OPERATION AMRITH AND ANTIBIOTIC RESISTANCE – GS III MAINS

Q. Antimicrobial Resistance was a serious global health threat and could not be "overshadowed by other competing public health priorities". Elucidate in the Indian context. (15 marks, 250 words)

News: *Kerala Launches 'Operation Amrith*

What's in the news?

- The Kerala Drug Control Department recently launched Operation Amrith (Antimicrobial Resistance Intervention For Total Health) to prevent the overuse of antibiotics in the state.

Operation Amrith:

Aim:

- To conduct **surprise raids in pharmacies to detect over-the-counter (OTC) sales of antibiotics without a doctor's prescription**.

Role of Drug Controller:

- The Drugs Controller of Kerala said the Drugs Control Department has a significant role in optimizing antibiotic use by preventing OTC antibiotic sales. As part of this, pharmacies must maintain records of antibiotic sales.
- They must also display posters stating "antibiotics not sold without a doctor's prescription".
- **Strict action** will be taken against those not complying.

Public Participation

- The public can participate by reporting pharmacies selling antibiotics without prescription to the Drug Control Department.
- A toll-free number has been provided for lodging complaints. Once a complaint is received, it will be transferred to the zonal office for verification and immediate action.

Aligns with State Action Plan:

- Operation Amrith activities are being carried out under **Kerala's Antimicrobial Resistance Strategic Action Plan's (KARSAP) antibiotic literacy initiative.**

- Kerala was the first Indian state with a state action plan on AMR aligned with India's national action plan. After releasing the state action plan on AMR, Kerala initiated the Antibiotic Literate Kerala Campaign to raise AMR awareness.

Phase Out OTC Antibiotic Sales:

- The health department has committed to completely phase out OTC antibiotic sales without prescription and take action against violating pharmacists.

Drug Take-Back Programme:

- For proper disposal of unused antibiotics, Kerala has the **Programme on Removal of Unused Drugs (PROUD).** This drug take-back programme was piloted in Thiruvananthapuram district in 2019.

Global Health and Economic Impact:

- The World Bank estimated in 2017 that annual global healthcare costs could reach $1.2 trillion by 2050 under a high AMR impact scenario.
- The world could also lose 3.8% of GDP annually and see up to 10 million deaths annually, mostly in Asia and Africa.

Kerala's Efforts on AMR Surveillance:

- Regarding AMR surveillance, Kerala launched the **Kerala Antimicrobial Resistance Surveillance Network (KARS-NET)** for human surveillance in 2018-19. An integrated plan was also developed for non-human AMR surveillance.
- In August 2023, **the Kerala State Pollution Control Board (KSPCB)** inaugurated an AMR lab for environmental surveillance of AMR.

Go back to basics:
Antimicrobial Resistance:

- Antimicrobial Resistance is the **resistance acquired by any microorganism** (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs that are used to treat infections.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as "**superbugs**".
- It occurs when a microorganism changes over time and no longer responds to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- The World Health Organisation (WHO) has identified **AMR as one of the top ten threats to global health.**

Reasons for the Antimicrobial Resistance:

1. Antibiotic consumption in humans:

- Unnecessary and injudicious use of antibiotic fixed dose combinations could lead to emergence of bacterial strains resistant to multiple antibiotics.

2. Social factors:

- Include **self-medication**.
- Access to antibiotics without prescription.
- Lack of knowledge about when to use antibiotics.

3. Cultural Activities:

- **Mass bathing in rivers** as part of religious mass gathering occasions.

4. Antibiotic Consumption in Food Animals:

- Antibiotics which are critical to human health are commonly used for growth promotion in **poultry**.

5. Pharmaceutical Industry Pollution:

- The wastewater effluents from the antibiotic manufacturing units contain a substantial amount of antibiotics, leading to contamination of rivers and lakes.

6. Environmental Sanitation:

- Untreated disposal of sewage water bodies - leading to contamination of rivers with antibiotic residues and antibiotic-resistant organisms.

7. Infection Control Practices in Healthcare Settings:

- A report on hand-washing practices of nurses and doctors found that only 31.8% of them washed hands after contact with patients.

Impacts of AMR:

1. **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.
2. The failure to treat infections caused by resistant bacteria also poses a **greater risk of death.**
3. Antimicrobial resistance increases the **cost of healthcare** with lengthier stays in hospitals, additional tests and use of more expensive drugs.
4. Without effective antibiotics for prevention and treatment of infections, the **achievements of modern medicine are put at risk.**
5. Without urgent action, the world is 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.
6. Antimicrobial resistance is **putting the gains of the Millennium Development Goals at risk and endangers achievement of the Sustainable Development Goals.**

Global efforts	**Indian efforts**
Global Action Plan on Antimicrobial Resistance (GAP): Globally, countries committed to the framework set out in the Global Action Plan1 (GAP) 2015 on AMR during the 2015	To prevent the Over the counter sales of antibiotics, the **Central Drug Standard Control**

World Health Assembly and committed to the development and implementation of multisectoral national action plans.

Tripartite Joint Secretariat on Antimicrobial Resistance: Tripartite joint secretariat (**FAO, OIE and WHO**) has been established and is hosted by WHO to drive multi-stakeholder engagement in AMR.

Interagency Coordination Group (IACG) on AMR: It was convened by the Secretary-General of the United Nations after the UN High-Level Meeting on Antimicrobial Resistance in 2016.
The IACG brought together partners across the UN, international organizations and individuals with expertise across human, animal and plant health, as well as the food, animal feed, trade to formulate a plan for the fight against antimicrobial resistance.

World Antimicrobial Awareness Week (WAAW): WAAW was previously called the World Antibiotic Awareness Week. From 2020, it will be called the World Antimicrobial Awareness Week.
It is a global campaign that aims to raise awareness of antimicrobial resistance worldwide.

Global Antimicrobial Resistance and Use Surveillance System (GLASS): WHO launched it in 2015 to continue filling knowledge gaps and to inform strategies at all levels.
GLASS has been conceived to progressively incorporate data from surveillance of AMR in humans, surveillance of the use of antimicrobial medicines, AMR in the food chain and the environment.

Global Antibiotic Research and Development Partnership (GARDP): A joint initiative of WHO and the Drugs for Neglected Diseases Initiative (DNDi), GARDP encourages research and development through public-private partnerships.
By 2025, the partnership aims to develop and deliver five new treatments that target drug-resistant bacteria identified by WHO as posing the greatest threat.

Organization (CDSO) prohibits medical stores from selling 24 key antibiotics without a doctor's prescription.

India's Red Line campaign: Which demands that prescription-only antibiotics be marked with a red line, to discourage the over-the-counter sale of antibiotics– is a step forward.

National Health Policy, 2017, terms antimicrobial resistance as one of the key healthcare issues and prioritizes the development of guidelines regarding antibiotic use and check on restricting the growth of antibiotics.

The National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017 has assigned coordinated tasks to multiple government agencies involving health, education, environment, and livestock to change prescription practices and consumer behaviour and to scale up infection control and antimicrobial surveillance.

FSSAI has set certain guidelines limiting the antibiotics in food products such as fish and honey.

WAY FORWARD:

- **AMR was a serious global health threat and could not be "overshadowed by other competing public health priorities".**
- India has committed to **strengthening surveillance and promoting research on newer drugs**. It also plans to strengthen **private sector engagement** and the reporting of data to the WHO Global Antimicrobial Resistance and Use Surveillance System (GLASS) and other standardised systems.
- The **National Action Plan on Antimicrobial Resistance (2017-21)** emphasised the effectiveness of the government's initiatives for hand hygiene and sanitation programmes such as Swachh Bharat Abhiyan, Kayakalp and Swachh Swasth Sarvatra.
- The government has also attempted to increase **community awareness** about healthier and better food production practices, especially in the animal food industry.
- The National Health Policy 2017 also offered specific guidelines regarding use of antibiotics, limiting the use of antibiotics as over-the-counter medications and banning or restricting the use of antibiotics for growth promotion in livestock.
    - It also called for scrutiny of prescriptions to assess antibiotic usage in hospitals and among doctors.
- The various G-20 health summits spread through 2023 offer an opportunity for India to ensure that all aspects of AMR are addressed and countries commit to progress. Some key areas for action are as follows.
    - **Surveillance** - both phenotypic and genotypic of priority pathogens and sharing of data, including through WHO'S GLASS platform.
    - **Regulatory and policy action** to stop use of antibiotics that are important for human health in animals.
    - **No use of antibiotics** for growth promotion in animals.
    - More **government investment** in research and innovation for new antibiotics.
    - **Explore use of vaccines** to prevent certain infections due to AMR organisms in humans and animals and special focus on combating TB and drug-resistant TB.