Community Medicine

Terminology in Public Health

Objectives

1. To define different terms used in public health setting
2. To apply these terms and use them in discussion and writing

Resources: Doctors' slides

Important | Notes | Extra

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Feedback - Editing File

HEALTH, what does it mean?

"Health is a state of **complete physical, mental, and social well-being** and not merely (not only) the absence of disease or infirmity." — WHO

Multi-factorial

It is believed that diseases occur due to the interaction of biological, social, environmental, psychological, genetic and economic factors, thus the cause of diseases is **multi-factorial**

Defining disease

There is no straight forward definition for disease
Simplest definition:
"Any deviation from normal functioning or state of complete physical and mental well-being"
Disease is better explained on a spectrum:
i.e. carrier state, subclinical, clinical, severe…etc.

Distinguishing disease from illness and sickness

Not everyone who has the disease will become ill, and not everyone who has the disease will experience sickness

Illness

"the individual's perception and behavior in response to the presence of disease, and the disease's impact on the psychological environment"

Sickness

"A state of social dysfunction; the role that one assumes when he/she is ill"

What is Final scope of Health?

Final scope of health is the ability to lead a socially and economically productive life.
The healthier a person is, the more productive they get.

Many sectors (health, education, agriculture, police) need to work together to help achieve well being which cannot be achieved with health services only.

Public Health

"the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals. "

RISK FACTOR

A risk factor is an attribute or determinant that is significantly associated with the development of a disease.
From a public health perspective, we are interested in attributes that are modifiable by intervention in order to reduce the possibility of disease occurrence.

RISK GROUP
A group of the population that have certain characteristics that make them at greater risk for developing a certain disease compared to the rest of the population
Targeting these groups in the prevention and control of diseases is known as "*The risk approach*"

TRUE or FALSE?

Risk factor and disease cause are the same

FALSE. Risk factors are considered significantly associated with diseases, but causative association is not necessarily there (except for in certain risk factors). Causation is additive, and diseases occur through interaction of a combination of factors

MORBIDITY

Any departure (lack) -subjective or objective- from a state of physiological or psychological well-being.

In contrast to the words 'disease', 'illness' and 'health problem', the word morbidity is used in a **'collective' way to describe the overall situation** in a community/country about prevalent health issues affecting various population groups.

morbidity rate

looks at the incidence of a disease across a population and/or geographic location during a single year

Morbidity refers to the unhealthy state of an individual, while mortality refers to the state of being mortal. Both concepts can be applied at the individual level or across a population. For example, a **morbidity rate** looks at the incidence of a disease across a population and/or geographic location during a single year.
Mortality rate is the rate of death in a population. The two are often used together to calculate the prevalence of a disease — e.g., measles — and how likely that disease is to be deadly, particularly for certain demographics.

	Morbidity	Mortality
Definition	Morbidity refers to the state of being diseased or unhealthy within a population.	Mortality is the term used for the number of people who died within a population.
Demographic reference	Morbidity refers to an incidence of ill health in a population.	Mortality refers to the incidence of death or the number of deaths in a population.
Types of data	Data is collected according to the disease type, gender age, area.	The mortality rate can be distinguished into crude death rate; perinatal mortality rate; the maternal mortality rate; infant mortality rate; child mortality rate; standardized mortality rate; and age-specific mortality rate.
indicators	• Incidence & Prevalence • Notification Rates • Attendance Rates at hospitals, etc • Admission, readmission and discharge rates • Duration of hospital stay • Spells of sickness •	• Crude Death Rate • Expectation of Life • Infant Mortality Rate • Child Mortality Rate • Under-5 proportionate mortality rate • Maternal Mortality Rate • Proportional Mortality Rate • Disease-specific Mortality Rate

EPIDEMIOLOGY

Epidemiology is often described as the **basic science of public health.**
Epi: on or upon. **Demos:** people or population. **Logos:** study of.

Epidemiology is the study of the distribution and determinants of any health-related states or events in specified populations, and the application of this study to the control of health problems
This encompasses studying disease frequency, its distribution and determinants

Disease frequency

The frequency of disease, disability or mortality are often expressed in the form of measurements

These could be:

Number of health events

Proportions (e.g. prevalence)

Rates (e.g. incidence, mortality rate, birth rate)

Ratio (e.g. maternal mortality ratio)

Comparing these measurements between populations can give clues about disease etiology

POPULATION/COMMUNITY

A specific group of people, often living in a defined geographical area, who share a common culture, values and norms, are arranged in a social structure according to relationships which the community has developed over a period of time.

DISTRIBUTION

Epidemiology is concerned with the frequency and pattern of health events in a population
Frequency refers not only to the number of health events but also to the relationship of that number to the size of the population (rates)
Pattern refers to the occurrence of health-related events by time, place, and person.

Diseases occur in patterns in communities.
It is important to study the distribution patterns in different subgroups in the population in order to get clues about causative (or risk) factors.
Distribution of the patterns is studied by person, place and time.

DETERMINANTS OF HEALTH

From the word "determine".
A factor that affects the nature or outcome of something.
Determinants of health: the range of personal (breast cancer in females, prostate cancer in males), social (varicose veins in teachers, asbestosis in constructional workers), economic (Hepatitis A in developing countries) and environmental (TB in prisoners) factors which determine the health status of individuals or populations.

Personal or proximal determinants of health are **age**, **sex**, **genetic factors** and **life style factors such as smoking habits, diet and physical activity play**.

COMMUNICABLE DISEASE

A disease 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
easily transmissible diseases are called **contagious** diseases.
Communicable Disease (typhoid, influenza,..
Non- Communicable Disease (DM, cancer,..

Infectious disease
A clinically manifest disease of man or animals resulting from an infection

Contagious disease
A disease that is transmitted through contact

Infestation
The lodgement, development and reproduction of arthropods on the surface of the body or in the clothing

CONTAMINATION

The presence of living infectious agents on the **exterior** surface of the body or on the clothes or articles of the person or on any inanimate object in the environment including water, milk and food.

- We call it contaminated water or contaminated food, not infected water or infected food. E.g. Cholera contaminated water causes infection, leading to severe diarrhea.

INFECTION

The **entry** and development or multiplication of an infectious agent in the body of man or animals.

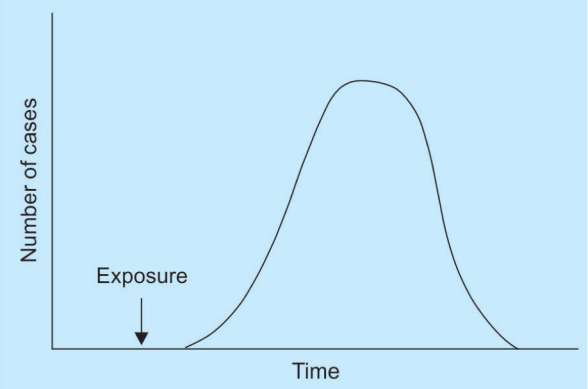
An infection does not always cause illness. The immune system of immunocompetent individuals is able to fight most of the pathogenic microbes that enter the body.

There are several levels of infection (Gradients of infection):

Colonization (S. aureus in skin and normal nasopharynx).
Subclinical (unapparent) (unclear) cases.
Latent infection
Clinical cases (mild/moderate/severe) (typical/atypical).

Point Source Epidemic

Single exposure common vehicle outbreak: Also known as 'Point Source Epidemic', where exposure to disease agent is brief and essentially simultaneous
– Epidemic Curve rises and falls rapidly, with no secondary waves
– Explosive: Clustering of cases within a narrow interval of time
– All cases develop within one incubation period of disease

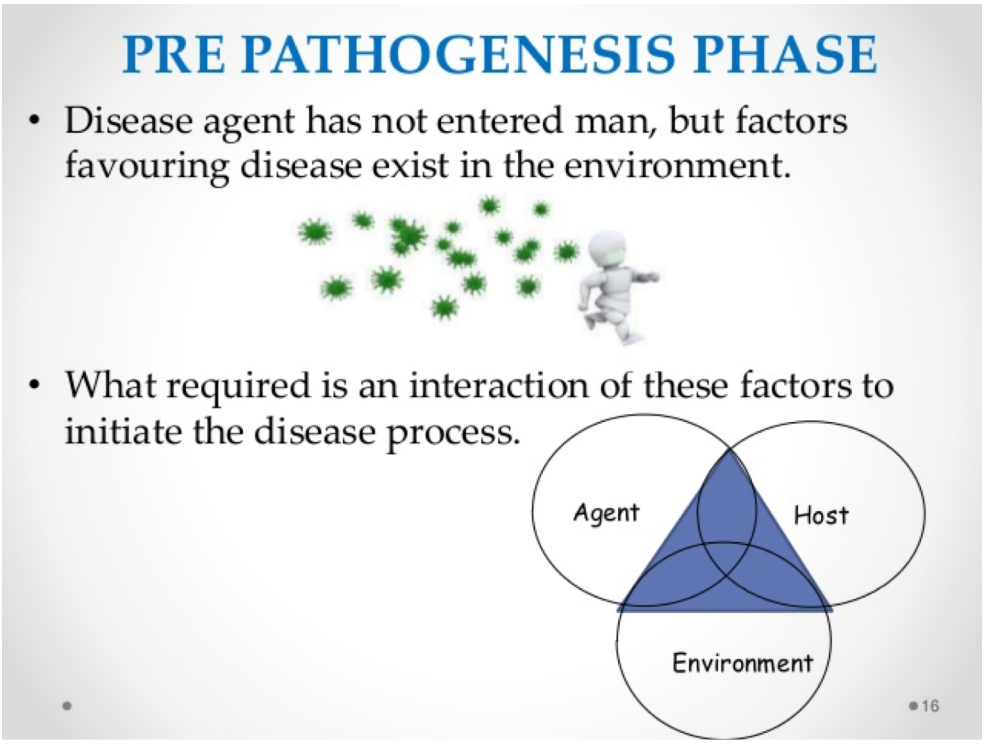


PATHOGENESIS PHASE OF DISEASE

The pathogenesis of a disease is the biological mechanism (or mechanisms) that leads to the diseased state.
The term can also describe the origin and development of the disease, and whether it is acute, chronic, or recurrent.

- Begins with 'Entry of organism' in susceptible host
- Multiplication of organism, disease initiation and progression
- Final outcome may be recovery, disability or death
- Host may become a clinical case, subclinical case or carrier

- Secondary and tertiary levels of prevention are possible ➢
- Screening of disease may improve prognosis and increase survival ➢



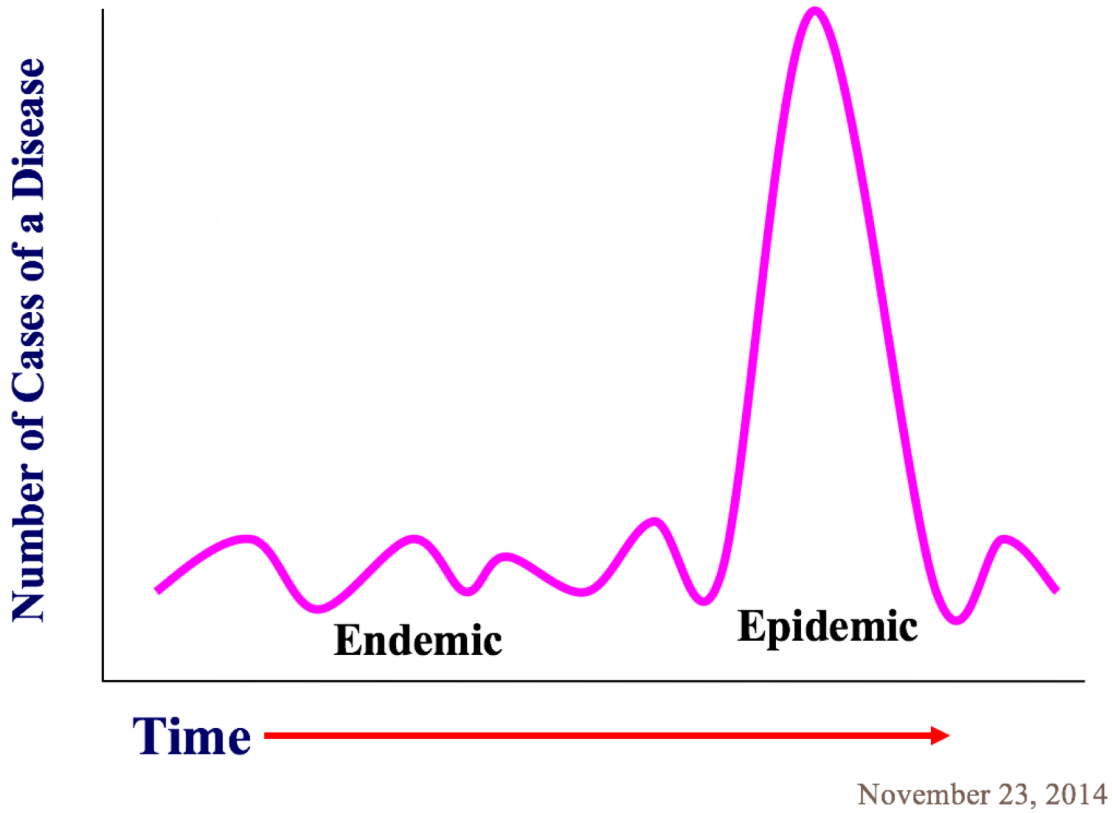
ENDEMIC

The **constant presence of a disease** or infectious agent within a given geographic area or population group; may also refer to the **usual prevalence** of a given disease within such area or group.
E.g. Typhoid, Hepatitis A.

EPIDEMIC

The sudden increase in the number of cases for a certain disease above what is normally expected in that population

Male Definition: The occurrence of more cases of a disease than expected in a given area or among a specific group of people over a particular period of time.



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PANDEMIC

When an epidemic spreads over several countries usually affecting a large number of people
E.g. Influenza A H1N1 in 2009.
An **endemic** disease can become **epidemic**, and an **epidemic** disease can become **pandemic.**
Male Definition: An **epidemic** occurring over a **very wide area** (several countries or continents) at the same time and usually affecting a large proportion of the population.

OUTBREAK

It is an epidemic that occurs in a limited geographic area (e.g. an institution, a home facility, a neighborhood, a village…). i.e. a localized epidemic

Male Definition: A localized epidemic affecting a large number of a group in the community.
E.g. outbreak of food poisoning.

SPORADIC

scattered about.

Cases occur **irregularly,** haphazardly **from time to time** and generally infrequently.
Cases are **few** and **separated** widely in space and time **showing no connection** to each other, nor a recognizable common source of infection

NOSOCOMIAL INFECTIONS (HOSPITAL-ACQUIRED INFECTION)

An infection originating in a medical facility; e.g., occurring in a patient in a hospital or other health care facility in whom the infection was not present or incubating at the time of admission.
It includes infections acquired in the hospital but appearing after discharge; it also includes such infections among staff.
Traumatized patient was admitted to the ER, after several days in the ICU, he starts showing signs and symptoms of a UTI. After investigation, it was found that the urinary catheter is highly contaminated with bacteria. Note that the patient did not have the UTI upon admission.

VIRULENCE

The **ability** of an infectious agent **to cause severe disease**, measured as the proportion of **persons with the disease who become severely ill or die**.

Virulence is a pathogen's or microbe's ability to infect or damage a host

RESERVOIR OF INFECTION

The reservoir (host) of an infective agent is the habitat in which an infectious agent normally lives, grows, and multiplies in.
Reservoirs include humans, animals, or the environment.

ZOONITIC DISEASE (ZOONOSIS)

An infection or infectious disease transmissible under natural conditions from **vertebral animals** (reservoirs) **to humans.**

Zoonotic diseases include:
brucellosis (cows and pigs),
anthrax (sheep),
plague (rodents),
rabies (dogs, bats and other mammals).

Difference between sterilization and disinfection

Disinfection
Thermal or chemical destruction of pathogen and other types of microorganisms

Sterilization
A validated process used to render a product free of all forms of viable microorganisms including bacterial spores.

CARRIER

A person or animal that **harbors the infectious agent** for a disease and can transmit it to others, but **does not demonstrate signs** of the disease.

COMMUNICABLE PERIOD

The **time** during which an infectious agent may be **transmitted** directly or indirectly **from an infected person to another** person or animal.

INCUBATION PERIOD

The time interval **from exposure** to an infectious agent to the **onset of symptoms** of an infectious disease.

Chemoprophylaxis

The administration of a chemicals, including antibiotics, to **prevent the development** of an infection or to **slow progression** of the disease to a clinically manifest form.

Chemotherapy

The use of a chemical **to treat** a clinically recognizable disease or **to limit its further progression.**

THE END