

AL MUSTAQBAL UNIVERSITY

College of Pharmacy / Fourth Stage



Public Health

(L 3) Environmental Health

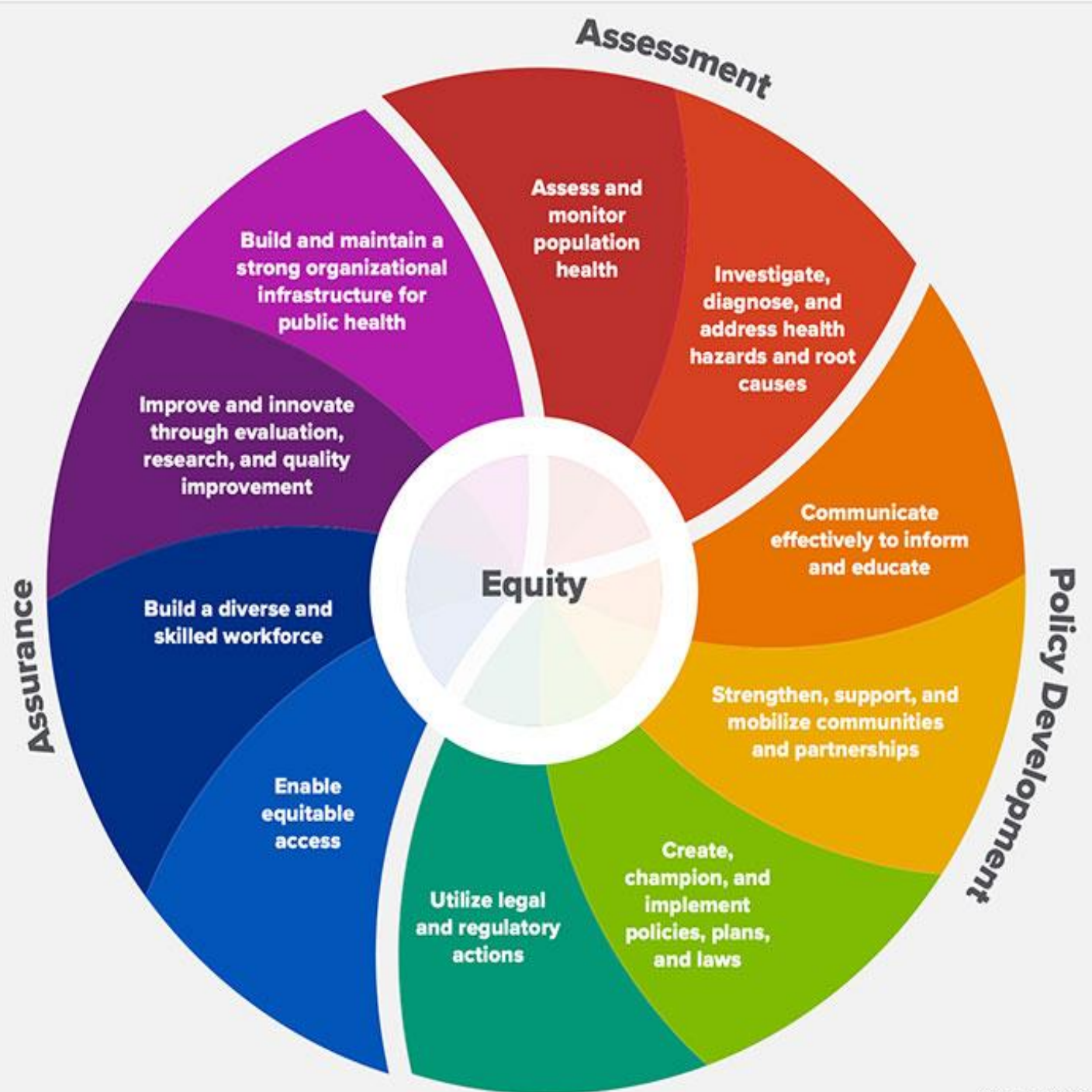
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Essential Public Health Services

Assessment

policy development

Assurance



Components of PH

Public health is an **interdisciplinary field**. It includes:

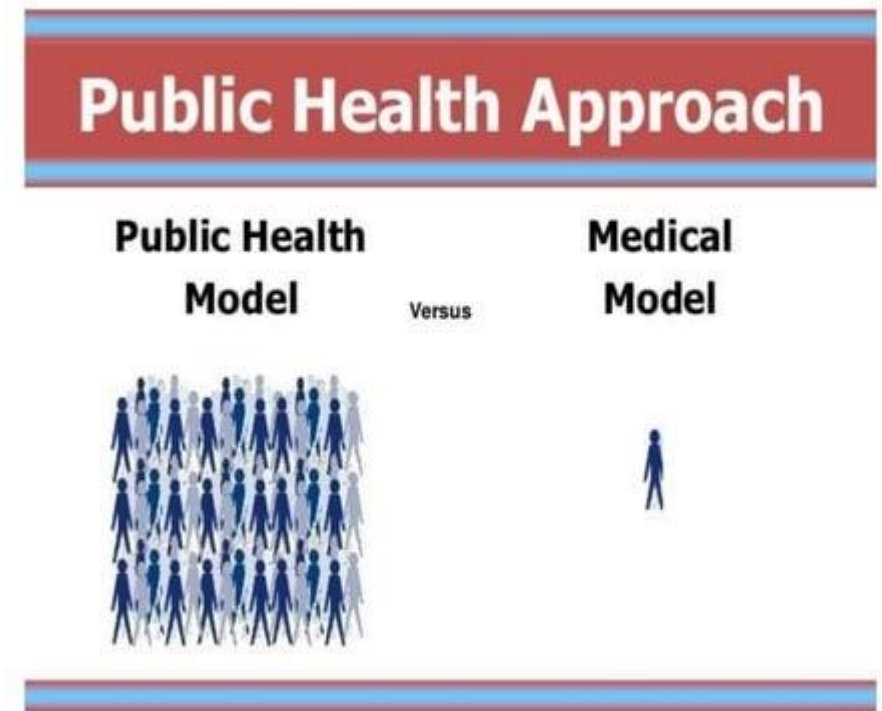
- Epidemiology,
- Biostatistics
- Management of health services
- Environmental health,
- Community health,
- Behavioral health,
- Health economics,
- Public policy,
- Mental health,
- Occupational safety,
- Gender issues in health, and
- Sexual and reproductive health.

Public Health Specialist & Clinician

In the medical field, clinician **treat diseases** and injuries of **one patient** at a time. But in public health we **prevent** disease and injury. Public health researchers, practitioners and educators **work with communities and populations**. We identify the **causes** of disease and disability and **implement** large scale solutions.

For example, instead of treating **gunshot wound**, we work to identify the **causes of gun violence** and **develop interventions**.

Instead of treating premature or low birth babies, we investigate the predisposing factors and we develop programs to keep babies healthy.





ENVIRONMENTAL HEALTH

Environmental health

There is a connection between the environment and the health of individuals and communities. Likewise, people can affect the health of the environment.

The Environment is : The **air** we breathe, The **water** we drink, The **food** we eat, and The **places** where we live, work, and play.

Environmental health: is a branch of public health that focuses on the study and management of the environmental factors that can affect human health. It encompasses the assessment and control of those factors in order to prevent or minimize their impact on individuals and communities. Environmental health related to a wide range of issues, including air and water quality, waste management, food safety, and the impact of environmental hazards on human health.

WHAT ARE ENVIRONMENTAL HEALTH HAZARDS?

- An **environmental health hazard** is a substance that has the ability to cause an adverse health event.
- This includes physical, chemical, and biological factors that are external to a person.
- Hazards can be natural or human-made.

EXAMPLES

- Air contaminants
- Toxic waste
- Radiation
- Disease-causing microorganisms and plants
- Pesticides
- Heavy metals
- Chemicals in consumer products
- Extreme temperatures and weather events

The most common environmental health hazards are air and water pollution.

ENVIRONMENTAL HAZARDS & HEALTH EFFECTS

Environmental hazards—like water and air pollution, extreme weather, or chemical exposures—can affect human health in a number of ways, from contributing to **chronic diseases** like cancer or to **acute illnesses** like heat exhaustion.

- There are gaps in information about how the environment affects human health.
- Some health effects are known, others are suspected.
- These health effects can be both short term (acute) and longer term (chronic).

AND, THERE IS A LOT THAT WE DON'T KNOW ABOUT THE RELATIONSHIPS BETWEEN ENVIRONMENTAL HAZARDS AND HEALTH.

More research is needed to determine how exposure is cause for health concern and what levels of exposure are safe.

For most chemicals, we do not know how low level environmental exposures affect our health.

ASSESSING EXPOSURES

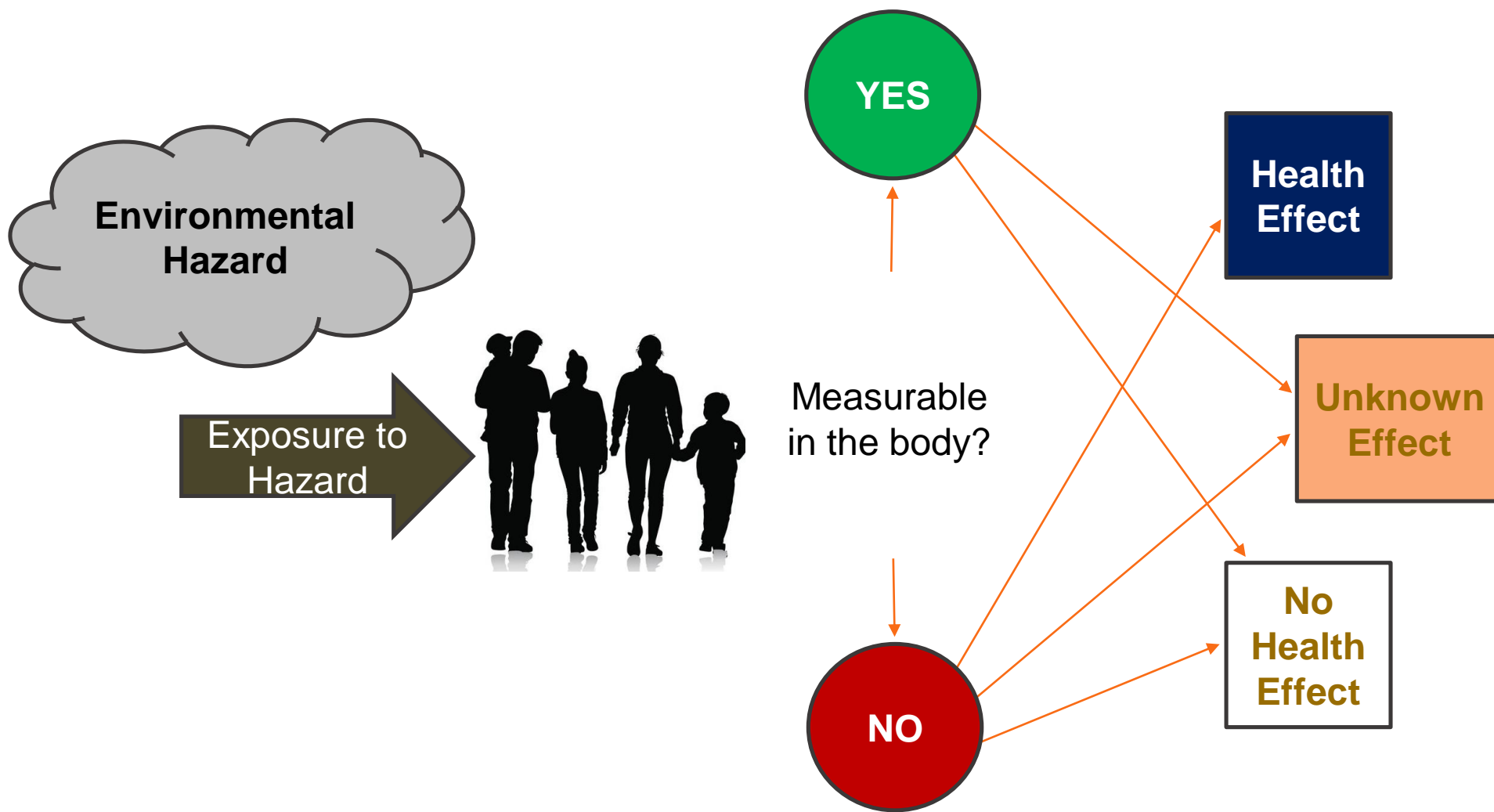
After being exposed to an environmental hazard, it may be possible to detect how much of a substance has gotten into a person's body.

This is called **biomonitoring**.

Most biomonitoring involves measuring the amount of a chemical or its breakdown product (metabolite) that is in a small sample of a person's blood or urine.

The amount of the chemical or metabolite in a person's blood or urine depends on the amount of the chemical that has entered that person's body. Exposure pathways include eating, drinking, breathing, and touching.

IT'S IMPORTANT TO NOTE THAT BEING **EXPOSED** TO AN ENVIRONMENTAL HAZARD **DOESN'T MEAN** THAT A PERSON WILL HAVE A **NEGATIVE HEALTH EFFECT**.



Being exposed to an **environmental hazard** does not mean that a person will **become ill**.

Being able to **measure amounts** of an environmental chemical in a person's blood, saliva, urine, or other body fluids or tissues **does not** mean that a person will **become sick**.

THE EFFECT OF AN ENVIRONMENTAL HAZARD ON INDIVIDUAL HEALTH IS INFLUENCED BY SEVERAL FACTORS:

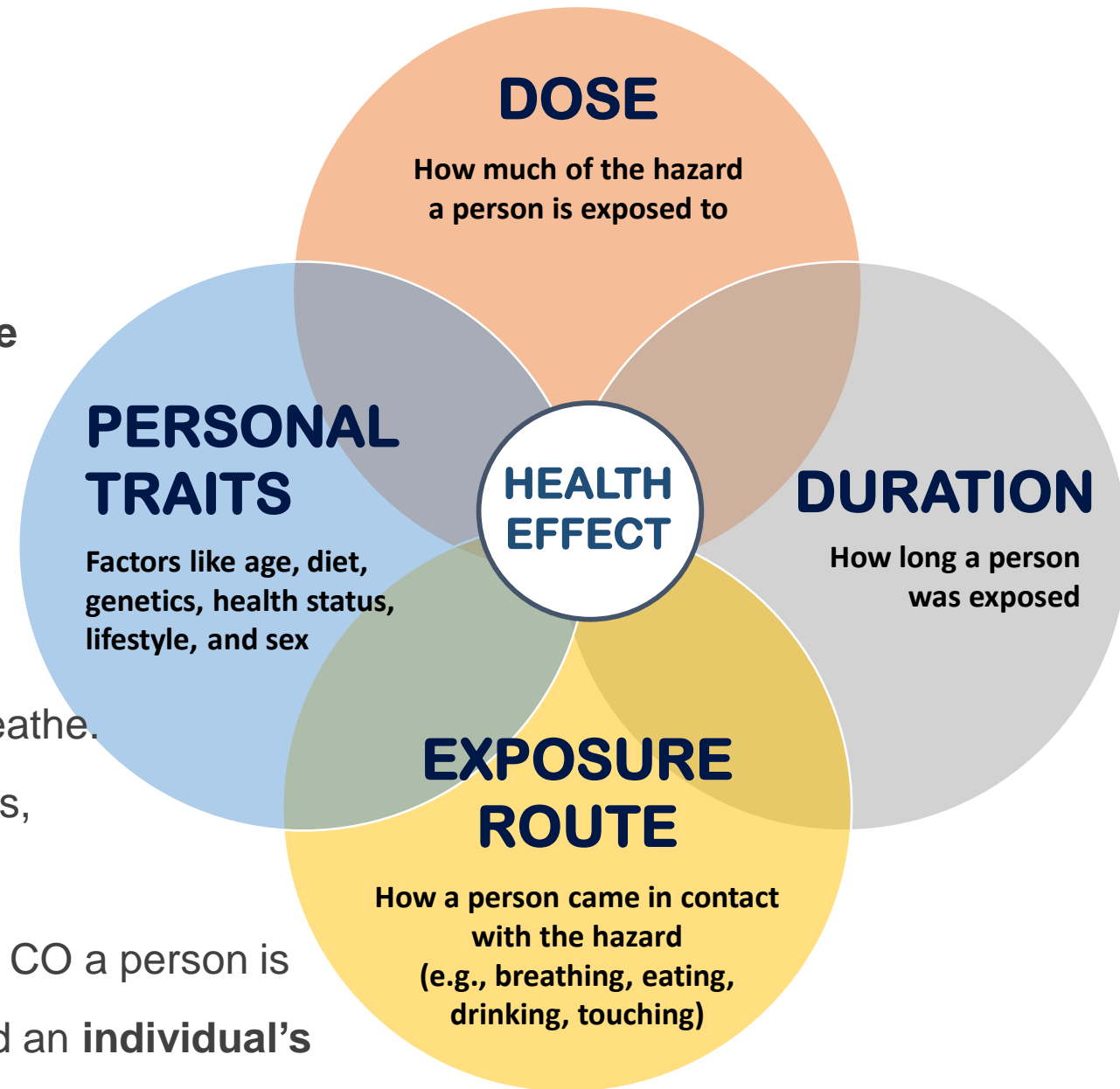
EXAMPLE:

Populations are at increased risk for **carbon monoxide poisoning** during extreme weather events that can cause power outages.

Without power, people may use charcoal or gas grills indoors to cook or keep warm. Doing this may expose them to carbon monoxide (CO) through the air they breathe.

While everyone in the home may be exposed to the gas, not everyone will get CO poisoning.

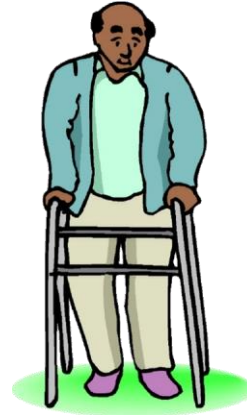
The likelihood of poisoning depends on **the amount** of CO a person is exposed to, **how long** a person is exposed to CO, and an **individual's characteristics** like age or having chronic health problems.



Individual Susceptibility



Pregnant women and their developing babies



Elderly people whose defense mechanisms are less efficient



Sick people who have weakened immune systems



Infants and children who are still developing



Climate Change and Public Health

World Health Organization has identified climate change as the greatest threat to global health in the 21st century.

Climate change affects health through both direct and indirect pathways. Direct impacts include heat-related illnesses, such as heat stroke and dehydration. Indirect health impacts of climate change are equally concerning, can alter the distribution and abundance of disease vectors, such as mosquitoes and ticks, leading to the spread of vector-borne diseases like malaria, dengue fever, and Lyme disease.

Also it can lead to an increase in air pollution, food insecurity, and waterborne diseases.

These impacts are not just limited to developing countries, but also affect developed nations. As such, it is imperative that we take action to address this issue and protect public health.

Occupational Health

Occupational health can be defined as the branch of public health that deals with the identification, assessment, and control of health hazards in the workplace.

It encompasses the physical, mental, and social well-being of workers, as well as the prevention of work-related injuries and diseases. Occupational health professionals work to ensure that workplaces are safe and healthy, promoting the overall well-being of employees.

So, Environmental health and Occupational health are inter-related, the first focuses on identifying and addressing environmental factors that can negatively impact human health, such as air and water pollution, toxic chemicals, and hazardous waste.

While the second, Occupational health, on the other hand, aims to prevent work-related injuries, illnesses, and exposures to harmful substances in the workplace.

EXAMPLES of OCCUPATIONAL HAZARDS

Safety Hazards: that can injure a worker, like working from heights, spills on floors, machinery with moving parts, confined spaces, steep stairs, or exposed electrical wiring.

Chemical Hazards: environmental smoke, cleaning products, acids, pesticides, carbon monoxide.

Biological Hazards: exposure to infectious diseases, molds, toxic or poisonous plants, or animal materials

Physical Hazards: These hazards include excessive noise, elevated or low temperatures, or radiation.

Work Organization Hazards: These hazards include workplace violence, discrimination, lack of respect, and other conditions that are hazardous to mental, emotional, and physical health.

Psychosocial Hazards: These hazards include work-related abuse, threats or assaults among workers, including physical, sexual, verbal, and psychological abuse, and workplace harassment

Weather Hazards: These hazards include slippery floors, sloped walkways lacking skid resistance, inappropriate footwear, and other weather hazards

THANK YOU!



ENVIRONMENTAL
health
is
HUMAN
health