

Terminology in Public Health

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OBJECTIVES OF THE LECTURE

By the end of this lecture students will be able to:

- Explain common definitions and terminology used in public health.
- Apply these definitions in different situations.

HEALTH, what does it mean?

When you ask someone if they're OK, the state of "being healthy" is subjective; the definition varies from a person to another depending on so many scales. So, in order to minimize the subjectivity, it has been defined as the following:

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

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.

DISEASE, ILLNESS AND SICKNESS

What is the difference?

- **Disease:** abnormal **medically defined changes** in the structure or functioning of the human body. The presence of signs and symptoms that lead to a diagnosis.
- **Illness:** the **individual's experience** or subjective perception of lack of physical and/or mental well-being. Depends on the person's definition of being healthy, and may or may not be a true, medically defined disease.
- **Sickness:** consequences (effect) **to function normally** in social roles. Struggling to maintain the normal lifestyle.

MORBIDITY

a word that summarizes everything

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.

EPIDEMIOLOGY

Epidemiology is often described as the **basic science of public health.**

Epi-demi-ology = Epi Demos Logos

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**

Three main words must be understood under the definition of Epidemiology, which are:

- Population/Community.
- Distribution.
- Determinants.

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.

They can be the people of a country, city, tribe, or even a family. Certain DISEASES are common between certain GROUPS because they SHARE certain aspects of the lifestyle; e.g. obesity is very common in the USA because the population shares the habit of consuming fast food, and deaths of road traffic accidents are very common in KSA because wearing the seat-belt is not considered “manly” among young-adult males.

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 = related to how much?).

10 people out of 100 compared to 10 people out of 1000000 are two completely different situations.

- **Pattern** refers to the **occurrence** of health-related events **by time, place, and person.**

E.g. pattern of car accident injuries in the morning, pattern of car accident injuries in Riyadh or Pattern of car accident injuries among adults.

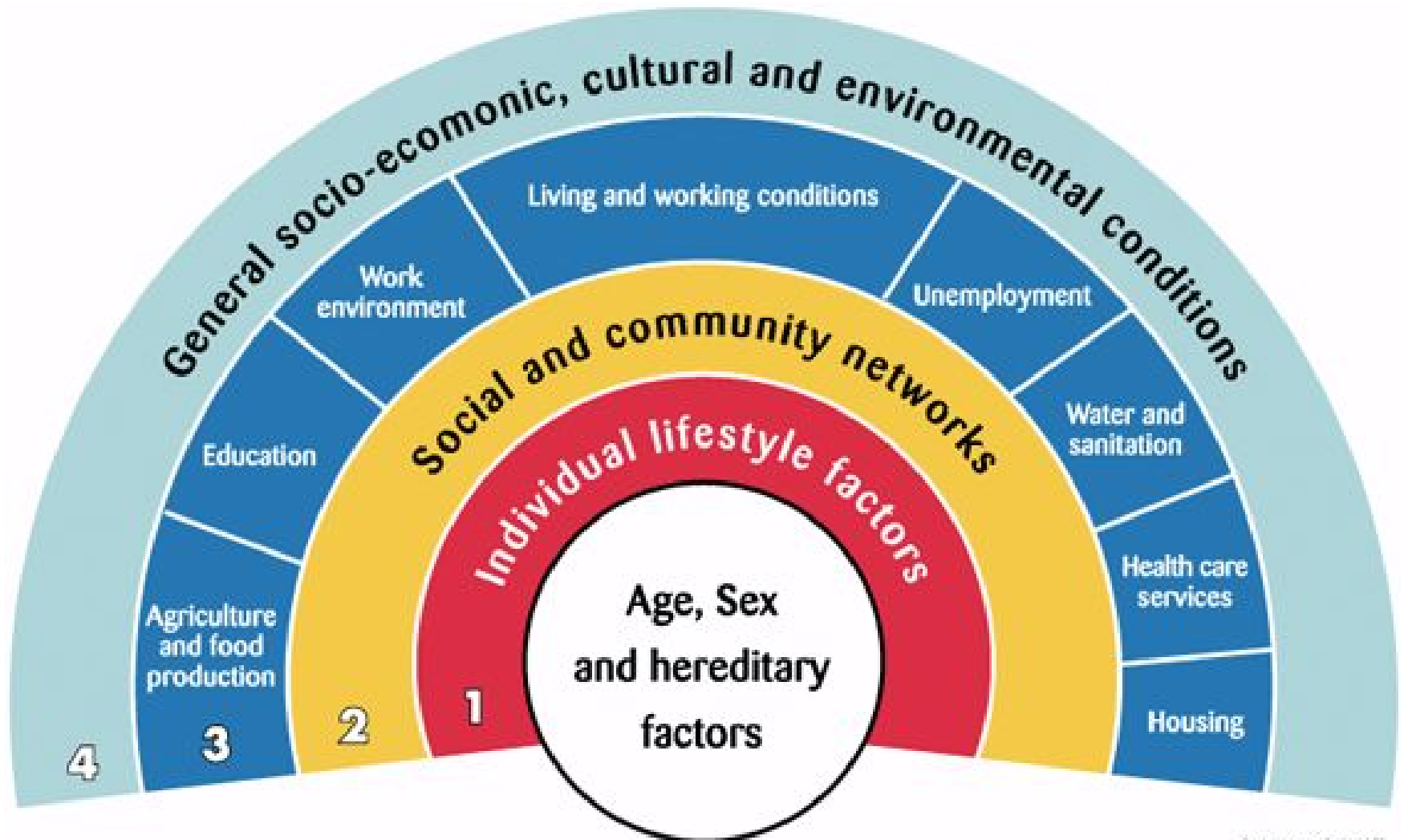
DETERMINANTS

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 and genetic factors. Life style factors such as smoking habits, diet and physical activity** play an important role in a wide range of health problems.

DETERMINANTS OF HEALTH



COMMUNICABLE DISEASE

An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent from reservoir to susceptible host.

Easily transmissible diseases are called **contagious** diseases.

- **Communicable Disease** (typhoid, influenza,..)
- **Non- Communicable Disease** (DM, cancer,..)

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 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).
- Apparent (clinical/symptomatic) and inapparent (unclear) cases.
- Clinical cases (mild/moderate/severe) (typical/atypical).

Now, we are going to discuss the appearance of diseases on a large community level, not an individual or small level.

ENDEMIC

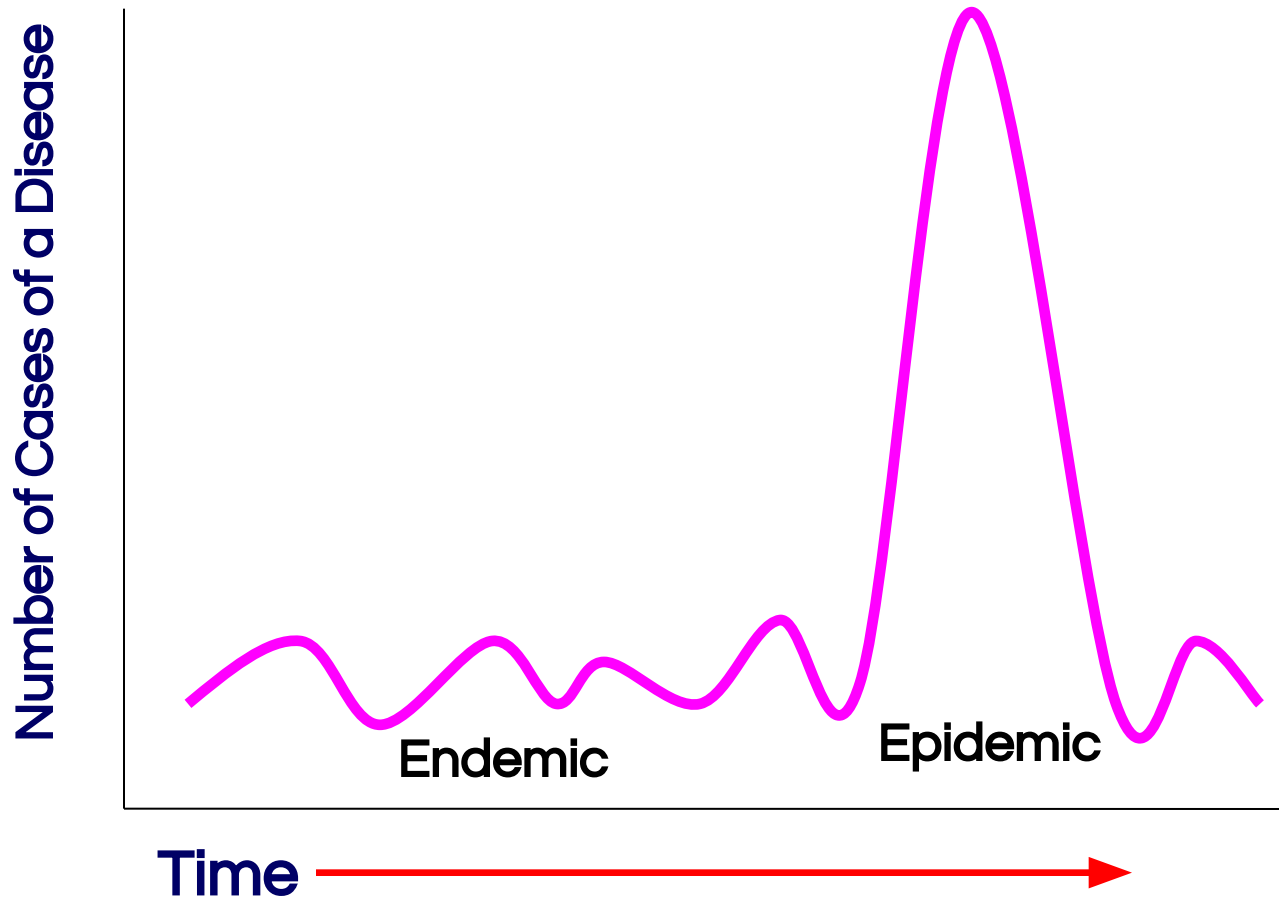
The **constant** presence of a disease or infectious agent within a given geographic area or population group; may also refer to the **usual prevalence** of a given disease within such area or group.

E.g. Typhoid, Hepatitis A.

EPIDEMIC

The 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.

ENDEMIC VS EPIDEMIC



PANDEMIC

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.

E.g. Influenza A H1N1 in 2009.

An **endemic** disease can become **epidemic**, and an **epidemic** disease can become **pandemic**.

OUTBREAK

A **localized epidemic** affecting a large number of a group in the community.

E.g. outbreak of food poisoning.

SPORADIC

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.

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. **The infection starts in the hospital** and can occur among staff of patients.

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.**

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.

ZOONOSIS

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

Zoonotic diseases include:

brucellosis (cows and pigs),

anthrax (sheep),

plague (rodents),

rabies (dogs, bats and other mammals).

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.**

REFERENCES

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2. Principles of EPIDEMIOLOGY in Public Health Practice *Third Edition* An Introduction to Applied Epidemiology and Biostatistics. Centers for Disease Control and Prevention (CDC) Glossary pages; 1-23.