

Disease Control

- Reduction of disease transmission to a level where it is no longer a public health problem
 - Aims to reduce:
 - Incidence
 - Duration
 - Severity/effects
 - Financial burden on the community
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Disease Elimination

- Complete interruption of transmission in a defined geographical area
 - Causative organism may still persist in the environment
 - Geographical term (country/region)
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Disease Eradication

- Complete extermination of the organism
 - No future cases
 - Global term (whole planet)
 - ☒ Only eradicated disease: Smallpox (declared eradicated 8 May 1980)
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Natural History of Disease

- Describes disease evolution without intervention
- From pre-pathogenesis → recovery / disability / death
- Disease results from interaction between:
 - Agent
 - Host
 - Environment

👉 Called the Epidemiological Triad

Phases of Natural History

1. Pre-pathogenesis Phase

- Disease has not yet entered the host
- Risk factors already present
- “Man exposed to risk of disease”
- Applies to communicable & non-communicable diseases

2. Pathogenesis Phase

- Begins with entry of agent into susceptible host
- Includes:
 - Multiplication of organism
 - Incubation period
 - Clinical / subclinical disease or carrier state
- Outcomes:
 - Recovery
 - Disability
 - Death

Goals of Preventive Medicine

- Promote health
- Preserve health
- Restore health
- Minimize suffering & distress

Modes of Intervention

1. Health promotion
2. Specific protection
3. Early diagnosis & treatment
4. Disability limitation
5. Rehabilitation

Levels of Prevention

I. Primordial Prevention

- Prevents emergence of risk factors
- Focus: children & lifestyle formation
- Main tool: Education (individual & mass)

II. Primary Prevention

Action before disease onset

- Acts in pre-pathogenesis phase

A. Health Promotion

- Not disease-specific
- Strengthens host
- Includes:
 - Health education
 - Environmental modification
 - Nutritional interventions
 - Lifestyle & behavioral changes

B. Specific Protection

- Immunization
- Chemoprophylaxis
- Specific nutrients
- Occupational safety
- Accident prevention
- Avoidance of allergens & carcinogens
- Control of pollution, food safety

III. Secondary Prevention

Early diagnosis & prompt treatment

- Acts in early pathogenesis
 - Tools:
 - Screening
 - Case finding
 - Goals:
 - Arrest disease progression
 - Prevent complications
 - Reduce morbidity & mortality
 - Less effective & more costly than primary prevention
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IV. Tertiary Prevention

Late pathogenesis phase

- Focus: disability limitation & rehabilitation
- Aims:
- Reduce impairment
- Minimize suffering
- Improve quality of life

Rehabilitation Types

- Medical
- Vocational
- Social
- Psychological

WHO Definitions

- Impairment: Loss or abnormality of structure or function
- Disability: Restriction in performing normal activities
- Handicap: Social disadvantage due to impairment/disability

Disease Prevention & Control

- Identify weakest link in transmission chain
- Requires epidemiological knowledge of:
- Magnitude
- Time, place, person
- Causation
- Reservoirs
- Transmission dynamics
- Often needs multiple control measures simultaneously

Golden Exam Tip

Primary prevention is always more effective, cheaper, and better than secondary or tertiary prevention.