# 16. Infectious Disease Awareness

## 16.1 Overview

**Infectious diseases** are caused by pathogenic microorganisms—bacteria, viruses, fungi, or parasites—that spread directly or indirectly from one person to another. They remain one of the major causes of morbidity and mortality worldwide, particularly in low- and middle-income countries.
According to the **World Health Organization (WHO)**, infectious diseases accounted for nearly **30% of the global disease burden** in 2022, with respiratory infections, diarrheal diseases, HIV/AIDS, tuberculosis (TB), and malaria being predominant. (WHO, 2023)

In India, **ICMR** and the **Ministry of Health & Family Welfare** highlight vector-borne diseases (malaria, dengue, chikungunya) and antimicrobial resistance as growing concerns. (MoHFW, 2024)

## 16.2 Causes / Risk Factors

- Pathogen exposure through contaminated food, water, air, or contact.
- Poor sanitation and inadequate hand hygiene.
- Incomplete vaccination or weakened immunity.
- Global travel, urban crowding, and climate change increasing vector habitats.
- Overuse or misuse of antibiotics leading to drug-resistant infections (AMR). (CDC, 2024)

## 16.3 Symptoms / Indicators

Symptoms depend on the type of pathogen and organ system affected but can include:

- Fever, chills, fatigue, and malaise.
- Cough, diarrhea, vomiting, rash, or joint pain.
- In severe cases: dehydration, sepsis, or organ failure.

## 16.4 Prevention / Lifestyle

Preventive measures recommended by WHO and CDC:

- **Vaccination** (e.g., measles, hepatitis, influenza, COVID-19).
- **Hand hygiene** using soap or alcohol-based sanitizer.
- **Safe food and water practices** (boiling, washing produce).
- **Vector control:** use of insecticide-treated nets and eliminating standing water.
- **Safe sex and needle hygiene** to prevent HIV and hepatitis transmission.

## 16.5 Screening / Diagnosis

Diagnostic methods vary:

- Laboratory testing (blood, urine, stool cultures).
- Rapid antigen or molecular tests (PCR).
- Imaging and clinical examination for systemic infections.
  Epidemiological surveillance systems track outbreaks and emerging pathogens. (WHO Global Health Observatory, 2023)

## 16.6 Management / Public Health Perspective

WHO's **International Health Regulations (IHR)** guide countries to detect and respond to public health threats.
Public health strategies emphasize:

- Strengthening surveillance systems and early warning tools.
- Promoting antibiotic stewardship to reduce antimicrobial resistance.
- National immunization drives and vector control programs.
  Examples include India's **Integrated Disease Surveillance Programme (IDSP)** and global vaccination initiatives under **GAVI**.

## Summary Points

- Infectious diseases remain a major public health challenge.

- Prevention through hygiene and vaccination is crucial.
- Antimicrobial resistance is an emerging global threat.