



## Mains Practice Question

**Q.** Discuss the term Antibiotic resistance and steps to control it. (250 words)

06 May, 2020 GS Paper 3 Science & Technology

### Approach

- Briefly explain the antibiotic resistance.
- Discuss the reasons for and impact of antibiotic resistance.
- Discuss the steps to be taken.
- Conclude suitably.

### Introduction

Antibiotics are medicines used to prevent and treat bacterial infections. Antibiotic resistance occurs when bacteria change in response to the use of these medicines.

The discovery of antibiotics less than a century ago was a turning point in public health that has saved countless lives. But, over the years, the misuse and overuse of antibiotics drugs have contributed to a phenomenon known as antibiotic resistance.

### Body

#### Reasons for the development of Antibiotic resistance

- Antibiotic resistance is accelerated by the misuse and overuse of antibiotics, as well as poor infection prevention and control.
- Antibiotics can be bought for human or animal use without a prescription.
- Similarly, in countries without standard treatment guidelines, antibiotics are often over-prescribed by health workers and veterinarians and over-used by the public.
- More than 50% of antibiotics in many countries is used inappropriately such as for treatment of viruses when they only treat bacterial infections or use of the wrong (broader spectrum) antibiotic.

#### Impact of Antibiotic Resistance

- Antibiotic resistance leads to higher medical costs, prolonged hospital stays, and increased mortality.
- A growing list of infections – such as pneumonia, tuberculosis, blood poisoning, gonorrhoea, and foodborne diseases – are becoming harder, and sometimes impossible, to treat as antibiotics become less effective.
- Antibiotic resistance is putting the achievements of modern medicine at risk. Organ transplantations, chemotherapy and surgeries such as caesarean sections become much more dangerous without effective antibiotics for the prevention and treatment of infections.
- As per a UN report, at least 7,00,000 people die each year due to drug-resistant diseases currently.
- According to WHO, without urgent action, the world is heading for a post-antibiotic era, in which common infections and minor injuries can once again kill. Also, it is estimated that by 2050, this number could go up to 10 million.

## Steps To Be Taken

- Steps can be taken at all levels of society to reduce the impact and limit the spread of antibiotic resistance.
- 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 sex, and good food hygiene.

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