treatment of infections** - medical procedures such as organ transplantation, cancer chemotherapy, diabetes management and major surgery (for example, **caesarean sections or hip replacements**) become very risky.
- **Increases the cost of healthcare** with lengthier stays in hospitals, additional tests and use of more expensive drugs.
- It is putting the gains of the **Millennium Development Goals** at risk and endangers achievement of the **Sustainable Development Goals (SDGs)**.
- **No new classes of antibiotics** have made it to the market in the last three decades, largely on account of inadequate incentives for their development and production.
- Without urgent action, we are heading to **antibiotic apocalypse** - a future without antibiotics, with bacteria becoming completely resistant to treatment and when common infections and minor injuries could once again kill.

#### Steps to be taken

- Since microbes will inevitably continue to evolve and become resistant even to new antimicrobials, we need **sustained investments and global coordination** to detect and combat new resistant strains on an ongoing basis.
- Efforts to control prescription of antimicrobials should be accompanied by efforts to **educate consumers to reduce inappropriate demand**, issue standard treatment guidelines that would empower providers to stand up to such demands, as well as provide point-of-care diagnostics to aid clinical decision-making.

- To track the spread of resistance in microbes, surveillance measures to identify these organisms need to expand beyond hospitals and encompass livestock, wastewater and farm run-offs.
- Individuals should only use antibiotics when prescribed by a **certified health professional**.
- Policymakers can ensure a robust national action plan to tackle antibiotic resistance is in place. This plan should strive:
  - **Improve surveillance** of antibiotic-resistant infections
  - **Strengthen policies, programmes,** and implementation of infection prevention and control measures
  - Regulate and promote the appropriate use and disposal of quality medicines.
  - Make information available on the impact of antibiotic resistance.
  - **Invest in research and development** of new antibiotics, vaccines, diagnostics and other tools.

## Conclusion

The world urgently needs to change the way it prescribes and uses antibiotics. Even if new medicines are developed, without behaviour change, antibiotic resistance will remain a major threat.

Behaviour changes must also include actions to reduce the spread of infections through vaccination, hand washing, practising safer intercourse, and good food hygiene.

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