HEALTH CONCEPT AND APPLICATION (HCA)

COURSE CONTENTS **Page**

HCA 01 – Health Care Concept

Page 1 to 10

Time allow 3 hours

At the end of this module, the learner should be able to:

- define health
- define public health
- describe new philosophy of health and dimension of health
- mention the concept of wellbeing
- describe determinants of health
- describe the spectrum of health
- describe changing concept of health
- identify and prioritize the health problems

Teaching Methods

- Lecture and Discussion

1. Definition of Health

There are many definitions of heath. The widely accepted definition of health is that given by World Health organization (WHO) in 1948.

WHO definition of health

"Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity".

There are many criticisms that the WHO definition of health is too broad. It is considered by many people as an idealistic goal than a realistic proposition. The WHO definition of health refers to a situation that may exist in some individuals but not in everyone all the time; it is not usually observed in groups of human beings and in communities. Therefore, the operational definitions of health are devised by WHO study group.

Operational definition (A)

There is no obvious evidence of disease and that a person is functioning normally, i.e. confirming within normal limits of the variation to the standard of health criteria generally accepted for one's age, sex, community, and geographical region.

Operational definition (B)

The several organs of the body are functioning adequately themselves and in relation to one another, which implies in a kind of equilibrium or homeostasis. That is a condition relatively stable but which may vary as human beings adapt to internal and external stimuli.

2. Definition of Public Health

Public Health is the science and art of preventing disease, prolonging life, and promoting health and efficiency through organized community efforts for the sanitation of the environment, the control of communicable infections, the education of the individual in personal hygiene, the organization of medical and nursing services for early diagnosis and preventive treatment of disease, and the development of social machinery to ensure for every individual a standard of living adequate for the maintenance of health, so organizing these benefits as to enable every citizen to realize his birthright of health and longevity (The WHO Expert Committee on Public Health Administration 1952).

3. New Philosophy of Health

- Health is a fundamental human right
- Health is the essence of productive life, and not the result of ever-increasing expenditure on medical care
- health is inter-sectoral
- Health is an integral part of development
- Health is central to the concept of quality of life
- Health involves individual, states and international responsibilities
- Health and its maintenance is a major social investment
- Health is worldwide social goal

4. Dimension of Health

- Health is multidimensional.
- There are three specific dimensions of health in WHO definition. These dimensions are physical, mental and social dimensions.
- Many more dimensions may be sited.
  E.g. spiritual, emotional, vocational, political etc.
- These dimensions function and interact with one another, each has its own nature.

4.1 Physical Dimension

- It implies perfect functioning of body.
- It conceptualizes health biologically as a state in which every cell and every organ is functioning at optimum capacity and in perfect harmony with the rest of the body.
- The signs of physical health in a individual are: good complexion, clean skin, bright eyes, lustrous hair with a body well clothed with firm flesh, not too fat, a sweet breath, good appetite, sound sleep, regular activity of bowels and bladder and smooth, easy, coordinated bodily movement.
- Biological normal limits are set by observation of large number of normal people who are free from evident disease.

4.2 Mental Dimension

- Mental health is not mere absence of mental illness or mental disease.
- Good mental health is the ability to respond to many varied experiences of life with flexibility and a sense of purpose.
- It is defined as "A state of balance between the individual and the surrounding world, a state of harmony between oneself and others, a co-existence between the realities of self and that of the other people and that of environment".

4.3 Social Dimension

- It implies harmony and integration within the individual, between each individual and other members of society and between individual and the world they live.
- It takes into account that every individual is part of a family and of wider community and focuses on social and economic conditions and well-being of the "whole person in the context of his social network".

4.4 Other Dimensions

- Spiritual dimension
- Emotional dimension
- Vocational dimension
- Philosophical dimension
- Political dimension
- Cultural dimension
- Socioeconomic dimension
- Environmental dimension
- Educational dimension
- Nutritional dimension
- Curative dimension
- Preventive dimension

5. Concept of Well-Being

- WHO definition of health introduces the concept of well-being.
- The question then arises what is meant by well-being.
- There is no satisfactory definition of well-being
- Psychologists have pointed out that the well-being of an individual or group of individuals have "objective" and "subjective" components.
- The objective component refers to:
  a. standard of living and
  b. level of living
- The subjective component refers to quality of life.

5.1. Standard of Living

- It refers to the usual scale of our expenditure, the goods we consume and the services we enjoy.
- Income and occupation, standard of housing; sanitation and nutrition; the level of provision of health; educational, recreational and other services used individually as measures of socioeconomic status are set collectively as an index of standard of living.
- There are vast inequalities of standard of living of the people in the different countries of the world. These differences are measured through the component of per capita Gross National Product (GNP).

5.2. Level of Living

- It consists of nine components which influence human wellbeing:
  - health
  - food consumption
  - education
  - occupation and working conditions
  - housing
  - social securities
  - clothing
  - recreational and leisure
  - human rights
- Health is the most important component because its impairment always means impairment of level of living.

5.3. Quality of Life

Quality of life is subjective component of well-being.

Definition of Quality of Life

- The condition of life resulting from the combination of effects of the complete ranges of factors such as those determining health, happiness (including comfort in the physical environment and a satisfying occupation), education, social and intellectual attainments, freedom of action, justice and freedom of expression. (WHO, 1976)

6. Determinants of Health

Health is multi-factorial.

Factors lie within the individual and externally in the society. Those factors interact and these interactions may be health promoting or deleterious. For conceptual purpose, health of individual and whole community may be considered to the results of many interactions.

As a brief, interactions of the more important influencing factors or determinants are described below.

Determinants of Health (Factors influencing health) are:

- Heredity
- Environment
- Lifestyle
- Socio-economic conditions
- Health and family welfare services
- Aging and the population
- Gender
- Other factors

6.1. Heredity

- Genetic make-up is unique in that it cannot be altered after conception
- A number of diseases are known to be genetic in origin. e.g. mental retardation, some types of diabetes, chromosomal anomalies, errors of metabolism etc.
- The status of health, therefore, partly depends on the genetic constitution of man.
- From the genetic standard point, health may be defined as "the state of individual which is based upon the presence in the genetic constitution of the genes that corresponds to the normal characterization and to the presence of normal karyotype".
- Positive health advocated by World Health Organization implies that a person should be able to express as completely as possible the potentialities of his genetic heritage.

6.2. Environment

- Environment is classified as "internal" and "external".
- Internal environment means "each and every component part, every tissue, organ and organ system and their harmonious functioning within the system".
- External environment consists of microenvironment and macroenvironment.
- Microenvironment corresponds to personal environment which includes the individual's way of living and lifestyle.
  E.g. eating habits, smoking habits, drinking alcohol, sleeping hours, exercise, recreation and hobby etc.
- Macroenvironment consists of those things to which man is exposed after conception.
  It is defined as "all factors that are external to the individual human host.
- Macroenvironment can be divided into physical, biological and psychosocial components, any or all of which can affect the health of man and his susceptibility to illness.
- Environment has a direct impact on physical, mental and social well-being of those living in it.
- The environmental factors range from housing, water supply, psycho-social stress and family structure through social and economic support systems to the organization of health and welfare services in the community.
- Physical, biological and psycho-social components of environment are not water tight compartments and they are linked with one another.
- If the environment is favorable to the individual he can make full use of his physical and mental capabilities.

- Protection and promotion of family and environmental health is one of the major issues in the world today.

6.3. Lifestyle

- It is diffuse concept reflecting a whole range of social values, attitude and activities.
- It composes of cultural and behavioral patterns and lifelong personal habits that have developed through process of socialization.
- Lifestyles are learnt through social interaction with parents, peer groups, friends and siblings and through school and mass media.
- Health problems, especially in the developed countries, are associated with lifestyle changes. E.g. coronary disease, lung cancer, obesity, drug addition, etc.
- In some developing countries where traditional lifestyle still persists, risk of illness and deaths are connected with lack of sanitation, poor nutrition, poor personal hygiene, elementary human habits, customs and cultural patterns.
- Not all lifestyle factors are harmful, many can actually promote health.
  E.g. Adequate nutrition, enough sleep, sufficient physical activity etc.
- Achievement of optimum health demands adoption of healthy lifestyle.
- Health is both a consequences of an individual's lifestyle aqnd the factors which determine it.

6.4. Socioeconomic Conditions

Health status of world people is primarily determined by their level of socioeconomic development.
E.g. Gross National Product (GNP), education, nutrition, employment, housing, political system of the country

Economic status
Education
Occupation
Political system

6.5. Health Services

- Health and family welfare services cover wide spectrum of personal and community services for comprehensive health care.
  E.g. Immunization can influence the incidence and prevalence of some particular diseases, Provision of safe water can prevent mortality and morbidity from water borne diseases, the care of pregnant women and children would contribute to the reduction of maternal and child mortality and morbidity.
- To be effective, the health services must reach the social peripheral, equitably distributed, accessible to the cost the country and community can afford and socially acceptable. (Primary Health Care)
- Health services are also essential for social and economic development, but health care does not produce good health.

- There is no significant correlation between medical density and expectation of life at birth where there is strong correlation between GNP and expectation of life at birth.
- Our expectation from an effective health service is good care.
- Nowadays, our emphasis upon health services is no matter what type of technologies or how it is cost-effective and, emphasis is only upon ultimately whether they improve health.

6.6. Aging and Population

- The world will have more than one billion people aged 60 and above in 2020.
- Over half of them will live in developing countries
- Rapid growing of aging population will lead to increased prevalence of chronic diseases and disabilities.

6.7. Gender

- An understanding of gender requires understanding the complex social processes through which people are defined and linked and how this evolves over time. These processes operate at an interpersonal level, at an institutional level and across wider society, in government, the institutions of the state and whole economies.
- At all these levels, gender is an important, but modifiable determinant of health across the life course. Gender intersects with other drivers of inequities, discrimination, marginalization and social exclusion, which have complex effects on health and well-being.

6.8. Other Factors

- Other contributions to health derive from systems outside the formal health care system. (i.e. health related systems)
  E.g. Food and agriculture, education, industry, social welfare, rural development etc.
- Adoption of policies in the economic and social fields that would assist in raising the standard of living.
  E.g. Employment opportunities, increased wages, prepaid medical programs, and family support system.
- In conclusion, medicine is not the sole contributor to health and wellbeing of the community.
- The potential of inter-sectoral contributions to the health of community is increasingly recognized.

7. Changing Concepts of Health

Understanding of health is the basis of health care services. It has evolved over the centuries as a concept from an individual concern to a worldwide social goal and encompassed the whole quality of life. In a world of continuous change new concepts are bound to emerge based on new patterns of thought.

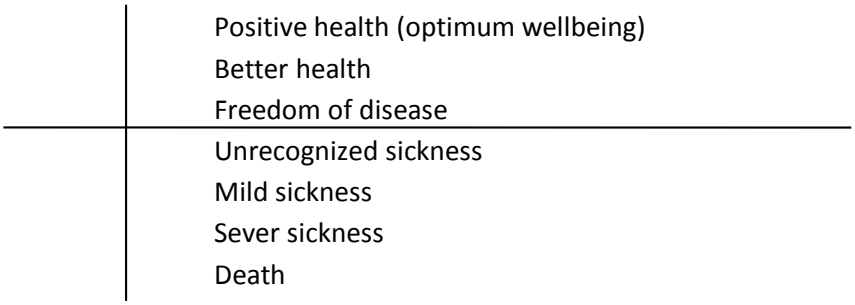
7.1. Biomedical Concept

7.2. Ecological Concept
7.3. Psychosocial Concept
7.4. Holistic Concept

8. Spectrum of Health

- Health and disease lie along a continuum, and there is no single cut off point.
- The highest point corresponds to the positive health (optimum wellbeing) and the lowest point in the health-disease spectrum is death.
- Health fluctuates within a range of optimum wellbeing to various level of dysfunction including the state of total dysfunction i.e. death.
- The spectral concept of health emphasizes that the health of individual is not static; it is a dynamic phenomenon and a process of continuous change.
- A person may function at maximum level of health today, and diminished levels of health tomorrow.
- It implies that health is not attained once and forever.

The Health Sickness Spectrum



9. Identification and Prioritization of Health Problems

9.1. Identification of Health Problems

Health workers have faced the problems to solve with limited resources (manpower, money and material). Therefore, prioritization of the problems is needed to make efficient utilization of resources to achieve desired objective.

A problem is a difficulty or obstacle seen to exist between a present situation and a desired future objective.

A problem is a perceived gap between what is what should be.

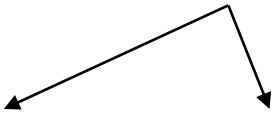
When identifying problem

- Analyze and identify what the problem is
- Find all its possible causes
- Look for ways to remove these causes

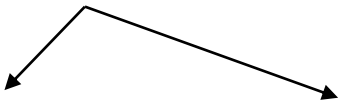
- Identify whether the problem is a disease or health problem? A service problem? Community problem?
- Identify area of change and its magnitude

Problem analysis

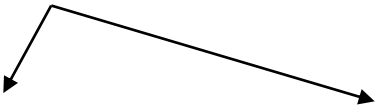
Healthy Sick Why?



Sought treatment No treatment Why?



Properly treat Not properly treat Why?



Recovery No recovery Why?

9.2. Prioritization of Health Problems

The following points should be considered in prioritization of health problems. The problem:

- that has effect on the majority of population
- that affect mother and children
- that has high mortality
- that is a felt need or real need
- that is resources required and/or available
- that has a solution and can be solved with available resources
- that the community accept as a problem
- that the community participate in solving it

Prioritization of health problems was based on objective and subjective criteria.

Objective criteria include morbidity and mortality trend.

Subjective criteria include political concern, community concern, availability of preventive technology, socioeconomic impact etc.

Prioritization technique is as follow:

$$\text{Prioritization} = \frac{MIV}{C}$$

Where M = magnitude of the health status affected by the problem

i.e. morbidity, mortality, disability etc.

I = Importance /extent of the problem, area, risk group, impact of disease

` V = Vulnerable to technology

C = Cost

After identification and prioritization of health problems, Health Workers have to formulate detailed plan of action for the prioritized health problems. Scheduling of activities is needed, and it should be revised and updated whenever necessary. Micro-planning is useful for solving these health problems. Monitoring and evaluation are also important.

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HCA 02 - Health Problems, Determinants and Trends

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Time allow 3hours

Objectives

At the end of the session, the learner should be able to:

- describe principles of epidemiology
- describe measurement of morbidity and mortality
- describe principles of prevention and control
- describe herd immunity
- describe objective, program and schedule of immunization
- investigate an outbreak
- Differentiate Communicable Disease and Non-communicable Disease

Teaching Methods

- Lecture and Discussion

1. Principles of Epidemiology

1.1. Definition of Epidemiology

- The branch of medical science which treats epidemics (Parkins, 1873)
- The science of the mass phenomenon of infectious diseases (Frost, 1927)
- The study of the distribution and determinants of disease frequency in man (MacMahon, 1960)
- Epidemiology is the study of distribution and determinants of health-related states and events in populations and the application of this study to control health problems (Last, 1983)
- Epidemiology is the determinants and distribution of health-related states or events in specified populations, and the application of this study to the control of health problems (John M. Last, 1988).

1. 2. Components of Epidemiology

Epidemiology is mainly the study of 3D (Disease frequency, Distribution and Determinants)

1.2.1. Disease Frequency

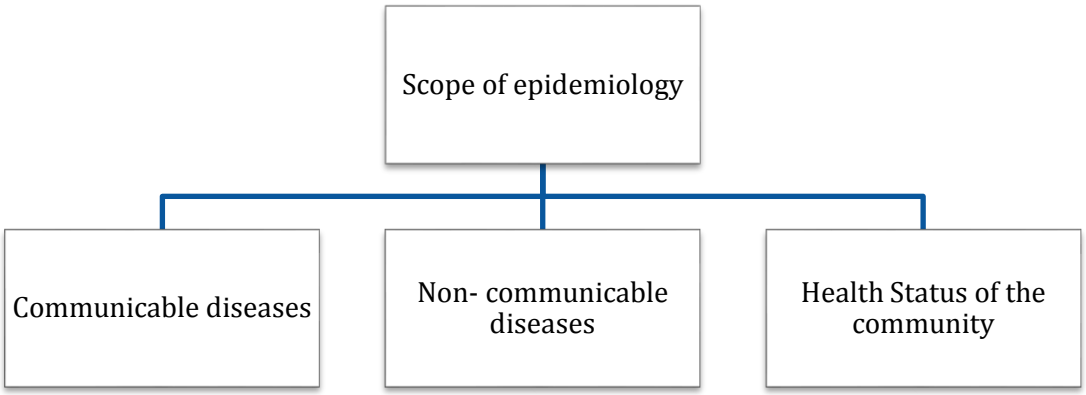
- Measured by proportion, ratio and rates
- Rates are essential for comparisons, which are important clues to disease aetiology and also a vital step in development of strategies for prevention and control of health problems

1.2.2. Disease Distribution

- described by time, place and person
- patterns lead to generation of hypothesis for aetiology, measures how to prevent and control diseases
- known as descriptive epidemiology

1.2.3. Disease Determinants

- to test the aetiological hypothesis and identify the underlying causes (Risk factors)
- The real substance of epidemiology and known as Analytical epidemiology



1.3. Aims of Epidemiology

Main Aims

a) To describe the distribution and magnitude of health and disease problems in human population
b) To identify the aetiological (risk) factors in pathogenesis of disease
c) To provide data essential to
   - Planning, implementation and evaluation of services
   - Prevention, control and treatment of disease
   - Setting up prioritization (among those services)

Ultimate Aims

a) To eliminate or reduce health problems or its consequences
b) To promote the health and well-being of society as a whole

1.4. Epidemiological Approach

Based on two major foundations

- Asking questions
- Making comparisons

1.4.1. Asking Questions

Related to health events

1) What is the event?
2) What is its magnitude?
3) Where did it happen?
4) When did it happen?
5) Who are affected?
6) Why did it happen?
7) How does it occur?
8) So, what interventions have been implemented?

Related to health action

1) What can be done to reduce this problem and its consequences?
2) How can it be prevented in the future?
3) What actions should be taken by the community? By the health services? By other sectors? Where and for whom these activities be carried out?
4) What resources are required? How are the activities to be organized?
5) What difficulties may arise and how might they be overcome?

* ANSWERS may provide clue to aetiology and help the epidemiologist to guide planning and evaluation.

1.4.2. Making Comparisons

1) To draw inferences
2) To find out crucial differences in the host and environmental factors between those affected and not affected
3) Epidemiological weighs balances and contrasts
4) Comparisons – clue to aetiology
5) The best method of ensuring comparability is by randomization. But if it is not possible, matching or standardization is usually done.

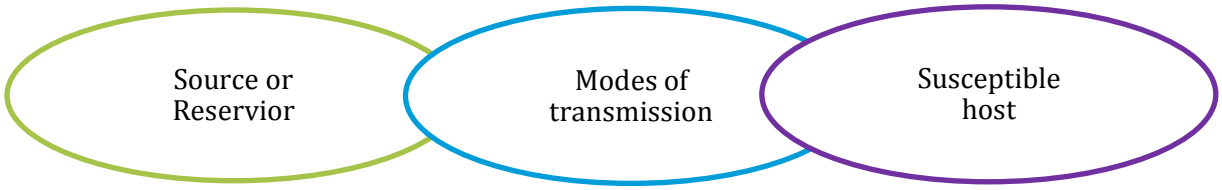
1.5. Uses of Epidemiology

1) To study historically, the rise and fall of disease in the population

2) To investigate the mode of transmission of a new disease
3) To determine the preventable causes of disease or injury
4) To determine the natural history of diseases
5) To study the biologic spectrum of diseases
6) To evaluate the individual's risk and chances
7) To define and refine syndromes
8) To plan and evaluate community public health interventions
9) To set the disease control priorities
10) To improve the diagnosis, treatment, and prognosis of clinical diseases
11) To improve health services and research
12) To provide expert testimony in courts of law

1.6. Dynamics of Disease Transmission

Chain of infection



1.6.1. Source and Reservoir

These are starting point.

Source is the person, animal, object or substance from which an infectious agent passes or disseminates to the host.

Reservoir is any person, animal, arthropod, plant, soil or substance in which infectious agent lives and multiplies, on which it depends primarily for survival and then transmits.

Classification of Reservoirs

A. Human reservoir

- **Cases**
  - Clinical case
  - Subclinical case
  - Index case
  - Primary case
  - Secondary case
  - Latent case

- **Carriers** – less infectious but more dangerous and carriers may be classified as below:

i. Type

- Healthy carriers – e.g. HBV, HIV, polio, meningococcal meningitis
- Incubatory carriers – e.g. Measles, typhoid
- Convalescent carrier – e.g. typhoid, cholera, dysentery

ii. By duration

- Temporary
- Permanent (chronic)

iii. By portal of exist

- Urinary
- Intestinal
- Respiratory
- Others

B. Animal reservoir

- Cases
- Carriers

More than 100 zoonoses (vertebrate to man)
E.g. of animal reservoirs - Pigs, ducks, pigeons, wild birds and many more
Generic recombination of viruses create new strains.

C. Non-living reservoir

- Soil and inanimate matters

e.g. tetanus, anthrax

1.6.2. Mode of Transmission

A. Direct Transmission

- Direct contact – kissing, skin contact, sexual contact etc.
- Droplet infection
- Contact with soil : Saprophytic existence – Hookworm larvae, tetanus, mycosis)
- Inoculation into skin or mucous
- Trans-placental transmission (vertical transmission)
  - Infection – TORCH agents
  - Non-infection – drug (thalidomide), radiation, Rh antibody

B. Indirect Transmission (5F = Flies, Fingers, Fomites, Food and Fluid)

- Vehicle borne – food, water, ice, blood, serum and tissue
- Vector borne
  - Mechanical
  - Biological

    Propagative – rat flea for plague bacilli
    Cyclo-propagative – Anopheles mosquito for malaria parasite

Cyclo-development – Culicine mosquito for filarial parasite

- Air borne
  - Droplet nuclei
  - dust
- Fomite borne
- Unclean hands and fingers

1.6.3. Susceptible Host

Four stages of successful parasitism

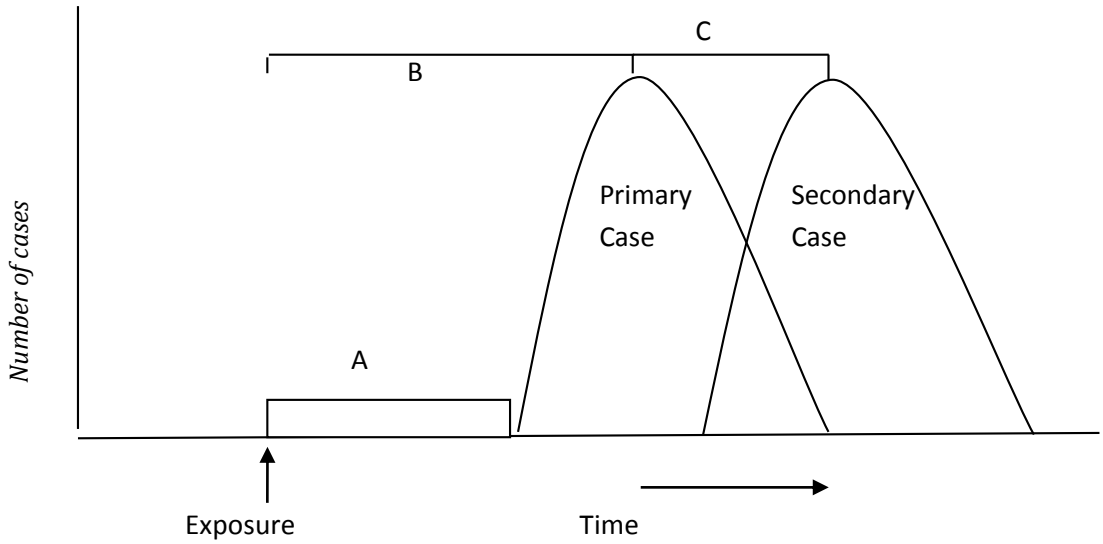
a) Portal of entry
b) Appropriate tissue or site of election
c) Portal of exist
d) Must survive in external environment for sufficient period

Incubation Period

It is the time interval between invasion by an infectious agent and appearance of the first symptom and sign of the disease.

Incubation period depends upon

- Generation time (Exposure ⟶ maximum infectivity)
- Infective dose
- Portal of entry
- Individual susceptibility



A = Minimum incubation period B = Median Incubation period

C = Estimate of average incubation period

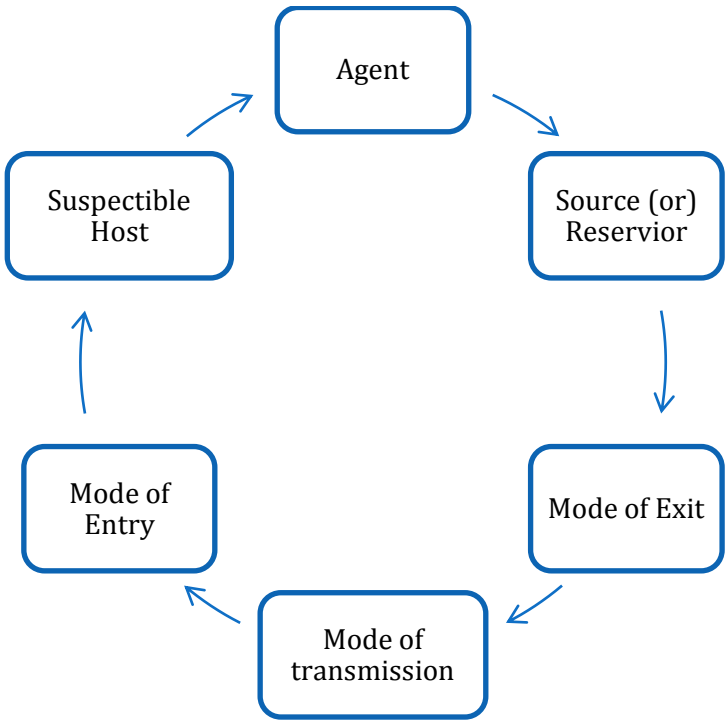
Length of Incubation Period

- Few hours to 2-3 days — e.g. Staphylococcal food poisoning
- Days to 3 weeks — e.g. Typhoid, measles, chicken pox
- Weeks to months — e.g. Hepatitis A and B, Rabies
- Years — e.g. HIV

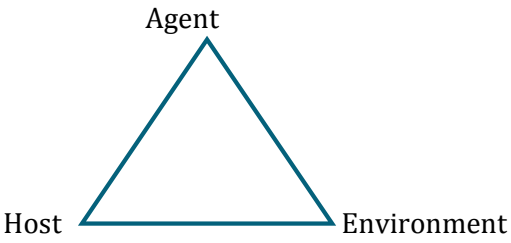
Importance of Incubation Period

- Tracing the source of infection and contacts "Follow the trail"
- Period of surveillance (or quarantine) = Maximum incubation period
- Immunization
- Identification of point source epidemics or propagated epidemics
    - Point source = All cases occur within ONE incubation period of the disease
    - Propagated = Cases occur later than the known length of incubation period
- Assessment of disease prognosis
  The shorter the incubation period, the worst the prognosis. e.g. Tetanus, rabies

Chain of infectious disease process



1.7. Epidemiological Triad of Disease Causation



1.7.1. Agent

Definition of agent – Agent is a substance, living or non-living, or a force, tangible or intangible, the excessive presence or relative lack of which may initiate or perpetuate a disease process.
N.B. A disease may have a single, multiple or combined and complete agent.

Classification of agent

A. Living agents - These are plant or animal origin. They may be metazoan, protozoa, fungi, yeast, bacteria, virus, Rickettsia, mycoplasma etc.

1) Biological agent

   All the microorganisms such as Bacteria, Virus, Fungus, Protozoa, Parasites etc.

B. Non-living agents

2) Physical agents – heat, cold, pressure, radial ion etc.
3) Chemical agents
   - Endogenous – Urea, Creatinine, Uric acid, Bilirubin
   - Exogenous – Dust, Allergens, Fumes
4) Mechanical agents – chronic friction, sprain, dislocation etc.
5) Social agents – Poverty, Smoking, Abuses, Unhealthy lifestyle
6) Nutritional agents – Carbohydrate, protein, fat, vitamins, minerals
7) Excess, insufficiency, or absence of a factor necessary to health
   - Chemical factors – Hormone
   - Nutritional factors
   - Lack of structure – Congenital absence of thymus
   - Lack of part of structure – Down's syndrome
   - Immunological factor - agammaglobulinemia

1.7.2. Host

Human host acts as soil and disease agent acts as seed.

Classification of host factors

1) Demographic characteristics
   - age

- sex
- ethnicity

2) Biological characteristics
   - Genetic factors – Each and every physical and physiological trait of the host is under the direct control of specific inherited gene. Genetic factors affect the resistance, immunity and tolerance of the host directly or indirectly.
   - Blood levels (Serum cholesterol level, blood glucose level etc.)
   - Blood groups
   - Physiological functions (Blood Pressure, Pulse rate)
   - Resistance – Overall non-specific defense mechanism to exogenous agents.
     E.g. Defense mechanism of skin and mucous membrane, Acidity of stomach and vagina, lymphatic barriers etc.
   - Tolerance – Increasing ability of the body to counteract quantitatively increase intensity of non-infectious exogenous physical and chemical agents.
   - Immunity – Ability of the body to ware off or neutralize the aggressiveness of biological agents through specific antibody and other immune mechanism.

3) Social and economic characteristics
   - socio-economic status
   - Education
   - Occupation
   - Housing
   - Stress

4) Lifestyle factors
   - Personality traits
   - Habits

5) Physiological and Hormonal Factors
   - It affects resistance, tolerance and immunity against infectious and non-infectious disease directly or indirectly

   E.g. Physiological functions of tissue repair and degeneration

6) Psychological factors
   - It affects the resistance, tolerance and immunity through the effect on physiological function
   - It includes psychological, emotional and mental factors
   - Important in personality development and coping with stress

1.7.3. Environment

Study of disease = Study of man and environment

Diseases due to preventable environmental conditions affect Hundreds of Millions of people.

There are two types of environment.

1) Internal or Microenvironment
2) External or Macroenvironment – External to human host which can again be divided into
    A. Physical environment
    B. Biological environment
    C. Psychosocial environment

A. Physical environment

- Heat, cold, air, water, radiation, atmosphere, pressure etc.
- Non-living things and physical factors
- Altered physical environment

↓

Development of new health problems

- Urbanization
- Pollution
- Radiation hazards
- Electro-magnetic hazards

↓

More ingenious man - Highly complicated environment

↓

Deleterious to Quality of Life we cherished

B. Biological environment

- Living things including man
- Some act as disease agents, reservoirs, intermediate host or vectors
- To remain healthy – we need
    - Constant adjustment and readjustment
    - Harmonious inter-relationship
    - Peaceful co-existence

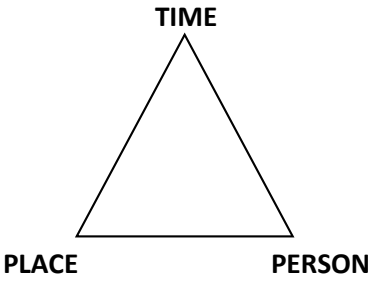
C. Psychosocial environment

- Cultural values
- Education
- Customs
- Lifestyle
- Habits
- Health services
- Beliefs
- Social and Political organizations
- Attitudes
- Morals

- Religions

They have either plus or minus effect on health.

1.8. Epidemiological Triad of Disease Distribution



Time	Place	Person
Three kinds of time trend 1. Short term fluctuation 2. Periodic fluctuations 3. Long-term or Secular trend	**A.** Local distribution fluctuations **B.** Rural-urban distribution **C.** National variation **D.** International variation **E.** Migration studies	1. Age 2. Sex 3. Ethnicity 4. Marital status 5. Education 6. Occupation 7. Social class 8. Behaviour 9. Stress 10. Migration

1.8.1. Time Distribution

Time distribution may yield important clues about the source or etiology of disease thereby suggesting potential preventive measures.

Three kinds of time trend

A. **Short term fluctuation** - Best known is an epidemic

1) Common Source epidemic

a. Single exposure or point source epidemic

b. Continuous or multiple exposure epidemic

2) Propagated epidemic
   - Person to person
   - Arthropod vector
   - Animal reservoir
3) Slow (modern) epidemic

B. **Periodic fluctuations**
1) Seasonal trend
2) Cyclic trend

C. **Long-term or Secular trend**

2. Measurement of Morbidity and Mortality

2.1. Measurement of Morbidity

(a) Incidence

Incidence rate is defined as "The number of NEW cases occurring in a defined population during a specified period of time".

$$\text{Incidence} = \frac{\text{Number of new cases of specific disease during a given time period}}{\text{Population at risk during that period}} \times 1000$$

E.g. If there had been 50 new cases of Influenza in a population of 10000 in a year

$$\text{Incidence rate} = \frac{50}{10000} \times 1000$$

= 5 per 1000 population per year

Incidence rate refers

- only to new cases
- during a given period
- in a specified population or population at risk unless other denominators are
- It can also refer new spells or episodes of disease arising in a given period of time per 1000 population.

  A person may suffer from Influenza more than once in a year. If he had suffered twice, he would contribute 2 spells of sickness in the year.

$$\text{Incidence rate (spells)} = \frac{\text{Number of spells of sickness starting in a defined period}}{\text{Mean number of persons exposed to risk in that period}} \times 1000$$

- Incidence rate is not influenced by duration of illness.
- The use of incidence is generally restricted to acute illnesses
- Incidence rate is useful for taking action
  - to control disease
  - for research into aetiology and pathogenesis, distribution of diseases and
  - efficiency of preventive and therapeutic measures

(b) Attack Rate

- It is special incidence rate
- Usually expressed as percent
- Used only when the population is exposed to risk for a limited period of time such as during an epidemic.

$$\text{Attack rate} = \frac{\text{Number of new cases of a specified disease during a specified time interval}}{\text{Total population at risk during the same interval}} \times 100$$

(c) Prevalence

- Prevalence rate refers specifically to all current cases (old and new cases) existing at a given period of time in a given population

$$\text{Prevalence rate} = \frac{\text{Total number of individuals who had disease at a given year}}{\text{Total number of populations at risk during that year}} \times 1000$$

Prevalence is of two types:
1) Point prevalence
2) Period prevalence

1) Point prevalence

Point prevalence of a disease is defined as the number of all current cases (old and new) of a disease at one point in time in relation to a defined population. The point may be a day or several days or a week or several weeks or a month etc.

$$\text{Point prevalence} = \frac{\text{Number of all current cases (old and new) of a specified disease existing at a given point in time}}{\text{Estimated population at the same point in time}} \times 100$$

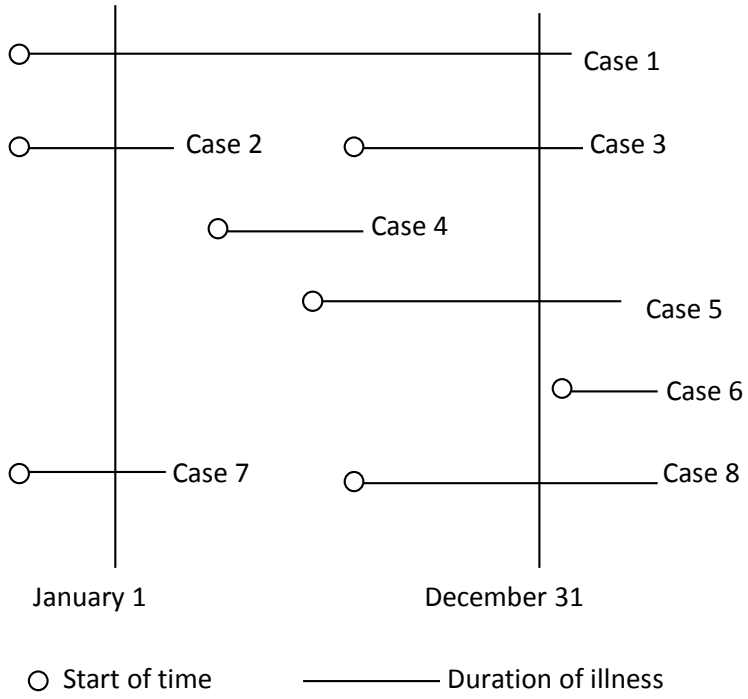
Point prevalence can be calculated for age, sex and other relevant factors or attributes.

2) Period prevalence

Period prevalence is less commonly used. It measures the frequency of all old and new cases existing during a defined period of time.

$$\text{Period prevalence} = \frac{\text{Number of existing cases (old and new) of a specified disease during a given period of time interval}}{\text{Estimated mid-interval population at risk}} \times 100$$

E.g. Incidence and Prevalence



Incidence would include case – 3, 4, 5, and 8.

Point prevalence January 1 cases – 1, 2 and 7
Point prevalence December 31 cases – 1, 3, 5, and 8.
Period prevalence January 1 to December 31 cases – 1, 2, 3, 4, 5, 7 and 8

2.2. Measurement of Mortality

Mortality data are easy to obtain, and it can be useful for the epidemiologist.

(a) Crude Death Rate (CDR)

- The simplest measure of mortality
- It is defined as "the number of deaths from all causes per 1,000 estimated mid-year population in one year, in a given place".

$$\text{Crude Death Rate} = \frac{\text{Number of deaths during the year}}{\text{Mid-year population}} \times 1000$$

- It summarizes the effect of two factors
  - population composition
  - age-specific death rates (which reflects the probability of dying)
- Disadvantage of CDR is it lacks the comparability for communities with population that differ by age, sex, race etc.

(b) Specific Death Rates

- The specific death rates may be
  - cause or disease specific e.g. tuberculosis, cancer, accident etc.
  - related to specific groups e.g. age specific, sex specific, age and sex specific etc.
- Specific death rates can indicate particular group or groups at risk.

$$\text{Specific Death Rate due to a disease} = \frac{\text{Number of deaths from that disease during a calendar year}}{\text{Mid-year population}} \times 1000$$

$$\text{Specific Death Rate for male} = \frac{\text{Number of deaths among males during a calendar year}}{\text{Mid-year population}} \times 1000$$

$$\text{Specific Death Rate due age group 15-20 years} = \frac{\text{Number of deaths of persons aged 15-20 years during a calendar year}}{\text{Mid-year population}} \times 1000$$

$$\text{Specific Death Rate for January} = \frac{\text{Number of deaths in January} \times 12}{\text{Mid-year population}} \times 1000$$

(Note: multiplied by 12 is to make the monthly death rate comparable with annual death rate)

(c) Case Fatality Rate (CFR)

- It represents the killing power of the disease.

- It is typically used for acute infectious diseases.

$$\text{CFR} = \frac{\text{Total number of death due to a particular disease}}{\text{Total number of cases due to the same disease}} \times 100$$

- CFR for the same disease can vary in different epidemic because of changes in the agent.

3. General Principles of Prevention and Control

Concepts of Prevention

- The inhibition of the development of disease before it occurs including measures which interrupt or slow the progress of disease
- There are Primary prevention, Secondary prevention and Tertiary prevention.

Concepts of Control

- Reduce incidence of disease
- Reduce duration of illness and risk of transmission
- Decrease the effects of infection (physical and psychological)
- Reduce the financial burden to community

Measures for prevention and control of communicable diseases

3.1 Notification

- Immediate intimation of occurrence of communicable disease by responsible person (lay person) to local health authority
- Notifiable disease for which official reports are required.

3.2. Reporting

- Health personnel to higher authority
- Midwife/Lady Health Visitor/ Public Health Supervisor/ Health Assistant to → Township Health Department → State/Regional Health Department → Department of Public Health and Medical Care
- Initial report by telephone/ email – cases/death
- Periodic report- daily/weekly/monthly
- Narrative form – case history

3.3. Early diagnosis and effective treatment

- Important in control measures
- Reduce period of communicability of cases/carriers
- Reduce secondary cases
- Reduce period of illness/untoward effects

3.4. Isolation

- Purpose of isolation is to protect the community by preventing transfer of infection from reservoir to the possible susceptible host.
- Isolation means separation of sick person from others during period of communicability.
- Types of isolation include standard isolation, strict isolation, protective isolation and high security isolation.
- Isolation has a distinctive value in control of some diseases. (E.g. Diphtheria, Cholera, Streptococcal respiratory infection, Pneumonia, Plague)

- Some diseases (large components of subclinical infections and carrier state (E.g. Polio, Hepatitis A, Typhoid fever), even rigid isolation will not prevent the spread of disease)
- Isolation has failed in the control of diseases such as Leprosy, TB, STD. In control of these diseases, physical isolation is replaced by chemical isolation (i.e. rapid treatment of cases)
- Isolation is done during period of communicability
- Isolation is done in separate room or hospital.

3.5. Quarantine

- Quarantine is prohibition of movement of exposed person to prevent from coming into contact with non-exposed for longest incubation period.
- Quarantine is defined as the limitation of freedom of movement such well person or domestic animals exposed to communicable disease for a period of time not longer than the longest incubation of disease to prevent effective contact with those not exposed.
- Types of quarantine
    - Absolute quarantine – as defined above
    - Modified quarantine – Selective partial limitation of freedom of movement e.g. exclusion of children from school
    - Segregation – The separation of special consideration, control of observation of some part of a groups of persons (or domestic animal) from others to facilitate control of communicable disease. E.g. removal of susceptible children to home of immune persons
    - Inward quarantine – Persons outside town are not allowed in (Healthy town)
    - Outward quarantine – Persons inside town are not allowed out (Infected town)
    - Outer ring quarantine – Whole town in/out – No contact
    - Inner ring quarantine – Infected house/other house

3.6. Epidemiological surveillance

- Surveillance can be defined as "continuous scrutiny (careful watch) of all aspects of occurrence and spread of disease that are pertinent for effective control".
- Surveillance of person – Quarantine
- Surveillance includes systematic collection and interpretation of morbidity and mortality records.
- Special reports of investigation of epidemics
- Isolation and identification of infectious agents
- Data concerning available use of vaccine/toxoid

- Information of immunity level of community

3.7. Disinfection

- Disinfection is killing of infectious agents outside the body by direct exposure to chemical or physical agents.
- Concurrent disinfection is prompt disinfection of discharge, fomites, utensils as soon as they are voided or soiled.
- Terminal disinfection is disinfection of houses, rooms, belongings, utensils, fomites after patient is removed/death/recovery.
- Precurrent disinfection is prophylactic disinfection. E.g. Disinfection of water by chlorine, Pasteurization of milk, Hand washing etc.
- Disinfectants can be natural agents, physical agents and chemical agents.

3.8. Disinfestation

- Disinfestation is destruction of insects, rodents, louses (arthropod vectors).
- Methods of disinfestations include physical measures, chemical measures using insecticides and rodenticide, biological measures and genetic measures.
- Disinfestation is used especially in control of vector borne diseases.

3.9. Environmental sanitation

- It is important for control of diseases which require vehicle or vectors for the transmission.
- It includes safe water supply, sanitary disposal of excreta, sanitary disposal of refuse, food sanitation, ventilation etc.

3.10. Immunization

- Increase immune status of susceptible population
- Increase herd immunity (Immune status of a group of people)
- immunization agents – vaccines, toxoid, immunoglobulins
- Active immunization - by giving vaccine/toxoid – antibodies are produced by the person him/herself in the body
- Passive immunization – by giving immunoglobulin (readymade)

3.11. Chemoprophylaxis

- It is administration of drugs to household contact, high risk persons to prevent infection
  E.g. Tetracycline to household members in case of cholera, Tetracycline for contacts of pneumonic plague

3.12. Health Education

- Gives health education according to the disease.
- It should include pathogenesis, mode of transmission, preventive and control measures.

3.13. Case search

- Searching of remaining cases including subclinical cases.
- For prevention of further spread

4. Immunization

4.1. Objectives of Immunization

Main aim is to attain the highest possible level of herd immunity against those diseases for which artificial immunization is available. Therefore, program aims at target population groups with low level of herd immunity.

The objectives of immunization are to:

- Protect an individual against disease or infection
- Decrease prevalence of disease or infection in community
- Decrease the probability of contact between susceptible and infected
- Decrease the proportion of latent or carrier infection
- Prevent outbreaks by decreasing the number of susceptible
- Increase herd immunity
- Eradicate wild type of virus

4.2 Expanded Program of Immunization in Myanmar

The Expanded Program of Immunization, Myanmar has been launched in May 1978. Since 2005, the routine immunization has been providing seven antigens to children who are under one year of age. Since November 2012 pentavalent vaccine has been introduced and eight diseases are preventable for the children. Fully immunized children are protected against Poliomyelitis, Measles, Diphtheria, Pertussis, Tetanus, Hepatitis B, H. influenza infection and severe Tuberculosis. The pregnant women are given two doses of Tetanus toxoid to prevent maternal and neonatal tetanus.

The central EPI is governed by central level staff who are working, through state and regional administrators and focal persons down to grass root level, with Township Medical Officers and other Public Health Staff from Township Health Department, Rural Health Centers and Sub-Rural Health Centers.

Routine vaccination is delivered by midwives, during the first few days of every month, through combination approaches of fixed and outreach sessions. The fixed posts are usually at Maternal and Child Health Centre and Urban Health Centers in towns and Rural Health Centers and Public places in rural areas. Majority of immunization services are provided through outreach sessions in wards and villages.

4.3. Immunization Schedule

Age	Vaccine
At birth	BCG*, Hepatitis B
2-month	BCG*, Pentavalent 1, OPV1 , PCV1
4-month	Pentavalent 2, OPV2, IPV, PCV2

6-month	Pentavalent 3, OPV3, PCV3
9-month	Measles, Rubella
18-month	Measles

Vaccine	Age of Administration
BCG	Births to 2 months
DPT- Hib- HepB	2 months, 4 months, 6 months
OPV	2 months, 4 months, 6 months
IPV	4 months
PCV	2 months, 4 months, 6 months
MR	9 months
Measles	18 months

*** If the child missed BCG at birth, BCG should be given together with other vaccine at 2 month of age.**

Schedule of Tetanus Toxoid (TT) Immunization for Pregnant Women

First dose - 2nd Trimester or 1st Antenatal visit
Second dose - 8 weeks after 1st dose
Third dose - Before delivery
Booster dose - At the time of injury

Schedule of Tetanus toxoid Immunization for farmers

First dose - At the time of immunization program at their village
Second dose - 8 weeks after 1st dose
Booster dose - At the time of injury

Tetanus toxoid immunization schedule for women of reproductive age

Dose of TT	When to give	Expected duration of protection
1	At first contact or as early as possible in pregnancy	None
2	At least 4 weeks after TT 1	1-3 years
3	At least 6 months after TT2	At least 5 years
4	At least 1 year after TT3	At least 10 years
5	At least 1 year after TT4	For all childbearing years and possibly longer

4.4. Diseases which can be Prevented by Expanded Program of Immunization

1) Tuberculosis
2) Diphtheria
3) Pertussis or Whooping cough
4) Tetanus
5) Poliomyelitis
6) Measles
7) Hepatitis B
8) Haemophilus influenzae type B infection

5. Herd Immunity

It is also called group immunity or population immunity.
Herd immunity can be defined as "Level of immunity in a population of a defined area, at a specified point in time.
Herd immunity determines the behavior of disease in a particular group.

If epidemic disease occurs in a population with low herd immunity:

- Easy transmission
- High morbidity and mortality (if fatal)
- Herd immunity gradually rises (acquired active natural immunity)
- At high level of herd immunity, cessation of disease transmission and decline epidemic wave

If epidemic disease occurs in a population with high herd immunity:

- Naturally prevent disease transmission

Conditions as the source of Herd immunity

- After epidemic attack of disease

- After unapparent or subclinical infections
- After artificial immunization of the population

Herd immunity can also be defined as the proportion of immunized persons to a particular disease in a defined population at a particular time

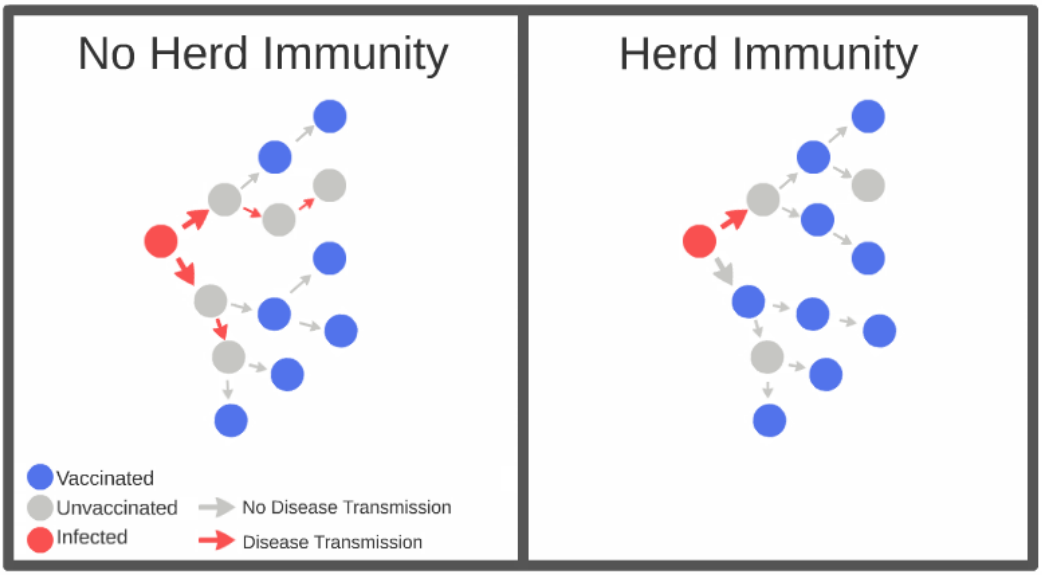
- Probability of an outbreak depends on ratio of immune persons and susceptible persons at a time.
- If immunized persons are more than susceptible persons there will be decrease chance of contact between infected persons and susceptible persons as the immunized persons serve as a kind of immune barrier.

Degree of herd immunity required to prevent epidemic depends on

- Specific disease
- Its period of communicability
- Site and social behaviour of the community
- The degree to which an infected person is capable of transmission

Herd immunity depends on

- Population structure and structure changes
- Influx of non-immuned and neonates



6. Outbreak Investigation

6.1. Definition of Outbreak

Occurrence of more cases of disease than expected in a given area among a specific group of people over a particular period of time or two or more linked cases of the same illness. (WHO)

6.2. Objectives of Outbreak Investigation

- to control continuing outbreak
- to prevent future outbreaks
- to provide statutorily mandated services
- to strengthen surveillance at local level
- to advance knowledge about a disease
- to provide training opportunities

6.3. Specific Demands when Investigating Outbreak

- Unexpected event
- Need to act quickly
- Need for rapid control
- Work carried out in the field
- Require systematic approach

6.4. Steps of an Outbreak Investigation

1) Confirm outbreak and diagnosis
2) Case definition and identification
3) Descriptive data collection and analysis
4) Develop hypothesis
5) Analytical studies to test hypothesis
6) Special studies
7) Implementation of control measures
8) Communication including outbreak report

Step 1. Confirm outbreak and diagnosis

- Detection can be done through
  - Routine surveillance system
  - Clinical/laboratory results
  - General Public media

- Confirmation can be done by
  - Verification of diagnosis?
  - Clinical and laboratory link between cases?
  - Expected number to define outbreak?

- If outbreak is confirmed, there are two measures to be carried out
  - Immediate control measures
    - Prophylaxis
    - Exclusion/inclusion
    - Public warning
    - Hygienic measures

- Further investigation
    - Unknown aetiology
    - Cases serious
    - Cases still occurring
    - Public pressure
    - Training opportunity
    - Scientific interest

    } required assistance
- Assistants may be:
    - Epidemiologist
    - Microbiologist
    - Environmental specialist
    - Ministry/Government
    - Press officer
    - Others

    } They are formed into "Outbreak Investigation Team" and work together in the field

Step 2. Case definition and identification

Case definition is standard set of criteria for deciding if a person should be classified as suffering from the disease under investigation. Clinical criteria, restriction of time, place, person should be considered. Case definition should be simple, practical, objective. Sensitivity and specificity should also be considered.

Example of case definition for cholera

- Patient older than 5 years with severe dehydration or dying of acute watery diarrhoea in town "B" between 1st June and 31st July'2014.

Case definition categorization

- Possible – Patients with severe diarrhoea
- Probable – Patients older than 5 years with severe dehydration or dying of acute watery diarrhoea in town "B" between 1st June and 31st July'2014
- Confirmed – Isolation of Vibrio cholera from stool of patient

Identify and Count Cases

- Clearly identifiable groups
- Hospitals
- Laboratories
- Schools
- Work places

Obtain information

- Identifying information
- Demographic information
- Clinical details
- Risk factors

Step 3. Descriptive data collection and analysis

Perform descriptive epidemiology

- Orient cases in
  - time
  - place
  - person

Evaluate information

- Pathogen?
- Source?
- Transmission?

Step 4. Develop hypothesis

- Who is at risk of becoming ill?
- What is the disease causing outbreak?
- What is the source and vehicle?
- What is the mode of transmission?

Step 5. Analytical studies to test hypothesis

- Analytical epidemiological studies
  - Cohort study
  - Case control study
  - Cross sectional study

Step 6. Special studies

- For advance knowledge about disease
- For program planning
- For training opportunity

Step 7. Implementation of control measures

*** May be carried out anytime during the outbreak

- Control the source of the pathogen
- Interrupt transmission
- Prevent recurrence
- Modify host response

Control the source of pathogen

- Remove source of contamination
- Remove person from exposure
- Inactive/neutralize the pathogen
- Isolate and/or treat infected person

Interrupt transmission

- Interrupt environmental source
- Control vector transmission
- Improve personal sanitation

Modify host response

- Immunize susceptible
- Use prophylactic chemotherapy

		Source/ Transmission	
		Known	Unknown
ETIOLOGY	*Known*	*Investigation +* *Control +++*	*Investigation +++* *Control +*
	Unknown	*Investigation +++* *Control +++*	*Investigation +++* *Control +*

Step 8. Communication including outbreak report

- Prepare written report
- Communicate public health messages
- Influence public health policy
- Evaluate performance

7. Communicable Disease versus Non-Communicable Disease

E.g. of Communicable diseases

- Tuberculosis
- Malaria
- Cholera
- Plague
- Ebola
- Bird flu
- Leprosy

E.g. of Non-communicable diseases

- Cancer
- Diabetes mellitus
- Hypertension
- Coronary heart disease
- Rheumatoid arthritis
- Cataract

	Communicable Disease	Non-communicable Disease
1	Agent is known.	Absence of known agent Disorder of unknown cause and progressive course are often labelled degenerative.
2	Caused by specific infectious agent E.g. Tuberculosis is caused by Mycobacterium tuberculosis.	Multifactorial causation Caused by risk factors - Cigarette use or other types of smoking - Alcohol abuse - Failure or inability to obtain preventive health services (e.g. for hypertension control, cancer detection, management of diabetes) - lifestyle changes (e.g. dietary pattern, physical activity) - Environmental risk factors (e.g. occupational hazards, air and water pollution, possession of destructive weapons) - Stress factors
3	Infectious agent can transmit from infected person to others	Do not transmit to others
4	Incubation period	Long Latent period
5	Definite onset	Indefinite onset
6	Not heredity	Usually family history present (Heredity, genetic)
7	Usually acute	Usually chronic

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HCA 03 - Health Promotion and Disease Prevention

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Teaching Hours – 3 Hours

Objectives

At the end of this module the learners should be able to:

- describe comprehensive health care
- list prerequisites for health
- define health promotion and disease prevention
- describe concepts of health promotion and Disease prevention
- describe The Ottawa chatter for health promotion
- describe strategies of health promotion and prevention
- describe community involvement in health promotion
- describe levels of prevention

Teaching Methods

- Lecture and Discussion

1. Comprehensive Health Care

Comprehensive health care was the term, first used by Bhore Committee in 1946. It is provision of integrated preventive, curative, rehabilitative and promotional health services from "womb to tomb" to every individual residing in a defined geographical area.

Criteria of comprehensive health care are

- Provide adequate promotive, preventive, curative and rehabilitative health care.
- Be as close as the beneficiaries as possible
- Has the widest cooperation between the people, the service and the profession
- Available to all irrespective of their ability to pay
- Look after specifically vulnerable and weaker sections of the community
- Create and maintain the healthy environment in homes as well as working places

2. Prerequisites for Health

The primary means of health promotion occur through developing healthy public policy that addresses the prerequisites of health such as

- income
- housing
- food security
- employment and
- quality working conditions

3. Definition of Health Promotion and Disease Prevention

Health Promotion can be defined as

- The process of enabling people to increase control over, and to improve their health. The concept of optimal health reflects not merely the absence of disease, but also a level of vitality to maintain enjoyment and contentment with life.
  (WHO Regional Office of Europe, 1984)

- The science and art of helping people change their lifestyle to move toward a state of optimal health (American Journal of health Promotion, 1986)
- The process of enabling people to increase control over their health and its determinants, and thereby improve their health. (WHO Bangkok Charter, 2005)

Prevention in health means "calls for action in advance, based on knowledge of natural history in order to make it improbable that the disease will progress subsequently". Preventive actions are defined as interventions directed to averting the emergence of specific diseases, reducing their incidence and prevalence in populations (Leavell & Clarck, 1976).

Disease prevention encompasses activities focused on health risk profiling of asymptomatic persons and the appropriate use of screening and surveillance tests for early detection of disease. Patient education and therapeutic intervention, when indicated, are imperative. Principles of disease prevention applied to individual patients should consider age, gender, family history, and lifestyle risk factors.

4. Concepts of Health Promotion and Disease Prevention

4.1. Concepts of Health Promotion

- Health promotion is critical for the improvement of health status of the communities
- Purpose of health promotion is to encourage individuals to take preventive measures to avert the onset or worsening of an illness or disease and to adopt healthier lifestyle
- Health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being
- Health promotion aims at making (political, economic, social, cultural, environmental, behavioral and biological factors) favourable through advocacy for health
- Health promotion focuses on achieving equity in health
- Health promotion demands coordinated action by all concerned: by government, by health and other sectors

4.2. Concepts of Disease Prevention

The goals of medicine are

- to promote health
- to preserve health
- to restore health when it is impaired and
- to minimize suffering and distress.

Prevention is essential to fulfill these goals. Successful prevention depends on knowledge of causation, dynamic of disease transmission, identification of risk factors and risk groups, availability of prophylactic or early detection and treatment measures, an organization for applying these measures to appropriate persons or groups and continuous evaluation of and development of procedures applied.

To initiate preventive measures, it is not necessary to know everything about the natural history of disease. Removal or elimination of single known essential cause may be sufficient to prevent a disease.

The objective of prevention is to intercept or oppose the cause and thereby disease process. One of the modes of interventions in disease prevention includes treatment according to the epidemiological concept.

5. The Ottawa Charter for Health Promotion

First International Conference on Health Promotion, Ottawa, 21 November 1986
Commitment to Health Promotion

The participants in this Conference pledge:

- to move into the arena of healthy public policy, and to advocate a clear political commitment to health and equity in all sectors,
- to counteract the pressures towards harmful products, resource depletion, unhealthy living conditions and environments, and bad nutrition; and to focus attention on public health issues such as pollution, occupational hazards, housing and settlements,
- to respond to the health gap within and between societies, and to tackle the inequities in health produced by the rules and practices of these societies,
- to acknowledge people as the main health resource; to support and enable them to keep themselves, their families and friends healthy through financial and other means, and to accept the community as the essential voice in matters of its health, living conditions and well-being,
- to reorient health services and their resources towards the promotion of health; and to share power with other sectors, other disciplines and, most importantly, with people themselves, and
- to recognize health and its maintenance as a major social investment and challenge; and to address the overall ecological issue of our ways of living.

The Conference urges all concerned to join them in their commitment to a strong public health alliance.

6. Strategies of Health Promotion and Disease Prevention

Health Promotion strategies emphasize changing the conditions of people's lives and work, which form the structure underlying health problems, calling for an inter-sectoral approach (Terris, 1990).

Principles of health promotion are:

- Address the wider determinants of health
- Based activities on the best available data and evidence
- Act to reduce inequalities in health
- Ensure active consumer and community participation
- Empower individuals
- Explicitly consider difference in gender and culture
- Facilitate intersectoral co-operation

The World Health Organization (WHO) urges all member states to develop evidence-based approaches to health promotion, as well as increase investments, infrastructure and community capacity in this sense. However, developing evidence-based programs to strengthen health promotion is hard to accomplish with a limited body of country-specific research on this topic.

Lack of funding, lack of properly trained workforce, as well as increasing workload on health care workers, are the reasons for the limited number of health promotion interventions in rural areas. Local untapped resources still exist in rural settings, which could contribute to the development of the health promotion capacity and infrastructure, like the case of libraries.

- Although, at the beginning, the concept of health promotion focused mainly on what the individuals can do, to the end of the 1980s a new approach had arisen.
- Environmental factors should be involved as well, when designing a health promotion program (McLeroy et al., 1988).
- "Health promotion is the combination of educational and environmental supports for actions and conditions of living conducive to health". (Green and Kreuter, 1991)

The Jakarta Declaration on Leading Health Promotion in the 21st Century described the priorities in health promotion as below:

- Promotion of social responsibility for health
- Increasing investments in health development
- Consolidation and expansion of partnerships for health
- Increased community capacity and empowerment
- Development of a health promotion infrastructure

**The strategies for disease prevention are described under levels of prevention.

7. Community Involvement in Health Promotion

Health can never be adequately protected by health services without the active understanding and involvement of communities. Community involvement means active participation of the people concerned in the analysis, decision-making, planning, implementation and evaluation of the program. The involvement of community is essential for health promotion and stimulation to the community for the sustainable development. Many studies have shown that people are most committed to

implementing programs that they have helped plan. Communities should also be involved in planning health promotion activities that seek to reduce the risk factors.

Community can involve in three ways:

- the community can provide the facilities, manpower, logistic support and possibly funds
- the community can be actively involved in planning, implementation, management and evaluation
- an equally important contribution that people can make is by joining in and using the health services.

The best method for a community to increase its participation is to develop strong community organizations and leadership with experience in mobilizing its resources and coordinating programs. If the community is involved it is easy to explore the people's priorities regarding health promotion activities. It will also help in preparation of messages based on existing problems and practices and potential health problems or non-communicable diseases, leading to promote a good health practices in community development and everyday life. Community can involve in identification of specific messages and communication methods appropriate for their situation.

8. Levels of Prevention

There are four levels of disease prevention. These levels are:
(1) Primordial prevention
(2) Primary prevention
(3) Secondary prevention
(4) Tertiary prevention

(1) Primordial prevention

Primordial prevention is focused on prevention of chronic diseases (Non-communicable diseases). It is prevention of the emergence or development of risk factors in countries or population groups in which they have not yet been appeared.

For instance, many adult health problems such as obesity, hypertension, ischemic heart disease have originated in their childhood as lifestyles are formed in this period. These lifestyles include smoking, eating patterns, physical exercise etc. In primordial prevention, children are educated to adopt healthy lifestyles and discouraging from adopting harmful lifestyle.

The interventions of primordial prevention are

- Health education
- Environmental modification
- Nutritional interventions
- Lifestyle and behaviourable changes

(2) Primary prevention

Primary prevention can be defined as "Action taken prior to the onset of disease, which removes the possibility that a disease will ever occur".

The interventions are carried out in the prepathogenesis phase of the disease or health problem or other departure from health. Primary prevention aims to achieve and maintain positive health. Primary prevention also applied to prevention of chronic diseases such as cancer, hypertension and coronary heart disease. World Health Organization recommended two strategies to accomplish this objective.

A. Population (Mass) Strategy

- directed at the whole population irrespective of individual risk level
  e.g. Studies have shown that even a small reduction in the average blood pressure or serum cholesterol of a population would produce a large reduction in the incidence of cardiovascular diseases.
- directed towards socio-economic, behavioural and lifestyle changes

B. High-Risk Strategy

- aims to bring preventive care to individuals at special risk.
- requires detection of individuals at high risk by optimum use of clinical methods

Primary prevention is holistic approach. It relies on measures designed to promote health or to protect against specific disease agents and hazards in the environment. Because of its safety and low cost, primary prevention can be applied widely.

Some of the interventions for primary prevention are

- Health education
- Immunization
- Use of specific nutrition
- Protection against occupational hazards
- Chemoprophylaxis
- Environmental sanitation
- Food sanitation etc.

(3) Secondary prevention

Secondary prevention can be defined as "Actions which halt the progress of a disease at its incipient stage and prevents complications".

The interventions for secondary are early diagnosis (screening test, case finding programs) and adequate treatment.

Secondary prevention attempts to arrest the disease process, restore health by seeking out unrecognized disease and treating it before irreversible pathological changes have taken place and reverse communicability of infectious diseases. Secondary prevention for the diseased person will be primary prevention for others as it protects acquiring infection to others. However, secondary prevention is not the perfect tool for control of communicable diseases.

The disadvantage of secondary prevention is that the patient has already been subject to mental anguish, physical pain and loss of productivity. The intervention of secondary prevention is more expensive and less effective than primary prevention.

(4) Tertiary prevention

Although disease process has been advanced, tertiary prevention could be done.

Tertiary prevention can be defined as "All measures available to reduce or limit impairments and disabilities, minimized suffering caused by existing departures from good health and to promote the patient's adjustment to irremediable conditions".
The interventions of tertiary prevention are disability limitation and rehabilitation. Rehabilitation includes psychosocial, vocational, and medical rehabilitations based on team work from a variety of professionals.

References:

1. American Academy of Family Physicians . "Health promotion and Disease Prevention". Reprint Number 267.
2. Park, K (2011). "Park's Textbook of Preventive and Social Medicine". 21st Edition, Published by M/s BANARSIDAS BHANOT, JABALPUR, India.

HCA 04- Curative and Rehabilitative Health Care

Pages 45- 49

Teaching Hours – 3 Hours

Objectives

At the end of the module the learner should be able to:

- define curative health care
- describe principles of curative health care
- describe significance of curative health care on health
- describe challenges of curative health care
- mention strategies to improve the curative health care
- explain community involvement in curative health care
- define rehabilitative health care
- describe challenges of rehabilitative health care
- list strategies to improve rehabilitative health care
- explain community involvement in rehabilitative health care

Teaching Methods

- Lecture and Discussion
- Reading Assignment
- Brainstorming session

1. Definition of Curative Health Care

Curative care or **curative medicine** is the health care given for medical conditions where a cure is considered achievable, or even possibly so, and directed to this end. Curative care differs from preventive care, which aims at preventing the appearance of diseases through pharmaceuticals and such techniques as immunization, exercise, proper eating habits and other life style issues, and from palliative care, which concentrates on reducing the severity of symptoms, such as pain.

Curative care is a subset of the health care and it is medical treatment to cure or control a condition. Medical care refers chiefly to those personal services that are provided directly by physicians or rendered as a result of the physician's instruction.

2. Principles of Curative Health Care

The principles

Those responsible for administering medical care should pursue the following objectives:

- Sustaining life
- Restoring health where possible
- Preventing deterioration in health and alleviating suffering.

Quality of life assessments should not be used to determine that the individual is no longer entitled to due respect, care and treatment.

What the principles mean in practice

The following points are to guide those who are involved in caring for patients. They may be updated from time to time.

- Every patient is to be respected as a human being with inherent human rights, especially the right to life and respect for intrinsic dignity.
- Every patient is entitled to receive all appropriate medical and nursing care.
- The provision of food and fluids, even when artificially delivered, is ordinary care to which each patient is entitled for so long as he or she is able to assimilate it.
- Medical treatment for everyone is to be applied for as long as it is appropriate in dealing with the patient's condition.
- All care and treatment should be given in accordance with the established medical ethical teachings of the Hippocratic tradition, in harmony with the religious tradition of the patient.
- No decision to withhold or withdraw treatment should be made with the intention of bringing about the death of the patient.

3. Significance of Curative Health Care on Health

Although improvement in health status of the population is related to control of communicable diseases, limitation of family size, proper nutrition and sanitation, specific preventive measures like vaccination and safe water supply, therapeutic measures are also essential for this improvement. Mortality rates have decreased when the medical care is truly effective. Medical care contributes improvements in infant and child care, and in the management of infectious diseases, hypertension, diabetes and other conditions.

The achievement of modern public health in controlling infectious diseases and even more so in reducing the morbidity and mortality associated with chronic diseases such as stroke and coronary heart disease, is in reality a shared achievement of curative care. Curative care is crucial in controlling communicable diseases as well as non-communicable diseases like hypertension, diabetes mellitus and coronary heart disease and in reducing complications and mortality from these diseases. Therefore, curative care has significant effect on the health status of individual and community as a whole.

4. Challenges of Curative Health Care

The challenges of curative care are:

- Inadequate human resources (Physician and population ratio, Doctor and nurse ratio etc.)
- Insufficient drugs and equipment
- Quality of care
- Quantity of procedures
- Development of guidelines
- Financial problems
- Equity issues – Accessibility, affordability
- Maldistribution of the staff

5. Strategies to Improve Curative Health Care

Strategies that can improve the curative care are as follow:

- Specialist services should be provided at township level
- Hospitals and Health care facilities should be equipped with appropriate modern diagnostic and therapeutic facilities
- There must be good referral system.
- Ambulances should be provided at the hospitals.
- Deployment of competent human. resources
- More patient-centered, responsive and accountable curative services should be provided by health staff
- Partnership approach – local donors, private and public sector cooperation
- coordination and cooperation in disease screening, and individual and community based therapeutic interventions

6. Community Involvement in Curative Health Care

Community involvement is curative care is essential. Community can participate in

- Contribution of funding by donation in terms of cash or medical equipment or drugs
- Arrange the transportation services for the patients
- Arrange and help the staff in providing community out reached medical care
- Case detection

7. Definitions of Rehabilitative Health Care

- Rehabilitative health care is a process aimed at enabling the disabled persons to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. Rehabilitation provides disabled people with the tools they need to attain independence and self-determination.
- 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
- The physical and mental restoration, as far as possible, of all treated patients to normal activity, so that they may be able to resume their place in the home, society and industry.

8. Challenges of Rehabilitative Health Care

Rehabilitation is a difficult and demanding task that seldom gives totally satisfactory results, but it needs enthusiastic cooperation from different segments of society as well as expertise, equipment and funds not readily available for this purpose even in affluent societies.

The challenges include

- Scarce resources
  - Inadequate human resources
  - Inadequate funding
  - materials
  - Technology
- Less interest than curative care

9. Strategies to Improve Rehabilitative Health Care

The primary goals of rehabilitation are restitution of function, compensation or adaptation to functional losses, and prevention of secondary complications. Rehabilitation should maximize the disabled person's potential for participation in social, leisure, or work activities. Rehabilitation should not be defined simply as improving independence but also as a program to prevent disability. A wide variety of strategies can be used to achieve these goals.

1) Multidisciplinary team approach
   Rehabilitation should be conducted by multidisciplinary team approach. For instance, Health sector, education sector, sports and physical education sector are needed for disabled children. The objective is to ensure that the disabled person receives comprehensive assessment and interventions.
   Medical rehabilitation – restoration of function
   Vocational rehabilitation – restoration of the capacity to earn a livelihood
   Social rehabilitation – restoration of family and social relationships
   Psychological rehabilitation – restoration of personal dignity and confidence
2) Community involvement
3) Recruitment of human resources for rehabilitative care
4) Training and refresher courses on rehabilitative care
5) Allocation of funding
6) Biomedical researches

10. Community Involvement in Rehabilitative Health Care

Without community involvement, rehabilitation cannot achieve its goal. Community Based Rehabilitation is an effective strategy for increasing community level activity for equalization of opportunities for people with disabilities by including them in programs focused on human rights, poverty reduction and inclusion.

Definition of Community Based Rehabilitation

Community Based Rehabilitation (CBR) has been defined by the International Labour Organization, the United Nations Educational, Scientific and Cultural Organization and the World Health Organization in a Draft Joint Position Paper (International Labour Organization et al. 2002) as follows:

"Community-based rehabilitation is a strategy within community development for the rehabilitation, equalization of opportunities and social integration of all people with disabilities.

CBR is implemented through the combined efforts of disabled people themselves, their families and communities, and the appropriate health, education, vocational and social services."

Major Objectives of CBR

The major objectives of CBR are:

- to ensure that people with disabilities are able to maximize their physical and mental abilities, to access regular services and opportunities, and to become active contributors to the community and society at large.
- to activate communities to promote and protect the human rights of people with disabilities through changes within the community, for example, by removing barriers to participation.

CBR involves:

- Partnerships with disabled people, both adults and children, their families and care givers
- Capacity building of disabled people and their families, in the context of their community and culture
- A holistic approach encompassing physical, social, employment, educational, economic and other needs
- Promoting the social inclusion of disabled people in existing mainstream services
- A system based in the community, using district and national level services for referral

Components of CBR are

- provision of functional rehabilitation services
- creating a positive attitude towards people with disabilities
- the creation of micro and macro income-generation
- vocational training
- the prevention of the causes of disabilities

References:

- Park, K (2011). "Park's Textbook of Preventive and Social Medicine". 21st Edition, Published by M/s BANARSIDAS BHANOT, JABALPUR, India.
- Society for the Protection of Unborn Children (2015). "Statement of Medical Care Principles". 3 Whitacre Mews, Stannary Street, London, SE11 4AB, United Kingdom.
- World Health Organization (1969). Tech Report Series Number 419.
- World Health Organization (1960). Tech Report Series Number 189.

HCA 05 – Health-related SDG

Pages 50 - 56

Time Allotment – 1 Hour

Objectives

At the end of this session, the learners should be able to

- Understand the history of Sustainable Development Goals
- Understand the 17 interdependent goals
- Describe health-related SDG 3

Teaching Methods

- Lecture and Discussion

Goal 1 - No Poverty

End poverty in all its forms everywhere.

Goal 2 - No Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Goal 3- Good Health and well-being

Ensure healthy lives and promote well-being for all at all ages.

Between 2000 and 2016, the worldwide under-five mortality rate decreased by 47 percent (from 78 deaths per 1,000 live births to 41 deaths per 1,000 live births). Still, the number of children dying under age five is extremely high: 5.6 million in 2016 alone. Newborns account for a growing number of these deaths, and poorer children are at the greatest risk of under-5 mortality due to a number of

factors. SDG Goal 3 aims to reduce under-five mortality to at least as low as 25 per 1,000 live births. But if current trends continue, more than 60 countries will miss the SDG neonatal mortality target for 2030. About half of these countries would not reach the target even by 2050.

Goal 3 aims to reduce maternal mortality to less than 70 deaths per 100,000 live births. In 2015, maternal health conditions were also the leading cause of death among girls aged 15–19. Key strategies for meeting SDG Goal 3 will be to reduce adolescent pregnancy (which is strongly linked to gender equality), provide better data for all women and girls, and achieve universal coverage of skilled birth attendants.

Goal 3 also aims to increase access to clean water and sanitation and reduce malaria, tuberculosis, polio, and the spread of HIV/AIDS. From 2000–2016, new HIV infections declined by 66 percent for children under 15 and by 45 percent among adolescents aged 15–19. However, current trends mean that 1 out of 4 countries still won't meet the SDG target to end AIDS among children under 5, and 3 out of 4 will not meet the target to end AIDS among adolescents. N Goal 3 aims to achieve universal health coverage, including access to essential medicines and vaccines. It proposes to end the preventable death of newborns and children under 5 and to end epidemics such as AIDS, tuberculosis, malaria, and water-borne diseases, for example.[35] 2016 rates for the third dose of the pertussis vaccine (DTP3) and the first dose of the measles vaccine (MCV1) reached 86 percent and 85 percent, respectively. Yet about 20 million children did not receive DTP3 and about 21 million did not receive MCV1. Around 2 in 5 countries will need to accelerate progress in order to reach SDG targets for immunization.

Attention to health and well-being also includes targets related to the prevention and treatment of substance abuse, deaths and injuries from traffic accidents and from hazardous chemicals and air, water and soil pollution and contamination.

Goal 4 - Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

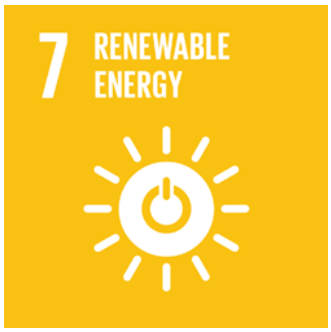
Goal 5 - Gender Equality

Achieve gender equality and empower all women and girls.

Goal 6 - Clean Water and Sanitation

Ensure availability and sustainable management of water and sanitation for all

Goal 7 - Clean Energy
Ensure access to affordable, reliable, sustainable and modern energy for all



Goal 8 - Good Jobs and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9 - Innovation and Infrastructure

Build resilient infrastructure promote inclusive and sustainable industrialization and foster innovation.

Goal 10 - Inequalities

Reduce inequality within and among countries

Target 10.1 is to "sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average". This goal, known as 'shared prosperity', is complementing SDG 1, the eradication of extreme poverty, and it is relevant for all countries in the world. Target 10.3 is to reduce the transaction costs for migrant remittances to below 3 percent. The target of 3 percent was established as the cost that international migrant workers would pay to send money home (known as remittances).

Goal 11 - Sustainable cities and communities

Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12 - Responsible Consumption

Ensure sustainable consumption and production patterns.

Goal 13 - Protect the Planet - Take urgent action to combat climate change and its impacts.

Goal 14 - Life below water - Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Goal 15 - Life on land - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Goal 16 - Peace and justice

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Goal 17 - Partnerships for the goals

Strengthen the means of implementation and revitalize the global partnership for sustainable development.

References:

1. Transforming our world: the 2030 Agenda for Sustainable Development. United Nations – Sustainable Development knowledge platform. Retrieved 24 Feb 2020.
2. Progress for Every Child in the SDG Era. UNICEF. Retrieved 24 Feb 2020.
3. United Nations: Gender equality and women's empowerment. United Nations Sustainable Development. Retrieved 24 Feb 2020.
4. WHO and UNICEF (2017) Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. Geneva.
5. Goal 8: Decent work and economic growth. UNDP. Retrieved 24 Feb 2020

HCA 06 – Gender and Protection Mainstreaming in Health Care

Pages 57 to 64

Time Allotment – 3 hours

Objectives

At the end of the session, the learners should be able to

- define sex and gender
- describe the characteristics of gender
- (describe manifestation of gender in everyday life
- describe importance of gender
- state the impact of gender on health
- describe the role of gender in access to health care
- describe gender policy of World Health Organization (WHO)
- describe gender mainstreaming
- describe concept of human rights
- describe definition of protection
- define 4 core principle of protection mainstreaming

Teaching Methods

- Lecture Discussion

1. Gender Mainstreaming in Health Care

1.1. Definitions of Sex and Gender

Sex refers to the biological and physiological characteristics of male and female animals, genitalia, reproductive organs, chromosomal complement, hormonal environment etc.

Gender refers to the society constructed refers, rights, responsibilities, possibilities and limitation that, in a given society, are assigned to men and women – in other words, to what is considered 'masculine' and 'feminine' in a given time and place.

Sex and gender are often used synonymously due to lack of clarity about the different between two terms.

Sex denotes the physical characteristics of a person. A person is born with a predetermined sex-either male or female. Sex is innate since it is biologically determined before birth.

Gender is learned through socialization. Gender refers are socially ascribed, taught and maintained. They are perpetuated through tradition and culture. Therefore, gender is used to describe the characteristics of women and men that are socially constructed.

People are born male and female but born to become boys and girls. Boys and girls grow into men and women in a socio-cultural context. As they grow, sex difference determines how they will behave and what they will be during the rest of their lives. This learned behavior and altitude make up gender identity and gender role.

Gender inequalities arise from the different and unequal roles and unequal power relations between men and women in different sphere of life. These inequalities have consequences on their lives, well-being and health. In most societies, women have less role in decision making about themselves and their health. Women have low control over their own health, have poor access to health services and inadequate capacity to protect themselves from risk to their health.

Cultural, political, environmental, economic, social, and religious factors play important role in formation and promotion perception of gender. Tradition, custom, law, class, ethics and individual or institutional bias further strengthen these perceptions.

1.2. Characteristics of Gender

1. Gender is relational – It refers not to women or men in isolation, but to the relationship between them and how this relationship is socially constructed, maintained and manifested.
2. Gender is hierarchical – The differences established between women and men, far from being neutral tend to attribute greater importance and values to the characteristics and activities is associated with what is masculine, and less value to what is associated with feminine characteristics and activities. This produces unequal power relationships.
3. Gender is dynamic – Concepts and perceptions about gender changes overtimes. Gender roles and relations have changed as civilization progressed. Gender roles have potential for modification through interventions directed towards behavior change.
4. Gender is context specific – gender roles and relations have varied according to ethnic group, socio-economic group, culture etc. Therefore, gender roles have to be seen within a historical and socio-cultural context.
5. Gender is institutional – Gender refers not only to the relation between women and men at the personal and private level, but to a social system that is supported by values, legislation, religion etc. Institutional mechanism further perpetuate the socially accepted meanings and perception of gender roles

1.3. Manifestations of Gender Difference in Everyday Life

(1) Social

- Different social roles and responsibility
- Man – head of the household, bread – winner
- Woman – nurturer
- Unequal opportunity in the family and community

(2) Educational

- Different educational opportunity and expectations
- Family resources are usually directed to boy's rather than girl's education.
- Girls are steered into less challenging academic tracks.
- Boys are sent into mathematics science stream
- Girls are sent into arts and humanities
- Although these academic boundaries are gradually disintegrating, it is a slow process.

(3) Occupational

- Man are encouraged to take up jobs which are perceived as requiring leadership and stamina e.g. – manger executive

- Women are steered into nurturing occupation. Which are perceived as congruent with their feminine – teacher, nurse etc.

(4) Economics

- Different in financial and other productive resources
- Credit loans and land ownership are seen as the sphere of men while production of items is seen as the responsibility of women

(5) Political

- Different in share power and authority
- Men are more involved in national and higher-level politics

1.4. Why Gender is Important

Gender issue is vital because

- Gender inequalities are an affront to human rights.
- Gender inequalities have a highly negative impact on the health of women and as a consequence, on health of families.

1.5. Impact of Gender on Health

The impact of gender is manifested at every stage of the life cycle of women and men, starting at conception and carrying on through childhood, adolescence, adult, and old age.

Gender inequalities concern both men and women since they have an impact on the lives and health of both. Men and women face differences in exposure to diseases, access to health services and consequences of health problems. Even among women, there are differences in access and utilization of health services by socioeconomic status, ethnicity and locality. It is necessary to obtain data by not only sex but also by age, socioeconomic status and other factors to understand the reality.

Impact of Gender Difference

- The male image of capacity to tolerate physical stress often hinders a man from readily expressing pain and weakness. This may delay treatment seeking and care during injuries and illnesses.
- Women face health problems not only due to biological disadvantages but also due to social inequalities based on gender differences.
- Most of the families prefer male child and it has effect on taking care at birth, during infancy and even in childhood.
- During adolescence

  Male adolescents are more vulnerable to:

  - violence
  - homicide
  - injuries related to sports and road traffic accidents
  - alcohol and drug abuse

  Female adolescents are more vulnerable to:

  - early marriage
  - teen age pregnancy
  - sexual harassment

- violent act like rape
- lured or sold for prostitution
- nutritional deficiency

- During adulthood

  Women have more specific risk such as
  - pregnancy and child birth related problems
  - consequences of child birth like vesico-vaginal fistula, prolapsed, infection etc.
  - anemia
  - depression
  - physical and sexual violence
  - gynaecological complications
  - prostitution and exposure to sexually transmitted diseases including HIV/AIDS
  - breast cancer, cervical cancer, ovarian cancer etc.
  - diabetes, hypertension, obesity
  - Maternal and Child Health services are not available or not accessible
  - Very little choice and control over family planning

  Men are more vulnerable to:
  - Cirrhosis liver
  - Lung cancer
  - Haemophilia
  - Hernia
  - Coronary artery diseases
  - Alcohol consumption
  - Smoking
  - Some occupational health problems e.g. accident

- Old age
  - Osteoporosis is more common in women
  - Mental depression is more common in women.

1.6. Access to Health Care and Gender

Reasons for why women are unable to access health care, even in times of emergency

- Health services may not be available. In many rural areas, especially in hard-to-reach areas, there are very few health centers and even they are spread out widely. These health centers are usually poorly equipped and understaffed. Referral services and institutional facilities are scare or far away.
- The shortage of trained health personal at the peripheral level is a serious constraint to women's health. In some countries, most deliveries take place at home without skilled birth attendances.
- Women are unable to utilize health services due to various socio-cultural constraints which pervade many societies in the Region such as restriction over mobility outside the house or village.
- transportation, time and cost are major constraints in poor income communities,
- Because of numerous demands on a woman's time and energy, a visit to the health center becomes cost-effective only when most of her needs and her children's needs can be taken

care of during one visit. In health centers, health services are usually not provided in integrated approach. For instance, antenatal care is held in different time to immunization or other services. For many women these multiple visits are impractical and often act as disincentives to seeking health care in public facilities.

- The working hours of government health facilities are often not suited for women workers. The quality of health services in these facilities is often perceived as not good. Therefore, many women seek private care which is expensive and adds to their economic burden. As private health care is expensive women tend to take only part of the treatment.
- Cultural sensitivities are major constraints. Many women do not want to consult male health care providers especially in rural areas.

1.7. World Health Organization's Gender Policy

- As a matter of policy and good public health practice, WHO will integrate gender considerations in all facets of its work.
- Integration of gender considerations, i.e. gender mainstreaming must become standard practice in all policies and programs.
- All programs will be expected to collect disaggregate data by sex, review and reflect on the gender aspects of their respective area of work and initiate work to development content specific materials.

1.8. Gender Mainstreaming in Health

- Gender mainstreaming is essential and integral to improve women's health. Compared to their male counterparts, women are unable to participate in decisions that affect their lives and their health due to gender discrimination.
- Gender mainstreaming is defined as "the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in any areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension in the designing, implementation, monitoring and evaluation of policies and programs in all political, economic and social spheres, such that inequality between men and women is not perpetuated"
- Equity requires that program designs and resource allocation are done keeping in perspective the need of different groups with particular concern for those who are at most disadvantage.

2. Protection Mainstreaming

Protection mainstreaming is concept of mainstreaming protection principle with service deliver to ensure people's right are protected and promoted through receiving services. To understand protection mainstreaming it need to understand principle of human rights and protection which foundation of protection are mainstreaming

Key characters of human rights:

- Human rights are rights inherent to all human beings. Because we are human certain things are owed to us and we have the freedom to do certain things

- Human rights law places and obligation on State to act in a particular way prohibits States from engaging in specified activities
- Human rights are universal.
- Human rights are inalienable, indivisible, interrelated and interdependent

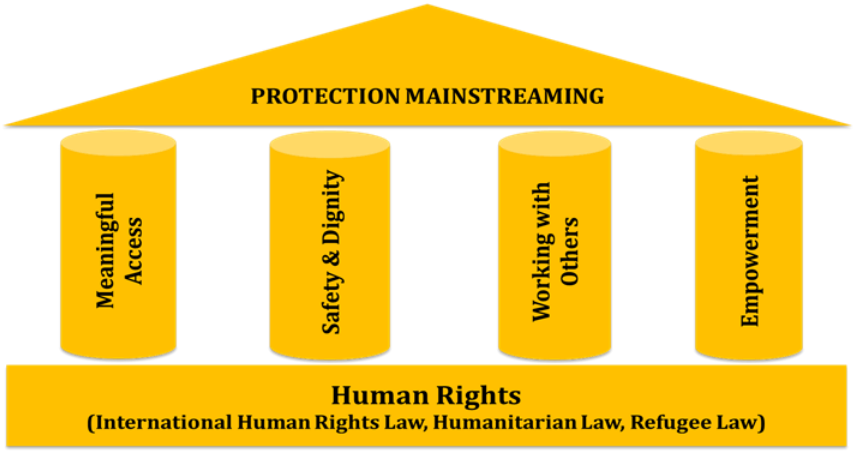
2.1. Definition of Protection

The concept of protection encompasses:

"All activities aimed at obtaining full respect for the rights of the individual in accordance with the letter and the spirit of the relevant bodies of law (i.e., human rights law, international humanitarian law, refugee law)."

Inter-Agency Standing Committee (IASC)

2.2. Core Principle of Protection Mainstreaming



Principle 1 - Meaningful access

Recognized as a crucial component of the work, we ensure that people have a meaningful opportunity to attain their rights by accessing available services and assistance. Conflict and divisions within society often emerge from discrimination resulting in individuals or groups being unable to access services. Barriers to access can exist in different forms, including logistical and social/cultural factors, insecurity and a lack of information on available
assistance and services.

Key messages:

It is essential for governments and civil society organizations (including international NGOs) to take appropriate measures to ensure that people have a meaningful opportunity to attain their rights by accessing available services and assistance without discrimination or impediment. In order for access to be meaningful, assistance and services must be:

- Available in sufficient quantity and quality
- Provided on the basis of need and without discrimination
- Within safe and easy reach and known of by potential beneficiaries
- Physically and financially accessible
- Culturally appropriate and sensitive to age and gender

Barriers to accessing assistance and services can present themselves in many different forms. Access can be barred /limited due to distance, security, a lack of information, social/cultural factors and discrimination. Vulnerable groups and individuals(like ethnic minorities, elderly persons, persons with disabilities, single-headed households) may face additional barriers and we need to take these into account when designing, implementing and monitoring programs.

Principle 2 – Safety and dignity

Concern for the safety and dignity of individuals is central to mainstreaming protection into sector programs. The safety of beneficiaries should be the primary consideration in humanitarian action. But being safe is not enough if people do not have their dignity, people need to feel valued, have a sense of self-respect and feel in control of their lives. Prioritizing safety and dignity entails ensuring that our interventions do not inadvertently cause harm to our beneficiaries.

Key messages: (some excerpts from ALNAP (2003). Humanitarian Protection: A Guidance Booklet)

- Protecting the individual requires protecting not only the body, but also the mind and soul.
- Our work as a humanitarian assistance must go beyond providing material assistance. To protect the rights of individuals we must prioritize their safety and dignity within our work.
- Safety is fundamental to survival, but the emotional and material quality of that safety is critical.
- The inner emotional experience of an individual is as important as their outward physical needs.
- A person's ability to maintain a strong sense of personal identity and self-respect can hold them through extreme physical suffering.
- There is great potential for us to do harm in our work. We must constantly analyze our work and the bad consequences it might have caused. It is never too late to change program activities.

Principle 3 - Working with others

Protection is a collective responsibility that requires individuals, communities, civil society, the international community and states to engage with one another constructively to ensure that rights are respected. We all have a responsibility to protect.

Key messages:

- Protection is a collective responsibility – States, the international community, local civil society, communities and individuals all have responsibility to protect rights.
- We can take actions to protect rights through collaborating with other actors, even if we cannot directly do anything to address a particular issue within our sector.

Principle 4 – Empowerment

Protection is fundamentally about people and seeking to capitalize on their knowledge of the problems that they face and build their capacity to address these problems. The IRC therefore strives

to put the people that we are trying to help at the centre of the decision-making processes that affect their lives so that services are choice-driven and client-focused. Special attention is also paid to ensuring the participation of, and consultation with, the most at risk/marginalized members of society whose voice may not otherwise be heard.

References:

1. World Health Organization. "Training Module for Health Professionals on Gender Mainstreaming in Health". South East Asia Regional Office, New Delhi.

HSM 07 – Total Quality Management

Pages 65- 70

Time Allotment – 3 Hours

Objectives

At the end of this session, the learners should be able to

- define health care quality
- list the attributes of quality
- define total quality management
- describe basic concepts of total quality management
- describe principles of total quality management
- describe basic elements of total quality management

Teaching Methods

- Lecture discussion

1. Introduction

Total Quality Management (TQM) is considered a very important factor for the long-term success of an organization. It is a systematic quality improvement approach for firm-wide management for the purpose of improving performance in terms of quality, productivity, customers' satisfaction, and profitability.

TQM is a management philosophy that is intended to empower every member of the organization. It is intended to promote, continuous, sustained and long-term improvement in quality and productivity and to eliminate employees' fear of change. TQM process depends on a certain set of values and beliefs shared by all organizational members.

The basic principle of TQM is that the cost of prevention is less than the cost of corrections. TQM focuses on process improvement, customer and supplier involvement, team work, training and education in an effort to achieve customer satisfaction, cost effectiveness, and defect-free work. TQM provides the culture and climate essential for innovation and for technology advancement.

2. Definition of Health Care Quality

There are many definitions for quality. Quality means 'degree of excellence' or 'degree of goodness'. The international acceptance of the definition of quality is "Meeting customer's requirement".

Some of the definitions are:

- Meeting the expectations of customers (Feigenbaum)
- Meeting the present and future needs of the consumers (Deming)
- Conformance to requirements (Crosby)
- Fitness for purpose of use (Juran)

3. Attributes of Quality

There are five broad attributes identified for quality are

- Reliability – Ability to perform the promised service dependably and accurately
- Assurance – Knowledge and courtesy of employees
- Tangible – Physical facilities, equipment and appearance of personnel.
- Empathy – Caring, individualized attention provided to the customers
- Responsiveness – Willingness to help customers and provide prompt service

4. Definition of Total Quality Management

- TQM can be defined both as a philosophy or a set of guiding principles for the foundation of an organization. Management allocates scarce resources effectively and efficiently. It utilizes and applies appropriate management tools to continuously improve the process and performance within an organization to meet or exceed the internal and external customers' needs and expectations.
- TQM is a holistic management philosophy that strives for continuous improvement in all function of an organization and it can be achieved only if the total quality concept is utilized from the acquisition of resources to customer service.
- Management approach of an organization centered on quality, based on the participation of all members of an organization and aiming at long-term success through customer satisfaction and benefits to all members of the organization and to society.

5. Basic Concepts of Total Quality Management

1) A committed management must participate in the quality program. A quality improvement committee must be established to develop a clear vision, set long-term goals and direct the

program. Managers of all levels must participate in quality improvement teams. TQM is a continuous activity and it must be entrenched in the culture of the organization. It must be communicated to all people.

2) The key to an effective TQM program is to focus on the customers, i.e. both internal and external. In the health sector, the internal customers are co-workers, i.e. health professionals. External customers are patients and families for hospital services and the population. As customers' satisfaction is the most important consideration the voice of the customers must be listened.
3) TQM is an organization-wide challenge. It is everyone's responsibility. All personnel especially managers (leaders) must be trained in TQM, statistical management tools and other appropriate quality improvement skills.
4) There must be continuous effort to improve all products or and services, i.e. promotive, preventive, curative and rehabilitative interventions so as to meet or exceed the needs of the customers.
5) A partnership relationship should be fostered with internal co-workers and end users (patient and population)
6) Performance measures should be established so as to monitor the continuous quality improvement mechanism.

6. Principles of TQM

In the Health Care Management System TQM should be used eight principles of quality management.

Sr. No	Principle	Description
1	Customer focused Organization	Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations
2	Leadership	Leaders establish unity of purpose and direction. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

3	Involvement of people	People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.
4	Process approach	A desired result is achieved more efficiently when activities and related resources are managed as a process.
5	System approach to management	Identifying, understanding and managing a system of interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.
6	Continual improvement	Continual improvement of the organization's overall performance should be a permanent objective of the organization.
7	Factual approach to decision making	Effective decisions are based on the analysis of data and information.
8	Mutually beneficial supplier relationships	An organization and its suppliers are interdependent, and a mutually beneficial relationship enhances the ability of both to create value.

TQM is a people focused management system that aims at continuing increase in customer satisfaction at continually lower real cost. TQM system approach and an integral part of high-level strategy, it works horizontally across functions and departments, involves all employees, top to bottom and extends backward and forward to include the sully chain and the customer chain. TQM stresses learning and adaption to continual change as keys to organizational success.

Deming Principles to Healthcare System

- Insists on zero defects eliminate inspection through proper quality control on suppliers
- Constant improve the system
- Education and training program
- Maintain the records
- Enumerate numerical goals and work standards
- Remove the barriers that hinder the worker through the day

- Top management support for implementing TQM

7. Basic Elements of TQM

1) Customer focus

   Quality will be judged by the customers. Reduction of defects and errors and eliminating causes of dissatisfaction contribute significantly to healthcare organization's view of quality. To understand customer's requirement and values customer survey can be done. Business ethics, patient's health and safety, environment and sharing of quality standards in the healthcare system and community activities are needed.

2) Strategic Planning and Leadership

   Strategic planning is important to anticipate customer's expectations, new opportunities, advanced diagnostic technologies development, evolving patient care system and social expectations. Leaders must be role model of the members of organization.

3) Continues improvement and learning

   Continuous improvement is part of organizational management. To achieve highest performance level, continuous improvement and learning is needed. Learning refers to adaption to changes, leading to new goals or approaches.

4) Empowerment and teamwork

   The success of healthcare organization largely depends on the knowledge, skills and motivation of its workforce. Team work is essential to attain quality health care.

5) Process management

   Most of the problems in healthcare organization are associated with process and few are due to workers themselves. Managers have to plan the activities required for the high level of performance in the process and identify opportunities for improving quality and customer's satisfaction.

6) Tools for process management

   The tools for process management are

   - Team building and group integration tools
   - Specific technical tools

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- Process flow chart
- Checklist
- Fishbone chart
- Process control chart etc.

7) Quality assurance and control

Quality assurance is the planned or systematic actions necessary to provide adequate confidence that a patient services or safety will satisfy given requirement for quality. The activities for quality assurance and control include quality planning, control, improvement, internal audit, quality advice and expertise, training of personal in quality, analysis of customer diagnosis, treatment records, and medical claims detail.

8. Summarization of Theory of TQM

1) Quality leads to lower cost as defects are reduced.
2) Most defects are caused by the system, not the worker.
3) Inspection is too late; aim to reduce defects during production and eliminate mass inspection.
4) Eliminate numerical quota, slogans, exhortation and targets for the workforce and promote sustained and continuous improvement of process and quality of output.
5) Drive out fear of change from workers: institute vigorous programs of education, training and retraining to help the workforce improve continuously and to increase their job security.
6) Break down barriers between staff areas and abandon review systems that will destroy team work and create rivalry.
7) End the practice of awarding business on price tag alone: look for suppliers committed to quality and develop long term relationships with them.

References:

1. Chakravarty, Abhijit. , Parmar, NK and Ranyal, Wg Cdr RK (2001). "Total Quality Management, The new paradigm in Health Care Management". MJAFI, 57:226-229
2. Gharakhani, D., Rahmati, H., Farrokhi, M.R., and Farahmandian, A (2013). "Total Quality Management and Organizational Management". American Journl of Industrial Engineering, 2013, Vol.1. No 3, p 46-50.
3. Patel, Gunjan . "Total Quality management in Healthcare". Generated by Foxit PDF Creater© Foxit Software, http:///www.foxitsoftware.com