Concepts of Control
Concepts of Prevention

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Specific Learning Objectives

- At the end of session, the learner shall be able to:
  - Differentiate Control, elimination and eradication.
  - Apply Levels of prevention.
  - Apply Modes of intervention.
  - Describe International Classification of Disease
Disease control

• The disease agent is permitted to exist in the community at a level where it ceases to be as public health problem.

• State of equilibrium becomes established between A, H & E.
• Aims at reducing:
  i. Incidence of disease
  ii. Duration of disease
  iii. Risk of transmission of infection
  iv. Financial burden to the community.
Disease Elimination

• Interruption of transmission of disease from large geographic regions or areas.
• An important precursor for eradication.
• e.g. Measles, Polio.
Disease Eradication

- Termination of all transmission of infection by extermination of the infectious agent.
- Tear out by roots.
- Cessation of infection and disease from the whole world.
- e.g. Small pox.
- Potential candidates: Polio, Measles, Dracunculiasis.
Monitoring

• The performance and analysis of routine measurements aimed at detecting changes in the environment or health status of population.
• e.g. Air pollution, Performance of health services
Surveillance

• The continuous scrutiny of all aspects of occurrence and spread of disease that are pertinent to effective control.
• Goes beyond passive reporting of cases.
• Lab confirmation of presumptive diagnosis
• Finding out source of infection
• Routes of transmission
• Identification of all cases, susceptible contacts, those who are at risk.
Evaluation

• The process by which results are compared with the intended objectives.
  ➢ Formative evaluation
  ➢ Summative evaluation
• Crucial in identifying health benefits derived.
• Useful in identifying performance difficulties.
Concepts of Prevention

• The objective of preventive medicine is to intercept or oppose the "cause" and thereby the disease process.

• Levels of Prevention:
  1. Primordial prevention
  2. Primary prevention
  3. Secondary prevention
  4. Tertiary prevention
Primordial Prevention

• Prevention of emergence or development of risk factors in population groups in which they have not yet appeared.

• e.g. Lifestyle diseases.

• Intervention: Health education.
Primary Prevention

• Action taken prior to the onset of disease, which removes the possibility that a disease will occur.
• Intervention in the pre-pathogenesis phase.
• Elimination or modification of risk factors.
• e.g. Communicable diseases and NCDs.
• Approaches for primary prevention:
  a. Population (mass) strategy
  b. High-risk strategy
Secondary Prevention

• Actions which halts the progress of a disease at its incipient stage and prevents complications.

• Intervention in early pathogenesis phase.
  – Early diagnosis and adequate treatment.

• Largely the domain of a clinical medicine.

• Drawbacks:
  – Already there is suffering of mental anguish, pain.
  – Loss of productivity
  – More expensive and less effective
Tertiary Prevention

• All measures available to reduce or limit impairments and disabilities, minimize suffering caused by existing departures from good health and to promote the patient’s adjustment to irremediable conditions.

• Intervention in late pathogenesis phases to prevent sequelae and limit disability.
Modes of Intervention

• Any attempt to intervene or interrupt the usual sequence in the development of disease.

• Modes of intervention:
  1. Health promotion
  2. Specific protection
  3. Early diagnosis and treatment
  4. Disability limitation
  5. Rehabilitation
Health Promotion

- Health education
- Environmental modifications
- Nutritional interventions
- Life style and behavioral changes
Specific Protection

- Immunization e.g. Vaccine preventable diseases.
- Specific nutrient e.g. Iron.
- Protection against injuries (helmet, seat belt)
- Chemoprophylaxis e.g. against Malaria.
- Control of consumer product quality and safety of foods, drugs, cosmetics etc.
Early diagnosis and Treatment

• The detection of disturbances of homoeostatic and compensatory mechanism while biochemical, morphological and functional changes are still reversible.

• Important in reducing high morbidity and mortality.
Disability Limitation

1. Disease
   - e.g. Accident

2. Impairment
   - Any loss or abnormality of psychological, physiological or anatomical structure or function,
   - e.g. loss of foot

3. Disability
   - Any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being.
   - e.g. unable to walk.

4. Handicap
   - Disadvantage for a given individual that limits or prevents the fulfillment of a role that is normal for that individual.
   - e.g. unemployed.
Rehabilitation

• The combined and coordinated use of medical, social, educational and vocational measures for training and retraining the individual to the highest possible level of functional ability.
  
  ➢ Medical rehabilitation
  ➢ Vocational rehabilitation
  ➢ Social rehabilitation
  ➢ Psychological rehabilitation
Hospitals and Community

• Hospitals:
  ➢ “An ivory tower of disease”
  ➢ Health Promotion settings

• Functions of a doctor:
  ➢ The care of the individual
  ➢ The care of community
    ➢ Community diagnosis & Community treatment
  ➢ As a teacher
Disease Classification

• To compare morbidity and mortality data at national and international levels.
• To facilitate decision making in prevention.
• To facilitate the research on particular disease.
• International Classification of Diseases (ICD).
  – ICD-10
  – Alphanumeric coding of disease.
Take Home Message...

PERIOD OF PRE-PATHOGENESIS

DISEASE PROCESS
→ Before man is involved →

Agent

And

Environmental Factors
(know and unknown)
Bring agent and host together or produce a disease provoking stimulus

Host

PERIOD OF PATHOGENESIS
→ The course of the disease in man →

DEATH

Chronic state

Defect

Disability

Illness

Clinical horizon
Signs & symptoms

Tissue and physiologic changes

Stimulus or agent becomes established and increases by multiplication

In the human host

Interaction of host and stimulus

Early pathogeneses → early lesions → advanced disease → convalescence

Host reaction

RECOVERY

LEVELS OF PREVENTION

PRIMARY PREVENTION

SECONDARY PREVENTION

TERTIARY PREVENTION

MODES OF INTERVENTION

HEALTH PROMOTION

SPECIFIC PROTECTION

EARLY DIAGNOSIS AND TREATMENT

DISABILITY LIMITATION

REHABILITATION