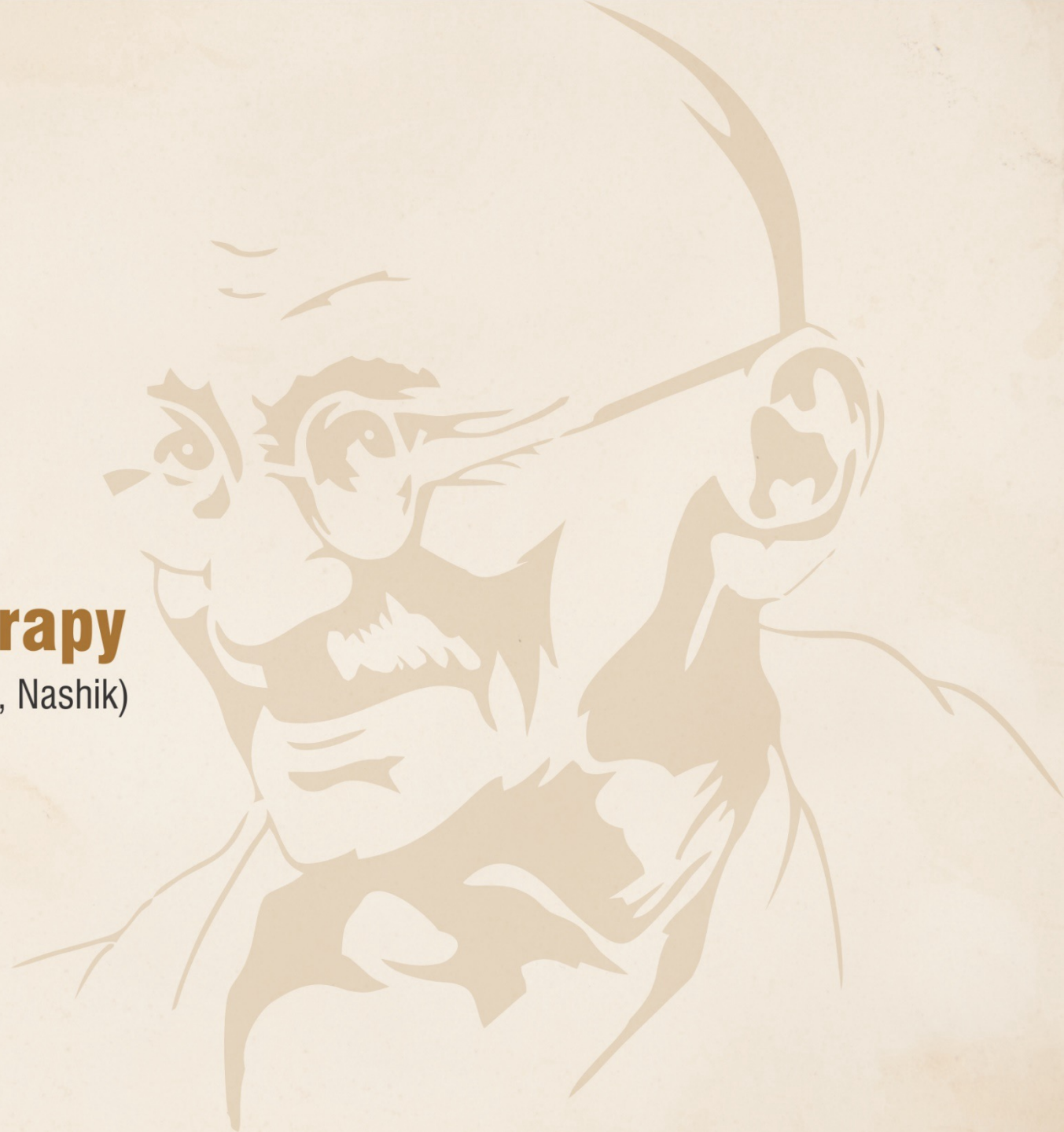




MAHATMA GANDHI MISSION

MGM Institute of Physiotherapy

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COMMUNICABLE DISEASES

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DYNAMICS COMMUNICABLE DISEASES TERMINOLOGIES



- **Infection:** Entry & development or multiplication of an infectious agent in body of man or animals
- **Contamination:** Presence of an infectious agent on a body surface
- **Infestation:** Lodgement, development & reproduction of arthropods on surface of body
- **Host:** A person or other animal, including birds and arthropods, that affords subsistence or lodgement to an infectious agent under natural (as opposed to experimental) conditions

DYNAMICS COMMUNICABLE DISEASES TERMINOLOGIES



- **Infectious disease:** A clinically manifest disease of man or animals resulting from an infection
- **Contagious disease:** Disease transmitted through contact
- **Communicable disease:** An illness due to a specific infectious agent or its toxic products capable of being directly or indirectly transmitted from man to man, animal to animal, or from the environment (through air, dust, soil, water, food, etc.) to man or animal

DYNAMICS COMMUNICABLE DISEASES TERMINOLOGIES



Epidemic (Epi upon; demos = people): Unusual occurrence in a community or region of disease, specific health-related behaviour (e.g., smoking) or other health related events (e.g., traffic accidents) clearly in excess of expected occurrence

Endemic (En=in; demos=people): Constant presence of a disease or infectious agent within a given geographic area or population group, without importation from outside; may also refer to the "usual" or expected frequency of the disease within such area or population group

Sporadic (scattered about): Irregularly, haphazardly from time to time & generally infrequently

Pandemic: An epidemic usually affecting a large proportion of population, occurring over a wide geographic area such as a section of a nation, the entire nation, a continent or world

DYNAMICS COMMUNICABLE DISEASES TERMINOLOGIES



- **Exotic:** Diseases which are imported into a country in which they do not otherwise occur
- **Zoonosis:** An infection or infectious disease transmissible under natural conditions from vertebrate animals to man
- **Nosocomial infection (hospital acquired):** Infection is an infection originating in a patient while in a hospital or other health care facility
- **Opportunistic infection:** defence to infect host & hence cause disease
- **Iatrogenic (Physician induced):** Any untoward or adverse consequence of a preventive, diagnostic or therapeutic regimen or procedure, that causes impairment, handicap, disability or death resulting from a physician's professional activity or from the professional activity of other health professionals
- **Surveillance:** Continuous scrutiny of factors that determine occurrence & distribution of disease & other conditions of ill health
- **Eradication:** Termination of all transmission of infection by extermination of the infectious agent through surveillance & containment

DYNAMICS COMMUNICABLE DISEASES

DISEASE TRANSMISSION

SOURCE
OR
RESERVOIR

MODES
OF
TRANSMISSION

SUSCEPTIBLE
HOST

DYNAMICS COMMUNICABLE DISEASES DISEASE TRANSMISSION



Source & reservoir

- Starting point for occurrence of a communicable disease is existence of a reservoir or source of infection
- Source: Person, animal, object or substance from which an infectious agent passes or is disseminated to the host
- Reservoir : Any person, animal, arthropod, plant, soil or substance {or combination of these) in which an infectious agent lives & multiplies, on which it depends primarily for survival, & where it reproduces itself in such manner that it can be transmitted to a susceptible host
- Types: Human, Animal, Reservoir in non-living things

DYNAMICS COMMUNICABLE DISEASES

DISEASE TRANSMISSION



Source & reservoir: Human reservoir (Case or carrier)

- Cases:
 - A person in population or study group identified as having the particular disease, health disorder or condition under investigation
 - Spectrum:
 - Clinical illness: mild or moderate, typical or atypical, severe or fatal depending upon the gradient of involvement
 - Subclinical cases: inapparent, covert, missed or abortive cases. They are equally important as sources of infection
 - Latent infection: Host does not shed infectious agent which lies dormant within the host without symptoms (and often without demonstrable presence in blood, tissues or bodily secretions of the host)
 - Forms
 - Primary case: 1st case of a communicable disease introduced into population unit being studied
 - Index case: to 1st case to come to the attention of investigator; it is not always the primary case
 - Secondary case: Are those developing from contact with primary case
 - Suspect: Case is an individual (or a group of individuals) who has all of the signs and symptoms of a disease or condition, yet has not been diagnosed as having the disease or had the cause of the symptoms connected to the suspected pathogen

DYNAMICS COMMUNICABLE DISEASES

DISEASE TRANSMISSION



Source & reservoir: Human reservoir (Case or carrier)

- Carriers:
 - An infected person or animal that harbours a specific infectious agent in absence of discernible clinical disease & serves as a potential source of infection for others
 - Less infectious than cases, are more dangerous than cases
 - By Types
 - Incubatory: those who shed the infectious agent during incubation period of disease
 - Convalescent: those who continue to shed the disease agent during period of convalescence
 - Healthy: Victims of subclinical infection who have developed carrier state without suffering from overt disease, but are nevertheless shedding the disease agent
 - By duration
 - Temporary: those who shed the infectious agent for short periods of time
 - Chronic: excretes the infectious agent for indefinite periods. Chronic carrier state occurs in a number of diseases
 - Portal of exit
 - Urinary
 - Intestinal
 - Respiratory

DYNAMICS COMMUNICABLE DISEASES DISEASE TRANSMISSION



Source & reservoir: Animal reservoir (Case or carrier)

- Source of infection may sometimes be animals & birds
- Reservoir in non living

DYNAMICS COMMUNICABLE DISEASES

DISEASE TRANSMISSION

Mode of transmission

A. DIRECT

- A. Direct contact
- B. Droplet infection
- C. Contact with soil
- D. Inoculation into skin or mucosa
- E. Transplacental (vertical)

B. INDIRECT TRANSMISSION

- A. Vehicle-borne
- B. Vector-borne
 - A. Mechanical
 - B. Biological
- C. Air-borne
 - A. Droplet nuclei
 - B. Dust
- D. Fomite-borne
- E. Unclean hands and fingers

TUBERCULOSIS-Introduction



- Infectious disease caused by M. tuberculosis
- Target organs: lungs (most common) intestine, meninges, bones and joints, lymph glands, skin & other tissues of body
- Chronic with varying clinical manifestations

TUBERCULOSIS-Problem Statement



- India highest TB burden country 1/4th of the estimated global incident TB cases in 2013
- Epidemiological indices:
 - Incidence: New
 - Prevalence: Old & new
 - Mortality: Death
 - Case fatality: Risk of death
 - Case notification: New Recurrent

CONCEPT OF HEALTH CARE



- Not synonymous to medical care
- Personal services that are provided directly by physicians or rendered as result of physicians instructions

HEALTH SYSTEM



- Management or administrative system/structure: Caters health care services
- Basic concepts
 1. Comprehensive health care
 - Bohre committee in 1946: Integrated preventive, curative, promotive & rehabilitative services (primary health care)
 - Criteria:
 - Adequate in no.
 - Close to beneficiaries
 - Widest cooperation b/w user, services & professionals
 - Available irrespective their ability to pay
 - Vulnerable group
 - Healthy environment at home & workplace

HEALTH SYSTEM



- Basic concepts

- 2. Basic health service

- WHO/UNICEF in 1965
 - Network of coordinated, peripheral & intermediate health units capable of performing effectively a selected group of functions essential to health of an area & assuring availability of competent professional & auxiliary personnel to perform these functions

- 3. Primary health care

- International conference at Alma Ata in 1978
 - Prior: "first contact care", "easily accessible care", "services provided by generalists
 - Essential health care made universally accessible to individuals and acceptable to them, through their full participation and at a cost the community and country can afford"

LEVELS OF HEALTH CARE



Primary

- 1st level of contact with the national health system, where "primary health care" .("essential" health care)
- Close to people, where most of their health problems can be dealt with & resolved
- Indian context: PHC centres & their subcentres
- Village "health teams": bridge cultural & communication gap between rural people & organised health sector.
- India "Health for All" by 2000 AD: PHC essential part

LEVELS OF HEALTH CARE



Secondary

- Intermediate
- Complex problems
- India: District hospitals & community health centers

Tertiary

- More specialized & requires specific facilities and attention of highly specialized health workers
- Regional or central level institutions, e.g., Medical College Hospitals, All India Institutes, Regional Hospitals, Specialized Hospitals and other Apex Institutions
- Fundamental & necessary function of health care system: Sound referral system.
- For a large majority of developing countries (including India) this aspect of the health system remains very weak

MILLENNIUM DEVELOPMENT GOALS



- September 2000, representatives from 189 countries: Millennium Summit in New York, to adopt UN Millennium Declaration.
- Goals: Development and poverty eradication "Millennium Development Goals" (MDGs).
- Health: 3 of 8 goals, 8 of the 18 targets, 18 of the 48 indicators health related
- Govt of India: Target 2015

References



Park K. Park's Textbook of Preventive and Social Medicine, 22nd ed. Banarsidas Bhanot; 2013. ISBN-13: 978-938-2219-026. Chapter 3 (Page number 75-80)

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