بسم الله الرحمن الرحيم

•Public Health: in the mid 19th century
Concerned more with national issues.
Data and evidence to support action
focus on populations, social justice and equity,
emphasis on preventions vs cure.

•International Health: during past decades
came to be more concerned with the disease (e.g. tropical diseases)
and conditions (war, natural disasters) of middle and low income countries.
Tended to denote a one way flow of 'good ideas'.

• Global Health: More recent and emphasises a greater scope of
health problems and solutions that transcend national boundaries
requiring greater inter-disciplinary approach
health equity among nations and for all people is a major objective

•Health Inequalities: the uneven distribution
(Good) احتياج كبار السن لعنايه اكبر من الشباب

•Health Inequities: the presence of systematic disparities (bad)
الطبقيه الاجتماعيه(الفقر والغنى)

*adequate levels of health worldwide: Global health

•Health differences arising from childhood disabilities--inequality

•Health differences arising from health insurance coverage
Health differences arising from cultural exclusion
Health differences arising from poor governance
------ inequity

•It was first introduced due to the spread of plague, cholera, smallpox and other mass afflictions--- puplic health not global

•In epidemiology, the patient is the community and individuals are viewed collectively., epidemiology is the study of the distribution and determinants of health-related states and events (not just diseases) in specified populations .

•Two Types of Analytical Study Designs: Cohort study design/Case-control study design

•The three essential characteristics of disease we look for in descriptive epidemiology are:
PERSON ,PLACE ,TIME

•Four core processes are used in the field of epidemiology:
1.Surveillance
2. Screening
3. Outbreak investigation
4. Assessing causation

*Active surveillance: Consists of actively searching for cases, by proactively calling and visiting hospitals. This type of surveillance is often conducted when an outbreak is detected.

*Passive surveillance:
information provided to the health agency without an initiating action by the agency. This type of surveillance includes traditional reportable disease surveillance, vital statistics, and disease registries.

-Determinants: Epidemiologists search for causes or factors that are associated with increased risk or probability of disease.

•Pathogenesis: the development, production, or process of generating a disease.

•Pathogenicity: describes the potential ability of a pathogenic substance to cause disease.

*Holoendemic: a disease that is highly prevalent in a population and is commonly acquired early in life in most all of the children of the population.

*Hyperendemic: persistent level of activity above the expected prevalence.

•Incubation period: A period of sub-clinical ,, ends with the onset of symptoms.

•Prodromal period The time during which a disease process not yet clinically manifest.

•Latent period: The interval between disease onset and clinical diagnosis.

Endemic: usual level /disease present among a population at all times.

Epidemic: _outbreak / in a group population/ geographical area/ in excess of the usual level.

Pandemic: epidemic that is widespread, large populace, possible worldwide.

•Fomites: inanimate objects that serve as a role in disease transmission.
Pencils, pens, doorknobs, infected blankets

- Convalescent carrier: exposed to and harbors disease-causing organism(pathogen) and is in the recovery phase but is still infectious.

- Healthy carrier: exposed to an harbors pathogen, has not shown any symptoms.

Passive carrier: exposed to and harbors disease causing organism, but has No signs or symptoms

- Incubatory carrier: exposed to and harbors a disease and is in the beginning stages of the disease, showing symptoms, and has the ability transmit the disease

• A pathogen uses a host (fly, flea, louse, or rat) as a mechanism for a ride or nourishment; this is mechanical transmission

• biological transmission is when the pathogen undergoes changes as part of its life cycle, while within the host/ vector and before being transmitted to the new host.

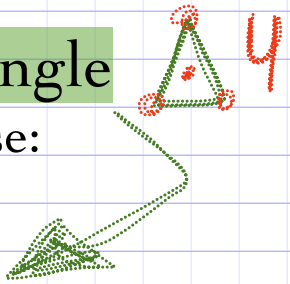
Passive Immunity (natural passive) acquired through transplacental transfer of a mother's immunity a to diseases to the unborn child (also via breastfeeding).

Active Immunity body produces its own antibodies.

Acquired Immunity obtained by having had a dose of a disease that stimulates the natural immune system or artificially stimulating Immune system.

Herd Immunity the resistance a population or group has to the invasion and spread of an infectious disease.

The Epidemiology Triangle



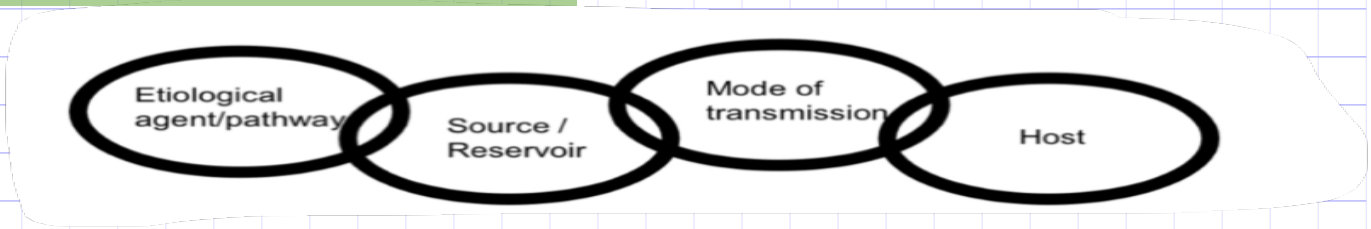
-factors contribute to the outbreak of a disease:

1. Role of the host
2. Time
3. Environmental circumstances
4. Agent

prevalence: it is the proportion of people in a population having a disease.

Incidence represents the number of new cases of a disease during a specific time period divided by the number of persons at risk for the diseases during that same time period.

Chain of Transmission

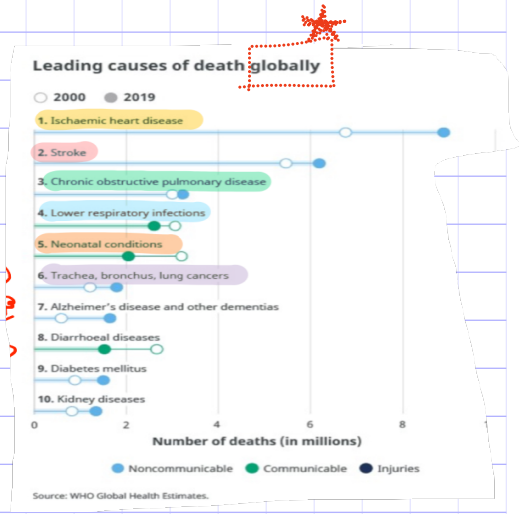


- The WHO uses 3 broad category definitions for causesof death and disability :

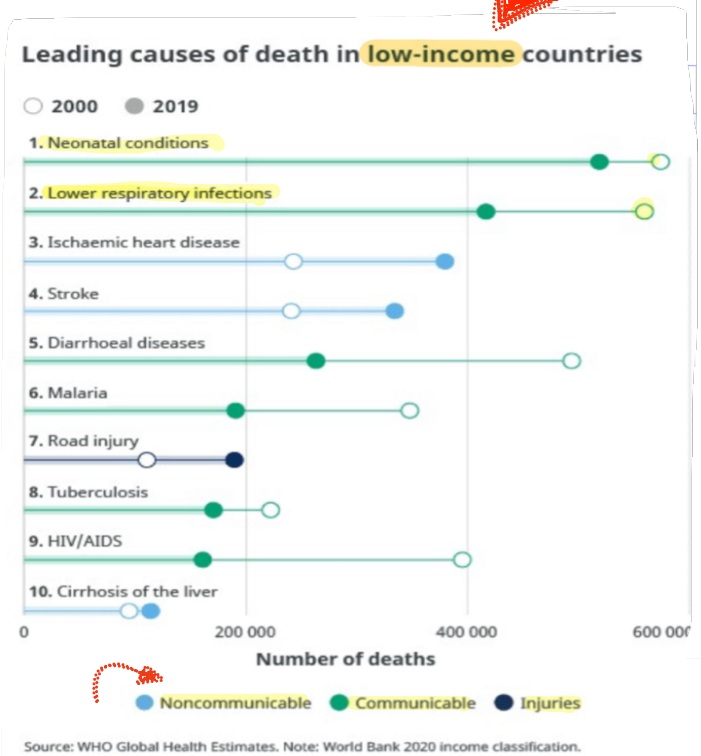
1. communicable disease(maternal, perinatal and nutritional conditions). 2. noncommunicable diseases; injuries 3.

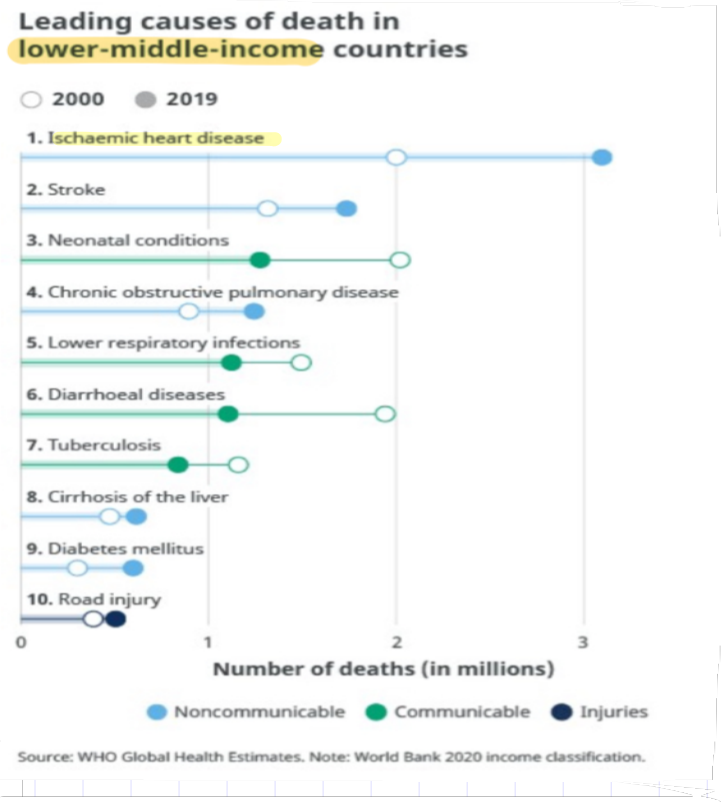
- In developed countries, 77% of deaths are from non-communicable disease.

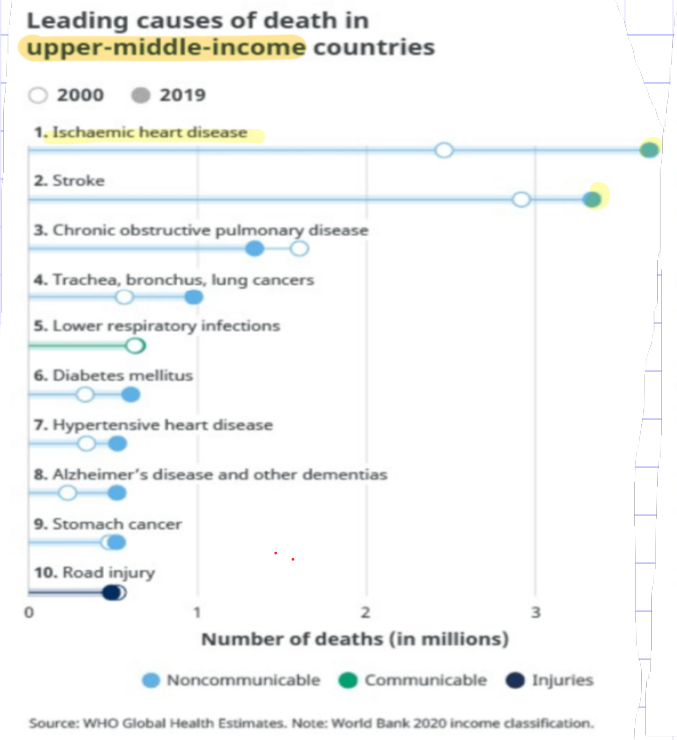
In developing countries, 55% of deaths are from communicable disease.

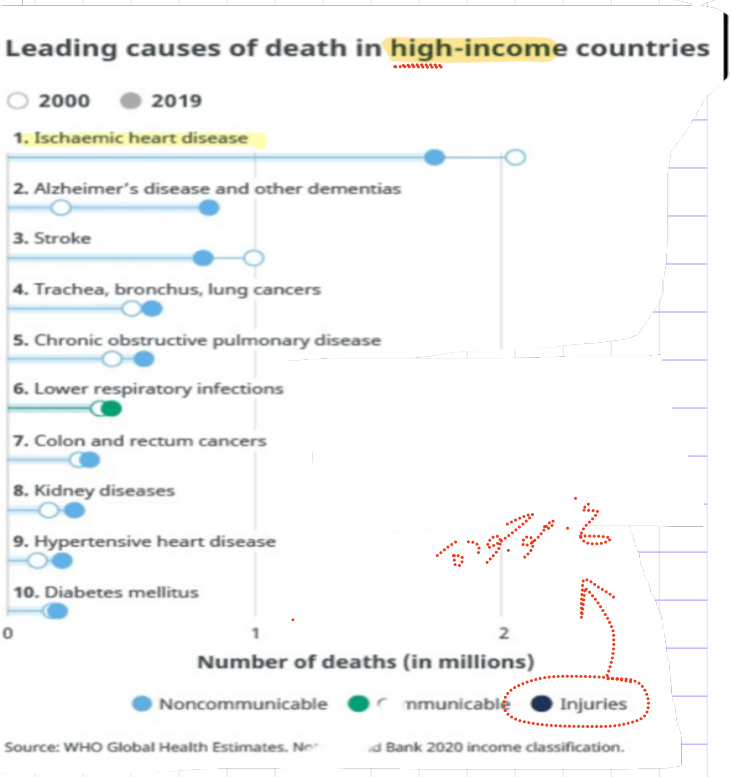


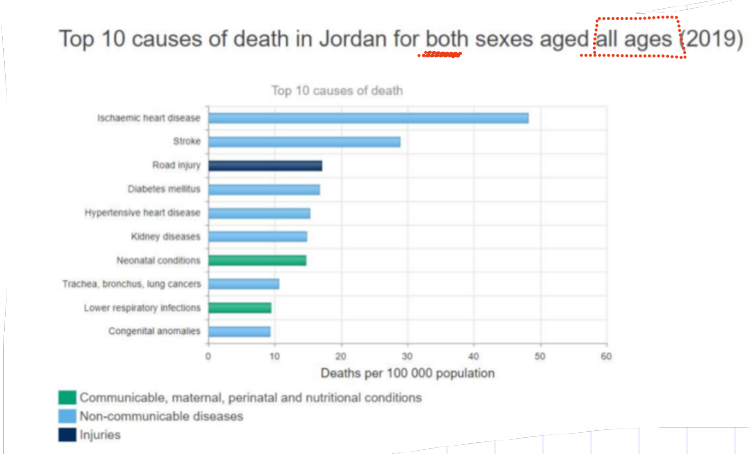
Leading Causes of Death by Income Group

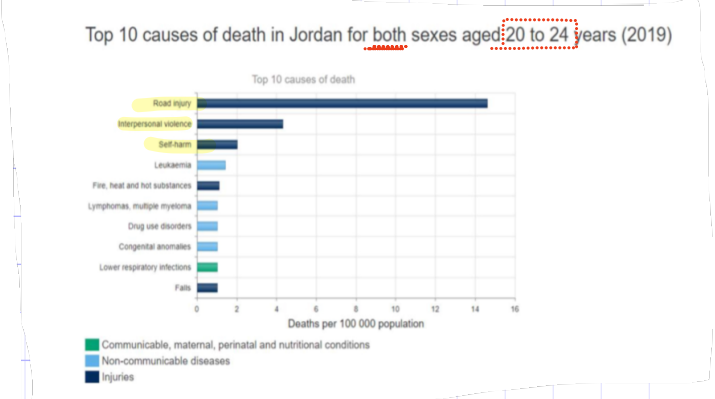

Leading causes of death in low-income countries
2000
2019
1. Neonatal conditions
2. Lower respiratory infections
3. Ischaemic heart disease
4. Stroke
5. Diarrhoeal diseases
6. Malaria
7. Road injury
8. Tuberculosis
9. HIV/AIDS
10. Cirrhosis of the liver
0
200 000
400 000
600 000
Number of deaths
Noncommunicable
Communicable
Injuries
Source: WHO Global Health Estimates. Note: World Bank 2020 income classification.

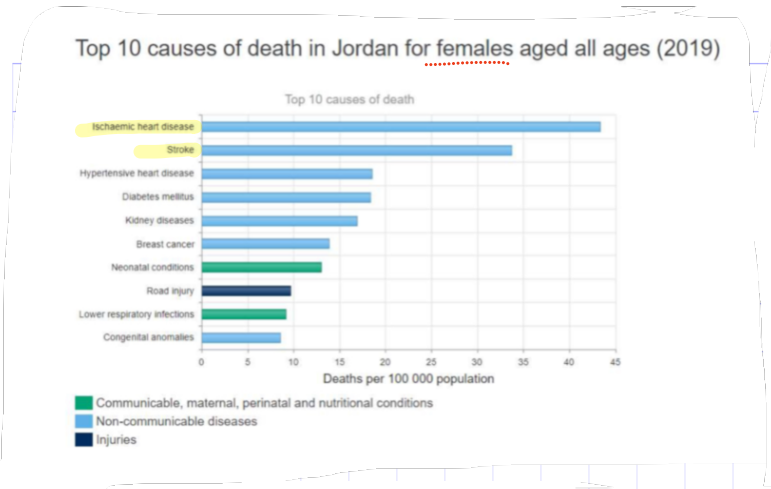

Leading causes of death in lower-middle-income countries
2000
2019
1. Ischaemic heart disease
2. Stroke
3. Neonatal conditions
4. Chronic obstructive pulmonary disease
5. Lower respiratory infections
6. Diarrhoeal diseases
7. Tuberculosis
8. Cirrhosis of the liver
9. Diabetes mellitus
10. Road injury
0
1
2
3
Number of deaths (in millions)
Noncommunicable
Communicable
Injuries
Source: WHO Global Health Estimates. Note: World Bank 2020 income classification.

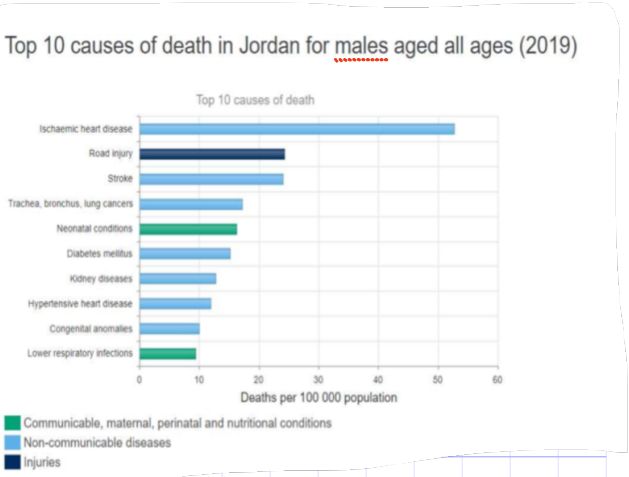

Leading causes of death in upper-middle-income countries
2000
2019
1. Ischaemic heart disease
2. Stroke
3. Chronic obstructive pulmonary disease
4. Trachea, bronchus, lung cancers
5. Lower respiratory infections
6. Diabetes mellitus
7. Hypertensive heart disease
8. Alzheimer's disease and other dementias
9. Stomach cancer
10. Road injury
0
1
2
3
Number of deaths (in millions)
Noncommunicable
Communicable
Injuries
Source: WHO Global Health Estimates. Note: World Bank 2020 income classification.

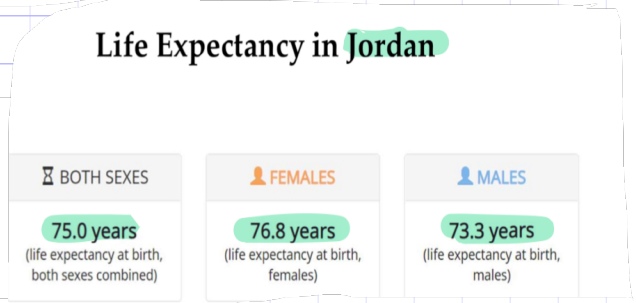

Leading causes of death in high-income countries
2000
2019
1. Ischaemic heart disease
2. Alzheimer's disease and other dementias
3. Stroke
4. Trachea, bronchus, lung cancers
5. Chronic obstructive pulmonary disease
6. Lower respiratory infections
7. Colon and rectum cancers
8. Kidney diseases
9. Hypertensive heart disease
10. Diabetes mellitus
0
1
2
Number of deaths (in millions)
Noncommunicable
Injuries
Source: WHO Global Health Estimates.

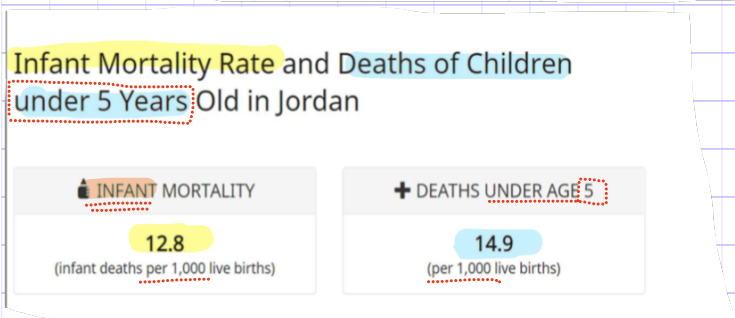

Top 10 causes of death in Jordan for both sexes aged all ages (2019)
Top 10 causes of death
Ischaemic heart disease
Stroke
Road injury
Diabetes mellitus
Hypertensive heart disease
Kidney diseases
Neonatal conditions
Trachea, bronchus, lung cancers
Lower respiratory infections
Congenital anomalies
0
10
20
30
40
50
60
Deaths per 100 000 population
Communicable, maternal, perinatal and nutritional conditions
Non-communicable diseases
Injuries


Top 10 causes of death in Jordan for both sexes aged 20 to 24 years (2019)
Top 10 causes of death
Road injury
Interpersonal violence
Self-harm
Leukaemia
Fire, heat and hot substances
Lymphomas, multiple myeloma
Drug use disorders
Congenital anomalies
Lower respiratory infections
Falls
0
2
4
6
8
10
12
14
16
Deaths per 100 000 population
Communicable, maternal, perinatal and nutritional conditions
Non-communicable diseases
Injuries









- DISPARITY VS INEQUITY

Disparity means there is a difference

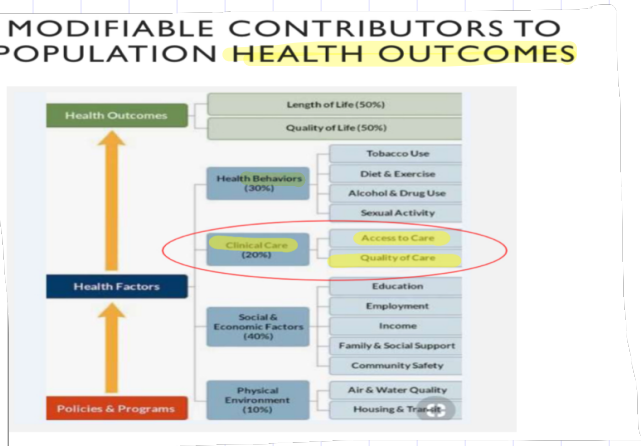
Inequity means that an injustice unfairness is driving the difference

Disparity: HIV/AIDS is more prevalent in low-income,

Inequity: 1 structural factors(political, cultural) 2 socioeconomic conditions (i.e., social class, gender, race/ethnicity), and 3 environmental factors (e.g., living and working conditions, neighborhood context) that contribute to HIV/AIDS risk

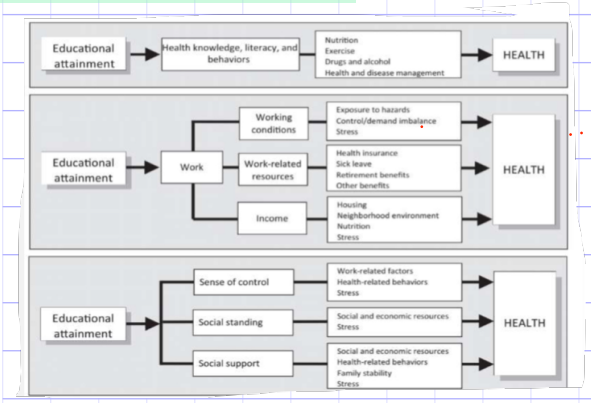
Table 1 – Causes of health inequities at three levels

Level of the Cause	Description	Examples
Distal (farthest away from an individual's health status) or societal	Cultural, political, and infrastructural causes	Education, income, housing conditions, air quality, access to food and water, road safety
Intermediate	Relationships, social contexts	Community factors, including those related to work, school, family, and peer environments
Proximal (closest to an individual's health status) or individual	Behaviors, capabilities, attitudes, and direct biological threats to health	Hygiene habits, exposure to disease vectors that cause diarrhea, dengue, malaria



SDH Example:Educational Attainment & Health

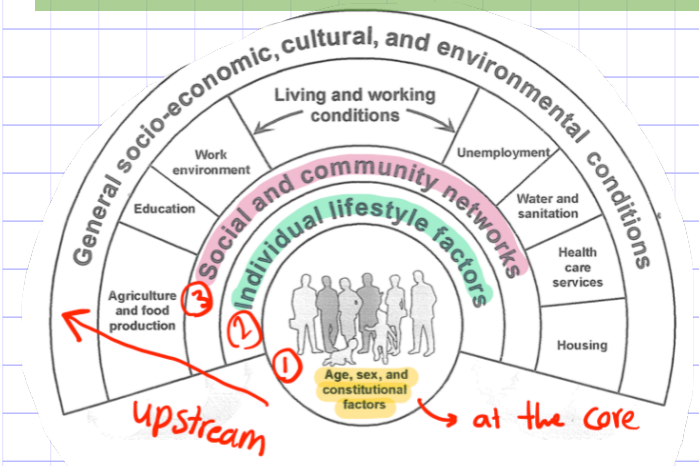
Social Determinants Of Health



من جزئيه الكتاب

- Turrell .identified SDH at three discrete, yet closely interrelated stages or levels narely, upstream, midstream, and downstream.
The upstream (or macro-level) factors include international influences. government policies, and the fundamental social,physical, economic, and environmental determinants of health.
The midstream (or intermediate-level) factors include psychosocial factors, health-related behaviors. and the role of the healthcare system. Some social factors, such as culture, beliefs, values, and norms, are seen to influence decision making, actions, and behavior at both upstream and midstream levels.
The downstream(or micro-level) factors include physiological and biological functioning.

The Main Determinants of Health



-Dahlgren and Whitehead developed a similarly multilayered and widely used "rainbow" model of determinants

- Realistic evaluation,helps to capture the linkages between the context, the mechanisms , and the outcomes.

- HEAT; a software application that facilitates assessment within and across countries using available data).

- A series of Innov8 publications and resources,including country case studies, are available that demonstrate application of this approach in areas such adolescent sexual andreproductive health, maternal and child health, and cervical cancer screening.

-"Equity Watch framework" of 25 priority indicators of health equity was used to organize evidence from 16 countries in east and southern Africa, complemented by Equity Watch work in countries .

A range of indicators are used in such processes for relative and absolute measures of health inequities, The indicators used may be related to the following issues:

1) Political and legal factors,
2) Economic factors
3) Services and entitlements,
4) Living standards and material conditions,
5) Social features.

Non-Communicable Diseases

- NCDs are the leading cause of mortal in the world.

-Characteristics of NCDs

Complex etiology (causes)
Multiple risk factors
Long latency period
Non-contagious origin (noncommunicable)
Prolonged course of illness
Functional impairment or disability

- The four main types of noncommunicable diseases are: cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes.

Around the world, NCDs affect women and men almost equally.

- Risk factors: An aspect of personal behavior or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or other health condition.

-Modifiable Risk Factor: A behavioral risk factor that can be reduced or controlled by intervention, thereby reducing the probability of disease. WHO has prioritized the following four ,Physical inactivity- Tobacco us Alcohol use, and - Unhealthy diets (increased fat and sodium, with low fruit and vegetable intake).

- Non-Modifiable Risk Factor: A risk factor that cannot be reduced or controlled by intervention; for example: Age, Gender, Race, and Family history(genetics).

These four behaviors lead to four key metabolic-physiological changes: raised blood pressure /overweight-obesity/ raised blood glucose/ raised cholesterol.

	Tobacco Use	Unhealthy diets	Physical Inactivity	Harmful Use of Alcohol
Cardio-vascular	✓	✓	✓	✓
Diabetes	✓	✓	✓	✓
Cancer	✓	✓	✓	✓
Chronic Respiratory	✓	✓	✗	✗

- Investing in better management
NCDs is critical. Management of NCDs includes detecting, screening and treating these diseases, and providing access to palliative care for people in need.

coronary heart disease disease of the blood vessels supplying the heart muscle;
cerebrovascular disease disease of the blood vessels supplying the brain;
peripheral arterial disease - disease of blood vessels supplying the arms and legs;
rheumatic heart disease damage to the heart muscle and heart valves from rheumatic fever, caused by streptococcal bacteria;
congenital heart disease malformations of heart structure existing at birth;
deep vein thrombosis and pulmonary embolism - blood clots in the leg veins, which can dislodge and move to the heart and lungs.

CVDs are the #1 cause of death globally

CVD

Major modifiable risk factors: - High blood pressure - Abnormal blood lipids - Tobacco use - Physical inactivity - Obesity Unhealthy diet (salt) Diabetes
Other modifiable risk factors: - Low socioeconomic status ,Mental ill health (depression) - Psychosocial stress Heavy alcohol use - Use of certain medication ,Lipoprotein
Non-modifiable risk factors: - Age - Heredity or family history - Gender ,Ethnicity or race
"Novel" risk factors: - Excess homocysteine in blood - Inflammatory markers (Creative protein)- Abnormal blood coagulation (elevated blood levels of fibrinogen)

- Symptoms of a heart attack include:
pain or discomfort in the centre of the chest;
pain or discomfort in the arms, the left shoulder, elbows, jaw, or back.
difficulty in breathing or shortness of breath.
nausea or vomiting; light-headedness or faintness;
cold sweat; and turning pale.
Women are more likely than men to have
shortness of breath, nausea, vomiting, and back or iaw nair

-The most common symptom of a stroke is sudden weakness of the face,arm, or leg, most often on one side of the body. Other symptoms include sudden onset of:

numbness of the face, arm, or leg, especially on one side of the body;
confusion, difficulty speaking or understanding speech;
difficulty seeing with one or both eyes;
difficulty walking, dizziness and/or loss of balance or coordination;
severe headache with no known cause
fainting or unconsciousness.

- For secondary prevention of cardiovascular disease in those with established disease, including diabetes, treatment with the following medications are necessary

aspirin
beta-blockers
angiotensin-converting
enzyme inhibitors
statins.

Type 2 is caused by modifiable risk factors and is the most common worldwide.

• Symptoms of type 1 diabetes include the need to urinate often, thirst, constant hunger, weight loss, vision changes and fatigue. These symptoms may occur suddenly.
• Symptoms for type 2 diabetes are generally similar to those of type 1 diabetes, but are often less marked. As a result, the disease may be diagnosed several years after onset.

- Type 1 diabetes cannot currently be prevented.
Effective approaches are available to prevent type 2 diabetes and prevent the complications and premature death that can result from all types of diabetes.

*Cancer is the second leading cause of death globally,

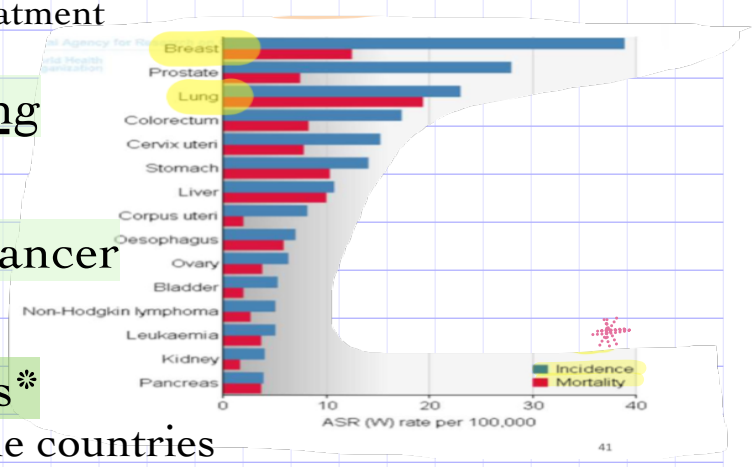
- Lung, prostate,colorectal, stomach and liver cancer are the most common types of cancerin men,
while breast, colorectal, lung, cervical and thyroid cancer are the most common among women.

Cancer Management

1. Early diagnosis identifies symptomatic cancer cases at the earliest possible stage.
2. Screening aims to identify individuals with abnormalities suggestive of a specific cancer or pre-cancer who have not developed any symptoms and refer them promptly for diagnosis and treatment

The highest mortality rate is lung cancer.

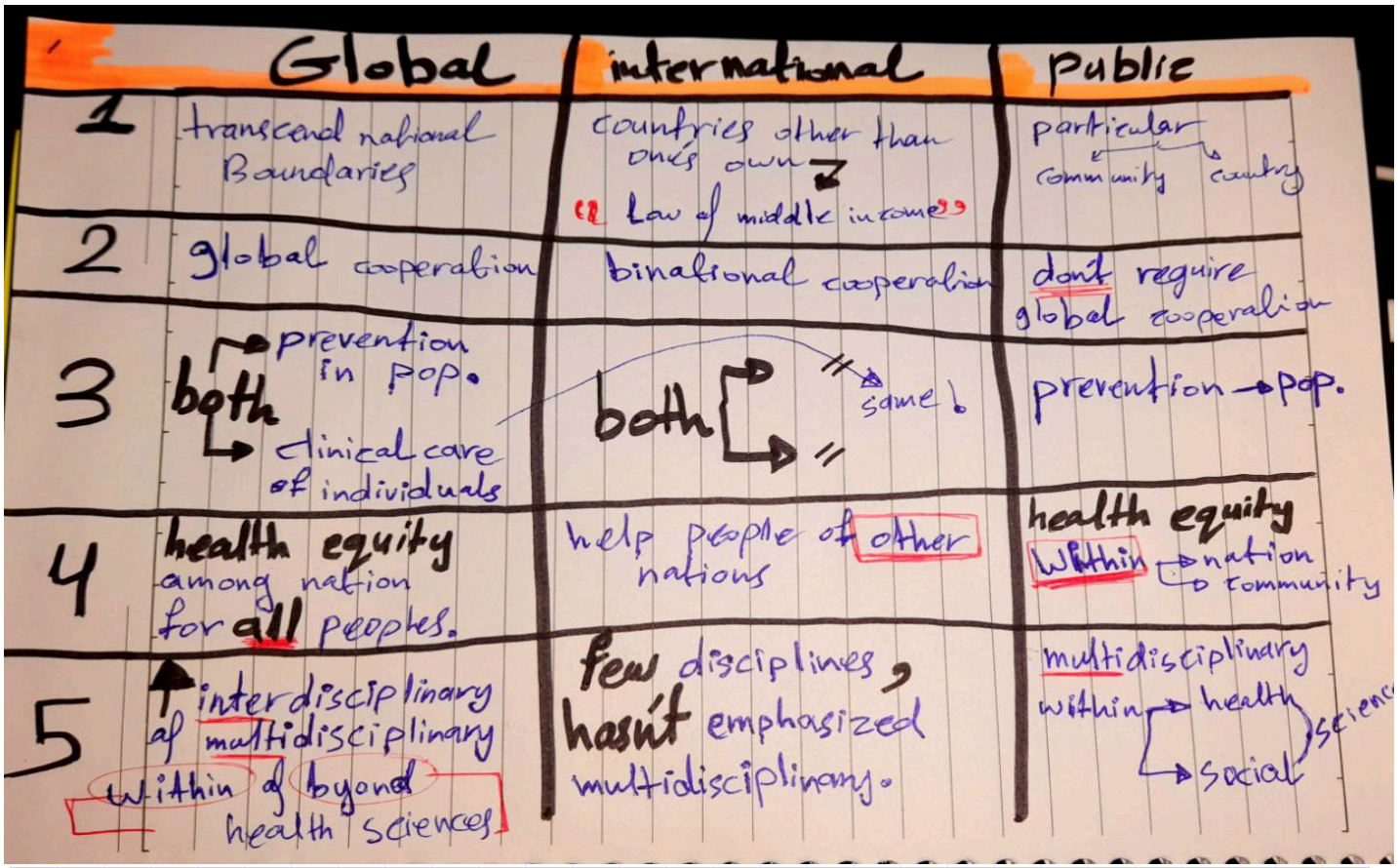
The highest incidence is breast cancer



Chronic Respiratory Diseases
- 90% of deaths occur in low-income countries
Two of the most common are asthma and chronic obstructive pulmonary disease [COPD)

Asthma is the most common chronic disease among children.

Treatment>corticosteroids



ثم بحمد الله

by Ayah Freihat