Nightmare bacteria

Prelims: *Current events of national and international importance | Health*

Why in news?

Infections caused by "nightmare bacteria" are rising rapidly in the United States, with cases increasing nearly 70% between 2019 and 2023, according to the US Centers for Disease Control and Prevention (CDC).

- The term "nightmare bacteria" is used to describe ***Carbapenem-resistant Enterobacteriaceae (CRE).***
- The CDC uses the term "nightmare bacteria" to describe pathogens that resist a wide range of antibiotics, including carbapenems, often considered drugs of last resort for severe infections.
- Bacteria carrying the NDM gene are particularly dangerous because they produce an enzyme that breaks down carbapenems, rendering them ineffective.
- **Drug Resistance -** Drug resistance develops when microbes adapt to survive medicines designed to kill them.
- Incomplete prescriptions, unnecessary use of antibiotics for non-bacterial illnesses, and widespread availability of drugs without proper oversight all contribute to the problem.
- Resistant bacteria not only survive but can also share their resistant genes with other microbes, making infections harder to treat.
- **Symptoms -**
    - **Urinary tract infections (UTIs) -** Frequent urination, pain or burning sensation, cloudy urine.
    - **Bloodstream infections -** High fever, rapid heartbeat, very low blood pressure.
    - **Pneumonia (lung infection) -** Persistent cough, chest pain, shortness of breath.
- Because these symptoms overlap with less dangerous infections, specialized testing is required to confirm resistance.
- **Global threat -** The problem of antibiotic resistance is not confined to the

US. Experts stress that because bacteria spread easily between people, animals, and food chains, the threat is global.

- **Vulnerability** - Researchers note that countries with weaker health systems or looser restrictions on antibiotic sales are more vulnerable to rapid spread.
- **Treatment -** Only two intravenous antibiotics are currently effective against these strains, both of which are costly and difficult to administer.

Quick facts

• **NDM-1, or New Delhi Metallo-beta-lactamase-1**, is a bacterial enzyme that causes widespread resistance to a range of powerful beta-lactam antibiotics.
• Because it is encoded on a highly transmissible gene, it can turn many types of bacteria into dangerous "superbugs".

Reference

Times of India | Nightmare Bacteria